California Public
Utilities Commission

Final Environmental Impact Report NextEra Energy Transmission West's Proposed Suncrest Dynamic Reactive Power Support Project

Volume 1 - Main Body

January 2018

SCH # 2016011004

Prepared by

Horizon
WATER and ENVIRONMENT

FINAL ENVIRONMENTAL IMPACT REPORT

Volume 1 – Main Body

CALIFORNIA PUBLIC UTILITIES COMMISSION

NextEra Energy Transmission West's Proposed Suncrest Dynamic Reactive Power Support Project

SCH #2016011004

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California Public Utilities Commission

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AB	Assembly Bill
AC	alternating current
ACHP	Advisory Council on Historic Preservation
A.D.	Anno Domini
ADT	average daily traffic
AF	acre-feet
AFY	acre-feet per year
AGR	Agricultural Supply
APLIC	Avian Power Line Interaction Committee
APM	Applicant proposed measure

APN	assessor's parcel number
AQUA	Aquaculture
AST	above-ground storage tank
AUSD	Alpine Unified School District
BACT	best available control technology
B.C.	Before Christ
bgs	below ground surface
BIOL	Preservation of Biological Habitats of Special Significance
BLM	Bureau of Land Management
BMPs	best management practices
B.P.	Before Present
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CCAA	California Clean Air Act of 1988
CAISO	California Independent Service Operator
CalARP	California Accidental Release Program
Cal. Code Regs.	California Code of Regulations
CalEEMod	California Emissions Estimator Model
Cal EMA	California Emergency Management Agency
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
Cal OES	California Governor's Office of Emergency Services
Cal/OSHA	California Department of Industrial Relations, Division of Occupational Safety and Health
CalRecycle	California Department of Resources Recovery and Recycling
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Standards Code
CCCC	California Climate Change Center
CCR	California Code of Regulations
CDC	Centers for Disease Control
CDOC	California Department of Conservation
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CDPH	California Department of Public Health
CEC	California Energy Commission
CEQA	California Environmental Quality Act of 1970, as amended
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (also known as the Superfund Act)
CESA	California Endangered Species Act
CFPP	Construction Fire Prevention Plan
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CI	*Coccidioides immitis*

CIAP	California Indian Assistance Program
CIWMA	California Integrated Waste Management Act
CIWMB	California Integrated Waste Management Board
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNF	Cleveland National Forest
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2e	carbon dioxide equivalents
COLD	Cold Freshwater Habitat
COMM	Commercial and Sport Fishing
County	County of San Diego
County Fire Authority	San Diego County Fire Authority
CPCN	Certificate of Public Convenience and Necessity
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CUPAs	Certified Unified Program Agencies
CVC	California Vehicle Code
CWA	Clean Water Act
cy	cubic yards
dB	decibel
dBA	A-weighted decibel
DEIR	draft environmental impact report
DG	decomposed granite
DHS	California Department of Health Services
DOORS	Diesel Off-Road Online Reporting
DPM	diesel particulate matter
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EI	expansion index
EIR	environmental impact report
EIS	environmental impact statement
ELF	extremely low frequency
EMF	electric and magnetic fields
EMS	Energy Management System
ESA	Endangered Species Act
ESA	Environmental Site Assessment
EST	Estuarine Habitat
FAA	Federal Aviation Administration
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FCI	Forest Conservation Initiative
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FMP	Field Management Plan
FMMP	Farmland Mapping and Monitoring Program
FPP	Fire Protection Plan

FRSH	Freshwater Replenishment
FTA	Federal Transit Administration
GHG	greenhouse gas
gigahertz	billion Hertz
G.O.	General Order
GWP	Global Warming Potential
GWR	Ground Water Recharge
HAZCOM	Hazardous Materials Communication
HCP	Habitat Conservation Plan
HFCs	hydrofluorocarbons
HMMP	habitat mitigation and monitoring plan
HMP	San Diego County Multi-Jurisdictional Hazard Mitigation Plan
HMWMP	Hazardous Materials and Waste Management Plan
hp	horsepower
HR	hydrologic region
HAS	hydrologic subarea
HU	hydrologic unit
HVAC	heating, ventilation, and air conditioning
Hz	Hertz
I-8	Interstate 8
IARC	International Agency for Research on Cancer
IBC	International Building Code
ICBO	International Conference of Building Officials
ICCP	Inter-Control Center Communications Protocol
IGBT	Insulated-gate bipolar transistor
IND	Industrial Service Supply
IPaC	Information for Planning and Conservation
IPCC	Intergovernmental Panel on Climate Change
IRPA/INIRC	International Radiation Protection Association/International Non-Ionizing Radiation Committee
JD	jurisdictional wetland delineation
kcmil	one thousand circular mils
KOP	key observation point
kW	kilowatt
kV	kilovolt
kV/m	kilovolt per meter
LACPH	Los Angeles County Department of Public Health
L_{dn}	energy average of the A weighted sound levels occurring during a 24-hour period
L_{eq}	equivalent steady-state sound level
L_{max}	maximum sound level measured during a given measurement period
L_{min}	minimum sound level measured during a given measurement period
LOS	level of service

MAR	Marine Habitat
MBTA	Migratory Bird Treaty Act
megavar	one million vars
MEP	maximum extent practicable
mG	milliGauss
MGD	million gallons per day
MIGR	Migration of Aquatic Organisms
MLD	Most Likely Descendant
MMI	Modified Mercalli Index
mph	miles per hour
MRZ	Mineral Resource Zone
MS4	municipal separate storm sewer system
MSCP	Multiple Species Conservation Program
MSE	Mechanically Stabilized Earth
msl	mean sea level
$MTCO_2e$	metric tons of carbon dioxide equivalents
MUN	Municipal and Domestic Supply
MVAR	megavolt amperes reactive
MW	megawatts
MWD	Metropolitan Water District of Southern California
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NAV	Navigation
NCCP	Natural Community Conservation Plan
NEET West	NextEra Energy Transmission West, LLC
NEHRP	National Earthquake Hazards Reduction Program
NERC	North American Electric Reliability Corporation
NEPA	National Environmental Policy Act
NESC	National Electric Safety Code
NHPA	National Historic Preservation Act
NIEHS	National Institute of Environmental Health Sciences
NIST	National Institute of Standards and Technology
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Association
NOP	Notice of Preparation
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act of 1977
NRC	National Research Council
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSF	National Science Foundation
O_3	ozone
O&M	operations and maintenance
OEHHA	[California] Office of Environmental Health Hazard Assessment
OES	San Diego County Office of Emergency Services
OHWM	ordinary high water mark

OPGW	optical ground wire
OSHA	Occupational Safety and Health Administration
PCBs	polychlorinated biphenyls
PDMWD	Padre Dam Municipal Water District
PEA	Proponent's Environmental Assessment
PERP	Portable Equipment Registration Program
PFCs	perfluorocarbons
PGA	peak ground acceleration
PM	particulate matter
$PM_{2.5}$	particulate matter of aerodynamic radius of 2.5 micrometers or less
PM_{10}	particulate matter of aerodynamic radius of 10 micrometers or less
POW	Hydropower Generation
ppm	parts per million
PPV	peak particle velocity
PROC	Industrial Process Supply
Proposed Project	NextEra Energy Transmission West Suncrest Dynamic Reactive Power Support Project
PSHA	Probabilistic Seismic Hazard Assessment
PUC	Public Utilities Code
PVC	polyvinyl chloride
RARE	Rare, Threatened, or Endangered Species
RCA	Resource Conservation Area
RCRA	Resource Conservation and Recovery Act of 1976
REC1	Contact Water Recreation
REC2	Non-contact Water Recreation
RHNA	Regional Housing Needs Assessment
RL-40	Rural Lands-40
RL-80	Rural Lands-80
RMP	risk management plan
rms	root-mean-square
ROW	right-of-way
RPO	Resource Protection Ordinance
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SB	Senate Bill
SCADA	supervisory control and data acquisition
SCEDC	Southern California Earthquake Data Center
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SDCFA	San Diego County Fire Authority
SDCOE	San Diego County Office of Education
SDCWA	San Diego County Water Authority
SDG&E	San Diego Gas & Electric
SDNHM	San Diego Natural History Museum
SDRWQCB	San Diego Regional Water Quality Control Board

SF_6	sulfur hexafluoride
SHELL	Shellfish Harvesting
SLT	screening-level threshold
SMARA	Surface Mining and Reclamation Act of 1975
SONGS	San Onofre Nuclear Generating Station
SO_2	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SPWN	Spawning, Reproduction, and/or Early Development
SR	State Route
Storm Water Strategy	Strategy to Optimize Resource Management of Storm Water
SVC	Static VAR compensator
SWCA	SWCA Environmental Consultants, Inc.
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCP	Traffic Control Plan
TCR	tribal cultural resource
TDS	total dissolved solids
TMDL	Total Maximum Daily Load
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UWMP	urban water management plan
var	volt-ampere reactive
VdB	vibration decibel
VOC	volatile organic compound
WARM	Warm Freshwater Habitat
WHO	World Health Organization
WILD	Wildlife Habitat
WPO	Watershed Protection, Stormwater Management, and Discharge Control Ordinance
WQC	Water Quality Certification
WRCC	Western Regional Climate Center
WRF	Water Reclamation Facility
ºF	degrees Fahrenheit
µg/m³	micrograms per cubic meter
µT	microtesla

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Executive Summary

Introduction

The California Public Utilities Commission (CPUC) has prepared this Final Environmental Impact Report (FEIR) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of NextEra Energy Transmission West, LLC's (NEET West's) proposed Suncrest Dynamic Reactive Power Support Project (Proposed Project). The Proposed Project would involve construction of a dynamic reactive device and approximately one-mile-long transmission line interconnecting with the existing Suncrest Substation in San Diego County, near Alpine, California. The dynamic reactive device would provide reactive power support and voltage regulation to the existing substation and transmission system in accordance with the California Independent System Operator's (CAISO's) 2013-2014 Transmission Plan.

This FEIR was prepared in compliance with the California Environmental Quality Act (CEQA) of 1970 (as amended) and the State CEQA Guidelines (California Code of Regulations [CCR] title 14, Section 15000 et seq.).

Project Purpose and Objectives

The Proposed Project was identified as a policy-driven need by the CAISO in its 2013-2014 T~~t~~ransmission plan for the State to meet its 33~~50~~ percent Renewable Portfolio Standard (RPS). Since the 2013-2014 Transmission Plan was published, California has increased the RPS goal to 50% renewable procurement by 2030. The retirement of the San Onofre Nuclear Generating Station, other potential retirements of gas-fired generation in the San Diego and Los Angeles Basin areas, and anticipated increases in renewable energy generation in the Imperial Valley area have created a deficit of reactive power in the transmission system in Southern California. Essentially, because renewable generation does not produce reactive power at the same level as traditional generating sources (e.g., fossil fuels), dynamic reactive power support is needed at the Suncrest Substation to support the voltage necessary to deliver power from the Imperial Valley to demand centers in the San Diego Basin.

The Proposed Project's objectives are as follows:

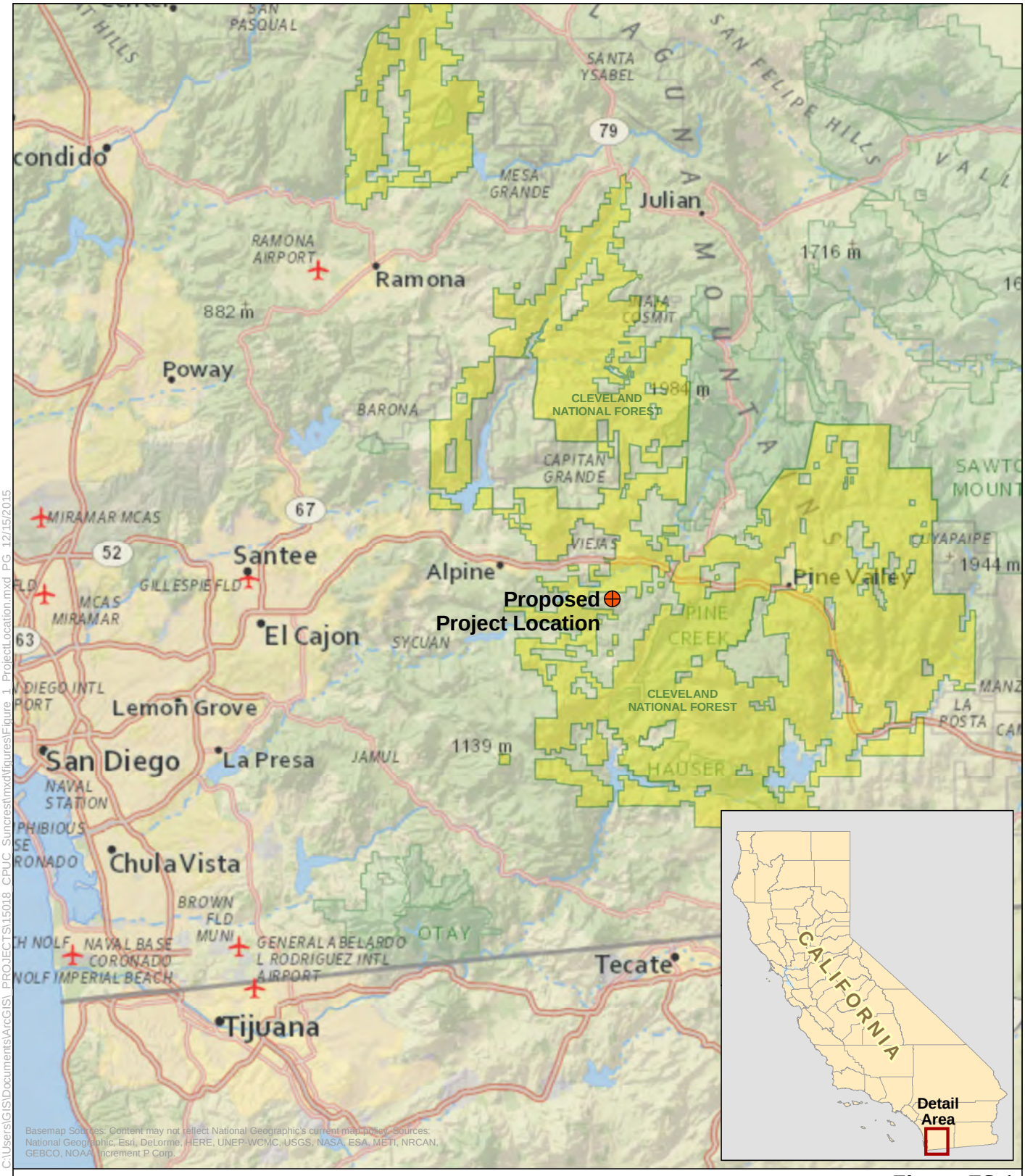
- Provide reactive support at or connected to the Suncrest Substation;
- Improve and maintain the reliability of the transmission grid; and
- Support achievement of the state's RPS by facilitating delivery of a higher percentage of renewable energy generation from the Imperial Valley area to population centers to the west.

Project Location

The Proposed Project would be located in unincorporated south-central San Diego County, approximately 3.75 miles southeast of the community of Alpine, off of Bell Bluff Truck Trail. Figure ES-1 shows the Project location. The lands surrounding the Proposed Project are primarily undeveloped, with some rural-residential development present to the east and south, and the existing Suncrest Substation at the Project's western terminus. The Proposed Project would be located on property (assessor's parcel numbers [APNs] 523-040-080 and 523-030-130) currently owned by private parties within the administrative boundary of the Cleveland National Forest.

A portion of the Proposed Project also would be located on the site of the former Wilson Construction Yard, which was used as a construction staging/laydown area during construction of the Suncrest Substation. This area was cleared of vegetation, graded, and stabilized with imported rock/gravel during the Suncrest Substation construction activities. Following completion of the substation in 2012, in accordance with the restoration plan prepared for the site, the former Wilson Construction Yard was de-compacted by ripping and cross-ripping between 18-24 inches and recontoured to a ground surface intended to replicate its original topography. The site has been signed off as complete by the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife.

The Proposed Project also would be located adjacent to the Lightner Mitigation Site, which encompasses the Suncrest Substation. This site was established in accordance with the Sunrise Powerlink environmental review documents in part to compensate for impacts to waters of the U.S. and waters of the State during construction of the Suncrest Substation/Sunrise Powerlink. The parcels comprising the Lightner Mitigation Site are currently owned by San Diego Gas & Electric (SDG&E). Certain parcels owned by SDG&E~~, but~~ are scheduled to be transferred from SDG&E to the U.S. Forest Service for conservation in perpetuity. SDG&E will retain ownership of certain Lightner parcels, including the Suncrest Substation, Bell Bluff Truck Trail, and a certain width outside of the road bed.



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N

0 5 10
Miles

Proposed Project Location

Cleveland National Forest

Figure ES-1
Project Location

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Suncrest Dynamic Reactive Power Support Project

Proposed Project

The Proposed Project would involve two primary components: (1) a Static Var Compensator (SVC) dynamic reactive device, and (2) an approximately one-mile-long transmission line connecting the proposed SVC to the existing Suncrest Substation. These two components are described briefly below. See Chapter 2, *Project Description,* for a detailed description.

SVC Dynamic Reactive Device

The SVC would be a set of electrical devices, including thyristor[1]-controlled reactors and capacitor[2] banks, designed to provide fast-acting reactive power to the existing transmission system. The SVC would have no moving parts, other than internal switchgear, and would be operated based on the load and voltage conditions at the Suncrest Substation. Essentially, if the power system's reactive power load is capacitive (i.e., leading), the SVC would use the thyristor-controlled reactors to consume vars from the system, thus lowering the voltage. If the system's reactive load is inductive (i.e., lagging), the capacitor banks would be automatically switched in, thereby increasing voltage.

Electrical equipment at the SVC would include, but not be limited to, lightning shielding masts, circuit breakers, busbars, two, three ~~single~~ phase 230-kilovolt (kV) main power transformers, capacitor banks, air core reactors, surge arrestors, and air break switches. The SVC would also include an approximately 2,500 square foot control house including protective relaying and control equipment, supervisory control and data acquisition (SCADA) equipment, and various other equipment. The SVC's electrical equipment would be contained within a fenced area of approximately 2.58 acres.

In addition to the electrical equipment, the SVC would include a number of associated site improvements, including the following:

- Two new 20-foot-wide by 95-foot-long access driveways from Bell Bluff Truck Trail to the SVC;
- A stormwater detention basin, sized to capture the runoff from the 85th percentile of a 25-year, 24-hour rain event, and earthen swales to divert run-on stormwater;
- A ~~Mechanically Stabilized Earth~~ retaining wall approximately 480 feet long and 15 feet tall at its highest point (an average height of 8 feet) along the east side of the facility;
- Chain link and barbed wire security fencing approximately ~~7~~8 feet high with secure gates accessible only by NEET West staff and emergency services personnel;
- Transformer oil containment basins designed to contain the oil volume of the transformers plus stormwater from the 25-year, 24-hour storm event;

[1] A thyristor is a solid-state semiconductor device that acts as a bistable switch.
[2] A capacitor is a passive two-terminal electrical component used to store energy temporarily in an electric field. In electric transmission systems, capacitors can be used to provide local sources of reactive power.

- A 10,000-gallon water tank for fire suppression outside the Suncrest SVC fence and adjacent to the northeastern driveway; and
- Signage and lighting.

The total size of the SVC including the above site improvements would be approximately 6 acres.

Transmission Line

The transmission line connecting the SVC to the existing Suncrest Substation would be approximately one mile in length and would be installed primarily underground. The transmission line would follow the alignment and be located within Bell Bluff Truck Trail for the majority of its length, with the last approximately 300 feet of the line transitioning to an overhead span via a new riser pole to be installed just north of the road. An intermediate pole would carry the overhead span into the existing Suncrest Substation.

The proposed transmission line would be a new 230-kV single-circuit line composed of cross-linked polyethylene-insulated, solid-dielectric, copper or aluminum conductor cables. The line would consist of three separate 230-kV conductor cables. The cables would be installed within polyvinyl chloride (PVC) conduits in a concrete-encased duct bank system. The duct bank system would include four conduits for the 230-kV cables (three for the cables plus one spare) as well as four smaller conduits for fiber optic cables, which would provide communications for line relaying, SCADA, and other devices, as required. The duct bank system would be approximately 30 inches wide by 24 inches tall, with the bottom of the duct bank approximately 5 feet below grade. Up to two ~~five~~ underground splice vaults would be installed along the transmission line alignment to allow for installation of the underground cables and for operation and maintenance of the transmission line.

The riser pole, described above, transitioning the line to an overhead span, would be between 85 to 95 feet tall with a base approximately 7 feet in diameter. The intermediate pole would be approximately 116 feet tall with the same diameter size base.

Project Construction

Project construction activities would include site preparation, excavation, installation of equipment and structures, and restoration. In general, construction of the SVC would require clearing of vegetation, grading, construction of structure and equipment foundations, installation of SVC and electrical equipment, and restoration of temporary impacts. Construction of the transmission line would involve trenching within Bell Bluff Truck Trail, construction and installation of the duct bank and splice vaults, installation of the riser pole and intermediate pole, pulling of cables into the duct banks and splice vaults, and restoration of the road surface.

Overall, Project construction is anticipated to take 11 months (6.5 months for construction; 2.5 months for testing and commissioning, and 2 months for restoration and cleanup, which will occur after project commercial operation). Typically, construction would occur 10 hours per day, 6 days per week, Monday through Saturday, between 7 a.m. and 7 p.m.; however, certain time-sensitive activities and/or activities which are not noise-intensive may occur outside these hours. Peak employment during Project construction is anticipated to be 64

workers, although, on average, the workforce on site would be approximately 40 to 50 persons or less per day.

It is anticipated that grading for construction of the SVC would remove a total of 21,000 cubic yards of material. For both the SVC and transmission line, it is anticipated that excavation can be conducted using conventional equipment; however, in areas where bulldozers or backhoes are not able to remove the material, scraping, ripping, drilling, hammering, cutting, and/or low-energy, localized blasting may be used to break up the material.

It is anticipated that approximately 2,600,000 gallons (approximately 8 acre-feet) of water would be required during Project construction. This water would be obtained either from local ponds owned by an adjacent property owner or from Padre Dam Municipal Water District.

Public Involvement Process

Scoping Comment Period

A Notice of Preparation (NOP) of an EIR for the Proposed Project was prepared pursuant to the State CEQA Guidelines (State CEQA Guidelines Section 15082) and circulated to the Office of Planning and Research's State CEQA Clearinghouse on January 5, 2016 (see Appendix A, *Notice of Preparation* in Volume 2). The scoping period continued for 32 days and concluded on February 8, 2016. The NOP provided information on the background, goals, and objectives of the Proposed Project; the date, time, and location of the public scoping meeting to be held during the scoping period, and explained how to submit a public comment. Newspaper ads also were published in the local newspaper advertising the scoping meeting.

CPUC conducted a public scoping meeting for the Proposed Project on January 21, 2016. The meeting was held from 6 p.m. to 8 p.m. at the Alpine Community Center located at 1830 Alpine Boulevard in Alpine, California. Besides staff, approximately 9 individuals attended the scoping meeting, including two members of the applicant (i.e., NEET West) team. The meeting format consisted of a presentation by CPUC and consultant staff followed by opportunities for attendees to ask questions and submit comments. Posters with basic information on the project were on display and CPUC and consultant staff were available before and after the meeting to answer questions and take comments. Written comment cards were provided to all meeting attendees, as well as information on how to access project documents and participate in the public review process going forward.

In addition to the oral comments and questions provided at the scoping meeting, CPUC received 10 scoping comment letters. Copies of all the comment letters received during the scoping period are included in Appendix B, *Comments Received on the Notice of Preparation* in Volume 2 of this FEIR. The input received in response to the NOP was considered in preparation of the DEIR.

DEIR Public Comment Period

The CPUC circulated the DEIR for public review and comment beginning on November 23, 2017 and ending on March 11, 2017. During this period, CPUC held a public meeting in Alpine on December 8, 2016. This meeting followed a similar format to that of the scoping meeting,

described above. Roughly 2 members of the public attended the meeting. The purpose of public circulation and the public meeting was to provide agencies and interested individuals with opportunities to comment on or express concerns regarding the contents of the DEIR. CPUC received 12 written comment letters during the DEIR public review period, all of which are reproduced and responded to in Volume 3 of this FEIR.

Preparation of the Final EIR

Preparation of the FEIR involved delineating and cataloging all the public comments received on the DEIR. As noted above, 12 written comment letters were received during the DEIR public review period; within each of these letters, many specific comments were identified and assigned a code number (see Volume 3, *Comments and Responses to Comments on the Draft EIR* for further information). Because a number of comments addressed certain common themes, specifically the feasibility and environmental impacts of the Suncrest Substation Alternative, it was determined that these comments were best addressed in master responses. The remainder of comments were responded to through individual responses to comments.

In response to certain comments on the DEIR, it was determined that revisions to the DEIR text were necessary or appropriate. In these instances, it was noted in the response that the text was revised, and the revised DEIR text was presented in Chapter 4 of Volume 3 using underline and ~~strikeout~~ to denote changes. These changes were also carried over to Volumes 1 and 2 of this FEIR (formerly the DEIR) and shown in underline/strikeout. Non-substantive changes made to update the DEIR to produce Volumes 1 and 2 of this FEIR, such as changing "DEIR" to "FEIR" in various locations and adding introductory text describing the FEIR preparation and public involvement process, are not shown in underline/strikeout.

Areas of Known Controversy and Issues to be Resolved

CEQA Guidelines section 15123(b) requires that an Executive Summary identify "areas of controversy known to a lead agency including issues raised by agencies and the public." To date, a number of issues have been raised regarding the Proposed Project which may be considered controversial, including the following:

- Potential location of the SVC within the existing Suncrest Substation, which could avoid virtually all of the Proposed Project's environmental impacts;
- Potential contribution of the Proposed Project to elevated levels of electric and magnetic fields along the Sunrise Powerlink alignment through the community of Alpine;
- Regulatory status of the restoration site at the former Wilson Construction Yard, on which the proposed SVC would be constructed; and
- Possible impacts to Hermes copper butterfly and the possible presence of suitable habitat on the proposed SVC site.

Significant Impacts

The environmental analysis for the Proposed Project contained in this FEIR did not identify any significant and unavoidable impacts. A number of impacts were identified that could be mitigated to a level of less-than-significant. These are listed in Table ES-1, presented at the end of this Executive Summary. Environmental resource topics with the potential for significant environmental impacts and evaluated in detail in this FEIR are as follows:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, and Seismicity
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Minerals
- Noise
- Population and Housing
- Public Services and Utilities
- Recreation
- Traffic and Transportation

Chapters 4 through 19 of this FEIR address each of these environmental resource topics and the impacts of the Proposed Project in more detail.

Alternatives Considered

In accordance with the requirements of CEQA, the FEIR considered a range of feasible alternatives to the Proposed Project. The alternatives could feasibly obtain most of the Project objectives while reducing one or more of the Proposed Project's significant effects. The following alternatives have been evaluated in this FEIR:

- No Project Alternative
- Northeast Site Alternative
- Suncrest Substation Alternative
- Overhead Transmission Line Alternative

In addition, one alternative was considered, but ultimately dismissed from further analysis because it would not avoid or substantially reduce one or more significant impacts of the Proposed Project. Alternatives are analyzed in detail in Chapter 20, *Alternatives Analysis*, and depicted in Figure 20-1, *Alternative Site Locations*.

No Project Alternative

Under the No Project Alternative, NEET West would not construct the SVC and underground transmission line and the Proposed Project would not be built. The No Project Alternative would not provide any reactive power at the Suncrest Substation's 230-kV bus and would not meet any of the project objectives.

Northeast Site Alternative

Under the Northeast Site Alternative, the SVC would be located approximately 0.3 mile north of Bell Bluff Truck Trail. This site is relatively undeveloped and is accessed via an existing dirt road. Use of this site for the SVC would require a slightly longer (1.4-mile-long) transmission line to connect to the existing Suncrest Substation. This alternative would produce and consume reactive power at the same level as the Proposed Project and would meet all of the project objectives.

Suncrest Substation Alternative

Under the Suncrest Substation Alternative, the SVC would be installed within the existing Suncrest Substation and, therefore, ~~no transmission line~~ the approximately one-mile-long transmission line would not be required. SDG&E has indicated that there is room within the existing substation to construct the SVC without expanding the substation footprint. Under this alternative, NEET West would construct, own, and operate the SVC. The Suncrest Substation Alternative would produce and consume reactive power at the same level as the Proposed Project and would meet all of the project objectives.

Overhead Transmission Line Alternative

Under the Overhead Transmission Line Alternative, the SVC would be at the same location as the Proposed Project, but the transmission line would be overhead instead of underground. The overhead transmission line connecting the SVC to the existing Suncrest Substation would be approximately 1 mile in length and would generally parallel Bell Bluff Truck Trail. A 70- to 100-foot-wide transmission line right-of-way would be required to account for the land needed for operations and maintenance, as well as transmission line clearance requirements under CPUC General Order 95. This alternative would include installation of approximately 17 tubular steel pole transmission structures between the SVC and existing Suncrest Substation. The types of transmission line structures would vary depending on location, and may include tangent, running angle, and dead-end structures, but pole heights would range between 80 and 140 feet above the ground. This alternative would meet all of the project objectives.

Environmentally Superior Alternative

Of the alternatives evaluated in this FEIR, the No Project Alternative is the environmentally superior alternative because it would avoid all construction- and operation-related impacts of the Proposed Project. However, the State CEQA Guidelines state that in cases when the No Project Alternative is the environmentally superior alternative, an EIR must also identify an environmentally superior alternative from among the other alternatives (State CEQA Guidelines Section 15126.6[e][2]). Accordingly, in addition to the No Project Alternative, the Suncrest Substation Alternative is considered to be the environmentally superior alternative.

The Suncrest Substation Alternative would avoid virtually all of the environmental impacts of the Proposed Project. Because this alternative would be located within an existing substation, substantial construction impacts to biological or cultural resources would not occur. Likewise, the Suncrest Substation Alternative would have no substantial impact on aesthetics or hydrology and water quality, and would avoid the need for a transmission line. The Suncrest Substation Alternative would still generate some construction-related emissions from transport of equipment and materials to the site and use of construction equipment to install the SVC, but these emissions would be substantially less than under the Proposed Project or any of the other alternatives.

The Suncrest Substation Alternative would produce reactive power at the same level as the Proposed Project and would meet all of the project alternatives. The Proposed Project is not environmentally superior to the Suncrest Substation Alternative because it would have a number of environmental impacts that could be avoided by the Suncrest Substation Alternative. These impacts include biological and potential cultural resources impacts from ground-disturbing activities for construction of the SVC and underground transmission line; aesthetic impacts from the SVC and associated facilities; and stormwater/water quality impacts from development of a new impervious surface. As the SVC would be placed within the existing Suncrest Substation under the Suncrest Substation Alternative, there would be no potential for any of these impacts under this alternative.

Each of the other action alternatives considered would reduce one or more of the environmental impacts of the Proposed Project, but on balance, the environmental effects of these alternatives would be greater than those for the Proposed Project. The Northeast Site Alternative would reduce impacts to Hermes copper butterfly compared to the Proposed Project, but it would have greater overall biological resources impacts by disturbing a previously undisturbed site. Like the Proposed Project, it would involve constructing the SVC at a distance from the existing Suncrest Substation and connecting it to the existing substation via a transmission line, all of which would be avoided by the Suncrest Substation Alternative. The Overhead Transmission Line Alternative would introduce aesthetic impacts and possible impacts to birds.

Summary of Impacts and Levels of Significance

The impacts of the Proposed Project, proposed mitigation, and significance conclusions before and after mitigation are discussed in detail in Chapters 4 through 19 of this FEIR. Table ES-1 summarizes the impacts, mitigation measures, and levels of significance identified in this document.

Table ES-1. Summary of Potential Impacts and Mitigation Measures

Impact	Level of Significance	Mitigation Measures
Aesthetics		
Impact AES- 1: Adverse Effects on Scenic Vistas or Scenic Highways from Project Construction and Operation	No Impact	N/A
Impact AES-2: Adverse Effects on the Visual Character or Quality of the Site and its Surroundings from Project Construction	Less than Significant	N/A
Impact AES-3: Long-term Adverse Effects on the Visual Character or Quality of the Site and its Surroundings during Operation	Less than Significant with Mitigation	▪ Mitigation Measure AES-1: Use Design and Architectural Features on Project Structures to Complement the Surrounding Visual Landscape
Impact AES-4: New Source of Light and Glare	Less than Significant with Mitigation	▪ Mitigation Measure AES-2: Light and Glare Reduction
Agriculture and Forestry Resources		
Impact AGR-1: Conversion of Farmland to Nonagricultural Uses	No Impact	N/A
Impact AGR-2: Conflict with Existing Zoning for Agricultural Use or Williamson Act Contract	Less than Significant	N/A
Impact AGR-3: Conversion of Forest Land to Non-Forest Land, or Conflict with Existing Zoning, Cause Rezoning of, Forest Land, Timberland, or Timberland Zoned Timberland Production	No Impact	N/A
Air Quality		
Impact AQ-1: Conflict with or Obstruct Implementation of the Applicable Air Quality Plan	Less than Significant	N/A
Impact AQ-2: Cause or Substantially Contribute to a Violation of Ambient Air Quality Standards	Less than Significant	N/A

Impact	Level of Significance	Mitigation Measures
Impact AQ-3: Create Emissions During Construction that Exceed County of San Diego Significance Thresholds	Less than Significant with Mitigation	▪ Mitigation Measure AQ-1: Off-Road Equipment Control
Impact AQ-4: Create Emissions During Operation that Exceed County of San Diego Significance Thresholds	Less than Significant	N/A
Impact AQ-5: Expose Sensitive Receptors to Substantial Pollutant Concentrations	Less than Significant	N/A
Impact AQ-6: Create Objectionable Odors that Could Affect a Substantial Number of People	Less than Significant	N/A
Biological Resources		
Impact BIO-1: Effects on Special-Status Plants	Less than Significant with Mitigation	▪ Mitigation Measure BIO-1: Design Project to Avoid or Minimize Impacts on Known Occurrences of Special-Status Plants ▪ Mitigation Measure BIO-2: Perform Focused Surveys for Special-Status Plants ▪ Mitigation Measure BIO-3: Avoid or Minimize Impacts on Special-Status Plant Species during Construction ▪ Mitigation Measure BIO-4: Compensate for Impacts to Special-Status Plant Species
Impact BIO-2: Effects on Special-Status Birds and Species Protected Under the Migratory Bird Treaty Act	Less than Significant with Mitigation	▪ Mitigation Measure BIO-5: Avoid Impacts on Nesting Birds ▪ Mitigation Measure BIO-6: Implement Preconstruction Surveys for Birds Protected Under the MBTA ▪ Mitigation Measure BIO-7: Structures Constructed to Minimize Impacts to Raptors and other Avian Life

Impact	Level of Significance	Mitigation Measures
Impact BIO-3: Effects on Golden Eagle	Less than Significant with Mitigation	▪ Mitigation Measure BIO-5: Avoid Impacts on Nesting Birds ▪ Mitigation Measure BIO-6: Implement Preconstruction Surveys for Birds Protected Under the MBTA
Impact BIO-4: Effects on Hermes Copper Butterfly	Less than Significant with Mitigation	▪ Mitigation Measure BIO-8: Survey for Potential Hermes Copper Butterfly Habitat ▪ Mitigation Measure BIO-9: Mitigate for Impacts to Hermes Copper Butterfly Habitat
Impact BIO-5: Effects on Special Status Mammals and Reptiles	Less than Significant with Mitigation	▪ Mitigation Measure BIO-10: Educational Training ▪ Mitigation Measure BIO-11: Biological Monitor ▪ Mitigation Measure BIO-12: Vehicle Use of Existing Roads ▪ Mitigation Measure BIO-13: Preconstruction Sweeps for Biological Resources ▪ Mitigation Measure BIO-14: Inspect Excavations for Trapped Wildlife ▪ Mitigation Measure BIO-15: Minimize Night Lighting ▪ Mitigation Measure BIO-16: Restoration and Revegetation ▪ Mitigation Measure HYD/WQ-1: Implement Construction Best Management Practices for Erosion Control

Impact	Level of Significance	Mitigation Measures
Impact BIO-6: Sensitive Natural Communities	Less than Significant with Mitigation	▪ Mitigation Measure BIO-17: Minimize Area of Disturbance of Engelmann Oak-Coast Live Oak/Poison Oak/Grass Association Habitat ▪ Mitigation Measure BIO-18: Develop and Implement a Restoration Plan for Engelmann Oak – Coast Live Oak/Poison Oak/Grass Association Habitat During Construction
Impact BIO-7: Effects on Waters	Less than Significant with Mitigation	▪ Mitigation Measure HAZ-1: Hazardous Materials and Waste Management Plan ▪ Mitigation Measure HYD/WQ-1: Implement Construction Best Management Practices for Erosion Control ▪ Mitigation Measure HYD/WQ-2: Avoidance and Minimization of Impacts to Existing Culverts and Stormwater Conveyance Features
Impact BIO-8: Effects on Movement of Wildlife and Use of Breeding Sites	Less than Significant with Mitigation	▪ Mitigation Measure BIO-5: Avoid Impacts on Nesting Birds ▪ Mitigation Measure BIO-6: Implement Preconstruction Surveys for Birds Protected Under the MBTA ▪ Mitigation Measure BIO-7: Structures Constructed to Minimize Impacts to Raptors and other Avian Life ▪ Mitigation Measure BIO-14: Inspect Excavations for Trapped Wildlife

Impact	Level of Significance	Mitigation Measures
Impact BIO-9: Conflict with Local Ordinances or Policies Protecting Biological Resources	No Impact	N/A
Impact BIO-10: Effects on Existing Habitat Conservation Plans or Natural Community Conservation Plans	No Impact	N/A
Cultural Resources		
Impact CR-1: Substantial Adverse Change in the Significance of a Historical and/or Archaeological Resource as Defined in Section 15064.5	Less than Significant with Mitigation	▪ Mitigation Measure CR-1: Conduct Archaeological Sensitivity Training and Construction Monitoring ▪ Mitigation Measure CR-2: Immediately Halt Construction if Cultural Resources Are Discovered, Evaluate All Identified Cultural Resources for Eligibility for Inclusion in the CRHR, and Implement Appropriate Mitigation Measures for Eligible Resources ▪ Mitigation Measure CR-3: Immediately Halt Construction if Human Remains Are Discovered and Implement Applicable Provisions of the California Health and Safety Code
Impact CR-2: Destruction of a Unique Paleontological Resource or Site or Unique Geological Feature	No Impact	N/A
Impact CR-3: Disturb Human Remains, Including Those Interred Outside of Dedicated Cemeteries	Less than Significant with Mitigation	▪ Mitigation Measure CR-3: Immediately Halt Construction if Human Remains Are Discovered and Implement Applicable Provisions of the California Health and Safety Code
Impact CR-4: Adverse Change in the Significance of a Tribal Cultural Resource as Defined in Public Resources Code 21074	Less than Significant with Mitigation	▪ Mitigation Measure CR-1: Conduct Archaeological Sensitivity Training and Construction Monitoring ▪ Mitigation Measure CR-2: Immediately Halt Construction if Cultural Resources Are Discovered,

Impact	Level of Significance	Mitigation Measures
		Evaluate All Identified Cultural Resources for Eligibility for Inclusion in the CRHR, and Implement Appropriate Mitigation Measures for Eligible Resources ▪ Mitigation Measure CR-3: Immediately Halt Construction if Human Remains Are Discovered and Implement Applicable Provisions of the California Health and Safety Code
Geology, Soils, and Seismicity		
Impact GEO-1: Potential to Expose People or Structures to Substantial Adverse Effects Associated with Rupture of a Known Earthquake Fault, Strong Seismic Ground Shaking, Seismic-Related Ground Failure, or Landslides	Less than Significant with Mitigation	▪ Mitigation Measure GEO-1: Implement Recommendations in the Project Geotechnical Investigation Report ▪ Mitigation Measure HAZ-2: Prepare and Implement Blasting Plan
Impact GEO-2: Cause Substantial Erosion or Loss of Topsoil	Less than Significant with Mitigation	▪ Mitigation Measure HYD/WQ-1: Implement Construction Best Management Practices for Erosion Control
Impact GEO-3: Potential to Be Located on a Geologic Unit That is Unstable or That May Become Unstable	Less than Significant with Mitigation	▪ Mitigation Measure GEO-1: Implement Recommendations in the Project Geotechnical Investigation Report ▪ Mitigation Measure HAZ-2: Prepare and Implement Blasting Plan
Impact GEO-4: Potential to Be Located on Expansive Soil, Creating Substantial Risks to Life or Property	Less than Significant	N/A

Impact	Level of Significance	Mitigation Measures
Greenhouse Gas Emissions		
Impact GHG-1: Potential to Exceed County of San Diego GHG Emission Significance Criteria	Less than Significant	N/A
Impact GHG-2: Conflict with Greenhouse Gas Emissions Reduction Plans, Policies, or Regulations	Less than Significant	N/A
Hazards and Hazardous Materials		
Impact HAZ-1: Potential to Create a Significant Hazard to the Public or the Environment through the Routine Transport, Use, or Disposal of Hazardous Materials	Less than Significant with Mitigation	▪ Mitigation Measure HAZ-1: Hazardous Materials and Waste Management Plan ▪ Mitigation Measure HAZ-2: Prepare and Implement Blasting Plan
Impact HAZ-2: Potential to Create a Significant Hazard to the Public or the Environment through Reasonably Foreseeable Upset and Accident Conditions	Less than Significant with Mitigation	▪ Mitigation Measure HAZ-1: Hazardous Materials and Waste Management Plan ▪ Mitigation Measure HAZ-2: Prepare and Implement Blasting Plan
Impact HAZ-3: Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan	Less than Significant with Mitigation	▪ Mitigation Measure TR-1: Maintain Traffic Flow ▪ Mitigation Measure TR-2: Minimize Effects of Temporary Roadway Disturbances ▪ Mitigation Measure TR-3: Emergency Coordination and Access Considerations
Impact HAZ-4: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires, Including Where Wildlands are Adjacent to Urbanized Areas or Where Residences are Intermixed with Wildlands	Less than Significant with Mitigation	▪ Mitigation Measure HAZ-2: Prepare and Implement Blasting Plan ▪ Mitigation Measure HAZ-3: Prepare and Implement a Construction Fire Prevention Plan

Impact	Level of Significance	Mitigation Measures
		▪ Mitigation Measure HAZ-4: Fire Safe Working Conditions and Best Management Practices ▪ Mitigation Measure HAZ-5: Follow Operational Requirements and Recommendations Identified in the Fire Protection Plan
Hydrology and Water Quality		
Impact HYD/WQ-1: Potential Impacts to Surface or Ground Water Quality	Less than Significant with Mitigation	▪ Mitigation Measure HYD/WQ-1: Implement Construction Best Management Practices for Erosion Control ▪ Mitigation Measure HAZ-1: Hazardous Materials and Waste Management Plan
Impact HYD/WQ-2: Depletion of Groundwater Supplies or Interference with Groundwater Recharge	Less than Significant	N/A
Impact HYD/WQ-3: Alteration of Existing Drainage Patterns	Less than Significant with Mitigation	▪ Mitigation Measure HYD/WQ-2: Avoidance and Minimization of Impacts to Existing Culverts and Stormwater Conveyance Features ▪ Mitigation Measure GEO-1: Implement Recommendations in the Project Geotechnical Investigation Report
Impact HYD/WQ-4: Effects on Existing Stormwater Facilities or Contribution of Polluted Runoff	Less than Significant with Mitigation	▪ Mitigation Measure GEO-1: Implement Recommendations in the Project Geotechnical Investigation Report ▪ Mitigation HAZ-1: Hazardous Materials and Waste Management Plan

Impact	Level of Significance	Mitigation Measures
Impact HYD/WQ-5: Potential to Expose Persons or Structures to Significant Risk of Loss Due to Flooding	Less than Significant	N/A
Impact HYD/WQ-6: Potential Contribution to Inundation by Mudflow	Less than Significant	N/A
Land Use and Planning		
Impact LU-1: Potential to Physically Divide an Established Community	No Impact	N/A
Impact LU-2: Conflicts with Applicable Land Use Plans, Policies, or Regulations	Less than Significant	N/A
Mineral Resources		
Impact MR-1: Loss of Availability of a Known Mineral Resource	No Impact	N/A
Impact MR-2: Loss of Availability of a Locally Important Mineral Resource Recovery Site	No Impact	N/A
Noise and Vibration		
Impact NOISE-1: Exposure of Persons to or Generation of Noise Levels in Excess of Applicable Standards	Less than Significant with Mitigation	▪ Mitigation Measure NOI-1: Construction-Noise Mitigation Plan
Impact NOISE-2: Expose Persons to Excessive Ground-borne Vibration or Ground-borne Noise Levels	Less than Significant with Mitigation	▪ Mitigation Measure HAZ-2: Prepare and Implement Blasting Plan
Impact NOISE-3: Cause a Substantial Temporary or Permanent Increase in Ambient Noise Levels	Less than Significant	N/A
Impact NOISE-4: Potential to Expose People Residing or Working in the Project Site to Excessive Noise Levels Due to Proximity to a Public Airport or Public-Use Airport or Private Airstrip	No Impact	N/A
Population and Housing		

Impact	Level of Significance	Mitigation Measures
Impact POP-1: Inducement of Substantial Population Growth	Less than Significant	N/A
Impact POP-2: Displace Substantial Numbers of Existing Housing	No Impact	N/A
Impact POP-3: Displace Substantial Numbers of People	No Impact	N/A
Public Services and Utilities		
Impact PUB/UTL-1: Effects on Fire Protection Service	Less than Significant with Mitigation	▪ Mitigation Measure PUB/UTL-1: Fund Fair Share Toward Any Necessary Fire Protection Service Improvements ▪ Mitigation Measure HAZ-3: Prepare and Implement a Construction Fire Prevention Plan ▪ Mitigation Measure HAZ-4: Fire Safe Working Conditions and Best Management Practices ▪ Mitigation Measure HAZ-5: Follow Operational Requirements and Recommendations Identified in the Fire Protection Plan
Impact PUB/UTL-2: Possible Effects on Police Protection, School, and Parks Service	Less than Significant	N/A
Impact PUB/UTL-3: Potential to Require or Result in the Construction of New or Expanded Water Facilities	Less than Significant	N/A
Impact PUB/UTL-4: Potential to Require or Result in the Construction or Expansion of Stormwater Facilities	Less than Significant	N/A
Impact PUB/UTL-5: Potential to Have Insufficient Water Supplies to Supply the Project from Existing Entitlements and Resources	Less than Significant	N/A
Impact PUB/UTL-6: Effects on Existing Landfill Capacity	Less than Significant	N/A

Impact	Level of Significance	Mitigation Measures
Impact PUB/UTL-7: Potential Failure to Comply with Existing Statutes and Regulations Related to Solid Waste	Less than Significant with Mitigation	▪ Mitigation Measure PUB/UTL-2: Diversion of Solid Waste in Accordance with San Diego County's Construction Demolition and Debris Recycling Ordinance
Recreation		
Impact REC-1: Increased Use of Parks/Other Recreational Facilities	Less than Significant	N/A
Impact REC-2: Include, or Require Construction or Expansion of, Recreational Facilities	No Impact	N/A
Transportation and Traffic		
Impact TR-1: Conflict with an Applicable Plan, Ordinance, or Policy Establishing Measures of Effectiveness	No Impact	N/A
Impact TR-2: Increase in Area Traffic Volumes and Degradation of LOS Due to Project-Generated Traffic	Less than Significant with Mitigation	▪ Mitigation Measure TR-1: Maintain Traffic Flow ▪ Mitigation Measure TR-2: Minimize Effects of Temporary Roadway Disturbances
Impact TR-3: Result in a Change in Air Traffic Patterns	No Impact	N/A
Impact TR-4: Increase in Safety Hazards	Less than Significant with Mitigation	▪ Mitigation Measure TR-1: Maintain Traffic Flow ▪ Mitigation Measure TR-2: Minimize Effects of Temporary Roadway Disturbances
Impact TR-5: Interference with Emergency Access and Circulation	Less than Significant with Mitigation	▪ Mitigation Measure TR-1: Maintain Traffic Flow ▪ Mitigation Measure TR-2: Minimize Effects of Temporary Roadway Disturbances

Impact	Level of Significance	Mitigation Measures
		▪ Mitigation Measure TR-3: Emergency Coordination and Access Considerations
Impact TR-6: Conflicts with Alternative Transportation	Less than Significant	N/A

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Chapter 1
Introduction

The California Public Utilities Commission (CPUC) has prepared this Final Environmental Impact Report (FEIR) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of construction and operation of NextEra Energy Transmission West's (NEET West's) proposed Suncrest Dynamic Reactive Power Support Project (Proposed Project). The Proposed Project would involve construction of a dynamic reactive device and an approximately one-mile-long transmission line interconnecting with the existing Suncrest Substation in San Diego County, near the community of Alpine. The Proposed Project is described in detail in Chapter 2, *Project Description*.

This document was prepared pursuant to the requirements of the California Environmental Quality Act of 1970, as amended (CEQA), and the State CEQA Guidelines (14 California Code of Regulations 15000 et seq.). This chapter describes the requirements of CEQA, the CEQA process, the organization of the FEIR, and the CEQA process.

1.1 Overview of CEQA Requirements

CEQA's basic purposes are to:

1. Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.

2. Identify the ways that environmental damage can be avoided or significantly reduced.

3. Prevent significant, avoidable damage to the environment by requiring implementation of feasible mitigation measures or project alternatives that would substantially lessen any significant effects that a project would have on the environment.

4. Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

With certain strictly limited exceptions, CEQA requires all state and local government agencies to consider the environmental consequences of projects over which they have discretionary authority before approving or carrying out projects. CEQA establishes both procedural and substantive requirements that agencies must satisfy to meet CEQA's objectives. For example, the agency with principal responsibility for approving or carrying out a project (the lead agency) must first assess whether a proposed project would result in significant environmental impacts. If there is substantial evidence that the project would result in significant environmental impacts, CEQA requires that the agency prepare an environmental impact report (EIR), analyzing both the proposed project and a reasonable range of potentially feasible alternatives.

As described in the State CEQA Guidelines (California Code Regulations, tit. 14, § 15121, subd. (a)), an EIR is an informational document that assesses potential environmental effects of a proposed project, and identifies mitigation measures and alternatives to the project that could reduce or avoid potentially significant environmental impacts. Other key CEQA requirements include developing a plan for implementing and monitoring the success of the identified mitigation measures and carrying out specific public notice and distribution steps to facilitate public involvement in the environmental review process. As an informational document used in the planning and decision-making process, an EIR's purpose is not to recommend either approval or denial of a project. Note that an EIR does not expand or otherwise provide independent authority of the lead agency to impose mitigation measures or avoid project-related significant environmental impacts beyond the authority already within the lead agency's jurisdiction.

1.2 Intent and Scope of this Document

CPUC is responsible for permitting of NEET West's Proposed Project. Approval or denial of NEET West's Application 15-08-027 for a Certificate of Public Convenience and Necessity would constitute a discretionary action by CPUC and therefore is subject to environmental review under CEQA (State CEQA Guidelines § 15378). The intent of this document is to comply with CEQA and to provide decision-makers and the public with information on the potential significant environmental impacts of the Proposed Project. This FEIR evaluates potential impacts to the physical environment that could occur from construction and operation of the Proposed Project, pursuant to Appendix G of the State CEQA Guidelines. CPUC will use the analyses presented in this FEIR and the whole of the administrative record to evaluate the Proposed Project's environmental impacts and to further modify, approve, or deny approval of the Proposed Project.

1.3 CEQA Process

The following discussion explains the steps in the CEQA process undertaken or planned to be undertaken for the Proposed Project. The State CEQA Guidelines prescribe a number of key steps in the environmental review and public involvement process, which are described below.

1.3.1 Notice of Preparation

A Notice of Preparation (NOP) of an EIR for the Proposed Project was prepared pursuant to the State CEQA Guidelines (State CEQA Guidelines § 15082) and circulated to the Office of Planning and Research's State CEQA Clearinghouse on January 5, 2016. Circulation of the NOP initiated the scoping period for the Proposed Project, during which time agencies and interested members of the public could submit comments on the scope and content of environmental issues to be evaluated in the DEIR. The scoping period continued for 34 days and concluded on February 8, 2016.

The NOP presented general background information on the Proposed Project, the scoping process, the environmental issues to be addressed in the EIR, and the anticipated uses of the EIR. The NOP was posted online, and more than 250 hard copies of the NOP were distributed by mail to a broad range of stakeholders including state, federal, and local regulatory agencies

and jurisdictions, Native American tribes, and property owners in the vicinity of the Proposed Project. The NOP is included in this FEIR in Appendix A, *Notice of Preparation* in Volume 2.

1.3.2 Scoping Meetings and Comments

During the scoping period, a scoping meeting was held at a location near the Proposed Project to provide the public, and responsible and trustee agencies, an opportunity to ask questions and submit comments on the scope of the EIR and the Proposed Project. Information on the location, date, and time of the scoping meeting was contained in the NOP, which was distributed to property owners near the Proposed Project. Additionally, CPUC published notices in the local newspaper, the Alpine Sun, and in the San Diego Union-Tribune advertising the scoping meeting in advance of the meeting. The scoping meeting also was advertised on the CPUC's project website at the following URL: http://cpuc.ca.gov/environment/info/horizonh2o/suncrest/index.html.

The scoping meeting was held as follows:

- January 21, 2016, 6:00 to 8:00 p.m., at the Alpine Community Center, 1830 Alpine Blvd., Alpine, CA 91901.

Besides CPUC and contractor staff, approximately 9 individuals attended the scoping meeting, including two members of the applicant (i.e., NEET West) team. The meeting format consisted of a presentation by CPUC and consultant staff followed by opportunities for attendees to ask questions and submit comments. Posters with basic information on the project were on display and CPUC and consultant staff were available before and after the meeting to answer questions and take comments. Written comment cards were provided to all meeting attendees, as well as information on how to access project documents and participate in the public review process going forward. Notes from the meeting documenting the concerns and comments expressed by attendees are included in Appendix B, *Comments Received on the Notice of Preparation* in Volume 2*.* Copies of the PowerPoint presentation, posters, and written comment card are provided in Appendix C, *Scoping Report* in Volume 2*.*

CPUC accepted written comments at the meetings, as well as during the 30-day scoping period. During the scoping period, 10 comment letters were received. These comment letters are included in Appendix B, *Comments Received on the Notice of Preparation* in Volume 2*.* This DEIR considered the input from the comments submitted on the Proposed Project during the scoping period.

1.3.3 Draft Environmental Impact Report

CPUC prepared the DEIR, as informed by public and agency input received during the scoping period, to disclose potentially significant environmental impacts associated with the Proposed Project. Where any such impacts were significant, feasible mitigation measures and potentially feasible alternatives that substantially lessen or avoid such effects were identified and discussed. Publication of the DEIR initiated a 45-day public review period as mandated by CEQA. This review period was later extended to 107 days, lasting from November 23, 2016 to March 11, 2017.

1.3.4 DEIR Public Review and Meetings

During the public review period for the DEIR, CPUC held one public meeting in Alpine on December 8, 2016. The meeting date, time, and location were published in the Notice of Availability (NOA) for the Proposed Project, and were also advertised in the local newspaper. The meeting began with a brief overview of the Proposed Project and the analysis and conclusions set forth in the DEIR. This introductory presentation was then followed by the opportunity for interested members of the public to provide oral and written comments to CPUC regarding the Proposed Project and the DEIR. Two members of the public attended the meeting. The oral comments taken at the meeting are included in Volume 3 (see Comment Letter H).

During the public review period, 12 comment letters were received on the DEIR, all of which are reproduced and responded to in Volume 3, *Comments and Responses to Comments on the Draft EIR.*

1.3.5 Final EIR

Preparation of the FEIR involved delineating and cataloging all the public comments received on the DEIR. As noted above, 12 written comment letters were received during the DEIR public review period; within each of these letters, many specific comments were identified and assigned a code number (see Volume 3, *Comments and Responses to Comments on the Draft EIR* for further information). Because a number of comments addressed common themes, specifically the feasibility and environmental impacts of the Suncrest Substation Alternative, it was determined that these comments were best addressed in master responses. The remainder of comments were responded to through individual responses to comments.

In response to certain comments on the DEIR, it was determined that revisions to the DEIR text were necessary or appropriate. In these instances, it was noted in the response that the text was revised, and the revised DEIR text was presented in Chapter 4 of Volume 3 using underline and ~~strikeout~~ to denote changes. These changes were also carried over to Volumes 1 and 2 of this FEIR (formerly the DEIR) and shown in underline/strikeout. Non-substantive changes made to update the DEIR to produce Volumes 1 and 2 of this FEIR, such as changing "DEIR" to "FEIR" in various locations and adding introductory text describing the FEIR preparation and public involvement process, are not shown in underline/strikeout.

1.4 Organization of this FEIR

This FEIR contains the following components:

Volume I – Main Body

Executive Summary. This chapter provides a summary of the Proposed Project, a description of the issues of concern and project alternatives, and a summary of environmental impacts and mitigation measures.

Chapter 1, *Introduction.* This chapter describes the purpose and organization of the FEIR and its preparation, review, and certification process.

Chapter 2, *Project Description.* This chapter summarizes the Proposed Project, including a description of the Proposed Project purpose and objectives, a brief description of the Proposed Project area, proposed actions that would be taken under the Proposed Project, and related permits and approvals associated with the activity.

Chapter 3, *Introduction to the Environmental Impacts.* This chapter is an introduction to the impact analysis conducted in the FEIR, Volume 1. This chapter also identifies resource topic areas determined not to be affected by the Proposed Project.

Chapters 4-19. These chapters describe the environmental resources and potential environmental impacts of the Proposed Project. Each of these chapters describes the existing setting and background information for the resource topic area under consideration to aid the reader in understanding the conditions that could be affected by the Proposed Project. In addition, each of these chapters includes a discussion of the criteria used in determining the significance levels of the Proposed Project's environmental impacts. Each of these chapters also provides mitigation measures to reduce, where possible, the adverse effects of potentially significant impacts.

Chapter 20, *Alternatives.* This chapter describes the process by which alternatives to the Proposed Project were developed and screened, evaluates their likely environmental impacts, and identifies the environmentally superior alternative.

Chapter 21, *Other Statutory Considerations.* This chapter addresses the Proposed Project's potential to contribute to cumulative impacts. Chapter 21 also outlines the Proposed Project's potential to induce growth and identifies significant, irreversible environmental changes resulting from the Project.

Chapter 22, *Report Preparation,* lists the individuals involved in preparing this volume of the FEIR.

Chapter 23, *References,* provides a bibliography of printed references, websites, and personal communications used in preparing this volume of the FEIR.

Volume II – Appendices

Appendix A is the NOP issued by CPUC.

Appendix B includes comments received on the NOP.

Appendix C is the scoping report prepared for the Proposed Project, including the materials used during the scoping meetings and the comments received on the NOP.

Appendix D is the electric and magnetic fields management plan.

Appendix E contains the air quality and greenhouse gas emission calculations.

Appendix F is biological resources supporting documentation

Appendix G presents the technical report for the cultural resources analysis, including Native American consultation, and telephone and e-mail communications, conducted during document preparation.

Appendix H is the geotechnical investigation report.

Appendix I presents the Phase 1 environmental site assessment for the project site.

Appendix J presents noise data and related photographs.

Appendix K is a fire protection plan.

Appendix L provides a mitigation monitoring and report plan.

Volume III – Comments and Responses to Comments on the Draft EIR

Chapter 1, *Introduction.* This chapter describes the organization of the Comments and Responses to Comment Document (Volume 3 of the FEIR), the DEIR public review period, and the preparation of the FEIR and certification process. This chapter also presents a list of agencies and persons that provided comments on the DEIR.

Chapter 2, *Master Responses.* This chapter contains the master responses prepared in response to common thematic comments received on the DEIR, specifically comments regarding the feasibility of the Suncrest Substation Alternative, and the selection of the Suncrest Substation Alternative as the environmentally superior alternative.

Chapter 3, *Individual Responses to Comments.* This chapter presents all of the comments received on the DEIR, and CPUC's individual responses to those comments. Some comment responses are referred to Chapter 2, *Master Responses.*

Chapter 4, *Revisions to the DEIR.* This chapters presents revisions made to the DEIR in response to comments, as well as any corrections made at the discretion of the CPUC.

Chapter 5, *Report Preparation.* This chapter lists the individuals involved in preparing the Comments and Responses to Comments Document and their responsibilities.

Chapter 6, *References.* This chapter provides the bibliography of literature, websites, and other materials cited during preparation of this volume of the FEIR.

Chapter 2
Project Description

2.1 Introduction

The California Public Utilities Commission (CPUC) is responsible for environmental review and permitting of NextEra Energy Transmission West, LLC's (NEET West's) proposed Suncrest Dynamic Reactive Power Support Project (Proposed Project). The Proposed Project would involve construction of a dynamic reactive device and an approximately one-mile-long transmission line interconnecting with the existing Suncrest Substation in San Diego County, near the community of Alpine. The dynamic reactive device would provide voltage regulation and support for the existing transmission system in accordance with the California Independent System Operator Corporation's (CAISO's) 2013-2014 Transmission Plan.

This chapter describes the Proposed Project's objectives, location, components, construction process, operations, and anticipated permits and approvals. Information presented in this chapter is based primarily on the Proponent's Application and Proponent's Environmental Assessment (PEA) submitted to the CPUC by NEET West.

2.2 Proposed Project Background, Purpose and Objectives

The Proposed Project originates from the CAISO's 2013-2014 transmission planning process, which identified a need for a +300-million/-100-milliion volt-ampere reactive (megavar)[1] dynamic reactive device at the existing Suncrest Substation's 230-kilovolt (kV) bus[2] (CAISO 2014). CAISO determined that the retirement of the San Onofre Nuclear Generating Station (SONGS) and projected increases in renewable generating capacity in the Imperial Valley would cause loading and voltage stability issues in the transmission system in the area of the existing Suncrest Substation. CAISO recommended reactive power support at the Suncrest Substation to correct these deficiencies and allow the transmission system to function as designed.

The existing Suncrest Substation is operated by San Diego Gas & Electric Company (SDG&E) and was completed in 2012 as part of SDG&E's Sunrise Powerlink project. The Sunrise Powerlink is a high-voltage electric transmission system connecting the Imperial Valley to major demand centers in San Diego, and is depicted on Figure 2-1. Among other things, the Suncrest Substation functions to "step down" the incoming energy on the 500-kV transmission line from the southeast to a voltage where it can be transported on the two

[1] Volt-ampere reactive (var) is a unit by which reactive power is expressed in an alternating current (AC) electric power system. Reactive power is described in the following paragraphs in this section. Megavar means one million vars. Reactive power may also be expressed as megavolt amperes reactive (MVAR).

[2] A bus or busbar is a metallic strip or bar that conducts electricity within a substation or other electrical apparatus. Buses are often the connection points for incoming transmission lines into a substation.

230-kV lines leaving the substation to the northwest towards the Sycamore Canyon Substation and San Diego.

The retirement of SONGS and anticipated increases in renewable energy production to meet the state's ~~50 percent~~ Renewable Portfolio Standard (RPS),[1] as well as anticipated future retirement of coastal gas-fired generation utilizing once-through cooling, are causing issues throughout the transmission grid in Southern California. In addition to the proposed dynamic reactive device at the Suncrest Substation, CAISO's 2013-2014 Transmission Plan recommended a number of other upgrades in the Southern California area, including a similar reactive support facility at the San Luis Rey Substation (CAISO 2014). Previous transmission plans had also recommended reactive support facilities at the Talega Substation and in the vicinity of SONGS.

Part of the challenge with the retirement of SONGS is that many renewable power sources do not produce reactive power at the same level as traditional power sources, such as natural gas or nuclear. As opposed to "real power," which is the element of electricity that performs useful work[2] and is measured in watts, reactive power functions to support voltage levels needed to maintain transmission system reliability. One way of thinking about reactive power is that it is the portion of electricity in an AC system[3] that carries the voltage[4] and current[5] up and down around an average value, analogous to a person climbing up and down a ladder to fill a water tank, one bucket at a time (Sauer 2003). The energy that it takes to climb up and down the ladder without carrying anything is solely reactive power because the start and end state are the same from an energy conservation perspective. Carrying a bucket of water up the ladder and dumping it into the water tank requires both reactive and real power because energy is lost in the transfer of water or the work performed (Sauer 2003).

[1] California's RPS, first established in 2002 under Senate Bill (SB) 1078 and most recently expanded in 2015 under SB 350, requires electric retail sellers and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030. At the time of publication of CAISO's 2013-2014 Transmission Plan, in which the need for the Proposed Project was identified, the State's RPS goal was 33 percent.

[2] In physics, work is said to have been done when a force acting upon an object causes a displacement of that object.

[3] AC is an electric current in which the flow of electric charge periodically reverses direction. By contrast, direct current is a current where electric charge flows in one direction. The U.S. interconnected grid is almost entirely an AC system where the voltages and currents alternate up and down 60 times per second (Sauer 2003).

[4] Voltage, also known as electric potential difference or electric pressure, is the difference in electric potential energy between two points per unit electric charge.

[5] Current is the flow of electric charge.

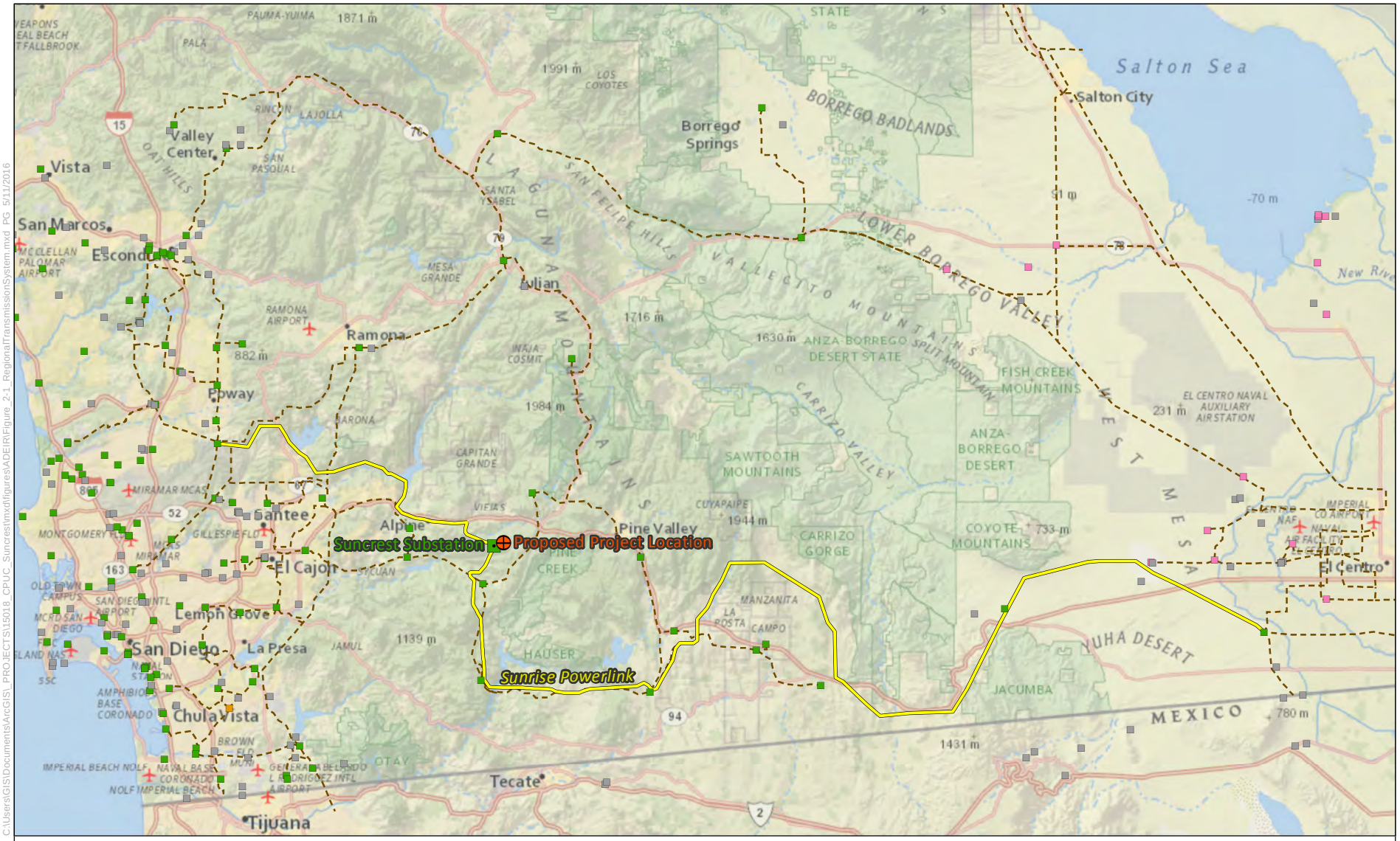

Figure 2-1
Regional Transmission System

Suncrest Dynamic Reactive Power Support Project

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In an electric transmission system, reactive power is essential to the ability to transmit power to meet demands and the operation of the system as a whole. For example, if the reactive power in a transmission system is too low, inductive loads[1] such as transformers will be unable to maintain the voltages necessary to operate, resulting in a "voltage collapse" causing blackouts. In terms of the water-carrying analogy, a situation where reactive power is not sufficient to maintain voltage may be represented by the person carrying the water up the ladder getting too tired and ultimately collapsing under the weight of the water, which may then create additional pressure on other "people" carrying water up their ladders causing them to collapse as well (Sauer 2003). Such a voltage collapse failure may occur even if there is sufficient real power (water in the analogy) available to meet the load.

For these reasons, reactive power support is needed at certain substations in Southern California. Substations represent large inductive loads in the system, and with the loss of a large producer of reactive power in SONGS and projected increases in power sources that do not produce as much reactive power as traditional sources, additional reactive power is needed for transformers to maintain adequate voltages. Without additional reactive power, it is possible that the transmission system will not be able to deliver new solar photovoltaic and other renewable power generation from the Imperial Valley to consumers in the San Diego and Los Angeles areas.

The +300/-100 megavar reactive device at the Suncrest Substation was identified as a policy-driven need in CAISO's 2013-2014 Transmission Plan to meet California's ~~50 percent~~ RPS. CAISO conducted a competitive bid solicitation process for the Suncrest dynamic reactive facility and selected NEET West to construct the Proposed Project. NEET West's proposal included a Static VAR compensator (SVC) interconnected with the existing Suncrest Substation via an approximately one-mile-long transmission line. The proposed SVC device would provide +300/-100 megavar of continuous or quasi-continuous reactive power response following system disturbances. The addition of the proposed SVC device allows the transmission system to operate reliably and to import the same amounts of power as originally designed, regardless of whether it is from a conventional or renewable source.

Following its selection by CAISO in January 2015 as the approved project sponsor, NEET West submitted a PEA to the CPUC in August 2015, as part of its application (A.15-08-027) for a Certificate of Public Convenience and Necessity, as specified in CPUC General Order (G.O.) 131-D.

The objectives of the Proposed Project are as follows:

- Provide reactive support at or connected to the Suncrest Substation;
- Improve and maintain the reliability of the transmission grid; and
- Support achievement of the state's RPS by facilitating delivery of a higher percentage of renewable energy generation from the Imperial Valley area to population centers to the west.

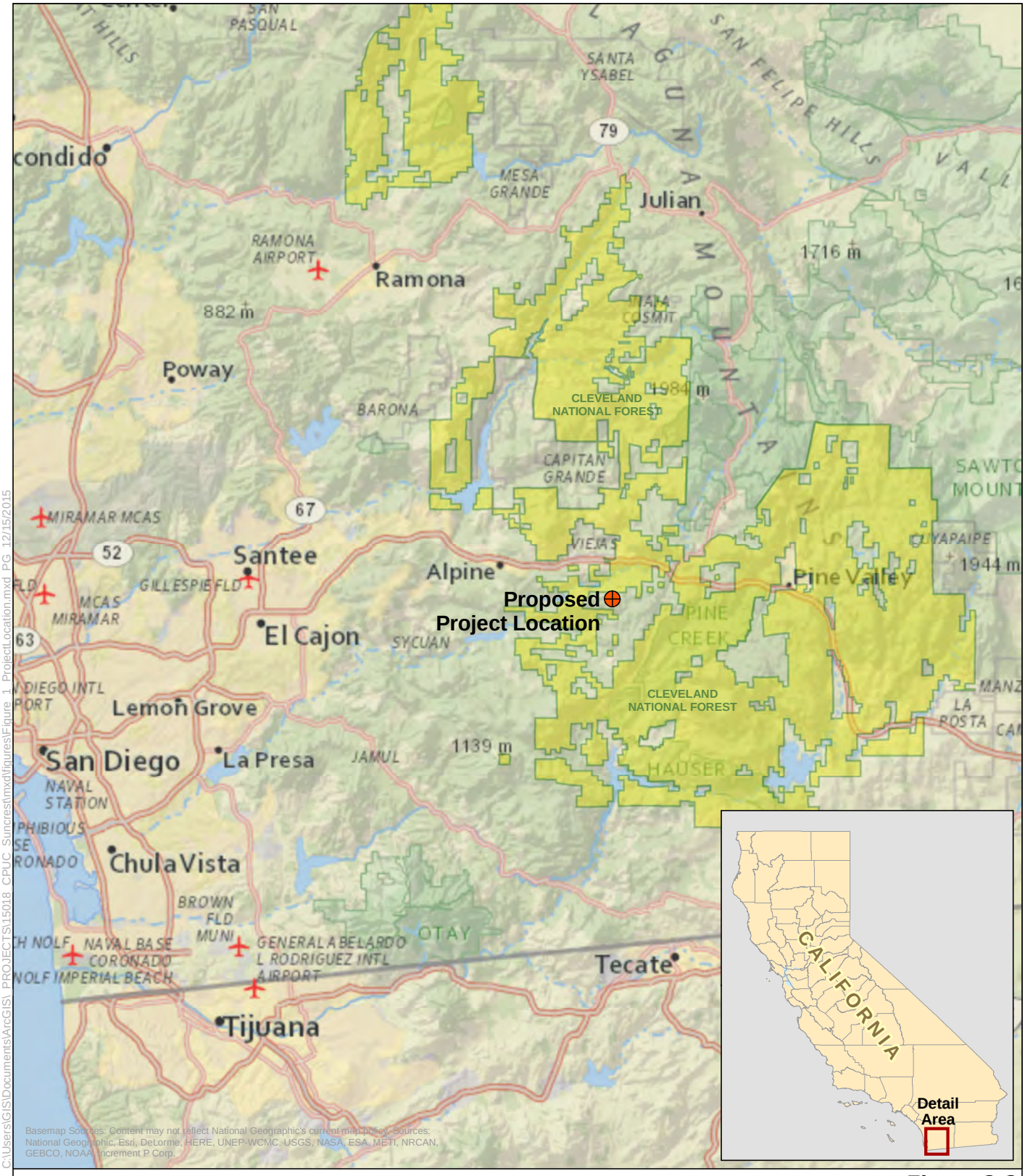
[1] A load is a device to which power is delivered. An inductive load is a part of an electrical circuit that uses magnetic energy to produce work. Examples of inductive loads would be most types of motors and transformers.

2.3 Proposed Project Location and Setting

The Proposed Project would be located in unincorporated south-central San Diego County, approximately 3.75 miles southeast of the community of Alpine, off of Bell Bluff Truck Trail. Figure 2-2 shows the Project location. The lands surrounding the Proposed Project are primarily undeveloped, with some rural-residential development present to the east and south, and the existing Suncrest Substation at the Project's western terminus. The nearest residence is approximately 0.6 mile to the southeast. Interstate-8 is located approximately 1.8 miles to the north of the Project area and Japatul Valley Road is approximately 1.2 miles to the southeast. The Proposed Project would be located on property (assessor's parcel numbers [APNs] 523-040-080 and 523-030-130) currently owned by private parties within the administrative boundary of the Cleveland National Forest. Elevations in the Project area range from 3,000 to 3,200 feet above mean sea level, and the area's topography is undulating with steep hills interspersed with narrow valleys and relatively deep canyons. The habitat types in the Project vicinity are primarily chaparral scrub and oak woodlands.

The proposed SVC facility, described below in Section 2.4.1.1, would be constructed immediately south of Bell Bluff Truck Trail within a portion of APN 523-040-080 (see Figure 2-3). NEET West has an option agreement to purchase a 6-acre portion of this parcel for construction of the SVC. This area, known as the Wilson Construction Yard (shown on Figure 2-4), was used as a construction staging/laydown area during construction of the Suncrest Substation. The area was used for storage and staging of materials, assemblage of the lattice tower segments, helicopter transport operations of materials and tower segments, and as a temporary water basin (SDG&E Undated). As part of the initial brush clearing for the area, native vegetation was cut into small pieces and incorporated into the topsoil, which was salvaged to a depth of approximately 6 inches. Grading was required within the Wilson Construction Yard, with a total of 10.27 acres impacted, and rock/gravel less than 3 inches in diameter was imported to the yard for soil stabilization and dust control during helicopter activities (the imported rock was removed following construction activities). The initial phase of construction at the yard occurred in June 2011 and the yard was utilized through a portion of 2012 (SDG&E Undated).

Following completion of the Suncrest Substation, in accordance with the restoration plan prepared for the Sunrise Powerlink, *Sunrise Powerlink Restoration Plan for Sensitive Vegetation in Temporary Impact Areas,* and the site-specific restoration plan prepared for the Wilson Construction Yard, *Site-Specific Restoration Plan (SRP): SRP AS-47 Southern Foothills; Link 3; Wilson* (AECOM and RECON Environmental 2012), the Wilson Construction Yard was de-compacted by ripping and cross-ripping between 18-24 inches and then recontoured to its original topography (SDG&E Undated). The salvaged topsoil was then redistributed over the site and seeded with a mix of native plant species representative of the pre-project valley needlegrass habitat condition at the site. The recontouring and seeding was conducted in fall of 2012, and maintenance and monitoring of the restoration site has been conducted since. In March 2016, the Wilson Construction Yard restoration was signed-off as complete by both the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS). CDFW and USFWS certified that the site had achieved the restoration plan's primary success standards, which primarily relate to percentage of native species cover.



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N

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Miles

Proposed Project Location

Cleveland National Forest

Figure 2-2
Project Location

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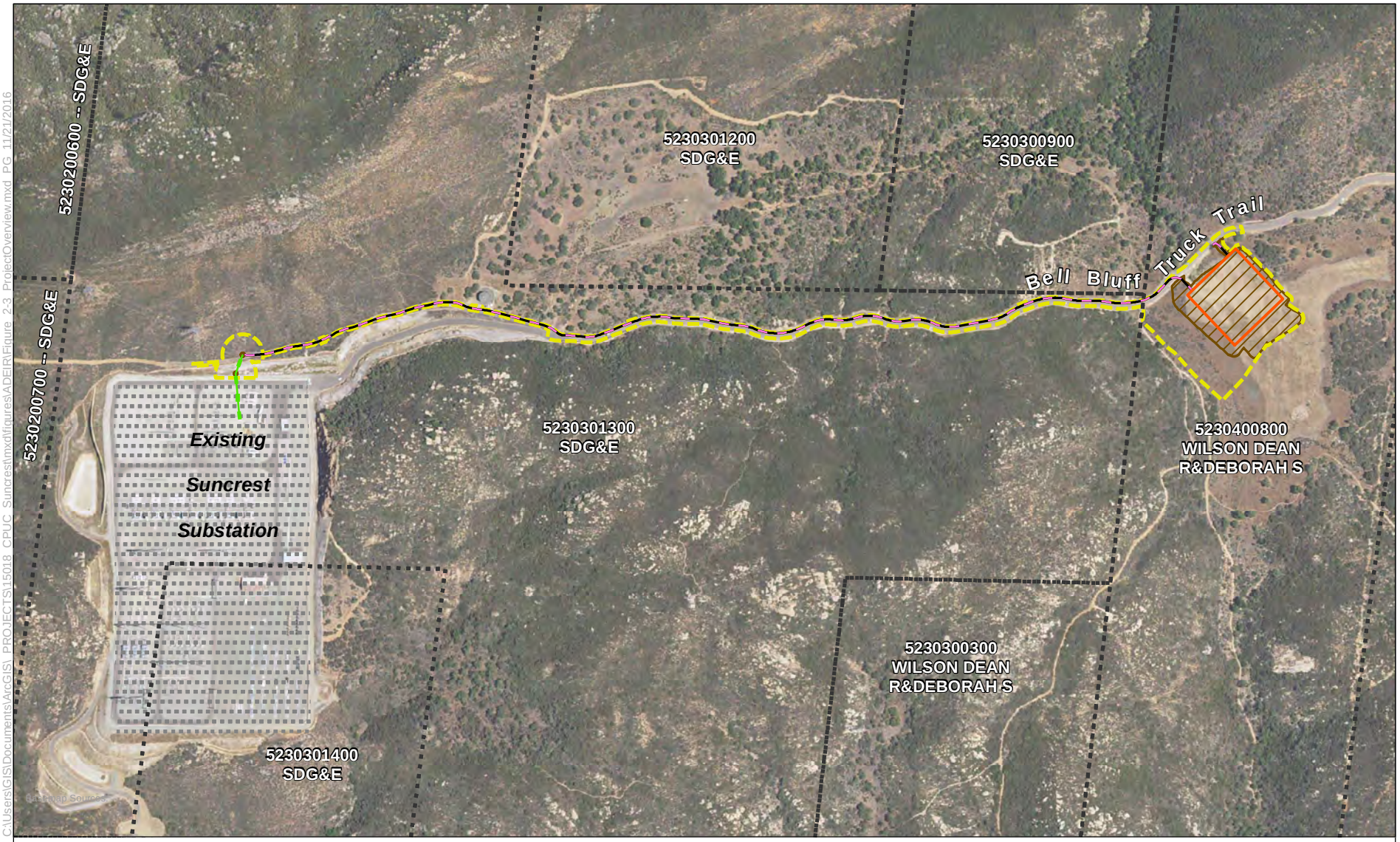
Suncrest Dynamic Reactive Power Support Project



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N

0 500 1,000
Feet

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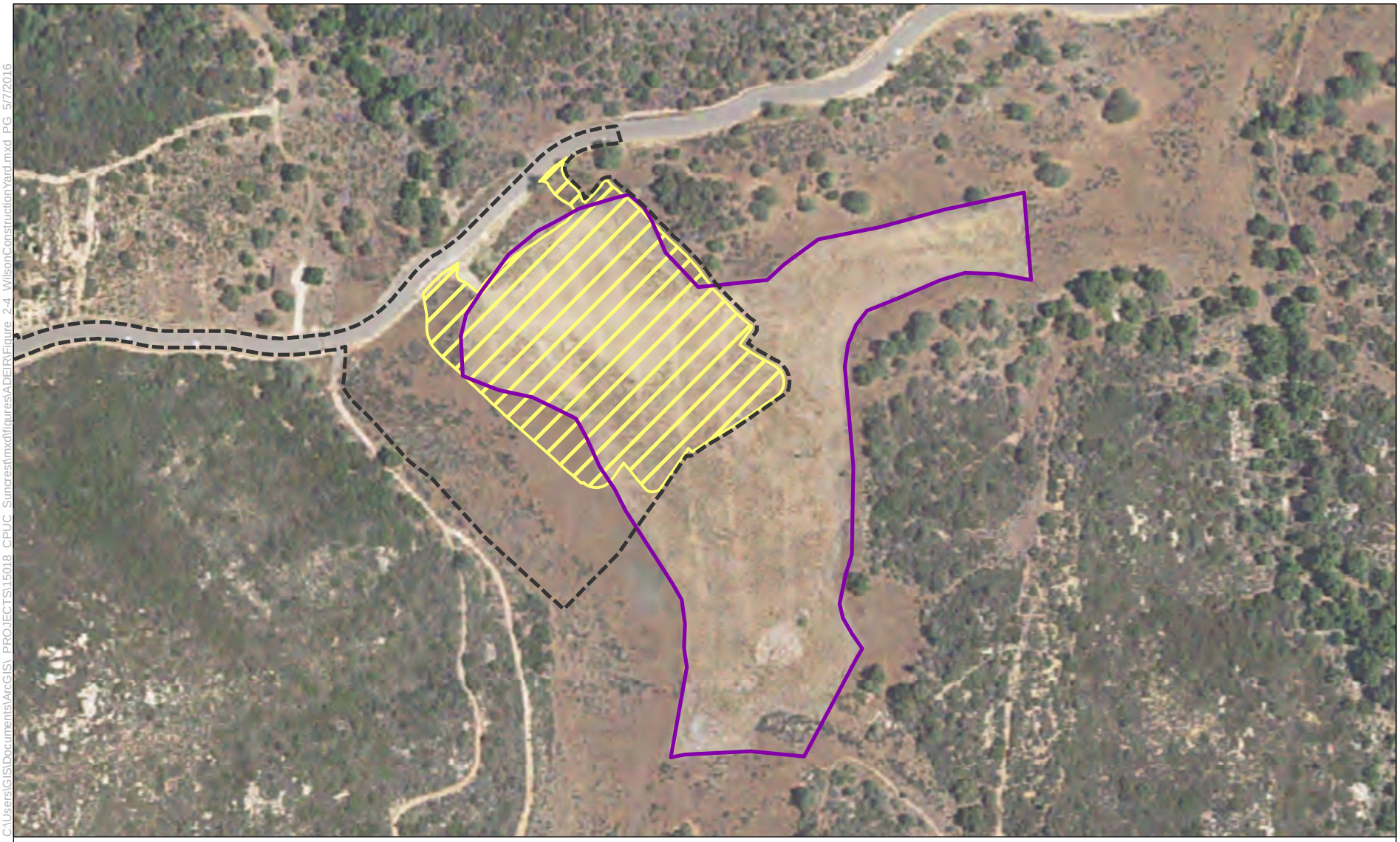
Horizon WATER and ENVIRONMENT

Project Components

- Project Area (limit of disturbance)
- Underground Transmission Line
- Overhead Transmission Line
- SVC Area
- Fenced Area
- Parcel Boundary (with APN and Owner)

Figure 2-3
Project Overview

Suncrest Dynamic Reactive Power Support Project



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Imagery Source: NAIP

Figure 2-4
Wilson Construction Yard

Suncrest Dynamic Reactive Power Support Project

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The one-mile-long transmission line component of the Proposed Project, described in Section 2.4.1.2, would be located primarily within Bell Bluff Truck Trail, as shown on Figure 2-3. Bell Bluff Truck Trail is a private, paved, secured road in the area of the Proposed Project. Approximately one mile east of the proposed SVC site there is a security gate operated by SDG&E restricting public access to the existing substation site. Bell Bluff Truck Trail is approximately 30 feet wide from the location of the proposed SVC west to the intersection with the access road to the existing Suncrest Substation (this portion of the road was widened and newly constructed as part of the Suncrest Substation construction), and approximately 12 feet wide west of the intersection with the substation access road.

The lands surrounding Bell Bluff Truck Trail west of the proposed SVC are included as part of the Lightner Mitigation Site, which was established in accordance with the Sunrise Powerlink environmental review documents. The Lightner Mitigation Site encompasses the Suncrest Substation (see Figure 2-5) and would include APN 523-030-130. This property is scheduled to be transferred from SDG&E to the U.S. Forest Service for conservation in perpetuity (SDG&E 2011). The Lightner Mitigation Site was established in part to compensate for impacts to waters of the U.S. and waters of the state during construction of the Suncrest Substation/Sunrise Powerlink, and is described in the Final Habitat Mitigation and Monitoring Plan for the Sunrise Powerlink (SDG&E 2011).

2.4 Proposed Project

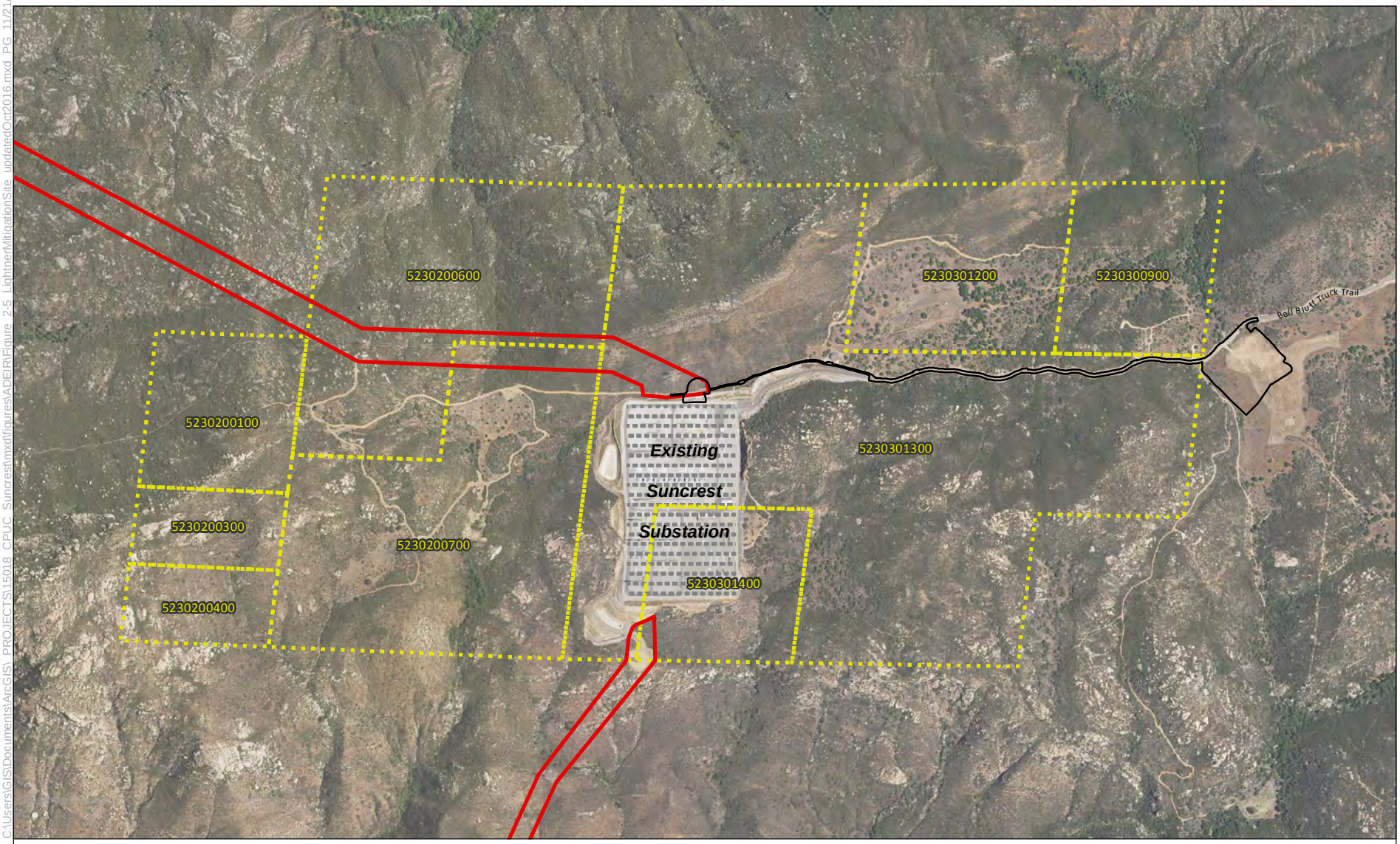
The Proposed Project would involve construction and operation of a SVC dynamic reactive device and approximately one-mile-long transmission line. Figure 2-3 above shows the primary Project components. The Proposed Project would disturb approximately 12 acres during construction, with Project features occupying a permanent footprint of approximately 6 acres. The following subsections describe the Proposed Project's components, anticipated construction process, and operation.

2.4.1 Proposed Project Components

2.4.1.1 SVC Components

The SVC would be a set of electrical devices, including thyristor[1]-controlled reactors and capacitor[2] banks, designed to provide fast-acting reactive power to the existing transmission system. The SVC would have no moving parts, other than internal switchgear, and would be operated based on the load and voltage conditions at the Suncrest Substation. Essentially, if the power system's reactive load is capacitive (i.e., leading), the SVC would use the thyristor-controlled reactors to consume vars from the system, thus lowering the voltage. If the system's reactive load is inductive (i.e., lagging), the capacitor banks would be automatically switched in, thereby increasing voltage.

[1] A thyristor is a solid-state semiconductor device that acts as a bistable switch.
[2] A capacitor is a passive two-terminal electrical component used to store energy temporarily in an electric field. In electric transmission systems, capacitors can be used to provide local sources of reactive power.



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Lightner Mitigation Site Parcels

Project Area (limit of disturbance)

Suncrest Powerlink ROW

Figure 2-5
Lightner Mitigation Site

Suncrest Dynamic Reactive Power Support Project

The proposed SVC's electrical equipment would be contained within a fenced area of approximately 2.58 acres. The total size of the SVC, however, including associated site improvements (e.g., access driveways, stormwater detention basin), would be approximately 6 acres.

Electrical Equipment and Facilities

While the final design and layout of the SVC facility may vary based on manufacturer's specific proposals (the final design would be procured through an engineering, procurement, and construction contract and functional specification, where manufacturers would have the flexibility to configure their SVC candidate designs in an optimal manner to meet the requirements of the specification), all candidate designs would be anticipated to include the following electrical equipment and facilities:

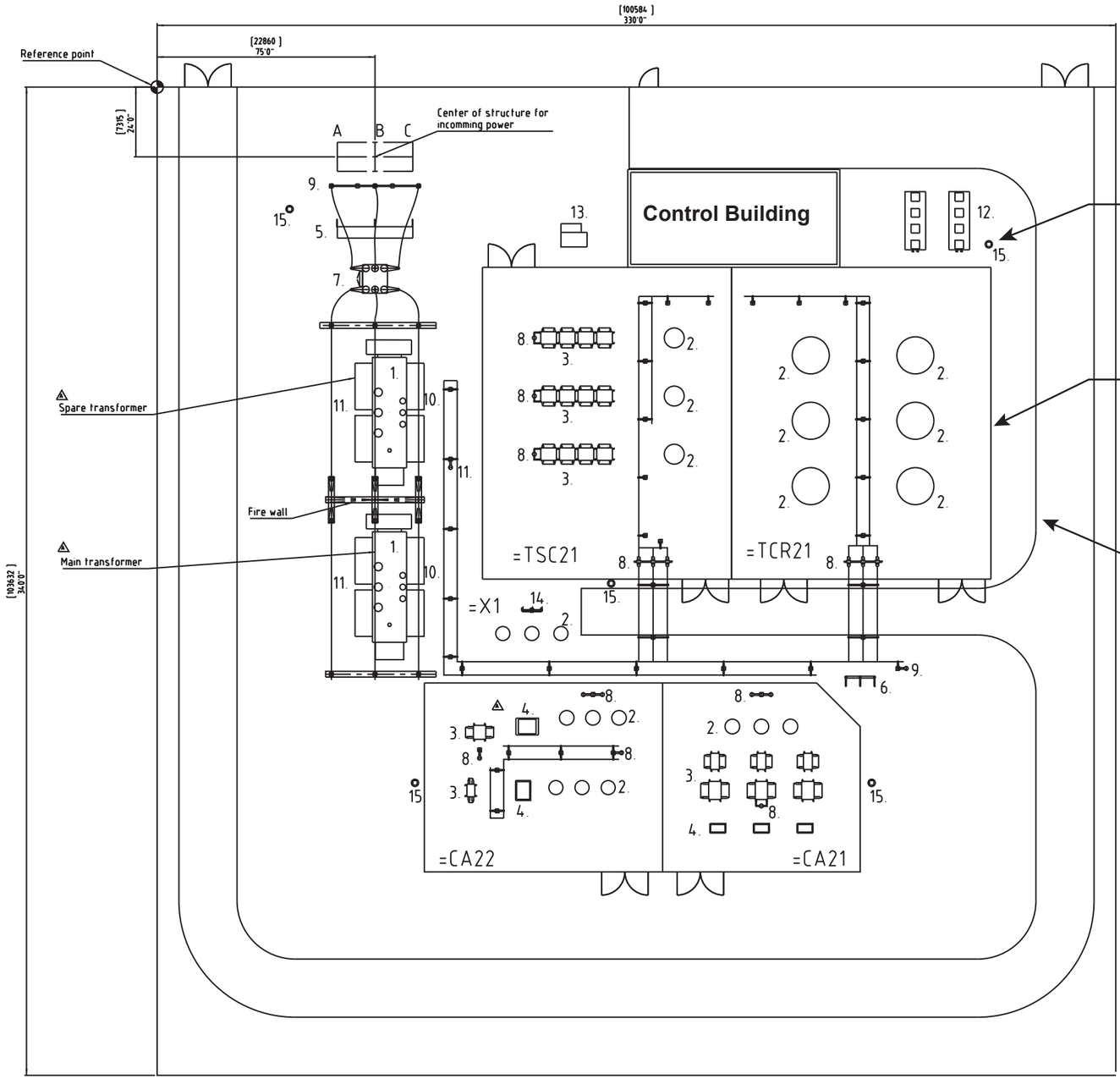
- Lightning shielding masts
- 230-kV circuit breaker
- 230-kV main stringbus and busbar
- 230-kV group operated air break switch
- 230-kV lightning arresters
- 230-kV potential measurement transformers
- Two, three ~~single~~ phase 230-kV main power transformers (one would be a spare), outdoor heating, venting and air conditioning equipment and thyristor/convertor cooling equipment
- Outdoor capacitor banks
- Outdoor air core reactors
- Outdoor medium voltage[1] busbars
- Outdoor medium voltage instrument/auxiliary transformers
- Outdoor medium voltage surge arrestors
- Outdoor medium voltage group-operated air break switches
- Control house of approximately 2,500 square feet containing the following equipment:
    - Thyristor valves and/or insulated-gate bipolar transistor (IGBT)[2] convertors

[1] Medium voltage is commonly defined as greater than 1 kV and less than 100 kV. The actual voltage rating of the Proposed Project equipment may vary based on manufacturer's proposals.
[2] An IGBT is a three-terminal power semiconductor device primarily used as an electronic switch.

- Protective relaying and control equipment
- Supervisory control and data acquisition (SCADA)[1] equipment
- Cooling equipment
- AC/DC auxiliary power equipment
- Spare parts and maintenance tool storage
- Miscellaneous support facilities

The preliminary layout and arrangement of the outdoor equipment at the proposed SVC is shown in Figure 2-6; however, as noted above, the actual layout of the equipment at the Proposed Project facility may vary from the figure based on the candidate designs submitted by manufacturers. All major equipment (e.g., power transformers, power circuit breakers, control buildings, capacitors, and reactors) would be installed on concrete foundations. The transformers at the SVC would each require a maximum of 10,000 to 13,000 gallons of oil. Secondary containment structures designed to contain the oil volume of the transformers plus the 25-year, 24-hour storm event would be included as part of the project, as described further below. The lightning shielding masts would be the tallest structures within the SVC at approximately 75-feet-high.

[1] SCADA is a system for remote monitoring and control that operates with coded signals over communication channels. It is commonly used to remotely operate large industrial processes such as electric power transmission systems.



1	Transformer
2	Reactor
3	Capacitor
4	Resistor
5	Disconnector
6	Grounding switch
7	Circuit breaker
8	Current transformer
9	Voltage transformer
10	Surge capacitor
11	Surge arrester
12	Cooling tower
13	Auxiliary Transformer
14	Fuse
15	Lightning mast

PRELIMINARY

Figure 2-6
Preliminary SVC Layout

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Suncrest Dynamic Reactive Power Support Project

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Associated Site Improvements

In addition to the electrical equipment, the SVC would include the following facilities or components:

- Two new 20-foot-wide by 95-foot-long access driveways from Bell Bluff Truck Trail to the SVC;
- A stormwater detention basin, sized to capture the runoff from the 85th percentile of a 25-year, 24-hour rain event, and earthen swales to divert run-on stormwater;
- A ~~Mechanically Stabilized Earth~~ retaining wall approximately 480 feet long and 15 feet tall at its highest point (an average height of 8 feet) along the east side of the facility;
- Chain link and barbed wire security fencing approximately ~~7~~8 feet high with secure gates accessible only by NEET West staff and emergency services personnel;
- Transformer oil containment basins designed to contain the oil volume of the transformers plus stormwater from the 25-year 24-hour storm event;
- A 10,000-gallon water tank for fire suppression outside the Suncrest SVC fence and adjacent to the northeastern driveway; and
- Signage and lighting.

The new driveways would be graveled and would include paved turning aprons off of Bell Bluff Truck Trail, an internal circulation route, and associated improvements. The turning aprons would be designed to accommodate large construction and haul vehicles and would occupy a total area of approximately 5,000 square feet. The access driveways would be entirely located within the 6-acre area of APN 523-040-080 that NEET West intends to acquire in fee title.

The stormwater detention basin would be sized based on the 85th percentile of the 25-year, 24-hour rainfall event. It would be designed to capture the runoff from such an event and then release the captured water over 48 hours. Overflow from the basin would occur through a rip-rap spillway that would provide for sheet-flow of the stormwater to the adjacent land surface during storms that exceed the basin's design capacity. A series of earthen swales would be constructed around the SVC facility to divert stormwater that would otherwise run onto the site. The swales would discharge any run-on water via shallow, concentrated sheet flow to the adjacent land surface, and would include rip rap aprons at discharge locations for erosion control.

The retaining wall would be built on grade (i.e., not above grade) on the east side of the SVC to provide slope stability, minimize the potential for erosion, and avoid the need for additional land and impacts to oak woodlands east of the Proposed Project site. The retaining wall would be supported by a concrete foundation constructed of concrete blocks, installed 1 to 2 feet below grade. Depending on the soil and rock conditions, anchors or reinforced geogrid strips, with a maximum embedment length of approximately 12 feet, may be installed to support the wall.

The lighting at the SVC facility would conform to National Electric Safety Code (NESC) requirements and applicable outdoor San Diego County outdoor lighting codes. NESC recommends illuminating substation facilities to a minimum of 22 lux or 2 foot-candles. Remotely-controlled lighting would be provided at a level sufficient to provide safe entry and exit to the SVC site and control building. Additional manually-controlled lighting would be available for use, when required, to further support safe working conditions at the SVC.

2.4.1.2 Transmission Line Components

The transmission line connecting the SVC to the existing Suncrest Substation would be approximately one mile in length and would be installed primarily underground. As shown in Figure 2-3, the proposed transmission line would follow the alignment of, and be located within, Bell Bluff Truck Trail for the majority of its length. The last approximately 300 feet of the line would transition to an overhead span via a new riser pole to be installed just north of the road. The overhead span would contain two poles in total; the 85- to 95-foot-tall riser pole (at the transition from underground to overhead) and an approximately 116-foot-tall intermediate pole which would be installed approximately 35 feet outside the Suncrest Substation. NEET West would own the riser pole. The intermediate pole would become the change of ownership pole, with NEET West owning the overhead span between the riser pole and the intermediate pole and SDG&E owning the overhead span from the intermediate pole into the Suncrest Substation.

Note: NEET West had originally proposed a single riser pole for the overhead transmission line connecting to the Suncrest Substation in the PEA they submitted to CPUC. Under this original proposal, it was believed that the single riser pole could be maintained via bucket trucks extended from Bell Bluff Truck Trail. Coordination with SDG&E, however, indicated that SDG&E would need a larger permanent maintenance pad to maintain the pole. As installation of a maintenance pad would involve cutting into the hillside, and would potentially introduce new significant impacts, NEET West developed the current "two-pole" design. This design allows SDG&E to maintain the intermediate pole (i.e., the new change of ownership pole) from the existing graveled access road, which runs along the perimeter of the existing Suncrest Substation, thereby avoiding the need for a new permanent work pad.

Underground Transmission Line

The proposed transmission line would be a new 230-kV single-circuit line composed of cross-linked polyethylene-insulated, solid-dielectric, copper or aluminum conductor cables. The line would consist of three separate 230-kV conductor cables. The cables would be installed within polyvinyl chloride (PVC) conduits in a concrete-encased duct bank system. The duct bank system would include four conduits for the 230-kV cables (three for the cables plus one spare) as well as four smaller conduits for fiber optic cables, which would provide communications for line relaying, SCADA, and other devices as required. The duct bank system would be approximately 30 inches wide by 24 inches tall, with the bottom of the duct bank approximately 5 feet below grade. Up to five underground splice vaults would be installed along the transmission line alignment (roughly every 900 feet) to allow for installation of the underground cables and for operation and maintenance of the transmission line.

While the majority of the transmission line would be installed within Bell Bluff Truck Trail, at vault locations, temporary disturbance may be required outside of the roadbed to facilitate

installation of the vaults. The permanent vault structures would be located within the existing paved roadbed.

Riser Pole and Above-Ground Transmission Line Segment

A riser pole would be installed on the road shoulder north of Bell Bluff Truck Trail. The riser pole would be between 85 to 95 feet tall, with a base of approximately 7 feet in diameter plus an area of permanent disturbance approximately 15 feet in radius from the pole. The riser pole would be accessed by Bell Bluff Truck Trail. In between the riser pole and Suncrest Substation, a secondary or intermediate pole would be installed approximately 35 feet north of the existing substation fence line. This intermediate pole would be approximately 116 feet tall, with a base of approximately 7 feet in diameter. The intermediate pole would be accessed by the existing Suncrest Substation paved driveway and graveled service road leading to and around Suncrest Substation. The intermediate pole would be situated on the hillside on the north side of the graveled service road, between 5 and 10 feet from the road edge. Approximately 0.37 acre of temporary and 0.01 acre of permanent disturbance would be required to construct, operate, and maintain this intermediate pole.

The slope on which the intermediate pole would be constructed is currently undergoing revegetation by SDG&E per mitigation requirements in the Sunrise Powerlink EIR/EIS.

Depending on the results of geotechnical testing, alternative construction methods, such as pole installation on micropile foundations, may be required for installation of the riser and intermediate poles. Micropile foundations typically consist of small-diameter (i.e., less than 300 millimeters) drilled and grouted replacement piles (i.e., a pile placed or constructed within a previously drilled borehole replacing the excavated ground). Micropiles are installed by drilling a borehole, reinforcing the hole with a casing or other enforcement structure, and grouting the hole. The new riser and intermediate poles would facilitate entry into the existing substation via an approximately 300-foot-long overhead span of 1272 kcmil[1] (45/7) aluminum conductor steel reinforced (ACSR), non-specular, "Bittern" conductors. The approximate vertical distance between the conductors would be 16.5 feet and clearance to the ground would be a minimum of 30 feet in compliance with CPUC G.O. 95, *Rules for Overhead Electric Line Construction.* SDG&E would be responsible for stringing the conductor cables required to connect SDG&E equipment at the Suncrest Substation.

Additionally, SDG&E would need to add electrical infrastructure to facilitate interconnection to ~~SDG&E equipment at~~ the Suncrest Substation. SDG&E would add foundations, support structures, grounding, conduits and wiring, bus work, breakers, disconnect switches, control, protection, metering, communication support racks and SCADA and communication facilities to the existing 230-kV substation yard.

Communication Cables

Primary and secondary optical ground wires (OPGW) would be used to carry the fiber optic communications and protective relaying from the termination structure into the substation. Two splice boxes, one for each OPGW, would be installed on the base of the riser pole, and

[1] A circular mil is a unit of area equal to the area of a circle with the diameter of one mil (i.e., one thousandth of an inch). One thousand circular mils is abbreviated as kcmil, and is often used to define large electrical wire sizes.

two splice boxes on the base of the intermediate pole. Surge arresters would be placed on the riser pole arms to protect the underground cable from transient surges.

2.4.2 Project Construction

Construction of the SVC and transmission line would require similar methods of site preparation, excavation, installation of equipment and structures, and restoration. Substantial grading would only be anticipated for the SVC; a very limited amount of grading would be necessary for construction of the transmission line. Anticipated construction methods are described further below for each project component. Information on the construction schedule, equipment, access and staging, water use, and utility connections for the project as a whole is presented in the following section.

2.4.2.1 SVC Construction

Construction of the SVC would occur in a phased approach beginning with site preparation and grading of the site, followed by installation of the foundations and underground equipment, and finally, installation and testing of the electrical equipment. Prior to clearing and grubbing, all necessary surveys, marking, and installation of stormwater management features (e.g., silt fence, fiber rolls, etc.) would be completed.

Site Preparation, Grading, and Earthwork

Construction of the SVC would require clearing of approximately 8.5~~6~~9 acres of California buckwheat scrub, non-native grassland, and ruderal lands. The SVC facility would be located on the site of the old Wilson Construction Yard, which was impacted during construction of the existing Suncrest Substation. Vegetation removal would be completed using mechanized removal equipment or by hand using chain saws. Following initial clearing, topsoil would be salvaged to a depth of approximately 6 inches (or less if topsoil ~~subsoil~~ is not present to that depth) in all areas to be restored and would be stored on-site or at a nearby approved work area for use in site restoration, as appropriate.

Following site clearing/vegetation removal, grading and excavation would be conducted. Grading would include both removal of excess material as well as importation of fill and gravel material. Table 2-1 provides a summary of anticipated grading activities and material quantities.

In general, earthwork activities (e.g., grading, excavation) would be completed such that the site meets project design specifications and matches proposed grades. Geotechnical borings completed to date in the vicinity of the SVC site have found predominately gravel, clayey sand, and decomposed granite. Based on information obtained from soil borings performed near the corners of the proposed SVC site and the results of the geotechnical investigation performed for the Proposed Project, NEET West anticipates that the majority of the SVC site can be excavated by conventional methods, although a minimal amount of hydraulic hammering or blasting may be required.

Table 2-1. SVC Grading Summary

Item	Description	Quantity/Height
Total Cut	Excavated earthwork material (including topsoil)	21,000 cubic yards (cy)
Excess Material	Material to be removed from site	4,000 cy
Total Fill	Placed and compacted material (including surfacing material)	17,000 cy
Surfacing Material	Gravel to be imported (included in "Total Fill")	2,500 cy
Maximum Cut-Slope Depth	Maximum depth of excavation from ground surface	18 ~~15~~ feet
Maximum Fill-Slope	Maximum height of filling from ground surface	13 feet
Maximum Retaining Wall Height	Maximum height of retaining wall	15 feet

Conventional excavation practices would be used first to excavate to the location where bedrock is encountered. In areas where shallow bedrock is found, detonation blast holes would be drilled into the bedrock. Explosives would be detonated in the blast holes to crack the rock around the blast hole. Blast intensity is dependent on the amount of explosives used, frequency, and diameter of the holes where the explosives are placed, and timing of the detonation. NEET West describes the type of blasting that may be used for the Proposed Project as low-energy, localized blast, also referred to as micro-blasting. Micro-blasting is blasting in a highly controlled manner involving time delays between numerous small micro blasts to fracture rock without injecting material and to minimize noise effects. While it is anticipated that a minimal amount of blasting may be required for construction of the SVC, it is impossible to determine the exact location where blasting would be required until conventional excavation is conducted and areas of bedrock are identified.

Removal of material would typically extend to depths where competent materials, with high mechanical strength and resistance to erosion and deformation, are encountered. The maximum anticipated depth of excavation from ground surface would be 15 feet. Any material that requires processing prior to placement as fill will be mechanically processed on-site to achieve a maximum particle size and distribution suitable for conventional placement in engineered fills. As shown in Table 2-1, grading for construction of the SVC would be anticipated to result in the generation of 4,000 cy of excess material that would require off-site removal and disposal at a landfill. Additionally, approximately 2,500 cy (or 6 inches over the SVC footprint) of gravel would need to be imported and installed at the SVC site for grounding purposes. All clean spoils excavated by the Proposed Project would be reused on-site as fill, as feasible.

Foundations, Below-Grade Construction, and Equipment Installation

Following earthwork, all necessary below-grade construction, including structure and equipment foundations, underground ducts, ground grid, and construction of the control shelter, would begin. After below-grade work is completed, major equipment and structures would be installed and anchored on their respective foundations. It is anticipated that all

major electrical and SVC equipment, such as power transformers, power circuit breakers, control building, capacitors, and reactors would be delivered to the SVC footprint and placed directly on the previously constructed foundations. Other SVC equipment such as air disconnect switches, instrument transformers, transmission structures, insulators, conductors, rigid bus, connectors, conduit, cable trench, rebar, etc., will be received and temporarily stored at the staging area prior to installation.

Work Area Restoration

Following completion of construction and demobilization, all temporarily disturbed work areas would be restored to their pre-construction conditions. Areas that were disturbed by grading, augering, or equipment movement would be recontoured to their original contours. Work areas would be decompacted, and salvaged topsoil materials would be re-spread following recontouring to aid in restoration of disturbed areas.

2.4.2.2 Transmission Line Construction

Similar to the SVC, construction of the transmission line would occur in a phased approach beginning with site preparation, followed by trenching, with duct bank and splice vault installation occurring concurrently, and finally, cable pulling, splicing, and termination. Prior to trenching, all necessary surveys, marking, and installation of stormwater management features (e.g., silt fence, fiber rolls) would be completed.

Site Preparation

Construction of the transmission line is anticipated to require minimal vegetation clearing, as the transmission line would be located primarily within (underneath) the paved surface of Bell Bluff Truck Trail. Vegetation clearing would only be required for the portion of the line alignment on the road shoulder in the areas of the new riser and intermediate poles. This area of impacts would be approximately 0.85 acre, with approximately 0.02 acre of permanent impacts at the riser and intermediate pole locations.

Trenching

Trenching required for duct bank and vault installation would involve asphalt cutting to expose the soil layer below the paved surface of Bell Bluff Truck Trail, followed by open-cut trenching techniques. The typical trench width for duct bank installation would be approximately 2.5 feet wide by 5 feet deep, while the typical trench width for vault installation would be 9 feet wide by 13 feet deep.

Excavation methods for digging the trenches for the underground alignment would include both conventional practices (e.g., a backhoe) and, potentially, blasting techniques. NEET West anticipates that 10 percent of the alignment, or approximately 530 linear feet of trench, could require blasting. Conventional excavation practices would be used first to excavate to the location where bedrock is encountered. In areas where shallow bedrock is found, detonation blast holes would be drilled into the bedrock. Explosives would be detonated in the blast holes to crack the rock around the blast hole. NEET West describes the type of blasting that may be used for construction of the Proposed Project as low-energy, localized rock blasting, which is also referred to as micro-blasting. Micro-blasting is blasting in a highly controlled manner involving time delays between numerous small micro blasts to fracture rock without injecting material and to minimize noise effects. NEET West states that it is not possible to

determine the exact location where blasting would be required until conventional excavation is conducted and areas of bedrock are identified.

All excavated material, including soil, rock, concrete, and asphalt would be temporarily staged on-site and hauled off to an appropriate disposal facility, such as Miramar Landfill. It is anticipated that a total of 3,000 cy would be generated and hauled off-site from trenching for transmission line construction at a rate of 30 cy (three truck trips) per day.

Duct Bank & Splice Vault Installation

Within each open trench section, the duct bank would be installed approximately 5 feet deep, or 3 feet below the ground surface to the top of the duct bank. As mentioned above, the duct bank would be approximately 2.5 feet wide by 2 feet in height. The duct bank would be constructed by first installing the conduit (6-inch diameter for the electrical cable and 2-inch diameter for the telecommunications cable) separated by spacers and then placing 3,000-pounds-per-square-inch concrete around the conduits to form the duct bank. After duct banks have been installed, the trenches would be backfilled. It is anticipated that approximately 800 cy of native, non-thermal, or thermal backfill would be used in backfilling trenches for the Proposed Project. Each duct bank would be anticipated to have a minimum of 36 inches of cover, including 18 inches of road and sub-road material.

In areas where the duct bank alignment runs parallel to water lines, telecommunications utilities, or drainage culverts, a minimum horizontal clearance of 12 inches and vertical clearance of 6 inches would be provided. This clearance would need to be increased to 24 inches in all directions for existing SDG&E electric distribution feeder lines or other utilities that operate at temperatures greater than the surrounding earth temperature. Currently, it is known that there is an existing underground 12-kV distribution line owned by SDG&E, located on the south side of Bell Bluff Truck Trail, which the duct bank/transmission line would parallel for approximately 3,400 feet (0.64 mile). From the intersection of Bell Bluff Truck Trail and the Suncrest Substation access road (see Figure 2-2), NEET West anticipates having to cross a 12-kV distribution feeder, which powers a communication site on the north side of the Suncrest Substation, and a water pipe connecting SDG&E's water tank to the existing substation. Adequate clearance would be given to these existing utilities, as described above, and in accordance with CPUC G.O. 128, *Rules for Construction of Underground Electric Supply and Communication Systems.* Prior to construction, all existing utilities and culverts within the roadway would be located and potholed to ensure proper separation and avoidance.

During trenching for the underground duct bank, additional excavation would occur in the location of the proposed splice vaults; up to five underground splice vaults may be required for the underground transmission line, spaced approximately 900 feet apart. The vaults would be pre-fabricated steel-reinforced concrete with approximate dimensions of 30 feet long by 8 feet wide by 11 feet deep, so the excavation would be large enough to accommodate these dimensions. Installation of each vault would occur over a 1-week period following a sequence of: excavation and shoring of the vault pit; delivery and installation of the vault; fill and compaction of backfill; and restoration of the excavated area to pre-construction conditions. Backfill for the vaults would consist of either compacted native soil, slurry, or concrete.

Riser Pole and Intermediate Pole Construction

The work areas for the riser pole and intermediate pole would first be cleared of vegetation and then be slightly graded prior to excavating for the pole foundations. Temporary work pads may be required to excavate for the foundations or install the poles at either location. The excavation depths would be approximately 20 feet deep. Approximately 30 cy of material would be removed from each pole location and re-used onsite or disposed of at an approved off-site location. Following construction of the pole foundations, the riser pole and intermediate pole structures would be installed.

Due to the likely presence of rock either at or very near the ground surface, installation of the riser pole and intermediate pole may require localized blasting or other alternative excavation techniques to install the poles. Alternative methods may include pole installation on a micro-pile foundation. Micropiles typically consist of small-diameter (less than 300 millimeters) drilled and grouted replacement piles (i.e., a pile placed or constructed within a previously drilled borehole replacing the excavated ground). Micropiles are installed by drilling a borehole, reinforcing the hole with a casing or other enforcement structure, and grouting the hole. Micropiles would be 35 to 40 feet deep under a 10-foot-deep pile cap. These foundations would use up to 70 cy of concrete.

Cable Pulling, Splicing & Termination

Following installation of the duct bank, splice vaults, and riser and intermediate poles, the electric and telecommunications cables would be installed in the duct banks. The cables would be pulled into the duct banks by placing a pulling rig on one end of the duct bank section and a cable reel on the other. Cables would be pulled through each segment between splice vaults, and then spliced at each splice vault location. Stringing of the conductor and OPGW between the intermediate pole and riser pole would be conducted using pulling and tensioning equipment set up on Bell Bluff Truck Trail and the Suncrest Substation service road. For the last span into the Suncrest Substation, SDG&E would place pulling and tensioning equipment on their service road and within the substation to pull the conductor and OPGW into place to make the final terminations at the A-frame structure.

A splice trailer would be located adjacent to the vault manhole to facilitate splicing (i.e., stripping of the cable jacket, shield, and insulation, and connection of the two cables on either side of the vault). At the ends of cables in the SVC facility and on the riser pole, the cable jacket, shield, and insulation would be stripped back to facilitate the installation of a terminator.[1] Temporary scaffolding may be required to reach the elevated terminations on the riser pole. Prior to energizing, each phase would be tested to ensure proper splicing and continuity.

Electric and telecommunication cable would be spliced into the SVC facility after being pulled through their respective ducts. Fiber optic cable routed to the existing Suncrest Substation would need to be spliced to connect to the OPGW in a splice box located on the intermediate pole. A splice box would also be installed on the riser pole to connect the underground fiber to the OPGW.

SDG&E would be responsible for construction activities necessary for supporting interconnection of the Project Applicant's facility and equipment to SDG&E equipment within

[1] A terminator is a resistor placed at the end of an electrical wire or cable to prevent a radio frequency signal from being reflected back from the end, causing interference.

the Suncrest Substation. This would involve adding foundations, support structures, grounding, conduits and wiring, bus work, breakers, disconnect switches, control, protection, metering, communication support racks and SCADA and communication facilities to the existing 230-kV substation yard.

Work Area Restoration

Following completion of construction and demobilization, all work areas utilized for construction would, to the extent practicable, be restored to their pre-construction conditions. All residual construction debris and waste would be removed and transported off-site to an approved disposal and/or recycling facility. The disturbed portion of Bell Bluff Truck Trail would be restored by replacing the aggregate road base and installing an asphalt cap. Any road signage or markings removed or disturbed during construction would be replaced.

2.4.2.3 Overall Construction Schedule, Equipment, Access, Water Use, and Utility Connections Information

Construction Schedule

Construction of the SVC and transmission line is expected to occur simultaneously. Overall, the Proposed Project would be anticipated to take 11 months to construct (6.5 months for construction; 2.5 months for testing and commissioning; and 2 months for restoration and cleanup) and is targeted to be operational by early 2018. Typically, construction would occur 10 hours per day, 6 days per week, Monday through Saturday, between 7 a.m. and 7 p.m.; however, certain time-sensitive activities and/or activities which are not noise-intensive may occur outside these hours.

Construction Workforce & Equipment

The peak employment during Project construction is anticipated to be 64 workers, although on average, the workforce on site would be less (approximately 40 to 50 persons [or less] per day). As a conservative assumption for the environmental impacts analysis in later chapters of this EIR, the total number of unique construction workers over the entire construction period will be approximately 120. In addition to construction workers, visitors to the site during construction would include NEET West management, engineering consultants, government inspectors, and construction monitors, who would visit the site intermittently. The workers for the more common development tasks of grading and building foundations for the SVC and transmission ~~riser pole~~ structures are likely to be hired from San Diego County. Workers for installing the SVC and underground transmission line will have specialized skills and may be drawn from either San Diego County or further away. Equipment to be used during Project construction would be anticipated to include, but not be limited to, bulldozers, excavators, backhoes, loaders, graders, scrapers, cranes, drill rigs, skid steer, dump trucks, tractor-trailers, splice trailers, water trucks, concrete mixer trucks, line trucks, fork lifts, pulling rigs, reel trailers, transformer low-boy trucks and trailers, and pick-up trucks.

Site Access & Construction Staging

The primary access to the Project site during construction would be along Bell Bluff Truck Trail. Bell Bluff Truck Trail is an existing, private, approximately 30-foot-wide (though it decreases to 12-foot-wide west of the intersection with the Suncrest Substation access road;

see Figure 2-3), paved road that provides access to the proposed SVC site and the existing Suncrest Substation from Jatapul Valley Road. As described under Section 2.4.1, "Proposed Project Components," two new access driveways would be constructed off of Bell Bluff Truck Trail to allow for access of the proposed SVC site. During construction of the transmission line, the Project would use nearly all of the one mile of Bell Bluff Truck Trail between the SVC site westward to the Suncrest Substation for vehicle movements and staging. Bell Bluff Truck Trail would also be used to access the riser pole structure, while the paved Suncrest Substation driveway and graveled service road would be used to access the intermediate pole outside the Suncrest Substation fence. No new temporary or permanent access roads would be required for construction of the underground transmission line.

During construction of the transmission line, work would primarily occur within the paved portions of Bell Bluff Truck Trail. Excavation would extend onto the road shoulder or outside the paved portion of the road only at the splice vault locations and for installation of the riser and intermediate poles. The Proposed Project would use one primary 2.56-acre material receiving and staging area located immediately west of the proposed SVC on APN 523-040-080. The Project Applicant would obtain a temporary construction easement from the private landowner to use this staging area prior to construction. Preparation of the staging area would involve grubbing, clearing, and limited grading. Perimeter security fencing would be installed around the outer limits of the SVC work area, and lighting would also be installed for security purposes. A security professional would monitor the staging area nightly, after normal working hours, and on weekends during the day if no construction personnel are present.

While it is anticipated that all major electrical and SVC equipment, such as power transformers, power circuit breakers, the control building, etc., would be delivered to the SVC site and placed directly on the previously constructed foundations, other SVC equipment, such as air break switches, instrument transformers, transmission structures, insulators, etc., would be received and temporarily stored at the staging area prior to installation. All construction equipment and vehicles associated with SVC construction would be parked within the staging area while inactive and at the completion of each workday, where practical.

Materials associated with the transmission line (e.g., conductor cable reels, fiber reels, manholes, vaults) would be stored at the SVC staging area. Construction equipment used in construction of the transmission line may be staged along Bell Bluff Truck Trail at active work sites based on safety considerations and/or to reduce potential environmental impacts associated with moving heavy equipment back to staging areas at the end of each workday.

Water Use

Overall, it is anticipated that approximately 2,600,000 gallons (~8 acre-feet) of water will be required during project construction. This water would be used on-site for the cutting of asphalt pavement, dust control, fire suppression reserve in compliance with the Project's Construction Fire Protection Plan, concrete washout, and other construction activities, including restoration work. Water usage would vary based on the construction activity/phase, but would average approximately 13,100 gallons per day for the entire project for the approximate construction duration of 196 workdays. All water to be used during Project construction would be supplied by water truck.

NEET West has rights to obtain water from the Wilson ponds, located on the Wilson property where the SVC is to be built. As a back-up water source, Currently, NEET West is also

negotiating a water services agreement with the Padre Dam Municipal Water District (PDMWD) for use of recycled water from their water recycling facility, located approximately 19 miles from the Project site. ~~NEET West is also coordinating with the owner of the property on which the SVC would be built for use of the property owner's storage ponds.~~ There already exists a PVC pipeline between the property owner's storage ponds and a water tank at the SVC site, so use of this water could potentially reduce substantially the number of truck trips necessary. Assuming the on-site water source is not available and water must be hauled in from an off-site location such as PDMWD's Water Recycling Facility, it is anticipated truck trips would average three per day (with a peak of up to 6 trips per day during below-grade construction for the SVC).

Utility Connections

AC power for construction and operation at the SVC facility (e.g., for power during construction and permanent lighting) would be provided from a nearby underground 12-kV distribution line located underneath Bell Bluff Truck Trail. This distribution line would be tapped and service would be brought into the SVC site. The service line would be brought in via an underground duct bank and would be installed in cooperation with SDG&E. All disturbances associated with the distribution would be contained within previously described areas of disturbance associated with other Project components. In addition to the power provided by the SDG&E distribution line, additional power for construction activities may be supplied by portable gas or diesel generators.

No new temporary or permanent sewer connections would be required for the Proposed Project. Portable toilets would be located at the staging area at the SVC facility. Portable toilets may be towed behind vehicles to the work locations for the underground transmission line each morning and then taken off of the road each evening and stored overnight at the SVC staging area.

2.4.3 Project Operation and Maintenance

2.4.3.1 Operation

NEET West anticipates remotely operating the Proposed Project from ~~it's~~ a NextEra affiliate's ~~Lone Star Transmission, LLC's~~ control center in ~~Austin, Texas~~. No staff would be needed on site to operate the Proposed Project. The SVC would operate in response to system disturbances or based on voltage/load conditions experienced at the Suncrest Substation. Depending on the conditions, the SVC would either produce or consume reactive power (i.e., vars) primarily through automatic operation/response of its thyristor-controlled reactors and capacitor banks. Essentially, if the power system's reactive load is capacitive (i.e., leading), the SVC would use the thyristor-controlled reactors to consume vars from the system, thus lowering the voltage. If the system's reactive load is inductive (i.e., lagging), the capacitor banks would be automatically switched in, thereby increasing voltage.

NEET West would use standard monitoring, control, and protection equipment, including circuit breakers and other line relay protection equipment, and would monitor and operate the Proposed Project via an Energy Management System (EMS) with redundant servers and telecommunications to two data centers based in North and South Florida. The Proposed Project facilities would be dual scanned from both data centers and redundant Inter-Control Center Communications Protocol (ICCP or IEC 60870-6/TASE.2) servers would exchange SCADA data with the CAISO and neighboring transmission operator entities. The EMS would

include displays and alarm processing to ensure transmission operations have real-time situational awareness. The EMS support personnel would perform daily checks of the applications and hardware to ensure they are in proper working order. The EMS system also would be maintained to ensure compliance with North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection Standard requirements.

2.4.3.2 Inspections and Maintenance

Maintenance of the Proposed Project would be anticipated to include routine monthly inspections of SVC equipment, the balance of the substation equipment and the transmission line cable terminations. A more thorough annual inspection and assessment of the main SVC components would be performed and drive any planned equipment outages. While an annual offline outage of the SVC is typical, offline maintenance will be driven by the monthly and annual inspections and assessments. NEET West does not anticipate any transmission line inspections, other than the monthly and annual inspections and assessments of the termination points. Inspection and maintenance would be performed by NEET West local personnel, augmented as necessary by NEET West subject matter experts and the equipment Original Equipment Manufacturer.

Remote monitoring equipment installed at the SVC would be able to detect any substantial leaks in the transformer oil structures and a repair technician would be dispatched to inspect the site in the event any leaks are detected. Additionally, the recurring maintenance visits described above would include inspections of the transformers and secondary containment basins. During the monthly inspections of the SVC facility, a technician would visually inspect for water collected in the transformer secondary containment basins to ensure there is no oil or sheen on water prior to draining. If the contents contain no oil or sheen, then the secondary containment basins would be drained, either through a drain valve or using a pump if the structure does not contain a drain valve. Any drain valves on the secondary containment structures would be kept closed, except for when draining the basin.

If, based on visual inspections, the secondary containment basins contain oil or sheen, the water and oil would be removed from site and sent for recycling. The secondary containment basin would then be cleaned to ensure the oil residue is removed.

If the secondary containment basin contains oily water and/or sheen after the cleaning mentioned above, the oil from the oily water would be removed by placing hydrophobic adsorbents on the surface to adsorb the oil, and would be disposed of (typically as oily rags) in accordance with the applicable federal and state regulations. The adsorbents would be replaced until there is no visible sheen and then the remaining water would be drained from the secondary containment basin. Alternatively, a suitably designed oil adsorbent sock, Petro-Plug, or similar would be placed at the drain to ensure only water is released.

NEET West anticipates creating a maintenance plan in accordance with the equipment vendors' directives, industry practice, NEET West's internal guidelines, and regulatory requirements. The plan would comply with the CAISO Transmission Control Agreement and Maintenance Practices Procedures and be approved by the CAISO before the start of commercial operation.

2.5 Permits and Approvals

The Proposed Project may be subject to a number of other regulatory permits and approvals, depending in part on the environmental analysis contained in this draft EIR, further surveys of environmental resources on or near the Project site, and the discretion of the regulatory agencies. Anticipated required permits and regulatory approvals for the Proposed Project are listed in Table 2-2 below.

Table 2-2. Proposed Project Permits and Approvals

Regulatory Agency	Law/Regulation	Permit/Authorization Type	Triggering Action
San Diego Regional Water Quality Control Board	Clean Water Act, Section 402	National Pollutant Discharge Elimination System (NPDES) General Construction Stormwater Permit	Disturbance of more than one acre of land during construction.
County of San Diego, Department of Environmental Health	Unified Program: various laws and regulations related to hazardous waste	Unified Program Facility Permit	Storage of transformer oil, which is classified as a hazardous substance under State law.
County of San Diego, Sheriff's Department	Blasting Permission	Blasting Permit	Potential use of blasting materials during construction

2.6 Applicant Proposed Measures

The Applicant, NEET West, would implement several measures to reduce the potential impacts of Project construction. Applicant proposed measures (APMs) that would be implemented for the Proposed Project are listed in Table 2-3.

Table 2-3. Applicant Proposed Measures (APMs) to be Implemented during Project Construction

APM Number and Title	APM Text
~~**AIR-1: Fugitive Dust Control**~~	~~During construction, water or non-toxic soil stabilizers will be applied in sufficient quantities on access roads, staging areas, work areas, and on stockpiles to control fugitive dust.~~
AIR-2: Speed Limits	During construction, vehicle speeds will be limited to 15 miles per hour on unpaved roads or work areas and vehicles should be turned around in established or designated areas only.
AIR-3: Vehicle Use and Idling Time	To the extent feasible construction vehicle use and idling time will be minimized. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel powered vehicles, have extended warm-up times following start-up that limit their

	availability for use following startup. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The Proposed Project will apply a "common sense" approach to vehicle use; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of preconstruction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use.
AIR-4: Construction Equipment Emissions	Low-emission construction equipment will be utilized during construction of the Proposed Project. Construction equipment will be maintained per manufacturer specifications. All off-road construction diesel engines not registered under the CARB Statewide Portable Equipment Registration Program shall meet at a minimum the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in Cal. Code Regs., tit. 13 § 2423(b)(1).
AIR-5: Loss of Sulfur Hexafluoride (SF_6)	In operation of the SVC, NEET West will maintain the 230-kv circuit breaker so that the loss of SF_6 is less than 0.5% per year. To assess the loss of SF_6, NEET West will conduct monthly inspections and maintain the records of such inspections. NEET West will also participate in the U.S. Environmental Protection Agency's voluntary SF_6 Emission Reduction Partnership for Electric Power Systems.

2.7 Electric and Magnetic Fields

2.7.1 Overview

The CPUC does not consider electric and magnetic fields (EMF) to be an environmental issue in the context of CEQA because there is no agreement among scientists that EMF creates a potential health risk and because CEQA does not define or adopt standards for defining any potential risk from EMF.

The weather and the earth's geomagnetic field cause naturally occurring EMF, while various technological applications, such as communications technologies, personal electronic devices, electric generation and transmission, and radiological imaging cause man-made EMF (CPUC 2016). EMFs are typically characterized by their wavelength or frequency as either "non-ionizing"[1] or "ionizing" radiation, as shown in Table 2-4 below. In general, the higher the frequency of EMFs, the shorter their wavelength, and the shorter the wavelength, the greater the amount of energy is imparted when interacting with physical objects (CPUC 2016). From this table it can be seen that the EMF from the Proposed Project's 1-mile transmission line would be "non-ionizing."

Hertz (Hz) is a unit of frequency that is defined as one cycle per second. With respect to EMF, Hz values reflect the rate at which electric and magnetic fields change their direction each

[1] Ionization is the process by which electrons are freed from atoms or electrons, thereby creating ions or charged particles. Ionizing radiation is radiation that carries enough energy to create ions.

second. In the U.S., electric transmission lines typically operate at 60 Hz, which is considered an extremely low frequency (ELF) (CPUC 2016). By comparison, mobile phones operate at between 1.9 and 2.2 billion Hz (gigahertz), while X-rays operate at upwards of 30 X 1019 Hz (National Cancer Institute 2016).

Table 2-4. Types of EMF Radiation

Radiation Type	Definition	Forms of Radiation	Source Examples
Non-Ionizing	Low to mid-frequency radiation which is generally perceived as harmless due to its lack of potency.	▪ Extremely Low Frequency (ELF) ▪ Radiofrequency (RF) ▪ Microwaves ▪ Visual Light	▪ Microwave ovens ▪ Computers ▪ House energy smart meters ▪ Wireless (wifi) networks ▪ Cell phones ▪ Bluetooth devices ▪ Power lines ▪ MRIs
Ionizing	Mid to high-frequency radiation which can, under certain circumstances, lead to cellular and/or DNA damage with prolonged exposure.	▪ Ultraviolet (UV) ▪ X-Rays ▪ Gamma	▪ Ultraviolet light ▪ X-Rays ranging from 30 X 10^{16} Hz to 30 X 10^{19} Hz ▪ Some gamma rays

Source: NIEHS 2016

2.7.1.1 Electric Fields

Electric fields from power lines from power lines are created whenever the lines are energized, with the strength of the field dependent directly on the voltage of the line creating it. Electric field strength is typically described in terms of kV per meter (kV/m). Electric field strength attenuates (reduces) rapidly as the distance from the source increases. Electric fields are reduced in many locations because they are effectively shielded by most objects or materials such as trees or houses.

Unlike magnetic fields, which penetrate almost everything and are unaffected by buildings trees, and other obstacles, electric fields are distorted by any object that is within the electric field including the human body. Even trying to measure an electric field with electronic instruments is difficult because the devices themselves will alter the levels recorded.

2.7.1.2 Magnetic Fields

Magnetic fields from power lines are created whenever current flows through power lines at any voltage. The strength of the field is directly dependent on the current in the line. Magnetic field strength is typically measured in milligauss (mG). Similar to electric fields, magnetic field strength attenuates rapidly with distance from the source. However, unlike electric fields, magnetic fields are not easily shielded by objects or materials. The nature of a magnetic field can be illustrated by considering a household appliance. When the appliance is energized by

being plugged into an outlet but not turned on, no current flows through it. Under such circumstances, an electric field is generated around the cord and appliance, but no magnetic field is created. If the appliance is switched on, the electric field would still be present and a magnetic field would also be created. The electric field strength is ~~directed~~ directly related to the magnitude of the voltage from the outlet and the magnetic field strength is directly related to the magnitude of the current flowing in the cord and appliance. Table 2-5 shows typical magnetic fields from household appliances.

Table 2-5. Typical Magnetic Fields from Household Appliances

Appliance	Magnetic Field (mG) – 12" Distant	Magnetic Field (mG) – Maximum
Electric Range	3-30	100-1,200
Garbage Disposal	10-20	850-1,250
Clothes Washer	1-3	10-400
Toaster	0.6-8	70-150
Vacuum Cleaner	20-200	2,000-8,000
Hair Dryer	1-70	60-20,000
Electric Shaver	1-100	150-15,000
Fluorescent Desk Lamp	6-20	400-3,500
Circular Saw	10-250	2,000-10,000
Electric Drill	25-35	4,000-8,000
Refrigerator	0.3-3	4-15

Source: CPUC 2016; Gauger 1985

At a distance of 12 inches, the magnetic field strengths range from 0.3 to 250 mG. At the source, magnetic field strengths from household appliances included in the table range from 4 mG to 20,000 mG. Field strength attenuates rapidly with distance from the source. Similar to household appliances, an underground transmission line will have a magnetic field that varies dependent upon the current in the transmission line and distance from the transmission line. The CPUC conducted an investigation of EMF levels along the underground double-circuit 230-kV transmission line located in Alpine Boulevard (CPUC 2016). Spot magnetic field measurements ranging from 21.4 mG to 29.0 mG were recorded directly above these buried transmission lines. The Proposed Project would include an underground single-circuit 230-kV transmission line. EMF levels in the vicinity of the Proposed Project's 230 kV single-circuit line are discussed in Section 2.7.4. ~~The CPUC previously conducted an investigation of EMF levels along the underground double-circuit 230-kV transmission line located in Alpine Boulevard (CPUC 2016).~~

2.7.2 Scientific Background and Regulations Applicable to EMF

2.7.2.1 EMF Research

For more than 20 years, questions have been asked regarding the potential effects of EMFs from power lines, and research has been conducted to provide some basis for response.

Earlier studies focused primarily on interactions with the electric fields from power lines. In the late 1970s, the subject of magnetic field interactions began to receive additional public attention and research levels increased. A substantial amount of research investigating both electric and magnetic fields has been conducted over the past several decades; however, much of the body of national and international research regarding EMF and public health risks remains contradictory or inconclusive (see Section 2.7.3 below).

Research related to EMF can be grouped into three general categories: cellular level studies, animal and human experiments, and epidemiological studies. Epidemiological studies have provided mixed results, with some studies showing an apparent relationship between magnetic fields and health effects while other similar studies do not. Laboratory studies and studies investigating a possible mechanism for health effects (mechanistic studies) provide little or no evidence to support this link.

Since 1979, public interest and concern specifically regarding magnetic fields from power lines has increased. The increase has generally been attributed to publication of the results of a single epidemiological study (Wertheimer and Leeper 1979). This study observed a statistical association between the high-current configuration (the "wire code") of electric power lines outside of homes in Denver and the incidence of childhood cancer. The "wire code" was assumed to be related to current flow of the line. The study did not take measurements of magnetic field intensity. Since publication of the Wertheimer and Leeper study, many epidemiological, laboratory, and animal studies regarding EMF have been conducted.

Research on ambient magnetic fields in homes and buildings in several western states found average magnetic field levels within most rooms to be approximately 1mG, while in a room with appliances present, the measured values ranged from 9 to 20 mG (Severson et al. 1988; Silva 1988). Immediately adjacent to appliances (within 12 inches), field values are much higher.

2.7.2.2 Methods to Reduce EMF

EMF levels from transmission lines can be reduced in three primary ways: shielding, field cancellation, or increasing the distance from the source. Shielding, which reduces exposure to electric fields, can be actively accomplished by placing trees or other physical barriers along the transmission line ROW. Shielding also results from existing structures the public may use or occupy along the line. Since electric fields can be blocked by most materials, shielding is effective for the electric fields but is not effective for magnetic fields.

Magnetic fields can be reduced either by cancellation or by increasing distance from the source. Cancellation is achieved in two ways. A transmission line circuit consists of three "phases": three separate wires (conductors) on a transmission tower. The configuration of these three conductors can reduce magnetic fields. First, when the configuration places the three conductors closer together, the interference, or cancellation, of the fields from each wire is enhanced. This technique has practical limitations because of the potential for short circuits if the wires are placed too close together. There are also worker safety issues to consider if spacing is reduced. In underground lines, the three phases typically can be placed much closer together than for overhead lines because the cables ~~are~~ have dielectric insulation.

The distance between the source of fields and the public can be increased by either placing the wires higher aboveground, burying underground cables deeper, or by increasing the width of the right-of-way. For transmission lines, these methods can prove effective in reducing fields because the reduction of the field strength drops rapidly with distance.

2.7.2.3 Scientific Panel Reviews

Numerous panels of expert scientists have convened to review the data relevant to the question of whether exposure to power-frequency EMF is associated with adverse health effects. These evaluations have been conducted in order to advise governmental agencies or professional standard-setting groups. These panels of scientists first evaluate the available studies individually, not only to determine what specific information they can offer, but also in terms of the validity of their experimental design, methods of data collection, analysis, and suitability of the authors' conclusions to the nature and quality of the data presented. Subsequently, the individual studies, with their previously identified strengths and weaknesses, are evaluated collectively in an effort to identify whether there is a consistent pattern or trend in the data that would lead to a determination of possible or probable hazards to human health resulting from exposure to these fields.

These reviews include those prepared by international agencies such as the World Health Organization (WHO 1984, 1987, 2001, and 2007), the international Non-Ionizing Radiation Committee of the International Radiation Protection Association (IRPA/INIRC 1990), and governmental agencies of a number of countries, such as the U.S. Environmental Protection Agency, the National Radiological Protection Board of the United Kingdom, the Health Council of the Netherlands, and the French and Danish Ministries of Health.

As noted below, these scientific panels have varied conclusions on the strength of the scientific evidence suggesting that power frequency EMF exposures pose any health risk.

In May 1999, the National Institute of Environmental Health Services (NIEHS) submitted to Congress its report titled, Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields, containing the following conclusion regarding EMF and health effects:

> Using criteria developed by the International Agency for Research on Cancer (IARC), none of the Working Group considered the evidence strong enough to label ELF-EMF exposure as a known human carcinogen or probable human carcinogen. However, a majority of the members of this Working Group concluded that exposure to power-line frequency ELF-EMF is a possible carcinogen.

In June 2001, a scientific working group of IARC (an agency of WHO) reviewed studies related to the carcinogenicity of EMF. Using standard IARC classification, magnetic fields were classified as "possibly carcinogenic to humans" based on epidemiological studies. "Possibly carcinogenic to humans" is a classification used to denote an agent for which there is limited evidence of carcinogenicity in humans and less than sufficient evidence of carcinogenicity in experimental animals. Other agents identified as "possibly carcinogenic to humans" include gasoline exhaust, styrene, welding fumes, and coffee (WHO 2001).

On behalf of the CPUC, the California Department of Health Services (DHS) completed a comprehensive review of existing studies related to EMF from power lines and potential health risks. This risk evaluation was undertaken by three staff scientists with the DHS. Each

of these scientists is identified in the review results as an epidemiologist, and their work took place from 2000 to 2002. The results of this review titled *An Evaluation of the Possible Risks From Electric and Magnetic Fields From Power Lines, Internal Wiring, Electrical Occupations, and Appliances* were published in June 2002. The conclusions contained in the executive summary are provided below:

- To one degree or another, all three of the DHS scientists are inclined to believe that EMFs can cause some degree of increased risk of childhood leukemia, adult brain cancer, Lou Gehrig's Disease, and miscarriage.

- They strongly believe that EMFs do not increase the risk of birth defects, or low birth weight.

- They strongly believe that EMFs are not universal carcinogens, since there are a number of cancer types that are not associated with EMF exposure.

- To one degree or another, they are inclined to believe that EMFs do not cause an increased risk of breast cancer, heart disease, Alzheimer's Disease, depression, or symptoms attributed by some to sensitivity to EMFs. However, all three scientists had judgments that were "close to the dividing line between believing and not believing" that EMFs cause some degree of increased risk of suicide.

- For adult leukemia, two of the scientists are "close to the dividing line between "believing or not believing" and one was "prone to believe" that EMFs cause some degree of increased risk.

The report indicates that the DHS scientists are more inclined to believe that EMF exposure increased the risk of the health problems than the majority of the members of scientific committees that have previously convened to evaluate the scientific literature. With regard to why the DHS review's conclusions differ from those of other recent reviews, the report states:

> The three DHS scientists thought there were reasons why animal and test tube experiments might have failed to pick up a mechanism or a health problem; hence, the absence of much support from such animal and test tube studies did not reduce their confidence much or lead them to strongly distrust epidemiological evidence from statistical studies in human populations. They therefore had more faith in the quality of the epidemiological studies in human populations and hence gave more credence to them.

While the results of the DHS report indicate these scientists believe that EMF can cause some degree of increased risk for certain health problems, the report did not quantify the degree of risk or make any specific recommendations to the CPUC.

In addition to the uncertainty regarding the level of health risk posed by EMF, individual studies and scientific panels have not been able to determine or reach consensus regarding what level of magnetic field exposure might constitute a health risk. In some early epidemiological studies, increased health risks were discussed for daily time-weighted average field levels greater than 2 mG. However, the IARC scientific working group indicated

that studies with average magnetic field levels of 3 to 4 mG played a pivotal role in their classification of EMF as a possible carcinogen.

The 2007 WHO [Environmental Health Criteria 238] report concluded that:

- Evidence for a link between Extremely Low Frequency (50 to 60 Hz) magnetic fields and health risks is based on epidemiological studies demonstrating a consistent pattern of increased risk for childhood leukemia. However, "…virtually all of the laboratory evidence and the mechanistic evidence fail to support a relationship between low-level ELF magnetic fields and changes in biological function or disease status…the evidence is not strong enough to be considered causal but sufficiently strong to remain a concern."

- "For other diseases, there is inadequate or no evidence or health effects at low exposure levels."

2.7.3 Policies, Standards, and Regulations

A number of counties, states, and local governments have adopted or considered regulations or policies related to EMF exposure. The reasons for these actions have been varied; in general, however, the actions can be attributed to addressing public reaction to and perception of EMF as opposed to responding to the findings of any specific scientific research.

In 1991, the CPUC initiated an investigation into electric and magnetic fields associated with electric power facilities. This investigation explored the approach to potential mitigation measures for reducing public health impacts and possible development of policies, procedures or regulations. Following is a brief summary of CPUC guidelines and regulatory activity regarding EMF.

2.7.3.1 CPUC Decision No. 93-11-013

In Decision No. 93-11-013, CPUC took interim steps to address EMFs related to electric utility facilities and power lines. Based on its investigation of the possible impacts of EMF exposure associated with electric utility installations, CPUC recommended the following:

- No-cost and low-cost steps to reduce EMF levels;

- Workshops to develop EMF design guidelines;

- Uniform residential and workplace EMF measurement programs;

- Stakeholder and public involvement; and

- Funding for educational and research programs.

In explaining and justifying its decision, CPUC stated that although the scientific community had not yet isolated the impact, if any, of utility-related EMF exposures on public health, other jurisdictions and agencies have concluded that the best response to EMFs is to avoid unnecessary new exposure to EMFs if such avoidance can be achieved at a cost that is reasonable in light of the risk identified. The decision stated that "low-cost" steps to reduce EMF levels should be defined as roughly 4 percent of the total cost of a budgeted project, but

emphasized that this should not be a hard-and-fast rule and that utilities should implement more or less costly solutions as they are determined to be effective.

2.7.3.2 CPUC Decision No. 06-01-042 and More Information

In 2006, CPUC revisited the EMF issue it had covered in its Decision No. 93-11-013 and affirmed its "low-cost/no-cost" policy for mitigation of EMF exposure for new utility transmission and substation projects. Decision No. 06-01-042 also reaffirmed the CPUC's policy of using a benchmark of 4 percent of transmission and substation project costs for EMF mitigation. In addition, Decision No, 06-01-042 adopted rules and policies to improve utility design guidelines for reducing EMF, and provided for a utility workshop to implement the policies and standardize design guidelines. Finally, Decision No. 06-01-042 restated CPUC's position that it is unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences.

The CPUC's EMF Design Guidelines for Electrical Facilities (July 21, 2006) document is available at http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=4884. More information about activities taken by CPUC with respect to EMFs can be found at: http://www.cpuc.ca.gov/General.aspx?id=4879. In addition, the results of a 2016 CPUC field investigation on EMF levels along an underground 230-kV transmission line in Alpine, California can be found here: http://www.cpuc.ca.gov/environment/info/aspen/sunrise/Alpine%20Electromagnetic%20Field%20Investigation%20Report_Appendices.pdf.

2.7.4 EMF Data Applicable to the Proposed Project

Notable existing sources of EMFs in the vicinity of the Proposed Project include SDG&E's Suncrest Substation, and Sunrise Powerlink transmission lines

The Proposed Project would not generate any real power and is not a "power plant." The Proposed Project does not increase or decrease the amount of power flow over existing transmission lines, it only acts to support the line voltage on existing lines depending upon the proportion of renewable power flowing on the lines. The Proposed Project does not modify existing transmission lines nor alter the rated capacity of the existing Sunrise Powerlink 500-kV and 230-kv transmission lines, therefore, any potential future power flow along these existing lines would be within the levels foreseen when these facilities were originally approved.

The proposed SVC would inject or absorb reactive power based on system conditions so as to maintain adequate or desirable voltage levels in response to various possible system disturbances. The reactive power flow between the new SVC facility and the existing Suncrest Substation will vary throughout the day and will also vary from day to day and season to season. Since the EMF along the transmission line is directly related to the power flow on the line, it also ~~vary~~ varies over time. The maximum reactive power flow is expected to occur rarely, under certain emergency or contingency situations. The SVC is designed to provide a maximum +300/-100 MVAR of reactive power. Based on modeling of the maximum output, the EMF along the new 1-mile 230-kV transmission line, at the edges of its 20 foot-wide right-of-way, would be 41 mG at one edge of the right-of-way and 41.9 mG at the other edge of the right-of-way.

The Electric and Magnetic FMP for the Proposed Project evaluated EMF mitigation measures in its design and construction plan and adopted certain no-cost mitigation options (Appendix D in Volume 2). The no-cost EMF mitigation design options that have been included in the Suncrest Project design are as follows:

- Locate high current devices, such as transformers, capacitors, and reactors near the center of the SVC Facility to the extent practicable.
- Locate the SVC Facility fencing so as to maximize the distance between the EMF generating equipment and the property fence to the extent practicable.
- Arrange the underground 230-kv transmission cables in a triangular configuration and install these cables at a minimum of 36 inches below grade where practicable.

Chapter 3
Introduction to the Environmental Analysis

3.0 Overview

Chapters 4 through 19 of this final environmental impact report (FEIR) describe the environmental resources and potential environmental impacts of the Proposed Project. These environmental resource topics are discussed in accordance with Appendix G of the California Environmental Quality Act Guidelines (State CEQA Guidelines). Each chapter describes the existing setting and background information for the resource topics to help the reader understand the conditions that could be affected by the Project. The potential environmental impacts of the Proposed Project are then discussed in relation to the significance criteria contained in Appendix G of the State CEQA Guidelines. Mitigation measures are included and described in the resource chapters where appropriate and feasible to reduce the adverse effects of significant impacts.

This chapter describes the overall approach to the environmental analysis contained in Chapters 4 through 19, and the significance criteria and terminology used in the California Environmental Quality Act (CEQA). This chapter also describes the baseline conditions for evaluating impacts to environmental resources under CEQA.

3.1 Approach to Analysis

As described in Chapter 1, *Introduction*, an EIR is an informational document that assesses potential environmental effects of a proposed project, and identifies mitigation measures and alternatives to the project that could reduce or avoid potentially significant environmental impacts. In accordance with the basic purposes of CEQA, the impacts analysis in Chapters 4 through 19 seeks foremost to identify and disclose potential environmental impacts that could result from the Proposed Project. The basic approach taken in the impacts analysis is as follows:

1. Describe and characterize the existing environmental and regulatory settings in the Project area or the area of potential impact (i.e., the physical conditions that existed at the time of publication of the Notice of Preparation (NOP) and the existing applicable laws and regulations that may govern or affect implementation of the Proposed Project);

2. Consider the significance criteria contained in Appendix G of the State CEQA Guidelines for each resource topic; dismiss from further consideration or add additional criteria, as appropriate;

3. Analyze impacts to environmental resources in light of the existing conditions (i.e., environmental and regulatory settings) and the Appendix G significance criteria; employ quantitative and/or qualitative analytical methods as appropriate;

4. Identify any feasible mitigation measures that could reduce identified significant environmental impacts.

Specific approaches or methods of analysis may differ based on the environmental resource topic, but the basic approach is the same for all. Some of the key concepts alluded to above are described further below.

3.1.1 Baseline Conditions

Under CEQA, the environmental setting or "baseline" serves as a gauge to assess changes to existing physical conditions that will occur as a result of a proposed project. As noted above, per the State CEQA Guidelines (Cal. Code Regs., tit. 14, § 15125), for purposes of an EIR, the environmental setting is normally the existing physical conditions in and around the vicinity of the proposed project as those conditions exist at the time the NOP is published. In other words, the environmental characteristics (e.g., air quality, water quality, traffic conditions) that existed at the time of publication of the NOP are to be used for comparison and consideration of potential project impacts.

3.1.2 Significance of Environmental Impacts

According to CEQA, an EIR should define the threshold of significance and explain the criteria used to determine whether an impact is above or below that threshold. As described above, this DEIR generally uses the significance criteria in Appendix G of the State CEQA Guidelines. The Appendix G significance criteria constitute the threshold for significance of environmental impacts, in that identified effects of the Proposed Project that trigger or meet one of the Appendix G criteria would be considered significant without adequate mitigation. If no feasible mitigation measures can be identified for an effect that meets one of the significance criteria, an impact may be identified as significant and unavoidable. The specific terminology used to describe levels of significance in the impacts analysis are described further below.

3.2 Impact Terminology and Use of Language in CEQA

This FEIR uses the following terminology to describe environmental effects of the Proposed Project:

- A finding of ***no impact*** is made when the analysis concludes that the Project would not affect the particular environmental resource or issue.
- An impact is considered ***less than significant*** if the analysis concludes that there would be no substantial adverse change in the environment and that no mitigation is needed.
- An impact is considered ***significant*** or ***potentially significant*** if the analysis concludes that there could be a substantial adverse effect on the environment.
- An impact is considered ***less than significant with mitigation*** if the analysis concludes that there would be no substantial adverse change in the environment with the inclusion of the mitigation measures described.

- An impact is considered ***significant and unavoidable*** if the analysis concludes that there could be a substantial adverse effect on the environment and no feasible mitigation measures are available to reduce the impact to a less than significant level.

- Mitigation refers to specific measures or activities adopted to avoid, minimize, rectify, reduce, eliminate, or compensate for an impact.

- A cumulative impact can result when a change in the environment results from the incremental impact of a project when added to other related past, present, or reasonably foreseeable future projects. Significant cumulative impacts may result from individually minor but collectively significant projects. The cumulative impacts analysis in this FEIR focuses on whether the Proposed Project's incremental contribution to other significant cumulative impacts caused by past, present, or probable future projects is cumulatively considerable (i.e., significant).

- Because the term “significant” has a specific usage in evaluating impacts under CEQA, it is used only to describe the significance of impacts and is not used in other contexts within this document. Synonyms such as "substantial" have been used when not discussing the significance of an environmental impact.

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Chapter 4
Aesthetics

4.1 Overview

This chapter describes the existing visual and aesthetic resources within the potentially affected area and pertinent local, state, and federal plans and policies regarding the protection of visual and scenic resources. The potential impacts on scenic resources, public views of scenic vistas, visual character of the potentially affected area, and nighttime views from construction and operation of the Proposed Project are evaluated and mitigation proposed to address the impacts found to be significant.

Aesthetics refers to visual resources and the quality of what can be seen or overall visual perception of the environment, and may include such characteristics as facility scale and mass, design character, and landscaping. Visual impacts are analyzed through an examination of views and/or viewsheds. Views refer to visual access and obstruction of prominent visual features, including both specific visual landmarks and panoramic vistas. Viewsheds refer to the visual qualities of a geographic area. The geographic area is defined by the horizon, topography, and other natural features that give an area visual boundary and context. Viewshed impacts are typically characterized by the loss and/or obstruction of existing scenic vistas or other major views in the area of the site that are available to the general public. Sensitive viewers are individuals or groups who are particularly affected by changes to the aesthetics of the surrounding area. View analysis is based upon relative visibility with regard to viewing location and proposed on-site development.

4.2 Regulatory Setting

4.2.1 Federal Laws, Regulations, and Policies

As described in Chapter 2, *Project Description*, and shown in Figure 2-2, the Proposed Project would be located on private property within the administrative boundary of the Cleveland National Forest (CNF). While the U.S. Forest Service (USFS) does not have jurisdiction over private property within the CNF's administrative boundary, this analysis considers the USFS's CNF Land Management Plan due to the Proposed Project's close proximity to national forest lands.

The Proposed Project would be located within the Sweetwater Place area of the CNF. Sweetwater Place encompasses the urban fringe of San Diego, the communities of Alpine, Descanso, Pine Valley, Guatay, Japatul Valley, Carveacre, and the Viejas Indian Reservation, and is characterized by a mix of natural and rural/urban elements (USFS 2005). The desired condition of Sweetwater Place is described as follows (USFS 2005: Part 2, page 63):

> Sweetwater Place is maintained as a natural appearing landscape that functions as one of the primary transition zones between the deserts of eastern San Diego County and southern California's coastal communities. The

valued landscape attributes to be preserved or developed over time are the undeveloped character of Forest Service land that remain in this otherwise highly developed rural area; opportunities for unobstructed, panoramic views from the Interstate 8 corridor – especially on the eastern side; the scenic integrity of important local landmarks; and built elements that are unobtrusive and exhibit a consistent architectural theme.

Program emphasis is to "manage development within the Interstate 8 road corridor to conserve panoramic views from the highway." Applicable goals and design criteria identified in the CNF Land Management Plan are as follows:

- **CNF Strategy, LM 1 – Landscape Aesthetics.** Manage landscapes and built elements in order to achieve scenic integrity objectives.
- **CNF Strategy, LM 2 – Landscape Restoration.** Restore landscapes to reduce visual effects of management activities and nonconforming features.
- **CNF Strategy, LM 3 – Landscape Character.** Maintain the character of National Forest System lands in order to preserve their intact nature, valued attributes, and open space.

4.2.2 State Laws, Regulations, and Policies

California Scenic Highway Program

In 1963, the California State Legislature established the California Scenic Highway Program, a provision of the Streets and Highways Code, to preserve and enhance the natural beauty of California (California Department of Transportation [Caltrans] 2016). The state highway system includes designated scenic highways and those that are eligible for designation as scenic highways.

There are no state-designated scenic highways in the vicinity of the Proposed Project. Interstate 8 (I-8) is an eligible state scenic highway that runs approximately 1.75 miles north of the Proposed Project, and is described in more detail within Section 4.3, "Environmental Setting," below (Caltrans 2011).

4.2.3 Local Laws, Regulations, and Policies

The California Public Utilities Commission (CPUC) has exclusive jurisdiction over the siting and design of electric transmission facilities. Therefore, it is exempt from local land use and zoning regulations. However, CPUC General Order (G.O.) 131-D states that in locating electric transmission facilities, the public utilities shall consult with the local agencies regarding land use matters. CPUC and NextEra Energy Transmission West, LLC (NEET West) have been in contact with applicable local agencies for the Proposed Project, and local laws and regulations are presented here for consideration of potential impacts related to aesthetics.

San Diego County General Plan

The Proposed Project site is located within unincorporated San Diego County and is therefore subject to the County of San Diego General Plan. Chapter 3 of the County's General Plan, the

Land Use Element, includes a framework that accommodates future development in a manner that ensures long-lasting compatibility with the existing visual character of the community (San Diego County 2011a). Chapter 5 of the County's General Plan, the Conservation and Open Space Element, provides specific guidance for the protection of scenic corridors, geographically extensive scenic viewsheds, and dark skies within the natural environment (San Diego County 2011b). The General Plan contains the following relevant policies to aesthetics and the Proposed Project:

- **Policy LU-2.8 – Mitigation of Development Impacts.** Require measures that minimize significant impacts to surrounding areas from uses or operations that cause excessive noise, vibrations, dust, odor, aesthetic impairment and/or are detrimental to human health and safety.

- **Policy LU 12.4 – Planning for Compatibility.** Plan and site infrastructure for public utilities and public facilities in a manner compatible with community character, minimize visual and environmental impacts, and whenever feasible, locate any facilities and supporting infrastructure outside preserve areas. Require context sensitive Mobility Element road design that is compatible with community character and minimizes visual and environmental impacts; for Mobility Element roads identified in Table M-4, an LOS [level of service] D or better may not be achieved.

- **Policy LU-6.9 – Development Conformance with Topography.** Require development to conform to the natural topography to limit grading; incorporate and not significantly alter the dominant physical characteristics of a site; and to utilize natural drainage and topography in conveying stormwater to the maximum extent practicable.

- **Policy COS-11.1 – Protection of Scenic Resources.** Require the protection of scenic highways corridors, regionally significant scenic vistas, and natural features, including prominent ridgelines, dominant landforms, reservoirs, and scenic landscapes.

- **Policy COS-11.2 – Scenic Resource Connections.** Promote the connection of regionally significant natural features, designated historic landmarks, and points of regional historic, visual, and cultural interest via designated scenic corridors, such as scenic highways and regional trails.

- **Policy COS-11.3 – Development Siting and Design.** Require development within visually sensitive areas to minimize visual impacts and to preserve unique or special visual features, particularly in rural areas, through the following.

    - Creative site planning;

    - Integration of natural features into the project;

    - Appropriate scale, materials, and design to complement the surrounding natural landscape;

    - Minimal disturbance of topography;

    - Clustering of development so as to preserve a balance of open space vistas,

- natural features, and community character; and
- Creation of contiguous open space networks.

- **Policy COS-11.4 – Collaboration with Agencies and Jurisdictions. Coordinate** with adjacent federal and State agencies, local jurisdictions, and tribal governments to protect scenic resources and corridors that extend beyond the County's land use authority, but are important to the welfare of County residents.

- **Policy COS-11.5 – Collaboration with Private and Public Agencies**. Coordinate with the California Public Utilities Commission, power companies, and other public agencies to avoid siting energy generation, transmission facilities, and other public improvements in locations that impact visually sensitive areas, whenever feasible. Require the design of public improvements within visually sensitive areas to blend into the landscape.

- **Policy COS-11.7 – Underground Utilities.** Require new development to place utilities underground and encourage "undergrounding" in existing development to maintain viewsheds, reduce hazards associated with hanging lines and utility poles, and to keep pace with current and future technologies.

- **Policy COS-12.1 – Hillside and Ridgeline Development Density**. Protect undeveloped ridgelines and steep hillsides by maintaining semi-rural or rural designations on these areas.

- **Policy COS-12.2 – Development Location on Ridges**. Require development to preserve the physical features by being located down and away from ridgelines so that structures are not silhouetted against the sky.

- **Policy COS-13.1 – Restrict Light and Glare.** Restrict outdoor light and glare from development projects in Semi-Rural and Rural Lands and designated rural communities to retain the quality of night skies by minimizing light pollution.

Alpine Community Plan

The Alpine Community Plan is a subcomponent of the General Plan. The Alpine Community Plan implements the goals and policies of the County General Plan for the Alpine area. The Alpine Community Plan contains the following relevant policies to aesthetics and the Proposed Project (San Diego County, 2011c):

- **Policy 5.3.** Proposed development within the following scenic view corridors should be done with extreme care to preserve these vistas, i.e., minimize grading, clearing and destruction of natural and topographical features. View corridors are:
  - From Interstate 8 toward El Capitan Reservoir;
  - East and west views of Viejas Mountain from Interstate 8; and
  - From Interstate 8 south along Sweetwater River.

4.3 Environmental Setting

The following sections describe the existing conditions in the Proposed Project area as they pertain to aesthetic resources, including descriptions of the following aesthetic elements: the existing visual character; selected key observation points; and the viewer groups and their typical responses and sensitivities. This section is based on information provided in Section 4.1 of the Certificate of Public Convenience and Necessity Proponent's Environmental Assessment (NEET West 2015).

Visual Character and Quality of the Site

Visual character is a descriptive tool rather than an evaluative tool and it is based on defined attributes that are neither good nor bad themselves. The visual character of the region as well as the visual character of the Project vicinity is described further below.

Regional Character

The Proposed Project is in an unincorporated area of south-central San Diego County, located on private land within the administrative boundary of the CNF. The Proposed Project is located approximately 3.75 miles southeast of the community of Alpine, off of Bell Bluff Truck Trail road, west of Japatul Valley Road and south of I-8. Elevations in the area range from 3,000 to 3,200 feet above mean sea level. The area's topography is undulating with steep hills interspersed with narrow valleys and relatively deep canyons with incised high gradient drainage corridors. The steep hills and distant mountains are closely spaced, creating a multidimensional, primarily natural viewshed. However, in some areas existing utility lines break up that natural viewshed, especially where existing utility development (e.g., substations, water storage towers, communication towers, and associated infrastructure) and roadways exist. The habitat types in the greater Proposed Project vicinity are primarily chaparral scrub, oak woodlands, rocky outcroppings, clearings, and man-made surfaces and structures.

Vicinity Character

The Proposed Project is located approximately 1.66 miles from the intersection of Bell Bluff Truck Trail and Japatul Valley Road. The immediate area is a mix of coastal chaparral, grassy fields, paved roadways and road shoulders (along Bell Bluff Truck Trail), and the entrance to the existing San Diego Gas & Electric (SDG&E) Suncrest Substation. Elevation is approximately 3,050 feet above mean sea level. There is currently a single-circuit transmission line entering Suncrest Substation from the south, and a double-circuit transmission line exiting Suncrest Substation to the northwest. The Static VAR compensator (SVC) facility would be located on a site that was used as a laydown yard during the construction of Sunrise Powerlink, also referred to as the Wilson Laydown Area. The underground transmission line would be located underneath Bell Bluff Truck Trail. Bell Bluff Truck Trail runs generally east to west and serves as the access road into Suncrest Substation. Travel along Bell Bluff Truck Trail is restricted by gates to authorized personnel, including SDG&E employees, contractors, and local landowners.

Light and Glare

Nighttime lighting is necessary to provide and maintain safe, secure, and attractive environments. Light that falls beyond the intended area of illumination is referred to as "light trespass." The most common cause of light trespass is spillover light, which occurs when a lighting source illuminates surfaces beyond the intended area, such as when building security lighting or parking lot lights shine onto neighboring properties. Spillover light can adversely affect light-sensitive uses, such as residences, at nighttime. Both light intensity and fixtures can affect the amount of any light spillover. Modern, energy-efficient fixtures that face downward, such as shielded light fixtures, are typically less obtrusive than older, upward-facing light fixtures.

Glare is caused by light reflections from pavement, vehicles, and building materials such as reflective glass, polished surfaces, or metallic architectural features. During daylight hours, the amount of glare depends on the intensity and direction of sunlight.

While construction activities would primarily take place during the daytime, environmental factors, such as weather or temperature, may require the scheduling of nighttime activities that necessitate the use of portable temporary lighting during construction of the Proposed Project. Additionally, as described in Chapter 2, *Project Description*, the SVC facility and control building would include permanent remotely-controlled security and safety lighting consistent with National Electric Safety Code requirements and applicable San Diego County outdoor lighting codes. Additional manually-controlled lighting would also be available for use at the SVC facility and control building, when required, to further support safe working conditions. The only other indirect sources of illumination in the vicinity of the Project site include security and safety lighting at the existing SDG&E Suncrest Substation.

Scenic Vistas

A scenic vista is generally defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. The landscape of the San Diego region is rich in natural open space, unique topographic resources, and scenic vistas. These natural features contribute greatly to the overall quality of the existing visual setting experienced by viewers within the County (San Diego County 2011b). While the peninsular ranges of the CNF provide open space and visual relief from the human-made environment, the Proposed Project is not directly located within or visible from any surrounding scenic vistas.

Scenic Highways and Corridors

There are no state-designated scenic highways in the vicinity of the Proposed Project. The nearest state-designated scenic highway is State Route 78, located approximately 25 miles to the northeast in the Anza Borrego Mountains. Interstate 8 (I-8) is an eligible state scenic highway that runs approximately 1.75 miles north of the Proposed Project.

Viewer Sensitivity

Viewer sensitivity is another consideration in assessing the effects of visual change. Sensitivity is a function of factors such as the visibility of resources in the landscape, proximity of viewers to the visual resource, elevation of viewers relative to the visual resource, frequency and duration of views, number of viewers, and types and expectations of

individuals and viewer groups. Attachment A[1], *Viewshed Delineations*, includes depictions at varying mileage buffers that graphically display whether or not the Proposed Project might be "visible" or "not visible" from surrounding locations. Generally, the further the mileage buffer extends away from the Proposed Project, visibility is diminished and the more difficult it would be for a viewer to discern the Proposed Project from the existing landscape. Locations delineated as "visible" do not distinguish between the degree at which the Proposed Project would impose on a viewer, nor does it imply that an unintentional viewer would "notice" the Proposed Project.

Existing views of the Project site were captured from 13 key observation points (KOPs),[2] as shown in Attachment B, *Key Observation Points*. A location map identifying where the KOP photos were taken is also provided in Attachment B. These photographs have been selected as being representative of the types of visual resources that are present in each area. Views of the Project site and vicinity from each of the viewpoints are as follows:

- **KOP 3:** This image was taken looking east from Bell Bluff Truck Trail at the entrance to the Suncrest Substation. This location was selected to generally characterize the existing landscape views along the proposed underground transmission line to the Proposed Project. The Proposed Project transmission line would be buried underground, and therefore potential impacts to viewers would be limited to temporary construction along Bell Bluff Truck Trail. The visible landscape is affected by a road cut for the Suncrest Substation access road and driveway and a water tank, while the surrounding area is undeveloped and natural-looking. Bell Bluff Truck Trail is closed to public use, and therefore, is considered a private view. Background views are partially blocked by nearby hills and large trees (see Figure 4-1).

- **KOP 6:** This image was taken looking east at Bell Bluff Truck Trail and the former Wilson Laydown Yard. This location was selected to generally characterize the existing easterly landscape view of the Proposed Project's SVC site. The landscape is developed and natural appearing, dominated by Bell Bluff Truck Trail, with a reclaimed California buckwheat scrub meadow in the foreground and undeveloped chaparral covered hills in the background. Some residential structures are visible in the background to the south. Views are open and unobstructed (see Figure 4-2).

- **KOP 7:** This image was taken along Bell Bluff Truck Trail looking southwest at the former Wilson Laydown Yard. This location was selected to illustrate the existing landscape view toward the Proposed Project. The landscape is both developed and natural appearing, dominated by Bell Bluff Truck Trail and showing a reclaimed California buckwheat scrub meadow and undeveloped chaparral covered hills. Views are relatively open with some obstruction by large trees.

- **KOP 8:** This image was taken looking west along Bell Bluff Truck Trail, approximately 0.25 mile northeast of the former Wilson Laydown Yard. This location was selected to generally characterize the existing landscape view toward the Proposed Project's

[1] To allow for text fluidity and to best facilitate the reader, Attachment A, *Viewshed Delineations*, and Attachment B, *Key Observation Points*, have been included at the end of Chapter 4, *Aesthetics*.

[2] Seventeen KOPs were originally identified by NEET West; however, as the design and siting of the Proposed Project was refined, thirteen of those KOPs were ultimately selected based on consideration of typical views experienced by travelers and local viewers, and included locations where Proposed Project-related changes would be most visible to the public or be seen by the greatest number of viewers (NEET West 2015).

SVC site. The landscape visible is predominantly undeveloped and natural appearing, with undeveloped chaparral covered hills in the background. Views are relatively open, with some obstruction by large trees (see Figure 4-3).

- **KOP 9**: This image was taken looking west at the southeast corner of the former Wilson Laydown Yard. The photograph generally characterizes the existing landscape views across the Wilson Laydown Area and Proposed Project area. The landscape visible is predominantly natural appearing, with a reclaimed California buckwheat scrub meadow in the middle ground and undeveloped chaparral covered hills in the background. This KOP is adjacent to private land and may be viewed by property owners. While the existing visual quality includes man-made visual contrasts, views are generally open and unobstructed (see Figure 4-4).

- **KOP 10:** This image was taken looking southwest at the eastbound I-8 scenic viewpoint, which is a public view. This location was selected to generally characterize the existing landscape view toward the Proposed Project from I-8. The landscape visible is predominantly undeveloped and natural appearing, with rolling chaparral covered hills and mountaintops. This location provides expansive and panoramic views of the surrounding CNF and Sweetwater River Canyon. Views are generally open with no obstructions. Existing Sunrise Powerlink 230-kilovolt (-kV) transmission line towers are visible along the ridges on the right side of the photograph.

- **KOP 11:** This image was taken looking northeast along Japatul Valley Road, 3 miles south of the Proposed Project. This viewpoint is representative of the existing landscape views available to residences located in the vicinity of the Proposed Project. This view captures a portion of the transition zone between the relatively undeveloped mountain, desert, and wilderness open-spaces of eastern San Diego County, and the urbanized communities of metropolitan San Diego. The existing Suncrest Substation is visible from KOP 11. The landscape visible to the north from Japatul Valley Road is predominantly undeveloped and natural appearing; however, the landscape includes man-made structures and pockets of development. Views can be open and unobstructed.

- **KOP 12**: This image was taken looking north from the nearest private residence, approximately 0.81 mile south of the Proposed Project. Wilson Laydown Yard is visible in the center of the photograph. This view captures the Proposed Project area from a location with high viewer exposure and extended duration of views. KOP 12 contains a middle ground view of Bell Bluff Truck Trail, and offers expansive, background views to the adjacent mountains. Views can be open and unobstructed (see Figure 4-5).

- **KOP 13:** This image was taken looking north along Japatul Lane, approximately 1.52 miles south of the Proposed Project. This view includes the Suncrest Substation and Sunrise Powerlink 230-kV transmission line structures. This viewpoint is representative of the existing landscape views available to users of Japatul Lane and residences located in close proximity to the Proposed Project. This view captures the Proposed Project area from an area with high viewer exposure and extended duration of views. The landscape visible to the north is predominantly undeveloped and

natural appearing, with some man-made structures and pockets of development. Views can be open and unobstructed (see Figure 4-6).

- **KOP 14:** This image was taken View looking north along Japatul Lane towards the Suncrest Substation, approximately 1.16 miles south of the Proposed Project. This viewpoint is representative of the existing landscape views available to residences located in close proximity to the Proposed Project. This view captures the Proposed Project area from an area with high viewer exposure and extended duration of views. The existing Suncrest Substation is highly visible. The landscape is predominantly undeveloped and natural appearing, with man-made structures and pockets of development. Views can be open and unobstructed.

- **KOP 15:** This image was taken looking northwest at the intersection of Vista Esperanza Lane and Japatul Valley Road, approximately 2.15 miles southeast of the Proposed Project. This viewpoint is representative of the existing landscape views available to residences located in close proximity to the Proposed Project, and includes the existing Suncrest Substation and Sunrise Powerlink 230-kV transmission line structures. This view captures a portion of the scenic adjacent mountains; and the transition zone between the relatively undeveloped mountain, desert, and wilderness open spaces of eastern San Diego County and the urbanized communities of metropolitan San Diego. The landscape visible is predominantly undeveloped and natural appearing, with man-made structures and pockets of development. Views can be open and unobstructed.

- **KOP 16:** This image was taken looking west along Japatul Highlands Road, near a private residence, approximately 0.85 mile south of the Proposed Project. This viewpoint is representative of the existing landscape views available to residences located in close proximity to the Proposed Project. The landscape is predominantly undeveloped and natural appearing, with man-made structures and pockets of development. The existing Sunrise Powerlink 230-kV transmission line and the Suncrest Substation is visible in center of the photograph. Views can be open and unobstructed. Overall viewer sensitivity is high.

- **KOP 17:** This image was taken looking west along Avenida De Los Arboles (Bell Bluff Truck Trail), 1.3 miles east of Proposed Project SVC area. This viewpoint is representative of the existing landscape views available to residences located to the east of the Proposed Project. The landscape is predominantly undeveloped and natural appearing, with the reclaimed coastal sage meadow in the middle ground and undeveloped chaparral covered hills in the background. This portion of Bell Bluff Truck Trail is open to the public and the existing visual quality includes man-made visual contrasts, including the existing Sunrise Powerlink 230-kV transmission line structure which connects to the Suncrest Substation.

Viewer Groups

Viewer groups in the vicinity of the Project site and their sensitivity to visual changes are described below. Viewer groups sensitivity is generally determined based on viewer activity, view duration, viewing distance, adjacent land use, and special management or planning designation. Viewer groups with visual access to the Project site are divided into the

categories of authorized personnel using Bell Bluff Truck Trail, residents and motorists, and recreational visitors.

Authorized Personnel using Bell Bluff Truck Trail

Authorized personnel, including SDG&E employees, utility contractors, and operator and maintenance workers traveling on Bell Bluff Truck Trail would have views of Proposed Project components (KOP 3, KOP 6, KOP 7, and KOP 8). Viewer concern and visual sensitivity are generally low as Bell Bluff Truck Trail is closed to public use (thus, this is considered a private view) and the existing visual quality includes man-made visual contrasts. In general, industrial viewers tend to be focused on their activity and less on the surrounding visual environment. Some private land owners are authorized to access private properties off Bell Bluff Truck Trail; however, again it is assumed viewer sensitivity is low to moderate as views are generally short term, and the existing right of way includes man-made visual contrasts.

Residents and Motorists

Local residents and motorists traveling on Japatul Valley Road, Japatul Lane, and I-8 would have views of Proposed Project components (KOPs 9 through 17). In general, as a viewer group, residents have a heightened sensitivity to the surrounding viewshed because they have high frequency and duration of views, as well as an expectation of a consistent setting. Motorists' views would be temporary and they would have limited expectations of the setting. In general, as a viewer group, motorists in this area would have reduced sensitivity to the surrounding viewshed; however, motorists represent the largest potentially affected view groups for the Proposed Project. Viewer sensitivity would vary since there is a mix of undeveloped lands with moderate-to-high visual quality (such as CNF and private residences and estates) and developed lands with relatively low visual quality (such as I-8, Suncrest Substation, and Japatul Road).

Recreational Visitors

Recreational visitors of natural areas typically have a heightened sensitivity to their surroundings and have an expectation of a consistent setting. Recreational visitors occupying some areas of the Pine Creek Wilderness Area, primarily on peaks with limited access, and visitors hiking to the pinnacle of Bell Bluff, a summit hike accessed from the California Riding and Hiking Trail, have minimal visibility of Proposed Project components. The Proposed Project would not be visible within canyons or along primary trails within the Pine Creek Wilderness Area or the designated California Riding and Hiking Trail. Additionally, the distance is 4 or more miles between these areas of visibility and the Proposed Project. Views of the Proposed Project from each of these recreation areas would not impact skylines, as the topography, vegetation, and distance creates background screening. For additional details surrounding recreational resources within the Proposed Project area, see Chapter 18, *Recreation*.

4.4 Impact Analysis

4.4.1 Methodology

The visual impact analysis evaluates the visual changes that would occur from implementing the Proposed Project using the standards of quality, consistency, and symmetry typically used

for a visual assessment. This assessment is based on a review of maps, site photographs, aerial photographs, Proposed Project-specific technical drawings and visual simulations (which provide a "before" and "after" development illustrating the potential changes that would occur with the implementation of the Proposed Project, see Figures 4-2 through 4-6) provided by NEET West (NEET West 2015). This assessment also focuses on those KOPs discussed above in Section 4.3, "Environmental Setting" (see Attachment B). Analysis of the impacts on existing visual resources from implementing the Proposed Project is based on evaluation of the extent and implications of the visual changes, considering the following factors:

- Specific changes in the visual composition, character, and specifically valued qualities of the affected environment;
- Visual context of the affected environment;
- Extent to which the affected environment contains places or features that have been designated in plans and policies for protection or special consideration; and
- Number of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities affected by actions that would be taken under the Proposed Project.

Visual impacts were compared against the thresholds of significance discussed below. Because NEET West intends to underground the proposed transmission line, the impact analysis below primarily focuses on aboveground Proposed Project components having the largest potential to change the existing visual resources, including construction of the Proposed Project and permanent aboveground Proposed Project components: the SVC and the riser pole structure connecting the underground transmission line to the existing Suncrest Substation. An assessment of visual quality is subjective, and reasonable disagreement can occur as to whether alterations in the visual character of the potentially affected area would be adverse or beneficial.

4.4.2 Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines and professional expertise, it was determined that the Proposed Project would result in a significant impact on aesthetics if it would:

A. Have a substantial adverse effect on a scenic vista;

B. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;

C. Substantially degrade the existing visual character or quality of the site and its surroundings; or

D. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

4.4.3 Environmental Impacts

Impact AES-1: Adverse Effects on Scenic Vistas or Scenic Highways from Project Construction and Operation (No Impact)

The Proposed Project, including both the SVC site and underground transmission alignment, would not be located within any scenic vistas or cross any designated State scenic highways. The nearest State scenic-highway is State Route 78, located approximately 25 miles to the northeast in the Anza Borrego Mountains. The Proposed Project would be marginally visible (e.g., the tops of the lightning masts within the SVC) from I-8 for less than 0.25 mile (KOP 10). While I-8 is eligible for State scenic highway designation, it is unlikely that motorists traveling the speed limit (65 miles per hour [mph]) would notice the Proposed Project through this stretch of highway (estimated to last approximately 16 seconds or less while traveling 65 mph). The Proposed Project would also not be substantially visible from the I-8 scenic view corridor along Sweetwater River or visible from the community of Alpine. Therefore, the Proposed Project would have no impact on scenic vistas or scenic highways.

Impact AES-2: Adverse Effects on the Visual Character or Quality of the Site and its Surroundings from Project Construction (Less than Significant)

During the Proposed Project's construction period (approximately ~~9~~11 months), construction activities, including vegetation removal and the staging of construction materials, equipment, and vehicles would be moderately visible along Bell Bluff Truck Trail (KOPs 3, 6, 7, and 8) to authorized personnel. Visual impacts resulting from construction would be short-term and temporary, and authorized personnel are assumed to have low to moderate levels of viewer sensitivity based on their short-term exposure to the Project, and their assumed level of awareness of facility infrastructure.

Construction-related visual impacts at KOPs 9 through 17, which represent public views, may result from the presence of equipment, materials, and work crews at the SVC site and along the underground transmission line. Residential viewers located along Bell Bluff Truck Trail and Japatul Vista Lane would experience longer duration views and would be more sensitive to visual changes associated with the Proposed Project's construction activities, such as vegetation clearing and construction staging areas. Although construction activities would have a moderate visual impact within the Project area, these impacts would be temporary and limited to the construction period. Temporary disturbance areas would be restored to preconstruction conditions and re-vegetated. Temporary visual impacts from Proposed Project construction activities would be less than significant.

Impact AES-3: Long-term Adverse Effects on the Visual Character or Quality of the Site and its Surroundings during Operation (Less than Significant with Mitigation)

Construction of the Proposed Project would result in above-ground permanent physical changes to the viewshed, including views of the riser pole and the SVC. Private views (i.e., KOP 3, 6, 7, and 8), open to authorized personnel and a small group of landowners with access to the Bell Bluff Truck Trail, would change moderately or even substantially, depending on the viewers' distance from the SVC site and/or the riser pole. However, as previously stated, viewer concern and visual sensitivity are generally low as Bell Bluff Truck Trail is closed to

public use and the existing visual quality includes man-made visual contrasts. As shown in Figure 4-1, the landscape character along Bell Bluff Truck Trail would not change as a result of the Proposed Project, as the 1-mile-long transmission line would be located underground.

Public views (i.e., KOPs 9 through 17), generally the views of local residents and commuter traffic along Japatul Valley Road, Japatul Lane, and I-8, would change moderately; however, due to the topography and distance from the Proposed Project components, mountains would screen most of these views, and generally Proposed Project components would not dominate the viewshed. KOPs 12 through 17 would have views of the Proposed Project permanent aboveground facilities. The SVC, as viewed from KOP 12, would create a visual contrast to the existing landscape and is in an area with high viewer concern and high visual sensitivity (see Figure 4-5). Expansive ranch-style residences have been built to face the hills surrounding the Proposed Project. Though the Proposed Project would be visible to a few residences and would be a contrast to the existing landscape, the range of view for the Proposed Project would not be significantly noticeable among the adjacent natural landscape features and total field of view. A few residences in Japatul Valley, as represented by KOPs 13 through 16 (see Figure 4-6), would have views of the Proposed Project. While residential viewer concerns are typically moderate-to-high, due to the topography and distance, mountains would screen most of these views, with in some cases (KOPs 13 and 15) only the tip of the riser pole within viewshed. Overall visual changes for residences in Japatul Valley would be moderate to low, as at the distance for these views Proposed Project components would not dominate the viewshed. Similarly, KOP 17 is a public view looking west from a residential area on Avenida De Los Arboles (Bell Bluff Truck Trail). At KOP 17, the Proposed Project would modify existing background views; however, overall visual change from KOP 17 would not create a substantial visual contrast or dominant the existing viewshed.

Figures 4-2, 4-3, 4-4, 4-5 and 4-6 depict existing and simulated views from KOPs 6, 8, 9, 12, and 13, respectively. The KOPs selected for these simulations are intended to present a reasonable range of those existing landscape settings where the most sensitive viewers are located, as well as to provide an illustration of how the completed Project might look from specific key viewing locations. Note that the visual simulations are based on conceptual site plans and building structure locations may change and do not show details such as architectural finishes.

Source: NEET West 2015

Figure 4-1
Key Observation Point 3, Existing Conditions

Suncrest Dynamic Reactive Power Support Project

Key Observation Point 6, Existing Conditions

Key Observation Point 6, Simulated View

Figure 4-2
Key Observation Point 6, Existing Conditions and Simulated View

Suncrest Dynamic Reactive Power Support Project

Horizon WATER and ENVIRONMENT

Source: NEET West 2015

Key Observation Point 8, Existing Conditions

Key Observation Point 8, Simulated View

Figure 4-3
Key Observation Point 8, Existing Conditions and Simulated View

Suncrest Dynamic Reactive Power Support Project

Horizon WATER and ENVIRONMENT

Source: NEET West 2015

Key Observation Point 9, Existing Conditions

Key Observation Point 9, Simulated View

Figure 4-4
Key Observation Point 9, Existing Conditions and Simulated View

Horizon WATER and ENVIRONMENT

Source: NEET West 2015

Suncrest Dynamic Reactive Power Support Project

Key Observation Point 12, Existing Conditions

Key Observation Point 12, Simulated View

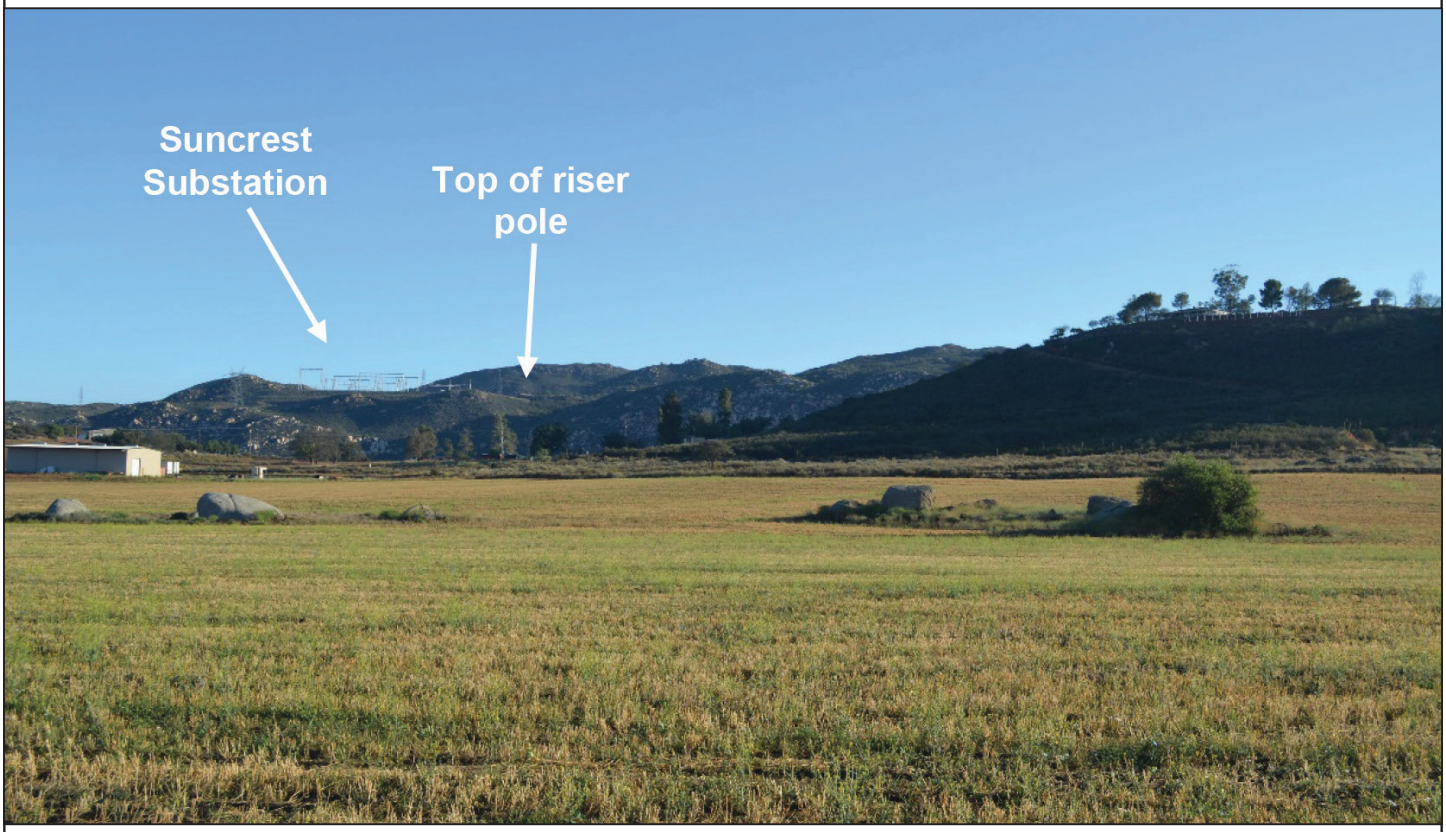
Figure 4-5
Key Observation Point 12, Existing Conditions and Simulated View

Suncrest Dynamic Reactive Power Support Project

Horizon WATER and ENVIRONMENT

Source: NEET West 2015

Key Observation Point 13, Existing Conditions



Key Observation Point 13, Simulated View

Figure 4-6
Key Observation Point 13, Existing Conditions and Simulated View

Horizon WATER and ENVIRONMENT

Source: NEET West 2015

Suncrest Dynamic Reactive Power Support Project

- **KOP 6 (see Figure 4-2):** This image was taken looking east from Bell Bluff Truck Trail towards the area proposed for the SVC location. As depicted in the existing conditions of Figure 4-2, the landscape character is predominantly natural in appearance with a reclaimed California buckwheat scrub meadow, chaparral covered hills, and Bell Bluff Truck Trail. The visual quality is moderate, with a landscape view of undisturbed slopes and a reclaimed meadow. As evident in the simulated view, the visual change of the Proposed Project will contrast substantially with the landscape foreground, middleground, and background views. The Proposed Project's overall visual change from KOP 6 will create high visual contrast and will dominate the view. Bell Bluff Truck Trail is closed to public use (thus, this is considered a private view) and the existing visual quality includes man-made visual contrasts.

- **KOP 8 (see Figure 4-3)**: This image was taken looking west from Bell Bluff Truck Trail towards the area proposed for the SVC location. As depicted in the existing conditions of Figure 4-3, the landscape character is predominantly natural in appearance with coastal sage- and chaparral-covered hills. The simulated view from this vantage point depicts changes to the foreground and middleground views, where the proposed SVC would be located. Background views are largely consistent with existing conditions. The visual quality is low-to-moderate, with a landscape view of relatively undisturbed slopes. Furthermore, as previously indicated, Bell Bluff Truck Trail is closed to public use (thus, this is considered a private view) and the existing visual quality includes man-made visual contrasts.

- **KOP 9 (see Figure 4-4)**: This image was taken looking west from a private viewpoint, and depicts the area proposed for the SVC location. As depicted in Figure 4-4, the existing landscape character is predominantly natural in appearance, with reclaimed California buckwheat scrub meadow and chaparral covered hills; and distant views of Bell Bluff Truck Trail. The visual quality is low-to-moderate, with a landscape view of undisturbed slopes and a reclaimed meadow. Construction of the SVC would make significant changes to the foreground and middleground of the existing viewpoint. Background views are relatively consistent to existing views.

- **KOP 12 (see Figure 4-5)**: This image was taken looking north from a residential area on Japatul Vista Lane. As depicted in the existing conditions of Figure 4-5, the landscape character is natural and developed with rocky ridges and coastal sage meadows. The viewpoint is representative of the nearest private residence. The SVC, as simulated in Figure 4-5, would create a visual contrast to the existing landscape, and since it is an area with high viewer concern and high visual sensitivity, the presence of the SVC would change the current view and result in changes to the visual quality. Views of the SVC would be limited to the middleground; foreground and background views would go unchanged. The height of the SVC's tallest structures, the lightning masts, are within the background of the existing mountains; therefore, there would be no changes to the existing skyline.

- **KOP 13 (see Figure 4-6)**: This image was taken looking north from a residential area on Japatul Lane. As depicted in the existing conditions of Figure 4-6, the landscape character is developed, with agricultural fields interspersed with structures in the foreground, and natural in appearance with chaparral-covered hills and rocky ridges in the middleground and background. The visual quality is moderate, with a landscape view of mountain slopes, agricultural fields, structures, vegetation edges,

and the Suncrest Substation. Viewer concern is moderate-to-high. Few residences in Japatul Valley would have a view of the Proposed Project. Due to topography, only the tip of the riser pole would be visible from KOP 13, and the mountains would screen any view of the SVC. Background views of distant hills and mountaintops would screen the tip of the riser pole, preventing any impacts to the existing skyline.

Mitigation Measure AES-1 would reduce potential impacts related to visual quality and character with adequate design and utilization of select building materials. Visual impacts from the Proposed Project would be less than significant with the proposed mitigation.

Mitigation Measure AES-1: Use Design and Architectural Features on Project Structures to Complement the Surrounding Visual Landscape.

NEET West or their contractor(s) shall implement the following measures to the extent feasible:

- Material and paint colors should be selected that are compatible with the existing colors of the surrounding area (i.e., dull grey, light brown, or dull green) in order to minimize visual contrast.
- Natural materials should be selected that blend with the natural surroundings and avoid the use of large expanses of reflective glazing, aluminum panels, and other materials not normally found in the environment.
- Dulled metal finish transmission structures and non-specular conductors (within the SVC and for the overhead span to interconnect into SDG&E's Suncrest Substation) shall be used for the Proposed Project.
- Non-specular conductors shall be treated to reduce reflectivity and have a smooth matte gray finish that blends unobtrusively with the environment.

Impact AES-4: New Source of Light and Glare (Less than Significant with Mitigation)

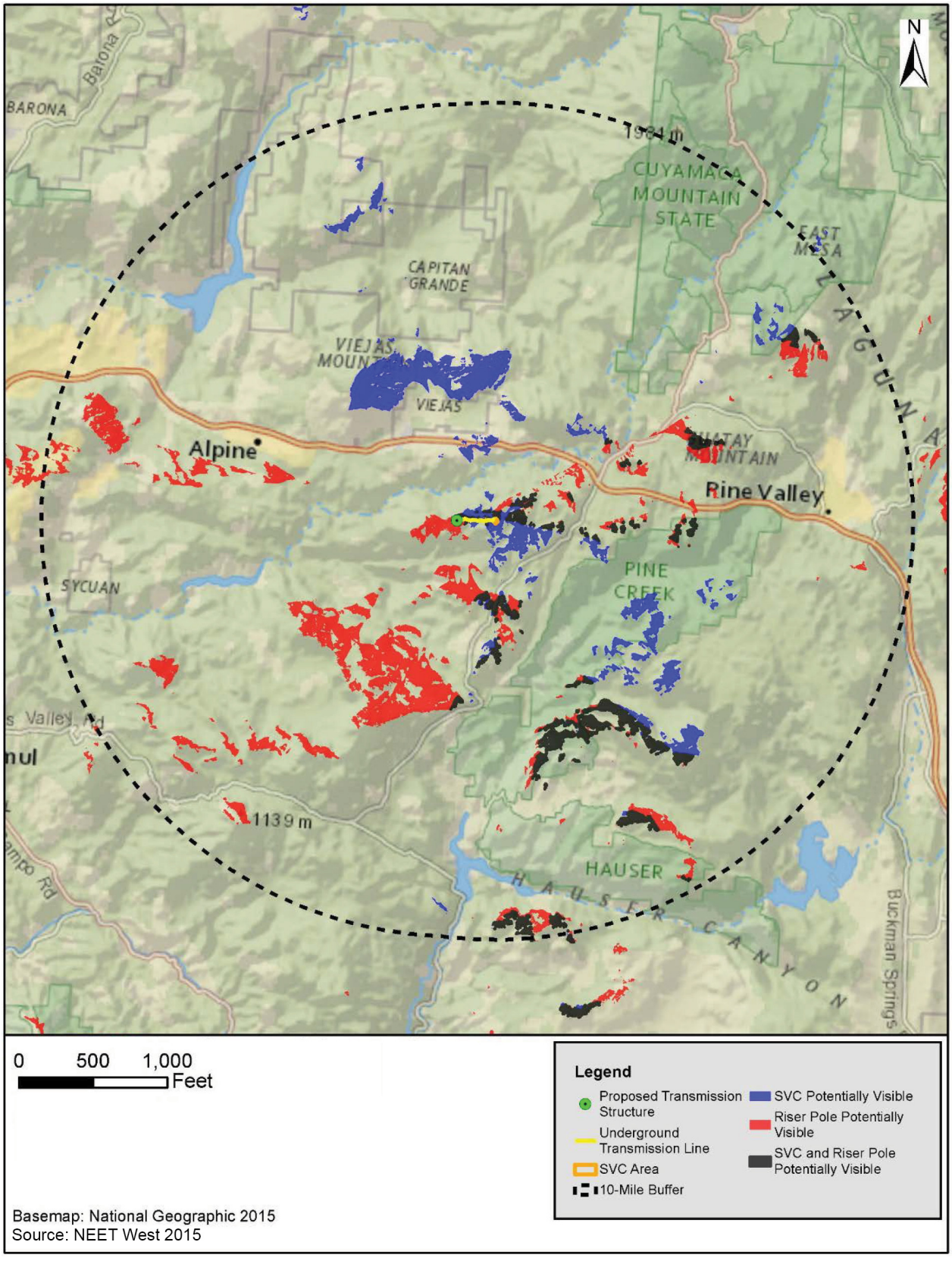
As described above in Section 4.3, E*nvironmental Setting*, construction and operation of the Proposed Project would include the use of nighttime security and safety lighting; including the use of temporary portable lighting for infrequent nighttime construction work, and permanent lighting sources at the SVC. Construction would primarily take place during the daytime; however, when nighttime construction is required, the scope of construction activities would be limited and would be temporary and short term. Permanent energy efficient lighting at the SVC would be shielded and downward facing to reduce impact on nighttime views. The SVC would generally not be visible to the public since the Proposed Project area is topographically screened. Authorized personnel on Bell Bluff Truck Trail may experience minimal glare from the Proposed Project; however, SDG&E employees and contractors or landowners traveling down Bell Bluff Truck Trail would be travelling at limited speeds and would experience the glare short term. Construction work is limited in duration and industrial workers' sensitivity to light is considered low, as described above in Section 4.3, *Environmental Setting, Viewer Groups.* With implementation of **Mitigation Measure AES-2**, lighting would be selectively placed and shielded to minimize the visual effects of the temporary and permanent presence of Project lighting; therefore, visual impacts from the Proposed Project would be less than significant with mitigation.

Mitigation Measure AES-2: Light and Glare Reduction.

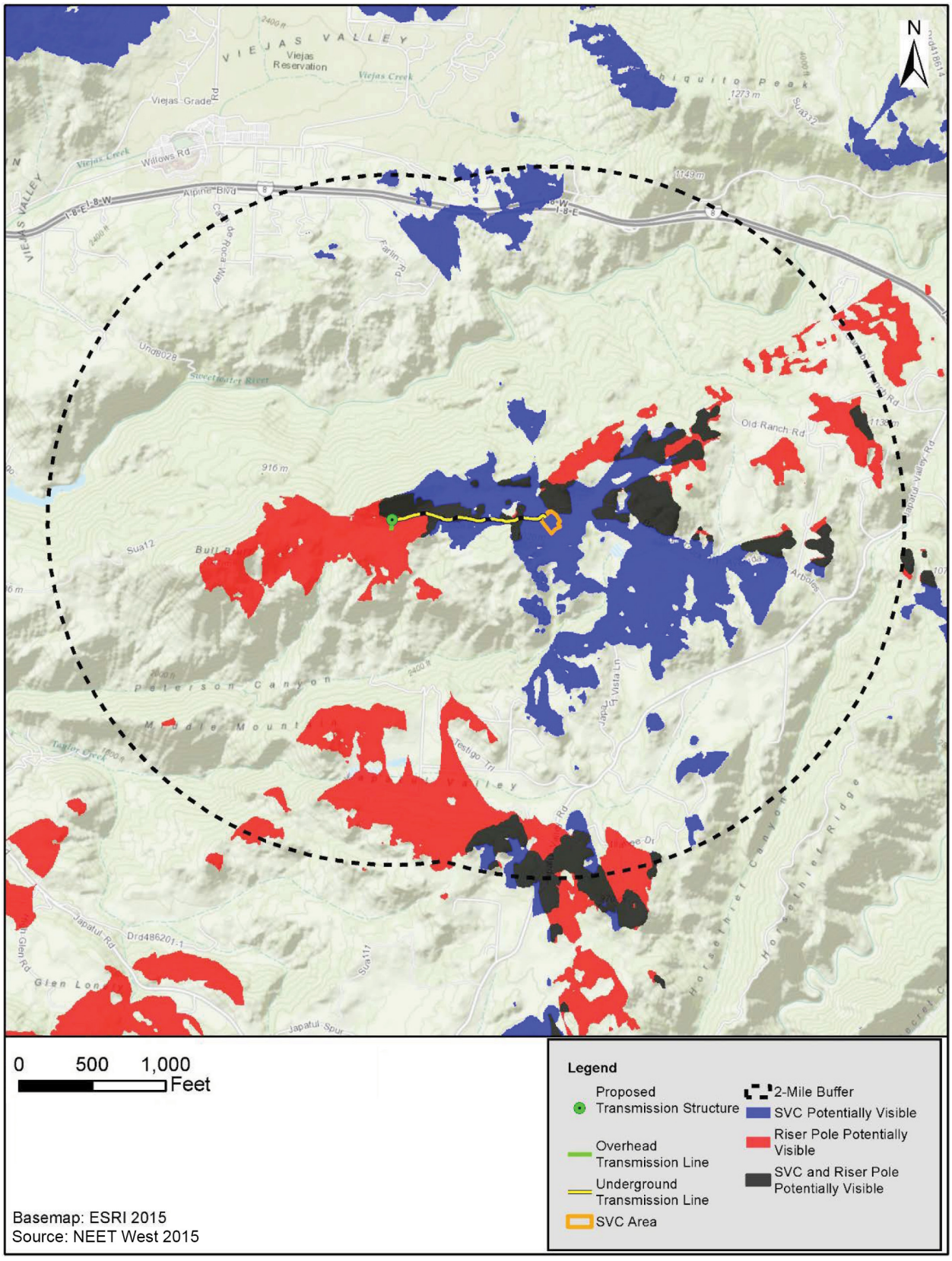
Temporary construction and permanent SVC lighting shall be the lowest illumination allowed for human safety and security, selectively placed, shielded and downward facing to minimize nighttime glare.

Attachment A
Viewshed Delineations

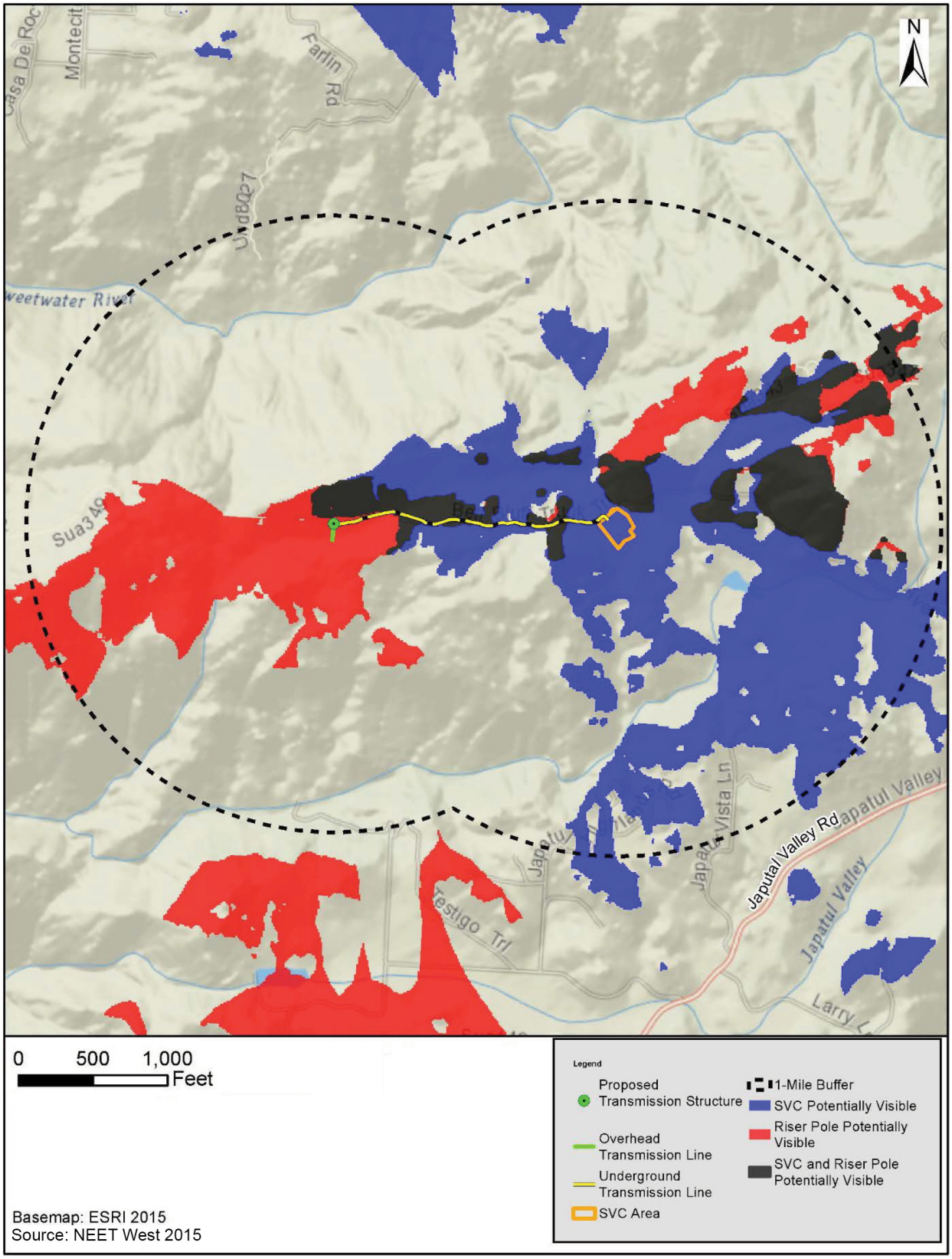
Viewshed Delineation (10 miles)



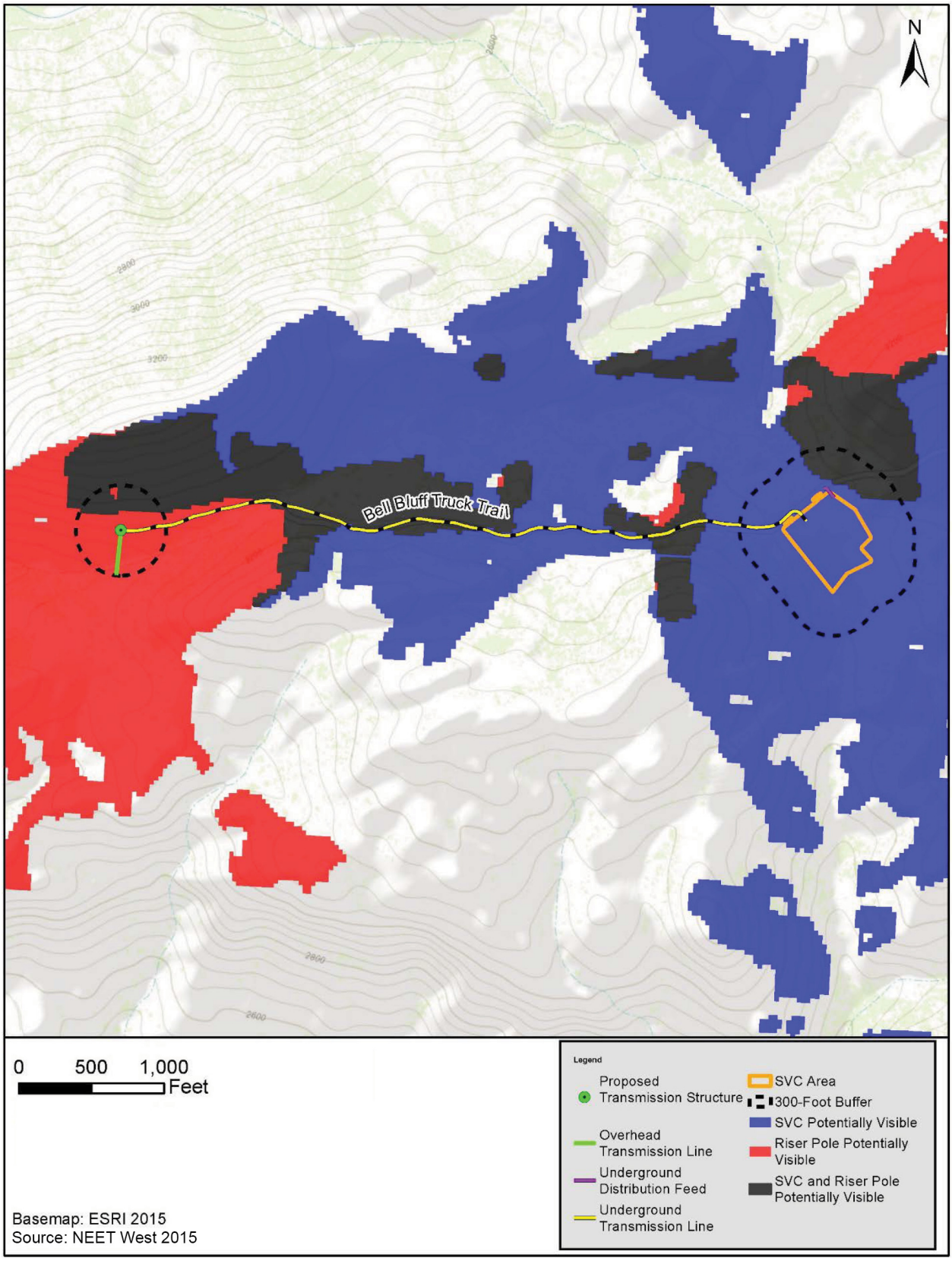
Viewshed Delineation (2 miles)



Viewshed Delineation (1 mile)

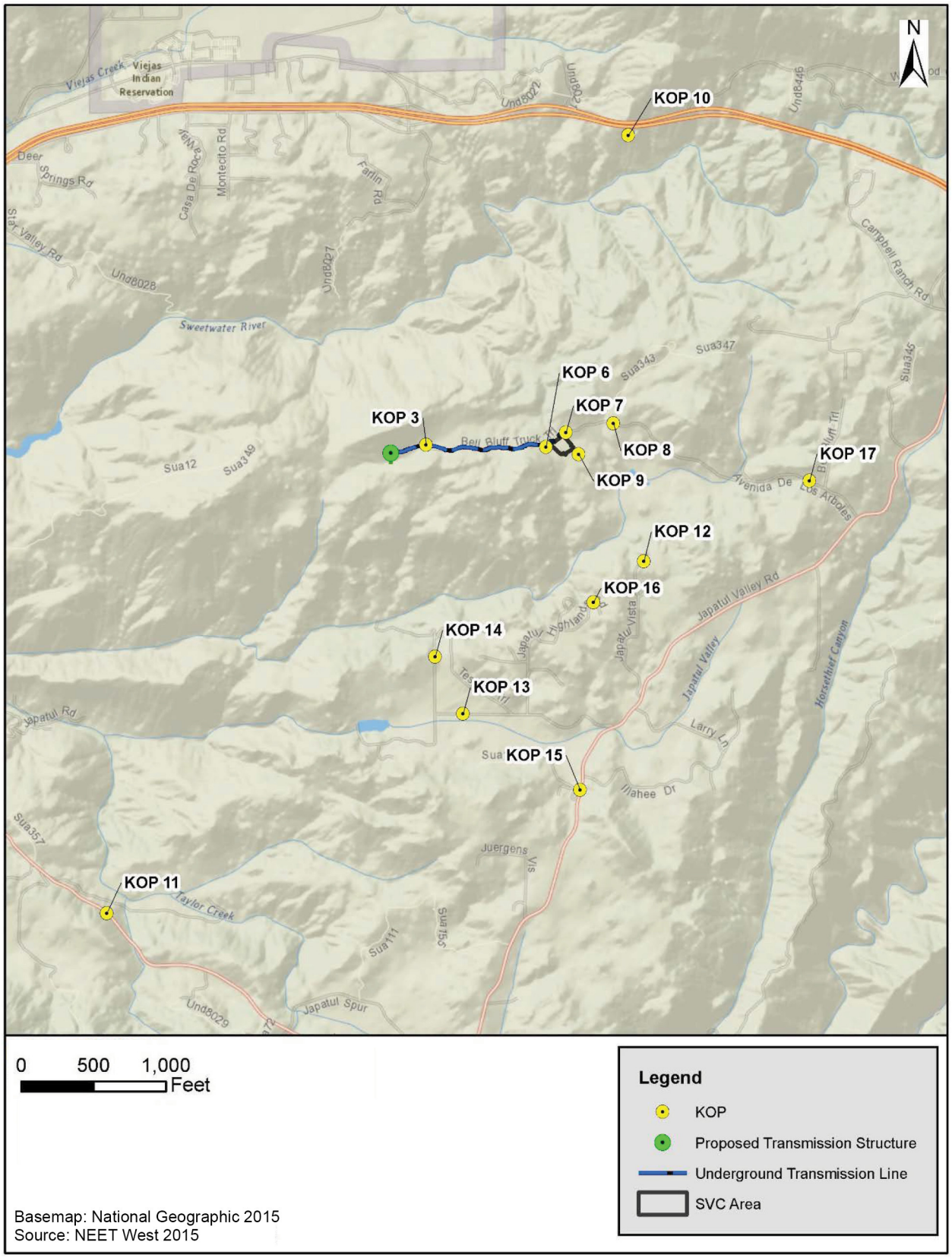


Viewshed Delineation (300 feet)



Attachment B
Key Observation Points

Regional Landscape Context and KOPs



KOP 3. View looking east from Bell Bluff Truck Trail at the entrance to the Suncrest Substation.

KOP 6. View looking east at Bell Bluff Truck Trail and the Wilson Laydown Yard.

Source: NEET West 2015

KOP 7. View along Bell Bluff Truck Trail looking southwest at the Wilson Laydown Yard.

KOP 8. View looking west along Bell Bluff Truck Trail, 0.25 miles northeast of the Wilson Laydown Yard.

Source: NEET West 2015

KOP 9. View looking west at the southeast corner of the Wilson Laydown Yard.

KOP 10. View looking southwest at the eastbound I-8 scenic viewpoint; Sunrise Powerlink 230 kV transmission line towers are visible along the ridges on the right side of photograph.

Source: NEET West 2015

KOP 11. View looking northeast along Japatul Valley Road, 3 miles south of Proposed Project; existing Suncrest Substation is visible along the ridgeline on the left of the photograph.

KOP 12. View looking north from the nearest residence's western property line to the Proposed Project; Wilson Laydown Yard is visible in center of photograph.

Source: NEET West 2015

KOP 13. View looking north along Japatul Lane, showing the Suncrest Substation and Sunrise Powerlink 230 kV transmission line structures.

KOP 14. View looking north along Japatul Lane towards the Suncrest Substation.

Source: NEET West 2015

KOP 15. View looking northwest at the intersection of Vista Esperanza Lane and Japatul Valley Road, showing the existing Suncrest Substation and Sunrise Powerlink 230 kV transmission line structures.

KOP 16. View looking west along Japatul Highlands Road; existing Sunrise Powerlink 230 kV transmission line and the Suncrest Substation visible in center of photograph.

Source: NEET West 2015

KOP 17. View looking west along Avenida de los Arboles (Bell Bluff Truck Trail), 1.3 miles east of Proposed Project SVC area; existing Sunrise Powerlink 230 kV transmission line structure which connects to the Suncrest Substation is visible on the right of photograph.

Source: NEET West 2015

Chapter 5
Agriculture and Forestry

5.1 Overview

This chapter summarizes the environmental and regulatory settings for agriculture and forestry, and describes potential impacts to agriculture and forestry resources that could occur as a result of the Proposed Project.

5.2 Regulatory Setting

5.2.1 Federal Laws, Regulations, and Policies

Cleveland National Forest Land Management Plan

As described in Chapter 2, *Project Description*, and shown in Figure 2-2, the Proposed Project would be located on private property within the administrative boundary of the Cleveland National Forest (CNF). The CNF encompasses 420,877 acres within Orange, Riverside, and San Diego Counties, and is administered by the U.S. Forest Service. While the U.S. Forest Service (USFS) does not have jurisdiction over private property within the CNF's administrative boundary, this analysis considers the USFS's CNF Land Management Plan due to the Proposed Project's close proximity to national forest lands. Grazing and forestry goals and strategies identified in the USFS's *Land Management Plan for the National Forests in Southern California (Part 1)* (U.S. Department of Agriculture [USDA] 2005a) and *Cleveland National Forest Strategy (Part 2)* (USDA 2005b) are ~~including~~ included below for informational purposes.

- **National Strategic Plan Goal 6 – General.** Mission-related work in addition to that which supports the agency goals.
- **National Strategic Plan Goal 6 – Objective 3.** Maintain the environmental, social, and economic benefits of forests and grasslands by reducing their conversion to other uses.
- **CNF Strategy, Livestock Grazing (LG) 1 – Livestock Grazing.** Livestock grazing areas are maintained and remain sustainable and suitable over the long term.
- **CNF Strategy LG 2 – Rangeland Health.** Rangelands are healthy and sustainable over the long term. Rangelands are meeting or moving toward forest plan, ecosystem, and site-specific desired conditions.

5.2.2 State Laws, Regulations, and Policies

Farmland Mapping and Monitoring Program

The California Department of Conservation (CDOC) established the Farmland Mapping and Monitoring Program (FMMP) in 1982, as a non-regulatory program to provide a consistent and impartial analysis of agricultural land use and land use changes throughout California. Creation of the FMMP was supported by the Legislature and a broad coalition of building, business, government, and conservation interests. The first Important Farmland Maps, produced in 1984, covered 30.3 million acres in 38 counties. This is an ongoing data set that collects data every two years to understand changes in agricultural land in the state. Data now spans more than 24 years and has expanded to 49.1 million acres as modern soil surveys have been completed by the United States Department of Agriculture. FMMP now maps agricultural and urban land use for nearly 98 percent of the state's privately held land (CDOC 2015a). FMMP rates and classifies agricultural land according to soil quality, irrigation status, and other criteria. Important Farmland categories are as follows (CDOC 2015b):

Prime Farmland: Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. These lands have the soil quality, growing season, and moisture supply needed to produce sustained high yields. Prime Farmland must have been used for irrigated agricultural production at some time during the 4 years before the FMMP's mapping date.

Farmland of Statewide Importance: Farmland similar to Prime Farmland, but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Farmland of Statewide Importance must have been used for irrigated agricultural production at some time during the 4 years before the FMMP's mapping date.

Unique Farmland: Farmland of lesser quality soils used for the production of the state's leading agricultural crops. These lands are usually irrigated but might include non-irrigated orchards or vineyards, as found in some climatic zones. Unique Farmland must have been cropped at some time during the 4 years before the FMMP's mapping date.

Farmland of Local Importance: Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

California Land Conservation Act of 1965 (Williamson Act)

The California Land Conservation Act of 1965 (commonly referred to as the Williamson Act) allows local governments to enter into contracts with private landowners for the purpose of preventing conversion of agricultural land to non-agricultural uses. In exchange for restricting their property to agricultural or related open space use, landowners who enroll in Williamson Act contracts receive property tax assessments that are substantially lower than the market rate.

5.2.3 Local Laws, Regulations, and Policies

The California Public Utilities Commission (CPUC) has exclusive jurisdiction over the siting and design of electric transmission facilities. Therefore, it is exempt from local land use and

zoning regulations. However, CPUC General Order (G.O.) 131-D states that in locating electric transmission facilities, the public utilities shall consult with the local agencies regarding land use matters. CPUC and NextEra Energy Transmission West, LLC (NEET West) have been in contact with applicable local agencies for the Proposed Project, and local laws and regulations are presented here for consideration of potential impacts related to hydrology and water quality.

San Diego County General Plan

The Proposed Project site is located within unincorporated San Diego County and is therefore included within the County of San Diego General Plan (General Plan). The General Plan serves to prevent agricultural land use conflicts, preserve agricultural resources, and support the long-term presence and viability of agricultural industry as an important component of the region's economy and open space linkage. The General Plan contains the following relevant policies to agricultural and forestry resources and the Proposed Project (San Diego County 2011a):

- **Goal LU-2 – Maintenance of the County's Rural Character.** Conservation and enhancement of the unincorporated County's varied communities, rural setting, and character.

- **Policy LU-5.3 – Rural Land Preservation.** Ensure the preservation of existing open space and rural areas (e.g., forested areas, agricultural lands, wildlife habitat and corridors, wetlands, watersheds, and groundwater recharge areas) when permitting development under the Rural and Semi-Rural Land Use Designations.

- **Policy LU-7.1 – Agricultural Land Development**. Protect agricultural lands with lower density land use designations that support continued agricultural operations.

- **Policy COS-6.2 – Protection of Agricultural Operations.** Protect existing agricultural operations from encroachment of incompatible land uses.

- **Policy COS-6.4 – Conservation Easements.** Support the acquisition or voluntary dedication of agriculture conservation easements and programs that preserve agricultural lands.

Alpine Community Plan

The Alpine Community Plan is a subcomponent of the General Plan. The Alpine Community Plan implements the goals and policies of the County General Plan for the Alpine area. The Alpine Community Plan contains the following relevant policies to agricultural and forestry resources and the Proposed Project (San Diego County 2011b):

- **Policy 1**. It is intended that agricultural zones be used to implement the Semi-Rural and Rural Land Use Designations to ensure continuation of agricultural uses.

- **Policy 5**. Encourage the formation of Agricultural Preserves in areas with active agricultural operations and in locations that will be optimal for future production of food and fibers.

5.3 Environmental Setting

As described in Chapter 13, *Land Use and Planning*, the Proposed Project is located within lands that are zoned for crop and animal agricultural use (A72). Existing land uses in the vicinity of the Proposed Project include undeveloped/rural, utility/electric transmission infrastructure, and low-density residential. While the Project area and portions of the Project site may have been used for livestock grazing in the past, currently there does not appear to be any agricultural or grazing activity in the area. Based on a review of the CDOC's Important Farmland Finder, no portion of the Static VAR compensator (SVC) site and land traversed by the proposed transmission line is located on Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. Similarly, no lands under Williamson Act contract are located within the Proposed Project area (CDOC 2014a and 2014b). Figure 2-2 in Chapter 2, *Project Description,* shows the extent of the CNF and the Proposed Project's location within the CNF's administrative boundary. The Proposed Project is not zoned for forest land, timberland, or timberland zoned for Timberland Production.

5.4 Impact Analysis

5.4.1 Methodology

The analysis of agriculture and forestry resource impacts was qualitative in nature and involved comparing aspects of the Proposed Project to the significance criteria described below. The plans, policies, and regulations described in Section 5.2, "Regulatory Setting," above, as well as existing land uses and mitigation obligations described in Section 5.3, "Environmental Setting," were considered in the impacts analysis.

5.4.2 Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines and professional expertise, it was determined that the Proposed Project would result in a significant impact on agriculture and forestry resources ~~aesthetics~~ if it would:

A. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to nonagricultural use;

B. Conflict with existing zoning for agricultural use, or a Williamson Act contract;

C. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g]);

D. Result in the loss of forest land or conversion of forest land to non-forest use in a manner that will significantly affect timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, or other public benefits, or

E. Involve other changes in the existing environment that, because of their location or nature, could result in a conversion of Farmland to a nonagricultural use.

5.4.3 Environmental Impacts

Impact AGR-1: Conversion of Farmland to Nonagricultural Uses (No Impact)

The Proposed Project is not located in any areas that are designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the FMMP. Therefore, no impact would occur.

Impact AGR-2: Conflict with Existing Zoning for Agricultural Use or Williamson Act Contract (Less than Significant)

Federal and State Plans, Policies, and Regulations

As noted in Section 5.2, "Regulatory Setting," the Proposed Project would be located on private property and therefore would not be subject to USFS jurisdiction. However, this analysis considers the CNF Land Management Plan because the Project site would be located within the administrative boundary of the CNF and in relatively close proximity to CNF lands. As described in Chapter 2, *Project Description,* to construct the SVC, NEET West would acquire a 6-acre portion of APN 523-040-080 in fee title. The Proposed Project would appear to conflict with the CNF Land Management Plan Strategy LG-1 (shown in Section 5.2 above), which is intended to maintain livestock grazing areas, because it would develop an area that has been used for animal grazing; however, although portions of the Project site may have been used for livestock grazing in the past, currently there does not appear to be any grazing activity. Furthermore, the construction, operation, and maintenance of the Proposed Project would not discourage future agricultural uses within the area, as grazing and farming could occur around the SVC without it conflicting with agricultural operations. The underground transmission line would have no land use conflicts as it would be placed under an existing roadway.

Local Plans, Policies, and Regulations

As described in the "Regulatory Setting" above, the CPUC has exclusive jurisdiction over the siting and design of electric transmission facilities, and therefore is not subject to local land use plans, policies, or regulations; however, local plans are considered in this final environmental impact report (FEIR) pursuant to G.O. 131-D. The Proposed Project would appear to conflict with the County of San Diego General Plan Goal LU-2 and Policies LU-5.3, LU-7.1, and COS-6.2 (shown in Section 5.2 above), and the goals and policies in the Alpine Community Plan, which relate to preservation of the County's rural character and rural lands. As described in Chapter 13, *Land Use and Planning*, however, the Proposed Project would be permissible under the County's zoning ordinance, which is designed to implement the General Plan. While the Project site is zoned for agricultural use (A72), minor and major impact utilities are allowable in the A72 zoning district with issuance of a minor or major use permit. For further information on land use and planning regulatory setting and impacts, see Chapter 13, *Land Use and Planning*.

Williamson Act Contract

The Proposed Project is not located in any areas that are under a Williamson Act contract. Therefore, there would be no conflicts with Williamson Act contracts, and no impact would occur.

Impact AGR-3: Conversion of Forest Land to Non-Forest Land, or Conflict with Existing Zoning, Cause Rezoning of, Forest Land, Timberland, or Timberland Zoned Timberland Production (No Impact)

The Proposed Project is not located in any areas zoned for forest land, timberland, or timberland zoned for Timberland Production. Therefore, no impact would occur.

Chapter 6
Air Quality

6.1 Overview

This chapter evaluates the Proposed Project's air quality impacts. The chapter first describes the air quality regulatory and environmental settings and then evaluates the project's air quality impacts. The impact evaluation begins by describing the air quality significance criteria and the methodology used to evaluate significance, and then presents the impact evaluation. Mitigation measures are identified for impacts that are determined to be significant.

6.2 Regulatory Setting

6.2.1 Laws, Regulations, and Policies

Sources of air pollutant emissions in the San Diego Air Basin are regulated by the United States Environmental Protection Agency (USEPA), California Air Resources Board (CARB), and San Diego Air Pollution Control District (SDAPCD). In addition, the County of San Diego has adopted air quality policies in its General Plan, and has published California Environmental Quality Act (CEQA) Guidelines and significance criteria for air quality impact analyses. The role of each regulatory agency is discussed below.

Federal

Federal Clean Air Act

The federal Clean Air Act (CAA) of 1970 and its subsequent amendments form the basis for the nation's air pollution control effort. The USEPA is responsible for implementing most aspects of the CAA. Basic elements of the act include the establishment of National Ambient Air Quality Standards (NAAQS) for criteria air pollutants (see Table 6-2 shown below in the Environmental Setting discussion), hazardous air pollutant standards, attainment plans, motor vehicle emission standards, stationary source emission standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The CAA allows delegation of the enforcement of many of the federal air quality regulations to the states. In California, the CARB is responsible for enforcing air pollution regulations. In San Diego County, the SDAPCD has this responsibility. In addition, the SDAPCD and the CARB are the responsible agencies for providing attainment plans and meeting attainment with the NAAQS; and the USEPA reviews and approves these plans and regulations, which are designed to attain and maintain attainment with the NAAQS.

Specific federal regulations that are applicable to the Proposed Project, either directly or indirectly, and that are enforced by federal agencies are listed below.

Emission Standards for Non-Road Diesel Engines

The USEPA has established a series of cleaner emission standards for new off-road diesel engines culminating in the Tier 4 Final Rule of June 2004 (USEPA 2004a). The Tier 1, Tier 2, Tier 3, and Tier 4 standards require compliance with progressively more stringent emission standards. Tier 1 standards were phased in from 1996 to 2000 (year of manufacture), depending on the engine horsepower category. Tier 2 standards were phased in from 2001 to 2006, and the Tier 3 standards were phased in from 2006 to 2008.

The Tier 4 standards complement the latest 2007 and later on-road heavy-duty engine standards by requiring 90 percent reductions in diesel particulate matter (DPM) and nitrogen oxides (NO_X) when compared against current emission levels. The Tier 4 standards are currently being phased in starting with smaller engines in 2008 until all but the very largest diesel engines meet NO_X and particulate matter (PM) standards in 2015.

Non-Road Diesel Fuel Rule

In May 2004, the USEPA set sulfur limits for non-road diesel fuel. Under this rule, sulfur levels in non-road diesel fuel would be limited to 500 parts per million (ppm) starting in 2007 and 15 ppm starting in 2010 (USEPA 2004b), at which time it would be equivalent to sulfur content restrictions of the California Diesel Fuel Regulations (described below).

Emission Standards for On-Road Trucks

To reduce emissions from on-road, heavy-duty diesel trucks, the USEPA established a series of cleaner emission standards for new engines, starting in 1988. These emission standards regulations have been revised over time. The latest effective regulation, the 2007 Heavy-Duty Highway Rule, provides for reductions in PM, NO_X, and non-methane hydrocarbon emissions that were phased in during the model years 2007 through 2010 (USEPA 2000).

State

California Clean Air Act

In California, the CARB is designated as the responsible agency for all air quality regulations. The CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for implementing the requirements of the federal CAA, regulating emissions from motor vehicles and consumer products, and implementing the California Clean Air Act of 1988 (CCAA). The CCAA outlines a program to attain the California Ambient Air Quality Standards (CAAQS) for ozone, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and carbon monoxide (CO) by the earliest practical date. Since the CAAQS are often more stringent than the NAAQS, attainment of the CAAQS will require more emission reductions than what is required to demonstrate attainment of the NAAQS. Similar to the federal requirements, the State requirements and compliance dates are based on the severity of the ambient air quality standard violation within a region. Additional information regarding the CAAQS are provided in Table 6-2, presented below in the Environmental Setting discussion.

Other CARB regulations promulgated under the authority of the CCAA that are relevant, directly or indirectly, to the Proposed Project are as follows:

California Diesel Risk Reduction Plan

CARB has adopted several regulations that are meant to reduce the health risk associated with on- and off-road and stationary diesel engine operation. This plan recommends many control measures with the goal of an 85 percent reduction in DPM emissions by 2020. The regulations noted below, which may also serve to significantly reduce other pollutant emissions, are all part of this risk reduction plan.

Emission Standards for On-Road and Off-Road Diesel Engines

Similar to the USEPA's regulations for on-road and off-road emissions described above, the CARB has established emission standards for new on-road and off-road diesel engines. These regulations have model year based emissions standards for NO_X, hydrocarbons, CO, and PM.

In-Use Off-Road Vehicle Regulation

The State has also enacted a regulation for the reduction of DPM and criteria pollutant emissions from in-use off-road diesel-fueled vehicles (Cal. Code Regs., tit. 13, Article 4.8, Chapter 9, Section 2449). This regulation provides target emission rates for PM and NO_x emissions from owners of fleets of diesel-fueled off-road vehicles, and applies to off-road equipment fleets of three specific sizes, as follows:

- Small Fleet – Fleet or municipality with equipment totaling less than or equal to 2,500 horsepower (hp), or municipal fleet in lower population area, captive attainment fleet, or non-profit training center regardless of horsepower.
- Medium Fleet – Fleet with equipment totaling 2,501 to 5,000 hp.
- Large Fleet – Fleet with equipment totaling more than 5,000 hp, or all state and federal government fleets regardless of total hp.

The target emission rates for these fleets are reduced over time. Specific regulation requirements include:

- Limit on idling, requiring a written idling policy, and disclosure when selling vehicles;
- Require all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled;
- Restrict the adding of older vehicles into fleets starting on January 1, 2014; and
- Require fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). (CARB 2014)

The construction contractor(s) who complete the construction activities for the Proposed Project, including the Applicant if they use their own off-road equipment fleet, would have to comply with the requirements of this regulation.

Heavy Duty Diesel Truck Idling Regulation

This CARB rule became effective February 1, 2005, and prohibits heavy-duty diesel trucks from idling for longer than five minutes at a time, unless they are queuing and provided the queue is located beyond 100 feet from any homes or schools (CARB 2006).

California Diesel Fuel Regulations

In 2004, the CARB set limits on the sulfur content of diesel fuel sold in California for use in on-road and off-road motor vehicles (Cal. Code Regs., tit. 13, §§ 2281-2285 and Cal. Code Regs., tit. 17, § 93114). Under this rule, sulfur content of diesel fuel was limited to 15 ppm starting in June 2006 (CARB 2004).

Statewide Portable Equipment Registration Program (PERP)

The PERP establishes a uniform program to regulate portable engines and portable engine-driven equipment units (CARB 2005). Once registered in the PERP, engines and equipment units may operate throughout California without the need to obtain individual permits from local air districts, as long as the equipment is located at a single location for no more than 12 months.

Local

San Diego County Air Pollution Control District

The SDAPCD is responsible for planning, implementing, and enforcing federal and State ambient standards within San Diego County. As part of its planning responsibilities, SDAPCD prepares Air Quality Management Plans and Attainment Plans as necessary based on the attainment status of the air basins within its jurisdiction. The SDAPCD also is responsible for permitting and controlling stationary source criteria and air toxic pollutants as delegated by the USEPA. The SDAPCD has developed the following federal and State attainment planning documents (SDAPCD 2016a):

- Eight-Hour Ozone Attainment Plan (federal 8-hour ozone attainment plan).
- Air Resources Board's Proposed State Strategy for California's 2007 State Implementation Plan (federal 8-hour ozone attainment plan).
- Ozone Redesignation Request and Maintenance Plan (federal 1-hour ozone maintenance plan).
- 2004 Revision to the California State Implementation Plan for Carbon Monoxide (federal CO maintenance plan).
- 2004 Triennial Revision of the Regional Air Quality Strategy for San Diego County (State ozone attainment plan).
- Measures to Reduce Particulate Matter in San Diego County (Health and Safety Code 39614)

- Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County.
- 2009 Regional Air Quality Strategy Revision.

Through the attainment planning process, the SDAPCD develops the SDAPCD's Rules and Regulations to regulate sources of air pollution in San Diego County (SDAPCD 2016b). The SDAPCD rules that may be applicable to the Proposed Project are identified below.

SDAPCD Rule 50 – Visible Emissions

This rule prohibits discharge of air contaminants or other material that are as dark or darker in shade as that designated No. 1 on the Ringelmann Chart or that obscure an observer's view.

SDAPCD Rule 51 – Nuisance

This rule prohibits discharge of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any such persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property.

SDAPCD Rule 55 – Fugitive Dust Control

The purpose of this rule is to control the amount of PM entrained in the atmosphere from man-made sources of fugitive dust. The rule limits visible dust opacity and visible dust plumes beyond property lines, and requires control of track-out onto paved roads.

SDAPCD Rule 67.0 – Architectural Coatings

Architectural coating Rule 1113 that limits the volatile organic compound (VOC) content of paints applied to various surfaces that would be applicable to any construction painting operation.

SDAPCD Regulation II – Permits

The rules under this regulation require the permitting of stationary sources, require new emission sources use best available control technology to control criteria pollutant emissions, and require offsetting of emissions if permitted emissions would exceed designated thresholds. There is the potential that portable internal combustion engines being used during Project construction would require permits from SDAPCD if they are not permitted under the CARB PERP program.

County of San Diego

The County of San Diego has adopted a General Plan that includes air quality related goals and policies (County of San Diego 2011). There are a number of air quality goals noted in the general plan, including the use of sustainable technology and products and encouraging contractors to use low-emission construction vehicles and equipment. There also is a subregional plan for the Central Mountain area which has several general policies and goals that seek to minimize the air quality impacts from new commercial, industrial, and private and public residential treatment centers (County of San Diego 2015).

The County of San Diego also has developed CEQA guidance documents that provide report format and content requirements and significance thresholds for air quality analysis (County of San Diego 2007a, 2007b). These documents have been used to establish the significance criteria used to evaluate Proposed Project impacts.

6.3 Environmental Setting

6.3.1 Regional Climate and Meteorology

The Proposed Project is located in the Cuyamaca Mountains, within the Mountain Empire area of southeastern San Diego County. The Project site is within the San Diego Air Basin and under the jurisdiction of the SDAPCD. Table 6-1 presents a monthly climate summary for the nearby community of Descanso.

Table 6-1. Descanso Monthly Average Temperatures and Precipitation

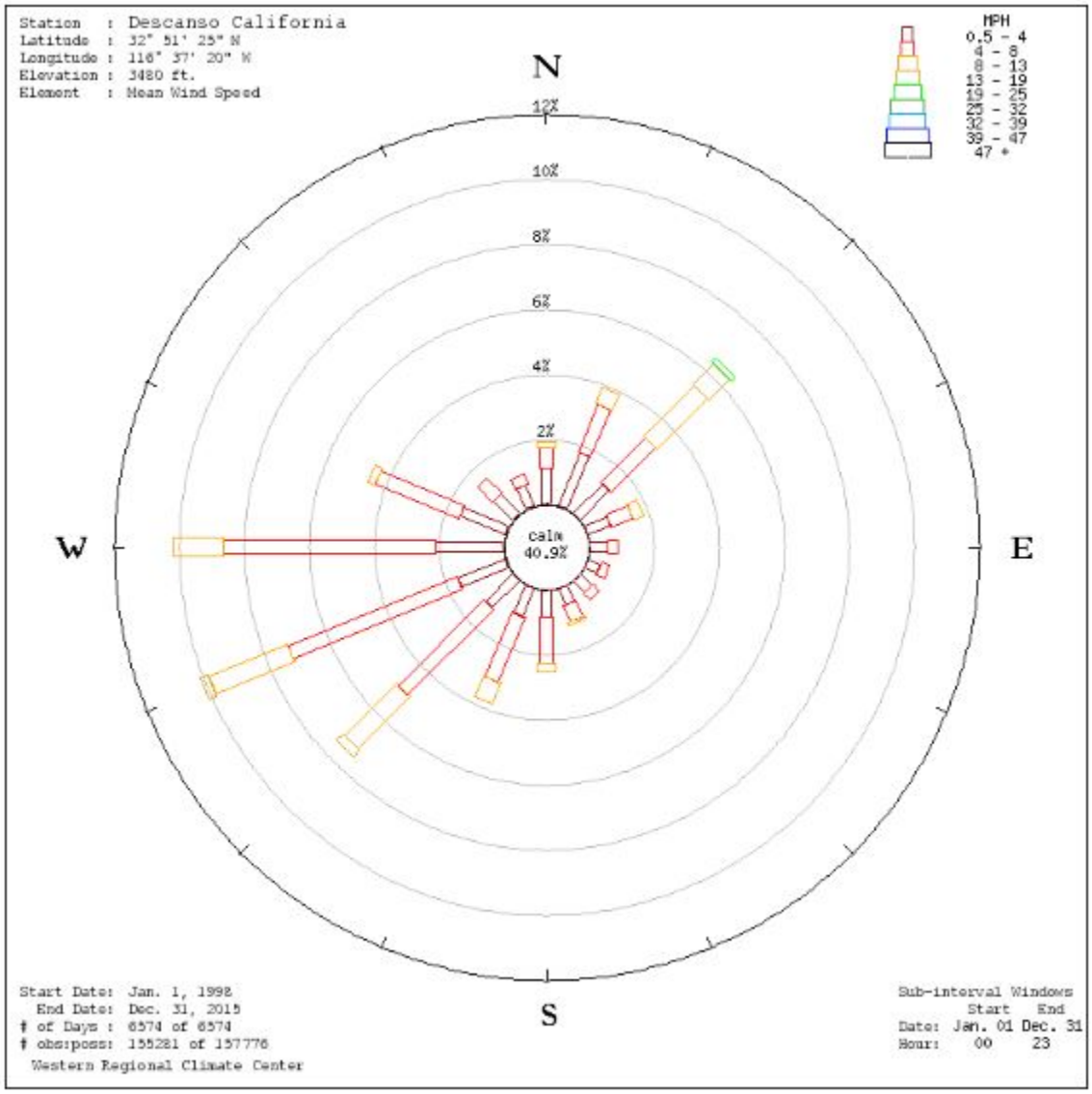
Month	Temperature (°F)		Precipitation
	High	Low	
January	60	30	5.74
February	62	32	5.56
March	64	35	5.85
April	69	38	1.78
May	75	42	0.65
June	85	46	0.16
July	92	52	0.40
August	93	53	0.65
September	88	48	0.67
October	79	39	0.90
November	68	32	2.36
December	61	28	3.19

Source: Intellicast, 2016.

The Project area experiences cool winters and warm summers, with significant drops in overnight temperatures that are influenced by the Project site's elevation, which is approximately 3,000 feet above sea level. As shown in Table 6-2, average summer (June to September) high and low temperatures in the study area range from 93 degrees Fahrenheit (°F) to 46°F. Average winter (December to March) high and low temperatures range from 64°F to 28°F. The average annual precipitation is approximately 28 inches, and small amounts of snow can fall in the winter, with over 85 percent of the annual precipitation occurring between November and April. Summer precipitation is higher than in San Diego County coastal locations due to a greater influence from the Southwest summer monsoon season. Regardless, the months of May through October still all average less than an inch of rain. Little precipitation occurs in Southern California during summer because high-pressure cells block migrating storm systems over the eastern Pacific.

As depicted in Figure 6-1 using a wind rose for the nearby Descanso Western Regional Climate Center meteorological station, the typical wind speeds and directions for the Project area, show a weak predominant onshore flow from the west and west southwest and another weak offshore flow from the northeast, and a very large number of calm wind hours. This wind rose is based on data gathered between 1998 through 2015.

Figure 6-1. Windrose from Descanso (1998-2015)



Source: Western Regional Climate Center, 2016.

Air Pollutants and Monitoring Data

Air pollutants are defined as two general types: (1) "criteria" pollutants, representing six pollutants for which national and state health- and welfare-based ambient air quality standards have been established; and (2) toxic air contaminants (TACs), which may lead to serious illness or increased mortality even when present at relatively low concentrations. An additional potential air quality-related concern is Valley Fever.

Criteria Pollutants

USEPA, CARB, and the local air districts classify an area as either attainment, unclassified, or nonattainment, depending on whether the monitored ambient air quality data shows compliance, insufficient data available, or non-compliance with the ambient air quality

standards (AAQS), respectively. The NAAQS and CAAQS relevant to the Project are provided in Table 6-2.

Table 6-2. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	Health Effects
Ozone (O_3)	1-hour	0.09 ppm	--	Breathing difficulties, lung tissue damage
	8-hour	0.070 ppm	0.075 ppm	
Respirable particulate matter (PM_{10})	24-hour	50 µg/m^3	150 µg/m^3	Increased respiratory disease, lung damage, cancer, premature death
	Annual	20 µg/m^3	--	
Fine particulate matter ($PM_{2.5}$)	24-hour [a]	--	35 µg/m^3	Increased respiratory disease, lung damage, cancer, premature death
	Annual [b]	12 µg/m^3	12 µg/m^3	
Carbon monoxide (CO)	1-hour	20 ppm	35 ppm	Chest pain in heart patients, headaches, reduced mental alertness
	8-hour	9.0 ppm	9 ppm	
Nitrogen dioxide (NO_2)	1-hour	0.18 ppm	0.100 ppm [3]	Lung irritation and damage
	Annual	0.030 ppm	0.053 ppm	
Sulfur dioxide (SO_2)	1-hour	0.25 ppm	0.075 ppm [c]	Increases lung disease and breathing problems for asthmatics
	3-hour	--	0.5 ppm	
	24-hour	0.04 ppm	--	

Sources: CARB 2001, 2016a.

Notes:

ppm = parts per million; µg/m^3 = micrograms per cubic meter; "--" = no standards

(a) The federal 24-hour $PM_{2.5}$ standard is based on the 98th percentile of maximum daily monitored values.

(b) The federal standard shown is the primary standard, the secondary standard is 15 µg/m^3.

(c) The new federal 1-hour NO_2 and SO_2 standards are based on the 98th and 99th percentile of daily hourly maximum values, respectively.

Table 6-3 summarizes the federal and State attainment status of criteria pollutants for the San Diego Air Basin based on the NAAQS and CAAQS, respectively. For simplification, the attainment status, is noted as attainment in the table if it has been identified as unclassifiable/attainment or some similar status that is not either nonattainment or attainment/maintenance.

Table 6-3. Attainment Status for the San Diego Air Basin

Pollutant	Attainment Status	
	Federal	State
O_3	Nonattainment	Nonattainment
PM_{10}	Attainment	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment

Sources: CARB 2016b; USEPA, 2016.

Table 6-4 summarizes the historical air quality data for the Project area collected at the nearest representative air quality monitoring station in San Diego County. The air monitoring station used to provide ozone, $PM_{2.5}$, and NO_2 concentrations is located at the Alpine-Victoria Avenue monitoring station in Alpine, which is located approximately six miles west northwest of the Project area. This inland monitoring station is the most representative of the Project area. PM_{10} concentrations listed in the table are from the El Cajon-Redwood Avenue and El Cajon-Floyd Smith Drive monitoring stations. The El Cajon monitoring station location was moved to the current Floyd Smith Drive location in 2014 resulting in insufficient data for 2014. Sulfur dioxide and carbon monoxide monitoring have been discontinued within San Diego County. Table 6-4 presents the maximum pollutant levels measured from the most representative monitoring stations from 2013 through 2015.

Table 6-4. Background Ambient Air Quality Data

Pollutant	Averaging Time	Maximum Concentration (ppm or µg/m³) [a]		
		2013	2014	2015
O_3	1-hour	0.095	0.092	0.097
	8-hour	0.083	0.082	0.085
PM_{10}	24-hour	41.1	—	50.3
	Annual	24.1	—	22.3
$PM_{2.5}$	24-hour 98th Percentile	20.1	17.4	—
	Annual	7.9	8.1	—
NO_2	1-hour	0.040	0.030	0.048
	1-hour 98th Percentile	0.026	0.025	0.026
	Annual	0.006	0.005	0.006

Source: CARB 2016c.

Notes:

ppm = parts per million; µg/m^3 = micrograms per cubic meter; "—" = no data or insufficient annual coverage currently available.

(a) Gaseous pollutant (ozone, SO_2, and NO_2) concentrations are shown in ppm and particulate (PM_{10} and $PM_{2.5}$) concentrations are shown in µg/m^3. The values provided may depict either "state" or "federal" maximum values depending on the AAQS that is applicable, or to provide complete data where otherwise missing the "state" or "federal" values.

The ambient air quality data indicate that in the three years of data shown, the local Project area had experienced exceedances of the State and federal ozone standards and the state PM_{10} standards, but experienced no exceedances of the federal PM_{10}, or federal or State $PM_{2.5}$ and NO_2 standards.

Toxic Air Contaminants

TACs are compounds that are known or suspected to cause adverse long-term (cancer and chronic) and/or short-term (acute) health effects. The Health and Safety Code defines a TAC as an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another's. There are almost 200 compounds designated in California regulations as TACs (Cal. Code of Regs., tit. 17, §§ 93000-93001). The list of TACs also includes the substances defined in federal statute as hazardous air pollutants pursuant to Section 112(b) of the federal CAA (42 U.S. Code § 7412(b)). Some of the TACs are groups of compounds which contain many individual substances (e.g., copper compounds, polycyclic aromatic compounds). TACs are emitted from mobile sources, including diesel engines; industrial processes and stationary sources, such as dry cleaners, gasoline stations, paint and solvent operations, and stationary fossil fuel-burning combustion. Ambient TACs concentrations tend to be highest in urbanized and industrial areas near major TACs emissions sources or near major mobile TACs emissions sources, such as heavily traveled highways or major airports/seaports. Unlike for criteria pollutants, regular monitoring and reporting of all ambient TACs concentrations, such as DPM concentrations, is not performed in San Diego County. Generally, TACs do not have ambient air quality standards. The three TACs that do have State ambient air quality standards (lead, vinyl chloride, and hydrogen sulfide) are pollutants that are in attainment of the State standards in San Diego County and that are not relevant to the air pollutant emissions sources for this Project.

Valley Fever

Coccidioidomycosis, often referred to as San Joaquin Valley Fever or Valley Fever, is one of the most studied and oldest known fungal infections. Valley Fever varies with the season and most commonly affects people who live in hot dry areas with alkaline soil. This disease affects both humans and animals, and is caused by inhalation of arthroconidia (spores) of the fungus *Coccidioides immitis* (CI). CI spores are found in the top few inches of soil and the existence of the fungus in most soil areas is temporary. The cocci fungus lives as a saprophyte (an organism, especially a fungus or bacterium, which grows on and derives its nourishment from dead or decaying organic matter) in dry, alkaline soil. When weather and moisture conditions are favorable, the fungus "blooms" and forms many tiny spores that lie dormant in the soil until they are stirred up by wind, vehicles, excavation, or other ground-disturbing activities and become airborne. Agricultural workers, construction workers, and

other people who are outdoors and are exposed to wind, dust, and disturbed topsoil are at an elevated risk of contracting Valley Fever (California Department of Public Health [CDPH] 2013).

Most people exposed to the CI spores will not develop the disease. Of 100 persons who are infected, approximately 40 will exhibit some symptoms and 2 to 4 will have the more serious disseminated forms of the disease. After recovery, nearly all, including the asymptomatic, develop a life-long immunity to the disease (Guevara 2014). African-Americans, Asians, women in the 3rd trimester of pregnancy, and persons whose immunity is compromised are most likely to develop the most severe form of the disease (Centers for Disease Control [CDC] 2013). In addition to humans, a total of 70 different animal species are known to be susceptible to Valley Fever infections, including dogs, cats, and horses; with dogs being the most susceptible (Los Angeles County Public Health [LACPH] 2007).

The Project is located in an area designated as suspected endemic for Valley Fever by the Center for Disease Control (CDC 2013). Annual case reports for 2000 through 2013 from the California Department of Public Health indicate that San Diego County has reported incident rates for Valley Fever that range from a rate of 1.8 to 4.8 cases per year per 100,000 population (CDPH 2011, 2015). These incidence rates for San Diego County have been below the State average incidence rates and have been well below the worst-case annual rates for other counties within the State during this period, which occurred within the San Joaquin Valley, where there have been over 300 cases per 100,000 population in some calendar years. Given the low incidence rate in San Diego County as a whole, and the fact that the fugitive dust causing activities associated with the Project would occur in an area that is not located near a large number of people (i.e., receptors), the potential for the Project construction activities to encounter and disperse CI spores and create the potential for additional Valley Fever infections is considered negligible.

Sensitive Receptors

The impact of air pollutant emissions on sensitive members of the general population is a special concern. Sensitive receptor groups include children and infants, pregnant women, the elderly, and the acutely and chronically ill. According to County of San Diego CEQA guidance (County of San Diego 2007b), sensitive receptor locations include schools, daycare centers, retirement homes, hospitals, and residences.

Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Residential areas can also be sensitive to air pollution due to high exposure periods for individuals that do not leave their residences often. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

A land use survey was conducted to identify sensitive receptors (e.g., schools, hospitals, recreational facilities, local residences) in the general vicinity of the Proposed Project. The Project area is generally surrounded by open space; there are no residences or other properties located within a half mile of the site, and perhaps a dozen residences located

between one-half and one mile from the site. The closest known school and hospital are located more than 5 and 15 miles from the project site, respectively. The project site is in an area that would including hiking and cycling activity, but there no known fixed recreation areas within a mile of the site.

6.4 Impact Analysis

6.4.1 Methodology

The assessment of environmental impacts and determination of necessary mitigation measures has been completed based on an independent critical analysis of the information provided by NextEra Energy Transmission West, LLC (NEET West) in the Proponent's Environmental Assessment (PEA), including the air pollutant emissions calculations provided in the PEA Appendix C (NEET West 2015) and later revised for the Two-Pole Interconnection Configuration (SWCA 2016).

The air pollutant emissions estimate was completed using the approved California Emissions Estimator Model (CalEEMod) based on assumptions regarding the equipment and vehicle trips required for construction and operation. The review of the emissions estimate, the assumptions associated with the efficacy of the Applicant proposed measures (APM) to reduce air pollutant emissions, and the findings presented in the air quality analysis provided in the PEA are discussed further in Section 6.3, "Environmental Impacts."

6.4.2 Criteria for Determining Significance

According to Appendix G of the State CEQA Guidelines and SDAPCD guidance, a significant impact would occur with respect to air quality if the Proposed Project would:

A. Conflict with or obstruct implementation of the applicable air quality plan.

B. Violate any air quality standard established by USEPA or CARB, or contribute substantially to an existing or projected air quality violation.

C. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors), in comparison to the relevant County of San Diego thresholds shown in Table 6-5.

D. Expose sensitive receptors to substantial air pollutant concentrations.

E. Create objectionable odors affecting a substantial number of people.

County of San Diego Significance Thresholds

The County of San Diego has published CEQA guidelines that includes screening-level thresholds (SLTs) for air quality impacts analysis (County of San Diego 2007b). The relevant thresholds are provided in Table 6-5.

Table 6-5. Screening-Level Thresholds for Air Quality Impact Analysis

Pollutant	Total Emissions		
	Lbs. per Hour	Lbs. per Day	Tons per Year
Respirable particulate matter (PM_{10})	---	100	15
Fine particulate matter ($PM_{2.5}$)	---	55	10
Oxides of Nitrogen (NO_X)	25	250	40
Oxides of Sulfur (SO_X)	25	250	40
Carbon monoxide (CO)	100	550	100
Volatile Organic Compounds (VOCs)	---	75	13.7

Source: County of San Diego 2007b.

The SLTs that are most relevant to the Proposed Project, which would be constructed in less than a year, would be the hourly and daily thresholds for construction and the annual thresholds for long-term operation.

6.4.3 Environmental Impacts

Impact AQ-1: Conflict with or Obstruct Implementation of Applicable Air Quality Plan (Less than Significant)

The Proposed Project would be built and operated in compliance with all SDAPCD rules and regulations developed to help implement the applicable air quality plans, and would also comply with all applicable State and federal air quality regulations. The SDAPCD air quality plans do not call for any additional future emission reduction regulations that would affect the Project's emissions sources, which are primarily construction off-road equipment and on-road vehicle emissions sources and operations and maintenance (O&M) on-road vehicle sources that are not regulated by SDAPCD. The Proposed Project also would not conflict with any County of San Diego General Plan air quality goals or policies. Additionally, the Proposed Project would not cause or induce growth beyond the assumptions within the applicable air quality plans or otherwise obstruct implementation of the applicable air quality plans. Impacts would be less than significant.

Impact AQ-2: Cause or Substantially Contribute to a Violation of Ambient Air Quality Standards (Less than Significant)

The Proposed Project's construction air pollutant emissions would occur for a short period and would be well below the magnitude that would cause air quality standard violations or contribute substantially to existing or projected air quality standard violations that are measured in San Diego County. Additionally, operations emissions would be negligible.

Therefore, impacts would be less than significant. Also, please see the emissions analysis provided below under Impact AQ-3.

Impact AQ-3: Create Emissions During Construction that Exceed County of San Diego Significance Thresholds (Less than Significant with Mitigation)

The applicant's emissions estimate was reviewed and that review determined that in general the estimate uses reasonable assumptions. There are a few discovered issues that may overestimate emissions, such as a likely overestimation of use for off-road trucks, and a few discovered issues that could underestimate emissions, such as not assuming any unpaved road travel. However, the overall combined effect of these discovered issues would not affect the findings presented below. The applicant's unmitigated construction emissions estimate, correcting for a construction start date in spring of 2017, is provided in Table 6-6.

Table 6-6. Unmitigated Construction Emissions

	VOC	CO	NO_X	SO_X	PM_{10}	PM2.5
Maximum Daily Emissions (lbs/day) [a]	22.2	130.5	246.2	0.36	16.7	10.1
Significance Thresholds	75	550	250	250	100	55
Significant?	No	No	No	No	No	No
Annual Emissions (tons/year) [a,b]	1.4	8.6	15.6	0.02	1.0	0.7
Significance Thresholds	13.7	100	40	40	15	10
Significant?	No	No	No	No	No	No

Source: SWCA 2016 (as revised in Appendix D); County of San Diego 2007b.

Notes:

(a) Does not assume implementation of APM AIR-4, but does include fugitive dust control measures APM AIR-1 and APM AIR-2 that are considered necessary to meet the performance requirements of SDAPCD Rule 55, and therefore are not considered mitigation measures. However, the emissions without these two APMs are presented in the uncontrolled emissions totals Appendix D.

(b) Assumes the worst case that the 10.5-month project construction schedule is completed in one calendar year.

The unmitigated~~controlled~~ emissions estimate shown above in Table 6-6 assumes the application of APMs AIR-1and AIR-2, which are considered necessary to meet the performance standards of SDAPCD Rule 55 and therefore are not considered mitigation measures, but not APMs AIR-3 and AIR-4 (see Chapter 2, *Project Description)*.

The State of California has regulations restricting idling time for off-road equipment and on-road vehicles. Therefore, APM AIR-3 is both unnecessary and would not provide additional emissions control. The control factor assigned to this measure in the PEA, 10 percent reduction of tailpipe emissions, is not considered valid due to these regulations being in place, and more importantly due to the fact that CalEEMod emissions estimate would not assume excessive idling times for either off-road equipment or on-road vehicles that would allow this measure to affect the emissions estimate.

APM AIR-4 is only minimally effective at controlling off-road equipment emissions, because specifying an off-road equipment fleet with Tier 2 engines in off-road equipment operating in 2017 or 2018 is essentially the same thing as specifying an uncontrolled fleet average. Therefore, given the issues with both of the APMs used to reduce construction equipment tailpipe emissions, the applicant's mitigated emissions estimate is not considered valid and has not been presented.

While the uncontrolled NOx emissions were determined to be marginally below the daily emissions significance threshold, changes in the project's work task schedule, equipment size, or equipment engine tier level assumption could cause emissions to exceed this threshold. Therefore, in order to ensure that the daily NO_X emissions would be below the County of San Diego emissions significance threshold and have a margin of safety, which would allow for additional task overlap and construction schedule compression, it is considered prudent to increase the off-road equipment mitigation to require USEPA/CARB Tier 3 or better compliant engines. Tier 3 engines have been required for new equipment/engines since 2006 to 2008, so this additional level of mitigation is not a burdensome requirement. **Mitigation Measure AQ-1** is proposed to address this mitigation recommendation. The mitigated construction emissions estimate, which is provided in Appendix E, *Air Quality and Greenhouse Gas Emissions Calculations*, is provided in Table 6-7.

Table 6-7. Mitigated Construction Emissions

	VOC	CO [a]	NO_x	SO_x	PM10	PM2.5
Maximum Daily Emissions (lbs/day)	8.2	173.4	154.8	0.36	9.4	7.0
Significance Thresholds	75	550	250	250	100	55
Significant?	No	No	No	No	No	No
Annual Emissions (tons/year) [b]	0.5	10.9	9.6	0.02	0.7	0.5
Significance Thresholds	13.7	100	40	40	15	10
Significant?	No	No	No	No	No	No

Source: Appendix D; County of San Diego, 2007b.

Notes:

(a) CalEEMod has a dicontinuity regarding controlled CO emissions, which due to the fact that the off-road equipment database (CARB's OFFROAD database) no longer provides CO emissions estimates, can show higher controlled CO emissions than uncontrolled CO emissions.

(b) Assumes the worst case that the 10.5-month project construction schedule is completed in one calendar year.

Comparing Table 6-7 with Table 6-6 shows a sizable reduction in the estimated maximum daily NOx emissions, along with sizable reductions in estimated VOC and exhaust PM emissions. After implementation of Mitigation Measure AQ-1 the project's emission would be well below all County of San Diego emissions significance thresholds and impacts would be less than significant.

Mitigation Measure AQ-1: Off-Road Equipment Control.

NEET West or their contractor(s) shall implement the following measure:

- All off-road equipment engines that are 50 horsepower or greater shall meet or exceed USEPA/ CARB Tier 3 emissions standards.

- Exceptions to the Tier 3 requirement shall be allowed for specialty equipment that will be used for no more than 5 days; provided that a due diligence search, which includes at least three (3) appropriate equipment rental firms could not procure the necessary equipment type with a Tier 3 compliant or better engine.

Impact AQ-4: Create Emissions During Operation that Exceed County of San Diego Significance Thresholds (Less than Significant)

The applicant's emissions estimate was reviewed and that review determined that in general, the estimate uses reasonable assumptions for the project's very limited daily operating emissions. The emissions estimate likely overestimates the annual emissions where maintenance events would be intermittent in nature, while it conservatively assumes them to be daily year-round. The project would not have any stationary emissions sources and the station would not be manned. The applicant's unmitigated construction emissions estimate is provided in Table 6-8.

Table 6-8. Unmitigated Operation Emissions

	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions (lbs/day)	2.85	3.55	1.01	0.01	0.59	0.18
Significance Thresholds	75	550	250	250	100	55
Significant?	No	No	No	No	No	No
Annual Emissions (tons/year)	0.52	0.63	0.18	0.00	0.10	0.03
Significance Thresholds	13.7	100	40	40	15	10
Significant?	No	No	No	No	No	No

Source: NEET West 2015; County of San Diego 2007b.

The unmitigated~~controlled~~ emissions estimate shown in Table 6-8 demonstrates that the project's operating emissions are well below County of San Diego emissions significance thresholds. Therefore, Project operation emissions would be less than significant.

Impact AQ-5: Expose Sensitive Receptors to Substantial Pollutant Concentrations (Less than Significant)

Due to the limited construction duration, the limited construction emissions, and the sparsely populated area surrounding the project site, there is very low potential for fugitive dust or DPM to impact sensitive receptors during construction. The total Project construction DPM emissions are not of a magnitude and duration that could create significant air toxic risks to the nearest receptors, and implementation of Mitigation Measure AQ-1 would also provide a substantial reduction in the DPM emissions that occur on the project site during construction. Compliance with the SDAPCD rules and regulations and implementation of the applicant APMs would reduce the fugitive dust emissions during

Project construction and associated impacts to sensitive receptors. The Proposed Project's operating emissions would be negligible and would not have the potential to impact sensitive receptors. Therefore, the Project's construction and operation air pollutant emissions would not expose sensitive receptors to substantial pollutant concentrations and would result in a less-than-significant impact.

Impact AQ-6: Create Objectionable Odors that Could Affect a Substantial Number of People (Less than Significant)

Some objectionable odors may be temporarily created during construction-related activities, such as from diesel exhaust and asphalt paving activities. However, these odors would dissipate quickly, would only occur proximate to the work areas for a short time, and would not affect a substantial number of people in the sparsely populated project site area. Therefore, any impacts from objectionable odors would be less than significant.

Chapter 7
Biological Resources

7.1 Introduction

This chapter discusses the potential for the Proposed Project to affect wetland, riparian, and upland habitats, and the special-status plant and wildlife species that may use these habitats. Specifically, this chapter describes the existing environmental setting in the project area, discusses federal, State, and local regulations relevant to vegetation and wildlife resources that may be affected by the Proposed Project, identifies plant and wildlife species potentially affected by the Proposed Project, and proposes mitigation measures to avoid or reduce the potentially significant impacts.

The following appendices support this chapter:

- Appendix F. *Biological Resources – Supporting Documentation*

7.2 Regulatory Setting

7.2.1 Federal Laws, Regulations and Policies

Endangered Species Act

The Endangered Species Act (ESA) (16 U.S. Code [USC] § 1531 et seq.; 50 Code of Federal Regulations [CFR] Parts 17 and 222) provides for conservation of species that are endangered or threatened throughout all or a substantial portion of their range, as well as protection of the habitats on which they depend. The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA. In general, USFWS manages terrestrial and freshwater species, whereas NMFS manages marine and anadromous species.

Section 9 of the ESA and its implementing regulations prohibit the "take" of any fish or wildlife species listed under the ESA as endangered or threatened, unless otherwise authorized by federal regulations. The ESA defines the term "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC § 1532). Section 7 of the ESA (16 USC § 1531 et seq.) outlines the procedures for federal interagency cooperation to conserve federally listed species and designated critical habitats.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC, Chapter 7, Subchapter II) protects migratory birds. Most actions that result in take, or the permanent or temporary possession of, a migratory bird constitute violations of the MBTA. The MBTA also prohibits destruction of occupied nests. The USFWS is responsible for overseeing compliance with the MBTA.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC § 668; 50 CFR Part 22) prohibits take of bald and golden eagles and their occupied and unoccupied nests. USFWS administers the Bald and Golden Eagle Protection Act.

Clean Water Act

The Clean Water Act (CWA) is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. CWA Sections 401 and 404 are the key sections that pertain to biological resources.

Section 401

Section 401 of the CWA allows for evaluation of water quality when a proposed activity requiring a federal license or permit could result in a discharge to waters of the United States (waters of the U.S.). In California, the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs) issue water quality certifications. Each RWQCB is responsible for implementing Section 401 in compliance with CWA and its water quality control plan (also known as a Basin Plan). Applicants for a federal license or permit to conduct activities that might result in the discharge to waters of the U.S. (including wetlands) must also obtain a Section 401 water quality certification to ensure that any such discharge will comply with the applicable provisions of the CWA. Compliance with Section 401 is required for all projects that have a federal component and may affect state water quality.

Section 404

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the U.S., which include all navigable waters, their tributaries, and some isolated waters, as well as some wetlands adjacent to the aforementioned waters (33 CFR Section 328.3). Areas typically not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial waterbodies, such as swimming pools, and water-filled depressions (33 CFR Part 328). Areas meeting the regulatory definition of waters of the U.S. are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) under the provisions of the CWA Section 404. Construction activities involving placement of fill into jurisdictional waters of the U.S. are regulated by USACE through permit requirements. No USACE permit is effective in the absence of state water quality certification pursuant to Section 401 of the CWA.

7.2.2 State Laws, Regulations and Policies

California Fish and Game Code

The California Fish and Game Code includes various statutes that protect biological resources, including the Native Plant Protection Act of 1977 (NPPA) and the California Endangered Species Act (CESA).

NPPA (California Fish and Game Code §§ 1900-1913) authorizes the Fish and Game Commission to designate plants as endangered or rare and prohibits take of any such plants, except as authorized in limited circumstances.

CESA (California Fish and Game Code §§ 2050-2098) prohibits state agencies from approving a project that would jeopardize the continued existence of a species listed under CESA as endangered or threatened. Section 2080 of the California Fish and Game Code prohibits the take of any species that is state listed as endangered or threatened, or designated as a candidate for such listing. The California Department of Fish and Wildlife (CDFW) may issue an incidental take permit authorizing take of listed and candidate species if that take is incidental to an otherwise lawful activity, subject to specified conditions.

California Fish and Game Code Sections 3503, 3513, and 3800 protect native and migratory birds, including their active or inactive nests and eggs, from all forms of take. In addition, Sections 3511, 4700, 5050, and 5515 identify species that are fully protected from all forms of take. Section 3511 lists fully protected birds, Section 5515 lists fully protected fish, section 4700 lists fully protected mammals, and Section 5050 lists fully protected amphibians.

7.2.3 Local Laws, Regulations, and Policies

Because the California Public Utilities Commission (CPUC) is a state agency, it generally is not subject to local laws and regulations; however, local laws, regulations, and policies are considered here for the evaluation of potential impacts to biological resources that could result from the Proposed Project to the extent that they may inform the analysis and allow for full disclosure of potential impacts.

County of San Diego General Plan

Several goals and policies within the Conservation and Open Space Element of the San Diego County General Plan (2011) relate to the protection of biological resources and are considered applicable to the Proposed Project. The following goals, and affiliated policies, in the County's general plan are applicable to biological resources:

Goal COS-1: Inter-Connected Preserve System. A regionally managed, inter-connected preserve system that embodies the regional biological diversity of San Diego County.

Policies:

COS-1.2 – Minimize Impacts. Prohibit private development within established preserves. Minimize impacts within established preserves when the construction of public infrastructure is unavoidable.

COS-1.3 – Management. Monitor, manage, and maintain the regional preserve system facilitating the survival of native species and the preservation of healthy populations of rare, threatened, or endangered species.

COS-1.4 – Collaboration with Other Jurisdictions. Collaborate with other jurisdictions and trustee agencies to achieve well-defined common resource preservation and management Goals.

COS-1.5 – Regional Funding. Collaborate with other jurisdictions and federal, state, and local agencies to identify regional, long-term funding mechanisms that achieve common resource management Goals.

COS-1.6 – Assemblage of Preserve Systems. Support the proactive assemblage of biological preserve systems to protect biological resources and to facilitate development through mitigation banking opportunities.

COS-1.7 – Preserve System Funding. Provide adequate funding for assemblage, management, maintenance, and monitoring through coordination with other jurisdictions and agencies.

COS-1.8 – Multiple-Resource Preservation Areas. Support the acquisition of large tracts of land that have multiple resource preservation benefits, such as biology, hydrology, cultural, aesthetics, and community character. Establish funding mechanisms to serve as an alternative when mitigation requirements would not result in the acquisition of large tracts of land.

COS-1.9 – Invasive Species. Require new development adjacent to biological preserves to use non-invasive plants in landscaping. Encourage the removal of invasive plants within preserves.

COS-1.10 – Public Involvement. Ensure an open, transparent, and inclusive decision-making process by involving the public throughout the course of planning and implementation of habitat conservation plans and resource management plans.

COS-1.11 – Volunteer Preserve Monitor. Encourage the formation of volunteer preserve managers that are incorporated into each community planning group to supplement professional enforcement staff.

Goal COS-2: Sustainability of the Natural Environment. Sustainable ecosystems with long-term viability to maintain natural processes, sensitive lands, and sensitive as well as common species, coupled with sustainable growth and development.

Policies:

COS-2.1 – Protection, Restoration and Enhancement. Protect and enhance natural wildlife habitat outside of preserves as development occurs according to the underlying land use designation. Limit the degradation of regionally important natural habitats within the Semi-Rural and Rural Lands regional categories, as well as within Village lands where appropriate.

COS-2.2 – Habitat Protection through Site Design. Require development to be sited in the least biologically sensitive areas and minimize the loss of natural habitat through site design.

Goal COS-3: Protection and Enhancement of Wetlands

Policies:

COS-3.1 – Wetland Protection. Require development to preserve existing natural wetland areas and associated transitional riparian and upland buffers and retain opportunities for enhancement.

COS-3.2 – Minimize Impacts of Development. Require development projects to:

1) Mitigate any unavoidable losses of wetlands, including its habitat functions and values; and

2) Protect wetlands, including vernal pools, from a variety of discharges and activities, such as dredging or adding fill material, exposure to pollutants such as nutrients, hydro-modification, land and vegetation clearing, and the introduction of invasive species.

San Diego Multiple Species Conservation Program

The San Diego Multiple Species Conservation Program (MSCP) was prepared pursuant to standards developed by USFWS and CDFW to meet the requirements of the California Natural Communities Act of 1991. The MSCP was developed for southwestern San Diego County, and protects 85 species in this area. The MSCP was approved in 1997. The MSCP has been implemented in southwestern San Diego County. The East County Plan, which would cover the Proposed Project area, is in the planning phase but has not yet been approved or implemented.

7.3 Environmental Setting

The following sections describe the environmental setting for biological resources in proximity to the Proposed Project. Information in this section was gathered from review of the NextEra Energy Transmission West, LLC (NEET West) Proponent's Environmental Assessment (PEA) (NEET West 2015a), which incorporates a Biological Technical Report (NEET West 2015b) prepared for the Proposed Project site.

7.3.1 Regional Setting

The Proposed Project would be located in unincorporated south-central San Diego County, in the Laguna Mountains of the Peninsular Ranges. Elevations in the Proposed Project area range from 3,000 to 3,200 feet (915 to 975 meters) above mean sea level. Topography in the area is undulating with steep hills interspersed with narrow valleys and relatively deep canyons. This portion of San Diego County is characterized by a Mediterranean climate, with hot dry summer and cool wet winters. High temperatures in the vicinity of the Proposed Project in August average 90.6 degrees Fahrenheit (°F) and low temperatures in December average 42.1°F (Western Regional Climate Center [WRCC] 2016). The majority of precipitation occurs between November and April, with average annual precipitation of approximately 16 inches (WRCC 2016). Soils in the Proposed Project area are mostly sandy loams (See Chapter 9, *Geology, Soils, and Seismicity* for more information).

7.3.2 Project Vicinity

The following section provides descriptions of biological communities and habitats in the Proposed Project area.

Habitats

Land cover in the vicinity of the Project area was mapped by SWCA biologists based on field visits and GIS analysis and is depicted in Figure 7-1 (NEET West 2015b). This vegetation study area extends past the Proposed Project footprint. Habitat descriptions are drawn from NEET West's PEA (NEET West 2015a).

Undeveloped areas within the Project footprint and immediate vicinity consist of chaparral scrub and oak woodlands. Within these habitats are disturbed areas which are dominated by non-native grasses and forbs. One habitat type (Engelmann Oak-Coast Live Oak/Poison Oak/Grass Association) present on a small portion of the Proposed Project footprint is considered a sensitive natural community by CDFW.

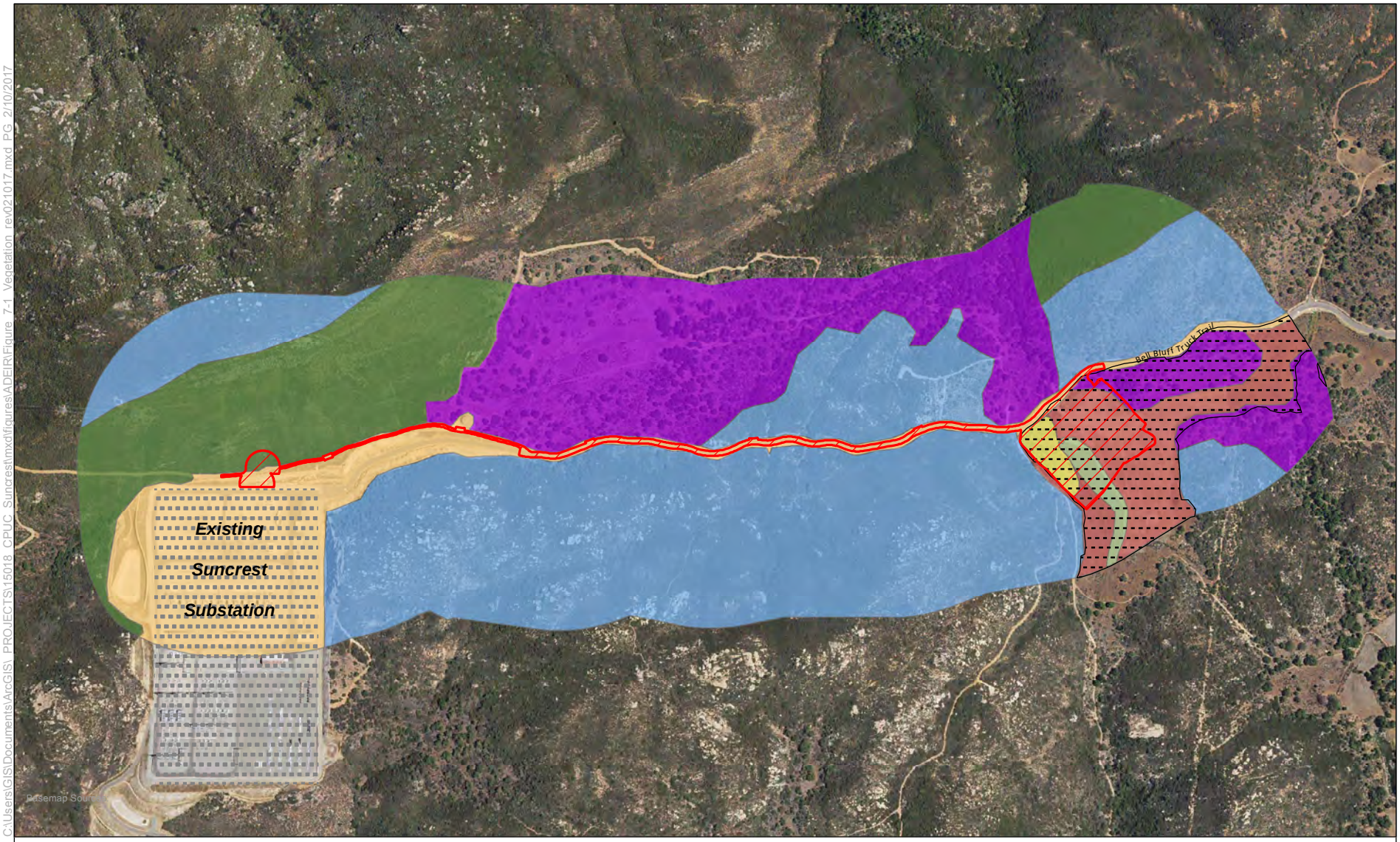
Habitats in the area where the SVC facility would be located have been repeatedly disturbed since 1994 (NEET West 2015a). This area has been disked in the past, and may have been used for grazing.

During the construction of the existing Suncrest Substation (completed in 2012), a portion of this area was disturbed by removal of topsoil and vegetation, and also graded. Following the completion of construction, this area was restored per SDG&E's *Sunrise Powerlink Restoration Plan for Sensitive Vegetation in Temporary Impacts Areas* (ICF and Chambers Group, Inc. 2011). In March 2016, CDFW and USFWS certified the restoration as having met the success criteria, and signed off the site mitigation as complete (Horizon 2016).

Engelmann Oak-Coast Live Oak/Poison Oak/Grass Association (Quercus engelmannii – Q. agrifolia/Toxicodendron diversilobum Association)

This association was mapped in the north-center and eastern portions of the vegetation study area, with stands concentrated along streams and other moist areas. Engelmann oak (*Quercus engelmannii*) and coast live oak (*Q. agrifolia*) are dominant in the canopy, with poison oak (*Toxicodendron diversilobum*) dominant in the shrub strata, and various grasses and forbs dominating the herbaceous layer. Subdominant shrubs observed include coastal sagebrush species, such as black sage (*Salvia mellifera*), white sage (*S. apiana*), California sagebrush (*Artemisia californica*), laurel sumac (*Malosma laurina*), and bush monkey flower (*Mimulus aurantiacus*). Grasses present include the non-native species soft chess (*Bromus hordeaceus*), cheatgrass (*B. tectorum*), slender wild oats (*Avena barbata*), red brome (*B. madritensis* ssp. *rubens*), and ripgut brome (*B. diandrus*); native species include purple needlegrass (*Stipa pulchra*) and muhly grasses (*Muhlenbergia* spp.).

This habitat is considered a sensitive natural community by CDFW (California Department of Fish and Game [CDFG] 2010). In the vicinity of the Static VAR compensator (SVC) facility, this community has been repeatedly disturbed. In the disturbed areas, the understory component of this community is not fully developed and is more similar to the *Eriogonum fasciculatum* Association, described below.



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Horizon WATER and ENVIRONMENT

Vegetation Communities

- Bigberry Manzanita – Chamise Chaparral
- California Buckwheat Scrub
- Chamise Chaparral
- Engelmann Oak-Coast Live Oak/Poison Oak/Grass Association
- Non-native Grassland
- Ruderal
- Urban/Developed

Source: SCWA 2015a

- Project Area (limit of disturbance)
- Subject to repeated disturbance

Figure 7-1
Vegetation Types

Suncrest Dynamic Reactive Power Support Project

Table 7-1. Land Cover/Vegetation Types in the Project Area

Project Components	Land Cover / Vegetation Types (acres)*						
	Engelmann Oak-Coast Live Oak/ Poison Oak/ Grass Association *(Quercus engelmannii – Quercus agrifolia/ Toxicodendron diversilobum/* Grass Association)**	**Chamise Chaparral (*Adenostoma fasciculatum* Alliance)**	**California Buckwheat Scrub ** (*Eriogonum fasciculatum* Association)**	**Bigberry Manzanita – Chamise Chaparral Association (*Arctostaphylos glauca – Adenostoma fasciculatum* Association)**	**Non-native Grassland****	**Ruderal****	**Urban Developed****
SVC Facility and Access Driveways	0.3	--	4.5	--	1.1	1.7	0.1
Underground Transmission Line and Vaults	< 0.1	< 0.1	< 0.1	--	--	--	3.1
Riser Pole Area and Tie-in	--	0.4	--	--	--	--	0.1

Note: Acreage includes both temporary and permanent impacts

* Vegetation types follow the California Manual of Vegetation (Sawyer, Keeler-Wolf, and Evens 2009) as modified for San Diego County (Evens and San 2005; AECOM et al. 2011)

** These land cover and vegetation types within the Proposed Project have been subjected to repeated disturbance over the past two decades.

Source: NEET West 2015a

California Buckwheat Scrub (Eriogonum fasciculatum Association)

This alliance is present within the SVC footprint, south of Bell Bluff Truck Trail. The mapped areas are dominated by California buckwheat (*Eriogonum fasciculatum*). As described above, the SVC footprint area has been subject to repeated disturbances, and was planted with native species for site restoration following construction of the existing Suncrest Substation. Because California sagebrush (*Artemisia californica*) is largely absent from the California buckwheat scrub alliance in the study area, this community does not qualify as Diegan or Riversidean coastal sage scrub, which are sensitive natural communities.

Chamise Chaparral (Adenostoma fasciculatum Alliance)

This chaparral alliance is dominated by chamise (*Adenostoma fasciculatum*), which can form dense, monotypic stands and generally lacks an herbaceous layer. This alliance is found in the northwest and northeast portions of the vegetation study area, and within the Proposed Project footprint. This alliance typically occurs on dry slopes, on shallow soils over bedrock. Other shrubs which commonly occur in this alliance include manzanitas (*Arctostaphylos* spp.), sages (*Salvia* spp.), ceanothus (*Ceanothus* spp.), and chaparral yucca (*Hesperoyucca whipplei*).

Bigberry Manzanita – Chamise Chaparral (Arctostaphylos glauca – Adenostoma fasciculatum Association)

This chaparral association is located on granitic slopes in the study area, and forms a dense, closed canopy scrub. The canopy is dominated by bigberry manzanita (*Arctostaphylos glauca*) and chamise. Subdominant shrubs include ceanothus, scrub oak (*Quercus berberidifolia*), and chaparral yucca. This association was mapped immediately adjacent to, but not within the Proposed Project footprint.

Non-native Grassland

In the study area, non-native grassland occurs in areas where disturbed conditions favor non-native species, such as in the laydown area used for the Sunrise Powerlink. This habitat is dominated by non-native grasses, including slender wild oats, soft chess, cheatgrass, red brome, ripgut brome, as well as non-native fobs including red-stemmed filaree (*Erodium cicutarium*), and short-pod mustard (*Hirschfeldia incana*). Some native species persists in this habitat, including western ragweed (*Ambrosia psilostachya*), lupines (*Lupinus* spp.), doveweed (*Croton setigerus*), and Parish's bluecurls (*Trichostema parishii*).

Ruderal

The northwest portion of the SVC site contains bare ground and ruderal vegetation in areas cleared and/or graded by the property owner. This habitat is dominated by species which can quickly colonize disturbed areas. The majority of the species in these areas are non-native, but some native species are also present.

Urban Developed

The area of the paved Bell Bluff Truck Trail, within which the proposed transmission line would be installed, is classified as urban/developed. This classification is characterized by an absence of vegetation due to the installation of permanent features or structures.

Wetlands and Waters

Drainages in the vicinity of the Proposed Project flow both northward and southward, eventually flowing to the Sweetwater River. Surface waters flowing northward join unnamed streams and flow to the Sweetwater River, while drainages southward join Taylor Creek or other unnamed streams which all eventually also join the Sweetwater River. Streams and surface water features in the vicinity of the Proposed Project are generally intermittent in nature. Several unnamed features cross Bell Bluff Truck Trail via culverts (Figure 7-2). These features are anticipated to be dry during the majority of the year, only flowing after rain events. Ditches constructed in uplands along Bell Bluff Truck Trail and Avenida de los Arboles to convey runoff are not considered jurisdictional features.

USACE Jurisdictional Waters

In the vicinity of the Proposed Project, one unnamed ephemeral drainage, which flows north from Bell Bluff Truck Trail, may be subject to USACE jurisdiction (Figure 7-2). An ordinary high water mark (OHWM) is apparent, and this seasonal stream eventually flows into the Sweetwater River. The Proposed Project will avoid this feature. Other natural drainage features observed in the vicinity of the proposed project either did not exhibit an OHWM, or did not have an apparent connection to downstream waters of the United States, and therefore are not generally considered jurisdictional by the USACE (NEET West 2015a).

Topography in the vicinity of the Proposed SVC location was significantly disturbed during development of the Wilson Construction Yard for the Sunrise Powerlink project. Following construction of the existing Suncrest Substation, the site was recontoured to a surface that was intended to match the site's topography prior to its use as the construction staging area (Horizon 2016). Although the topography was restored at this site, altered drainage patterns may have resulted from the disturbance and modifications at the site.

The jurisdictional wetland delineation (JD) conducted for the Sunrise Powerlink identified a wetland within the proposed SVC site (SDG&E 2009); however, a 2015 wetland evaluation conducted by SWCA did not identify wetland features in this location (NEET West 2015a). The cause of this discrepancy may in part be due to potentially altered drainage patterns at the site caused by construction of the Suncrest Substation between the time of the first wetland evaluation in 2009 and the more recent wetland evaluation in 2015 (Horizon 2016). The other potential cause of this discrepancy could be the difference in methodology between these two wetland evaluations. Due to concerns about impacts to potential archaeological resources at the site, the 2009 delineation did not include digging test pits to evaluate the presence of hydric soils. This constraint may have resulted in a JD which included features which would not otherwise be considered wetlands.

The 2015 wetland evaluation conducted by SWCA followed the USACE Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008), including digging and testing for hydric soils (NEET West 2015a). The 2015 SWCA wetland evaluation concluded that neither hydric soils nor jurisdictional wetlands were present within the Proposed Project (NEET West 2015a). A formal JD report has not been prepared for the Proposed Project, as the Proposed Project has been designed to avoid all potentially jurisdictional features.

CDFW Jurisdictional Waters and Riparian Habitats

Two natural drainages on both sides of Bell Bluff Truck Trail and their associated riparian-influenced vegetation, in addition to the natural drainage north of the Proposed SVC location, may be subject to CDFW jurisdiction. These two drainages are conveyed across Bell Bluff Truck Trail through culverts. The Proposed transmission line would be installed beneath these culverts, and it is not anticipated that these culverts would need to be removed. However, culvert removal may be necessary in the instance that blasting is required beneath the culverts. Current designs anticipate that the connectivity of these waters would not be affected by the implementation of the Proposed Project. In the vicinity of these potentially jurisdictional features, the Proposed Project is limited to the developed portion of Bell Bluff Truck Trail.

Critical habitat

No designated critical habitat is present within the Proposed Project footprint, or in the immediate surrounding area (Figure 7-3) (USFWS 2016a). Final critical habitat for arroyo toad (*Anaxyrus californicus*), an ESA-listed endangered species, is approximately 0.6 miles north of the Proposed Project, along the Sweetwater River. Other critical habitat in the vicinity of the Proposed Project includes Cushenbury oxytheca (*Oxytheca parishii* var. *goodmaniana*) and San Diego thornmint (*Acanthomintha ilicifolia*) (2.7 miles northwest of the Proposed Project), coastal California gnatcatcher (*Polioptila californica californica*) (7.3 miles northwest of the Proposed Project), San Bernardino bluegrass (*Poa atropurpurea*) (8.6 miles southeast of the Proposed Project), and Quino checkerspot butterfly (*Euphydryas editha quino*) (10 miles southwest of the Proposed Project).

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Feet

Surface Waters
Potential Jurisdiction

CDFW

USACE and CDFW

Source: SCWA 2015a

Project Area

Figure 7-2
Potentially Jurisdictional Waters

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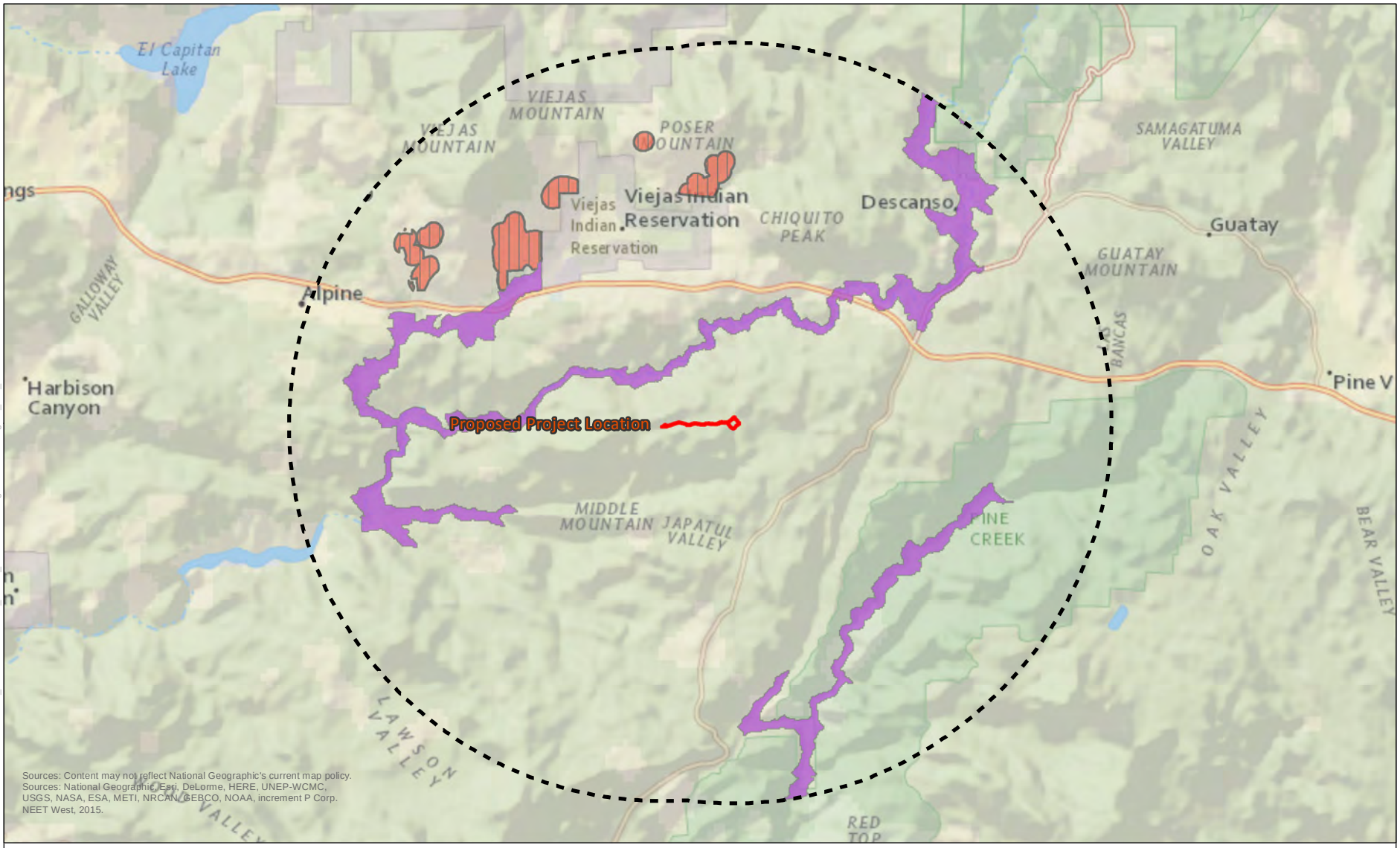
WATER and ENVIRONMENT

Suncrest Dynamic Reactive Power Support Project



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Horizon WATER and ENVIRONMENT

Critical Habitat

- Project Footprint
- 5-mile buffer
- Arroyo toad
- Cushenbury oxytheca
- San Diego thornmint

Source: USFWS 2016

Figure 7-3
Critical Habitat in the Vicinity of the Proposed Project

Suncrest Dynamic Reactive Power Support Project

Wildlife Corridors

The Proposed Project is surrounded by open space and low density residential development. This connection to open space allows for wildlife movement through the area. However, there are no major rivers or canyons within the Proposed Project area which would concentrate animal movement through the area. The Proposed Project is located within a Natural Landscape Block, but not within an Essential Connectivity Area (Spencer et al. 2010).

The Peninsular Ranges provide a large scale connection between the Transverse Ranges and the Baja Peninsula. Thus the region surrounding the Proposed Project is an important resource for wildlife movement and connectivity.

Special-Status Species

For the purposes of this EIR, special-status plant and wildlife species refers to those species that meet one or more of the following criteria:

- Species that are listed as threatened or endangered under the ESA (50 CFR 17.12 for listed plants, 50 CFR 17.11 for listed animals);
- Species that are candidates for possible future listing as threatened or endangered under ESA (76 Federal Register [FR] 66370);
- Species that are listed or proposed for listing by the State of California as threatened or endangered under CESA (14 CCR 670.5);
- Plants listed as rare under NPPA (California Fish and Game Code, § 1900 et seq);
- Plants considered by the California Native Plant Society [CNPS] to be "rare, threatened, or endangered in California" (CNPS Rare Plant Ranks 1, 2, 3 and 4);
- Species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines, § 15380);
- Animals fully protected in California (California Fish and Game Code, § 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]); and
- Nesting raptors protected in California (California Fish and Game Code, § 3503.5).

Special-status plant and animal species with the potential to occur in the project area were identified through a review of the following resources:

- USFWS Information for Planning and Conservation (IPaC) Report for the Study Area (USFWS 2016b).
- California Natural Diversity Database (CNDDB) query for the nine U.S. Geological Survey (USGS) 7.5-minute quadrangles within and adjoining the Proposed Project, including: Alpine, Barrett Lake, Cuyamaca Peak, Descanso, Dulzura, El Cajon Mountain, Morena Reservoir, Tule Springs, and Viejas Mountain (CDFW 2016).

- CNPS's Inventory of Rare and Endangered Plants of California query for the nine USGS 7.5-minute quadrangles within and adjoining the Proposed Project (CNPS 2016).

Through a search of the above resources, sensitive species historically reported to occur within the general project vicinity were identified. A list of these species is provided in Table 7-2. Figure 7-3 shows critical habitat within a 5-mile radius of the Proposed Project. Figures 7-4 and 7-5 show the California Natural Diversity Database (CNDDB) occurrences of special-status plants and animals within a 5-mile radius of the Proposed Project. The potential for special-status species to occur in areas affected by the Proposed Project was evaluated according to the following criteria:

- **None:** Indicates that the area contains a complete lack of suitable habitat, the local range for the species is restricted, and/or the species is extirpated in this region.

- **Not Expected:** Indicates situations where suitable habitat or key habitat elements may be present but may be of poor quality or isolated from the nearest extant occurrences. Habitat suitability refers to factors such as elevation, soil chemistry and type, vegetation communities, microhabitats, and degraded/substantially altered habitats.

- **Possible:** Indicates the presence of suitable habitat or key habitat elements that potentially support the species.

- **Present:** Indicates that either the target species was observed directly or its presence was confirmed by diagnostic signs (i.e., tracks, scat, burrows, carcasses, castings, prey remains) during field investigations or in previous studies in the area.

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Table 7-2. Sensitive Plant and Animal Species Known to Occur in the Vicinity of the Project Site

Scientific Name	Common Name	Federal Listing Status	State Listing Status	CNPS Rare Plant Rank	General Habitat	Micro Habitat	Potential to Occur at the Project Site
PLANTS							
Acanthomintha ilicifolia	San Diego thorn-mint	FT	SE	1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools.	Endemic to active vertisol clay soils of mesas & valleys. Usually on clay lenses within grassland or chaparral communities. 10-960 meters. Annual herb. Blooms April through June.	**None**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.
Ambrosia monogyra	singlewhorl burrobrush	-	-	2B.2	Chaparral, Sonoran desert scrub.	Sandy soils. 10-460 meters. Perennial shrub. Blooms August through November.	**None**. The Proposed Project is not within the elevation range for this species.
Ambrosia pumila	San Diego ambrosia	FE	-	1B.1	Chaparral, coastal scrub, valley and foothill grassland.	Sandy loam or clay soil; sometimes alkaline. In valleys; persists where disturbance has been superficial. Sometimes on margins or near vernal pools. 3-580 meters. Perennial rhizomatous herb. Blooms April through October.	**None**. The Proposed Project is not within the elevation range for this species.
Androsace elongata ssp. *acuta*	California androsace	-	-	4.2	Chaparral, cismontane woodland, coastal sage scrub, valley and foothill grassland, meadows and seeps, pinyon and juniper woodland.	Highly localized and often overlooked little plant. 150-1200 meters. Annual herb. Blooms March through June.	**Possible.** The Proposed Project contains suitable habitat for this species.
Arctostaphylos otayensis	Otay manzanita	-	-	1B.2	Chaparral, cismontane woodland.	Metavolcanic soils with other chaparral associates. 275-1700 meters. Perennial evergreen shrub. Blooms January through April.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Artemisia palmeri	San Diego sagewort	-	-	4.2	Coastal scrub, chaparral, riparian forest, riparian woodland, riparian scrub.	In drainages and riparian areas in sandy soil within chaparral and other habitats. 15-915 meters. Perennial deciduous shrub. Blooms February though September.	**Possible.** The Proposed Project contains suitable habitat for this species.
Asplenium vespertinum	western spleenwort	-	-	4.2	Chaparral, cismontane woodland, coastal scrub.	Rocky sites. 180-1000 meters. Blooms February through June.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Astragalus deanei	Dean's milk-vetch	-	-	1B.1	Chaparral, cismontane woodland, coastal scrub, riparian forest.	Open, brushy south-facing slopes in Diegan coastal sage, sometimes on recently burned-over hillsides. 75-695 meters. Blooms February through May.	**None**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.
Astragalus douglasii var. perstrictus	Jacumba milk-vetch	-	-	1B.2	Chaparral, cismontane woodland, valley and foothill grassland, pinyon and juniper woodland, riparian scrub.	Stony hillsides and gravelly or sandy flats in open oak woodland. 900-1370 meters. Blooms April through June.	**Possible.** The Proposed Project contains suitable habitat for this species.
Astragalus oocarpus	San Diego milk-vetch	-	-	1B.2	Chaparral, cismontane woodland.	Openings in chaparral or on gravelly flats and slopes in thin oak woodland. 120-1795 meters. Blooms May through August.	**Possible.** The Proposed Project contains suitable habitat for this species.
Atriplex pacifica	south coast saltscale	-	-	1B.2	Coastal scrub, coastal bluff scrub, playas, coastal dunes.	Alkali soils. 1-400 meters. Blooms March through October.	**None**. The Proposed Project lacks suitable habitat for this species.
Ayenia compacta	California ayenia	-	-	2B.3	Mojavean desert scrub, Sonoran desert scrub.	Sandy and gravelly washes in the desert; dry desert canyons. 60-1830 meters. Blooms March through April.	**None**. The Proposed Project lacks suitable habitat for this species.
Baccharis vanessae	Encinitas baccharis	FT	SE	1B.1	Chaparral, cismontane woodland.	On sandstone soils in steep, open, rocky areas with chaparral associates. 40-855 meters. Blooms August through November.	**None.** The proposed Project is not within the known range for this species (USFWS 2016c).

Scientific Name	Common Name	Federal Listing Status	State Listing Status	CNPS Rare Plant Rank	General Habitat	Micro Habitat	Potential to Occur at the Project Site
Bloomeria clevelandii	San Diego goldenstar	-	-	1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools.	Mesa grasslands, scrub edges; clay soils. Often on mounds between vernal pools in fine, sandy loam. 50-465 meters. Blooms April through May.	**None**. The Proposed Project is not within the elevation range for this species.
Boechera hirshbergiae	Hirshberg's rockcress	-	-	1B.2	Pebble (or pavement) plains.	1400-1415 meters. Blooms March through May.	**None**. The Proposed Project lacks suitable habitat for this species.
Brodiaea orcuttii	Orcutt's brodiaea	-	-	1B.1	Vernal pools, valley and foothill grassland, closed-cone coniferous forest, cismontane woodland, chaparral, meadows and seeps.	Mesic, clay habitats; sometimes serpentine; usually in vernal pools and small drainages. 30-1695 meters. Blooms May through June.	**None**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.
Calandrinia breweri	Brewer's calandrinia	-	-	4.2	Chaparral, coastal scrub.	Sandy or loamy soils. Disturbed sites, burns. 10-1200 meters. Blooms January through June.	**None**. The Proposed Project lacks suitable habitat for this species.
California macrophylla	round-leaved filaree	-	-	1B.2	Cismontane woodland, valley and foothill grassland.	Clay soils. 15-1200 meters. Blooms March through May.	**None**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.
Calochortus dunnii	Dunn's mariposa-lily	-	SR	1B.2	Closed-cone coniferous forest, chaparral, valley and foothill grassland.	On gabbro or metavolcanic soils; also known from sandstone; often associated with chaparral. 255-1615 meters. Blooms February through June.	**None**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.
Camissoniopsis lewisii	Lewis' evening-primrose	-	-	3	Valley and foothill grassland, coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub.	Sandy or clay soil. 0-300 meters. Blooms March through June.	**None**. The Proposed Project is not within the elevation range for this species.
Carex obispoensis	San Luis Obispo sedge	-	-	1B.2	Closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland.	Usually in transition zone on sand, clay, or serpentine; in seeps. 10-820 meters. Blooms April through June.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Caulanthus simulans	Payson's jewelflower	-	-	4.2	Chaparral, coastal scrub.	Frequently in burned areas, or in disturbed sites such as streambeds; also on rocky, steep slopes. Sandy, granitic soils. 90-2200 meters. Blooms February through June.	**Possible.** The Proposed Project contains suitable habitat for this species.
Ceanothus cyaneus	Lakeside ceanothus	-	-	1B.2	Closed-cone coniferous forest, chaparral.	200-1040 meters. Blooms April through June.	**Possible.** The Proposed Project contains suitable habitat for this species.
Ceanothus otayensis	Otay Mountain ceanothus	-	-	1B.2	Chaparral.	Metavolcanic or gabbroic soils. 75-1160 meters. Blooms January through April.	**None**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.
Ceanothus verrucosus	wart-stemmed ceanothus	-	-	2B.2	Chaparral.	1-380 meters. Blooms December through May.	**None**. The Proposed Project is not within the elevation range for this species.
Chaenactis parishii	Parish's chaenactis	-	-	1B.3	Chaparral.	Rocky sites. 1300-2500 meters. Blooms May through July.	**None**. The Proposed Project is not within the elevation range for this species.
Chamaebatia australis	southern mountain misery	-	-	4.2	Chaparral.	Gabbro or metavolcanic soils. 300-1020 meters. Blooms November through May.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Chorizanthe leptotheca	Peninsular spineflower	-	-	4.2	Chaparral, coastal scrub, lower montane coniferous forest.	On granitic soils, in alluvial fans. 300-1900 meters. Blooms May through August.	**Possible.** The Proposed Project contains suitable habitat for this species.
Chorizanthe polygonoides var. longispina	long-spined spineflower	-	-	1B.2	Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools.	Gabbroic clay. 30-1530 meters. Blooms April through July.	**Not expected**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.

Scientific Name	Common Name	Federal Listing Status	State Listing Status	CNPS Rare Plant Rank	General Habitat	Micro Habitat	Potential to Occur at the Project Site
Clarkia delicata	delicate clarkia	-	-	1B.2	Cismontane woodland, chaparral.	Often on gabbro soils. 235-1000 meters. Blooms April through June.	**Possible.** The Proposed Project contains suitable habitat for this species.
Clinopodium chandleri	San Miguel savory	-	-	1B.2	Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland.	Rocky, gabbroic or metavolcanic substrate. 120-1075 meters. Blooms March through July.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Comarostaphylis diversifolia ssp. diversifolia	summer holly	-	-	1B.2	Chaparral, cismontane woodland.	Often in mixed chaparral in California, sometimes post-burn. 30-945 meters. Blooms April through June.	**Possible.** The Proposed Project contains suitable habitat for this species.
Convolvulus simulans	small-flowered morning-glory	-	-	4.2	Chaparral, coastal scrub, valley and foothill grassland.	Wet clay, serpentine ridges. 30-700 meters. Blooms March through July.	**None**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.
Cordylanthus rigidus ssp. *brevibracteatus*	short-bracted bird's-beak	-	-	4.3	Chaparral, lower montane coniferous forest, pinyon-juniper woodland, upper montane coniferous forest.	In openings, on granitic substrate. 610-2590 meters. Blooms July through October.	**Possible.** The Proposed Project contains suitable habitat for this species.
Cylindropuntia californica var. californica	snake cholla	-	-	1B.1	Chaparral, coastal scrub.	15-290 meters. Blooms April through May.	**None**. The Proposed Project is not within the elevation range for this species.
Deinandra conjugens	Otay tarplant	FT	SE	1B.1	Coastal scrub, valley and foothill grassland.	Coastal plains, mesas, and river bottoms; often in open, disturbed areas; clay soils. 60-275 meters. Blooms April through June.	**None**. The Proposed Project is not within the elevation range for this species.
Deinandra floribunda	Tecate tarplant	-	-	1B.2	Chaparral, coastal scrub.	Often in little drainages or disturbed areas. 70-1220 meters. Blooms August through October.	**Possible.** The Proposed Project contains suitable habitat for this species.
Delphinium hesperium ssp. cuyamacae	Cuyamaca larkspur	-	SR	1B.2	Lower montane coniferous forest, meadows and seeps, vernal pools.	On dried edge of grassy meadows, also described as in mesic sites. 1220-1630 meters. Blooms May through July.	**None**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.
Delphinium parishii ssp. *subglobosum*	Colorado Desert larkspur	-	-	4.3	Chaparral, cismontane woodland, pinyon-juniper woodland, Sonoran desert scrub.	On dry stony fans and slopes. 600-1800 meters. Blooms March through June.	**Possible.** The Proposed Project contains suitable habitat for this species.
Dichondra occidentalis	western dichondra	-	-	4.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland.	On sandy loam, clay, and rocky soils. 50-500 meters. Blooms January through July.	**None**. The Proposed Project is not within the elevation range for this species.
Downingia concolor var. brevior	Cuyamaca Lake downingia	-	SE	1B.1	Meadows and seeps, vernal pools.	In vernal seeps, lakes and pools, and on mudflats, with *Orthocarpus*, *Limnanthes*, *Collinsia*. 1400-1500 meters. Blooms May through July.	**None**. The Proposed Project is not within the elevation range for this species.
Dudleya variegata	variegated dudleya	-	-	1B.2	Chaparral, coastal scrub, cismontane woodland, valley and foothill grassland.	In rocky or clay soils; sometimes associated with vernal pool margins. 3-580 meters. Blooms April through June.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Ericameria cuneata var. macrocephala	Laguna Mountains goldenbush	-	-	1B.3	Chaparral.	Endemic to the Laguna Mountains. Among boulders; in crevices in granitic outcrops and in rocky soil. 1195-1850 meters. Blooms September through December.	**Not expected.** The Proposed Project is 12 miles west of the Laguna Mountains, to which this species is endemic.
Ericameria palmeri var. palmeri	Palmer's goldenbush	-	-	1B.1	Coastal scrub, chaparral.	On granitic soils, on steep hillsides. Mesic sites. 5-625 meters. Blooms July through November.	**None**. The Proposed Project is not within the elevation range for this species.
Eriogonum evanidum	vanishing wild buckwheat	-	-	1B.1	Chaparral, cismontane woodland, lower montane coniferous forest, pinyon and juniper woodland.	Sandy sites. 975-2240 meters. Blooms July through October.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.

Scientific Name	Common Name	Federal Listing Status	State Listing Status	CNPS Rare Plant Rank	General Habitat	Micro Habitat	Potential to Occur at the Project Site
Euphorbia abramsiana	Abrams' spurge	-	-	2B.2	Mojavean desert scrub, Sonoran desert scrub.	Sandy sites. -45-1445 meters. Blooms August through November.	**None**. The Proposed Project lacks suitable habitat for this species.
Ferocactus viridescens	San Diego barrel cactus	-	-	2B.1	Chaparral, coastal scrub, valley and foothill grassland.	Often on exposed, level or south-sloping areas; often in coastal scrub near crest of slopes. 3-490 meters. Blooms May through June.	**None**. The Proposed Project is not within the elevation range for this species.
Fraxinus parryi	chaparral ash	-	-	2B.2	Chaparral.	Open mixed chaparral and in the chaparral-sage scrub interface in California. 213-620 meters. Blooms March through May.	**None**. The Proposed Project is not within the elevation range for this species.
Fremontodendron mexicanum	Mexican flannelbush	FE	SR	1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland.	Usually scattered along the borders of creeks or in dry canyons; found on gabbro, serpentine, or metavolcanics. 10-716 meters. Blooms March through June.	**None**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.
Geraea viscida	sticky geraea	-	-	2B.3	Chaparral.	Loamy coarse sand to gravelly sand soils; often in post burned areas and in bulldozed areas. 450-1700 meters. Blooms April through June.	**Possible.** The Proposed Project contains suitable habitat for this species.
Githopsis diffusa ssp. *filicaulis*	Mission Canyon bluecup	-	-	3.1	Chaparral.	Probably in open, grassy places and mesic, disturbed areas; much overlooked. 450-700 meters. Blooms April through June.	**Possible.** The Proposed Project contains suitable habitat for this species.
Grindelia hallii	San Diego gumplant	-	-	1B.2	Meadows, valley and foothill grassland, chaparral, lower montane coniferous forest.	Frequently occurs in low moist areas in meadows; associated species commonly include *Wyethia*, *Ranunculus*, *Sidalcea*. 185-1745 meters. Blooms May through October.	**Possible.** The Proposed Project contains suitable habitat for this species.
Harpagonella palmeri	Palmer's grapplinghook	-	-	4.2	Chaparral, coastal scrub, valley and foothill grassland.	Clay soils; open grassy areas within shrubland. 20-955 meters. Blooms March through May.	**None**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.
Hesperocyparis [Cupressus] forbesii	Tecate cypress	-	-	1B.1	Closed-cone coniferous forest, chaparral.	Primarily on north-facing slopes; groves often associated with chaparral. On clay or gabbro. 60-1645 meters.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Hesperocyparis stephensonii	Cuyamaca cypress	-	-	1B.1	Closed-cone coniferous forest, chaparral, chaparral, cismontane woodland, riparian forest.	Restricted to the southwest slopes of Cuyamaca Peak, on gabbroic rock. 1035-1705 meters.	**None**. The Proposed Project is not within the range of this species.
Heuchera brevistaminea	Laguna Mountains alumroot	-	-	1B.3	Broadleaved upland forest, chaparral, cismontane woodland, riparian forest.	Steep, rocky slopes. 1360-2000 meters. April through September.	**None**. The Proposed Project is not within the elevation range for this species.
Heuchera rubescens var. versicolor	San Diego County alumroot	-	-	3.3	Chaparral, lower montane coniferous forest.	Rocky outcrops. 1155-1950 meters. Blooms May through June.	**None**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.
Holocarpha virgata ssp. *elongata*	curving tarplant	-	-	4.2	Chaparral, coastal scrub, valley and foothill grassland, cismontane woodland.	60-1100 meters. Blooms May through November.	**Possible.** The Proposed Project contains suitable habitat for this species.
Horkelia truncata	Ramona horkelia	-	-	1B.3	Chaparral, cismontane woodland.	Habitats in California include: mixed chaparral, vernal streams, and disturbed areas near roads. Clay soil; at least sometimes on gabbro. 400-1300 meters. Blooms May through June.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Hulsea californica	San Diego sunflower	-	-	1B.3	Chaparral, lower montane coniferous forest, upper montane coniferous forest.	Burns, clearings, or openings in chaparral and pine-oak woodland. 365-1860 meters. Blooms April through June.	**Possible.** The Proposed Project contains suitable habitat for this species.
Isocoma menziesii var. decumbens	decumbent goldenbush	-	-	1B.2	Coastal scrub, chaparral	Sandy soils; often in disturbed sites. 10-135 meters. Blooms April through November.	**None**. The Proposed Project is not within the elevation range for this species.

Scientific Name	Common Name	Federal Listing Status	State Listing Status	CNPS Rare Plant Rank	General Habitat	Micro Habitat	Potential to Occur at the Project Site
Iva hayesiana	San Diego marsh-elder	-	-	2B.2	Marshes and swamps, playas.	Riverwashes. 10-500 meters. Blooms April through October.	**None**. The Proposed Project lacks suitable habitat for this species.
Juncus acutus ssp. leopoldii	southwestern spiny rush	-	-	4.2	Salt marshes, alkaline seeps, coastal dunes (mesic sites).	Moist saline places. 3-900 meters. Blooms March through June.	**None**. The Proposed Project lacks suitable habitat for this species.
Juncus luciensis	Santa Lucia dwarf rush	-	-	1B.2	Vernal pools, meadows and seeps, lower montane coniferous forest, chaparral, Great Basin scrub.	Vernal pools, ephemeral drainages, wet meadow habitats and streamsides. 300-2040 meters. Blooms April through July.	**None**. The Proposed Project lacks suitable habitat for this species.
Lathyrus splendens	pride-of-California	-	-	4.3	Chaparral.	Sandy to gravelly soils. 200-1525 meters. Blooms March through June.	**Possible.** The Proposed Project contains suitable habitat for this species.
Lepechinia ganderi	Gander's pitcher sage	-	-	1B.3	Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland.	Usually found in chaparral or coastal scrub; sometimes in Tecate cypress woodland. Gabbro or metavolcanic substrate. 305-1005 meters. Blooms June through July.	**None**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	-	-	4.3	Chaparral, coastal scrub.	Dry soils, shrubland. 1-885 meters. Blooms January through July.	**Possible.** The Proposed Project contains suitable habitat for this species.
Lewisia brachycalyx	short-sepaled lewisia	-	-	2B.2	Lower montane coniferous forest, meadows and seeps.	Dry to moist meadows in rich loam. 1370-2450 meters. Blooms February through July.	**None**. The Proposed Project is not within the elevation range for this species.
Lilium parryi	lemon lily	-	-	1B.2	Lower montane coniferous forest, meadows and seeps, riparian forest, upper montane coniferous forest.	Wet, mountainous terrain; generally in forested areas; on shady edges of streams, in open boggy meadows and seeps. 1220-2745 meters. Blooms July through August.	**None**. The Proposed Project lacks suitable habitat for this species.
Limnanthes alba ssp. parishii	Parish's meadowfoam	-	SE	1B.2	Meadows and seeps, vernal pools.	Vernally moist areas and temporary seeps of highland meadows and plateaus; often bordering lakes and streams. 600-1760 meters. Blooms April through June.	**None**. The Proposed Project lacks suitable habitat for this species.
Linanthus bellus	desert beauty	-	-	2B.1	Chaparral.	Dry slopes and flats; open sandy spots in chaparral, mostly in loamy coarse sandy soil types. 1000-1400 meters. Blooms April through May.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Linanthus orcuttii	Orcutt's linanthus	-	-	1B.3	Chaparral, lower montane coniferous forest, pinyon and juniper woodland.	Sometimes in disturbed areas; often in gravelly clearings. 915-2145 meters. Blooms May through June.	**Possible.** The Proposed Project contains suitable habitat for this species.
Microseris douglasii ssp. platycarpha	small-flowered microseris	-	-	4.2	Cismontane woodland, valley and foothill grassland, coastal scrub, vernal pools.	Alkaline clay in river bottoms. 15-1070 meters. Blooms April through May.	**None**. The Proposed Project lacks suitable habitat for this species.
Mimulus clevelandii	Cleveland's bush monkeyflower	-	-	4.2	Chaparral, cismontane woodland, lower montane coniferous forest.	Disturbed gravelly roadsides and slopes. 450-2000 meters. Blooms April through July.	**Possible.** The Proposed Project contains suitable habitat for this species.
Mimulus diffusus	Palomar monkeyflower	-	-	4.3	Chaparral, lower montane coniferous forest.	Sandy or gravelly soils. 1220-1830 meters. Blooms April through June.	**None**. The Proposed Project is not within the elevation range for this species.
Monardella hypoleuca ssp. lanata	felt-leaved monardella	-	-	1B.2	Chaparral, cismontane woodland.	Occurs in understory in mixed chaparral, chamise chaparral, and southern oak woodland; sandy soil. 300-1575 meters. Blooms June through August.	**Possible.** This species is present in the vicinity of the proposed Project (NEET West 2015b). The Proposed Project contains suitable habitat for this species.
Monardella macrantha ssp. hallii	Hall's monardella	-	-	1B.3	Broadleaved upland forest, chaparral, lower montane coniferous forest, cismontane woodland, valley and foothill grassland.	Dry slopes and ridges in openings within the above communities. 730-2195 meters. Blooms June through October.	**Possible.** The Proposed Project contains suitable habitat for this species.

Scientific Name	Common Name	Federal Listing Status	State Listing Status	CNPS Rare Plant Rank	General Habitat	Micro Habitat	Potential to Occur at the Project Site
Myosurus minimus ssp. apus	little mousetail	-	-	3.1	Vernal pools, valley and foothill grassland. This subspecies has taxonomic problems; distinguishing between this and *M. sessilis* is difficult.	Alkaline soils. 20-640 meters. Blooms March through June.	**None**. The Proposed Project lacks suitable habitat for this species.
Navarretia peninsularis	Baja navarretia	-	-	1B.2	Lower montane coniferous forest, chaparral, meadows and seeps, pinyon and juniper woodland.	Wet areas in open forest. 1150-2365 meters. Blooms May through August.	**None**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.
Nolina cismontana	chaparral nolina	-	-	1B.2	Chaparral, coastal scrub.	Primarily on sandstone and shale substrates; also known from gabbro. 140-1275 meters. Blooms March through July.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Nolina interrata	Dehesa nolina	-	SE	1B.1	Chaparral.	Typically on rocky hillsides or ravines on ultramafic soils (gabbro or metavolcanic). 180-855 meters. Blooms June through July.	**None**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.
Packera ganderi	Gander's ragwort	-	SR	1B.2	Chaparral.	Recently burned sites and gabbro outcrops. 400-1200 meters. Blooms April through June.	**None**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.
Pentachaeta aurea ssp. aurea	golden-rayed pentachaeta	-	-	4.2	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland, riparian woodland.	80-1850 meters. Blooms March through July.	**Possible.** The Proposed Project contains suitable habitat for this species.
Pickeringia montana var. tomentosa	woolly chaparral-pea	-	-	4.3	Chaparral.	Gabbroic or granitic substrates; usually clay. 0-1700 meters. Blooms May through August.	**Possible.** The Proposed Project contains suitable habitat for this species.
Piperia colemanii	Coleman's rein orchid	-	-	4.3	Chaparral, lower montane coniferous forest.	Often in sandy soils. 1200-2300 meters. Blooms June through August.	**Possible.** The Proposed Project contains suitable habitat for this species.
Piperia cooperi	chaparral rein orchid	-	-	4.2	Chaparral, cismontane woodland, valley and foothill grassland.	15-1585 meters. Blooms March through June.	**Possible.** The Proposed Project contains suitable habitat for this species.
Plagiobryoides vinosula	wine-colored tufa moss	-	-	4.2	Cismontane woodland, meadows and seeps, Mojavean desert scrub, pinyon and juniper woodland, riparian woodland.	Usually granitic rock or granitic soil along seeps and streams, sometimes clay. 30-1735 meters.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Poa atropurpurea	San Bernardino blue grass	FE	-	1B.2	Meadows and seeps.	Mesic meadows of open pine forests and grassy slopes, loamy alluvial to sandy loam soil. 1360-2455 meters. Blooms April through August.	**None**. The Proposed Project lacks suitable habitat for this species.
Polygala cornuta var. fishiae	Fish's milkwort	-	-	4.3	Cismontane woodland, riparian woodland, chaparral.	Scree slopes, brushy ridges, and along creeks; often with oaks. 100-1000 meters. Blooms May through August.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Quercus dumosa	Nuttall's scrub oak	-	-	1B.1	Closed-cone coniferous forest, chaparral, coastal scrub.	Generally on sandy soils near the coast; sometimes on clay loam. 15-400 meters. Blooms February through August.	**None**. The Proposed Project is not within the elevation range for this species.
Quercus engelmannii	Engelmann oak	-	-	4.2	Cismontane woodland, chaparral, riparian woodland, valley and foothill grassland.	50-1300 meters. Blooms March through June.	**Present.** This species is present in the Propose Project footprint.
Ribes canthariforme	Moreno currant	-	-	1B.3	Chaparral, riparian scrub.	Among boulders in oak-manzanita thickets; shaded or partially shaded sites. 340-1200 meters. Blooms February through April.	**Possible.** The Proposed Project contains suitable habitat for this species.

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Romneya coulteri	Coulter's matilija poppy	-	-	4.2	Coastal scrub, chaparral.	In washes and on slopes; also after burns. 20-1200 meters. Blooms March through July.	**Possible.** The Proposed Project contains suitable habitat for this species.
Rubus glaucifolius var. ganderi	Cuyamaca raspberry	-	-	3.1	Lower montane coniferous forest.	Open, moist forest; gabbro soils. 1200-1675 meters. Blooms May through June.	**None**. The Proposed Project lacks suitable habitat for this species.
Rupertia rigida	Parish's rupertia	-	-	4.3	Chaparral, lower montane coniferous forest, cismontane woodland, meadows and seeps, pebble plain, valley and foothill grassland.	700-2500 meters. Blooms June through August.	**Possible.** The Proposed Project contains suitable habitat for this species.
Salvia munzii	Munz's sage	-	-	2B.2	Coastal scrub, chaparral.	Rolling hills and slopes, in rocky soil. 35-575 meters. Blooms February through April.	**Possible**. The Proposed Project contains suitable habitat for this species.
Scutellaria bolanderi ssp. austromontana	southern mountains skullcap	-	-	1B.2	Chaparral, cismontane woodland, lower montane coniferous forest.	In gravelly soils on streambanks or in mesic sites in oak or pine woodland. 425-2000 meters. Blooms June through August.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Selaginella cinerascens	ashy spike-moss	-	-	4.1	Chaparral, coastal scrub.	20-640 meters.	**Possible.** The Proposed Project contains suitable habitat for this species.
Selaginella eremophila	desert spike-moss	-	-	2B.2	Sonoran desert scrub, chaparral.	Shaded sites, gravelly soils; crevices or among rocks. 200-900 meters.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Senna covesii	Cove's cassia	-	-	2B.2	Sonoran desert scrub.	Dry, sandy desert washes, slopes. 255-1295 meters. Blooms March through August.	**None**. The Proposed Project lacks suitable habitat for this species.
Sibaropsis hammittii	Hammitt's clay-cress	-	-	1B.2	Valley and foothill grassland, chaparral.	Mesic microsites in open areas on clay soils in *Stipa* grassland. Often surrounded by *Adenostoma* chaparral. 720-1065 meters. Blooms March through April.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Sidalcea neomexicana	Salt Spring checkerbloom	-	-	2B.2	Playas, chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub.	Alkali springs and marshes. 0-1530 meters. Blooms March through June.	**None**. The Proposed Project contains general habitat but lacks suitable micro habitat for this species.
Sphenopholis obtusata	prairie wedge grass	-	-	2B.2	Cismontane woodland, meadows and seeps.	Open moist sites, along rivers and springs, alkaline desert seeps. 300-2000 meters. Blooms April through July.	**None**. The Proposed Project lacks suitable habitat for this species.
Stemodia durantifolia	purple stemodia	-	-	2B.1	Sonoran desert scrub.	Sandy soils; mesic sites. 35-795 meters. Blooms January through December.	**None**. The Proposed Project lacks suitable habitat for this species.
Stipa diegoensis	San Diego County needle grass	-	-	4.2	Chaparral, coastal scrub.	Rocky slopes, sea cliffs and stream banks; often in mesic sites. 10-800 meters. Blooms February through June.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Streptanthus bernardinus	Laguna Mountains jewelflower	-	-	4.3	Chaparral, lower montane coniferous forest.	Clay or decomposed granite soils; sometimes in disturbed areas such as streamsides or roadcuts. 1440-2500 meters. Blooms May through August.	**Possible.** The Proposed Project contains suitable habitat for this species.
Streptanthus campestris	southern jewelflower	-	-	1B.3	Chaparral, lower montane coniferous forest, pinyon-juniper woodland.	Open, rocky areas. 900-2300 meters. Blooms April through July.	**Possible.** The Proposed Project contains suitable habitat for this species.
Symphyotrichum defoliatum	San Bernardino aster	-	-	1B.2	Meadows and seeps, cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, valley and foothill grassland.	Vernally mesic grassland or near ditches, streams and springs; disturbed areas. 2-2040 meters. Blooms July through November.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Tetracoccus dioicus	Parry's tetracoccus	-	-	1B.2	Chaparral, coastal scrub.	Stony, decomposed gabbro soil. 165-1000 meters. Blooms April through May.	**Possible**. The Proposed Project contains suitable habitat for this species.

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Thermopsis californica var. semota	velvety false lupine	-	-	1B.2	Lower montane coniferous forest, meadows and seeps, cismontane woodland, valley and foothill grassland.	Pine forests and meadow edges, on rocky slopes and outcrops, and along roadsides. 1000-1870 meters. Blooms March through June.	**None**. The Proposed Project lacks suitable habitat for this species.
Viguiera laciniata	San Diego County viguiera	-	-	4.2	Chaparral, coastal scrub.	Slopes and ridges. 60-750 meters. Blooms February through August.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Xanthisma junceum	rush-like bristleweed	-	-	4.3	Chaparral, coastal scrub.	Dry hillsides. 240-1000 meters. Blooms May through January.	**Possible.** The Proposed Project contains suitable habitat for this species.
INVERTEBRATES							
Callophrys thornei	Thorne's hairstreak	-	-	-	Associated with the endemic tecate cypress (*Hesperocyparis forbesii*).	Only known from vicinity of Otay Mountain.	**None**. The Proposed Project lacks suitable habitat for this species.
Euphydryas editha quino	quino checkerspot butterfly	FE	-	-	Sunny openings within chaparral and coastal sage shrublands in parts of Riverside and San Diego counties.	Hills and mesas near the coast. Need high densities of food plants *Plantago erecta*, *P. insularis*, and *Orthocarpus purpurascens (=Castilleja exserta*).	**Not expected.** Host plants not observed at the site (NEET West 2015b), and 2010 surveys were negative (Chambers Group 2010).
Halictus harmonius	harmonious halictid bee	-	-	-	Known only from the foothills of the San Bernardino Mountains, possibly also the San Jacinto Mountains.	NA	**None**. The Proposed Project is not within the known range for this species.
Helminthoglypta milleri	peak shoulderband	-	-	-	Known only from the type locality at Cuyamaca Peak in San Diego County.	Found in rock piles.	**None**. The Proposed Project is not within the known range for this species.
Lycaena hermes	Hermes copper butterfly	FC	-	-	Found in southern mixed chaparral and coastal sage scrub at western edge of Laguna Mountains.	Host plant is *Rhamnus crocea*. Although *R. crocea* is widespread throughout the coast range, *Lycaena hermes* is not.	**Possible.** The Proposed Project does not currently contains suitable habitat for this species; however, suitable habitat is located within the 150-meter buffer along Bell Bluff Truck Trail. It is possible that suitable habitat could develop within the Proposed Project site.
AMPHIBIANS AND REPTILES							
Anaxyrus californicus	arroyo toad	FE	SSC	-	Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc.	Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Aspidoscelis hyperythra	orangethroat whiptail	-	WL	-	Inhabits low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats.	Prefers washes and other sandy areas with patches of brush and rocks. Perennial plants necessary for its major food-termites.	**Possible.** The Proposed Project contains suitable habitat for this species.
Aspidoscelis tigris stejnegeri	coastal whiptail	-	SSC	-	Found in deserts and semiarid areas with sparse vegetation and open areas. Also found in woodland and riparian areas.	Ground may be firm soil, sandy, or rocky.	**Possible.** The Proposed Project contains suitable habitat for this species.
Crotalus ruber	red-diamond rattlesnake	-	SSC	-	Chaparral, woodland, grassland, and desert areas from coastal San Diego County to the eastern slopes of the mountains.	Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.	**Possible**. The Proposed Project contains suitable habitat for this species. A 2011 CNDDB occurrence is within the Proposed Project (CDFW 2016).
Emys marmorata	western pond turtle	-	SSC	-	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 feet elevation.	Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 kilometer from water for egg-laying.	**None**. The Proposed Project lacks suitable habitat for this species.

Scientific Name	Common Name	Federal Listing Status	State Listing Status	CNPS Rare Plant Rank	General Habitat	Micro Habitat	Potential to Occur at the Project Site
Lampropeltis zonata (pulchra)	California mountain kingsnake (San Diego population)	-	WL	-	Restricted to the San Gabriel and San Jacinto Mountains of Southern California.	Inhabits a variety of habitats, including valley-foothill hardwood, coniferous, chaparral, riparian, and wet meadows.	**None**. The Proposed Project is not within the known range for this species.
Phrynosoma blainvillii	coast horned lizard	-	SSC	-	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	**Possible.** The Proposed Project contains suitable habitat for this species.
Plestiodon skiltonianus interparietalis	Coronado Island skink	-	WL	-	Grassland, chaparral, pinon-juniper and juniper sage woodland, pine-oak and pine forests in Coast Ranges of Southern California.	Prefers early successional stages or open areas. Found in rocky areas close to streams and on dry hillsides.	**Possible.** The Proposed Project contains suitable habitat for this species.
Salvadora hexalepis virgultea	coast patch-nosed snake	-	SSC	-	Brushy or shrubby vegetation in coastal Southern California.	Require small mammal burrows for refuge and overwintering sites.	**Possible.** The Proposed Project contains suitable habitat for this species.
Spea hammondii	western spadefoot	-	SSC	-	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands.	Vernal pools are essential for breeding and egg-laying.	**None**. The Proposed Project lacks suitable habitat for this species.
Taricha torosa	Coast Range newt	-	SSC	-	Coastal drainages from Mendocino County to San Diego County.	Lives in terrestrial habitats and will migrate over 1 kilometer to breed in ponds, reservoirs and slow moving streams.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Thamnophis hammondii	two-striped gartersnake	-	SSC	-	Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 feet elevation.	Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	**None**. The Proposed Project lacks suitable habitat for this species.
BIRDS							
Accipiter cooperii	Cooper's Hawk	-	WL	-	Woodland, chiefly of open, interrupted or marginal type.	Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	**Possible.** The Proposed Project contains suitable habitat for this species, however nesting is not expected.
Agelaius tricolor	Tricolored Blackbird	-	SSC	-	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California.	Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**None**. The Proposed Project lacks suitable habitat for this species.
Aimophila ruficeps canescens	Southern California Rufous-Crowned Sparrow	-	WL	-	Resident in Southern California coastal sage scrub and sparse mixed chaparral.	Frequents relatively steep, often rocky hillsides with grass and forb patches.	**Possible.** The Proposed Project contains suitable habitat for this species.
Aquila chrysaetos	Golden Eagle	-	FP/WL	-	Rolling foothills, mountain areas, sage-juniper flats, and desert.	Cliff-walled canyons provide nesting habitat in most parts of range; also large trees in open areas.	**Possible.** The Proposed Project contains suitable habitat for this species. Nesting is not expected in the Proposed Project footprint.
Artemisiospiza belli belli	Bell's Sage Sparrow	-	WL	-	Nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range.	Nest located on the ground beneath a shrub or in a shrub 6-18 inches above ground. Territories about 50 yards apart.	**Possible.** The Proposed Project contains suitable habitat for this species.
Buteo swainsoni	Swainson's Hawk	-	ST	-	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees.	Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**Possible.** The Proposed Project contains suitable habitat for this species. However the breeding population in San Diego County is considered extirpated (Bloom 1980).
Empidonax traillii extimus	Southwestern Willow Flycatcher	FE	SE	-	Riparian woodlands in Southern California.	NA	**Not expected.** The Proposed Project lacks suitable breeding habitat for this species, although it could potentially be present during migration.

Scientific Name	Common Name	Federal Listing Status	State Listing Status	CNPS Rare Plant Rank	General Habitat	Micro Habitat	Potential to Occur at the Project Site
Falco mexicanus	Prairie Falcon	-	WL	-	Inhabits dry, open terrain, either level or hilly.	Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	**Possible.** The Proposed Project contains suitable habitat for this species. Nesting is not expected in the Proposed Project footprint.
Gymnogyps californianus	California Condor	FE	SE/FP	-	Require vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude.	Deep canyons containing clefts in the rocky walls provide nesting sites. Forages up to 100 miles from roost/nest.	**None.** The Proposed Project is not within the current range for this species (USFWS 2016d).
Polioptila californica californica	Coastal California Gnatcatcher	FT	SSC	-	Obligate, permanent resident of coastal sage scrub below 2500 feet in Southern California.	Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.	**None**. The Proposed Project lacks suitable habitat for this species.
Vireo bellii pusillus	Least Bell's Vireo	FE	SE	-	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 feet.	Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, *Baccharis*, or mesquite.	**None**. The Proposed Project lacks suitable habitat for this species.
MAMMALS							
Antrozous pallidus	pallid bat	-	SSC	-	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting.	Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Possible.** The Proposed Project contains suitable habitat for this species.
Chaetodipus californicus femoralis	Dulzura pocket mouse	-	SSC	-	Variety of habitats including coastal scrub, chaparral and grassland in San Diego County.	Attracted to grass-chaparral edges.	**Possible.** The Proposed Project contains suitable habitat for this species.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	-	SSC	-	Coastal scrub, chaparral, grasslands, sagebrush, etc. in western San Diego County.	Sandy, herbaceous areas, usually in association with rocks or coarse gravel.	**Possible.** The Proposed Project contains suitable habitat for this species.
Corynorhinus townsendii	Townsend's big-eared bat	-	~~SC~~/ SSC	-	Throughout California in a wide variety of habitats. Most common in mesic sites.	Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	**Possible.** The Proposed Project contains suitable habitat for this species. This species is not expected to roost in the Proposed Project.
Dipodomys stephensi	Stephens' kangaroo rat	FE	ST		Primarily annual and perennial grasslands, but also occurs in coastal scrub and sagebrush with sparse canopy cover.	Prefers buckwheat, chamise, brome grass and filaree. Will burrow into firm soil.	**Not expected.** The Proposed Project contains suitable habitat for this species, however it is not within the known range for this species (USFWS 2016e).
Eumops perotis californicus	western mastiff bat	-	SSC	-	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.	Roosts in crevices in cliff faces, high buildings, trees and tunnels.	**Possible.** The Proposed Project contains suitable habitat for this species. This species is not expected to roost in the Proposed Project.
Lasiurus blossevillii	western red bat	-	SSC	-	Roosts primarily in trees, 2-40 feet above ground, from sea level up through mixed conifer forests.	Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging. Associated with riparian woodlands.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Macrotus californicus	California leaf-nosed bat	-	SSC	-	Desert riparian, desert wash, desert scrub, desert succulent scrub, alkali scrub and palm oasis habitats.	Needs rocky, rugged terrain with mines or caves for roosting. In California occurs at elevations up to 600 meters.	**None**. The Proposed Project lacks suitable habitat for this species.
Neotoma lepida intermedia	San Diego desert woodrat	-	SSC	-	Coastal scrub of Southern California from San Diego County to San Luis Obispo County.	Moderate to dense canopies preferred. They are particularly abundant in rock outcrops, rocky cliffs, and slopes.	**Possible.** The Proposed Project contains suitable habitat for this species.

Scientific Name	Common Name	Federal Listing Status	State Listing Status	CNPS Rare Plant Rank	General Habitat	Micro Habitat	Potential to Occur at the Project Site
Nyctinomops femorosaccus	pocketed free-tailed bat	-	SSC	-	Variety of arid areas in Southern California; pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian, etc.	Rocky areas with high cliffs.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.
Taxidea taxus	American badger	-	SSC	-	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**Not expected.** The Proposed Project contains marginally suitable habitat for this species.

* List of Abbreviations for Federal and State Species-Status:

FE = Federal endangered
FT = Federal threatened
FC = Federal candidate for listing
FP = State fully protected species
SE = State endangered
ST = State threatened
SC = State candidate
SSC = State species of special concern
SR = State rare
WL = Watch List
1B = plants are considered rare, threatened, or endangered in California and elsewhere.
2 = plants are rare, threatened, or endangered in California, but more common elsewhere.
3 = plants about which more information is needed for review
4 = plants of limited distribution; a watch list

Threat Ranks:

0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2-Fairly threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

1
2

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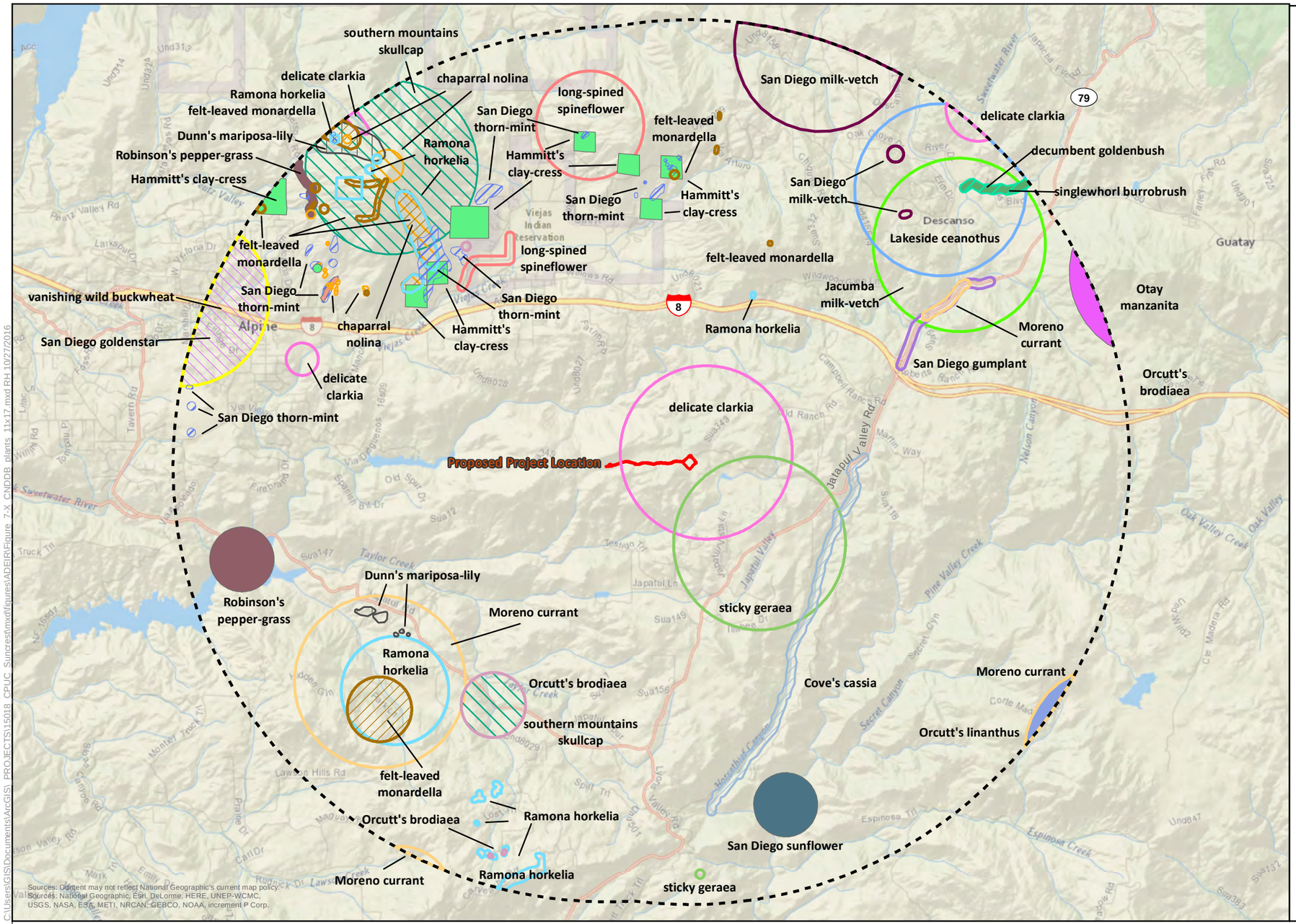

Special-status Plant Species Occurrences

- Cove's cassia
- Dunn's mariposa-lily
- Hammitt's clay-cress
- Jacumba milk-vetch
- Lakeside ceanothus
- Moreno currant
- Orcutt's brodiaea
- Orcutt's linanthus
- Otay manzanita
- Palmer's grapplinghook
- Ramona horkelia
- Robinson's pepper-grass
- San Diego goldenstar
- San Diego gumplant
- San Diego milk-vetch
- San Diego sunflower
- San Diego thorn-mint
- chaparral nolina
- decumbent goldenbush
- delicate clarkia
- felt-leaved monardella
- long-spined spineflower
- singlewhorl burrobrush
- southern mountains skullcap
- sticky geraea
- vanishing wild buckwheat

Source: CDFW, CNDDB, October 2016 update

N

0 2.5 5
Miles

Prepared by:
Horizon WATER and ENVIRONMENT

- Project Footprint
- 5-mile Buffer

Figure 7-4
CNDDB Plant Occurrences in the Vicinity of the Proposed Project

Suncrest Dynamic Reactive Power Support Project

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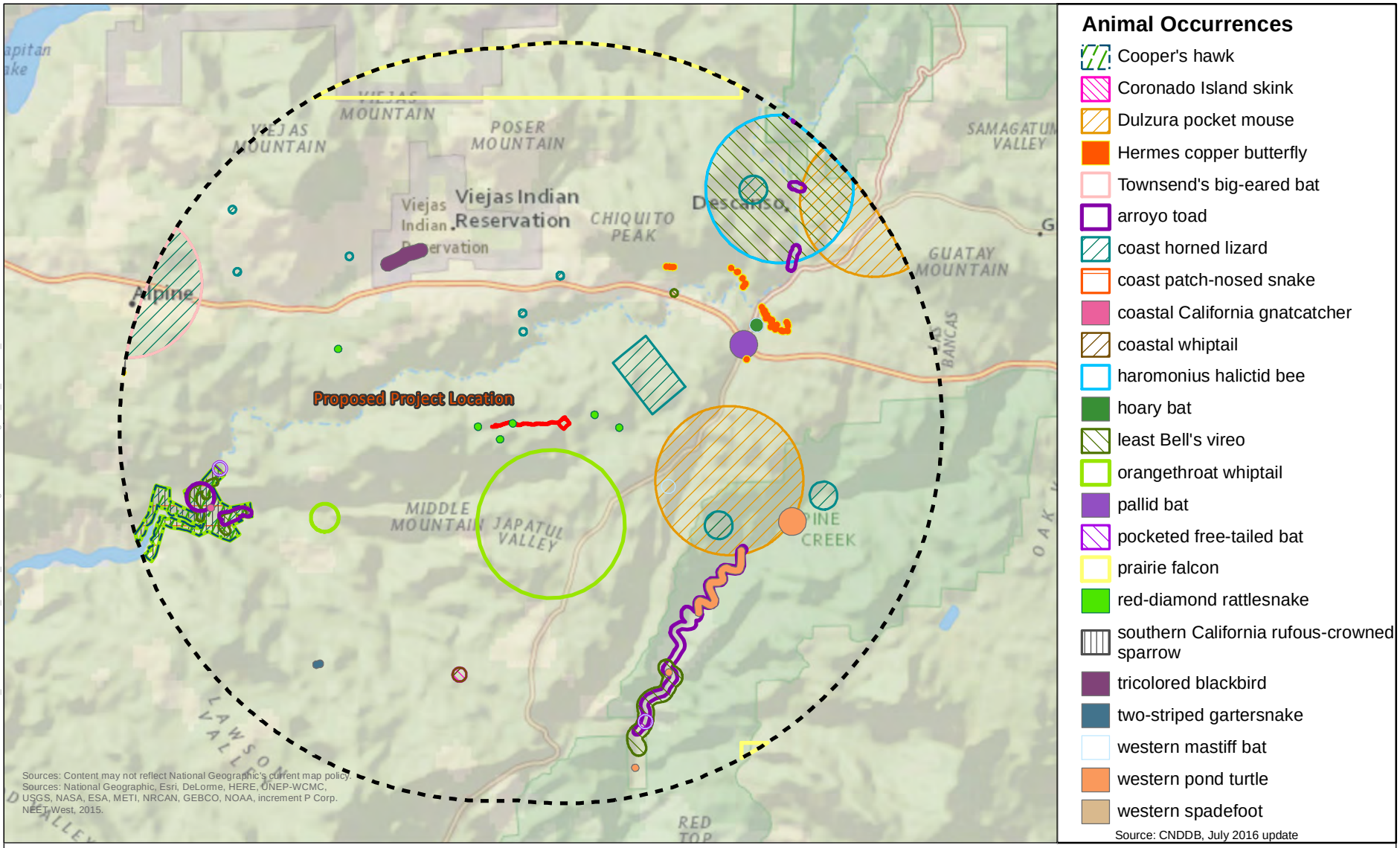

Animal Occurrences

- Cooper's hawk
- Coronado Island skink
- Dulzura pocket mouse
- Hermes copper butterfly
- Townsend's big-eared bat
- arroyo toad
- coast horned lizard
- coast patch-nosed snake
- coastal California gnatcatcher
- coastal whiptail
- haromonius halictid bee
- hoary bat
- least Bell's vireo
- orangethroat whiptail
- pallid bat
- pocketed free-tailed bat
- prairie falcon
- red-diamond rattlesnake
- southern California rufous-crowned sparrow
- tricolored blackbird
- two-striped gartersnake
- western mastiff bat
- western pond turtle
- western spadefoot

Source: CNDDB, July 2016 update

N

0 2.5 5
Miles

Project Footprint
5-mile Buffer

Prepared by:
Horizon WATER and ENVIRONMENT

Figure 7-5
CNDDB Animal Occurrences in the Vicinity of the Proposed Project

Suncrest Dynamic Reactive Power Support Project

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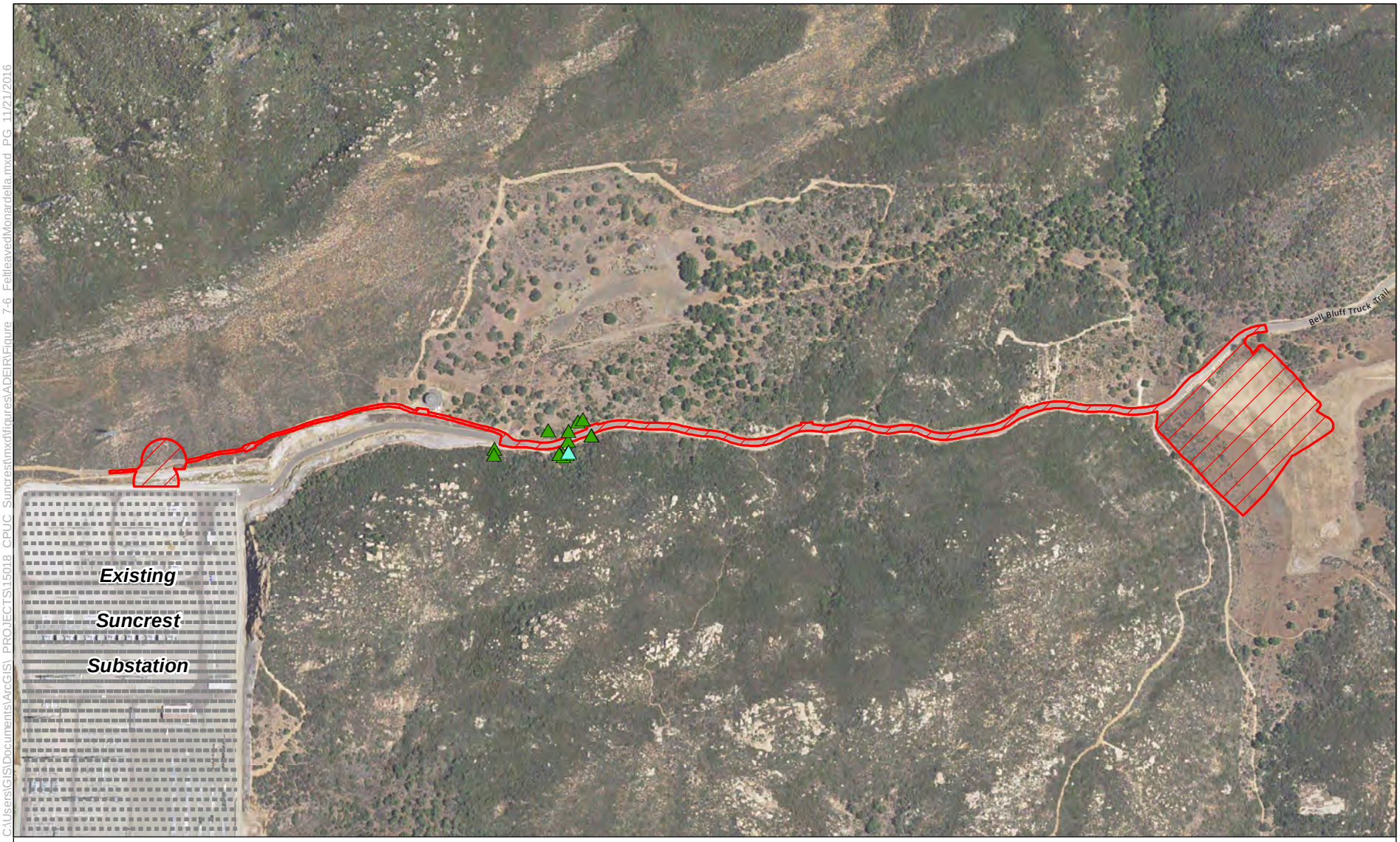
Special-Status Plants

SWCA conducted botanical surveys during 2014 and 2015 which were consistent with the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFG 2009) (NEET West 2015a). During 2015 rare plant surveys, a population of felt-leaved monardella (*Monardella hypoleuca* ssp. *lanata*) was identified immediately adjacent to the Proposed Project footprint (NEET West 2015b). This species was also identified in 2010 surveys for the Sunrise Powerlink/Suncrest Substation (NEET West 2015b). Figure 7-6 shows both historic locations (2010) of this species, and locations identified in 2015. Stands of Engelmann oak (*Quercus engelmannii*) are present in the north central and eastern portions of the proposed project area. This species is part of the Engelmann Oak-Coast Live Oak/Poison Oak/Grass Association, which is considered a CDFW sensitive plant community. The location of this Association can be found in Figure 7-1.

Other special-status plant species with the potential to occur within the Proposed Project include California androsace (*Androsace elongata* ssp. *Acuta*), San Diego sagewort (*Artemisia palmeri*), San Diego milk-vetch (*Astragalus oocarpus*), Payson's jewelflower (*Caulanthus simulans*), Lakeside ceanothus (*Ceanothus cyaneus*), Peninsular spineflower (*Chorizanthe leptotheca*), delicate clarkia (*Clarkia delicate*), summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*), short-bracted bird's-beak (*Cordylanthus rigidus* ssp. *Brevibracteatus*), Tecate tarplant (*Deinandra conjugens*), Colorado Desert larkspur (*Delphinium parishii* ssp. *Subglobosum*), sticky geraea (*Geraea viscida*), Mission Canyon bluecup (*Githopsis diffusa* ssp. *Filicaulis*), San Diego gumplant (*Grindelia hallii*), curving tarplant (*Holocarpha virgata* ssp. *Elongate*), San Diego sunflower (*Hulsea californica*), pride-of-California (*Lathyrus splendens*), Robinson's pepper-grass (*Lepidium virginicum var. robinsonii*), Orcutt's linanthus (*Linanthus orcuttii*), Cleveland's bush monkeyflower (*Mimulus clevelandii*), Hall's monardella (*Monardella macrantha* ssp*. hallii*), golden-rayed pentachaeta (*Pentachaeta aurea ssp. Aurea*), woolly chaparral-pea (*Pickeringia montana var. tomentosa*), Coleman's rein orchid (*Piperia colemanii*), chaparral rein orchid (*Piperia cooperi*), Moreno currant (*Ribes canthariforme*), Coulter's matilija poppy (*Romneya coulteri*), Parish's rupertia (*Rupertia rigida*), Munz's sage (*Salvia munzii*), ashy spike-moss (*Selaginella cinerascens*), Laguna Mountains (jewelflower *Streptanthus bernardinus*), southern jewelflower (*Streptanthus campestris*), Parry's tetracoccus (*Tetracoccus dioicus*) and rush-like bristleweed (*Xanthisma junceum*). These species were not detected within the Proposed Project footprint during rare plant surveys, but the Proposed Project contains suitable habitat for these species.



N

0 500 1,000

Feet

Felt-leaved Monardella Locations

Current Location

Historic Location

Source: SCWA 2015a

Project Area

Figure 7-6
Felt-leaved Monardella in the Vicinity of the Proposed Project

Suncrest Dynamic Reactive Power Support Project

Prepared by:

Horizon WATER and ENVIRONMENT

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Special-Status Animals

Thirteen special-status animals have a "possible" potential to occur at the Proposed Project site. No special status species were identified during biological surveys conducted by SWCA in 2014 and 2015. There are CNDDB records of red-diamond rattlesnake (*Crotalus ruber*) within the Proposed Project site (CDFW 2016). SWCA biologists also observed woodrat houses approximately 820 feet north of Bell Bluff Truck trail (NEET West 2015a). These woodrat houses could have been constructed by either the San Diego desert woodrat (*Neotoma lepida intermedia*), a state species of special concern, or the dusky-footed woodrat (*Neotoma fuscipes*), which is not a special-status species.

Invertebrates

Hermes copper butterfly

Hermes copper butterfly (*Lycaena hermes*) is found in southern mixed chaparral and coastal sage scrub habitats. This species is dependent on its host plant, spiny redberry (*Rhamnus crocea*) as a larval food source, and nectars mainly on California buckwheat (Deutschman et al. 2011). Both of these species are present on the Proposed Project site (NEET West 2015a), though not in close enough proximity to each other to be considered suitable habitat for Hermes copper butterfly, as described further below. The closest CNDDB occurrence is approximately 2.8 miles northeast of the Proposed Project.

The Final EIR/EIS for the Sunrise Powerlink Project provides additional information on Hermes copper butterfly in the vicinity of the Proposed Project, although the information presented is not internally consistent. In Appendix 8J of the Final EIR/EIS, Figure Ap. 8J-36 shows Hermes copper butterfly observations approximately 8 miles south of the Proposed Project (CPUC and Bureau of Land Management [BLM] 2008). Appendix 8R of the EIR/EIS discloses that 80 Hermes copper butterflies were observed during 2008 surveys along the Modified Route D Alternative (CPUC and BLM 2008). Although maps of these observations are not provided, from the mile post descriptions it appears that a cluster of butterflies was observed just south of the current location of the San Diego Gas & Electric (SDG&E) Suncrest Substation. This would be the closest potential observation to the Proposed Project, at approximately 0.3 mile south.

SWCA conducted a habitat assessment for Hermes copper butterfly on October 28, 2015 (NEET West 2015a). This included surveys for spiny redberry shrubs within 15 feet of California buckwheat – preferred habitat for this species (SWCA 2015a). General habitat surveys were conducted in March 2015, but due to access restrictions these surveys were limited to within 10 feet of the roadway (NEET West 2015a). These surveys are outside the flight season for this species, so would be unlikely to detect this species if it were present at the Proposed Project site. These surveys used the *County of San Diego Guidelines for Hermes Copper Butterfly (Lycaena hermes)* (County of San Diego 2010) as a general guideline for the surveys, as there is no formal USFWS survey protocol (NEET West 2015a). These surveys did not identify any suitable habitat within the Proposed Project site, but did identify suitable habitat within 150 meters (500 feet) of the Proposed Project site (NEET West 2015a). This buffer area contains 36 stands of suitable habitat (NEET West 2015a).

As there is suitable habitat within 500 feet of the Proposed Project site, it is possible that Hermes copper butterfly could occur within the Proposed Project site.

Amphibians and Reptiles

Arroyo toad

Breeding habitat for arroyo toad consists of shallow, slow-moving streams and riparian habitats which are regularly disturbed by flooding (USFWS 2009). This species is abundant in third to sixth order streams, but small populations also exist in first and second order stream at elevations up to 4,600 feet above mean sea level (msl) (USFWS 2009). During the non-breeding season, this species uses several upland habitat types adjacent to rivers or streams, including sycamore-cottonwood woodlands, coastal sage scrub, chaparral, oak woodlands, and grassland (USFWS 2009). During this period, this species burrows into sandy areas in upland terraces for refuge (USFWS 2009).

Critical habitat for this species is located along the Sweetwater River, approximately 0.6 miles north of the Proposed Project site. Extant populations of arroyo toad are located within the Sweetwater River Basin (USFWS 2014a). The closest CNDDB occurrence is approximately 3.3 miles southeast of the Proposed Project (CDFW 2016). Surveys conducted for the Proposed Project did not identify suitable habitat for this species (NEET West 2015a). This species is not expected to occur at the Proposed Project site.

Red-diamond rattlesnake

This species is found in chaparral, woodland, grassland, and desert areas from coastal San Diego County to the eastern slopes of the mountains. A CNDDB occurrence of red-diamond rattlesnake is within the Proposed Project site, and there are several other occurrences nearby (CDFW 2016). The Proposed Project has suitable habitat for this species, and it is possible that this species could occur.

Coastal whiptail

Coastal whiptail (*Aspidoscelis tigris stejnegeri*) is a lizard which is found in deserts, semiarid areas as well as woodland and riparian areas. This species is possible in the Engelmann Oak-Coast Live Oak/Poison Oak/Grass Association habitat. The closest CNDDB occurrence is approximately 3.9 miles south of the Proposed Project site (CDFW 2016).

Coast horned lizard

Coast horned lizard (*Phrynosoma blainvillii*) occurs in a variety of habitats throughout California. In southern California, it can occur from the coast up to elevations of 6,000 feet in the mountains (CDFG 2000). It burrows into loose soil to avoid predators and heat, and mainly feeds on ants (CDFG 2000). The closest CNDDB occurrence is approximately one mile northeast of the Proposed Project site (CDFW 2016). Suitable habitat occurs in the Proposed Project vicinity, and this species may be present.

Coast patch-nosed snake

Coast patch-nosed snake (*Salvadora hexalepis virgultea*) is known to occur mainly in shrubby or brushy habitats in coastal southern California, ranging from San Luis Obispo to Baja California and elevations from sea level to approximately 7,000 feet above msl (Jennings and Hayes 1994). It generally preys upon whiptail lizards, and is thought to overwinter in burrows or woodrat nests (Jennings and Hayes 1994). The closest CNDDB occurrence is

approximately four miles southwest of the Proposed Project site (CDFW 2016). Suitable habitat occurs in the Proposed Project vicinity, and this species may be present.

Birds

Golden Eagle

Golden Eagle (*Aquila chrysaetos*) is found throughout California (except the center of the Central Valley), typically in rolling foothills, mountains, desert, and sage-juniper flats (Polite and Pratt 1990). Its elevation range is from sea level to 11,500 feet above msl (Polite and Pratt 1990). This species nests on cliffs and large trees in open areas, and feeds on small mammals, birds and reptiles (Polite and Pratt 1990).

Golden Eagles have been reported in the vicinity of the Proposed Project since 1971 (eBird 2016). The most recent report in the vicinity was in May of 2016, approximately 2.8 miles northeast of the Proposed Project site (eBird 2016). Occupied eagle nests were identified approximately 5 and 11 miles from the Proposed Project site during focused surveys in 2010 and 2011 (NEET West 2015a). Breeding activity occurred in the past within 1 mile of the Project site, but the nests are believed to have been destroyed in wildfires more than 8 years ago and no nests have been detected in recent surveys (NEET West 2015a). The closest CNDDB occurrence is approximately 9.8 miles south of the Proposed Project site (CDFW 2016).

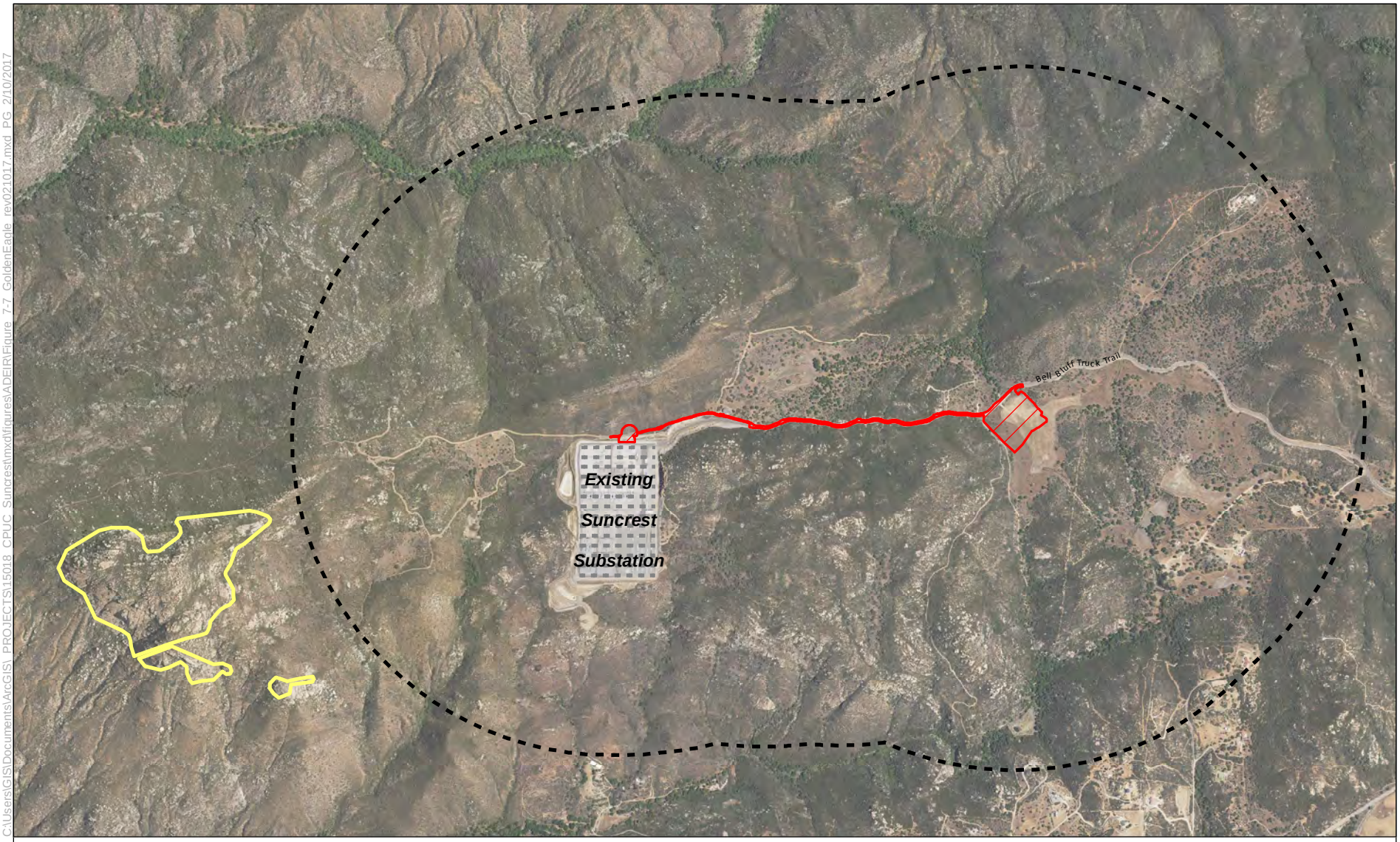
This species may forage within the Proposed Project site. There is no nesting habitat within the Proposed Project site, but cliffs in the vicinity provide potentially suitable nesting habitat. Golden eagles could potentially establish nests on Bell Bluff, west of the Proposed Project. SWCA identified potential nesting habitat in the vicinity of the Proposed Project. This habitat is more than 4,000 feet from the Proposed Project and is depicted in Figure 7-7 (NEET West 2015a).

Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is largely a summer and fall transient in southern California (Polite 2006). The breeding population in San Diego County is considered extirpated (Bloom 1980). The closest CNDDB occurrence is approximately 11.7 miles southwest of the Proposed Project (CDFW 2016). This species may occur at the Proposed Project site during migration, but is not expected to breed in the vicinity of the Proposed Project.

Southwestern Willow Flycatcher

Southwestern Willow Flycatcher (*Empidonax traillii extimus*) is a small, insect-eating migratory bird which historically migrated and bred in the southwest U.S. and northern Mexico (USFWS 2014b). This species nests in riparian vegetation from sea level to approximately 8,500 feet above msl (USFWS 2014b). Generally, this species does not nest in areas which lack willows (*Salix* spp.) or tamarisk (*Tamarix* spp.) (USFWS 2014b). Suitable nesting habitat likely exists along the Sweetwater River, 0.6 miles north of the Proposed Project. The closest CNDDB occurrence is approximately 10.6 miles northwest of the Proposed Project (CDFW 2016). The Proposed Project site lacks suitable nesting habitat, but this species could potentially be present during migration.



N

0 1,000 2,000
Feet

Likely Golden Eagle Nesting Area

Source: SCWA 2015a

Project Area

4000-foot buffer

Figure 7-7
Likely Golden Eagle Nesting Area

Prepared by:
Horizon
WATER and ENVIRONMENT

Suncrest Dynamic Reactive Power Support Project

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Mammals

Pallid bat

In California, pallid bat (*Antrozous pallidus*) occurs in a variety of habitats throughout the state, such as oak woodland, brushy areas, rocky canyons, desert, and coastal redwood forests at elevations up to approximately 9,800 feet above msl (Pierson and Rainey 1998a). This species roosts in crevices in rock, old buildings, bridges, caves, mines, and tree cavities (Pierson and Rainey 1998a). It feeds on a variety of insect species. This species is not expected to roost at the Project site, but may forage there. The closest CNDDB occurrence is approximately 2.8 miles northeast of the Proposed Project (CDFW 2016).

Dulzura pocket mouse

Dulzura pocket mouse (*Chaetodipus californicus femoralis*) is found in San Diego County in habitats including coastal scrub, chaparral, and grassland. This species is often found at grass-chaparral edges. Suitable habitat occurs in the Proposed Project area, and this species may be present. The closest CNDDB occurrence is approximately 1.5 miles southeast of the Proposed Project (CDFW 2016).

Northwestern San Diego pocket mouse

Northwestern San Diego pocket mouse (Chaetodipus fallax fallax) is found in western San Diego County in coastal scrub, chaparral, grasslands, and sagebrush habitats. It prefers sandy areas, usually in association with rocks or coarse gravel. It is found at elevations from 0 to 6,000 feet above msl (Brylski 1990a). This species is a granivore (Dudek 2003). The closest CNDDB occurrence is approximately 11.5 miles west of the Proposed Project (CDFW 2016). Suitable habitat occurs in the Proposed Project vicinity, and this species may be present.

Townsend's big-eared bat

Townsend's big-eared bat (*Corynorhinus townsendii*) is a colonial bat species which is distributed throughout Western North America (Pierson and Rainey 1998). Small moths are the primary food source for this species, but it also consumes beetles and other insects (Harris 1990). This species generally roosts in caves, but may also roost in old mines or buildings (Pierson and Rainey 1998b). This species is known to roost in San Diego County (Pierson and Rainey 1998b). The closest CNDDB occurrence is approximately five miles northwest of the Proposed Project (CDFW 2016). The Project site does not contain suitable roosting habitat, but this species could potentially be present during foraging.

Stephens' kangaroo rat

Stephens' kangaroo rat (*Dipodomys stephensi*) typically occurs west of the Peninsular Ranges, at lower elevations in flat or gently rolling grasslands of inland valleys in western Riverside County and northern and Central San Diego County (USFWS 2010). This species prefers grasslands that are dominated by forbs (USFWS 2010). The closest known population of this species is located in the Ramona Grasslands, approximately 20 miles northwest of the Proposed Project (USFWS 2010). The closest CNDDB occurrence is approximately 19.8 miles northwest of the Proposed Project (CDFW 2016). The Project site is not considered part of this species current range (USFWS 2016e), thus this species is not expected to occur at the Project site. No surveys have been conducted for this species (NEET West 2015a).

Western mastiff bat

Western mastiff bat (*Eumops perotis californicus*) is a colonial bat found in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. It roosts in crevices in cliff faces, large boulders and cracks in buildings and roosts are generally located at least 10 feet from the ground (Pierson and Rainey 1998). It largely feeds on moths (Pierson and Rainey 1998c). It ranges from central Mexico and across the southwestern U.S. (Pierson and Rainey 1998c). In southern California, it is widely distributed, with concentration in San Diego County and the Los Angeles basin (Pierson and Rainey 1998c). The closest CNDDB occurrence is approximately 1.8 miles southeast of the Proposed Project (CDFW 2016). The Proposed Project site contains suitable foraging habitat, but does not contain suitable roosting habitat. However, this species could potentially roost in nearby cliffs.

San Diego desert woodrat

San Diego desert woodrat is found in coastal scrub, and prefers moderate to dense canopies. It is found in greater numbers in rock outcrops, rocky cliffs, and slopes (Brylski 1990b). This species is distributed from San Diego County to San Luis Obispo County. This species builds houses out of twigs and other materials, often in rock crevices or in lower tree branches (Brylski 1990b). The closest CNDDB occurrence is approximately 11.6 miles west of the Proposed Project (CDFW 2016). Three woodrat nests were observed north of Bell Bluff Truck Trail, outside of the Project site (NEET West 2015a). The non-special status dusky-footed woodrat also overlaps in range with the Proposed Project. The woodrat houses could have been constructed by either of these species. As suitable habitat for San Diego desert woodrat occurs at the Proposed Project site, this species may be present at the Project site.

7.4 Impact Analysis

7.4.1 Methodology

The Proposed Project may impact biological resources through the direct or indirect disturbance, modification, or destruction of habitat such that it results in death, injury or harassment of individuals or populations of plant or animal species, or impedes or prevents the dispersal of individuals or populations of special-status species. Potential impacts on existing biological resources were evaluated by comparing the quantity and quality of habitats present in the project area under baseline conditions to anticipate conditions after implementation of the Proposed Project activities. Direct and indirect impacts on special-status species were assessed based on the potential for the species or their habitat to be disturbed or enhanced by implementation of the Proposed Project.

7.4.2 Criteria for Determining Significance

Based on Appendix G of the CEQA Guidelines and professional expertise, the Proposed Project would result in a significant impact to biological resources if it would:

A. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW, USFWS, or NMFS;

B. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW, USFWS, or NMFS;

C. 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, hydrological interruption, or other means; or

D. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

E. Conflict with local policies or ordinances protecting biological resources, or conflict with the provisions of an adopted Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP).

The analysis considers both species and their habitats. A less-than-significant impact generally refers to a situation where there is a measurable impact, but the impact is not likely to result in an adverse outcome for the survival or fitness of a particular species, or a widespread or long-lasting adverse effect on a natural community. Conversely, an impact would be considered potentially significant if it may substantially decrease the likelihood of survival or fitness of a particular species (e.g., substantial decrease in a local population size or extirpation), or result in widespread or long-lasting adverse effects on a natural community. For impacts found to be potentially significant, mitigation measures are proposed. Any impact that remains significant after application of all feasible mitigation is considered significant and unavoidable.

7.4.3 Environmental Impacts

Impact BIO-1: Effects on Special-Status Plants (Less than Significant with Mitigation)

Construction of the Proposed Project would involve vegetation clearing, excavation, and grading that could result in a direct impact on special-status plant species or their habitat. This would be a significant impact. Operations of the Proposed Project are unlikely to result in surface disturbances to any special-status species or related habitats, and would not have a significant adverse impact on special-status plants.

Several special status plants have the potential to occur in the Proposed Project site. These include felt-leaved monardella. San Diego milk-vetch, delicate clarkia, Lakeside ceanothus, summer holly, Tecate tarplant, sticky geraea, San Diego gumplant, San Diego sunflower, Orcutt's linanthus, Hall's monardella, Moreno currant, and southern jewelflower.

No special status plants have been identified within the Project footprint to date. Felt-leaved monardella has historically been present in the immediate vicinity of the Proposed Project along Bell Bluff Truck Trail. This species was detected in 2010 pre-construction rare plant surveys for the Sunrise Powerlink transmission line and Suncrest Substation, and again in 2015 rare plant surveys conducted for the Proposed Project (NEET West 2015a). A population consisting of approximately 25 individuals was identified in 2015 adjacent to the

Bell Bluff Truck Trail, outside of the project footprint (NEET West 2015a). There is suitable habitat for this species within the Project site.

Construction in the vicinity of the known population of felt-leaved monardella would be limited to the paved portions of Bell Bluff Truck Trail, and the project has been designed to avoid this species. Although felt-leaved monardella is not currently present within the Project site, ~~as this species is an annual, its location can change from year to year~~ the location of this population may change over time. If the Proposed Project were to overlap with occurrences of this species, due to design change or population movement, impacts could include mortality of individuals and/or population fragmentation. This would be a significant impact.

Several mitigation measures are proposed to avoid, reduce, or compensate for direct impacts on special-status plant species. Implementation of **Mitigation Measure BIO-1** would avoid or minimize disturbance to known occurrences of special-status plants (Figure 7-1), to the extent feasible. Within one year of the start of ground-disturbing activities, **Mitigation Measure BIO-2** would be implemented to identify the extent to which special-status plants are present and could be adversely affected by the Proposed Project. Mitigation Measure BIO-2 is necessary because the presence of special-status plants could change between the time rare plant surveys were conducted in 2015 and when construction commences. **Mitigation Measure BIO-3** would require monitoring to confirm avoidance or minimization of impacts to identified special-status plant populations. Finally, **Mitigation Measure BIO-4** would be implemented to provide compensatory mitigation should special-status plants be adversely affected.

With implementation of these mitigation measures, the impact on special-status plants would be less than significant with mitigation.

Mitigation Measure BIO-1: Design Project to Avoid or Minimize Impacts on Known Occurrences of Special-Status Plants.

NEET West or their contractor(s) shall implement the following measures:

- To the extent feasible, the Proposed Project shall avoid or minimize impacts on known occurrences of felt-leaved monardella (as shown on Figure 7-6 of this EIR). Avoidance and minimization measures may include adjustments of the project design to avoid special-status plants.

Mitigation Measure BIO-2: Perform Focused Surveys for Special-Status Plants.

NEET West or their contractor(s) shall implement the following measures:

Within 1 year before commencement of ground-disturbing activities, a qualified botanist shall perform surveys for special-status plant species with the potential to occur at the site. Floristic surveys will be performed according to the *Protocols for Surveying and Evaluating Impacts to Specials Status Native Plant Populations and Natural Communities* (CDFG 2009 or current version). Floristic surveys will be performed during the appropriate bloom period(s) for each species. If special-status plants are detected within the construction zone or within a 100-foot radius of the construction zone, Mitigation Measure BIO-3 shall be implemented.

Mitigation Measure BIO-3: Avoid or Minimize Impacts on Special-Status Plant Species during Construction.

If special-status plants are detected within the construction zone or within a 100-foot radius of the construction zone while implementing Mitigation Measure BIO-~~1b~~2, NEET West or the contractor(s) shall install exclusion fencing to protect plants that remain in place. Locations of special-status plant populations shall be clearly identified in the field by staking, flagging, or fencing. The plants shall be monitored throughout the duration of construction to determine whether the project has resulted in adverse effects (direct or indirect), as determined by a qualified botanist. If the botanist determines that special-status plants may have been adversely affected, NEET West shall implement measures to compensate for the impact as described in Mitigation Measure BIO-4.

Mitigation Measure BIO-4: Compensate for Impacts to Special-Status Plant Species.

If avoidance of special-status plants is not feasible, NEET West shall implement measures to compensate for impacts on special-status plants. Compensation may be provided by purchasing credits at an approved mitigation bank (provided at a minimum 1:1 ratio [mitigation to impact]), or through transplanting perennial species, collecting and dispersing seed of annual species, and other conservation strategies that shall restore and protect the viability of the local population. Because of the differences in plant growth forms and life histories, conservation measures would be developed on a species-specific basis based on input from CDFW, and would be consistent with the East San Diego County MSCP planning process. If compensation measures are implemented, monitoring plant populations shall be conducted annually for 5 years to assess the mitigation's effectiveness. Monitoring shall assess vegetative density, population size, natural recruitment, and plant health and vigor. Monitoring results may trigger management actions such as collection and sowing of additional seed, tillage/disturbance within existing populations to induce establishment, installation of container plants, and control of other competing vegetation to ensure successful plant establishment and survival. The determination of success will be based on whether there has been a substantial reduction (> 20 percent) in the size or abundance of the population compared to baseline conditions. The site shall be evaluated at the end of the 5-year monitoring period, or sooner if conditions allow, to determine whether the mitigation has met the success criteria.

Impact BIO-2: Effects on Special-Status Birds and Species Protected under the Migratory Bird Treaty Act (Less than Significant With Mitigation)

Special status birds that could potentially be present at the Project site during migration include Swainson's Hawk and Southwest Willow Flycatcher. The Project site does not provide high quality foraging habitat for these species, and these species are not anticipated to nest within the Project site. Thus, impacts to these species are anticipated to be less than significant. Golden Eagles may potentially be present in the vicinity of the Proposed Project, and impacts to this species are addressed in Impact BIO-3. Although no special-status birds are anticipated to nest within the Project site, a variety of birds protected by the MBTA could potentially nest within the Project site or in the immediate vicinity.

Construction of the Proposed Project could disturb nesting birds by generating noise, creating visual distractions, or having a direct impact on occupied nests (e.g., vegetation removal). Transmission infrastructure may pose electrocution and collision hazards for raptors in the area. The impacts from construction activities that disturb nesting of birds protected under the MBTA would be considered potentially significant. Implementation of **Mitigation Measures BIO-5** and **BIO-6** would reduce this impact to a level that is less than significant with mitigation.

Impacts from transmission infrastructure would also be considered potentially significant. The Proposed Project has been designed to minimize impacts to birds from transmission infrastructure by locating the majority of the transmission line underground. To further reduce the potential of impacts from transmission infrastructure on birds, **Mitigation Measure BIO-7** would be implemented.

Mitigation Measure BIO-5: Avoid Impacts on Nesting Birds.

Whenever possible, NEET West or their contractor(s) shall avoid impacts on native nesting birds by not initiating Proposed Project activities that involve clearing vegetation, generating mechanical noise, or ground disturbance during the typical breeding season from February 1 to August 31.

Mitigation Measure BIO-6: Implement Preconstruction Surveys for Birds Protected under the MBTA.

If construction is scheduled to commence during the non-nesting season (September 1 to January 31), no preconstruction surveys for nesting birds are required. If construction begins between February 1 and August 31, ~~NEET West or their contractor(s) shall ensure that~~ surveys for nesting birds ~~are~~ will be conducted by a CPUC, USFWS, or CDFW-approved ~~qualified~~ biologist within a 500-foot radius of the construction area. The survey shall be conducted no more than 14 days prior to construction. If the biologist determines that the area surveyed does not contain any active nests, then construction activities may commence without any further mitigation. If active nests are found, CDFW and USFWS will be notified and no-work buffers around nests shall be established that are sufficient to ensure that breeding is not likely to be disrupted or adversely affected by construction. Buffers for non-special-status birds protected under the MBTA shall be 250 feet around the nest. Special status birds are not anticipate to nest within 500 feet of the Proposed Project, but if active special status bird nest are detected, no-work buffer shall be 500 feet around the nest. Buffers will be maintained until the young have fledged or the nests become inactive, or unless a qualified CDFW or USFWS biologist determines that smaller buffers would be sufficient to avoid impacts to nesting birds. Factors to be considered for determining buffer size will include: the presence of natural buffers provided by vegetation or topography; nest height; locations of foraging territory; and baseline levels of noise and human activity.

If construction-related blasting is deemed necessary during the nesting season for the Golden Eagle, NEET West shall provide CPUC, CDFW, and USFWS additional detail regarding the extent, timing, and duration of such blasting. No blasting shall occur until an avoidance plan is approved by CPUC, CDFW, and USFWS.

Mitigation Measure BIO-7: Structures Constructed to Minimize Impacts to Raptors and other Avian Life.

NEET West or their contractor(s) shall construct structures to conform to "Suggested Practices for Raptor Protection on Power Lines" (Raptor Research Foundation, Inc. 1981) to minimize impacts to raptors. NEET West or their contractor(s) shall construct all aboveground power transmission lines to the Avian Power Line Interaction Committee (APLIC) Guidelines recommendations: *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*, and *Reducing Avian Collisions with Power Lines: State of the Art in 2012* (APLIC 2006, 2012).

Impact BIO-3: Effects on Golden Eagle (Less than Significant With Mitigation)

Golden Eagles are present in the vicinity of the Proposed Project, and have historically nested approximately 1 mile away from the Proposed Project. At this distance, construction of the Proposed Project is not anticipated to substantially affect nesting golden eagles through blasting noise. However, if nesting golden eagles were to occur within 500 feet of the construction footprint, and blasting was to be used during construction, nest abandonment might occur. This would be a significant impact.

As the Suncrest Substation was constructed in 2011 and 2012, and has been in operation since, any Golden Eagle nests established in the vicinity are presumably habituated to the increased human presence and noise associated with the substation. Operation of the Proposed Project is not anticipated to greatly increase human visitation and noise compared to current conditions at the site. Anticipated operational noise levels resulting from the Proposed Project are discussed in detail in Chapter 15, *Noise and Vibration*, and were found to be less than significant compared to existing conditions. Thus impacts from operation of the Proposed Project on golden eagles are anticipated to be minimal.

Implementation of **Mitigation Measures BIO-5** and **BIO-6** would reduce the potential for noise impacts from blasting on nesting Golden Eagles to a level that is less than significant with mitigation.

Impact BIO-4: Effects on Hermes Copper Butterfly (Less than Significant With Mitigation)

Suitable habitat for the Hermes copper butterfly is present in the vicinity of the Proposed Project. No suitable habitat was mapped within the Project site during the 2015 surveys conducted by SWCA. While California buckwheat and spiny redberry are present within the Project site, the two plant species are not in close enough proximity to be considered suitable habitat for the Hermes copper butterfly.

Suitable habitat for Hermes copper butterfly may develop within the project footprint prior to construction. If this occurs, the Proposed Project could have a substantial adverse effect on the species. ~~This would be a significant impact.~~ Vehicle strikes and removal of vegetation could result in direct impacts to the Hermes copper butterfly. Removal of the spiny redberry shrub and California buckwheat would destroy the Hermes copper butterfly's habitat. Indirect impacts to both the Hermes copper butterfly and its habitat could result from fugitive dust, invasive plant species, and herbicide application. These impacts would be considered

significant. **Mitigation Measure BIO-8** and **BIO-9** would reduce potential impacts to Hermes copper butterfly to less than significant. **Mitigation Measure BIO-12** would minimize impacts from vehicle strikes by generally restricting vehicles to existing roads and minimizing vehicle speed on roads in the Proposed Project. **Mitigation Measure HYD/WQ-1** would reduce the potential for fugitive dust by watering for dust control. **Mitigation Measure BIO-16** would ensure that herbicide drift would be controlled by using hand-held applicators for spot-treatment, and would reduce the impacts of invasive plant species on potential Hermes copper butterfly habitat.

Mitigation Measure BIO-8: Survey for Potential Hermes Copper Habitat.

Prior to the start of vegetation clearing for the Project, a survey shall be conducted to determine the presence or absence of potentially suitable Hermes copper habitat within the Project footprint. Potentially suitable habitat is defined as mature (woody) spiny redberry shrub(s) within 15 feet of California buckwheat. If Hermes copper habitat is mapped within the project footprint and will be affected by Project activities, then Mitigation Measure BIO-9 shall be implemented.

Mitigation Measure BIO-9: Mitigate for Impacts to Hermes Copper Butterfly Habitat.

NEET West or their contractor(s) shall implement the following measures:

- If areas mapped as Hermes Copper butterfly habitat are advsersely affected by the Proposed Project, NEET West shall mitigate permanent impacts at a 1:1 ratio for unoccupied habitat and 3:1 ratio for occupied habitat. Habitat should be considered occupied if it is within 150 meters of a Hermes copper sighting (County of San Diego 2010).

Impact BIO-5: Effects on Special-Status Mammals and Reptiles (Less than Significant With Mitigation)

Several special-status mammals and reptiles have the potential to occur within the Project site, including red-diamond rattlesnake, coastal whiptail, coast horned lizard, coast patch-nosed snake, pallid bat, Dulzura pocket mouse, northwestern San Diego pocket mouse, Townsend's big-eared bat, Stephens' kangaroo rat, western mastiff bat, and San Diego desert woodrat. These species could be advserely affected by Proposed Project construction through effects on their habitat, and potentially direct mortality. Direct mortality (except for bats) could be caused by construction traffic, vegetation removal, and soil grading. Temporary impacts would include ground disturbance, fugitive dust, and night lighting. Night lighting could impact bats or other nocturnally active species such as the northwestern San Diego pocket mouse and Dulzura pocket mouse. Steep walled excavations (i.e. for the transmission line) could pose an entrapment hazard for special status mammals and reptiles. Habitat loss for these species would also occur. These impacts would be considered potentially significant.

Implementation of several mitigation measures would reduce the potential for impacts to these species. Implementation of **Mitigation Measures BIO-10** and **BIO-11** would reduce potential impacts to these special-status species through education of Proposed Project personnel and employing a biological monitor to monitor construction activities. Implementation of **Mitigation Measure BIO-12** would minimize impacts such as habitat

destruction or direct mortality by generally restricting vehicles to existing roads and minimizing vehicle speed on roads in the Proposed Project. Implementation of **Mitigation Measure BIO-13** would reduce the potential for special status species to be present within the Proposed Project footprint prior to vegetation clearing and ground disturbing activities. Implementation of **Mitigation Measure BIO-14** would reduce the potential for steep-sided excavation or trenching to entrap special-status wildlife by twice-daily monitoring and fencing/covering of excavations at the end of each workday. **Mitigation Measure BIO-15** would reduce the potential for impacts to nocturnal animals from increased nighttime light. To minimize the Proposed Project impacts on special-status species habitat, **Mitigation Measure BIO-16** would be implemented to restore temporarily affected areas.

As described in Chapter 12, *Hydrology and Water Quality*, the Proposed Project would be required to obtain a General Construction Stormwater Permit from the SDRWQCB, which would require preparation and implementation of a stormwater pollution prevention plan (SWPPP). The SWPPP would include a list of BMPs to prevent erosion, including fugitive dust. Implementation of **Mitigation Measures HYD/WQ-1** and **BIO-12** would reduce the potential for fugitive dust by watering for dust control, minimizing the area of soil disturbance, and minimizing vehicle speed on roads.

With implementation of the above described mitigation measures, impacts to these species would be reduced a level that is less than significant with mitigation.

Mitigation Measure BIO-10: Educational Training.

NEET West or their contractor(s) shall ensure that before conducting construction activities all Proposed Project personnel shall participate in an educational training session conducted by a CPUC-approved ~~qualified~~ biologist or CPUC-approved environmental inspector. All on-site personnel shall be informed about relevant special-status species and their habitat, conservation goals, identification, and procedures to follow in the event of a possible sighting. Personnel who miss the first training session or are hired later in the season must participate in a make-up session before conducting Project activities. A record of the personnel that attended the training shall be kept by the CPUC-approved ~~qualified~~ biologist or CPUC-approved environmental inspector.

Mitigation Measure BIO-11: Biological Monitor.

NEET West or their contractor(s) shall employ a qualified biologist or environmental inspector who is familiar with the biological resources and issues at the Proposed Project to conduct monitoring during all construction-related ground-disturbing activities that may impact sensitive biological resources. These activities would include but not necessarily be limited to: initial clearing and vegetation removal; perimeter fence installation and excavation; and movement of construction equipment and other activities outside of fenced/paved areas within wildlife habitat. The biological monitor/environmental inspector shall flag or otherwise clearly mark environmentally sensitive areas with appropriate buffers, within which construction is not allowed. The monitor/inspector shall have the authority to stop work activities upon the discovery of sensitive biological resources, and allow construction to proceed after the identification and implementation of steps required to avoid or

minimize impacts to sensitive resources. Such steps shall be pre-approved by CDFW and/or USFWS, as applicable given the species' status.

Mitigation Measure BIO-12: Vehicle Use of Existing Roads.

NEET West or their contractor(s) shall restrict all Proposed Project vehicle movement to existing roads as a part of the Proposed Project, except when not feasible due to physical or safety constraints. When it is not feasible to keep vehicles on existing access roads or avoid construction of access driveways ~~during the nesting, breeding, or migration season,~~ NEET West shall perform a site survey in the area where the work is to occur~~. This survey shall be performed to determine presence or absence of special-status nesting birds or other special-status species in the work area~~ as detailed in Mitigation Measure BIO-13.

Parking or driving on unpaved areas underneath oak trees shall not be allowed in order to protect root structures. In addition, a 15-mile-per-hour speed limit shall be observed on roads in the Proposed Project area to reduce dust and allow reptiles and small mammals to disperse.

Mitigation Measure BIO-13: Preconstruction Sweeps for Biological Resources.

Prior to initial vegetation clearance, grubbing, and ground-disturbing activities, NEET West or their contractor(s) shall ensure that a qualified biologist shall conduct pre-construction sweeps of the Project site for special-status wildlife and plants. During these surveys, the biologist shall:

a) Ensure that potential habitats become inaccessible to wildlife (e.g., burrows are removed that would otherwise provide temporary refuge);

b) Survey for bat roosts by performing a daytime pedestrian survey to inspect potential habitat within 100 feet of the Proposed Project limits for indications of bat use (e.g., occupancy, guano, staining, smells, or sounds) and a night roost/emergence survey. The survey must be performed a qualified bat biologist. If the bat biologist determines that habitat within the survey area is used, or is likely to be used, as a bat roost, and may be affected by construction, then specific measures will be developed and implemented to minimize impacts on the roost. Such measures may include minimizing construction activity near the roost during the maternity season (May 1-August 15) or other measures developed by a qualified bat biologist that will minimize the disturbance to a level that would not cause long-term roost abandonment or failure of a maternity roost.

c) In the event of an unanticipated discovery of a special-status ground-dwelling animal, a biologist holding the appropriate State and/or federal permits shall recover and relocate the animal to adjacent suitable habitat within the Proposed Project at least 200 feet from the limits of grading; and,

d) In the event of the discovery of a previously unknown special-status plant, the area will be marked as an environmentally sensitive area, and avoided to the maximum extent practicable. If avoidance is not possible, NEET West will

implement Mitigation Measure BIO-4.~~consult with USFWS and/or CDFW as appropriate given the species' status.~~

Mitigation Measure BIO-14: Inspect Excavations for Trapped Wildlife.

NEET West or their contractor(s) shall inspect all steep-walled trenches or excavations used during construction twice daily (early morning and evening) to protect against wildlife entrapment. If wildlife is located in a trench or excavation, the on-site biological resource monitor shall be contacted immediately to remove them if they cannot escape unimpeded. If the biological resource monitor is not qualified to remove the entrapped wildlife, a recognized wildlife rescue agency may be employed to remove the wildlife and transport them safely to other suitable habitats.

Steep-walled trenches and excavations shall be fenced and/or covered at the end of each workday, to prevent wildlife from becoming entrapped and for safety purposes. Alternatively, escape ramps shall be installed in trenches or excavation to allow wildlife to exit on their own volition.

Mitigation Measure BIO-15: Minimize Night Lighting.

NEET West or their contractor(s) shall minimize construction night lighting on adjacent habitats. Exterior lighting within the Proposed Project area adjacent to habitat shall be the lowest illumination allowed for human safety and security, selectively placed, shielded, and directed downward to the maximum extent practicable. Vehicle traffic associated with Proposed Project activities shall be kept to a minimum volume and speed to prevent mortality of nocturnal wildlife species.

Mitigation Measure BIO-16: Restoration and Revegetation.

NEET West shall develop a Restoration and Revegetation Plan to guide restoration activities on the Project site that promotes locally appropriate native plant growth and eliminates non-native and invasive species. The Restoration Plan shall identify measures and success criteria specific to each impacted plant community at the Proposed Project. The total area to be planted, and species composition, shall be tailored for each affected plant community based on existing standards and precedents. The Restoration Plan shall identify success criteria for each habitat type and develop monitoring measures to ensure that success criteria will be met. The Restoration Plan shall be consistent with the East San Diego County MSCP planning process. Monitoring results shall be provided to CDFW on a basis determined in the Restoration Plan.

Disturbed soils shall be revegetated with an appropriate weed-free, native seed mix. All areas designated for temporary impacts shall be revegetated with a seed blend that includes native grasses, forbs, and shrub species characteristic of the plant community receiving the temporary impact. Revegetation activities shall be undertaken as soon as construction activities have been completed to minimize colonization by non-native weedy species and to ensure compliance with the Proposed Project's SWPPP. Herbicides, if required during the restoration period, shall be applied using hand-held applicators for spot-treatment and shall not be used within 100 feet of drainages or sensitive plant populations.

Impact BIO-6: Sensitive Natural Communities (Less than Significant With Mitigation)

The majority of the Proposed Project would be constructed on disturbed and previously developed land that does not support riparian habitat or other sensitive natural communities; however, portions of the Proposed Project would be constructed in the Engelmann Oak – Coast Live Oak/Poison Oak/Grass Association, a sensitive natural communities as identified by CDFW (CDFG 2010) (Figure 7-1). Although no Engelmann Oak trees will be disturbed, tThe Proposed Project would permanently impact approximately 0.3 acre of this habitat (Table 7-1).

Within the Project Area, this community has been subjected to repeated disturbances over the past 20 years. However, this community still provides habitat values. Temporary and permanent loss of the Engelmann Oak – Coast Live Oak/Poison Oak/Grass Association would be considered a potentially significant impact. Implementation of **Mitigation Measures BIO-17** and **BIO-18** would reduce this impact to a level that is less than significant with mitigation.

Mitigation Measure BIO-17: Minimize Area of Disturbance of Engelmann Oak – Coast Live Oak/Poison Oak/Grass Association Habitat.

NEET West or their contractor(s) shall ensure that the disturbance or removal of vegetation shall not exceed the minimum necessary to complete construction and shall only occur within the defined work area.

Mitigation Measure BIO-18: Develop and Implement a Restoration Plan for Engelmann Oak – Coast Live Oak/Poison Oak/Grass Association Habitat Disturbed during Construction.

NEET West or their contractor(s) shall develop and implement a Habitat Restoration Plan to mitigate any temporary and permanent impact on Engelmann Oak – Coast Live Oak/Poison Oak/Grass Association habitat. The Restoration Plan shall be consistent with the East San Diego County MSCP planning process. Monitoring results shall be provided to CDFW on a basis determined in the Restoration Plan. At a minimum, fFor any temporary impact, all disturbed soils and new fill in this habitat shall be revegetated with site-appropriate native species. For any permanent impact, Engelmann Oak – Coast Live Oak/Poison Oak/Grass Association habitat shall be mitigated, at a minimum, at a ratio of 1.1:1 (replacement to impact). Engelmann Oak – Coast Live Oak/Poison Oak/Grass Association restoration or compensation may be completed at the Project site, in the vicinity, or at a conservation bank with a service area that covers the Project site. Revegetated or restored areas shall be maintained and monitored to ensure a minimum of 65 percent survival of woody plantings after 5 years.

Impact BIO-7: Effects on Waters (Less than Significant with Mitigation)

As described above, there are no USACE jurisdictional waters within the Proposed Project. The path of the transmission line crosses two drainages which are conveyed underneath Bell Bluff Truck Trail via culverts. It is anticipated that the excavation for the proposed transmission line would occur beneath these culverts, and that they would be shored and left in place; however, it is possible that culverts would need to be temporarily removed during

construction. No impacts to the natural bed, bank, or riparian vegetation would occur. If culverts were removed during a period when water is flowing in these drainages, significant impacts to these waters could occur. Implementation of **Mitigation Measure HYD/WQ-2** would reduce these impacts by minimizing the potential for water to be present in drainage at the time of temporary culvert removal.

Construction of the Proposed Project would involve site clearing, grading, and excavation, which could potentially impact waters in the vicinity of the Proposed Project through erosion. Existing regulations would require the Proposed Project to implement a number of measures to prevent possible adverse effects on water quality. These measures are described in Chapter 12, *Hydrology and Water Quality*. **Mitigation Measure HYD/WQ-1**, also described in Chapter 12, details BMPs that would be protective of water quality. Additionally, inadvertent release of hazardous materials could potentially impact waters. As described in Chapter 11, *Hazards and Hazardous Materials*, **Mitigation Measure HAZ-1** would require preparation and implementation of a Hazardous Materials and Waste Management Plan. With implementation of **Mitigation Measures HYD/WQ-1, HYD/WQ-2,** and **HAZ-1**, potential impacts to waters would be reduced to less than significant.

Impact BIO-8: Effects on Movement of Wildlife and Use of Breeding Sites (Less than Significant with Mitigation)

The majority of the Proposed Project would be constructed in previously disturbed or developed lands that do not function as a significant movement corridor for wildlife. Although the Peninsular Ranges provide an important pathway for wildlife migration, the specific Proposed Project location is not a known important migration area. Excavation for the proposed transmission line could create temporary barriers to wildlife movement in the immediate vicinity. Impacts of excavation on wildlife movement would be minimized by implementation of **Mitigation Measure BIO-14**, which requires that steep-sided excavation be covered or fenced at the end of each work day.

Wildlife may breed in the Proposed Project site. Implementation of **Mitigation Measures BIO-5, BIO-6,** and **BIO-7** would reduce potential impacts to wildlife breeding in the vicinity of the Proposed Project. With implementation of these mitigation measure, impacts would be reduced to a level that is less than significant with mitigation.

Impact BIO-9: Conflict with Local Ordinances or Policies Protecting Biological Resources (No Impact)

The CPUC has exclusive jurisdiction over the siting and design of the Proposed Project. As such, projects under CPUC jurisdiction, including the Proposed Project, are exempt from local regulations and permitting. Because these local policies or ordinances do not apply to the Proposed Project, there would be no impact. However, the construction and operation of the Proposed Project will not conflict with any environmental plans, policies, or regulations adopted by agencies with jurisdiction over local regulations related to biological resources. No impact would occur.

Impact BIO-10: Effects on Existing Habitat Conservation Plans or Natural Community Conservation Plans (No Impact)

The Proposed Project is located within the San Diego County MSCP area. However, the East County Plan, which would cover the Proposed Project area, is in the planning phase and has not yet been approved or implemented. The Proposed Project would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan, thus there would be no impact.

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Chapter 8
Cultural Resources

8.1 Overview

This chapter describes potential impacts of the Proposed Project related to cultural and paleontological resources. Cultural resources include prehistoric archaeological sites, historic-era archaeological sites, tribal cultural resources (TCRs), and historic buildings, structures, landscapes, districts, and linear features. Prehistoric archaeological sites are places where Native Americans lived or carried out activities during the prehistoric period, which is generally prior to the late 1700s. Historic-era archaeological sites reflect the activities of people after initial exploration and settlement in the region by the Spanish during the late 1700s, and by others later on. Native American sites can also reflect the historic era. Prehistoric and historic-era sites contain artifacts, cultural features, subsistence remains, and human burials.

Paleontological resources are the fossil remains of prehistoric flora and fauna, or traces of evidence of the existence of prehistoric flora and fauna. This chapter addresses the occurrence of paleontological resources within the project area and the potential impact that construction activities and operation of the Proposed Project would have on scientifically important fossil remains, as identified in the California Environmental Quality Act Guidelines (State CEQA Guidelines). The analysis presented in this chapter conforms to the Society of Vertebrate Paleontology criteria.

The purpose of this chapter is to describe the regulatory setting associated with cultural and paleontological resources, the affected environment for these resources, project impacts on cultural and paleontological resources, and mitigation measures that would reduce these impacts.

8.2 Regulatory Setting

8.2.1 Federal Laws, Regulations, and Policies

National Historic Preservation Act of 1966

Enacted in 1966 and amended in 2000, the National Historic Preservation Act (NHPA) instituted a multifaceted program, administered by the Secretary of the Interior, to encourage sound preservation policies of the nation's cultural resources at the federal, state, and local levels. The NHPA authorized the expansion and maintenance of the National Register of Historic Places (NRHP), established the position of State Historic Preservation Officer, provided for the designation of State Review Boards, set up a mechanism to certify local governments to carry out the goals of the NHPA, assisted Native American tribes in preserving their cultural heritage, and created the Advisory Council on Historic Preservation

(ACHP). Projects that involve federal funding or permitting (i.e., have a federal nexus) must comply with the provisions of the NHPA, as amended (16 U.S. Code 470[f]).

Cultural resources are considered during federal undertakings chiefly under Section 106 of the NHPA through one of its implementing regulations, 36 Code of Federal Regulations [CFR] 800 (Protection of Historic Properties), as well as NEPA. Properties of traditional religious and cultural importance to Native Americans are considered under Section 101(d)(6)(A) of the NHPA. Section 106 states that federal agencies with direct or indirect jurisdiction over federally funded, assisted, or licensed undertakings must take into account the effect of the undertaking on any historic property that is included in or eligible for inclusion in the NRHP, and that the ACHP must be afforded an opportunity to comment, through a process outlined in the ACHP regulations, in 36 CFR Part 800, on such undertakings.

Other federal laws pertaining to cultural resources include the Archaeological Data Preservation Act of 1974, American Indian Religious Freedom Act of 1978, Archaeological Resources Protection Act of 1979, and Native American Graves Protection and Repatriation Act of 1989.

U.S. Forest Service, Cleveland National Forest

The Proposed Project is located on a private parcel within the administrative boundary of the Cleveland National Forest (CNF). Because the Proposed Project does not traverse any CNF or other federal lands, it is not subject to U.S. Forest Service (USFS) jurisdiction. While the Proposed Project is not subject to policies or requirements of the CNF, the CNF is a nearby landholder and, as such, NextEra Energy Transmission West, LLC (NEET West) has considered relevant elements of the plan during the design of the Proposed Project.

The CNF (USDA 2005) has prepared a Land Management Plan that includes goals and objectives regarding cultural resources, including Native American traditional use of resources. The CNF Land Management Plan promotes conservation education and provides for heritage site protection. Goals specific to Native American interests include protecting, preserving, and restoring traditionally and contemporarily used resources, and providing access to those resources; and working collaboratively with Native Americans for managing heritage resources.

8.2.2 State Laws, Regulations, and Policies

CEQA and CEQA Guidelines

Section 21083.2 of the California Environmental Quality Act (CEQA) requires that the lead agency determine whether a project may have a significant effect on unique archaeological resources. A unique archaeological resource is defined in CEQA as an archaeological artifact, object, or site about which it can be clearly demonstrated that there is a high probability that it:

- Contains information needed to answer important scientific research questions, and there is demonstrable public interest in that information;
- Has a special or particular quality, such as being the oldest of its type or the best available example of its type; or

- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Although not specifically inclusive of paleontological resources, these criteria may also help to define "a unique paleontological resource or site."

Measures to avoid, conserve, preserve, or mitigate significant effects on these resources are also provided under CEQA Section 21083.2.

Assembly Bill (AB) 52, which went into effect on July 1, 2015, requires that State lead agencies consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of a proposed project, if so requested by the tribe. The bill, chaptered in CEQA Section 21084.2, also specifies that a project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment.

Defined in Section 21074(a) of the Public Resources Code, TCRs are:

(1) Sites, features, places, cultural landscapes, sacred places and objects with cultural value to a California Native American tribe that are either of the following:

a. Included or determined to be eligible for inclusion in the California Register of Historical Resources; or

b. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

TCRs are further defined under Section 21074 as follows:

(3) A cultural landscape that meets the criteria of subdivision (a) is a TCR to the extent that the landscape is geographically defined in terms of the size and scope of the landscape; and

(4) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Mitigation measures for TCRs must be developed in consultation with the affected California Native American tribe pursuant to newly chaptered Section 21080.3.2, or according to Section 21084.3. Section 21084.3 identifies mitigation measures that include avoidance and preservation of TCRs and treating TCRs with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource.

Section 15064.5(b) of the State CEQA Guidelines notes that "a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Substantial adverse changes include physical changes to the historical resource or to its immediate surroundings, such that the significance of the historical resource would be materially impaired. Lead agencies are expected to identify potentially feasible measures to mitigate significant adverse changes in the significance of a historical resource before they approve such projects. Historical resources are those that are:

- listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR) (Public Resources Code § 5024.1);
- included in a local register of historic resources (Public Resources Code § 5020.1(k)) or identified as significant in an historic resource survey meeting the requirements of Public Resources Code § 5024.1(g); or
- determined by a lead agency to be historically significant.

State CEQA Guidelines Section 15064.5 also prescribes the processes and procedures found under Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.95 for addressing the existence of, or probable likelihood of, Native American human remains, as well as the unexpected discovery of any human remains within the project site. This includes consultation with the appropriate Native American tribes.

State CEQA Guidelines Section 15126.4 provides further guidance about minimizing effects to historical resources through the application of mitigation measures. Mitigation measures must be legally binding and fully enforceable.

The lead agency having jurisdiction over a project is also responsible to ensure that paleontological resources are protected in compliance with CEQA and other applicable statutes. Paleontological and historical resource management is also addressed in Public Resources Code Section 5097.5, "Archaeological, Paleontological, and Historical Sites." This statute defines as a misdemeanor any unauthorized disturbance or removal of a fossil site or remains on public land and specifies that state agencies may undertake surveys, excavations, or other operations as necessary on state lands to preserve or record paleontological resources. This statute would apply to any construction or other related project impacts that would occur on state-owned or state-managed lands.

California Register of Historical Resources

Public Resources Code Section 5024.1 establishes the CRHR. The register lists all California properties considered to be significant historical resources. The CRHR includes all properties listed as or determined to be eligible for listing in the NRHP, including properties evaluated under Section 106 of the National Historic Preservation Act. The criteria for listing are similar to those of the NRHP. Criteria for listing in the CRHR include resources that:

1. Are associated with the events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Are associated with the lives of persons important in our past;

3. Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or

4. Have yielded, or may be likely to yield, information important in prehistory or history.

The regulations set forth the criteria for eligibility as well as guidelines for assessing historical integrity and resources that have special considerations.

8.2.3 Local Laws, Regulations, and Policies

Because the California Public Utilities Commission (CPUC) regulates and authorizes the construction of investor-owned public utility facilities, the CPUC has exclusive jurisdiction over the siting and design of the Proposed Project. As such, projects under CPUC jurisdiction, including the Proposed Project, are exempt from local land use and zoning regulations and permitting. However, Section III.C of CPUC General Order (G.O.) 131-D (planning and construction of facilities for the generation of electricity and certain electric transmission facilities) requires "the utility to communicate with, and obtain the input of, local authorities regarding land-use matters and obtain any non-discretionary local permits." As a result, NEET West has taken into consideration all State and local plans and policies as they relate to cultural resources. Although County and other local polices are listed below, they are provided for disclosure purposes only.

County of San Diego Municipal Code

The County of San Diego Municipal Code, Section 396.7, provides for the San Diego County Local Register of Historical Resources, and describes guidelines for the application, enforcement, and public awareness of the County's historic preservation regulations, as enforced by the County Planning and Development Services department. The purpose of the historic preservation ordinance is to develop and maintain "an authoritative listing and guide to be used by local agencies, private groups, and citizens in identifying historical resources within the County. In addition, the listing shall also be used as a management tool for planning, and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (Subsection B).

Subsection E (2) of Section 396.7 of the Municipal Code provides the following criteria for the designation of historical resources in San Diego County:

A. Is associated with events that have made a significant contribution to the broad patterns of San Diego County's history and cultural heritage;

B. Is associated with the lives of persons important to the history of San Diego County or its communities;

C. Embodies the distinctive characteristics of a type, period, San Diego County region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,

D. Has yielded, or may be likely to yield, information important in prehistory or history.

Sites, places, or objects, which are eligible to the National Register or California Register, are automatically included in the San Diego County Local Register.

County of San Diego General Plan

Chapter 5, Conservation and Open Space Element, of the *San Diego County General Plan* (County of San Diego 2011) includes goals and policies regarding cultural resources to ensure their protection and preservation. The goals and policies are intended to supplement NEPA, NHPA, and CEQA, and are listed below.

Goal COS-7: Protection and Preservation of Archaeological Resources. Protection and preservation of the County's important archeological resources for their cultural importance to local communities, as well as their research and educational potential.

Policy COS-7.1 – Archaeological Protection. Preserve important archaeological resources from loss or destruction and require development to include appropriate mitigation to protect the quality and integrity of these resources.

Policy COS-7.2 – Open Space Easements. Require development to avoid archeological resources whenever possible. If complete avoidance is not possible, require development to fully mitigate impacts to archaeological resources.

Policy COS-7.3 – Archaeological Collections. Require the appropriate treatment and preservation of archaeological collections in a culturally appropriate manner.

Policy COS-7.4 – Consultation with Affected Communities. Require consultation with affected communities, including local tribes, to determine the appropriate treatment of cultural resources.

Policy COS-7.5 – Treatment of Human Remains. Require human remains be treated with the utmost dignity and respect, and that the disposition and handling of human remains will be done in consultation with the MLD [Most Likely Descendent] and under the requirements of federal, State, and County Regulations.

Policy COS-7.6 – Cultural Resource Data Management. Coordinate with public agencies, tribes, and institutions in order to build and maintain a central database that includes a notation whether collections from each site are being curated, and if so, where, along with the nature and location of cultural resources throughout San Diego County.

Goal COS-8: Protection and Conservation of the Historical Built Environment. Protection, conservation, use, and enjoyment of the County's important historic resources.

Policy COS-8.1 – Preservation and Adaptive Reuse. Encourage the preservation and/or adaptive reuse of historic sites, structures, and landscapes as a means of protecting important historic resources as part of the discretionary application process, and encourage the preservation of historic structures identified during the ministerial application process.

Policy COS-8.2 – Education and Interpretation. Encourage and promote the development of educational and interpretive programs that focus on the rich multicultural heritage of San Diego County.

County of San Diego Resource Protection Ordinance

The County of San Diego (2007) adopted the Resource Protection Ordinance (RPO) (Ordinance No. 9842) to protect sensitive resources of all kinds, including "significant prehistoric or historic sites," in 1991 and most recently updated the ordinance in 2007. Under the RPO, a Resource Protection Study must be conducted for use permits, and applications for parcel map revisions and rezoning purposes. This ordinance requires that cultural resources be evaluated as part of the County's discretionary environmental review process and if any resources are determined significant under the RPO, they must be preserved. The RPO prohibits development, trenching, grading, clearing, and grubbing, or any other activity or use that may result in damage to significant prehistoric or historic site lands, except for scientific investigations with an approved research design prepared by an archaeologist certified by the Society of Professional Archaeologists.

Alpine Community Plan

The *Alpine Community Plan* (a component of the *San Diego County General Plan*) (County of San Diego 2010) was developed as a part of and in conjunction with the *San Diego County General Plan* to provide guidance for decisions regarding land use in the Alpine Planning Area. Chapter 9, Conservation, addresses cultural resources—Goal 1 is to "promote the well-planned management of all valuable resources, natural and man-made, and prevent the destruction and wasteful exploitation of natural resources, where feasible." The chapter discuses Resource Conservation Areas (RCAs) and localities identified as worthy of special efforts to protect resources, and includes policies and recommendations to help meet conservation goals; those listed below pertain to cultural resources.

Conservation

- **Policies and Recommendations 1:** Encourage the protection and conservation of unique resources in the Alpine Planning Area.

- **Policies and Recommendations 2:** Important plant, animal, mineral, water, cultural, and aesthetic resources in the Alpine Community Plan area shall be protected through utilization of the RCA designations and appropriate land usage.

- **Policies and Recommendations 3:** Agencies regulating environmental reports and analyses required by CEQA may require supplemental studies for projects with land located in RCAs, if necessary.

- **Policies and Recommendations 4:** Promote conservation education in the community and schools.

- **Policies and Recommendations 26:** Support the preparation of an adequate inventory of significant historical landmarks in Alpine.

- **Policies and Recommendations 27:** Encourage cooperation with other jurisdictions for trading and otherwise negotiating land transfers to consolidate holdings for historical preservation.

Conservation

Goals

- **Goal 1:** The preservation of known historical and archaeological resources, and the provision of adequate protection for new sites as they are discovered.

- **Goal 2:** The preservation of archaeological and historical resources through the identification of resources and regulatory review of development projects.

Policies

- **Policy 1:** Appropriate historical resources shall be nominated to the State and/or National Register of Historic Resources.

- **Policy 2:** Significant historic and prehistoric sites located within the Subregion shall be evaluated for Historic Landmark Status under Ordinance 7105 and, if qualified, shall be designated and rezoned in accordance with Section 7550 and regulated under Section 5700 of the Zoning Ordinance.

- **Policy 3:** Encourage public agencies and private property owners to make significant archaeological and historic resources available to the public for educational purposes.

- **Policy 4:** Create RCAs to protect unique or otherwise scientifically valuable archaeological sites that are identified in CEQA studies, scientific investigations, or from institutional records.

- **Policy 5:** Create management plans to protect archaeological sites from future land development and vandalism.

8.3 Environmental Setting

8.3.1 Prehistory

The prehistory of coastal and inland southern California is varied and rich, with occupations extending from at least 12,000 years ago to historic contact. Numerous chronological sequences have been devised to assess cultural changes within various areas of southern California in the past 75 years or more (Moratto 2004). The framework used here is divided into three major periods: Paleoindian Period (ca. 9000–6000 B.C.), Archaic Period (6000 B.C.–A.D. 500), and Late Prehistoric Period (A.D. 500–Historic Contact).

Paleoindian Period (ca. 9000–6000 B.C. [11,500-8000/7500 B.P.])

Although occupation in California began as early as 8,000 to 11,000 years ago, evidence for the presence of humans prior to about 6000 B.C. (or 8,000 years Before Present [B.P.]) is relatively sparse and scattered throughout the State. The earliest accepted dates for human occupation of southern California come from sites along the coast, particularly from two of

the Northern Channel Islands located off the coast from Santa Barbara. The adaptations reflected in the archaeological record from these sites are referred to as a Paleo-Coastal Tradition that was dependent on marine resources (Jones 1991; Jones et al. 2002). However, an increasing frequency of radiocarbon dates show occupation of the Southern Channel Islands, as well as the coastal areas of Orange and San Diego Counties, as early as 9,000 to 10,000 years B.P. (Byrd and Raab 2010:219). Paleoindians who lived away from the coast in California are reflected in what is termed the Western Pluvial Lakes Tradition. These Paleoindians practiced a diverse mixture of hunting and gathering, and were not dependent on large Pleistocene megafauna as in other parts of North America at the time. As indicated by the name, Western Pluvial Lakes Tradition, the major occupational emphasis of peoples living during this period was on Pleistocene lakeshores in the now-arid areas of southern California, the western Great Basin, and along the Cascade–Sierra Nevada uplift that forms California's eastern border (see Moratto 2004:90–92).

Archaic Period (6000 B.C.–A.D. 500 [8000/7500-1500 B.P.])

Subsistence patterns shifted around 6000 B.C., coincident with the gradual desiccation associated with the onset of the Altithermal, a warm and dry period that lasted about 3,000 years (Antevs 1955). The Archaic Period generally is characterized by an ecological adaptation to collecting, which resulted in an increased frequency of ground stone implements. The Early Archaic Period in southern California is generally referred to as the Milling Stone Period (Wallace 1978), with sites common in the southern California coastal region between Santa Barbara and San Diego, and at many near-coastal and inland locations. A distinction is made between coastal (La Jolla complex) and inland (Pauma complex) cultures within San Diego County during the entirety of the Archaic Period (Moratto 2004; True 1958). Considerable debate exists as to the relationship between the San Dieguito, La Jolla, and Pauma complexes within the San Diego County subregion. Regardless of the San Dieguito debate, archaeological evidence from both inland and coastal sites in San Diego County indicates a long period of cultural continuity during the entire span of the Archaic Period (Moratto 2004).

Late Prehistoric Period (A.D. 500–Historic Contact [1500 B.P.-Historic Contact)

The Late Prehistoric Period in southern California is characterized by a number of changes in subsistence, foraging, and land use patterns, which reflect patterns of Native American groups in the historic period. Small projectile points become dominant during this period, signifying use of the bow and arrow. The period also witnessed an increased emphasis on plant collecting and processing, population size and settlement growth, the establishment of permanent villages, expansion of trade networks, and, in some areas, rock art. Two cultural complexes have been defined for San Diego County during the Late Prehistoric Period: the San Luis Rey II complex in the north and the Cuyamaca complex in the south (Moratto 2004). The San Luis Rey II complex likely represents the forebears of the Takic-speaking Luiseño/Juaneño who inhabited northern San Diego County during the ethnohistoric period. The forebears of the Yuman-speaking Kumeyaay (Ipai and Tipai geographic divisions) of ethnographic and modern times may be represented by the Cuyamaca complex.

8.3.2 Ethnography

At the time of European contact, most of present-day Imperial and San Diego Counties were populated with Yuman-speaking peoples, collectively referred to today as the Kumeyaay, and called Diegueño by the Spanish (Kroeber 1925; Luomala 1978). The Kumeyaay language consists of three main dialects that correspond to the geographic divisions of the Kumeyaay. These dialects are Ipai, Kumeyaay, and Tipai (Shipley 1978). The Ipai (formerly Northern or Western Diegueño) inhabited the central portion of San Diego County, whereas the Kamia (formerly Eastern Diegueño) occupied the remaining southern part of San Diego County and eastward into Imperial County and the California portion of the Colorado Desert. Tipai (formerly Southern Diegueño) territory included Jamul in San Diego County, extending southward deep into Baja California. Today, many local groups have banded together as the Kumeyaay Nation or Kumeyaay-Diegueño Nation (Viejas Band of Kumeyaay Indians 2016).

Kumeyaay territory was divided among bands that generally controlled 10 to 30 miles within a drainage system (Shipek 1982:297). The entire band aggregated in winter villages, which were placed in sheltered valleys near reliable sources of water (Luomala 1978:597). All of the Ipai and many of the Tipai camped in coastal valleys during certain times of the year, when they gathered coastal resources. Land resources generally belonged to individual bands, with few areas considered "tribal" or open to anyone (Shipek 1982:301).

Several reservations were formed after the mid-1870s. These include Barona Ranch, Campo, Cuyapaipe, Inaja and Cosmit, Los Coyotes (shared with Mountain Cahuilla), Manzanita, Mesa Grande, Santa Ysabel, Sycuan, and Viejas (California Indian Assistance Program 2011). In the 1920s, many Kumeyaay became members of the Mission Indian Federation, which was organized to fight for self-rule on southern California reservations.

8.3.3 History

Post-Contact history for the State of California is generally divided into three periods: the Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823 throughout the state. Independence from Spain in 1821 marks the beginning of the Mexican Period. Signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican-American War, signals the beginning of the American Period, when California became a territory of the United States.

Spanish Period (1769-1822)

Spanish explorers made sailing expeditions along the coast of southern California between the mid-1500s and mid-1700s. In search of the legendary Northwest Passage, Juan Rodríguez Cabrillo stopped in 1542 at present-day San Diego Bay. Much of the present California and Oregon coastline was mapped and recorded in the next half-century by Spanish naval officer Sebastián Vizcaíno. The Spanish crown laid claim to California based on the surveys conducted by Cabrillo and Vizcaíno (Kyle et al. 2002). Inland exploration and colonization of Alta California by Spain was not a priority for more than 200 years. The 1769 overland expedition by Captain Gaspar de Portolá marks the beginning of California's "historic period."

Portolá established the Presidio of San Diego, a fortified military outpost, as the first Spanish settlement in Alta California.

In July 1769, Franciscan Friar Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California between 1769 and 1823. The series of 21 missions paralleled the California coastline between San Diego and Sonoma. A second mission in San Diego County, Mission San Luis Rey de Francia, was founded near present-day Oceanside in 1798. All of the missions contained churches, workshops, storehouses, soldiers' barracks, and quarters for Native American neophytes, who were used as labor. In San Diego, 1,400 Native Americans were associated with the mission by 1797. The cattle and horses raised on the pastures adjacent to the first mission led to the eventual expansion of ranching to other areas and missions within San Diego County and beyond.

Mexican Period (1822-1848)

After more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821. Extensive land grants were established in the interior during the Mexican Period, in part to increase the population away from the more settled coastal areas where the Spanish had concentrated their colonization efforts. At the same time, the influence of the California missions waned in the late 1820s through the early 1830s. Following adoption of the Secularization Act of 1833, the Mexican government privatized lands owned by the California missions, redistributing them to private, non–Native American ranchers through several hundred land grants (Kyle et al. 2002).

During the Mexican Period, the large ranchos became important economic and social centers. These included Cuyamaca Rancho, San Felipe Rancho, and Santa Ysabel Rancho, which together comprised about 63,000 acres in today's central San Diego County. The Santa Rosa Rancho, comprising more than 133,000 acres, is now the Marine Corps Base at Camp Pendleton in northwestern San Diego County. The city of San Diego was organized under Mexico's laws as a pueblo (town) in 1834. Subsequent development caused the growing non-native population to move beyond the walls of the presidio, which is the area now known as Old Town.

American Period (1848-Present)

War in 1846 between Mexico and the United States ended with the Treaty of Guadalupe Hidalgo, signed in 1848, ushering California into its American Period. California became one of the United States with the Compromise of 1850. San Diego County, at first stretching from San Diego Bay east to the Colorado River, was designated upon statehood and formally organized in 1852. Later, portions of San Diego County were carved out to create part of Riverside County in 1893 and Imperial County in 1907 (Kyle et al. 2002).

The California Southern Railroad (a subsidiary of the Santa Fe Railway system) connected the Los Angeles area through Oceanside with San Diego in 1885 (Davidson 1955). Arrival of the Southern Pacific, Santa Fe, and connecting lines throughout southern California in the 1870s and 1880s brought economic opportunity and exponentially increased the state's population, a combined economic and cultural phenomenon widely identified as the Boom of the Eighties (San Diego Yesterday 2016). The town of El Centro was linked directly with San Diego in 1919 with construction of the San Diego and Arizona Railway (Dodge 1956).

San Diego County

Successful Gold Rush merchant and land speculator Alonzo E. Horton moved from San Francisco to San Diego in 1867, purchased 960 acres adjacent to the bay south of Old Town, and laid out an "addition" for San Diego's new town site. The fast-growing city was re-incorporated in 1872, and within a few years San Diego became the largest California city south of Los Angeles. Beginning in the 1870s, many residents of San Diego County commonly lived on farmsteads, often forming rural communities with clusters of other nearby farmsteads. Many of these farmsteads were built on land surrounding Horton's Addition, while his "South San Diego" rapidly developed into the new downtown San Diego and the Hillcrest area.

San Diego Bay first harbored U.S. Navy ships in 1898, and San Diego County thereafter hosted several major naval installations, accelerating after construction of the Pacific fleet's coaling station in 1907. The Navy added its first Naval Air Station on North Island in 1917, and during World War II the city and bay became a major center of the aircraft industry and naval aviation. At the northwestern extent of the county, Marine Corps Base Camp Pendleton was established on the coast in 1942 to train Marines for the war. After the war, many personnel that had been stationed in San Diego County returned to the area with their families to create the next population and housing boom (Davidson 1955).

Outside the city of San Diego, the earliest farmers and farming communities owned the most productive land and prospered well into the 1920s. Many of the county's smaller agricultural tracts disappeared in the 1920s and 1930s, and some were incorporated into a few large agricultural tracts. The associated decline in cattle ranching was further exacerbated by the creation of the CNF in 1908. Developed to protect the San Diego, Orange, and Riverside County watershed, the USFS placed strict guidelines on the number of cattle permitted to graze the forest lands and on burning vegetation to improve forage quality. Still, beef production remained one of the more important agricultural industries in San Diego throughout the 1930s and 1940s.

The key industries in the county include agriculture, the military and homeland defense industry, innovation technology (biomedical, software, telecommunications), international trade, manufacturing, and tourism (City-Data.com 2016). Of these, manufacturing, including shipbuilding and repair, production of toys and sporting goods, computers, metals, and industrial machinery, contributed the most to the county's gross national product in 2002. Agricultural production in the county now focuses on specialized crops (e.g., avocados, exotic flowers, nursery and decorative plants). San Diego County has the twelfth-largest farm economy in the U.S., with more small farms (less than 10 acres in size) than any other county in California (San Diego Farm Bureau 2016).

8.3.4 Cultural Resources Studies

Native American Coordination

A request was made to the Native American Heritage Commission (NAHC) for a search of the Sacred Lands Files in March 2015. The NAHC's response stated that no Native American cultural resources are known in the immediate vicinity of the Proposed Project area. The NAHC also provided a list of 15 Native American groups and individuals who may have knowledge of cultural resources in or near the Proposed Project location. Letters asking

about concerns and requesting information about the project area were sent to each of the contacts listed by the NAHC, plus four additional contacts NextEra identified independently. Those contacted are listed in Table 8-1.

Table 8-1. Native American Consultation

Organization/Tribe	Name of Contact	Letter Date	Comments
Barona Band of Mission Indians	Mr. Clifford LaChappa, Chairman	06/22/2015: via U.S. Mail	No response as of 11/10/2016
Barona Band of Mission Indians	Mr. Adam Reyes, Councilman	06/22/2015: via U.S. Mail	No response as of 11/101/2016
Campo Kumeyaay Nation	Mr. Steven Cuero, Committee Member	06/22/2015: via U.S. Mail	No response as of 11/10/2016
Campo Kumeyaay Nation	Mr. Ralph Goff, Chairman	06/22/2015: via U.S. Mail	No response as of 11/10/2016
Ewiiaapaayp Band of Kumeyaay Indians	Will Micklin, Executive Director	06/22/2015: via U.S. Mail	No response as of 11/10/2016
Ewiiaapaayp Band of Kumeyaay Indians	Robert Pinto Sr., Chairperson	06/22/2015: via U.S. Mail	No response as of 11/10/2016
Iipay Nation of Santa Ysabel	Clint Linton, Director of Cultural Resources	06/22/2015: via U.S. Mail	No response as of 11/10/2016
Iipay Nation of Santa Ysabel	Virgil Perez, Chairperson	06/22/2015: via U.S. Mail	No response as of 11/10/2016
Inter-Tribal Cultural Resource Protection Council	Frank Brown, Coordinator	06/22/2015: via U.S. Mail	No response as of 11/10/2016
Jamul Indian Village	Raymond Hunter, Chairperson	06/22/2015: via U.S. Mail	No response as of 11/10/2016
Kumeyaay Cultural Historic Committee	Ron Christman	06/22/2015: via U.S. Mail	No response as of 11/10/2016
Kumeyaay Cultural Repatriation Committee	Steve Banegas, Spokesperson		No response as of 11/10/2016
Kumeyaay Cultural Repatriation Committee	Bernice Paipa, Vice Spokesperson	06/22/2015: via U.S. Mail	No response as of 11/10/2016
Kumeyaay Diegueno Land Conservancy	Kim Bactad, Executive Director	06/22/2015: via U.S. Mail	No response as of 11/10/2016

Organization/Tribe	Name of Contact	Letter Date	Comments
Kwaaymii Laguna Band of Mission Indians	Carmen Lucas	06/22/2015: via U.S. Mail	07/06/2015: Letter received via U.S. Mail from Ms. Lucas requesting a copy of the cultural resources technical report and recommending that the Viejas Band of Kumeyaay Indians provide Native American monitoring for the Proposed Project. A site visit was conducted on August 4, 2015.
Sycuan Band of the Kumeyaay Nation	Lisa Haws, Cultural Resource Manager	06/22/2015: via U.S. Mail	No response as of 11/10/2016
Sycuan Band of the Kumeyaay Nation	Cody J. Martinez, Chairperson	06/22/2015: via U.S. Mail	No response as of 11/10/2016
Viejas Band of Kumeyaay Indians	Julie Hagen, Cultural Resources	06/22/2015: via U.S. Mail	06/29/2015: Letter received from Ms. Hagen via email requesting a copy of the cultural resources technical report and a site visit. NEET West arranged for a site visit on August 4, 2015. No further input was received as of 11/10/2016.
Viejas Band of Kumeyaay Indians	Anthony R. Pico, Chairperson	06/22/2015: via U.S. Mail	No response as of 11/10/2016

Two individuals, Julie Hagen of the Viejas Band of Kumeyaay Indians and Carmen Lucas of the Kwaaymii Laguna Band of Mission Indians, responded to the June 22, 2015 letter. Ms. Hagen requested a site visit and a copy of the cultural resources survey report when it is publicly available. Ms. Lucas asked to review the cultural resources technical report and recommended that the Viejas Band of Kumeyaay Indians provide Native American Monitoring for the Proposed Project. NextEra arranged a site visit for Ms. Hagen and Ms. Lucas on August 4, 2015.

Public Resources Code 21080.3.1 Consultation (AB 52)

The CPUC has initiated consultation with Native American tribes who had requested consultation with the CPUC or who had been identified by the NAHC as being traditionally and culturally affiliated with the project area. The Viejas Band of Kumeyaay Indians was the only tribe interested in consultation. NEET West and its consultant met with representatives of the Viejas Band of Kumeyaay Indians at the Proposed Project location on August 4, 2015 to walk over the site and discuss the tribe's concerns about the Project. This meeting was followed by a telephone call with the Viejas Band on September 8, 2015, to review the field

visit and the concerns expressed by the tribe. Subsequent telephone calls were conducted with Julie Hagen, the designated point of contact. The tribe has not identified any TCRs within the Project footprint, but they have concerns about the presence of cultural resources on and near the property. They also are concerned about the potential for blasting to disturb buried resources and have recommended that all construction ground disturbance be monitored by a qualified archaeologist and Native American representative. Other issues important to the tribe are more broadly environmental and include the plants and animals associated with the site.

Archaeological Resources

A record search was conducted of the Proposed Project study area and a 1-mile radius by the South Coastal Information Center of the California Historical Resources Information System (CHRIS) at San Diego State University in February 2015. The purpose of the record search was to identify the presence of any previously recorded cultural resources within the project site, and to determine if any portions of the project site had previously been surveyed for cultural resources. The CHRIS search also included a review of historic maps, the NRHP, the CRHR, the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, the Historic Properties Directory, and the California State Historic Resources Inventory. The records search identified five cultural resources studies that had previously been conducted within the Proposed Project area, and another 16 within the 1-mile search radius. One prehistoric site, P-37-031744/CA-SDI-20166, a bedrock milling station, had been recorded within the Proposed Project area, while another 20 have been recorded within the 1-mile record search buffer. Of these, 16 are prehistoric sites, one is a prehistoric isolate, and three are historic-era archaeological sites.

An intensive cultural resources pedestrian survey was conducted of all areas that could be impacted by the Proposed Project during February, March, May, and August 2015 (~~Hoffman and Treffers~~ SWCA 2015). The intensive-level survey consisted of systematic surface inspection with transects walked at 50-foot intervals or less to ensure that all surface-exposed artifacts, sites, and built environment resources in the Proposed Project area could be identified. The ground surface was thoroughly examined for the presence of prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools), historic-era artifacts (e.g., metal, glass, ceramics), sediment discoloration that might indicate the presence of a cultural midden, roads and trails, and depressions and other features that might indicate the former presence of structures or buildings (e.g., post holes, foundations).

Nearly all of the Proposed Project area is disturbed, most notably by recent improvements to Bell Bluff Truck Trail and the former Wilson Laydown Area. The Wilson Laydown Area is proposed as the site for the Static VAR compensator (SVC). This area was a temporary laydown yard for the Sunrise Powerlink project and it has recently undergone revegetation/ restoration in accordance with the Sunrise Powerlink environmental mitigation requirements. Construction activities associated with site preparation of the Wilson Laydown Area included brush clearing and grading, removal of native vegetation and incorporation of vegetation into the topsoil, and topsoil salvage to a depth of 6 inches. After the location was no longer used as a materials storage and laydown area, restoration efforts included re-contouring the land and mechanically ripping the ground to alleviate compaction, resulting in substantial movement of sediments. The yard was ripped and cross-ripped to a depth of 18 to 24 inches prior to being re-contoured to the original topography. Salvaged topsoil was then re-distributed over the site and seeded (San Diego Gas & Electric [SDG&E]

2015). As a result, the top 24 to 30 inches of the Proposed Project area have been thoroughly disturbed.~~.~~ Most of the Proposed Project area consists of a relatively flat, open area surrounded by slopes of varying steepness. Surrounding undisturbed areas are covered in dense vegetation, including brush, trees, and grasses. Ground visibility in the Proposed Project area during the survey was variable, though generally good to excellent (over 70 percent).

Three resources were recorded within the Proposed Project area during the survey: one newly identified prehistoric archaeological site (SUN-S-1012), one previously recorded prehistoric archaeological site (P-37-031744/CA-SDI-20166), and one newly identified historic-era built environment resource (SUN-BSO-1002). These resources are discussed in detail below.

Prehistoric Archaeological Site (SUN-S-1012)

Prehistoric archaeological site SUN-S-1012 consists of three pieces of flaked stone debitage (waste material) all manufactured from the same metavolcanic material, known as Santiago Peak. The site is in poor condition with significant disturbances associated with the past use of the area as a temporary construction laydown yard and current biological habitat restoration efforts. Substantial ground disturbance, as discussed above, occurred in the vicinity of the site during site preparation and use as a materials storage and laydown area, and subsequent restoration efforts (SDG&E 2015).

The ground surface surrounding site SUN-S-1012 is highly disturbed, with a visibly uneven surface consisting of a mixture of subsoil and topsoil. Information provided by SDG&E indicates that the disturbance related to the use of the area as a materials storage and laydown area for Sunrise Powerlink has thoroughly disrupted the horizontal position of materials and the stratigraphic relationships of the entire area to a depth of at least 6 inches, and as deep as 9 inches (SDG&E 2015); the soil was ripped to another 24 to 30 inches deep during restoration of the area. The archaeological site is not known to contain buried deposits, but if these exist, they are highly unlikely to retain integrity. As part of the Phase I cultural resources study for the Proposed Project, prehistoric site SUN-S-1012 was evaluated and found not eligible for listing in the CRHR due to a lack of integrity (Hoffman and Treffers 2015). In addition, prehistoric archaeological site SUN-S-1012 does not meet the criteria for a "unique archaeological resource" under CEQA. No further cultural resources work, including further research, avoidance, or additional mitigation measures is necessary for this resource.

Prehistoric Archaeological Site P-37-031744/CA-SDI-20166

Previously recorded archaeological site P-37-031744/CA-SDI-20166 was revisited and the site record was updated during the pedestrian survey (Hoffman and Treffers 2015). This site is a prehistoric bedrock mortar site with two milling slicks (localities on an outcrop where seeds were ground) located within and north of Bell Bluff Truck Trail. The site was originally recorded in 2011 as a prehistoric bedrock milling site consisting of a low granite outcrop with one partially exfoliated milling slick. The site was subsequently found ineligible for the CRHR and the NRHP by the CPUC and BLM, and a portion of the bedrock outcrop was impacted during construction of the adjacent segment of Bell Bluff Truck Trail (Kyle and Williams 2013). During the pedestrian survey, an additional milling slick feature was identified within a portion of site P-37-031744/CA-SDI-20166 that is outside of the Proposed Project area,

thus expanding the site boundary; there is no evidence to suggest buried cultural deposits are present within the expanded site boundary. The new data do not change the previous finding that the site lacks the potential to yield important information (Criterion 4) of PRC 5024.1(c). In addition, there are no new data to suggest the site may be eligible under Criteria 1, 2, or 3. As part of the Phase I cultural resources study for the Proposed Project (Hoffman and Treffers 2015), it was found that this site remains ineligible for listing on the CRHR. No further cultural resources work is necessary for this resource, including further research, avoidance, or additional mitigation measures.

Historic-Era Road SUN-BSO-1002/Bell Bluff Truck Trail

Historic-era road SUN-BSO-1002/Bell Bluff Truck Trail is an access road that dates to at least 1903 according to historic maps. It remained a dirt access road and recreational trail, though occasional realignments occurred, until recently when portions of the road were graded and paved to provide access in support of construction and operation of the Suncrest Substation in 2012. Two segments of the road within the Proposed Project area that were recorded during the current study are identified portions of the historic-era road alignment. As part of the Phase I cultural resources study for the Proposed Project (Hoffman and Treffers 2015), SUNBSO-1002/Bell Bluff Truck Trail was evaluated and found not eligible for listing in the CRHR. Historic road SUN-BSO-1002/Bell Bluff Truck Trail is not eligible for listing in the CRHR for the following reasons:

- Research did not reveal any direct and important associations with historical events or persons (Criteria 1 and 2).
- It does not embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, nor possess high artistic values (Criterion 3).
- Research does not suggest the property has the potential to yield information important in history or prehistory (Criterion 4).

Furthermore, the numerous modifications of the Bell Bluff Truck Trail have substantially affected its integrity, such that it no longer conveys any potential significance as an early unpaved access road. Therefore, no further cultural resources work including further research, avoidance, or additional mitigation measures, is necessary for this resource.

Paleontological Resources

Paleontological resources include fossil remains, as well as fossil localities and rock or soil formations that have produced fossil material. Fossils are the remains or traces of prehistoric animals and plants. Fossils are important scientific and educational resources because of their use in (1) documenting the presence and evolutionary history of particular groups of now-extinct organisms; (2) reconstructing the environments in which these organisms lived; and (3) determining the relative ages of the strata in which they occur, as well as the relative ages of the geologic events that resulted in the deposition of the sediments that formed these strata and in their subsequent deformation.

The methodology applied to the evaluation of potential project impacts on paleontological resources involved two elements: first, to evaluate the potential for unique paleontological

resources to exist within the project site, and then to evaluate the impacts that construction of the Proposed Project could have on those resources.

A literature search conducted by the San Diego Natural History Museum (SDNHM) indicated that none of the rock units underlying the Proposed Project are known to be fossiliferous, and that there are no known fossil sites at the project site or within a 1-mile radius (Hall and Bell 2015). As a result, the project area is not considered sensitive for paleontological resources.

8.4 Impact Analysis

8.4.1 Methodology

All aspects of the cultural resources study were conducted in accordance with the U.S. Secretary of the Interior's Standards and Guidelines for Identification of Cultural Resources (48 CFR Parts 44720–44723). Resource documentation also followed the guidance outlined in Instructions for Recording Historical Resources (Office of Historic Preservation 2011). Methods employed for the Proposed Project consisted of pre-field research, Native American consultation, fieldwork, and report preparation. In conjunction with prehistoric and historic overviews, previous investigations and historic maps provided background information for assessing cultural sensitivity and identifying the types of sites likely to be located within the project site.

8.4.2 Criteria for Determining Significance

For the purposes of this analysis, the Proposed Project would result in a significant impact to cultural resources if it would meet one or more of the following criteria:

A. Cause a substantial adverse change in the significance of a historical resource as defined in State CEQA Guidelines Section 15064.5;

B. Cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5;

C. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature; or

D. Disturb any human remains, including those interred outside of dedicated cemeteries.

E. Cause a substantial adverse change in the significance of a TCR as defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place or object with cultural value to a California Native American tribe, and that is:

   a) Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or

   b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in

subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

8.4.3 Environmental Impacts

Impact CR-1: Substantial Adverse Change in the Significance of a Historical and/or Archaeological Resource as Defined in State CEQA Guidelines Section 15064.5 (Less than Significant with Mitigation)

No historical or archaeological resources, as defined by State CEQA Guidelines Section 15064.5, are located in the Proposed Project area. Resources identified in the project study area (historic-era road SUN-BSO-1002/Bell Bluff Truck Trail, and prehistoric archaeological sites P-37-031744/CA-SDI-02016620166 and SUN-S-1012) were evaluated and do not appear to be eligible for listing in the CRHR. Therefore, the Proposed Project would have no impact on historical or archaeological resources.

It is possible, however, that undiscovered historical resources may be present in the project area and, if present, these resources could be impacted during the ground-disturbing activities associated with the proposed construction. In order for these potential impacts to be reduced to a less-than-significant level, **Mitigation Measures CR-1, CR-2, and CR-3** would be implemented before and during construction. Therefore, impacts to historical resources would be less than significant with mitigation.

Mitigation Measure CR-1: Conduct Archaeological Sensitivity Training and Construction Monitoring.

Prior to initiation of ground-disturbing activities, NEET West shall arrange for construction crews to receive training about the kinds of archaeological materials that could be present within the project site and the protocols to be followed should any such materials be uncovered during construction. Training materials shall be developed ~~shall be conducted~~ by an archaeologist who meets the U.S. Secretary of Interior's professional standards. Training may be required during different phases of construction to educate new construction personnel.

The presence of archaeological sites both within the Proposed Project SVC area and along the Bell Bluff Truck Trail indicates that the area is sensitive for archaeological resources. As a result, a qualified archaeological monitor shall be retained to conduct full-time monitoring of initial ~~monitor all~~ ground disturbing activities associated with the project. A Native American monitor shall also participate in observing ground-disturbing activities. The archaeological monitor will work under the supervision of the principal investigator. The duration and timing of the monitoring will be determined by the CPUC, with recommendations provided by the principal investigator. If the principal investigator determines that monitoring is no longer warranted, he or she may recommend to the CPUC that monitoring cease entirely. In addition, if the principal investigator determines that an increase in the level of monitoring is warranted, he or she may recommend to the CPUC that full-time monitoring continue beyond initial ground disturbance. If any prehistoric or historic-era features, or human remains, are exposed during construction, the archaeological monitor shall have the authority to stop work in the vicinity of the finds and implement the actions identified in Mitigation Measure CR-2.

Mitigation Measure CR-2: Immediately Halt Construction if Cultural Resources Are Discovered, Evaluate All Identified Cultural Resources for Eligibility for Inclusion in the CRHR, and Implement Appropriate Mitigation Measures for Eligible Resources.

Not all cultural resources are visible on the ground surface. Construction activities, including possible blasting, at the SVC would require excavation up to approximately 1815 feet deep. and trenching Excavation for the installation for the transmission line along the Bell Bluff Truck Trail would be up to approximately 9 feet deep. These activities have the potential to uncover buried cultural resources. If any cultural resources, such as structural features, unusual amounts of bone or shell, flaked or ground stone artifacts, historic-era artifacts, human remains, or architectural remains are encountered during any project construction activities, work shall be suspended immediately at the location of the find and within a radius of at least 50 feet and the CPUC shall be notified within 24 hours.

All cultural resources accidentally uncovered during construction within the project site shall be evaluated for eligibility for inclusion in the CRHR. Resource evaluations shall be conducted by individuals who meet the U.S. Secretary of the Interior's professional standards in archaeology, history, or architectural history, as appropriate. If any of the resources meet the eligibility criteria identified in Public Resources Code Section 5024.1 or CEQA Section 21083.2(g), mitigation measures shall be developed and implemented in accordance with State CEQA Guidelines Section 15126.4(b) before construction resumes.

For resources eligible for listing in the CRHR that would be rendered ineligible by the effects of project construction, or a TCR, additional mitigation measures shall be implemented. Mitigation measures for archaeological resources may include (but are not limited to) avoidance; incorporation of sites within parks, greenspace, or other open space; capping the site; deeding the site into a permanent conservation easement; or data recovery excavation. Mitigation measures for archaeological resources shall be developed in consultation with responsible agencies and, as appropriate, interested parties, such as Native American tribes. Native American consultation is required if an archaeological site is determined to be a TCR. Implementation of the approved mitigation would be required before resuming any construction activities with potential to affect identified eligible resources at the site.

Furthermore, archaeological resources may also contain previously unidentified human remains. Although it would be unlikely for human remains to be disturbed during construction, given the previously disturbed nature and geology of the location, the possibility, though remote, exists that burials could be encountered. If human remains are encountered, Mitigation Measure CR-3 would be implemented during construction to ensure that potential impacts to these resources are less than significant with mitigation.

Mitigation Measure CR-3: Immediately Halt Construction if Human Remains Are Discovered and Implement Applicable Provisions of the California Health and Safety Code.

If human remains are accidentally discovered during the Proposed Project's construction activities, the requirements of California Health and ~~Human~~ Safety Code Section 7050.5 shall be followed. Potentially damaging excavation shall halt in the project site of the remains, with a minimum radius of 100 feet, and the County Coroner shall be notified. The Coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code § 7050.5[b]). If the Coroner determines that the remains are those of a Native American, he or she must contact NAHC by phone within 24 hours of making that determination (Health and Safety Code § 7050[c]). Pursuant to the provisions of Public Resources Code Section 5097.98, the NAHC shall identify a Most Likely Descendent (MLD). The MLD designated by the NAHC shall have at least 48 hours to inspect the site and propose treatment and disposition of the remains and any associated grave goods. NEET West shall work with the MLD to ensure that the remains are removed to a protected location and treated with dignity.

Impact CR-2: Destruction of a Unique Paleontological Resource or Site or Unique Geological Feature (No Impact)

None of the geological units that underlie the project area are known to be fossiliferous, and there are no records of any fossils found within 1 mile of the project location. As a result, the Proposed Project would have no impact on paleontological or unique geological features.

Impact CR-3: Disturb Human Remains, Including Those Interred Outside of Dedicated Cemeteries (Less than Significant with Mitigation)

As previously mentioned, it would be unlikely for human remains to be disturbed during construction. However, if human remains are encountered, implementation of **Mitigation Measure CR-3** would ensure that potential impacts to human remains would be less than significant with mitigation.

Impact CR-4: Adverse Change in the Significance of a Tribal Cultural Resource as Defined in Public Resources Code 21074 (Less than Significant with Mitigation)

No TCRs, as defined under Public Resources Code Section 21074, have been identified in the project area. However, the CPUC will continue consultations with the Viejas Band and other tribes who request consultation throughout the duration of the CEQA process. Should it come to light that a TCR is present in the project area, the CPUC will work with affected tribe to ensure that appropriate measures are taken to mitigate or avoid a significant effect on a TCR. Implementation of **Mitigation Measures CR-1, CR-2,** and **CR-3** would ensure that potential impacts would be less than significant with mitigation.

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Chapter 9
Geology, Soils, and Seismicity

9.1 Overview

This chapter evaluates potential impacts related to geology, soils, and seismicity that may be caused by the Proposed Project. The impact analysis considers potential impacts in light of existing laws and the physical geologic and soils conditions in the Project vicinity.

Resources used to prepare this chapter include geologic fault and soils maps produced by the California Department of Conservation (CDOC), the geotechnical investigation report prepared for the Proposed Project (Kleinfelder 2015), and the proponent's environmental assessment (PEA) submitted to the California Public Utilities Commission (CPUC) by NextEra Energy Transmission West (NEET West) (NEET West 2015).

9.2 Regulatory Setting

9.2.1 Federal Laws, Regulations, and Policies

National Earthquake Hazards Reduction Act

The National Earthquake Hazards Reduction Act of 1977 (Public Law 95-124) created the National Earthquake Hazards Reduction Program (NEHRP), establishing a long-term earthquake risk reduction program to better understand, predict, and mitigate risks associated with seismic events. Four federal agencies are responsible for coordinating activities under NEHRP: U.S. Geological Survey (USGS); National Science Foundation (NSF); Federal Emergency Management Agency (FEMA); and National Institute of Standards and Technology (NIST). Since its inception, NEHRP has shifted its focus from earthquake prediction to hazard reduction. The current program objectives (NEHRP 2009) are as follows:

1. Developing effective measures to reduce earthquake hazards;

2. Promoting the adoption of earthquake hazard reduction activities by federal, state, and local governments, national building standards and model building code organizations, engineers, architects, building owners, and others who play a role in planning and constructing buildings, bridges, structures, and critical infrastructure or "lifelines";

3. Improving the basic understanding of earthquakes and their effects on people and infrastructure through interdisciplinary research involving engineering, natural sciences, and social, economic, and decision sciences; and

4. Developing and maintaining the USGS seismic monitoring system (Advanced National Seismic System); the NSF-funded project aimed at improving materials, designs, and construction techniques (George E. Brown Jr. Network for Earthquake Engineering

Simulation); and the global earthquake monitoring network (Global Seismic Network).

Implementation of NEHRP objectives is accomplished primarily through original research, publications, and recommendations and guidelines for state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

9.2.2 State Laws, Regulations, and Policies

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code § 2621 et seq.) was passed to reduce the risk to life and property from surface faulting in California. The Alquist-Priolo Act prohibits construction of most types of structures intended for human occupancy on the surface traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault zones). It also defines criteria for identifying active faults, giving legal weight to terms, such as "active," and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones. Under the Alquist-Priolo Act, faults are zoned and construction along or across them is strictly regulated if they are "sufficiently active" and "well defined." Before a project can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Public Resources Code §§ 2690-2699.6) establishes statewide minimum public safety standards for mitigation of earthquake hazards. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act. Under the Seismic Hazards Mapping Act, the State is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other seismic hazards, and cities and counties are required to regulate development within mapped seismic hazard zones. In addition, the act addresses not only seismically induced hazards but also expansive soils, settlement, and slope stability. Under the act, cities and counties may withhold the development permits for a site within seismic hazard zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans.

California Building Code and International Building Code

Title 24 of the California Code of Regulations (CCR), also known as the California Building Standards Code (CBC), specifies standards for geologic and seismic hazards other than surface faulting. These codes are administered and updated by the California Building Standards Commission. The CBC specifies criteria for open excavation, seismic design, and load-bearing capacity directly related to construction in California.

The 2012 International Building Code (IBC) (known as the Uniform Building Code prior to 2000) was developed by the International Conference of Building Officials (ICBO) and is used

by most states, including California, as well as local jurisdictions to set basic standards for acceptable design of structures and facilities. The IBC provides information on criteria for seismic design, construction, and load-bearing capacity associated with various buildings and other structures and features. Additionally, the IBC identifies design and construction requirements for addressing and mitigating potential geologic hazards. New construction generally must meet the requirements of the most recent version of the IBC.

9.2.3 Local Laws, Regulations, and Policies

The CPUC has exclusive jurisdiction over the siting and design of electric transmission facilities. Therefore, it is exempt from local land use and zoning regulations. However, CPUC General Order (G.O.) 131-D states that in locating electric transmission facilities, the public utilities shall consult with the local agencies regarding land use matters. CPUC and NEET West have been in contact with applicable local agencies for the Proposed Project, and local laws and regulations are presented here for consideration of potential impacts related to geology, soils, and seismicity.

San Diego County General Plan

The Safety Element of the San Diego County General Plan (County of San Diego 2011) contains goals and policies related to geologic hazards and seismic safety. These include policies to locate development in areas where risk to people or resources is minimized or a minimum of 50 feet from active or potentially active faults; requiring development to include engineering measures to reduce seismic and geologic hazard risk in accordance with the CBC and IBC; prohibit high occupancy uses, essential facilities, and uses that permit significant amounts of hazardous materials within Alquist-Priolo and other identified hazard zones; and directing development away from areas with high landslide, mudslide, or rock fall potential when engineering solutions have been determined to be infeasible.

County of San Diego Grading Ordinance

The County of San Diego Grading Ordinance requires property owners or persons proposing to conduct grading or clearing within the County to obtain a grading permit. General precautions required by the Grading Ordinance include removing all loose dirt from the grading site and providing adequate erosion control or drainage devices, debris basins, or other safety devices. The Grading Ordinance includes a number of design standards and performance requirements that serve to prevent erosion and minimize loss of topsoil (County of San Diego 2012).

9.3 Environmental Setting

9.3.1 Regional Geologic and Topographical Setting

The Proposed Project would be located in the Peninsular Ranges Geomorphic Province, approximately 12 miles west of the Laguna Mountains (NEET West 2015). The Peninsular Ranges is a series of mountain ranges separated by northwest trending valleys, subparallel to faults branching from the San Andreas Fault (CGS 2002).

The geologic character of western San Diego County and the Peninsular Ranges Geomorphic Province can generally be traced back to ancient processes of subduction[1] and crustal uplift (Walawender No Date). During the Mesozoic Era[2] (200 million years ago), present day San Diego County was underwater, as ocean waters extended eastward to Arizona and northern Mexico (Walewender No Date). Over time, the sedimentary rocks that had formed in the shallow seas off the coast of North America were subducted under the Continental Plate, leading to the formation of metamorphic[3] and igneous[4] rocks. As the subducted material was drawn downwards, it melted or partially melted from exposure to heat from the earth's core and then rose upward to form the different rock types that exist today (e.g., gabbro, schist, gneiss, etc.) (Walawender No Date). Following uplift, these igneous and metamorphic rocks were then eroded at varying rates based on their composition, leading to the present-day topography in the region.

9.3.2 Local Geology

Consistent with the regional geologic character described above, the California Geologic Survey (CGS) maps the Proposed Project site as an area characterized by Mesozoic, granitic rocks (CGS 2016). This was confirmed during the geotechnical investigation performed for the Proposed Project, where granitic rocks of the Corte Madera Monzogranite and Cuyamaca Gabbro were encountered underneath the surficial units below the entire proposed Static VAR compensator (SVC) site and the proposed transmission line alignment (Kleinfelder 2015). Samples of these materials taken from the geotechnical borings revealed that the majority of this unit is appreciably decomposed, ranging from completely weathered to highly weathered (Kleinfelder 2015). Below the decomposed granite, impenetrable granitic material was encountered at depths from 5 to 25 feet below ground surface (bgs) when the augers refused on the hard surface and the borings were terminated (Kleinfelder 2015). Additionally, although not encountered in the borings during the geotechnical investigation for the Proposed Project, a 2009 study by URS Corporation for the San Diego Gas & Electric (SDG&E) Suncrest Substation documented Jurassic to Triassic area metamorphic rocks near the west end of the transmission line alignment, near the proposed riser pole location (Kleinfelder 2015).

9.3.3 Soils

The proposed SVC would be located within an area mapped as Fallbrook sandy loam, as shown in Figure 9-1. Additionally, portions of the proposed transmission line would pass through areas mapped as Cieneba very rocky coarse sandy loam and Cieneba coarse sandy loam (Natural Resources Conservation Service [NRCS] 2016). According to the Soil Survey for the San Diego Area, CA (Soil Conservation Service [SCS] 1973), the Fallbrook series consists of well-drained, moderately deep to deep sandy loams that formed in material weathered in

[1] Subduction is a geological process that takes place at convergent boundaries of tectonic plates where one plate moves under another and is forced down into the mantle.
[2] The Mesozoic Era is an interval of geological time from about 252 to 66 million years ago. The era is subdivided into three major periods: the Triassic, Jurassic, and Cretaceous.
[3] Metamorphic rocks are the product of transformation of an existing rock. The original rock is subjected to high heat and pressure, causing profound physical and/or chemical changes in the rock. Examples of metamorphic rocks include gneiss and schist.
[4] Igneous rocks are formed through the cooling and solidification of magma or lava. Igneous rocks may form either below the surface as intrusive (plutonic) rocks or on the surface as extrusive (volcanic) rocks.

place from grandiorite. The Cieneba series consists of excessively drained, very shallow to shallow coarse sandy loams (SCS 1973).

In addition to the soil classes mapped by the NRCS, due to the history of the Project site and substantial grading effort undertaken for the construction of Bell Bluff Truck Trail and the SDG&E Suncrest Substation, there is likely some artificial fill present in the Project area (Kleinfelder 2015). Between the SDG&E Suncrest Substation and the proposed SVC site, the grading effort for construction of Bell Bluff Truck Trail included both cut and fill embankment (Kleinfelder 2015). However, artificial fill was only encountered in one boring location (along Bell Bluff Truck Trail, near the middle of the proposed alignment) during the geotechnical investigation, consisting of a clayey sand and extending to a depth of approximately ~~3~~three feet bgs. The geotechnical investigation report anticipates most of the fill in the Project area to be less than five feet in depth, with isolated areas up to a maximum of 10 feet in depth (Kleinfelder 2015).

The geotechnical investigation tested three soil samples taken from the proposed SVC location for their expansive[5] properties. Test results on one of the samples showed an expansion index (EI)[6] of ~~4~~four, while test results on the other two showed the soils were non-expansive. Based on these results, and on visual evaluations of the topsoil and colluvial soil variability throughout the site, the geotechnical investigation report concluded these materials may be classified in the low expansion range (Kleinfelder 2015).

[5] Expansive soils are characterized by their ability to undergo significant volume changes (shrink or swell) in response to changes in moisture content (Kleinfelder 2015). Such volume changes can cause damage to buildings via settlement or heave of structures or concrete slabs supported on grade.

[6] Expansion index (EI) is a system used to provide an indication of swelling potential of a compacted soil. The classification of potential expansion of soils using EI is as follows: 0-20 (Very Low); 21-50 (Low); 51-90 (Medium); 91-130 (High); >130 (Very High).

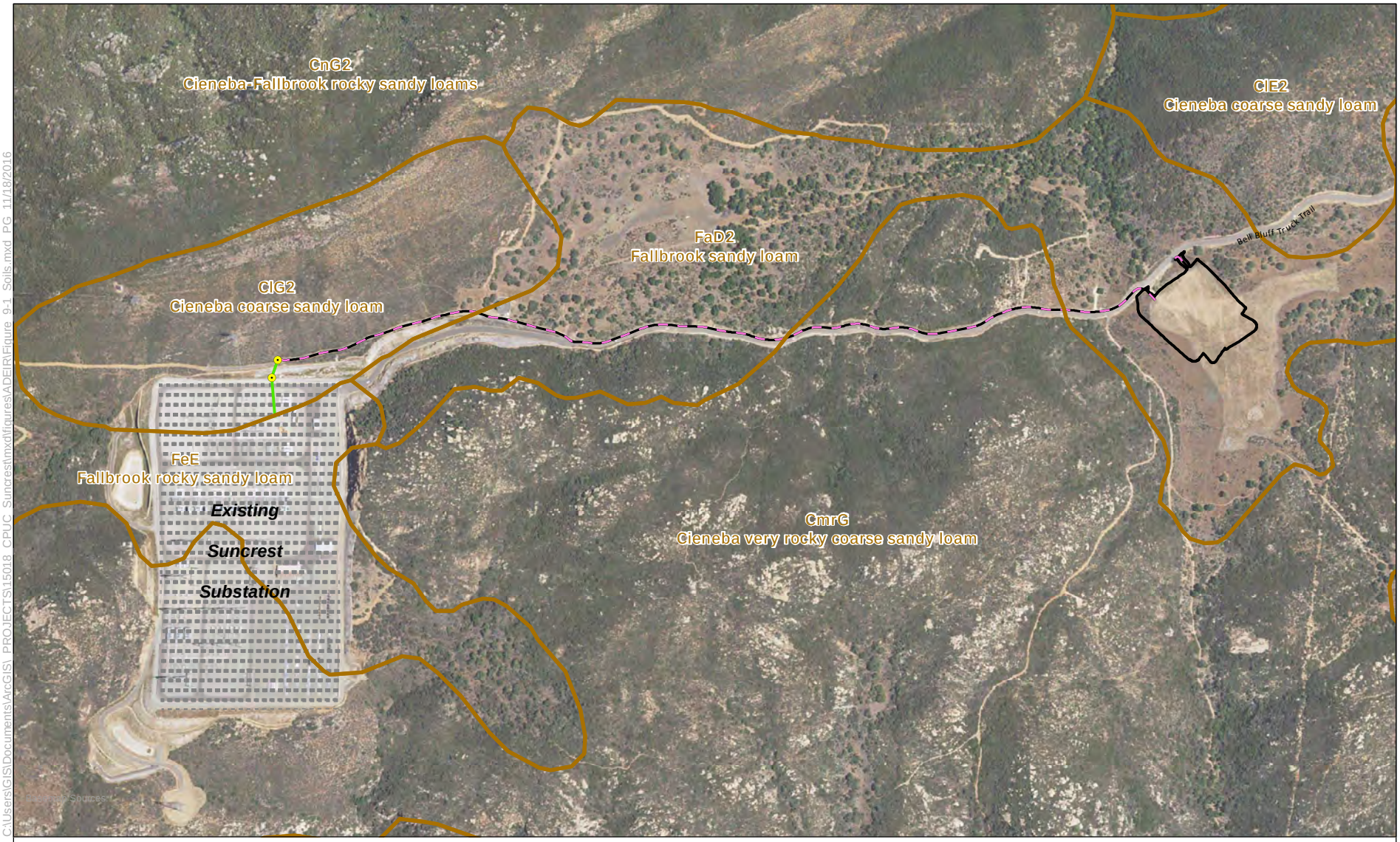

Figure 9-1
Soils in the Project Area

Suncrest Dynamic Reactive Power Support Project

9.3.4 Seismicity

The Proposed Project location is not in immediate proximity to any recently active faults, and is not within an Alquist-Priolo Earthquake Hazard Zone (CGS 2016). The nearest fault which has experienced displacement within the last 11,700 years (i.e., Holocene age) is the Elsinore fault (CGS 2010), which is located approximately 18 miles east-northeast of the Project site. Figure 9-1 shows faults in the Project vicinity. While there are several quaternary (age undifferentiated) (i.e., older than 700,000 years) faults in the Project vicinity, as shown on Figure 9-1, these are not considered active.[7]

Table 9-1. Proximity of the Project Site to Regional Faults

Fault Zone	Fault	Approximate Distance from Proposed Project (Miles)	Last Known Major Displacement
Elsinore	Julian Section	18	Within last 11,700 years
	Coyote Mountain Section	29	Within last 11,700 years
Rose Canyon	Silver Strand	34	Within last 11,700 years
	Coronado	35	Within last 11,700 years
	Spanish Bight	37	Within last 11,700 years
San Jacinto	Coyote Creek	45	1968
	Superstition Hills	61	1987

Source: CGS 2010

In general, the San Diego region has a relatively inactive seismic history compared to surrounding southern California areas, such as the Imperial Valley, northern Baja California, and offshore regions (NEET West 2015).

The Elsinore Fault Zone, located approximately 18 miles from the Proposed Project, is one of the largest faults in southern California; however, it has been one of the quietest in historical times (Southern California Earthquake Data Center [SCEDC] 2016a). The most recent surface rupture is estimated to have occurred at some time in the 18th Century AD. The most recent earthquake occurred in 1910 when a magnitude 6 quake struck near Temescal Valley (SCEDC 2016a).

The Rose Canyon Fault is thought to have had at least one late Holocene rupture, with the date of the earthquake most likely occurring sometime between 1450 and 1769 AD (Southern California Edison 2012). The San Jacinto Fault Zone is considered the most active fault zone in the area, with the most recent surface rupture occurring on April 9, 1968, when a magnitude 6.5 earthquake occurred on the Coyote Creek fault segment (SCEDC 2016b). According to the Southern California Earthquake Data Center (SCEDC), probable magnitudes on the San Jacinto Fault Zone are 6.5 to 7.5, with the interval between surface ruptures estimated at between 100 and 300 years, per segment (SCEDC 2016b).

[7] The USGS considers a fault to be active if it has moved one or more times in the last 10,000 years (USGS 2016).

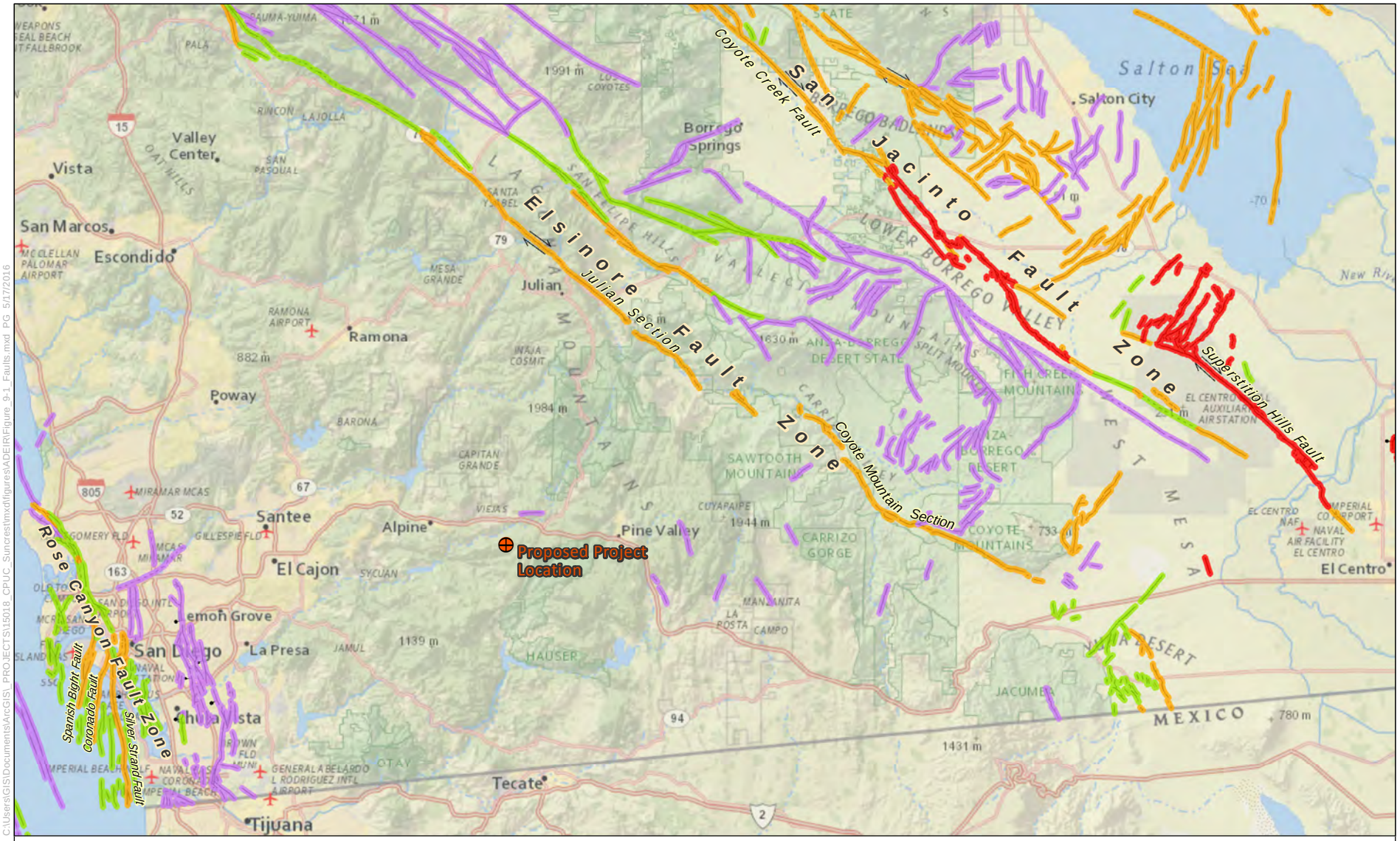

Figure 9-2
Faults in the Project Vicinity

Suncrest Dynamic Reactive Power Support Project

Prepared by:

Horizon WATER and ENVIRONMENT

Sources: Content may not reflect National Geographic's current map policy.
Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp. USGS, California Geological Survey

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Ground Shaking

Ground shaking can cause substantial damage to buildings and is typically the most destructive force from earthquakes. The Modified Mercalli Intensity (MMI) scale, shown in Table 9-2, is the current standard used throughout the U.S. for describing ground shaking. The MMI scale is a ranking system based on observed effects: less intense earthquakes are typically rated on the basis of individual accounts, whereas higher intensity events are rated based on observed structural damage.

Table 9-2. Modified Mercalli Intensity Scale

Intensity	Shaking	Description/Damage
I	Not Felt	Not felt except by a very few under especially favorable conditions.
II	Weak	Felt only by a few persons at rest, especially on upper floors of buildings.
III	Weak	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV	Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Moderate	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Strong	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Very Strong	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Severe	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Violent	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Extreme	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.

Source: USGS 1989

The Project site is located in an area mapped by the CGS as low risk for potential earthquake shaking, as it is west of the significant faults in the region (i.e., San Jacinto, Elsinore) (CGS 2008). However, given that the Project site is within a seismically-active region (i.e., southern California), it can be expected to be impacted by shaking from regional earthquakes at some point during the life of the Project (Kleinfelder 2015). According to the geotechnical investigation report, the most significant seismic event likely to affect the Project site would be an earthquake with a moment magnitude of approximately 7.3M resulting from a rupture

on the Julian segment of the Elsinore fault, which is located approximately 18 miles northeast of the Project site (Kleinfelder 2015). The PEA, submitted to CPUC by the project proponent, NEET West, estimated a peak ground acceleration (PGA)[8] of 0.215g for the Project area (NEET West 2015). This translates to a MMI rank of VII, or "Very Strong."

Liquefaction and Subsidence

Soil liquefaction is a phenomenon that occurs when saturated sandy or silty soils lose strength during cyclic loading, as caused by earthquakes. During the loss of strength, the soil acquires "mobility" sufficient to permit both horizontal and vertical movements, behaving like a liquid. The factors known to influence liquefaction potential are soil type and depth, grain size, density, groundwater level, degree of saturation, and the intensity and duration of ground shaking. The greatest potential for liquefaction occurs in areas where the water table is less than 20 feet bgs and where soils consist of relatively uniform, low-density sands. Clayey-type soils are generally not subject to liquefaction. The probability of liquefaction correlates directly with the intensity and duration of ground shaking (i.e., the stronger and/or longer the earthquake, the greater the chance of liquefaction). Subsidence, or seismically induced settlement, is the settlement or lowering of the ground surface that may be caused by fault movement, slope instability, or liquefaction and compaction of the soil at the site (City of San Diego 2007).

The Proposed Project site does not appear to be located in an area with high potential for liquefaction, as indicated on the County of San Diego's hazard mitigation planning liquefaction map (County of San Diego 2009a). The County's map shows liquefaction layers in the area of El Cajon and along the Sweetwater River drainage, but not the Project site. The County's map also shows the Project site as being within an area of low liquefaction risk with respect to peak ground acceleration (County of San Diego 2009a). As described in the Project geotechnical investigation report (Kleinfelder 2015), the majority of the Project site is underlain at depth by very dense soil and weathered rock, with some limited areas of shallow alluvium, colluvium, and compacted fill. Due to these characteristics, and the fact that groundwater was not encountered within the soil units, the geotechnical investigation report concludes that the potential for liquefaction and seismic related settlement across the majority of the site is low (Kleinfelder 2015).

Landslide and Slope Failure

Landslides are deep-seated ground failures (several tens to hundreds of feet deep) in which a large section of a slope detaches and slides downhill (Kleinfelder 2015). Not to be confused with minor slope failures (e.g.., slumps), landslides can cause extensive damage to structures both above and below the slide mass (Kleinfelder 2015). In general, landslides may occur in steeply sloped areas during seismic events, though the slope material, saturation, and other factors play important roles in the probability of a landslide occurrence.

According to the geotechnical investigation report prepared for the Proposed Project, the natural slopes within the Project area are composed of granitic material that typically are not

[8] The PEA notes that PGA in the vicinity of the Proposed Project was determined using the CGS Probabilistic Seismic Hazard Assessment (PSHA) ground motion interpolator. Based on uncertainties in the size and location of earthquake events, the PSHA interpolator depicts PGAs with a 10 percent probability of exceedance in 50 years or an annual probability of one in 475 of being exceeded each year (NEET West 2015).

prone to landsliding on low to moderate slopes and in most cases even on steep slopes are not prone to deep-seated failures (Kleinfelder 2015). The geotechnical investigation report noted that during the site reconnaissance of the Project site area, the slope surfaces were observed and no signs of past slope instability were identified (Kleinfelder 2015). Based on their observations and the characteristics of the slopes at the site, the report authors concluded that the hazard with respect to landsliding at the proposed SVC site would be low, and would be low to moderate for the most significant slope along the transmission line alignment at the western end of the site above the existing SDG&E Suncrest Substation (Kleinfelder 2015). This assessment is supported by County of San Diego's hazard mitigation planning rain-induced landslide map (County of San Diego 2009b), which indicates that the Proposed Project site is not in an area of high landslide or soil slip susceptibility.

9.4 Impact Analysis

9.4.1 Methodology

Potential impacts related to geology, soils, and seismicity from the Proposed Project are evaluated qualitatively in consideration of the existing characteristics of the Project site and existing laws and regulations, as described in the preceding sections of this chapter. The analysis relies on the geotechnical evaluation conducted for the Proposed Project (Kleinfelder 2015). Potential impacts are considered with respect to the applicable State CEQA Guidelines Appendix G significance criteria, described below.

9.4.2 Criteria for Determining Significance

According to Appendix G of the State CEQA Guidelines, the Proposed Project would have a significant effect related to geology and soils if it would meet any of the following conditions:

A. Expose people or structures to potential substantial adverse effects, including:

- the risk of loss, injury, or death involving rupture of a known earthquake fault;
- strong seismic ground shaking;
- seismic-related ground failure, including liquefaction; or
- landslides;

B. Result in substantial soil erosion or the loss of topsoil;

C. Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;

D. Be located on expansive soil, creating substantial risks to life or property; or

E. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for disposal of waste water.

Criteria Dismissed from Further Consideration

The Proposed Project would not generate wastewater, other than small amounts of wastewater associated with use of portable sanitary restrooms by construction workers during construction. Additionally, the Proposed Project would not tie into the municipal sewer system and would not involve installation or use of any septic tanks or alternative wastewater disposal systems. Therefore, Criterion E is dismissed from further analysis and not discussed further.

9.4.3 Environmental Impacts

Impact GEO-1: Potential to Expose People or Structures to Substantial Adverse Effects Associated with Rupture of a Known Earthquake Fault, Strong Seismic Ground Shaking, Seismic-Related Ground Failure, or Landslides (Less than Significant with Mitigation)

Rupture of a Known Earthquake Fault

Based on the distance to known active faults, it is unlikely that the Proposed Project would exacerbate fault rupture conditions or otherwise subject people or structures to substantial adverse effects resulting from the rupture of a known active earthquake fault. This conclusion is supported by the Project's geotechnical investigation report, which concludes that the hazard with respect to fault rupture is nominal (Kleinfelder 2015). If a surface fault rupture were to occur within or across the Project site, it would not likely expose people to adverse effects because the SVC facility would be operated remotely with no staff typically on-site. A surface fault rupture at the Project site could damage the SVC facility or transmission line, potentially resulting in cascading and deleterious effects on the rest of the regional electric transmission system; however, as described above, this is not considered a likely occurrence. This impact would be less than significant**.**

Strong Seismic Ground Shaking

It is possible the Project location may experience strong seismic ground shaking at some point during the life of the Project. An earthquake or strong seismic ground shaking at the Proposed Project location would be unlikely to expose people to adverse effects because typically no people would be present at the SVC facility. The SVC facility would be operated remotely and workers would only be present at the site infrequently for short periods during routine inspection and maintenance activities.

Strong seismic ground shaking at the Project site could potentially cause damage to the SVC facility or underground transmission line; however, this may be considered unlikely given the estimated PGA for the Project area as it corresponds to the MMI. According to the MMI, during an event of VII intensity (the maximum intensity seismic event that may be expected at the Project location), damage is negligible in buildings of good design and construction (see Table 9-2). If the SVC or transmission line were to experience damage due to ground shaking from a regional earthquake, it could potentially cause the facility to lose functional efficiency or require the facility be taken off-line for some period of time to conduct repairs. This scenario could result in adverse effects on the regional electric transmission system, potentially contributing to blackouts or other failures.

To ensure the Proposed Project facilities could withstand any potential ground shaking at the Project site, and that the facilities are constructed on suitable geologic material so as to negate or minimize the effects of possible shaking, the Proposed Project would implement **Mitigation Measure GEO-1**, which would require adherence to the recommendations in the Project geotechnical investigation report. With implementation of this mitigation measure, it is anticipated that the potential for substantial adverse effects associated with seismic ground shaking would be less than significant. This impact would be less than significant with mitigation.

> **Mitigation Measure GEO-1: Implement Recommendations in the Project Geotechnical Investigation Report.**
>
> NEET West and/or its contractors shall implement the recommendations contained in the geotechnical investigation report prepared for the Proposed Project by Kleinfelder, dated September 2015 (see Appendix H, *Geotechnical Investigation Report* in Volume 2). These include recommendations for a geotechnical engineer to be present during construction to evaluate the suitability of excavated soils for use as engineered fill, and to observe and test site preparation and fill placement.

Seismic-Related Ground Failure

As described in Section 9.3, "Environmental Setting," the risk of liquefaction or substantial settlement in the Project area is considered low. The majority of the Project site is underlain at depth by very dense soil and weathered rock, with some limited areas of shallow alluvium, colluvium, and compacted fill (Kleinfelder 2015). Additionally, groundwater was not encountered within any of the soil units during the geotechnical investigation (Kleinfelder 2015).

The Proposed Project would implement Mitigation Measure GEO-1, which would require implementation of the recommendations in the Project geotechnical investigation report. These recommendations include requirements for excavation and scarification of suitable ground surface for construction, parameters for soils used as engineered fill, and requirements for compaction of structural fill placed below foundations or laid pipe, all of which would serve to reduce the potential for liquefaction or settlement during a seismic event.

If seismic-related ground failure were to occur on the Project site during the life of the Project, it could potentially result in damage to the SVC facility or transmission line. This scenario could result in adverse effects to the regional transmission system, potentially contributing to blackouts or other failures. However, as described above, this is considered an unlikely occurrence, especially with implementation of **Mitigation Measure GEO-1**. This impact would be less than significant with mitigation.

Landslides

Although the Project site is located in an area of generally steep terrain, the area is not considered especially prone to landslides. The natural slopes within the Project area are composed of granitic material that typically are not prone to landsliding on low to moderate slopes and in most cases even on steep slopes are not prone to deep-seated failures (Kleinfelder 2015). Additionally, during the site reconnaissance, the geotechnical

investigation observed slope surfaces and did not identify any signs of past slope instability. The County of San Diego also does not identify the Project area as a high-risk area for landslides (County of San Diego 2009b).

The Proposed Project would involve blasting during Project construction, which could potentially create a pathway for initiation of a landslide (i.e., through percussive ground vibrations); however, the proposed blasting would be low-energy and would only be used to break up hard rock material during excavations for the SVC and transmission line. Ground vibrations from blasting alone would not be anticipated to generate a landslide without other contributing factors, such as heavy rains or weak, unstable slopes. Additionally, the Proposed Project would require preparation of a blasting plan, in accordance with **Mitigation Measure HAZ-2**, which would address ground vibrations and maximum peak particle velocity for ground movement in compliance with Chapter 3 (Control of Adverse Effects) in the Blasting Guidance Manual of the U.S. Department of Interior Office of Surface Mining Reclamation and Enforcement. Given the composition of the slopes in the Project area and implementation of HAZ-2, blasting would not be anticipated to have the potential to generate a landslide. This impact would be less than significant with mitigation.

Impact GEO-2: Cause Substantial Erosion or Loss of Topsoil (Less than Significant with Mitigation)

Construction of the Proposed Project would involve excavation for construction of the SVC foundations and for installation of the transmission line. This would open the potential for erosion or loss of topsoil to occur by cutting the natural ground surface and exposing loose soil to the wind or rain. Operation of heavy equipment during Project construction also would have the potential to cause erosion if the equipment is operated off-road, thereby disturbing the natural ground surface. In addition to loss of topsoil, erosion can result in adverse effects to water quality and aquatic organisms.

As described in Chapter 12, *Hydrology and Water Quality,* the Proposed Project would implement **Mitigation Measure HYD/WQ-1**, which would require implementation of best management practices (BMPs) for erosion control. These measures would be complimentary to any erosion control measures included in the stormwater pollution prevention plan (SWPPP) that would be prepared for the Proposed Project. Because construction of the Proposed Project would disturb more than 1 acre of land, it would be required to obtain a General Construction Stormwater Permit pursuant to Section 402 of the Clean Water Act (CWA).

With implementation of Mitigation Measure HYD/WQ-1 and preparation and implementation of the SWPPP, substantial erosion and loss of topsoil caused by the Proposed Project would be unlikely to occur. This impact would be less than significant with mitigation.

Impact GEO-3: Potential to Be Located on a Geologic Unit That is Unstable or That May Become Unstable (Less than Significant with Mitigation)

The Project site is not considered unstable with respect to possible liquefaction or subsidence. The majority of the Project site is underlain at depth by very dense soil and weathered rock, with some limited areas of shallow alluvium, colluvium, and compacted fill (Kleinfelder 2015). Due to the history of the Project site, artificial fill may be present in

portions of the site, but the geotechnical investigation report anticipates fill to be less than five feet in depth with isolated areas up to a maximum of 10 feet in depth (Kleinfelder 2015).

Given the composition of the materials underlying the Project site, it is unlikely that the Proposed Project would exacerbate existing unstable geologic conditions. Standard mechanical excavation techniques during Project construction would be unlikely to cause instability or adverse effects, such as on- or off-site landslides, liquefaction, or subsidence. Blasting during Project construction would have greater potential to result in adverse effects related to geological instability, but the blasting would be low-energy and would follow industry standards to minimize any potential to result in slope failures or landslides. In accordance with **Mitigation Measure HAZ-2**, a blasting plan would be prepared prior to project construction, which would address ground vibrations and maximum peak particle velocity for ground movement, including provisions to monitor and assess compliance with the ground vibration and peak particle velocity requirements. Additionally, the Proposed Project would implement **Mitigation Measure GEO-1**, which would require implementation of the recommendations in the Project geotechnical investigation report, including those related to proper site preparation and placement of suitable structural fill.

With implementation of Mitigation Measures HAZ-2 and GEO-1, the potential for the Project to be located on a geologic unit that is unstable or may become unstable would be less than significant. This impact would be less than significant with mitigation.

Impact GEO-4: Potential to Be Located on Expansive Soil, Creating Substantial Risks to Life or Property (Less than Significant)

The soils underlying the proposed SVC site showed low expansive potential, according to testing conducted for the geotechnical investigation report. Though not tested in the geotechnical investigation, the soils underlying Bell Bluff Truck Trail and the proposed transmission line would be anticipated to have similar expansive properties. In general, sandy loam soils are not as prone to expansion as clay-type soils, and the granular decomposed granitic materials underlying much of the Project area, noted in the geotechnical investigation report, would be considered to have a very low to low expansion potential (Kleinfelder 2015). Therefore, this impact would be less than significant.

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Chapter 10
Greenhouse Gas Emissions

10.1 Overview

This chapter evaluates the Proposed Project's greenhouse gas (GHG) emissions impacts. The chapter first describes the GHG emissions regulatory and environmental settings and then evaluates the project's greenhouse gas emissions impacts. The impact evaluation begins by describing the GHG emissions significance criteria and the methodology used to evaluate significance, and then presents the impact evaluation.

10.2 Regulatory Setting

All levels of government have some responsibility for the protection of air quality, and each level (federal, State, and regional/local) has specific responsibilities relating to air quality regulation. The regulation of GHGs and climate change is a relatively new component of air quality. Several legislative actions have been adopted to regulate GHGs on a federal, State, and local level, as detailed in this section.

10.2.1 Federal Laws, Regulations, and Policies

United States Environmental Protection Agency

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that GHGs are air pollutants covered by the federal Clean Air Act (CAA). In reaching its decision, the Court also acknowledged that climate change is caused, in part, by human activities. The Supreme Court's ruling paved the way for the regulation of GHG emissions by the U.S. Environmental Protection Agency (USEPA) under the CAA.

The USEPA has enacted a number of GHG regulations, and other environmental regulations that impact GHG emissions, including:

- Mandatory GHG Reporting,
- GHG Tailoring Rule for Prevention of Serious Deterioration Permits,
- Carbon Pollution Standards for Power Plants,
- Oil and Natural Gas Air Pollution Standards,
- GHG Vehicle Emissions Standards,
- Corporate Average Fuel Economy Standards,
- Renewables Fuel Standard, and

- Geologic Sequestration of Carbon Dioxide, under the Safe Drinking Water Act (USEPA 2016a, 2016b).

None of these federal regulations are specifically relevant to the construction or operation of the Proposed Project; however, the vehicle and fuel-related standards would indirectly cause GHG emission reductions from the regulated vehicles used during construction and operation of the Proposed Project.

10.2.2 State Laws, Regulations, and Policies

Climate change is a global phenomenon, and the regulatory environment and scientific data are changing rapidly. In addition to the federal regulations and policies on climate change, several states, including California, are formally addressing climate change. As of 2013, California is one of 20 states that have set GHG emission targets (C2ES 2013). Executive Orders S-3-05 and B-30-15, Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, and Senate Bill (SB) 32, promulgated targets to achieve reductions in GHG emissions to 1990 levels by the year 2020. The California Air Resources Board (CARB) is designated as the responsible State agency for traditional air quality regulations. In addition, AB 32 vested CARB with regulatory authority for GHGs.

There are a variety of statewide rules and regulations that have been implemented or are in development in California that mandate the quantification or reduction of GHGs, or plan for adaptation for expected climate change scenarios. The relevant State actions are discussed below.

Executive Order S-3-05

Executive Order S-3-05 was signed by Governor Arnold Schwarzenegger in June 2005. Executive Order S-3-05 establishes the following statewide emission reduction targets through the year 2050:

- by 2010, reduce GHG emissions to 2000 levels;
- by 2020, reduce GHG emissions to 1990 levels; and
- by 2050, reduce GHG emissions to 80 percent below 1990 levels.

Executive Order S-3-05 also calls for the CalEPA to coordinate oversight in the efforts to meet these targets and to prepare biennial science reports on the potential impact of continued global climate change on certain sectors of the California economy. The first of these reports, "Our Changing Climate: Assessing Risks to California", and its supporting document "Scenarios of Climate Change in California: An Overview" were published by the California Climate Change Center (CCCC) in 2006 (CCCC 2006a, 2006b). The Climate Action Team has prepared subsequent Executive Order S-3-05 mandated reports in 2007/2008, 2009, and 2010.

This Executive Order does not include any specific requirements that directly pertain to the Proposed Project.

Assembly Bill 32

In response to Executive Order S-3-05 (June 2005), which declared California's particular vulnerability to climate change, the California Global Warming Solutions Act of 2006 (AB 32) was signed on September 27, 2006. In passing the bill, the California Legislature found that:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems (California Health & Safety Code, Sec. 38500, Division 25.5, Part 1).

AB 32 was established to mandate the quantification and reduction of GHGs to 1990 levels by 2020, and is the first law to comprehensively limit GHG emissions at the State level. The law establishes periodic targets for reductions, and requires certain facilities to report emissions of GHGs annually. The bill also reserves the ability to reduce emissions targets lower than those proposed in certain sectors that contribute the most to emissions of GHGs, including transportation. Additionally, the bill requires GHG emission standards to be implemented by 2012; and CARB to develop an implementation program and adopt GHG control measures "to achieve the maximum technologically feasible and cost-effective GHG emission reductions from sources or categories of sources." CARB issued a draft Climate Change Scoping Plan (Scoping Plan) in December 2008.

The AB 32 Scoping Plan contains the main strategies California will use to reduce the GHGs that cause climate change. The Scoping Plan includes recommendations for reducing GHG emissions from most sectors of the California economy. The range of GHG reduction actions include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms, such as a cap-and-trade system, and an AB 32 cost of implementation fee regulation to fund the program. The proposed Scoping Plan was released on October 15, 2008, and approved at the Board hearing on December 12, 2008.

The draft of the First Update to the Scoping Plan was published in February 2014, followed by its accompanying Environmental Analysis (a California Environmental Quality Act [CEQA]-Equivalent Document) published in March 2014 and approved in June 2014 (CARB 2016).

California Governor's Executive Order B 30 15

Executive Order B-30-15 (April 2015) establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030. One purpose of this interim target is to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. This executive order also specifically addresses the need for climate adaptation and directs state agencies to update the state climate adaption strategy to identify how climate change will affect California infrastructure and industry and what actions the state can take to reduce the risks posed by climate change. SB 32 of 2016 codified this GHG emissions target to 40% below the 1990 level by 2030.

California Renewable Portfolio Standard Program

SB 1078 established California's Renewable Portfolio Standard (RPS) program in 2002. The RPS program requires retail sellers of electricity to purchase a specified minimum percentage of electricity generated by eligible renewable energy resources. The bill requires the California Energy Commission to certify eligible renewable energy resources, to design and implement an accounting system to verify compliance with the RPS by retail sellers, and to allocate and award supplemental energy payments to cover above-market costs of renewable energy. Under SB 1078, each electrical corporation was required to increase its total procurement of eligible renewable energy resources by at least one percent per year so that 20 percent of its retail sales were procured from eligible renewable energy resources.

In 2006, SB 107 accelerated the RPS program by establishing a deadline of December 31, 2010, for achieving the 20 percent goal.

The RPS goal was increased to 33 percent when Governor Schwarzenegger signed Executive Order S1408 in November 2008. Executive Order S-14-08 was later superseded by Executive Order S-21-09 on September 15, 2009. Executive Order S-21-09 directed the CARB to adopt regulations requiring an RPS of 33 percent by 2020. On September 23, 2010, the CARB approved a Renewable Electricity Standard regulation.

The 33 percent RPS goal became law when SB X1-2 was signed into law by Governor Brown in April 2011. SB X1-2, which was codified into the California Public Resources Code (Sections 25740 through 25751) and Public Utilities Code (Sections 399.11 through 399.31), requires that all electricity retailers in the State meet a 33 percent RPS by the end of 2020, and that they have met a 20 percent RPS by 2013, and will meet a 25 percent RPS by 2016.

Early in 2015, the Governor and Legislature started work to increase the RPS standard to 50 percent by the year 2030. With the Clean Energy and Pollution Reduction Act of 2015 (SB 350), signed into law on October 7, 2015, California expanded the specific set of objectives to be achieved by 2030, with the following:

- To increase the RPS from 33 percent to 50 percent for the procurement of California's electricity from renewable sources; and
- To double the energy efficiency savings in electricity and natural gas end uses by retail customers.

This law does not specifically apply to the Proposed Project, but the Proposed Project would increase grid reliability and efficiency to allow for ~~that helps~~ the integration of intermittent renewable energy resources that will enable electricity retailers to meet their RPS obligations required under this law.

Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulating Gear

This CARB regulation (17 California Code of Regulations 95350) became effective on June 17, 2011. This regulation requires that owners of gas insulating gear containing sulfur hexafluoride (SF_6) meet annual leakage rate limits, and requires that they measure, record, and report annual SF_6 emissions.

California Senate Bill 97

SB 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. It directs the Office of Planning and Research (OPR) to develop draft CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions" by July 1, 2009, and directs the Resources Agency to certify and adopt the CEQA guidelines by January 1, 2010.

The OPR published a technical advisory on CEQA and Climate Change on June 19, 2008 (OPR 2008). The guidance did not include a suggested threshold, but stated that the OPR has asked the CARB to "recommend a method for setting thresholds which will encourage consistency and uniformity in the CEQA analysis of greenhouse gas emissions throughout the state." The OPR does recommend that CEQA analyses include the following components:

- Identify GHG Emissions,
- Determine Significance, and
- Mitigate Impacts.

On December 30, 2009, the California Natural Resources Agency (CNRA) adopted amendments to the State CEQA Guidelines including GHG/Climate Change analysis guidelines. According to the CNRA, "due to the global nature of GHG emissions and their potential effects, GHG emissions will typically be addressed in a cumulative impacts analysis" (CNRA 2009). Two GHG CEQA checklist items were included as part of the Guideline amendment; they are discussed further below.

As discussed in State CEQA Guidelines Section 15064.4, the determination of the significance of GHG emissions calls for a careful judgment by the lead agency, consistent with the provisions in Section 15064. Section 15064.4 further provides that a lead agency should make a good-faith effort, to the extent possible, on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project.

A lead agency shall have discretion to determine, in the context of a particular project, whether to:

- Use a model or methodology to quantify GHG emissions resulting from a project, and determine which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or
- Rely on a qualitative analysis or performance based standards.

Section 15064.4 also advises a lead agency to consider the following factors, among others, when assessing the significance of impacts from GHG emissions on the environment:

- The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;

- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and

- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

Office of the California Attorney General

The Office of the California Attorney General (OAG) maintains a website with a list of resources that set forth potential CEQA mitigations for global climate change impacts (OAG 2015). The Attorney General has listed reference documents that local agencies may consider to offset or reduce global climate change impacts from a project. These references are examples that are not intended to be exhaustive and provide measures and policies that could be undertaken. Moreover, the measures cited may not be appropriate for every project, so the Attorney General recommends that the lead agency use its own informed judgment in deciding which measures it would analyze, and which measures it would require for a given project.

The references, provided in the Attorney General's website, list energy efficiency measures that could be undertaken or funded by a diverse range of projects, including: renewable energy, water conservation and efficiency, solid waste measures, land use measures, transportation and motor vehicles, and carbon offsets (OPR 2008; California Air Pollution Control Officers Association [CAPCOA] 2009). However, most of the listed measures would not be applicable to the Proposed Project because they are more appropriate as measures to reduce long-term operational GHG emissions. However, these and other potential GHG emissions reduction measures listed by state agencies will be evaluated for applicability.

10.2.3 Local Laws, Regulations, and Policies

The County of San Diego has adopted a General Plan that includes greenhouse gas related goals and policies (County of San Diego 2011). There are a number of climate change goals noted in the general plan, including the use of sustainable technology and products and encouraging contractors to use low-emission construction vehicles and equipment. There is also a subregional plan for the Central Mountain area, but this element does not contain any additional greenhouse gas goals or policies (County of San Diego 2015). The County recently completed an interim climate change analysis guidance document (County of San Diego 2016), and the County is currently developing final CEQA guidelines for Climate Change and a Climate Action Plan (CAP), but those guidelines and that plan have not been approved.

While the County of San Diego does not currently have an adopted CAP, the City of San Diego adopted their CAP in December 2015 and amended it in July 2016 (City of San Diego 2016). The emissions reduction strategies in this CAP, which are expected to be like the strategies that will be included in the County of San Diego's CAP, rely primarily on reducing energy consumption through energy and water efficient buildings, the use of clean and renewable energy, transportation improvements to reduce vehicle miles traveled, and waste management activities to reduce waste generation and capture associated gas generation.

Many local air pollution control agencies in California have proposed numerical or other GHG significance criteria. The San Diego Air Pollution Control District (SDAPCD), which has local

regulatory authority over the air pollutant emissions, has not established a recommended CEQA-significant emissions level and currently has no GHG emissions regulations that are relevant to the Proposed Project.

10.3 Environmental Setting

While climate change has been a concern for over two decades, efforts devoted to GHG emissions reduction and climate change research and policy have increased dramatically in recent years. Global climate change refers to the impacts that occur from the accumulation of GHGs in the atmosphere combined with other sources of atmospheric warming. GHGs occur naturally in the atmosphere and help to regulate the Earth's temperature. Without these natural GHGs, the Earth's surface would be approximately 61 degrees Fahrenheit (°F) cooler (California Environmental Protection Agency~~6~~ [CalEPA] 2006); however, emissions from fossil fuel combustion for activities such as electricity production and vehicular transportation have elevated the concentration of GHGs in the atmosphere above naturally occurring levels. Scientific evidence indicates a trend of increasing global temperatures near the Earth's surface over the past century due to increased human-induced levels of GHGs. Worldwide between 1880 and 2015, the 15 warmest years on record have all occurred since 1998. The warmest year on record was 2015, which exceeded the previous records set in 2014, 2010, and 2013 (National Oceanic and Atmospheric Administration [NOAA] 2016a). According to California Energy Commission's (CEC's) *The Future Is Now: An Update on Climate Change Science Impacts and Response Options for California*, the American West is heating up faster than other regions of the United States (CEC 2009). The CCCC reports that, by the end of this century, average global surface temperatures could rise by 4.7°F to 10.5°F due to increased GHG emissions (CCCC 2006a).

According to NOAA, the atmospheric concentration of carbon dioxide (CO_2) measured at Mauna Loa, Hawaii in April 2016 was 407.42 parts per million (ppm) (NOAA 2016b). This is compared to the pre-industrial levels of 280 ppm +/- 20 ppm (International Panel on Climate Change [IPCC] 2007a). NOAA's Mauna Loa data also show that the mean annual CO_2 concentration growth rate is accelerating. In the 1960s, the rate of change was about 0.9 ppm per year. In the first decade of the 2000s, it was almost 2 ppm per year, and in 2015, it was over 4 ppm. The impacts of GHGs differ from criteria pollutants in that GHG emissions from a specific project do not cause direct adverse localized human health effects. Rather, the direct environmental effect of GHG emissions is the cumulative effect of an overall increase in global temperatures, which in turn has numerous indirect effects on the environment and humans. The impacts of climate change include potential physical, economic, and social effects, such as: inundation of settled areas near the coast from rises in sea level associated with melting of land-based glacial ice sheets, exposure to more frequent and powerful climate events, changes in suitability of certain areas for agriculture, reduction in Artic sea ice, thawing permafrost, later freezing and earlier breakup of ice on rivers and lakes, a lengthened growing season, shifts in plant and animal ranges, earlier spring events such as the flowering of trees, and a substantial reduction in winter snowpack (IPCC 2007b).

California could experience unprecedented heat, longer and more extreme heat waves, greater intensity and frequency of heat waves, and longer dry periods. More specifically, it is predicted that California could witness the following events by the end of the century (CCCC 2006a):

- Temperature rises between 3°F and 10.5°F,

- 6 to 30 inches or greater rise in sea level,
- 2 to 4 times as many heat-wave days in major urban centers,
- 2 to 6 times as many heat-related deaths in major urban centers,
- 1.5 to 2.5 times more critically dry years,
- 30 to 90 percent loss in Sierra snowpack,
- 25 to 85 percent increase in days conducive to ozone formation,
- 3 to 20 percent increase in electricity demand,
- 7 to 30 percent decrease in forest yields (pine), and
- 10 to 55 percent increase in the risk of wildfires.

Similar major changes to existing weather patterns and associated impacts could occur world-wide, but these climate changes will not always result in less rainfall or warmer temperatures. In some areas, rainfall would increase and average temperatures would drop. However, it is not specifically drought or increased temperatures that create the environmental, social, and economic impacts from climate change; rather, it is the significant change from existing weather patterns and conditions that causes these impacts.

Greenhouse Gas Emissions

GHGs trap heat in the atmosphere and are emitted by natural processes and human activities. Examples of GHGs that are produced both by natural processes and industry include CO_2, methane (CH_4), and nitrous oxide (N_2O). The State of California and the USEPA have identified six GHGs generated by human activity that are believed to be the primary contributors to man-made global warming: CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

- **Carbon Dioxide:** CO_2 enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and chemical reactions (e.g., the manufacture of cement). CO_2 is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

- **Methane:** CH_4 is emitted during the production and transport of coal, natural gas, and oil. CH_4 emissions also result from livestock and agricultural practices, and the decay of organic waste in municipal solid waste landfills.

- **Nitrous Oxide:** N_2O is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

- **Fluorinated Gases:** HFCs, PFCs, and SF_6 are synthetic, powerful climate-change gases that are emitted from a variety of industrial processes. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in smaller quantities than other gases, but because they are more potent climate-changers than

other gases, they are sometimes referred to as high "Global Warming Potential" (GWP) gases.

GHGs have varying amounts of GWP; GWP is the ability of a gas or aerosol to trap heat in the atmosphere. By convention, CO_2 is assigned a GWP of 1. In comparison, SF_6 has a GWP of 23,500 (IPCC Fifth Assessment Report basis), which means that it has a global warming effect 23,500 times greater than CO_2 on an equal-mass basis (The Climate Registry [TCR] 2015). To account for their GWP, GHG emissions are often reported as CO_2 equivalent (CO_2e). The CO_2e for a source is calculated by multiplying each GHG emission by its GWP, and then adding the results together to produce a single, combined emission rate representing all GHGs.

GHG emissions in the United States and California come mostly from energy use. Energy-related CO_2 emissions resulting from fossil fuel exploration and use, primarily in the form of CO_2 emissions from burning fossil fuels, account for approximately three-quarters of the human-generated GHG emissions in the United States. More than half of the energy-related emissions within the United States come from large stationary sources, such as power plants; approximately a third comes from transportation; while agriculture and forestry and other land uses (residential and commercial) make up a majority of the remainder of sources (USEPA 2014). The United States and California emissions of GHGs in 1990 and later years are summarized in Table 10-1.

Table 10-1 United States and California Greenhouse Gas Emissions (million metric tons CO_2e)

Inventory Sector [a]	1990	2005	2008	2009	2010	2011	2012
United States Emissions [b]							
Electric Power Industry	1,866.1	2,445.7	2,401.8	2,187.0	2,302.5	2,200.9	2,064.9
Transportation	1,553.2	2,012.3	1,916.5	1,839.1	1,853.5	1,832.2	1,815.5
Industry	1,527.9	1,403.5	1,367.6	1,217.2	1,297.3	1,290.5	1,273.9
Agriculture	518.1	583.6	615.3	605.3	600.9	612.7	614.1
Commercial	385.3	370.4	379.2	381.9	376.6	378.4	353.2
Residential	345.4	371.3	365.4	357.9	359.9	353.9	322.0
U.S. Territories	33.7	58.2	49.8	47.9	58.0	57.9	57.9
United States Total	**6,229.6**	**7,244.9**	**7,095.5**	**6,636.3**	**6,848.6**	**6,726.6**	**6,501.5**
State of California Emissions [c]							
Electricity Generation	110.6	119.4	129.7	113.4	102.6	98.7	105.8
Transportation	150.7	187.8	176.9	170.4	169.4	167.2	166.6
Industry and Construction	103.7	92.4	92.0	88.5	93.5	96.1	97.8
Commercial	14.4	12.6	12.9	13.0	13.4	13.6	13.4
Residential	29.7	28.0	28.8	28.5	29.2	29.6	27.3

Inventory Sector [a]	1990	2005	2008	2009	2010	2011	2012
Agriculture, Forestry and Other Land Uses	16.9	36.4	37.8	36.3	35.9	37.1	37.8
Other	1.3	11.6	12.0	12.0	12.0	12.3	12.1
California Total	**433.3**	**488.2**	**490.1**	**462.1**	**456.0**	**454.6**	**460.8**

Source: USEPA 2014; CARB 2007 (for California 1990); CARB 2015.

Notes:

(a) Sectors are as provided in each of the references used, with the in-state and out–of-state electricity generation values totaled.

(b) Does not include the emissions sinks presented in this reference.

(c) Emissions are the non-excluded emissions totals, not including emissions sinks, where from the CARB, 2015 reference subcategories including industry and agriculture have been grouped together to minimize the other category.

For comparison with the emission data given in Table 10-1, the estimated global emissions of CO_2e in 2012 are 53,937 million metric tons (Emission Database for Global Atmospheric Research, European Commission [EDGAR] 2016). This indicates that the United States, which has about 4.4 percent of the global population, emits roughly 12 percent of the total global GHG emissions. California, which has approximately 0.51 percent of the global population, emits just less than 0.85 percent of the total global GHG emissions, which is approximately 40 percent lower per capita than the overall United States average.

A critical interpretation of the data provided in Table 10-1, along with knowledge regarding other current events, regulatory actions, and population levels, provides for several potential conclusions regarding the California and United States GHG emission trends, such as:

- After peaking earlier in the first decade of this millennia, emissions from electricity generation are dropping, which is likely due to both the increased use of natural gas, reduced reliance on coal, and the increase in renewable power (e.g., solar, wind).
- Transportation emissions are also dropping after peaking in the first decade of this millennia, likely primarily due to the impact of increased vehicle fuel efficiency standards.
- Commercial and agricultural emissions in general are increasing along with the increase in population.
- GHG emissions can fluctuate from year to year, where such fluctuations may be based on economic conditions, severe weather conditions, or other factors that relate to fuel consumption and consumer habits.
- California has a significantly lower per capita GHG emissions footprint than the United States average.

GHG emissions for the Proposed Project would include both direct and indirect emissions that occur as a result of Project actions. Direct emissions from construction activities include GHG emissions generated from construction equipment and vehicles. Direct emissions from

operation activities include a small amount of GHG emissions generated from operations and maintenance activities and from leaks of SF_6 from the new gas insulated electrical equipment.

Indirect GHG emissions sources can take many forms. Some of these forms include increase or decrease in electricity or water use, loss of natural CO_2 uptake from developing formerly vegetated areas, and material recycling. For the Proposed Project, the indirect GHG emissions would be minor, as there is little or no net anticipated electricity use for the Project and water use would primarily be in the form of the temporary use of water for fugitive dust control during construction. The purpose of the Project is to maintain system reliability with the forecasted increased use of renewable energy sources ~~improve local grid reliability and efficiency~~, which should reduce fossil fuel use for electricity generation ~~needs~~.

10.4 Impact Analysis

10.4.1 Methodology

The assessment of environmental impacts and determination of necessary mitigation measures has been completed independently based on a critical analysis of the information provided by NextEra Energy Transmission West, LLC (NEET West) in their Proponent's Environmental Assessment (PEA). The PEA includes air pollutant and GHG emissions calculations, which are provided in the PEA Appendix C (NEET West 2015). The PEA emissions estimates were later revised for the Two-Pole Interconnection Configuration (SWCA 2016).

The greenhouse gas emissions estimate was completed by NEET West using the approved California Emissions Estimator Model (CalEEMod) based on assumptions regarding the equipment and vehicle trips required for construction and operation. The review of the emissions estimate, the assumptions associated with the efficacy of the applicant proposed measure (APM) to reduce air pollutant emissions, and the findings presented for greenhouse gas emissions in the air quality analysis provided in the PEA are discussed further Section 10.3, "Environmental Impacts."

10.4.2 Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines and professional expertise, it was determined that the Proposed Project would result in a significant impact related to greenhouse gas emissions if it would:

A. Generate a substantial amount of GHG emissions; or

B. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs.

County of San Diego Significance Thresholds

The County of San Diego recently published interim CEQA guidelines that include GHG emissions significance thresholds for certain development projects (County of San Diego 2016), but this guidance does not include significance thresholds for industrial projects like the proposed project. However, this guidance does recommend use of a screening level

emissions rate that is based on the CAPCOA recommended quantitative threshold of 900 metric tons per year of CO_2e (CAPCOA 2008). to determine if additional project analysis and mitigation is required. This screening level threshold, in comparison to the project's annual operating emissions plus the project-life amortized construction emissions, is being used as a very conservative GHG emissions significance threshold for this Project.

10.4.3 Environmental Impacts

Impact GHG-1: Potential to Exceed County of San Diego GHG Emission Significance Criteria (Less than Significant)

The Proposed Project would generate GHG emissions through construction activities and operations and maintenance activities. The period of construction would be short-term (approximately 6.5 months [not including the 2.5 months for testing and commissioning, and 2 months for restoration and cleanup]), and construction-phase GHG emissions would occur directly from the off-road heavy-duty equipment and on-road motor vehicles used during construction. Equipment and vehicles would be needed to mobilize the crew, equipment, and materials to prepare the construction sites, and to construct the facility and other Project elements. Operation emissions would be minimal, and would result from vehicle and equipment emissions required for intermittent maintenance activities that would occur at this unmanned site. Indirect GHG emissions would result from the use of water and electricity. The indirect GHG emissions from water use, which would be minor for this project, have not been calculated.

The estimated Project GHG emissions compared to the County of San Diego GHG emissions significance threshold are provided in Table 10-2. The construction emissions are based on the emissions presented in Appendix E, *Air Quality and Greenhouse Gas Emissions Calculations* (see Volume 2), which includes updating the construction schedule start date.

Table 10-2 Greenhouse Gas Emissions Estimate

Construction Emissions Source	GHG Emissions (Metric Tons CO_2e)
Total Construction	2,085
Operation Emissions Source	
Motor Vehicles [a]	106.6
Energy Consumption [b]	322.6
SF_6 Equipment Leaks	8.6
Operation Annual Subtotal	**437.8**
Amortized Annual Construction Emissions [c]	69.5
Total Direct/Indirect Annualized Emissions	**507.3**
County of San Diego Significance Threshold	900
Exceed Significance Threshold	No

Source: Appendix E; NEET West 2015; SWCA 2016; County of San Diego 2016.

Notes:

Construction Emissions Source	GHG Emissions (Metric Tons CO_2e)

(a) These emissions, which are provided as 365 times the daily emissions, are overestimated for this intermittent emissions source.
(b) Energy consumption as calculated by CalEEMod, which is a generic calculation based on the project footprint. It is likely that the project will result in an overall reduction in electricity consumption and net reduction in energy based GHG emissions.
(c) Amortized emissions are the operation emissions plus the annualized construction emissions over the Project life (30 years).

The conservative estimate of total project life annualized GHG emissions are estimated to be approximately 500 metric tons of CO2e per year, and would therefore be well below the County of San Diego's recommended GHG emissions significance threshold of 900 tons per year of CO_2e. Additionally, the Project's purpose is to improve ~~the~~ grid efficiency and reliability to allow for increased use of renewable energy sources ~~of the local electricity distribution system~~. Any gains in electricity distribution efficiency could reduce the GHG emissions from additional electricity generation; however, these indirect emissions reductions that would be attributable to the Project cannot be estimated. The Project's total direct and indirect GHG emissions have been determined to be less than significant.

Impact GHG-2: Conflict with Greenhouse Gas Emissions Reduction Plans, Policies, or Regulations (Less than Significant)

The Project's GHG emissions are expected to be minimal both during construction and operation of the Project. In addition, with implementation of APM AIR-5, NEET West will ensure that SF_6 containing equipment leaks are minimized and that they comply with the applicable SF_6 regulations. Estimated GHG emissions of the Proposed Project would be well below the threshold of federal and State mandatory reporting regulations. The level of the Project's GHG emissions would be too low to be subject to 40 Code of Federal Regulations Part 52 and the State cap-and-trade regulations.

The Proposed Project, which includes the building of the new Suncrest Reactive Power Support Facility and a transmission connection to the Suncrest Substation, would be built to conform to all applicable energy efficiency building regulations, such as Title 24 requirements. The Proposed Project would ~~also~~ improve the capacity, reliability, and efficiency of the overall electrical transmission system to~~, which would~~ help meet the goal of reducing electricity sector GHG emissions. The project would conform with the emissions reduction strategies in the City of San Diego's CAP and would be expected to conform with the emissions reduction strategies that will be part of the future County of San Diego CAP. There are no other federal, State, or local GHG emissions reduction regulations, policies, or plans that would directly apply to the Project's construction or operation. Therefore, the Proposed Project would not conflict with any applicable plan, policy or regulation related to reducing GHGs, including those in the County of San Diego's General Plan, and would therefore have a less-than-significant impact.

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Chapter 11
Hazards and Hazardous Materials

11.1 Overview

This chapter evaluates potential impacts related to hazards and hazardous materials that may occur from the Proposed Project. Hazardous materials are chemical and non-chemical substances that can pose a threat to the environment or human health if misused or released. Hazardous materials occur in various forms and can cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property. Hazardous materials can include explosives, flammable and combustible substances, poisons, radioactive materials, pesticides, petroleum products, and other materials defined as hazardous under the Resource Conservation and Recovery Act of 1976 (RCRA) in 40 Code of Federal Regulations (CFR) 261.

Potential impacts are evaluated in light of existing laws and regulations governing hazards and hazardous materials, and the existing physical environmental setting as it relates to hazards and hazardous materials, as described in Section 11.2, "Regulatory Setting," and Section 11.3, "Environmental Setting," below.

Resources used to prepare this chapter include the Phase 1 Environmental Site Assessment (ESA), included as part of the Proponent's Environmental Assessment (PEA) and applicable State and local agency websites.

11.2 Regulatory Setting

Because regulations for hazardous materials were developed over time, hazardous materials are regulated by numerous agencies whose jurisdictions and responsibilities sometimes overlap. Federal agencies that regulate hazardous materials include the U.S. Environmental Protection Agency (USEPA) and the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA). At the State level, agencies, such as the California Department of Industrial Relations, Cal/OSHA, and the California Emergency Management Agency (Cal EMA) govern the use of hazardous materials. State and local agencies often have either parallel or more stringent rules than federal agencies.

Generation, transportation, and disposal of hazardous wastes can also be regulated by different agencies. The lead federal agency is USEPA. The California Department of Toxic Substances Control (DTSC) has primary State regulatory responsibility but may delegate enforcement authority to local jurisdictions that enter into agreements with the State agency.

The following is a review of federal and State regulations that are potentially relevant to the Proposed Project. The laws and regulations described below are not all necessarily applicable to the Proposed Project, but may be provided for informational purposes.

11.2.1 Federal Laws, Regulations, and Policies

Resource Conservation and Recovery Act

The RCRA (42 U.S. Code [USC] § 6901 et seq.), as amended by the Hazardous and Solid Waste Amendments of 1984, is the primary federal law for the regulation of solid waste and hazardous waste in the United States. These laws provide for the "cradle-to-grave" regulation of hazardous wastes, including generation, transportation, treatment, storage, and disposal. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed of.

The USEPA has primary responsibility for implementing RCRA, but individual states are encouraged to seek authorization to implement some or all RCRA provisions. California received authority to implement the RCRA program in August 1992. The DTSC is responsible for implementing the RCRA program in addition to California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also called the Superfund Act; 42 USC § 9601 et seq.) is intended to protect the public and the environment from the effects of past hazardous waste disposal activities and new hazardous material spills. Under CERCLA, the USEPA has the authority to seek the parties responsible for hazardous materials releases and to ensure their cooperation in site remediation. CERCLA also provides federal funding (through the "Superfund") for the remediation of hazardous materials contamination. The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499) amends some provisions of CERCLA and provides for a Community Right-to-Know program.

Spill Prevention, Control, and Countermeasure Rule

The USEPA's Spill Prevention, Control, and Countermeasure (SPCC) Rule (40 CFR Part 112) apply to facilities with a single above-ground storage tank (AST) with a storage capacity greater than 660 gallons, or multiple tanks with a combined capacity greater than 1,320 gallons. The rule includes requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining shorelines. The rule requires specific facilities to prepare, amend, and implement SPCC Plans. The SPCC rule applies to oil-filled equipment, including transformers, which store in excess of the threshold quantities of oil described above (USEPA No Date).

Occupational Safety and Health Administration

OSHA is responsible at the federal level for ensuring worker safety. OSHA sets federal standards for implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances (as well as other hazards). OSHA regulations require blasting explosives to be stored in approved facilities as required under the applicable provisions of the Bureau of Alcohol, Tobacco, and Firearms regulations contained in 27 CFR Part 55. OSHA also establishes criteria by which each state can implement its own health and safety program.

11.2.2 State Laws, Regulations, and Policies

Safe Drinking Water and Toxic Enforcement Act of 1986 – Proposition 65

The Safe Drinking Water and Toxic Enforcement Act of 1986, more commonly known as Proposition 65, protects the State's drinking water sources from contamination with chemicals known to cause cancer, birth defects, or other reproductive harm. Proposition 65 also requires businesses to inform the public about exposure to such chemicals in the products they purchase, in their homes or workplaces, or that are released into the environment. In accordance with Proposition 65, the California Governor's Office publishes, at least annually, a list of such chemicals. The Office of Environmental Health Hazard Assessment (OEHHA), an agency under the California Environmental Protection Agency (CalEPA), is the lead agency for implementation of the Proposition 65 program. Proposition 65 is enforced through the California Attorney General's Office; however, district and city attorneys and any individual acting in the public interest may also file a lawsuit against a business alleged to be in violation of Proposition 65 regulations.

Hazardous Materials Business Plans

Hazardous materials business plans are required for businesses that handle hazardous materials in quantities equal to or greater than 55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of compressed gas, or extremely hazardous substances above the threshold planning quantity (40 CFR Part 355, Appendix A) (Cal OES 2014). Business plans are required to include an inventory of the hazardous materials used/stored by the business, a site map, an emergency plan, and a training program for employees. In addition, business plan information is provided electronically to a statewide information management system, verified by the applicable Certified Unified Program Agencies (CUPA), and transmitted to agencies responsible for the protection of public health and safety (i.e., local fire department, hazardous material response team, and local environmental regulatory groups).

California Occupational Safety and Health Administration

Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations in California. Cal/OSHA regulations pertaining to the use of hazardous materials in the workplace (California Code of Regulations [CCR] Title 8) include requirements for safety training, availability of safety equipment, accident and illness prevention programs, warnings about exposure to hazardous substances, and preparation of emergency action and fire prevention plans. Hazard communication program regulations that are enforced by Cal/OSHA require workplaces to maintain procedures for identifying and labeling hazardous substances, inform workers about the hazards associated with hazardous substances and their handling, and prepare health and safety plans to protect workers at hazardous waste sites. Employers also must make material safety data sheets available to employees and document employee information and training programs.

California Accidental Release Prevention

The purpose of the California Accidental Release Prevention (CalARP) program is to prevent accidental releases of substances that can cause serious harm to the public and the environment, to minimize the damage if releases do occur, and to satisfy community right-to-know laws. In accordance with this program, businesses that handle more than a threshold

quantity of regulated substance are required to develop a risk management plan (RMP). This RMP must provide a detailed analysis of potential risk factors and associated mitigation measures that can be implemented to reduce accident potential. CUPAs implement the CalARP program through review of RMPs, facility inspections, and public access to information that is not confidential or trade secret.

California Health and Safety Code, Management of Used Oil

Section 25250-25250.30 of the California Health and Safety Code specifies requirements related to management of used oil, which is typically considered a hazardous waste. These include the prohibition of the disposal of used oil by discharge to sewers, drainage systems, surface water or groundwater, or by deposit on land; and reporting requirements for transport of used oil to recycling facilities. However, Section 25250.4 identifies an exemption for "dielectric fluid removed from oil-filled electrical equipment that is filtered and replaced, onsite, at a restricted access electrical equipment area, or that is removed and filtered at a maintenance facility for reuse in electrical equipment and is managed in accordance with the applicable requirements of Part 279 (commencing with Section 279.1) of Subchapter I of Chapter 1 of Title 40 of the Code of Federal Regulations." This section clarifies that "oil-filled electrical equipment" includes, but is not limited to, transformers, circuit breakers, and capacitors.

The Unified Program

The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. CalEPA and other State agencies set the standards for their programs while local governments implement the standards. These local implementing agencies are called CUPAs. For each county, the CUPA regulates/oversees the following:

- Hazardous materials business plans;
- California accidental release prevention plans or federal risk management plans;
- The operation of underground storage tanks (USTs) and ASTs;
- Universal waste and hazardous waste generators and handlers;
- Onsite hazardous waste treatment;
- Inspections, permitting, and enforcement;
- Proposition 65 reporting; and
- Emergency response.

The CUPA for San Diego County is the County of San Diego Department of Environmental Health (County of San Diego 2016).

California Fire Code

The California Fire Code (24 CCR Part 9) establishes minimum requirements to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings. Chapter 33 of the Code contains requirements for fire safety during construction and demolition activities, such as development of a prefire plan in coordination with the fire chief; maintaining vehicle access for firefighting at construction sites, and requirements related to safe operation of internal combustion engine construction equipment.

CAL FIRE Wildland Fire Management

The Office of the State Fire Marshal and the California Department of Forestry and Fire Protection (CAL FIRE) administer State policies regarding wildland fire safety. Construction contractors must comply with the following requirements in the Public Resources Code during construction activities at any sites with forest-, brush-, or grass-covered land:

- Earthmoving and portable equipment with internal combustion engines must be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (Public Resources Code § 4442).
- Appropriate fire-suppression equipment must be maintained from April 1 to December 1, the highest-danger period for fires (Public Resources Code § 4428).
- On days when a burning permit is required, flammable materials must be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor must maintain the appropriate fire-suppression equipment (Public Resources Code § 4427).
- On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines must not be used within 25 feet of any flammable materials (Public Resources Code § 4431).

California Public Utilities Commission General Order 95: Rules for Overhead Electric Line Construction

The California Public Utilities Commission's (CPUC) General Order (G.O.) 95 specifies requirements for overhead transmission line design, construction, and maintenance, including a number of requirements to avoid or minimize potential safety hazards. These requirements include standards related to vegetation management and maintenance of minimum vegetation clearances from high-voltage lines to minimize potential fire hazard. Table 1, Case No. 14 in G.O. 95 specifies a minimum radial clearance of bare line conductors from vegetation in Extreme and Very High Fire Threat Zones in Southern California as follows: (1) 48 inches for supply conductors and supply cables from 22.5 to 300 kilovolts (kV); (2) 120 inches for supply conductors and supply cables from 300 to 550 kV.

California Highway Patrol

The California Highway Patrol, along with the California Department of Transportation (Caltrans), enforces and monitors hazardous materials and waste transportation laws and

regulations in California. These agencies determine container types used and license hazardous waste haulers for hazardous waste transportation on public roads. All motor carriers and drivers involved in transportation of hazardous materials must apply for and obtain a hazardous materials transportation license from the California Highway Patrol.

11.2.3 Local Laws, Regulations, and Policies

The CPUC has exclusive jurisdiction over the siting and design of electric transmission facilities. Therefore, it is exempt from local land use and zoning regulations. However, CPUC G.O. 131-D states that in locating electric transmission facilities, the public utilities shall consult with the local agencies regarding land use matters. CPUC and NextEra Energy Transmission West, LLC (NEET West) have been in contact with applicable local agencies for the Proposed Project, and local laws and regulations are presented here for consideration of potential impacts related to hazards and hazardous materials.

San Diego County General Plan

The San Diego County General Plan (2011) guides land use decisions in the unincorporated portions of the County, and contains goals and policies related to public safety, hazardous materials, and fire hazard mitigation. Goals and policies contained in the County's General Plan related to hazards and hazardous materials and the Proposed Project include:

- **Policy 5-1.1 – Minimize Exposure to Hazards.** Minimize the population exposed to hazards by assigning land use designations and density allowances that reflect site specific constraints and hazards.

- **Policy 5-3.1 – Defensible Development.** Require development to be located, designed, and constructed to provide adequate defensibility and minimize the risk of structural loss and life safety resulting from wildland fires.

- **Policy 5-11.1 – Land Use Location.** Require that land uses involving the storage, transfer, or processing of hazardous materials be located and designed to minimize risk and comply with all applicable hazardous materials regulations.

Alpine Community Plan

The Alpine Community Plan is a subcomponent of the San Diego County General Plan. By law, the goals and policies contained in the Community Plan are internally consistent with those in the larger County General Plan. Goals and policies in the Alpine Community Plan related to hazards and hazardous materials of potential applicability to the Proposed Project include:

- **Chapter 8, Safety – Policy #3.** Encourage development with fire preventive development practices and fire resistant plant types.

- **Chapter 8, Safety – Policy #4.** Consider fire hazards in Alpine a serious and significant environmental impact during review of Environmental Impact Reports.

- **Chapter 8, Safety – Policy #5.** Encourage the adequate inspection and maintenance of all utilities that could pose a hazard to the Community.

San Diego County Multi-Jurisdictional Hazard Mitigation Plan

The San Diego County Multi-Jurisdictional Hazard Mitigation Plan (HMP), led by the County Office of Emergency Services (OES), was a joint effort involving input from most of the jurisdictions within the County boundaries. The HMP involved a comprehensive risk assessment process, involving identification of hazards and assets, assessing vulnerability, and development of hazard profiles (County of San Diego 2010). Based on the risk assessment, the HMP develops goals, objectives, and actions for each participating jurisdiction. The goals, objectives, and actions for unincorporated San Diego County potentially applicable to the Proposed Project include the goal to reduce the possibility of damage and losses to existing assets, including people, critical facilities/infrastructure, and public facilities due to structural fire/wildfire; and to enforce standardized Defensible Space Clearance distances.

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan

The Operational Area Emergency Plan is a county-wide plan covering all of the unincorporated San Diego County area and many cities within the County's boundaries. The plan describes the roles and responsibilities of County and city departments forming a comprehensive emergency management system that provides for a planned response to disaster situations. The plan lists and describes all of the hazards that San Diego County is susceptible to and identifies objectives and protocols for different functional topic areas. Of relevance to the Proposed Project, Annex K, "Logistics," of the plan identifies policies and procedures for providing and/or coordinating the provision of services, personnel, equipment, and supplies to support operations associated with natural disasters and technological perils and incidents. One of the objectives of logistics operations is to "maintain communications systems, potable water systems, electrical, sanitation, and other utility systems and services. If required, coordinate the emergency restoration of disrupted private services with public utilities" (County of San Diego OES 2010).

San Diego County Consolidated Fire Code

San Diego County's Consolidated Fire Code contains amendments to the California Fire Code, and includes the ordinances of the 16 local fire protection districts in San Diego County, including the Alpine Fire Protection District. In accordance with California Health and Safety Code Section 13869.7(a), these amendments and the standards in the Consolidated Fire Code are more stringent than the State Fire Code. Requirements in the Consolidated Fire Code include those related to fire apparatus access roadways, fire hydrant spacing, automatic fire extinguishing systems in new buildings and structures, and landscaping requirements. Section 4903 of the Code may require an applicant for a parcel map or major use permit for any property located a wildland-urban interface fire area to submit a Fire Protection Plan (FPP) as part of the approval process.

Blasting Permit

County of San Diego Ordinance No. 9044 contains requirements related to use of explosives for construction projects, and requires prospective blasters to obtain a blasting permit from the County Sheriff's Department. The permit would require issuance of written notice to all residences and businesses within specified distances from the proposed blast location; pre-

and post-blast inspection of structures within specified distances from the blast site; and notification of the applicable fire protection district prior to conducting blasting. The County Code defines minor blasting as a blasting that meets all of the following criteria: quantity of rock to be blasted does not exceed one hundred (100) cubic yards per shot, bore hole diameter does not exceed two inches (2"), hole depth does not exceed twelve feet (12'), maximum charge weight does not exceed eight (8) pounds of explosives per delay, and the initiation of each charge will be separated by at least 10 milliseconds. All blasting operations that do not meet the criteria for minor blasting are considered major blasting.

11.3 Environmental Setting

11.3.1 Potentially Affected Area

The Proposed Project would be located on an approximately 6-acre area off of Bell Bluff Truck Trail in unincorporated San Diego County, near the community of Alpine. The Project also would include a 1-mile-long transmission line underneath Bell Bluff Truck Trail connecting to the existing San Diego Gas & Electric (SDG&E) Suncrest Substation. The area is primarily undeveloped with California buckwheat scrub vegetation and oak woodland habitats in the vicinity. The nearest structures are a residential home approximately 0.6 mile to the southeast, and other low-density residential development beginning approximately 1 mile to the east. The existing SDG&E Suncrest Substation is an approximately 40-acre electrical transmission facility, located at the Project's western terminus. The existing Suncrest Substation (substation) is connected to a high-voltage (500-kV) transmission line which enters the substation from the southeast. Two 230-kV transmission lines exit the existing substation to the northwest. These facilities are part of the Sunrise Powerlink, which is a high-voltage electric transmission system that extends from roughly the Imperial Valley west to near the City of San Diego.

The closest schools to the Proposed Project (Alpine Elementary School, Boulder Oaks Elementary School, Joan MacQueen Middle School, Boulder Oaks Elementary, and Julian Charter School) are located approximately 6 miles west to northwest of the Project site in Alpine (refer to Chapter 17, *Public Services and Utilities,* for more detailed information regarding impacts to schools). The nearest major hospital to the Proposed Project is Sharp Grossmont Hospital located in El Cajon, approximately 20 miles west of the Project site. Several day care facilities exist in Alpine, as well as a daycare facility in the Sycuan area, approximately 10 miles west to southwest of the Project site. No airports or private airstrips exist within 2 miles of the Project site; however, there is a private airstrip (On the Rocks Airport-1CA6) located approximately 4 miles southwest of the Proposed Project.

11.3.2 Historical Uses

As part of its Phase 1 ESA, SWCA Environmental Consultants (SWCA), on behalf of NEET West, reviewed the history of the subject property and adjacent properties in accordance with applicable ASTM standards (SWCA 2015). This review included a review of past aerial images, the results of which are reproduced here from the Phase 1 ESA.

Table 11-1. Summary of Historical Aerial Photograph Interpretation

Date of Aerial Photograph	Observations
1953, 1963, 1975, 1989 EDR aerial photographs Various scales	The subject property and most surrounding properties appear to be vacant and undeveloped scrubland with a few dirt roads. An area adjacent to the southwest appears as if it may have been cleared for grazing. The subject property and surrounding area does not appear to have changed significantly during this time period.
1994, 1996, 2002, 2003, 2004, 2005, 2006, 2008, 2009, 2010 EDR and Google Earth aerial photographs Various scales	By 1994, the subject property and adjacent land still appear to be undeveloped and vacant. No significant changes are evident in the 1996 photograph, except that what appears to be a square-shaped residence is present on or adjacent to the north of the right-of-way, approximately 0.77 mile east of the area where the SDG&E Suncrest Substation exists today. In 2003, another structure, possibly a gate, is evident north of the right-of-way, approximately 900 feet east-northeast of the location of the proposed Static VAR compensator (SVC). No additional significant changes are evident during this time period.
2012, 2013, 2014 Google Earth aerial photographs Variable scales	By 2012, the SDG&E Suncrest Substation at the western end of the subject property has been constructed. It appears that the roadway has been improved and paved, and stormwater controls are in place along the road. A tank, probably a water tank, is present approximately 1,000 feet northeast of the substation. A smaller tank has been added approximately 0.7 mile east of the substation, north of the road. A large portion of the location of the proposed substation has been graded. In 2013, another smaller tank has been added, approximately 275 feet southeast of the large tank. The surrounding area appears to remain undeveloped and unoccupied, except as described above.

Source: SWCA 2015

Past aerial imagery shows that the Proposed Project area remained largely undeveloped until roughly 2012, when the SDG&E Suncrest Substation was built and Bell Bluff Truck Trail was improved and paved (SWCA 2015).

As described in Chapter 2, *Project Description,* during construction of the SDG&E Suncrest Substation, the proposed SVC site (i.e., former Wilson Construction Yard) was used as a construction materials storage and staging area. The area was used for storage and staging of materials, assemblage of the lattice tower segments, helicopter transport operations of materials and tower segments, and as a temporary water basin (SDG&E Undated). This use required clearing of vegetation, grading and importation of gravel and rock to the site. Following completion of the SDG&E Suncrest Substation in 2012, the Wilson Construction Yard was de-compacted by ripping and cross-ripping between 18 to 24 inches and then recontoured to a ground surface intended to duplicate its original topography.

11.3.3 Hazardous Materials

The Phase I ESA conducted for the Proposed Project, included of this final environmental impact report (FEIR) in Volume 2 as Appendix I, *Phase 1 Environmental Site Assessment*, included a review of federal and State environmental records for evidence of hazardous materials sites or contamination in the Project vicinity (SWCA 2015). As described in the Phase I ESA, this review included generation and review of an environmental database report (generated by Environmental Data Resources, Inc.), which identified no nearby hazardous materials sites or facilities. The Phase I ESA also included review of records from the State Water Resources Control Board's (SWRCB's) GeoTracker website, which contains environmental data for regulated facilities in California including cleanup sites and hazardous waste facilities, and DTSC's EnviroStor website, which includes data for leaking underground storage tanks, land disposal sites, and hazardous waste permitted facilities (SWCA 2015). SWCA did not identify any relevant nearby sites or facilities based on information from these sources.

Additionally, SWCA evaluated the potential for nearby contamination to migrate over time on or near the Proposed Project site, but did not identify any off-site potential sources of vapor intrusion or vapor encroachment (SWCA 2015).

The Phase I ESA also included a visual inspection of the Proposed Project site. During the visual inspection, SWCA staff did not observe any soil staining, odors, or other evidence of leaks or spills at the existing SDG&E Suncrest Substation, the proposed SVC site, or along Bell Bluff Truck Trail (SWCA 2015).

11.3.4 Fire Hazard

The Proposed Project is located within a Very High Fire Hazard Severity Zone, as defined and identified by CAL FIRE (CAL FIRE 2007). This designation indicates that the physical conditions (e.g., vegetation, topography, weather, crown fire potential, ember production and movement) create a very high likelihood that the area will burn over a 30 to 50-year time period, and potentially will burn at a high intensity and speed (CAL FIRE 2012). In general, San Diego County is subject to extreme fire danger due to a combination of physical and climatic factors. In the fall, at the height of the fire season, extreme fire weather conditions include low humidity, sustained high-speed winds, and strong gusts (NEET West 2015). Santa Ana winds are strong, extremely dry down-slope winds that originate inland and affect coastal Southern California. The Santa Ana winds typically blow from the northeast over the Peninsular Ranges, and can have sustained speeds of 40 miles per hour (mph) with gusts over 100 mph, creating extreme fire danger (NEET West 2015).

11.4 Impact Analysis

11.4.1 Methodology

For the purpose of this assessment, hazardous materials are defined as any materials that, because of quantity, concentration, or physical or chemical characteristics, pose a significant, present, or potential hazard to human health and safety or to the environment, if released. Hazardous materials include, but are not limited to, hazardous substances, hazardous wastes, and any material that a handler or the administering regulatory agency has a reasonable basis

for believing would be injurious to the health and safety of persons or would be harmful to the environment if released into the workplace or the environment (California Health and Safety Code § 25501).

Although often treated separately from hazardous materials, petroleum products (including crude oil and refined products such as fuels and lubricants) and natural gas are considered in this analysis because they might pose a potential hazard to human health and safety if released into the environment. Hazardous wastes include residues, discards, byproducts, contaminated products, or similar substances that exceed regulatory thresholds for properties of toxicity, ignitibility, corrosivity, or reactivity. Federal and state regulations identify by name the specific hazardous wastes that EPA has designated as "listed wastes."

Potential impacts related to hazards and hazardous materials that may occur from the Proposed Project are evaluated with respect to the applicable State CEQA Guidelines Appendix G significance criteria, described below. Potential impacts also are considered in light of existing federal and State laws and regulations related to hazards and hazardous materials, as well as the existing physical environment in the area of the Proposed Project, including proximity to sensitive receptors.

11.4.2 Criteria for Determining Significance

According to Appendix G of the State CEQA Guidelines, the Proposed Project would result in a significant effect related to hazards and hazardous materials if it would:

A. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

B. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

C. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or wastes within 0.25 mile of an existing or proposed school.

D. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5, and as a result, create a significant hazard to the public or the environment.

E. Result in a safety hazard for people residing or working in the project area if the project is within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public-use airport or private airstrip.

F. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

G. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Criteria Dismissed from Further Consideration

Because there are no schools within 0.25 mile of the Proposed Project, as described in Section 11.3, "Environmental Setting," significance criterion C above is not considered further. Similarly, because the Phase 1 ESA determined that no hazardous materials sites exist on or near the Project site, significance criteria D above is also dismissed from further detailed analysis. Additionally, no airports or private airstrips exist within 2 miles of the Proposed Project site. The nearest private airstrip is located approximately 4 miles southwest of the Project site. Therefore, significance criterion E is not considered further.

11.4.3 Environmental Impacts

Impact HAZ-1: Potential to Create a Significant Hazard to the Public or the Environment through the Routine Transport, Use, or Disposal of Hazardous Materials (Less than Significant with Mitigation)

Construction

Construction of the Proposed Project would involve the routine transport, use, and disposal of hazardous materials. These materials would include, but would not be limited to, diesel fuel, gasoline, lubrication oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, cement slurry, and, possibly, explosives for blasting activities. These materials would primarily be contained within construction equipment, but may also be stored on-site or transported to the site, and may be replenished or disposed of periodically. Installation of the transformers for the SVC facility would involve transport and handling of mineral oil[1] (each of the two transformers will require approximately 10,000 gallons of mineral oil). Routine transport, use, and disposal of hazardous materials during Project construction could potentially expose persons or the environment to hazards if adequate precautions are not taken; for example, if appropriate personal protective equipment were not worn or hazardous materials were otherwise mishandled to allow for exposure. Because the Project area is primarily undeveloped and sparsely inhabited, routine transport, use, and disposal of hazardous materials for the Proposed Project construction would be unlikely to affect the general public, but could adversely affect construction workers or the environment. Such adverse effects could include illness from exposure to toxic substances or soil or groundwater contamination from inappropriate disposal practices.

As described in Section 11.2, "Regulatory Setting," the Proposed Project would be subject to a number of existing federal and State laws and regulations related to hazardous materials, which would include protective requirements designed to limit potential impacts. In accordance with OSHA and Cal/OSHA requirements, the Proposed Project would be required to implement workplace training, safety procedures for the handling of hazardous substances, and to ensure workers are not exposed to hazardous materials above exposure limits. OSHA requirements also would require that explosives are stored in approved facilities.

In accordance with San Diego County's Unified Program, which implements a number of federal and State laws and regulations related to hazardous materials, and is administered by

[1] Mineral oil or "transformer oil" is an oil that is stable at high temperatures and has desirable electrical insulating properties. Its functions are to insulate, suppress corona and arcing, and to serve as a coolant.

the San Diego County Department of Environmental Health, the Proposed Project would be required to follow hazardous waste storage and labeling requirements and requirements for proper disposal of hazardous waste (County of San Diego 2016). The quantities of potentially hazardous materials contained in construction equipment and used during construction may be below thresholds which would trigger required preparation of a hazardous material business plan or an RMP, pursuant to the Unified Program; however, the Proposed Project would implement **Mitigation Measure HAZ-1**, requiring the preparation and implementation of a Hazardous Materials and Waste Management Plan (HMWMP). As shown below, the HMWMP would include an inventory of hazardous materials on-site; information on protocols for the safe storage, use, transport, and disposal of hazardous materials; spill response procedures, and other components designed to avoid or minimize potential impacts.

Additionally, the Proposed Project would implement **Mitigation Measure HAZ-2**, requiring preparation and implementation of a blasting plan prior to conducting any blasting activities. The blasting plan under Mitigation Measure HAZ-2 would outline the proposed safe and lawful transport, storage, and use of explosives during Project construction.

Implementation of Mitigation Measure HAZ-1 and HAZ-2, along with adherence to existing federal and State laws, would be anticipated to reduce the potential for routine transport, use, and disposal of hazardous materials to create a significant hazard to the public or the environment. This impact would be less than significant with mitigation.

Mitigation Measure HAZ-1: Hazardous Materials and Waste Management Plan.

NEET West and/or its contractor(s) shall prepare and implement a Hazardous Materials and Waste Management Plan (HMWMP). The HMWMP may include components or requirements which are part of compliance documents for other applicable federal and state hazardous materials regulations. The HMWMP shall include the following information:

- A list of hazardous materials present on-site during construction and operation, to be updated as needed along with product Safety Data Sheets and other information regarding storage, application, transportation, and disposal requirements;
- A Hazardous Materials Communication (i.e., HAZCOM) Plan;
- Assignments and responsibilities of Proposed Project Health and Safety roles;
- Standards for any secondary containment and countermeasures that will be required for hazardous materials;
- Spill response procedures based on product and quantity. The procedures shall include materials to be used, location of such materials within the Proposed Project area, and disposal protocols; and
- Protocols for the management, testing, reporting, and disposal of potentially contaminated soils or groundwater observed or discovered during construction. This will include termination of work within the area of

suspected contamination sampling by an OSHA trained individual, and testing at a certified laboratory.

A copy of the HMWMP shall be provided to the CPUC for recordkeeping prior to the start of construction. HMWMP updates shall be made and submitted as needed if construction activities change whereas the existing HMWMP does not adequately address the Proposed Project.

Mitigation Measure HAZ-2: Prepare and Implement Blasting Plan.

NEET West shall conduct a pre-blast survey, prepare a blasting plan, and obtain appropriate blasting and explosive permits prior to conducting any blasting activities during Project construction. NEET West shall submit a written report of the pre-blast survey and final blasting plan to CPUC and the County of San Diego and receive approval from that agency prior to any rock removal activity. The pre-blast survey and blasting plan shall meet the following conditions:

- The pre-blast survey shall be conducted for structures within a minimum radius of 1,000 feet from the identified blast site to be specified by NEET West. Notification that blasting will occur shall be provided to all owners of the identified structures to be surveyed prior to commencement of blasting. The pre-blast survey shall be included in the final blasting plan.

- The final blasting plan shall outline safe and lawful procedures for transport, handling, and storage of explosives. The blasting plan shall identify where on the site explosives will be stored and explain what safety precautions will be taken in transporting and handling explosives to prevent potential accidental explosions or release of hazardous materials into the environment.

- The final blasting plan shall address air-blast limits, ground vibrations, and maximum peak particle velocity for ground movement, including provisions to monitor and assess compliance with the air-blast, ground vibration, and peak particle velocity requirements. The blasting plan shall meet criteria established in Chapter 3 (Control of Adverse Effects) in the Blasting Guidance Manual of the U.S. Department of Interior Office of Surface Mining Reclamation and Enforcement.

- The final blasting plan shall identify fire-safe blasting procedures and measures to prevent possible ignition of wildfires during blasting activities.

- <u>The blasting plan shall include measures to prevent contamination of groundwater including proper drilling, explosive handling and loading procedures; observing the entire blasting procedures; evaluating blast performance; and handling and storage of blasted rock, as follows:</u>

    1. <u>**Loading practices.** The following blasthole loading practices to minimize environmental effects shall be followed:</u>

        a. <u>Drilling logs shall be maintained by the driller and communicated directly to the blaster. The logs shall indicate</u>

depths and lengths of voids, cavities, and fault zones or other weak zones encountered as well as groundwater conditions.

b. Explosive products shall be managed on-site so that they are either used in the borehole, returned to the delivery vehicle, or placed in secure containers for off-site disposal.

c. Spillage around the borehole shall either be placed in the borehole or cleaned up and returned to an appropriate vehicle for handling or placement in secured containers for off-site disposal.

d. Loaded explosives shall be detonated as soon as possible and shall not be left in the blastholes overnight, unless weather or other safety concerns reasonably dictate that detonation should be postponed.

e. Loading equipment shall be cleaned in an area where wastewater can be properly contained and handled in a manner that prevents release of contaminants to the environment.

f. Explosives shall be loaded to maintain good continuity in the column load to promote complete detonation. Industry accepted loading practices for priming, stemming, decking and column rise need to be attended to.

2. **Explosive selection.** The following measures shall be followed to reduce the potential for groundwater contamination when explosives are used:

   a. Explosive products shall be selected that are appropriate for site conditions and safe blast execution.

   b. Explosive products shall be selected that have the appropriate water resistance for the site conditions present to minimize the potential for hazardous effect of the product upon groundwater.

3. **Prevention of misfires.** Appropriate practices shall be developed and implemented to prevent misfires.

4. **Muck pile management.** Muck piles (the blasted pieces of rock) and rock piles shall be managed in a manner to reduce the potential for contamination by implementing the following measures:

   a. Remove the muck pile from the blast area as soon as reasonably possible.

b. Manage the interaction of blasted rock piles and stormwater to prevent contamination of water supply wells or surface water.

- The blasting plan shall outline the anticipated blasting procedures for the removal of rock material at the proposed SVC, riser pole and underground transmission line structures. The blasting procedures shall incorporate line control to full depth and controlled blasting techniques to create minimum breakage outside the line control and maximum rock fragmentation within the target area. Prior to blasting, all applicable regulatory measures shall be met. NEET West, or its subcontractor (as appropriate) shall keep a record of each blast for at least 1 year from the date of the last blast.

- The blasting plan shall incorporate provisions to post signage along roads and trails within a minimum of 1000 feet of the identified blast site. Precautions such as fencing or taping will be incorporated that limit access to recreationalists and the general public.

Operation

During operation, the Proposed Project would involve relatively minimal transport, use, and disposal of hazardous waste, as the facility would be operated remotely and would only require periodic maintenance and repair activities. As described in Chapter 2, *Project Description,* no staff would be needed on site to operate the Proposed Project. NEET West anticipates that maintenance of the Proposed Project would include routine monthly inspections of the SVC equipment, as well as more thorough annual inspections and maintenance of the main SVC components. The transmission line would be inspected every 6 to 8 months. Any necessary repairs or maintenance would typically be conducted on an as-needed basis. Hazardous materials that may be stored, transported, used, or disposed of include transformer oil, solvents, and paints. Although they may be used or handled infrequently, use of these materials during maintenance and repair activities could potentially expose workers or the environment to adverse effects.

In general, the Proposed Project would be required to comply with applicable federal, State, and local laws and regulations related to hazardous materials management. As described in Section 11.2, "Regulatory Setting," use, storage, transport, and disposal of hazardous materials during Project operation would be subject to OSHA and Cal/OSHA regulations, which include requirements for the protection of worker health and safety. Because the Proposed Project would store greater than 1,320 gallons of mineral oil in the transformers (each of the two transformers would require a maximum of 10,000 to 12,000 gallons of oil), it also would likely be subject to the USEPA's SPCC rule, which requires preparation and implementation of an SPCC plan, including identification and implementation of appropriate spill containment structures and countermeasures. The requirements of the SPCC rule may be met in part by the transformer oil containment basins which are proposed as part of the Project. As described in Chapter 2, *Project Description,* the Proposed Project would include secondary containment structures designed to contain the oil volume of the transformers plus the 25-year 24-hour storm. Due to the oil contained in the transformers, the Proposed Project also may be required to prepare and implement a hazardous materials business plan and potentially an RMP, which would include a number of emergency and spill contingency-related requirements. Some of these requirements may be met or may compliment items

included in the HMWMP, which would be prepared and implemented pursuant to Mitigation Measure HAZ-1.

Periodic replacement of transformer oil may be subject to applicable sections of the California Health and Safety Code related to management of used oil. Depending on whether the oil would be filtered and replaced on-site, the Proposed Project may be required to follow reporting and other requirements governing transport of oil to recycling or disposal facilities or be managed in accordance with applicable federal regulations. Either way, the routine replacement, disposal, or transport of used transformer oil would not be anticipated to create a significant hazard to the public or the environment.

Overall, given adherence to applicable laws and regulations and implementation of Mitigation Measure HAZ-1, potential impacts associated with the routine storage, use, transport, and disposal of hazardous waste would be anticipated to be less than significant. This impact would be less than significant with mitigation.

Impact HAZ-2: Potential to Create a Significant Hazard to the Public or the Environment through Reasonably Foreseeable Upset and Accident Conditions (Less than Significant with Mitigation)

Construction

As described under Impact HAZ-1 above, construction of the Proposed Project would involve use, transport, storage, and disposal of hazardous materials, including, but not limited to, diesel fuel, gasoline, lubrication oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and cement slurry, and, possibly, explosives for blasting activities. These materials would primarily be contained within construction equipment, but may also be stored on-site and/or transported to and from the site. Use of these materials would have the potential to result in accidental spills that could release hazardous materials into the environment. Such potential releases could harm plants, soil-dwelling microorganisms, or contaminate groundwater rendering it unfit for designated beneficial uses. Accidental detonation of explosives could pose a safety hazard to workers or wildlife in the area. Because the Project area is relatively undeveloped and sparsely populated, potential releases of hazardous materials due to upset or accident conditions would be unlikely to affect the general public, but may create a hazard to construction workers present on-site during construction.

Numerous federal, State, and local laws and regulations relate to hazardous materials management. In general, the Proposed Project would be required to handle, store, use, transport, and dispose of hazardous materials in accordance with applicable federal, state, and local laws. The Proposed Project also would implement **Mitigation Measure HAZ-1**, which would require preparation and implementation of a HMWMP. The HMWMP would include a number of measures designed to prevent or minimize the effects of potential releases of hazardous materials, including maintaining an inventory of hazardous materials present on-site during construction, a HAZCOM plan, spill response procedures, and standards for secondary containment and countermeasures in the event of a spill.

Additionally, **Mitigation Measure HAZ-2** would be implemented to ensure that appropriate safety procedures are in place for the storage, transport, and handling of explosives during Project construction.

Given implementation of Mitigation Measure HAZ-1 and HAZ-2, accidental releases of hazardous materials during construction of the Proposed Project would be unlikely to occur, and should they occur, potential impacts on the public or the environment would be minimized. Therefore, this impact would be less than significant with mitigation.

Operation

As described under Impact HAZ-1 above, the Proposed Project would involve only infrequent handling, use, transport, and disposal of hazardous materials. In general, the Proposed Project would be operated remotely and no staff would typically be needed on-site. Hazardous materials would be used or handled infrequently during routine maintenance and repair activities or during replacement of transformer oil. Hazardous materials that may be used during Project operation include paints, solvents, used transformer oil, or similar substances. Although they may be used infrequently, these materials would have the potential to create a significant hazard to workers or the environment if they were to spill or be released through upset or accident conditions.

The Proposed Project would involve on-site storage of mineral oil or transformer oil, which is a petroleum product and considered a hazardous material for the purposes of this analysis. Each of the two proposed transformers would require a maximum of 10,000 to 12,000 gallons of mineral oil. If the containing structures were to leak or fail (e.g., during a seismic event), without adequate secondary containment structures, the oil may be released into the environment. Because the Project site and surrounding vicinity is relatively undeveloped and sparsely populated, such a release would be unlikely to directly affect members of the general public, but it could adversely affect workers should they happen to be present in the environment. If the oil were released outside the footprint of the SVC, it could contaminate the surrounding soil and potentially be transported to nearby water bodies or percolate down to the groundwater, though this is considered unlikely given the dense rock underlying the Project site.

The Proposed Project would be required to follow all applicable laws and regulations related to hazardous materials and waste. These may include OSHA and Cal/OSHA regulations, the USEPA's SPCC rule, and applicable Unified Program requirements. The SPCC rule includes requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining shorelines, and may be applicable to the Proposed Project's storage of oil in transformers. These requirements may be met in part by the transformer oil containment basins which are proposed as part of the Project. These secondary containment structures would be designed to contain the oil volume of the transformers plus the 25-year 24-hour storm, and would be anticipated to prevent any oil from being discharged to the surrounding environment in the event of a rupture of the primary containment structure, such as during a seismic event.

The Proposed Project also may be required to prepare and implement a hazardous materials business plan and potentially an RMP, which would include a number of emergency and spill contingency-related requirements. Some of these requirements may be met or may compliment items included in the HMWMP, which would be prepared and implemented pursuant to Mitigation Measure HAZ-1. As described above, Mitigation Measure HAZ-1 would include an inventory of hazardous materials present on-site during operation, a HAZCOM plan, spill response procedures, and standards for secondary containment and countermeasures in the event of a spill.

Overall, with adherence to applicable laws and regulations pertaining to hazardous materials and implementation of Mitigation Measure HAZ-1, the potential for the Project to create a significant hazard to the public or environment through upset or accident conditions would be anticipated to be less than significant. This impact would be less than significant with mitigation.

Impact HAZ-3: Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan (Less than Significant with Mitigation)

Construction

Construction of the Proposed Project would involve operation and temporary storage of large construction equipment, excavation and hauling of excavated material, transportation and storage of construction materials (e.g., conduit, conductor cables, electrical/SVC equipment, etc.), and trenching within Bell Bluff Truck Trail. All of these activities would have the potential to disrupt traffic flow along the two-lane Bell Bluff Truck Trail and potentially impede emergency response vehicles and/or evacuation procedures. The presence of large construction equipment and haul trucks on local roadways could potentially impede movement and access of emergency response vehicles or interfere with evacuation procedures. Because Bell Bluff Truck Trail is a private, secured roadway in the area of the Proposed Project, such construction activities would be unlikely to substantially affect the general public but could affect emergency access to and from the existing SDG&E Suncrest Substation and associated high-voltage transmission lines. If trenching activities along Bell Bluff Truck Trail were to block vehicle traffic and prevent access to the existing substation or transmission lines by emergency personnel, it could result in a significant impact. Prompt access to the existing facilities may be necessary to prevent property damage or risks to life safety in the event of a fire or other emergency associated with the SDG&E Suncrest Substation.

As described in Chapter 19, *Transportation and Traffic,* the Proposed Project would implement **Mitigation Measures TR-1** and **TR-2** to minimize potential impacts associated with haul truck and heavy equipment traffic and temporary roadway disturbances caused by the Proposed Project. Mitigation Measure TR-1 would require that NEET West and/or its contractor(s) conduct work in such a way as to maintain two-way traffic flow on roadways in the vicinity of the work site, to the extent feasible, and to prohibit heavy equipment and haul traffic in residential areas. Mitigation Measure TR-2 would require that NEET West and/or its contractor(s) prepare and implement a Traffic Control Plan (TCP) to describe procedures to guide traffic, safeguard construction workers, provide safe passage of traffic, and minimize traffic impacts, as necessary, through the duration of construction. Additionally, the Proposed Project would implement **Mitigation Measure TR-3** to require that NEET West and/or its contractor(s) coordinate with local emergency service providers to ensure that emergency vehicle access and response is not impeded in the event work is conducted on roads with the potential to affect traffic flow.

With implementation of the mitigation measures described above, construction of the Proposed Project would not be anticipated to substantially interfere with emergency response or evacuation procedures in the area of the existing SDG&E Suncrest Substation and surrounding Project vicinity. Given the Proposed Project's location along a private road in a remote and relatively unpopulated area of San Diego County, its' construction would not be

likely to impede or interfere with implementation of regional emergency response or evacuation plans, such as the *Unified San Diego County Emergency Service Organization Operational Area Emergency Plan.* Therefore, this impact would be less than significant with mitigation.

Operation

The Proposed Project would be operated remotely and no staff would typically be on-site during Project operation. Following construction, Bell Bluff Truck Trail would be restored to pre-project conditions and no structures or equipment would interfere with vehicle movement. Therefore, the Proposed Project would not affect emergency response or evacuation related to the existing SDG&E Suncrest Substation or surrounding area.

Once operational, the Proposed Project will represent a key piece of infrastructure for the regional transmission system. As described in Section 11.2, "Regulatory Setting," one of the objectives of the *Unified San Diego County Emergency Services Organization Operational Area Emergency Plan* is to maintain key utility systems and services, and, if required, coordinate the emergency restoration of disrupted private services with public utilities (County of San Diego OES 2010). In this regard, the Proposed Project would be another piece of utility infrastructure that would need to be accounted for and potentially restored in the event of an emergency or disaster. There is no reason to believe this would place an undue burden on emergency response personnel or impede the implementation of existing emergency response and evacuation plans. Overall, this impact would be less than significant.

Impact HAZ-4: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires, Including Where Wildlands Are Adjacent to Urbanized Areas or Where Residences Are Intermixed with Wildlands (Less than Significant with Mitigation)

Construction

During construction, the Proposed Project would involve use of combustion-engine construction equipment, as well as storage of potentially flammable materials, such fuel or lubricating oil. Project construction also may involve use of explosives during blasting activities. These activities could potentially provide a spark or ignition source, or introduce materials that could combust or burn at high intensity if exposed to a heat source. The Proposed Project site is located in an area classified as a Very High Fire Hazard Severity Zone by CAL FIRE due to its physical, climatic, and topographic factors. Therefore, use of combustion-engine and/or spark-generating construction equipment, and use or storage of flammable materials, in this area for Project construction may increase the risk of initiating a wildland fire.

Although the Proposed Project is located in a relatively undeveloped and sparsely inhabited area of San Diego County, a wildland fire in this area could be devastating, potentially leading to high loss of property and life. This is especially true if it were to occur during the period of Santa Ana winds when it would be difficult for firefighting personnel to control its spread. Some of the largest and most destructive fires in California's history (e.g., Cedar Fire [273,246 acres burned], Laguna Fire [175,425 acres burned]) have occurred in the general vicinity of

the Proposed Project, and history has shown that wildfires started in this region can spread extremely quickly and over great distances (CAL FIRE 2016).

To reduce the potential for wildfire risk during construction, the Proposed Project would implement a Construction Fire Prevention Plan (CFPP), as described below in **Mitigation Measure HAZ-3.** The CFPP would identify fire prevention measures that would be employed during the construction phase, identifying potential sources of ignition and detailing the measures, equipment, and training that will be provided to all site contractors (Dudek 2016). Basic topics to be addressed in the CFPP include fire risk mitigation measures, fuel modification at construction sites, fire patrols, mufflers and spark arrestors on equipment engines, and storage of flammable and combustible liquids and fueling of vehicles and equipment (Dudek 2016).

Additionally, the Proposed Project would be subject to applicable sections of the Public Resources Code related to prevention of wildland fires and the California Fire Code (see Section 11.2, "Regulatory Setting"). The Proposed Project also would implement **Mitigation Measure HAZ-4**, which would require implementation of a number of BMPs related to fire safety during construction.

Additionally, the Proposed Project would implement **Mitigation Measure HAZ-2**, which would require preparation and implementation of a blasting plan, which would include fire-safe blasting procedures and measures to prevent the possible ignition of a wildfire from use of explosives.

Implementation of the measures described above and compliance with applicable laws and regulations would be anticipated to reduce potential for the Project construction activities to initiate a wildland fire. The location of the Proposed Project in an area susceptible to wildfire could expose construction workers and equipment to risk of loss due to wildland fire, but given the temporary nature of construction (11-month construction period) this would not be considered a likely occurrence. Overall, this impact would be less than significant with mitigation.

Mitigation Measure HAZ-3: Prepare and Implement a Construction Fire Prevention Plan.

NEET West and/or its contractor(s) shall prepare and implement the Project's Construction Fire Prevention Plan (CFPP) in accordance with applicable sections of the San Diego County Consolidated Fire Code. The document will address fire prevention measures that will be employed during the construction phase, identifying potential sources of ignition and detailing the measures, equipment, and training that will be provided to all site contractors. The CFPP shall be prepared, reviewed, and approved by the San Diego County Fire Authority (SDCFA) and CAL FIRE a minimum of 45 days prior to commencement of construction activities.

Mitigation Measure HAZ-4: Fire Safe Working Conditions and Best Management Practices.

NEET West and/or its contractor(s) shall implement the following measures during construction and operation to reduce the potential for ignitions and minimize fire-related hazards (these measures may be included in the CFPP, as appropriate):

- All work vehicles will be required to carry fire suppression equipment. Workers will be trained in the use of equipment for incipient stage fire suppression.
- Smoking will be confined to vehicles or approved smoking areas where fire suppression equipment and appropriate disposal facilities are present. All smoking materials will be disposed of in appropriate disposal bins.
- All on-road vehicle parking will be restricted to paved or graveled surfaces unless parking is required during an emergency or required for worker safety.
- Require spark arrestors on all off-road equipment.
- Restrict work activities during Red Flag Warnings issued by the National Weather Service to the extent possible. Where it is not possible to stop or restrict work activities due to safety or time sensitive activities, work activities will be limited to those needed to complete the current task and establish safe working conditions. During Red Flag Warnings, a crew member will be assigned to fire watch for each separate and distinct active work area.
- Weather and fire danger will be monitored on a daily basis.
- Fire suppression equipment such as backpack water pumps or water buffaloes will be kept on-site at a minimum of 50 feet from each separate and distinct active work area.

Operation

During operation, the Proposed Project would not involve activities that would be anticipated to create wildfire risk. Project operation may involve routine maintenance and repair activities involving use of internal-combustion engine construction equipment or flammable materials, but these activities would primarily be conducted within the fence line of the SVC and other paved areas.

Because the Proposed Project would be operated remotely with no staff typically present on-site and would not include any residential uses, a wildfire in the area would be unlikely to expose people to injury or death due to their presence on the Project site.

A wildfire in the area could damage the proposed SVC or transmission line, which could potentially result in substantial losses to the facilities and transmission system.

NEET West has prepared an FPP (Appendix K, Fire *Protection Plan*), which is separate from the CFPP that would be prepared for Project construction. This document was prepared in coordination with the SDCFA, and it evaluates potential impacts associated with wildland fire hazard. The FPP modeled anticipated fire behavior based on fuel load, vegetation type, climate, topography, and other factors, and evaluated potential risk to Project facilities. The FPP prescribes defensible space[2] requirements of up to at least 84 feet and up to 144 feet of

[2] Defensible space (sometimes called "firescaping"), in the context of fire control, is the natural and landscaped area around a structure that has been maintained and designed to reduce fire danger.

modified natural fuels in all directions from site equipment (Dudek 2016). The defensible space prescribed in the FPP would be accomplished by removing or maintaining natural fuels/vegetation to a height of no more than 6 inches. Any planting used in the defensible space would be required to consist of low-growing ground cover selected from the SDCFA desirable plant list (Dudek 2016). The FPP also recommends firefighters receive training in advance of Project implementation regarding firefighting at energized facilities and potential transformer oil fires. **Mitigation Measure HAZ-5** would require implementation of all of the requirements and recommendations contained in the FPP**.**

In addition to the requirements in the FPP related to the SVC facility design and operation, the Proposed Project would be subject to applicable laws and regulations related to overhead transmission lines and riser poles. CPUC G.O. 95 specifies minimum clearances for overhead electric lines for fire safety. The minimum clearance from vegetation for lines operating at 100 to 300,000 volts (the Proposed Project's overhead transmission line would operate at 230,000 volts [i.e., 230 kV]) in Extreme and Very High Fire Threat Zones in Southern California is 48 inches. Additionally, firebreak clearances may be applicable surrounding the proposed riser pole in accordance with PRC Section 4292. These regulations would serve to reduce potential fire risk caused by the Proposed Project, as well as minimize potential damage to Project facilities or fire spread or intensification should a wildfire occur in the area.

With implementation of Mitigation Measure HAZ-5 and adherence to applicable laws and regulations, the potential for the Proposed Project to expose people or structures to significant risk of loss, injury, or death due to wildland fire would be anticipated to be less than significant with mitigation.

Mitigation Measure HAZ-5: Follow Operational Requirements and Recommendations Identified in the Fire Protection Plan.

NEET West and/or its contractor(s) shall follow all of the requirements and recommendations contained in the FPP prepared for the Proposed Project by Dudek, dated ~~June~~December 2016. These requirements include, but are not limited to, design and implementation of defensible space around the proposed SVC facility according to the parameters described in the FPP; conducting training sessions with local fire station personnel and providing technical support to fire personnel regarding electrical fires and firefighting at energized facilities; appropriate design of driveways and access roads to allow for safe and efficient fire personnel and equipment access; development and implementation of appropriate protocols for de-energizing the proposed facilities; inclusion of a 10,000-gallon water storage tank accessible to firefighters at the SVC site, and arrangement of electrical equipment on the SVC site to maintain adequate setbacks from vegetated areas..

Chapter 12
Hydrology and Water Quality

12.1 Overview

This chapter describes the setting and potential impacts of the Proposed Project related to hydrology and water quality. Potential impacts are evaluated in light of existing laws and regulations and the existing physical environmental conditions as they relate to hydrology and water quality.

Resources used to prepare this chapter include the San Diego Regional Water Quality Control Board's (SDRWQCB's) Basin Plan, the California Department of Water Resources' (DWR's) Bulletin 118, and the proponent's environmental assessment (PEA) submitted to the California Public Utilities Commission (CPUC) by NextEra Energy Transmission West, LLC (NEET West).

12.2 Regulatory Setting

12.2.1 Federal Laws, Regulations and Policies

Clean Water Act

The Clean Water Act (CWA) is the primary federal law that protects the quality of the nation's surface waters. The key sections of the CWA which are applicable to the Proposed Project are described below.

Section 303(d)

Under CWA Section 303(d), states are required to identify and make a list of water bodies that are polluted. In California, this responsibility falls to the State Water Resources Control Board (SWRCB) and its nine RWQCBs. In addition to identifying impaired water bodies, states must identify the pollutants causing the impairments; establish priority rankings for waters on the list, and develop a schedule for development of control plans to improve water quality, including development of Total Maximum Daily Loads (TMDLs). Water bodies downstream of the Proposed Project listed as impaired and requiring TMDLs are listed in Section 12.3, "Environmental Setting."

Section 401

Section 401 of the CWA regulates discharges of fill or dredged material to waters of the U.S. and state. Section 401 applies to any project or applicant seeking a federal permit (e.g., CWA Section 404 permit) for any activity which may result in a discharge to a water body. The CWA Section 401 program follows a general approach of: (1) impact avoidance as a first priority, (2) minimization of impacts if avoidance is not possible, and (3) mitigation to compensate for unavoidable permanent impacts and ensure no net loss of water resources

occurs (SWRCB 2016). The SWRCB and its nine RWQCBs issue water quality certifications for projects subject to section 401 of the CWA. Each RWQCB is responsible for implementing section 401 in compliance with the CWA and its water quality control plan (also known as a Basin Plan; discussed further in Section 12.2.2, "State Laws, Regulations, and Policies," below).

Section 402

CWA Section 402 regulates facilities that discharge pollutants into waters of the U.S. through the National Pollutant Discharge Elimination System (NPDES). Under the NPDES, all facilities discharging pollutants from any point source into waters of the U.S. must obtain a NPDES permit. While originally focused on municipal and industrial discharges from pipes or other point sources, Section 402 of the CWA was amended in 1987 to include stormwater discharges which may be non-point source in nature. Phase I of the NPDES Storm Water Program imposed permitting requirements on several types of stormwater discharges, including certain industrial activities, medium (i.e., serving 100,000 to 250,000 people) and large (serving greater than 250,000 people) municipal separate sanitary sewer systems (MS4s), and construction sites disturbing 5 or more acres. Phase II of the Storm Water Program regulations, issued in 1999, expanded permitting requirements to include small (serving less than 100,000 people) MS4s, construction sites of 1 to 5 acres, and other certain previously exempt industrial facilities.

General Construction Stormwater Permit

Most construction projects that disturb 1 acre or more of land are required to obtain coverage under the SWRCB's *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Order 2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ), in accordance with CWA Section 402. The general permit requires the applicant to file a public notice of intent to discharge stormwater and prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP must include a site map and a description of the proposed construction activities; demonstrate compliance with relevant local ordinances and regulations, and present a list of best management practices (BMPs) that will be implemented to prevent soil erosion and protect against discharge of sediment and other construction-related pollutants to surface waters. Permittees are further required to conduct monitoring and reporting to ensure that BMPs are correctly implemented and are effective in controlling the discharge of construction-related pollutants.

Municipal Stormwater Permitting Program

The SWRCB regulates stormwater discharges from MS4s, in accordance with Section 402 of the CWA, through its Municipal Storm Water Permitting Program. As described above, the MS4 permitting requirements were developed in two phases: Phase I and II. MS4 permits continue to be issued under Phase I or Phase II depending on the size of the MS4 seeking authorization. Phase I permits for medium and large MS4s require the discharger to develop and implement a Storm Water Management Plan/Program with the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP), including identifying what BMPs will be used to address specific program areas (SWRCB 2013).

San Diego Regional Stormwater Permit

The San Diego Regional Stormwater Permit (Order No. R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100) is a Phase I MS4 stormwater permit covering the County of San Diego, the City of San Diego, and numerous other jurisdictions in the San Diego region. The San Diego Regional Permit prohibits "discharges from MS4s in a manner causing, or threatening to cause, a condition of pollution, contamination, or nuisance in receiving waters of the state" (SDRWQCB 2015). The San Diego Regional Stormwater Permit requires that the County develop new and updated Runoff Management Plans and Programs, including Water Quality Improvement Plans and a Jurisdictional Runoff Management Plan (County of San Diego 2016). In unincorporated San Diego County, the permit requirements are generally implemented under the authority of the Watershed Protection, Stormwater Management, and Discharge Control Ordinance (WPO), which is described in this chapter under Section 12.2.3, "Local Laws, Regulations, and Policies."

Section 404

Section 404 of the CWA prohibits discharges of dredged or fill material into waters of the U.S. without a permit from the U.S. Army Corps of Engineers (USACE). Waters of the U.S. are generally defined as follows:

1. Waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. Interstate waters, including interstate wetlands;
3. The territorial seas;
4. Impoundments of waters otherwise identified in items 1 through 3 above;
5. Tributaries of waters identified in items 1 through 3 above;
6. Waters adjacent to a water identified in items 1 through 5 above, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters;
7. Waters determined, on a case-specific basis, to have a significant nexus to other waters of the U.S.; and
8. Waters located within the 100-year floodplain of a water identified in items 1 through 3 above and all waters located within 4,000 feet of the high tide line or ordinary high water mark (OHWM) of a water identified in items 1 through 5 above where they are determined on a case-specific basis to have a significant nexus to a water identified in items 1 through 3 above.

The following are not considered waters of the U.S. even when otherwise meeting the above criteria: wastewater treatment systems, ditches with ephemeral or intermittent flow, and features such as artificially irrigated areas or artificially constructed lakes or ponds.

12.2.2 State Laws, Regulations, and Policies

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Control Act (also known as the Porter-Cologne Act), passed in 1969, established the SWRCB and divided the State into nine hydrogeologic regions, each overseen by an RWQCB. In conjunction with the federal CWA, the Porter-Cologne Act is the principal law governing water quality regulation in California (SWRCB 2014). The Porter-Cologne Act requires that each RWQCB develop a water quality control plan (also known as a Basin Plan) to identify the existing and potential beneficial uses of waters of the State and establish water quality objectives to protect these uses. Waters of the State are defined differently than waters of the U.S., described above under CWA, Section 404, and include any surface water or groundwater, including saline waters, which are within the boundaries of the State.

The Porter-Cologne Act also implements many provisions of the CWA, such as the NPDES permitting program, described above under Section 12.2.1, "Federal Laws, Regulations, and Policies." Any entity discharging or proposing to discharge materials that could affect water quality must file a report of waste discharge with the applicable RWQCB (SWRCB 2014).

SDRWQCB Basin Plan

As described above, the purpose of the Basin Plan is to preserve and enhance water quality and protect the beneficial uses of all regional waters (SDRWQCB 1994). Specifically, the Basin Plan: (1) designates beneficial uses for surface and ground waters; (2) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State's antidegradation policy; (3) describes implementation programs to protect the beneficial uses of all waters in the region; and (4) describes surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan (SDRWQCB 1994). Designated beneficial uses for water bodies in the San Diego Basin potentially affected by the Proposed Project are shown in Table 12-2 in Section 12.3, "Environmental Setting."

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA), passed in 2014, became law in 2015 and created a legal and policy framework to locally manage groundwater sustainably. The SGMA allows local agencies to customize groundwater sustainability plans to their regional economic and environmental conditions and needs, and establish new governance structures, known as Groundwater Sustainability Agencies (GSAs). The SGMA is intended to prevent undesireable results from groundwater use, which are defined as the following:

- Chronic lowering of groundwater levels (not including overdraft during a drought if a basin is otherwise managed).
- Significant and unreasonable reduction of groundwater storage.
- Significant and unreasonable seawater intrusion.

- Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies.

- Significant and unreasonable land subsidence that substantially interferes with surface land uses.

- Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

Storm Water Strategy

The SWRCB's Strategy to Optimize Resource Management of Storm Water (Storm Water Strategy) (SWRCB 2016) identifies the goals, objectives, and actions needed for the SWRCB and RWQCBs to improve the regulation, management, and utilization of California's storm water resources. The overarching intent of the Storm Water Strategy is to establish the value of storm water as resource in California and encourage its application to beneficial uses (SWRCB 2016). Goals and objectives in the Storm Water Strategy potentially applicable to the Proposed Project include management of storm water to preserve watershed processes and increasing source control to prevent pollution.

12.2.3 Local Laws, Regulations, and Policies

The CPUC has exclusive jurisdiction over the siting and design of electric transmission facilities. Therefore, it is exempt from local land use and zoning regulations. However, CPUC General Order (G.O.) 131-D states that in locating electric transmission facilities, the public utilities shall consult with the local agencies regarding land use matters. CPUC and NEET West have been in contact with applicable local agencies for the Proposed Project, and local laws and regulations are presented here for consideration of potential impacts related to hydrology and water quality.

County of San Diego General Plan

The County of San Diego General Plan (2011) guides land use and development in the unincorporated areas of the county. Goals and policies in the General Plan related to hydrology and water quality and the Proposed Project include the following:

Conservation and Open Space Element

Goal COS-4: Water Management. A balanced and regionally integrated water management approach to achieve the long-term viability of the County's water quality and supply.

Policy COS-4.3 – Stormwater Filtration. Maximize stormwater filtration and/or infiltration in areas that are not subject to high groundwater by maximizing the natural drainage patterns and the retention of natural vegetation and other pervious surfaces. This policy shall not apply in areas with high groundwater, where raising the water table could cause septic system failures, moisture damage to building slabs, and/or other problems.

Goal COS-5: Protection and Maintenance of Water Resources. Protection and maintenance of local reservoirs, watersheds, aquifer-recharge areas, and natural drainage systems to maintain high-quality water resources.

Policy COS-5.2 – Impervious Surfaces. Require development to minimize the use of directly connected impervious surfaces and to retain stormwater run-off caused from the development footprint at or near the site of generation.

Policy COS-5.3 – Downslope Protection. Require development to be appropriately sited and to incorporate measures to retain natural flow regimes, thereby protecting downslope areas from erosion, capturing runoff to adequately allow for filtration and/or infiltration, and protecting downstream biological resources.

County of San Diego Grading Ordinance

The County of San Diego Grading Ordinance requires property owners or persons proposing to conduct grading or clearing within the County to obtain a grading permit. General stormwater drainage precautions required by the Grading Ordinance include removing all loose dirt from the grading site and providing adequate erosion control or drainage devices, debris basins, or other safety devices. The Grading Ordinance includes a number of design standards and performance requirements that serve to protect hydrology and water quality, including those related to fill material, drainage and erosion prevention (County of San Diego 2012).

County of San Diego Watershed Protection Ordinance

The County of San Diego's WPO is intended to protect water resources and to improve water quality within the County by controlling the stormwater conveyance system and receiving waters, among other related functions. As noted above under Section 12.2.1, "Federal Laws, Regulations, and Policies," the County's WPO also serves to implement requirements of the San Diego Regional Stormwater Permit, including the Jurisdictional Runoff Management Program. In accordance with the regional MS4 permit, the WPO generally prohibits discharges of pollutants directly or indirectly into the stormwater conveyance system or receiving waters, and requires that stormwater discharges from a site do not contain sediments in amounts in excess of the sediments that would have been discharged from the site in an undisturbed condition (County of San Diego 2016). The WPO also requires a number of general BMPs for applicable projects, including removing accumulations of eroded soils from slopes prior to the rainy season, protection of slopes from erosion, and storage/containment of materials and wastes with the potential to pollute stormwater.

12.3 Environmental Setting

12.3.1 General Regional and Watershed Setting

The Proposed Project is located in the inland portion of the South Coast Hydrologic Region (HR) (CDOC 2010). The South Coast HR covers approximately 6.78 million acres (10,600 square miles) of southern California that drains to the Pacific Ocean, including all of Orange County, most of San Diego and Los Angeles Counties, parts of Riverside, San Bernardino, and Ventura counties, and small portions of Kern and Santa Barbara Counties (DWR 2003). With

over 50 percent of the State's population in only 7 percent of the State's surface area, the South Coast HR has the highest population density of any HR in California (DWR 2003). The South Coast HR is divided into the Los Angeles, Santa Ana, and San Diego subregions, which are overseen by RWQCBs #4, #8, and #9, respectively. The Proposed Project would be located in the San Diego subregion, or "Basin." Subregions are further subdivided into hydrologic units (HUs), hydrologic areas (HAs), and hydrologic subareas (HSAs). The Proposed Project would be located in the Loveland Reservoir HSA of the Upper Sweetwater River HA of the Sweetwater River HU (SDRWQCB 2011). Figure 12-1 shows the location of the Proposed Project with respect to the hydrologic identifiers described above.

12.3.2 Topography and Climate

The South Coast HR is bound on the east by the Peninsular Range. The Peninsular Range includes the Santa Ana, Agu Tibia, Palomar, Vulcan, Cuyamaca, and Laguna Mountains, and is the most prominent physical feature in the region, trending from the northwest to the southeast (SDRWQCB 2011). The San Diego Basin, which occupies the southern portion of the South Coast HR, is characterized by three distinct physiographic areas (from west to east): a coastal plain area, a central mountain-valley area, and an eastern mountain valley area (SDRWQCB 2011). The coastal plain area comprises a series of wave cut benches covered by thin terrace deposits which have been deeply dissected by streams draining to the sea, and smoothed and rounded by local erosion. This coastal area ranges in elevation from sea level to about 1,200 feet above mean sea level (msl), and extends from the coast to about 10 miles inland. The central mountain-valley area is characterized by ridges and intermontane basins, which are generally of fault block origin modified by erosion (SDRWQCB 2012). The floors of the intermontane valleys are generally underlain by moderate thicknesses of alluvium and residuum, and range in elevation from 500 to about 5,000 feet above msl. The eastern mountain-valley area occurs northeast of the Elsinore fault zone. This area contains broad, flat valleys of block fault origin, which rise to the southeast from about 1,000 feet above msl near Temecula to about 3,000 to 3,500 feet above msl in the plateaus of Glenoak, Lewis and Reed valleys (SDRWQCB 2011).

The Proposed Project would be located in the central mountain-valley area of the San Diego Basin, approximately 30 miles inland from the coast. The local topography in the vicinity of the Proposed Project is undulating with steep hills interspersed by narrow valleys and deep canyons. Elevations in the Project vicinity range from between 3,000 to 3,200 feet above msl. The topography of the proposed Static VAR compensator (SVC) site itself slopes generally downward from the northeast to the southwest (Kleinfelder 2015). The elevation at the site ranges from a high of approximately 3,087 feet above msl on the northeast to a low of approximately 3,047 feet above msl at the southwest corner, for a total differential of roughly 40 feet (Kleinfelder 2015).

The greater San Diego area is characterized by a Mediterranean climate, with warm to hot, dry summers, and mild to cool, wet winters. The coastal climate is generally mild, with temperatures averaging 65 degrees Fahrenheit (°F) and precipitation averaging 10 to 13 inches (SDRWQCB 2011). Average temperatures generally decrease and precipitation totals generally increase as one moves inland from the coast, with most precipitation falling from November through February throughout the region. Monthly average precipitation in the Project vicinity (i.e., Alpine, CA) ranges from a high of 3.6 inches in February to a low of 0.2 inches in August (National Oceanic and Atmospheric Administration [NOAA] 2016). Monthly average temperature ranges from 76°F in August to 54°F in December (NOAA 2016).

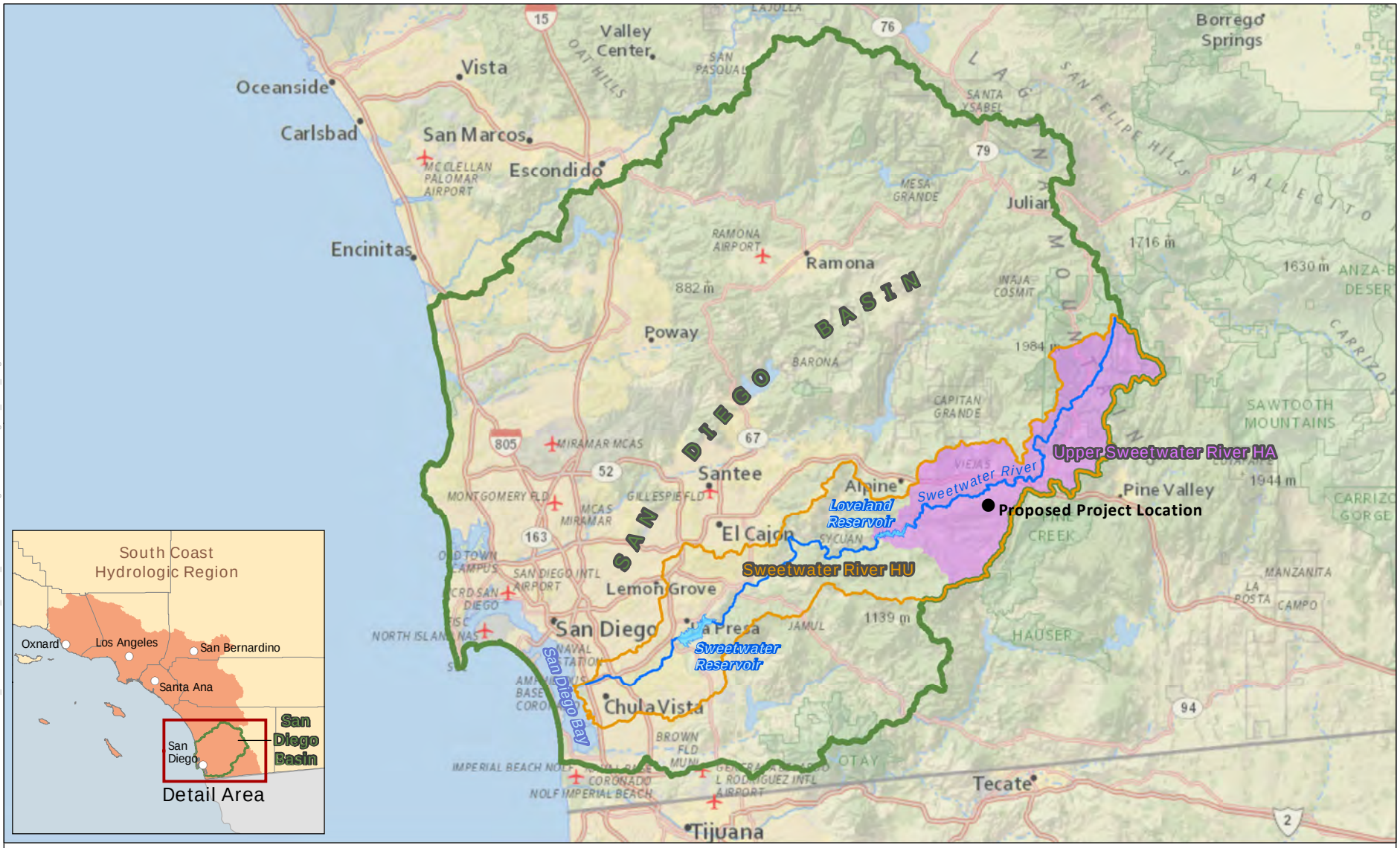

Figure 12-1
Regional Watershed Setting

N

0 10 20
Miles

- Proposed Project Location
- Upper Sweetwater River Hydrologic Area (HA)
- Sweetwater River Hydrologic Unit (HU)
- San Diego Basin

Prepared by:
Horizon WATER and ENVIRONMENT

Sources: Content may not reflect National Geographic's current map policy.
Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
USGS National Hydrology Dataset; State of California, CalWater 2.2.1

Suncrest Dynamic Reactive Power Support Project

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12.3.3 Surface Water Hydrology and Quality

Surface Waters and Flows

As described above in Section 12.3.1, "General Regional and Watershed Setting," the Proposed Project would be located in the Sweetwater River HU. The Sweetwater River HU covers an area of approximately 230 square miles and is traversed along its length by the Sweetwater River, which flows 55 miles from its headwaters in the Cuyamaca Mountains in a generally northeast to southwest direction, ultimately draining to the San Diego Bay. The Sweetwater River is located approximately 1 mile northwest of the proposed SVC site and approximately 0.7 mile north of the proposed transmission line at the location of the proposed riser pole.

Other surface water features in the Proposed Project vicinity include Taylor Creek (located approximately 0.55 mile south of the proposed SVC site), which runs east to west in the vicinity of the Proposed Project and ultimately drains to the Sweetwater River and Loveland Reservoir. Palo Verde Lake is a relatively small impoundment on the Sweetwater River located approximately 2.15 miles west to northwest of the existing San Diego Gas & Electric (SDG&E) Suncrest Substation and approximately 3.10 miles west to northwest of the proposed SVC site. Loveland Reservoir is a larger impoundment (25,387 acre-feet [AF]) along the Sweetwater River located approximately 4.57 miles west of the existing substation and approximately 5.5 miles west of the proposed SVC site. Following Loveland Reservoir, the Sweetwater River flows west to southwest through increasingly urbanized areas before reaching the Sweetwater Reservoir and then ultimately discharging into the San Diego Bay. In addition to Sweetwater River and Taylor Creek, a number of unnamed natural drainages, ephemeral streams, and dry washes also exist in the immediate Project vicinity[1]. Several of these features cross Bell Bluff Truck Trail via culverts. Figure 12-2 shows the surface waters in the Proposed Project vicinity.

The streams and surface features in the Project vicinity are all generally intermittent in nature. Even the Sweetwater River, which is the largest drainage feature in the HU, is typically dry for long periods during the summer and fall (U.S. Geological Survey [USGS] 2016). This may be owing to the relatively minor and highly seasonal precipitation rates in the area, and the lack of significant contributions of groundwater to base flows (see Section 12.3.5, "Groundwater," for additional discussion on groundwater).

The Proposed Project site is shown in more detail on the topographic map of Figure 12-2. The site occupies a topographic saddle, along the watershed divide between the Sweetwater River watershed to the north and the Taylor Creek watershed to the south. The site drains to unnamed tributaries to both the north and south directions which then join these larger watersheds to the north and south of the Proposed Project. Drainages that contribute runoff to the project site, on the slopes to the east and west of the project site, as well as, other unnamed tributaries that drain along or across the Bell Bluff Truck Trail, are dry during much of the year (i.e., summer and fall months), with flows occurring only ephemerally after rainfall events. As noted above, the Sweetwater River and Taylor Creek both flow generally in a

[1] "Vicinity" in this chapter is used to describe the area surrounding the Proposed Project site. There is no set distance which defines the Project vicinity, but it generally refers to within 5-10 miles of the Project site.

northwest to southeast direction, with adjacent small contributing channels flowing into the main river/creek channels.

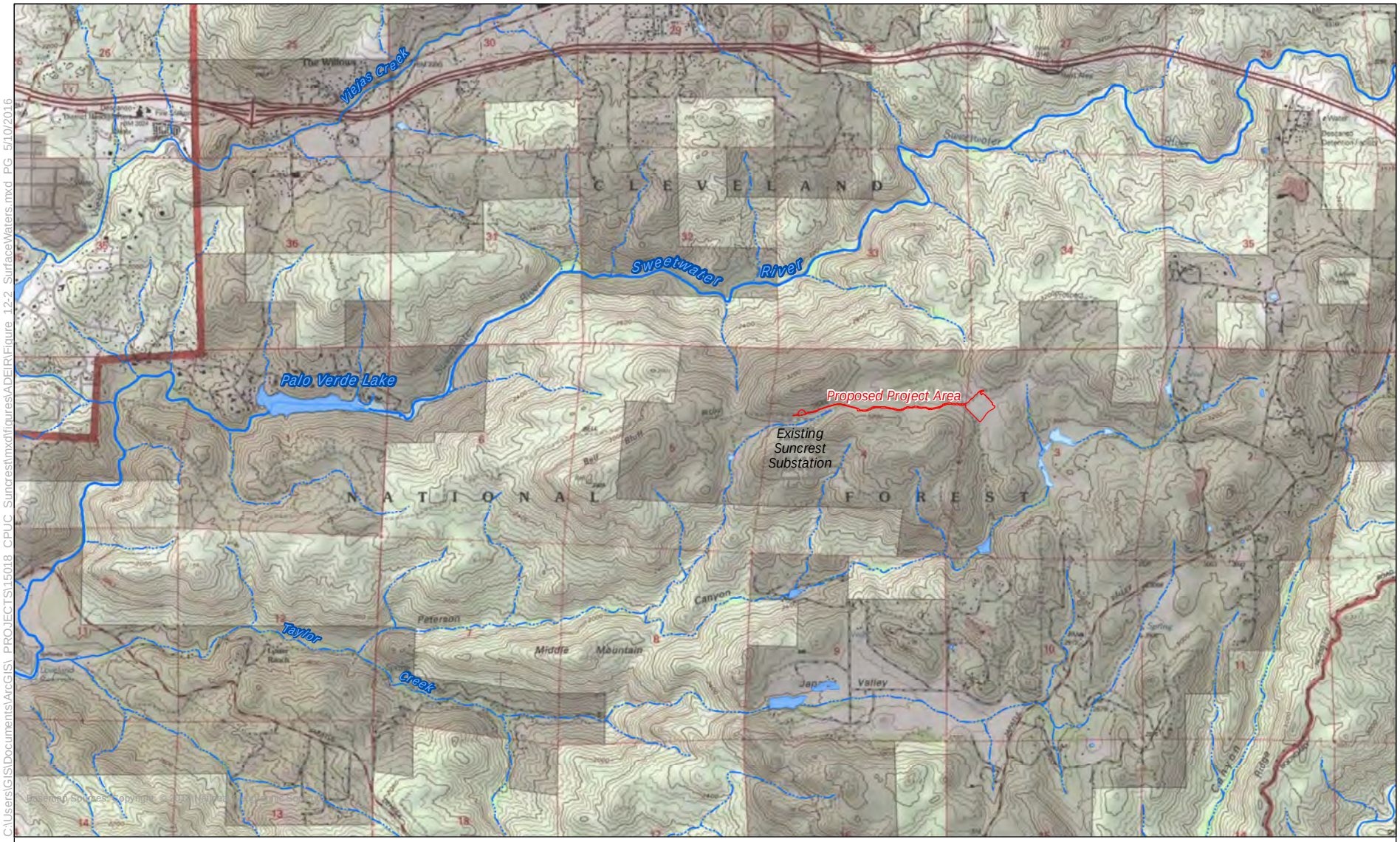

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Figure 12-2
Surface Waters in the Project Vicinity

Suncrest Dynamic Reactive Power Support Project

Research of the history of the SVC site indicates that the local topography of the site has been highly disturbed and altered in the recent past. As described in Chapter 2, *Project Description*, the SVC site, also known as the Wilson Construction Yard, was cleared and graded for its use as a construction materials storage and staging yard during construction of the existing SDG&E Suncrest Substation (SDG&E Undated). Rock and gravel was imported to the yard for soil stabilization and dust control during helicopter activities. In accordance with SDG&E's restoration plan for mitigation of temporary impacts caused by construction of the SDG&E Suncrest Substation, the Wilson Construction Yard was de-compacted by ripping and cross-ripping between 18-24 inches and then recontoured to a surface intended to match its original topography. Additionally, for construction of the SDG&E Suncrest Substation (completed in 2012), Bell Bluff Truck Trail, which runs immediately north of the proposed SVC site, was paved and widened, including raising the elevation of the road surface over the existing drainage feature to the north of the site and installing a culvert underneath the roadway.

All of these modifications to the SVC site topography may have affected the drainage patterns at the site, and also may explain the uncertainty regarding potential wetland features on the site. Research of the site discovered that the jurisdictional wetland delineation (JD) conducted for the Sunrise Powerlink identified a wetland within the proposed SVC site (SDG&E 2009). Recent communications with SDG&E have indicated that, based on the findings of the delineation, they avoided this area during construction of the substation, including using temporary fencing and establishing a buffer. However, subsequent wetlands testing conducted by SWCA Environmental Consultants, Inc. (SWCA) on behalf of NEET West in 2015 did not produce positive findings for wetland features in the same location. This may be in part due to the altered drainage patterns at the site caused by construction of the Suncrest Substation, but may also be due to the different methods used in the original JD conducted by SDG&E and the recent JD conducted by SWCA. SDG&E staff indicated that, due to restrictions on their ability to dig test pits caused by concerns over potential archaeological resources impacts, during their JD for the existing Suncrest Substation they assumed presence of hydric soils (one of the three "prongs" in a wetlands evaluation; see Chapter 7, *Biological Resources,* for additional information) and therefore may have over-included features as wetlands in their assessment. SWCA (2015) was able to follow U.S. Army Corps of Engineer's (USACE's) standard protocol and dig test pits to evaluate the presence of hydric soils as part of their evaluation; SWCA concluding that no hydric soils were present.

Beneficial Uses and Water Quality

Table 12-2 shows the designated beneficial uses, as identified in the San Diego Basin Plan, for the surface waters potentially affected by the Proposed Project (i.e., downstream and hydrologically connected). As shown in Table 12-2, the Sweetwater River in the vicinity of the Proposed Project (i.e., near Descanso and Viejas Creeks) provides for a number of beneficial uses, including municipal, agricultural, and industrial water supply; recreation; warm and cold water habitat, and spawning habitat for anadromous fishes (SDRWQCB 2011). Taylor Creek, Loveland Reservoir, and the Sweetwater Reservoir provide for similar uses with the exception that they do not provide for spawning habitat. The Sweetwater River downstream of the Sweetwater Reservoir, likely due to its noted water quality problems (discussed further below), does not provide for municipal water supply or contact recreation (SDRWQCB 2011). The San Diego Bay provides for a variety of uses, such as industrial water supply, navigation, commercial and sport fishing, estuarine habitat, and shellfish harvesting.

Because they are higher in the watershed and surrounded by less development, the streams and surface water features in the immediate vicinity of the Proposed Project generally have better water quality than features further down in the watershed and closer to the more urbanized portions of the San Diego Metropolitan Area. As evidence of this, the upper Sweetwater River and Taylor Creek are not listed on the CWA Section 303(d) list for any impairments requiring TMDLs whereas several downstream water body segments are listed for a number of impairments. Table 12-1. Clean Water Act Section 303(d) Listed Water Body Segments Potentially Affected by the Proposed Project1 shows the 303(d) listed water body segments potentially affected by the Proposed Project.

Table 12-1. Clean Water Act Section 303(d) Listed Water Body Segments Potentially Affected by the Proposed Project

Water Body Name	Pollutant	Proposed TMDL Completion
Loveland Reservoir	Aluminum	2019
	Manganese	2019
	Oxygen, Dissolved	2019
	pH	2019
Sweetwater Reservoir	Oxygen, Dissolved	2019
Sweetwater River, Lower (Below Sweetwater Reservoir)	Total Dissolved Solids	2021
	Phosphorous	2021
	Selenium	2021
	Total Nitrogen as N	2021
	Toxicity	2021
	Enterococcus	2021
	Fecal Coliform	2021
San Diego Bay	PCBs (Polychlorinated biphenyls)	2019

Source: SDRWQCB 2007

As shown in Table 12-1. Clean Water Act Section 303(d) Listed Water Body Segments Potentially Affected by the Proposed Project1, the Loveland Reservoir, Sweetwater Reservoir, Sweetwater River below the Sweetwater Reservoir, and the San Diego Bay all have at least one pollutant causing an impairment requiring a TMDL, with the Sweetwater River below the Sweetwater Reservoir being particularly polluted (SDRWQCB 2007). The sources of the pollutants identified in Table 12-1. Clean Water Act Section 303(d) Listed Water Body Segments Potentially Affected by the Proposed Project were generally listed as unknown in the latest Section 303(d) report, but may be the result of any number of point and non-point sources.

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Table 12-2. Beneficial Uses of Surface Waters Potentially Affected by the Proposed Project

Water Body	Beneficial Use																				
	MUN	AGR	IND	PROC	GWR	NAV	FRSH	POW	REC1	REC2	COMM	BIOL	EST	WARM	COLD	WILD	RARE	MAR	AQUA	MIGR	SPWN	SHELL
Sweetwater River, Near Descanso Creek	●	●	●	●					●	●				●	●	●					●	
Sweetwater River, Near Viejas Creek	●	●	●	●					●	●				●	●	●					●	
Taylor Creek	●	●	●	●					●	●				●		●						
Loveland Reservoir	●	●	●	●					●	●				●	●	●						
Sweetwater Reservoir	●	●	●	●					●	●				●		●						
Sweetwater River, Downstream of Sweetwater Reservoir	+		●						◌	●				●		●						
San Diego Bay			●			●			●	●	●	●	●			●	●	●		●	●	●

● = Existing beneficial use; ◌ = Potential beneficial use; + = Excepted from MUN

MUN = Municipal and Domestic Supply; includes uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

AGR = Agricultural Supply; includes uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.

IND = Industrial Service Supply; includes uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.

PROC = Industrial Process Supply; includes uses of water for industrial activities that depend primarily on water quality.

GWR = Ground Water Recharge; includes uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

NAV = Navigation; includes uses of water for shipping, travel, or other transportation by private, military, or commercial vehicles.

FRSH = Freshwater Replenishment; includes use of water for natural or artificial maintenance of surface water quantity or quality (e.g., salinity).

POW = Hydropower Generation; includes uses of water for hydropower generation.

REC1 = Contact Water Recreation; includes uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and SCUBA diving, surfing, white water activities, fishing, or use of natural hot springs.

REC2 = Non-contact Water Recreation; includes the uses of water recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picknicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

COMM = Commercial and Sport Fishing; includes the uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

BIOL = Preservation of Biological Habitats of Special Significance; includes uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources require protection.

EST = Estuarine Habitat; includes uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).

WARM = Warm Freshwater Habitat; includes uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.

COLD = Cold Freshwater Habitat; includes uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.

WILD = Wildlife Habitat; includes uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

RARE = Rare, Threatened, or Endangered Species; includes uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened, or endangered.

MAR = Marine Habitat; includes uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).

AQUA = Aquaculture; includes the uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.
MIGR = Migration of Aquatic Organisms; includes uses of water that support habitats necessary for migration, acclimatization between fresh and salt water, or other temporary activities by aquatic organisms, such as anadromous fish.
SPWN = Spawning, Reproduction, and/or Early Development; includes uses of water that support high quality habitats suitable for reproduction, early development and sustenance of marine fish and/or cold freshwater fish.
SHELL = Shellfish Harvesting; includes uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters and mussels) for human consumption, commercial, or sport purposes.

Source: SDRWQCB 2011

As part of their responsibilities under the Porter-Cologne Act, the RWQCBs set narrative and numerical water quality objectives for surface waters (and ground waters) for the protection of the designated beneficial uses. For reference, the water quality objectives for surface waters in the vicinity of the Proposed Project are shown in Table 12-3 below.

Table 12-3. Water Quality Objectives for Surface Waters in the Sweetwater Hydrologic Unit

Water Body	Constituent (mg/L or as noted)												
	TDS	Cl	SO_4	%Na	N&P	Fe	Mn	MBAS	B	ODOR	Turb NTU	Color Units	F
Sweetwater Hydrologic Unit (HU #909.00)													
Lower Sweetwater	1,500	500	500	60	a	0.3	0.05	0.5	0.75	None	20	20	-
Middle Sweetwater	500	250	250	60	a	0.3	0.05	0.5	0.75	None	20	20	1.0
Upper Sweetwater	500	250	250	60	a	0.3	0.05	0.5	0.75	None	20	20	1.0

TDS = Total dissolved solids; Cl = Chloride; SO_4 = Sulphate; %Na = Percent sodium; N&P = Nitrates and phosphates; Fe = Iron; Mn = Manganese; MBAS = Methylene Blue Active Substances; B = Boron; Turb NTU = Turbidity Nephelometric Turbidity Units; F = Fluorine; Color = Color of water as determined by reference to the color of distilled water containing X milligrams of platinum as potassium chloroplatinate per liter.

Source: SDRWQCB 2012

12.3.4 Stormwater

As described in Chapter 2, *Project Description,* the Proposed Project would be located in a generally rural, undeveloped area in San Diego County. The only impervious surface within the Project area is Bell Bluff Truck Trail, which runs adjacent to the proposed SVC site and along the proposed transmission line (the transmission line would be installed underneath Bell Bluff Truck Trail). Bell Bluff Truck Trail was paved and widened as part of the Sunrise Powerlink project. This included adding a stormwater conveyance system along the length of the road, as well as several of culverts underneath the roadway to allow flows to pass under the road. The stormwater conveyance system consists of concrete "v-ditches" at the base of the slope on the south side of Bell Bluff Truck Trail in the area of the Proposed Project, which convey runoff from the roadway and the adjacent land to outlets and/or culverts.

12.3.5 Groundwater

The South Coast HR has 56 delineated groundwater basins, 27 of which are located within the San Diego subregion (DWR 2003). None of these basins, however, are within or near the Proposed Project. The Proposed Project is not within the planning area of any GSAs, pursuant to SGMA, at the time of writing. The nearest downstream basin, to which surface waters in the Project area generally flow, is the Sweetwater Valley Groundwater Basin (Groundwater Basin #9-17), which is located downstream of the Sweetwater Reservoir near the confluence with San Diego Bay (County of San Diego 2007). The Sweetwater Valley Groundwater Basin underlies an alluvial valley that empties into the San Diego Bay (DWR 2004). The basin is bounded on the east by impermeable Santiago Peak volcanic rocks; on the north and south by Pliocene to Pleistocene semi-permeable terrestrial deposits, and on the west by the San Diego Bay. The primary water-bearing deposit in the basin is Quaternary alluvium, which consists of unconsolidated stream deposits of sandy silt, sand, and cobbles, and has an

estimated average thickness of 80 to 100 feet (DWR 2004). Groundwater in these deposits is unconfined, and wells typically produce an average yield of about 300 gallons per minute (DWR 2004).

Designated beneficial uses for groundwater in the Sweetwater HU include Municipal and Domestic Supply (MUNI), Agricultural Supply (AGR) and Industrial Service Supply (IND) (only MUNI and AGR in the Upper Sweetwater HSA) (SDRWQCB 2012). Groundwater in the basins of the San Diego subregion of the South Coast HR has mainly calcium and sodium cations and bicarbonate and sulfate anions, with local impairments by nitrate, sulfate, and TDS found (DWR 2003). Generally, the groundwater in the alluvium of the Sweetwater Valley Groundwater Basin is of sodium chloride character, with a TDS concentration ranging from 300 to more than 50,000 parts per million (DWR 2004).

Groundwater was not encountered in any of the borings drilled during the geotechnical study conducted for the Proposed Project (Kleinfelder 2016). In addition, geologic observations of natural outcrops as well as graded slopes within the Project area did not identify any areas of obvious water seepage (though these observations were made in the summer months following several years of drought) (Kleinfelder 2016). The 2009 investigation conducted for the Suncrest Substation did encounter groundwater in some of the borings below the substation at depths from between 44 to 60 feet bgs, corresponding to elevations of between 3,036 to 3,049 feet msl. A water well at the toe of a steep hillside in the area of the existing access road to the Suncrest Substation identified in the 2009 investigation had water at 8 to 12 feet bgs, corresponding to elevations between 3,139 to 3,135 feet msl. However, it is not known whether the observed water represents a groundwater table, a perched condition, or seepage within fractured rock (Kleinfelder 2016). Water well data obtained from DWR's website from three residential well sites approximately 2 miles northeast of the proposed SVC substation had water at depths ranging from between 35 to 97 feet bgs.

12.3.6 Floodplains and Tsunamis

The Proposed Project is located high in the watershed, and at an elevated location relative to the nearby Sweetwater River and Taylor Creek. The Federal Emergency Management Agency (FEMA) designates the Project area as Zone X on its Federal Insurance Rate Map, indicating it is outside the 0.2 percent annual chance floodplain (FEMA 2002). No dams or impoundments exist upstream of the Proposed Project; therefore, the Proposed Project would not be located within any dam inundation area. The Project also is located approximately 30 miles inland from the coast, at an elevation of over 3,000 feet above msl. This is well outside of identified tsunami inundation areas (Cal EMA 2009).

12.4 Impact Analysis

12.4.1 Methodology

Potential impacts from the Proposed Project related to hydrology and water quality were evaluated qualitatively by considering aspects of the Proposed Project with respect to applicable State CEQA Guidelines Appendix G significance criteria (identified below) and in light of the existing regulatory and environmental settings. In general, the analysis relies on the description of the Project in Chapter 2, *Project Description,* and the existing regulations and physical environmental conditions described in earlier sections of this chapter. CPUC

assumes the Applicant (NEET West) would follow existing laws and regulations during construction and operation of the Proposed Project. Impacts that may occur from the Proposed Project are not necessarily considered significant unless they would result in changes to the physical environment, such as to trigger one of the Appendix G significance criteria. Discussion of impacts are separated into construction- and operation-related impacts where such separation is informative or where the two types of impacts differ substantially in nature or mechanism.

12.4.2 Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines, the Proposed Project would result in a significant impact on hydrology and water quality if it would:

A. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality;

B. Substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level or result in any undesireable results pursuant to SGMA, as follows:

    a. Chronic lowering of groundwater levels (not including overdraft during a drought if a basin is otherwise managed).

    b. Significant and unreasonable reduction of groundwater storage.

    c. Significant and unreasonable seawater intrusion.

    d. Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies.

    e. Significant and unreasonable land subsidence that substantially interferes with surface land uses.

    f. Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.;

C. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;

D. Substantially alter the existing drainage pattern of the site or area, include through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

E. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

F. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;

G. Place within a 100-year flood hazard area structures which would impede or redirect floodflows;

H. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam;

I. Contribute to inundation by seiche, tsunami, or mudflow.

Criteria Dismissed From Further Analysis

The Proposed Project does not include the construction or modification of any homes, and is not located within a 100-year flood hazard area (FEMA 2002). For this reason, the sixth criterion (F) does not apply to the Proposed Project and is not evaluated further. Likewise, the seventh criterion (G) does not apply because the Project would not be located within a 100-year flood hazard area. This criterion is not evaluated further. Contribution to inundation by seiche or tsunami (under criterion I) also are not considered applicable because the Proposed Project is not located near any large water bodies or the coast. Potential contribution to inundation by mudflow, however, is considered in the impacts analysis below.

12.4.3 Environmental Impacts

Impact HYD/WQ-1: Potential Impacts to Surface or Ground Water Quality (Less than Significant with Mitigation)

Construction

Construction of the Proposed Project would involve site clearing, grading, and excavation, all of which could potentially result in erosion and adverse effects on downstream water bodies. Without adequate protections, loose dirt or sediment from Project ground disturbance activities could wash downstream in a rain event to Sweetwater River or Taylor Creek, and eventually make its way to Loveland Reservoir and Sweetwater Reservoir. Excess sediment in waterways can cloud the water reducing the amount of sunlight reaching aquatic plants, clog fish gills, and smother aquatic habitat and spawning areas (USEPA 2007). Project construction also would involve operation and storage of construction equipment, which typically contains hazardous materials, such as fuel, lubricant, oil, etc., and storage and management of explosive products and blasted pieces of rock from blasting activities. If improperly handled or without adequate safeguards, use and storage of such materials could potentially contaminate surface or groundwaters from spills, ~~or~~ leaking equipment, or leaching of exploded materials. Many hazardous materials used in construction activities are toxic to aquatic organisms or humans and, if allowed to enter waterways, could adversely affect designated beneficial uses (see Table 12-2). While Project excavation activities could potentially create a pathway for groundwater contamination, it is not anticipated that groundwater will be encountered during Project construction due to the Project's location high in the watershed and the documented low water table in the area.

Existing regulations would require the Proposed Project to implement a number of measures to prevent possible adverse effects on water quality. Under CWA, Section 402, the Proposed Project would be required (because it would disturb more than 1 acre of land) to obtain a General Construction Stormwater Permit from the SDRWQCB, which would require preparation and implementation of a SWPPP. As described in Section 12.2, "Federal Laws, Regulations, and Policies," the SWPPP must include a list of BMPs to prevent erosion and potential impacts to hydrology and water quality; however, there is some leeway as to which specific BMPs may be included in the SWPPP, as the SWPPP preparer would have some discretion in crafting the plan. Therefore, this draft EIR incorporates **Mitigation Measure HYD/WQ-1** to ensure that certain important BMPs for erosion prevention and protection of water quality are implemented during construction of the Proposed Project. Additionally, as described in Chapter 11, *Hazards and Hazardous Materials*, the Proposed Project would implement **Mitigation Measure HAZ-1**, which would require preparation and implementation of a Hazardous Materials and Waste Management Plan (HMWMP), which will describe hazardous materials storage, management, and disposal protocols during Project construction and operation. **Mitigation Measure HAZ-2** would require preparation and implementation of a blasting plan, including outlining safe and lawful procedures for transport, handling, and storage of explosives; identifying where on the site explosives would be stored and explaining what safety precautions would be taken in transporting and handling explosives to prevent accidental explosions or release of hazardous materials into the environment; and measures to protect groundwater quality, such as proper loading practices, explosive selection, and muck pile management. It is not anticipated that the Proposed Project would require a CWA, Section 401 Water Quality Certification (WQC) because it is not believed any wetlands or features subject to USACE jurisdiction exist on the proposed SVC site and transmission line installation would avoid existing jurisdictional features crossing Bell Bluff Truck Trail via culverts. It is possible, however, that the transmission line may not be able to avoid the culverts across Bell Bluff Truck Trail, and may therefore require CWA Section 401 and/or 404 permits. If required, a Section 401 WQC and/or Section 404 nationwide or individual permit also may require water quality protection measures and compensatory mitigation for any impacts to waters of the U.S. or State.

With implementation of Mitigation Measure HYD/WQ-1 ~~and~~ HAZ-1, and HAZ-2, and adherence to existing laws and regulations, the Proposed Project is not anticipated to have any significant impacts on water quality during construction. With implementation of Mitigation Measure HAZ-2, Project blasting during construction would not be anticipated to cause significant water quality impairments. Overall, ~~T~~the Proposed Project would not be anticipated to violate any water quality standards or waste discharge requirements during construction. This impact would be less than significant with mitigation.

Mitigation Measure HYD/WQ-1: Implement Construction Best Management Practices for Erosion Control.

NEET West and/or its contractor(s) shall implement the following measures during Proposed Project construction, or shall implement alternative measures that are equally or more effective:

- Implement practices to reduce erosion of exposed soil and stockpiles, including watering for dust control, establishing perimeter silt fences, and/or placing fiber rolls.

- Minimize soil disturbance areas.
- Implement practices to maintain water quality, including silt fences, stabilized construction entrances, and storm-drain inlet protection.
- Where feasible, limit construction to dry periods.
- Prevent standing water from forming and remaining in depressions, excavatinos, trenches, or any other areas for more than 96 hours.
- Revegetate disturbed areas.

The performance standard for these erosion control measures is to use the best available technology that is economically achievable. These measures may be included in SWPPP requirements, as appropriate.

Operation

Following construction, the Proposed Project may continue to generate stormwater discharges from its new impervious surface. The Proposed Project would include approximately 6 acres of developed area, approximately 2.6 acres of which would be impervious. Additionally, the Proposed Project would involve storage and use of hazardous materials, such as transformer oil, as well as solvents and paints potentially used during maintenance activities. If any of these hazardous materials associated with the SVC equipment were to spill or leak and/or be discharged downstream via stormwater flows, this could result in adverse effects on water quality and beneficial uses. As shown in Table 12-1. Clean Water Act Section 303(d) Listed Water Body Segments Potentially Affected by the Proposed Project, downstream water bodies include a number of designated beneficial uses, including municipal and agricultural water supply, recreation, and wildlife habitat. Transformer oil, solvents, paints, and other materials that may be used during Project operation could be toxic to aquatic life or humans, or otherwise impact beneficial uses. Additionally, stormwater discharges from the new impervious facility, to the extent they could carry sediment or accelerate downstream erosion due to increased runoff velocity or volumes, could result in sedimentation and associated adverse effects in Sweetwater River, Taylor Creek, or other downstream water bodies.

However, the Proposed Project would include a stormwater detention basin and stormwater drainage system, including earthen swales surrounding the facility. This system would be designed to capture stormwater that runs off from the facility and divert stormwater that may run-on to the site, thereby preventing high volume or velocity discharges that may affect downstream water quality. Additionally, the Proposed Project would be subject to the San Diego Regional Stormwater Permit and the County of San Diego's WPO, which require that projects do not discharge stormwater, such as to substantially impact water quality. Also, the Proposed Project would implement Mitigation Measure HAZ-1 to require development and implementation of a Hazardous Materials and Waste Management Plan. This plan would establish protocols for safe storage, management, and disposal of hazardous materials used for the Proposed Project. With adherence to these existing laws and regulations, and implementation of Mitigation Measure HAZ-1, the Proposed Project would not be anticipated to adversely affect water quality or violate water quality standards. This impact would be less than significant with mitigation.

Impact HYD/WQ- 2: Depletion of Groundwater Supplies or Interference with Groundwater Recharge (Less than Significant)

The Proposed Project would not use groundwater supplies during construction or operation. It is anticipated that approximately 2,600,000 gallons (approximately 8 acre-feet) of water will be required during project construction. This water would be used for cutting of asphalt pavement, dust control, fire suppression reserve, concrete washout, and other purposes. None of this water, however, would be obtained from groundwater sources. Rather, it would be obtained from either the Padre Dam Municipal Water District (PDMWD) or from storage ponds owned by an adjacent landowner. NEET West is currently negotiating a water services agreement with PDMWD for use of recycled water from their water recycling facility. NEET West also is coordinating with the owner of the property on which the proposed SVC would be built for use of water from the property owner's ponds, which are supplied by local runoff and a contract with the Sweetwater Authority.

The Proposed Project would include approximately 2.6 acres of new impervious surface, which could interfere to some degree with groundwater recharge. Compared with existing conditions, the Proposed Project may reduce infiltration of precipitation or runoff water into the soil below, which may in turn decrease percolation of water into the groundwater below; however, the Proposed Project is not located on or near any designated groundwater basins or GSA planning areas, and is located relatively high in the watershed where substantial groundwater supplies would not be expected. Nor is the Proposed Project site a significant groundwater recharge location due to its relatively high position in the watershed, limited catchment areas contributing runoff, and soil type. Additionally, the geotechnical investigation conducted for the Proposed Project identified granitic bedrock below the surficial units underlying the entire proposed SVC site and transmission alignment (Kleinfelder 2016). This subsurface material would not be conducive to percolation of groundwater or storage of groundwater supplies.

Given the existing geologic and topographic conditions at the proposed SVC site, it is ~~anticipated~~ believed that, currently, most precipitation falling on or near the site ~~would be~~ is transported via shallow subsurface flow or via overland sheetflow to drainages downgradient, and is not percolating deep into soil below and recharging groundwater. Therefore, the addition of impervious surface in this area may not have a dramatic effect on groundwater recharge with respect to existing conditions, and would not be expected to cause any undesireable results, as defined under SGMA. This impact would be less than significant.

Impact HYD/WQ-3: Alteration of Existing Drainage Patterns (Less than Significant with Mitigation)

The Proposed Project would alter existing drainage patterns at the Project site by introducing a new impervious surface to the area. In general, impervious surfaces increase the volume and velocity of runoff from a site compared to natural ground surfaces where water may infiltrate slowly into the soil. Such increased runoff volume and velocity can potentially result in erosion or flooding downstream (e.g., if the impervious development is large enough and stormwater management features are not incorporated or are insufficient). Stormwater management features included as part of the Project, including a stormwater detention basin

and earthen swales, would mitigate potential effects of increased runoff volume and velocity. These facilities would capture runoff and then release it slowly via shallow, overland flow.

The Project could temporarily affect existing culverts underneath Bell Bluff Truck Trail. Construction of the underground transmission line would encounter existing culverts underneath the roadway, which convey flows from either side of the road surface. While NEET West intends to avoid existing culverts, it may not be possible due to the type of subsurface material encountered and some culverts may need to be temporarily removed. Temporary removal of existing culverts would alter drainage patterns, potentially resulting in erosion or sedimentation. Additionally, while not anticipated, it is possible that installation of splice vaults could temporary impact the existing "v-ditch" along the base of the slope to the south of the roadway. To avoid and minimize these potential impacts, the Proposed Project would implement **Mitigation Measures HYD/WQ-2**. **Mitigation Measure GEO-1** also would help to ensure that any impacts associated with construction activities around culverts and other stormwater conveyance facilities are minimized. This impact would be less than significant with mitigation.

Mitigation Measure HYD/WQ-2: Avoidance and Minimization of Impacts to Existing Culverts and Stormwater Conveyance Features

The Proposed Project will be designed to avoid existing stormwater conveyance structures to the extent feasible. Specific avoidance strategies include:

- Siting splice vault structures and the riser pole structure within or immediately adjacent to Bell Bluff Truck Trail or in uplands outside of existing drainage features and the storm water conveyance system along Bell Bluff Truck Trail.

- Where feasible based on geotechnical investigation, avoiding culverts within Bell Bluff Truck Trail during construction of the underground transmission line by bracing or stabilizing culvert structures and excavating beneath the culvert structures to maintain culvert function.

Where it is infeasible to avoid impacts to existing culverts or other stormwater conveyance structures, work will not occur within 48 hours of a forecasted rain event of 0.5 inches or greater and temporary piping will be onsite to maintain any unexpected water flow. Prior to removing or impacting any existing culverts during construction, NEET West shall obtain all necessary regulatory approvals/permits from the appropriate agency (e.g., USACE, California Department of Fish and Wildlife, or RWQCB) with jurisdiction over the features.

Following construction, NEET West shall reinstall any temporarily removed culverts or other stormwater conveyance structures and restore work areas to preconstruction conditions.

Impact HYD/WQ-4: Effects on Existing Stormwater Facilities or Contribution of Polluted Runoff (Less than Significant with Mitigation)

The Project site is currently undeveloped and the only existing stormwater drainage facilities in the area are along and underneath Bell Bluff Truck Trail. The Proposed Project would not

be anticipated to discharge substantial stormwater flows to these existing facilities because the Project features would be contained underground within Bell Bluff Truck Trail or would include their own stormwater management features that would not discharge to the existing road system. In this respect, the Proposed Project would not be anticipated to contribute substantial runoff that would exceed the capacity of the existing system.

The Proposed Project would have the potential to generate polluted runoff, primarily during Project construction. During construction, the Proposed Project would involve open trenching and excavation within Bell Bluff Truck Trail for installation of the underground transmission line. Project construction also would involve operation of construction equipment and, potentially, temporary storage of materials along Bell Bluff Truck Trail. These activities could generate polluted runoff (e.g., sediment-laden runoff from excavations or hazardous materials leaking from construction equipment) that may be discharged to the existing stormwater system along the road. Additionally, during Project operation, the Proposed Project may have the potential to generate polluted runoff from use of hazardous materials (e.g., transformer oil, solvents, paint) on the SVC site.

In accordance with the General Construction Stormwater Permit, the Proposed Project would be required to prepare and implement a SWPPP to minimize potential erosion and discharges of contaminated runoff to the existing system. Additionally, the Proposed Project would implement **Mitigation Measure GEO-1** to ensure the Project construction contractor implements adequate erosion-control measures and BMPs. The Proposed Project also would implement **Mitigation Measure HAZ-1** to require preparation and implementation of a Hazardous Materials and Waste Management Plan. The Proposed Project also would be subject to the San Diego Regional Stormwater Permit, which would limit potential discharges to existing stormwater systems. With implementation of these plans and measures, any potential impacts related to contribution of polluted runoff would be less than significant with mitigation.

Impact HYD/WQ-5: Potential to Expose Persons or Structures to Significant Risk of Loss Due to Flooding (<u>No Impact</u>~~Less than Significant~~)

The Proposed Project is located relatively high in the watershed in a mountainous area. The surrounding topography is steep and there are no defined river or stream systems in immediate proximity to the Project site. The nearest features are Sweetwater River and Taylor Creek, which are approximately 1 mile northwest and 0.55 mile south of the Project site, respectively. In addition to being relatively far away, these drainages are at lower elevations than the Proposed Project, which is relatively elevated on a ridge. The Project site is not located in a 100-year flood hazard zone as defined by FEMA. In this type of setting, flooding would not be anticipated and there would be little possibility of significant loss to people or structures from flooding. The proposed SVC would be an important, if not critical, component to the regional transmission system, as it would provide needed voltage support and regulation. As such, any damage to the facility from flooding could have impacts on the transmission system beyond those impacts to the facility; however, there is no reason to believe such an event is likely or possible. Therefore, <u>no impact would occur.</u>~~this impact would be less than significant.~~

Impact HYD/WQ-6: Potential Contribution to Inundation by Mudflow (Less than Significant)

Due to the Proposed Project's location in a relatively steep and mountainous area, mudflow or landslide would be a potential hazard of concern. The proposed SVC site is surrounded by moderately sloped hills to the east and west, and steep slopes exist on either side of Bell Bluff Truck Trail along the proposed transmission line alignment. The Project geotechnical study, however, found that the natural slopes within the Project area are composed of granitic material that typically are not prone to landsliding on low to moderate slopes and in most cases even on steep slopes are not prone to deep-seated failures (Kleinfelder 2016). The study also found no signs of slope instability in slopes in the Project area. Overall, the geotechnical report concluded that the hazard with respect to landsliding at the proposed SVC site is low, and the hazard associated with the proposed transmission line along the steepest slope in the Project area above the Suncrest Substation is low to moderate (Kleinfelder 2016). Based on the findings of the geotechnical report, the potential contribution of the Project to inundation by mudflow would be less than significant.

Chapter 13
Land Use and Planning

13.1 Overview

This chapter describes the setting and potential impacts of the Proposed Project related to land use and planning. Under California Environmental Quality Act (CEQA), land use and planning generally refers to existing land uses and land use plans, and significance criteria relate to the potential for a project to physically divide an existing community or conflict substantially with an existing land use plan. Potential conflicts with applicable Habitat Conservation Plans are also included under land use and planning in the State CEQA Guidelines Appendix G significance criteria, but these potential impacts are addressed in this Final Environmental Impact Report (FEIR) in Chapter 7, *Biological Resources*. Sources used to prepare this section include the San Diego County General Plan and Alpine Community Plan.

13.2 Regulatory Setting

13.2.1 Federal Laws, Regulations, and Policies

Cleveland National Forest Land Management Plan

The Proposed Project would be located on private property within the administrative boundary of the Cleveland National Forest (CNF). The CNF encompasses 420,877 acres within Orange, Riverside, and San Diego Counties, and is administered by the U.S. Forest Service. While the U.S. Forest Service does not have jurisdiction over private property within the CNF's administrative boundary, this analysis considers the U.S. Forest Service's (USFS's) CNF Land Management Plan due to the Proposed Project's close proximity (0.2 mile) to National Forest lands.

The Proposed Project would be located within the Sweetwater Place area of the CNF. As described in the CNF Land Management Plan, Sweetwater Place encompasses the urban fringe of San Diego, the communities of Alpine, Descanso, Pine Valley, Guatay, Japatul Valley, Carveacre, and the Viejas Indian Reservation, and is characterized by a mix of natural and rural/urban elements (USFS 2005). The desired condition of Sweetwater Place is described as follows (USFS 2005: Part 2, page 63):

> Sweetwater Place is maintained as a natural appearing landscape that functions as one of the primary transition zones between the deserts of eastern San Diego County and southern California's coastal communities. The valued landscape attributes to be preserved or developed over time are the undeveloped character of Forest Service land that remain in this otherwise highly developed rural area; opportunities for unobstructed, panoramic views from the Interstate 8 corridor – especially on the eastern side; the

scenic integrity of important local landmarks; and built elements that are unobtrusive and exhibit a consistent architectural theme.

Applicable goals and design criteria identified in the CNF Land Management Plan include:

- **Goal 7.1** – Retain natural areas as a core for a regional network while focusing the built environment into the minimum land area needed to support growing public needs.

- **CNF S5** – Consolidate major transportation and utility corridors by co-locating facilities and/or expanding existing corridors.

13.2.2 State Laws, Regulations, and Policies

~~No state laws, regulations, and policies relate to land use and planning and the Proposed Project.~~ **Certificate of Public Convenience and Necessity**

CPUC General Order No. 131-D, Section III.A states that a Certificate of Public Convenience and Necessity (CPCN) is required for construction of major electric transmission line facilities which are designed for immediate or eventual operation at 200 kV or more. Issuance of a CPCN is the Commission's finding that such facilities are necessary to promote the safety, health, comfort, and convenience of the public, and that the facilities are required by the public convenience and necessity. As described in Chapter 2, *Project Description,* the proposed SVC would interconnect with the existing Suncrest Substation's 230 kV bus via a one-mile-long transmission line that would operate at 230 kV. Therefore, the Proposed Project requires a CPCN from the CPUC.

From a land use perspective, issuance of a CPCN by CPUC certifies the entity proposing to construct the subject transmission facility as a public utility, as defined under Public Utilities Code, Section 216 and 218. Because CPUC has exclusive jurisdiction over the siting and regulation of electric transmission facilities, issuance of a CPCN by CPUC exempts the entity proposing to construct the transmission facility from local land use authority.

13.2.3 Local Laws, Regulations, and Policies

The California Public Utility Commission (CPUC) has exclusive jurisdiction over the siting and design of electric transmission facilities. Therefore, it is exempt from local land use and zoning regulations. However, CPUC General Order (G.O.) 131-D states that in locating electric transmission facilities, the public utilities shall consult with the local agencies regarding land use matters. CPUC and NextEra Energy Transmission West, LLC (NEET West) have been in contact with applicable local agencies for the Proposed Project, and local laws and regulations are presented here for consideration of potential impacts related to land use and planning.

County of San Diego General Plan

The Proposed Project site is located within unincorporated San Diego County and is therefore included within the County of San Diego General Plan. The County's General Plan guides land use and development in the County's unincorporated areas and identifies goals and policies for implementation of its Community Development Model. The Community Development

Model uses three regional categories – Village, Semi-Rural, and Rural Lands – to broadly reflect the differing character of County lands that range from communities with substantial populations to predominantly undeveloped backcountry areas (County of San Diego 2011). With respect to this model, the community of Alpine would be considered a Village, whereas the project site would be considered Semi-Rural/Rural. The Semi-Rural/Rural categories are generally intended to preserve natural features and rural character, buffer communities, foster agriculture, and accommodate unique rural communities.

One former component of the County's General Plan was its Forest Conservation Initiative (FCI) (County of San Diego 2016). The FCI was enacted in 1993 and remained in effect through 2010. The FCI was designed to limit the conversion of privately owned lands within the CNF to urban uses. Among other things, the FCI amended the General Plan to impose a minimum parcel size of 40 acres on all privately owned lands within the boundaries of the CNF (County of San Diego 2011). Upon expiration of the FCI at the end of 2010, all land use designations reverted back to their designation prior to the FCI, and the FCI parcel size restrictions were no longer in effect. The County is now in the process of preparing a Supplemental Environmental Impact Report (EIR) (supplemental to the County's General Plan Update Program EIR, certified in 2011) for its Forest Conservation Initiative Lands General Plan Amendment. The FCI General Plan Amendment under consideration would involve redesignation of lands formerly included in or affected by the FCI, in some cases allowing greater development density.

The Proposed Project considered in this EIR would be located on land formerly within the FCI area. Upon expiration of the FCI, the land reverted back to the prior land use designation of Rural Lands-80 (RL-80), or rural land with a minimum parcel size of 80 acres. The FCI General Plan Amendment currently under consideration in the County's Supplemental EIR would change this current designation to Rural Lands-40 (RL-40). In this respect, the County's proposed land use designation change in the General Plan Amendment for the area of the Suncrest Project site would not differ from the FCI in terms of effect.

Applicable goals and policies in the County's General Plan include the following:

- **Goal LU-2 – Maintenance of the County's Rural Character.** Conservation and enhancement of the unincorporated County's varied communities, rural setting, and character.

- **Policy LU-4.6 – Planning for Adequate Energy Facilities.** Participate in the planning of regional energy infrastructure with applicable utility providers to ensure plans are consistent with the County's General Plan and Community Plans and minimize adverse impacts to the unincorporated area.

- **Policy LU-5.3 – Rural Land Preservation.** Ensure the preservation of existing open space and rural areas (e.g., forested areas, agricultural lands, wildlife habitat and corridors, wetlands, watersheds, and groundwater recharge areas) when permitting development under the Rural and Semi-Rural Land Use Designations.

- **Policy LU-12.4 – Planning for Compatibility.** Plan and site infrastructure for public utilities and public facilities in a manner compatible with community character, minimize visual and environmental impacts, and whenever feasible, locate any facilities and supporting infrastructure outside preserve areas. Require context

> sensitive Mobility Element road design that is compatible with community character and minimizes visual and environmental impacts; for Mobility Element roads identified in Table M-4, an LOS [level of service] D or better may not be achieved.

Alpine Community Plan

The Alpine Community Plan is a subcomponent of the County General Plan. The Alpine Community Plan implements the goals and policies of the County General Plan for the Alpine area. In accordance with State law, it is internally consistent with the General Plan goals and policies and does not undermine any policies of the General Plan. Key goals and policies in the Alpine Community Plan include those related to maintaining and enhancing the rural character of the Alpine area. The Plan states as follows (County of San Diego 2011):

> Alpine is a rural community, and the intent of the Community Plan is to maintain the rural atmosphere of the Planning Area. Land use and lot sizes have considerable influence on the rural characteristics of the community, as well as the visual aspects of the community. A concern of the community is to encourage private developers to choose designs which are compatible with the image and scale of a rural community.

The Proposed Project would be located within the Alpine Community Planning Area, though well outside of the community center, in the sparsely populated Japatul Valley.

County of San Diego Community Trails Master Plan

The County of San Diego Community Trails Master Plan (CTMP) provides a blueprint for development of a system of interconnected regional and community trails and pathways, which is intended to address an established public need for recreation and transportation. The Alpine Community Trails Map section of the CTMP shows Proposed Community Trail #23 as running in an east-west direction approximately 0.5 mile north of Bell Bluff Truck Trail in the area of the Proposed Project (County of San Diego 2009).

County of San Diego Zoning Ordinance

The San Diego County Zoning Ordinance specifies allowed uses within designated zoning districts, and generally prescribes land uses consistent with the General Plan. As described further below, in Section 13.3, "Environmental Setting," the Proposed Project would be located within the General Agricultural Use (A72) zoning district. According to the County Zoning Ordinance, the A72 use regulations are intended to create and preserve areas for the raising of crops and animals. Permitted uses within the A72 district include family residential, essential services, and various agricultural uses (e.g., tree crops, row and field crops). The Zoning Ordinance indicates that minor impact utilities are allowed by the A72 use regulations with issuance of a minor use permit, while major impact utilities are allowed with issuance of a major use permit.

13.2.4 Other Regulatory Considerations

Existing Mitigation Obligations Related to the Sunrise Powerlink

Wilson Construction Yard

As described in Chapter 2, *Project Description,* the proposed Static VAR compensator (SVC) site (also known as the Wilson Construction Yard) was recently restored as part of the mitigation requirements for the Sunrise Powerlink Project. This site was used as a materials staging and storage area during construction of Suncrest Substation, and subsequent restoration/revegetation efforts were recently signed-off as complete by the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS). Following sign-off by the regulatory agencies, San Diego Gas and Electric Company (SDG&E) will be released from its mitigation obligations and no further restrictions will remain in effect with regard to potential use of the site.

Lightner Mitigation Site

The land surrounding the proposed transmission line is included within the Lightner Mitigation Site (shown in Figure 2-5 in Chapter 2, *Project Description*), which was established to off-set permanent impacts to Waters of the U.S. and Waters of the State from SDG&E's Sunrise Powerlink project. In this respect, the Lightner Mitigation Site is part of the compensatory mitigation provided by SDG&E for impacts from the Sunrise Powerlink and is intended to be preserved for resource conservation purposes in perpetuity. As described in the Final Habitat Mitigation and Monitoring Plan for the Sunrise Powerlink (SDG&E 2011), the goals of mitigation at the Lightner Mitigation Site are to:

- Preserve and manage aquatic resources and associated uplands in perpetuity as a "watershed" approach to mitigation;
- Restore and enhance stream and wetland functions, including buffer and wildlife habitat functions;
- Compensate for Project impacts to Waters of the State beneficial uses; and
- Provide the legal structure and funding for long-term management of weeds, trash, vandalism, trespassing and any other human-induced disturbances in perpetuity through a non-wasting endowment.

For long-term management and protection of the site, it is anticipated that ownership of portions of the Lightner Mitigation Site will be transferred to the U.S. Forest Service (currently the site is still owned by SDG&E). SDG&E will retain certain areas within the area designated as the Lightner site, including the Suncrest Substation, Bell Bluff Truck Trail, and a portion of the land on either side of Bell Bluff Truck Trail.

13.3 Environmental Setting

As described above, the Proposed Project would be located in unincorporated San Diego County on lands zoned for agriculture (A72). The entire SVC site and the land along and on either side of the proposed transmission line would be within the A72 zoning district. These

lands are currently designated as RL-80 in the County's General Plan, but a proposal is under consideration to change this designation to RL-40. Figure 2-2 in Chapter 2, *Project Description,* shows the extent of the CNF and the Proposed Project's location within the CNF's administrative boundary. Figure 2-3 shows the assessor parcel numbers (APNs) of lands in and around the Project site.

Existing land uses in the vicinity of the Proposed Project include undeveloped/rural, utility/electric transmission infrastructure, and low-density residential. While the Project area and portions of the Project site may have been used for livestock grazing in the past, currently there does not appear to be any agricultural or grazing activity in the area. The nearest residence to the Project site is approximately 0.6 mile to the southeast of the proposed SVC site. Otherwise, the land surrounding the Proposed Project is generally undeveloped, with the exception of the existing Suncrest Substation located at the western terminus of the Proposed Project. The existing SDG&E Suncrest Substation represents a very large utility/industrial use in the area, as it includes an approximately 40-acre site ~~concrete pad~~ with large electrical equipment and high-voltage transmission lines entering and exiting the facility from the southwest and northeast.

13.4 Impact Analysis

13.4.1 Methodology

The analysis of land use and planning impacts was qualitative in nature and involved comparing aspects of the Proposed Project to the significance criteria described below. The land use plans, policies, and regulations, described in Section 13.2, "Regulatory Setting," as well as existing land uses and mitigation obligations described in Section 13.3, "Environmental Setting," were considered in the impacts analysis.

13.4.2 Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines and professional expertise, the Proposed Project would result in a significant impact related to land use and planning if it would:

A. Physically divide an established community; or

B. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

The third land use and planning significance criteria specified in Appendix G of the State CEQA Guidelines (related to potential conflicts with a habitat conservation plan or natural community conservation plan) is addressed in Chapter 7, *Biological Resources.*

13.4.3 Environmental Impacts

Impact LU-1: Potential to Physically Divide an Established Community (No Impact)

The Proposed Project would be located in a rural, primarily undeveloped area, and not within or near an established community. The proposed SVC and transmission line would be constructed within and/or adjacent-to a private road (i.e., Bell Bluff Truck Trail) which is not publicly accessible. As such, there would no potential for the Project to physically divide an established community. No impact would occur.

Impact LU-2: Conflicts with Applicable Land Use Plans, Policies, or Regulations (Less than Significant)

Federal and State Plans, Policies, and Regulations

The Proposed Project would be located on private property and therefore would not be subject to U.S. Forest Service jurisdiction; however, this analysis considers the CNF Land Management Plan because the Project site would be located within the administrative boundary of the CNF and in relatively close proximity (0.2 mile) to CNF lands. The CNF Land Management Plan characterizes the desired condition of the Sweetwater Place (i.e., the general region in which the Proposed Project would be located) as a natural appearing landscape, and a stated goal of the CNF Land Management Plan is to "retain natural areas as a regional network while focusing the built environment into the minimum land area needed to support growing public needs" (USFS 2005). The Project would seem to conflict with these elements of the CNF Land Management Plan, as the Project would introduce an industrial land use/structure into an otherwise natural-appearing landscape. The approximately 6-acre SVC would contrast with the surrounding landscape and would likely be visible from some nearby CNF lands. However, as the Proposed Project would be sited relatively close (approximately 1 mile) to the existing Suncrest Substation, it would seem to partially implement CNF Land Management Plan Policy S5 to "consolidate major transportation and utility corridors and collocating facilities and/or expanding corridors."

Apart from the CNF Land Management Plans, no other federal or State land use plans, policies, or regulations related to the Proposed Project were identified.

Local Plans, Policies, and Regulations

Because it is a State agency, the CPUC generally is not subject to local land use plans, policies, or regulations; however, local plans are considered in this Draft EIR to the extent that analysis of any conflicts with local plans may inform decision-makers or allow for full disclosure of potential impacts. As described in Chapter 2, *Project Description,* to construct the SVC, NEET West would acquire a 6-acre portion of APN 523-040-080 in fee title. By subdividing this parcel, the Proposed Project would seem to conflict with the current County of San Diego General Plan land use designation of RL-80, as well as the proposed FCI General Plan Amendment designation of RL-40, which stipulate minimum lot sizes of 80 acres and 40 acres, respectively. The proposed SVC also would seem to conflict with the intent of the Rural Land designation in the General Plan, which is generally intended to preserve natural features and rural character, buffer communities, foster agriculture, and accommodate rural communities. The proposed SVC would be a relatively large (6-acre) industrial facility located

in an otherwise rural undeveloped area (with the notable exception of the 40-acre existing Suncrest Substation approximately 1 mile to the west). Likewise, the Proposed Project may conflict to some degree with the County of San Diego General Plan Goal LU-2 and Policy LU-5.3 (described in Section 13.2, "Regulatory Setting"), and the goals and policies in the Alpine Community Plan, which relate to preservation and maintenance of the County's rural character and rural lands; however, the Proposed Project would be permissible under the County's zoning ordinance, which is designed to implement the General Plan.

Existing Mitigation Obligations Related to the Sunrise Powerlink

Wilson Construction Yard

The SVC would be located on a restoration site (Wilson Construction Yard) for the Sunrise Powerlink, which has recently been signed off as complete by CDFW and USFWS. Therefore, as it currently stands, siting the SVC on the Wilson Construction Yard would conflict with SDG&E's mitigation obligations related to the Sunrise Powerlink. SDG&E is not yet released from its obligations to restore the site, and constructing the SVC on the site would impact the on-going restoration. However, because the site restoration is very near complete and will likely be signed off as complete by CPUC prior to Project construction, and because the restoration is considered mitigation of temporary impacts and the land would not be set aside for permanent conservation as mitigation for permanent impacts, this conflict would not be anticipated to be significant.

Lightner Mitigation Site

The proposed transmission line would be constructed primarily underground within Bell Bluff Truck Trail. Surrounding Bell Bluff Truck Trail on either side would be the Lightner Mitigation Site, which was established as mitigation for permanent impacts to Waters of the U.S. and Waters of the State from the Sunrise Powerlink. As described in Chapter 2, *Project Description,* while the proposed transmission line would be installed primarily within the paved portion of Bell Bluff Truck Trail, temporary disturbance of adjacent land may occur during installation of the splice vaults. While these impacts would not be consistent with the intent and goals of the mitigation site, the conflicts from the Proposed Project would be temporary and would not be anticipated to be substantial.

Conclusion

Overall, the Proposed Project would conflict with certain elements of the CNF Land Management Plan, County of San Diego General Plan, and Alpine Community Plan related to preservation of natural and rural features. The Proposed Project would seem to be an allowable use under the current zoning, which functions to implement the General Plan, and would not include housing or directly increase population. Construction of the SVC would not reduce the amount of land permanently set aside for conservation to compensate for permanent impacts caused by the Sunrise Powerlink. Therefore, this impact would be less than significant.

Chapter 14
Mineral Resources

14.1 Overview

This chapter describes the setting and potential impacts on mineral resources from the Proposed Project. Information used to prepare this section includes the following resources prepared by the California Department of Conservation (CDOC): the California Geological Survey (CGS) Information Warehouse (CDOC 2016a), the Assembly Bill 3098 List of Mines Regulated under the Surface Mining and Reclamation Act of 1975 (SMARA) (CDOC 2016b), Guidelines for Classification and Designation of Mineral Lands (CDOC 2000), Update of Mineral Land Classification: Aggregate Materials in the Western San Diego County Production-Consumption Region (CDOC 1996), and Mineral Land Classification of the Western San Diego County Production-Consumption Region (CDOC 1982). Additional Information sources include: San Diego County General Plan, Conservation and Open Space Element (San Diego County 2011); Alpine Community Plan, San Diego County General Plan (San Diego County 2010); History of Mining in Southern California (San Diego Natural History Museum [SDNHM] 2016); and Mineral Resources On-Line Spatial Data (U.S. Geological Survey [USGS] 2016).

14.2 Regulatory Setting

14.2.1 Federal Laws, Regulations and Policies

No federal laws, regulations, or policies apply to mineral resources and the Proposed Project.

14.2.2 State Laws, Regulations and Policies

Surface Mining and Reclamation Act

The SMARA requires that the State Mining and Geology Board identify, map, and classify aggregate resources throughout California that contain regionally significant mineral resources. Designations of land areas are assigned by CDOC and CGS following analysis of geologic reports and maps, field investigations, and using information about the locations of active sand and gravel mining operations. Local jurisdictions are required to enact planning procedures to guide mineral conservation and extraction at particular sites and to incorporate mineral resource management policies into their general plans.

14.2.3 Local Laws, Regulations, and Policies

As a State agency, the California Public Utilities Commission (CPUC) generally is not subject to local laws and land use and zoning regulations; however, local laws, regulations, and policies are considered here for the evaluation of potential mineral resource impacts that

could result from the Proposed Project to the extent that they may inform the analysis and allow for full disclosure of potential impacts.

San Diego County General Plan

The Conservation and Open Space Element of the General Plan (County of San Diego 2011a) describes three general categories of important mineral resources, including construction materials, industrial and chemical mineral materials, and metallic and rare materials. The continued availability of construction aggregate for the development of roads, homes, buildings, and other infrastructure is considered essential to the economy of the County. Urban development has encroached upon many existing and potential future sites for mining construction aggregate. Few new mining sites have been recently permitted in the County and the aggregate production rate from existing local mining sites has not kept pace with demand. To meet demand, substantial volumes of aggregate are being imported from quarries located outside of San Diego County. Due to increased transportation costs, the price for aggregate in the County is among the highest in the State of California. The total permitted area of local mining facilities contains less than a 50-year supply of aggregate for the County. Thus, maintaining access to mineral resources, especially the remaining undeveloped land that has been classified as Mineral Resource Zone (MRZ)-2 (an area where significant mineral deposits are present or where it is indicated that a high likelihood for their presence exists) by the CDOC is important for the future economic activity of the County.

The following General Plan Conservation and Open Space Element goal and policy may be applicable to the Proposed Project:

- **Goal COS-10:** Protection of Mineral Resources. The long-term production of mineral materials adequate to meet the local County average annual demand, while maintaining permitted reserves equivalent to a 50-year supply, using operational techniques and site reclamation methods consistent with SMARA standards such that adverse effects on surrounding land uses, public health, and the environment are minimized.

- **Policy COS-10.1 – Siting of Development.** Encourage the conservation (i.e., protection from incompatible land uses) of areas designated as having substantial potential for mineral extraction. Discourage development that would substantially preclude the future development of mining facilities in these areas. Design development or uses to minimize the potential conflict with existing or potential future mining facilities. For purposes of this policy, incompatible land uses are defined by SMARA Section 3675.

Alpine Community Plan

The Alpine Community Plan (County of San Diego 2011b) is a subcomponent of the County General Plan that implements the goals and policies of the County General Plan for the Alpine area. The Conservation Element of the Alpine Community Plan identifies Resource Conservation Areas (RCA) as localities worthy of special efforts to protect important natural resources. One of the criteria used in identifying RCAs was areas containing mineral resources, which would require conservation measures to ensure future availability. The Proposed Project site is not located in an RCA. Mineral resource-

related goals and policies of the Conservation Element of the Alpine Community Plan that may be applicable to the Proposed Project include:

- **Goal 1** – Promote the well-planned management of all valuable resources, natural and man-made, and prevent the destruction and wasteful exploitation of natural resources, where feasible.

- **Policy 1** – Encourage the protection and conservation of unique resources in the Alpine Planning Area.

- **Policy 2** – Important plant, animal, mineral, water, cultural and aesthetic resources in the Alpine Plan area shall be protected through utilization of the Resource Conservation Area designations and appropriate land usage.

14.3 Environmental Setting

The California Gold Rush of the mid-1800s led to mineral exploration throughout southern California. Although gold deposits in the County were not extensive enough to warrant large volume mining, high-quality gemstones were discovered east of San Diego in the foothills and upper elevations of the Peninsular Ranges, which are also known as the Santa Ana, San Jacinto, and Laguna Mountains. Tourmaline, kunzite, morganite, topaz, garnet, aquamarine, lepidolite, and quartz are found in San Diego County. The gemstones are a result of cataclastic metamorphism associated with the mechanical deformation of the Farallon plate after being subducted under the North American plate. This type of metamorphism is restricted to a narrow band along the subduction zone (SDNHM 2016).

The Project site has not been included in the study area for studies included in the CDOC's SMARA Mineral Lands Classification portal (CDOC 2016a); however, it is approximately 4 miles west of the study area identified in a mineral land classification study of aggregate materials in the Western San Diego County Production-Consumption Region (CDOC 1982). The Proposed Project site is located approximately 9 miles from the nearest area designated as MRZ-2. To be classified by the CDOC as a regionally or statewide significant mineral resource, a mineral deposit must be actively mined under a valid permit or meet CDOC-defined criteria of marketability and threshold value as specified in the CDOC's Guidelines for Classification and Designation of Mineral Lands (CDOC 2000). An update of the CDOC's 1982 study of the Western San Diego County Production-Consumption Region prepared by CDOC (1996) did not result in the mapping of any new MRC-2 zones closer to the Proposed Project.

The mine located closest to the Project site was identified as the Palo Verde Desiltation and Reclamation Project, a specialty sand and fill dirt mining operation at Palo Verde Lake, for which reclamation is in progress, based on available information from the CDOC (2016b). A review of the CDOC's current list of mines regulated under SMARA (CDOC 2016c) identified the closest active mine as the Turvey Decomposed Granite (DG) Pit, which is located in Alpine, at the intersection of Dunbar Lane and Alpine Boulevard, approximately 9 miles from the Proposed Project site.

The U.S. Geologic Survey Mineral Resource Data System identifies a historic quartz production site, the Lowrey Deposit, located approximately 0.7 mile east of the Proposed Project site. Additionally, a potential stone production site, Ajax Deposit, is identified approximately 1.1 miles southeast of the Project site (USGS 2016).

14.4 Impact Analysis

14.4.1 Methodology

This section describes the potential impacts of the Proposed Project related to mineral resources. This evaluation considers the extent to which the Proposed Project would result in the loss of known mineral resources or locally-important mineral resource recovery sites. Effects are evaluated qualitatively based on available information on existing facilities and current demand in the Project Area.

14.4.2 Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines and professional expertise, it was determined that the Proposed Project would result in a significant impact on mineral resources if it would:

A. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State; or

B. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

14.4.3 Environmental Impacts

Impact MR-1: Loss of Availability of a Known Mineral Resource (No Impact)

No mineral resources are known to occur at the Proposed Project site. Project activities would not result in the loss of availability of a known mineral resource. There would be no impact.

Impact MR-2: Loss of Availability of a Locally Important Mineral Resource Recovery Site (No Impact)

The Proposed Project is not located on, or in the vicinity of, a locally-important mineral resource recovery site, nor would it result in the loss of such a site. There would be no impact.

Chapter 15
Noise and Vibration

15.1 Overview

This chapter describes the existing noise environment in the vicinity of the potentially affected area, presents relevant noise and vibration regulations, identifies sensitive noise and vibration receptors that could be affected by the Proposed Project, and evaluates the potential noise and vibration impacts of the Proposed Project. Mitigation measures to avoid or reduce impacts are identified, as appropriate.

15.2 Overview of Noise and Vibration Concepts and Terminology

15.2.1 Noise

In the context of the California Environmental Quality Act (CEQA), noise can be defined as unwanted sound. Sound is characterized by various parameters, including the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient sound level, or sound intensity. The decibel (dB) scale is used to quantify sound intensity. Because sound pressure can vary enormously within the range of human hearing, a logarithmic scale is used to keep sound intensity numbers at a convenient and manageable level. The human ear is not equally sensitive to all frequencies in the spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive, creating the A-weighted decibel (dBA) scale.

Different types of measurements are used to characterize the time-varying nature of sound. Below are brief definitions of these measurements and other terminology used in this chapter.

- **Decibel (dB)** is a measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro pascals.

- **A-weighted decibel (dBA)** is an overall frequency weighted sound level in decibels that approximates the frequency response of the human ear.

- **Maximum sound level (L_{max})** is the maximum sound level measured during a given measurement period.

- **Minimum sound level (L_{min})** is the minimum sound level measured during a given measurement period.

- **Equivalent sound level (L_{eq})** is the equivalent steady-state sound level that, in a given period, would contain the same acoustical energy as a time-varying sound level during that same period.

- **Day night sound level (L_{dn})** is the energy average of the A weighted sound levels occurring during a 24-hour period, with 10 dB added to the A weighted sound levels during the period from 10:00 p.m. to 7:00 a.m. (typical sleeping hours). This weighting adjustment reflects the elevated sensitivity of individuals to ambient sound during nighttime hours.

- **Community noise equivalent level (CNEL)** is the energy average of the A-weighted sound levels during a 24-hour period, with 5 dB added to the A-weighted sound levels between 7:00 p.m. and 10:00 p.m. and 10 dB added to the A-weighted sound levels between 10:00 p.m. and 7:00 a.m.

In general, human sound perception is such that a change in sound level of 3 dB is barely noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level. Table 15-1 presents approximate noise levels for common noise sources, measured adjacent to the source.

Table 15-1. Examples of Common Noise Levels

Common Outdoor Activities	Noise Level (dBA)
Jet flyover at 1,000 feet	110
Gas lawnmower at 3 feet	100
Diesel truck at 50 feet traveling 50 miles per hour	90
Noisy urban area, daytime	80
Gas lawnmower at 100 feet, commercial area	70
Heavy traffic at 300 feet	60
Quiet urban area, daytime	50
Quiet urban area, nighttime	40
Quiet suburban area, nighttime	30
Quiet rural area, nighttime	20

Source: California Department of Transportation (Caltrans) 2013

15.2.2 Vibration

Ground-borne vibration propagates from the source through the ground to adjacent buildings by surface waves. Vibration may be composed of a single pulse, a series of pulses, or a continuous oscillatory motion. The frequency of a vibrating object describes how rapidly it is oscillating, measured in Hertz (Hz). Most environmental vibrations consist of a composite, or "spectrum," of many frequencies. The normal frequency range of most ground-borne vibrations that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz. Vibration information for this analysis has been described in terms of the peak particle velocity (PPV), measured in inches per second, or of the vibration level

measured with respect to root-mean-square vibration velocity in decibels (VdB), with a reference quantity of 1 micro-inch per second.

Vibration energy dissipates as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. High-frequency vibrations reduce much more rapidly than do those characterized by low frequencies, so that in a far-field zone distant from a source, the vibrations with lower frequency amplitudes tend to dominate. Soil properties also affect the propagation of vibration. When ground-borne vibration interacts with a building, a ground-to-foundation coupling loss usually results but the vibration also can be amplified by the structural resonances of the walls and floors. Vibration in buildings is typically perceived as rattling of windows, shaking of loose items, or the motion of building surfaces. In some cases, the vibration of building surfaces also can be radiated as sound and heard as a low-frequency rumbling noise, known as ground-borne noise.

Ground-borne vibration is generally limited to areas within a few hundred feet of certain types of industrial operations and construction/demolition activities, such as pile driving. Road vehicles rarely create enough ground-borne vibration amplitude to be perceptible to humans unless the receiver is in immediate proximity to the source or the road surface is poorly maintained and has potholes or bumps. Human sensitivity to vibration varies by frequency and by receiver. Generally, people are more sensitive to low-frequency vibration. Human annoyance also is related to the number and duration of events; the more events or the greater the duration, the more annoying it becomes.

15.3 Regulatory Setting

15.3.1 Federal Laws, Regulations, and Policies

No federal laws, regulations, or policies for construction-related noise and vibration apply to the Proposed Project. However, the Federal Transit Administration's (FTA's) *Guidelines for Construction Vibration in Transit Noise and Vibration Impact Assessment* state that for evaluating daytime construction noise impacts in outdoor areas, a noise threshold of 90 dBA Leq should be used for residential areas (FTA 2006).

For construction vibration impacts, the FTA guidelines use an annoyance threshold of 80 vibration decibels (VdB) for infrequent events (fewer than 30 vibration events per day) and a damage threshold of 0.3 in/sec PPV for engineered concrete and masonry structures and 0.12 in/sec PPV for buildings extremely susceptible to vibration damage (FTA 2006).

15.3.2 State Laws, Regulations, and Policies

California requires each local government entity to implement a noise element as part of its general plan. California Administrative Code, Title 4, presents guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The state land use compatibility guidelines are listed in Table 15-2.

Table 15-2. State Land Use Compatibility Standards for Community Noise Environment

Land Use Category	Community Noise Exposure - L_{dn} or CNEL (db)						
	50	55	60	65	70	75	80
Residential – Low Density Single Family, Duplex, Mobile Homes							
Residential – Multi-Family							
Transient Lodging – Motels, Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arenas, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
Normally Unacceptable	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Clearly Unacceptable	New construction or development generally should not be undertaken.

15.3.3 Local Laws, Regulations, and Policies

The California Public Utilities Commission (CPUC) has exclusive jurisdiction over the siting and design of electric transmission facilities. Therefore, it is exempt from local land use and zoning regulations. However, CPUC General Order (G.O.) 131-D states that in locating electric transmission facilities, the public utilities shall consult with the local agencies regarding land use matters. CPUC and NEET West have been in contact with applicable local agencies for the Proposed Project, and local laws and regulations are presented here for consideration of potential impacts related to noise.

County of San Diego Guidelines for Determining Significance for Noise

The County of San Diego's (County's) *Guidelines for Determining Significance for Noise* (County of San Diego 2009a) describes noise terms and general principles, identifies federal, state, and local noise-related regulations, and recommends impact significance thresholds to be used in CEQA analyses for projects within the County. These thresholds are used in the impacts analysis and discussed in more detail in Section 15.5.1, "Criteria for Determining Significance." In general, the significance thresholds vary based on the noise source (construction vs. non-construction activities), and the receptor's land use zoning. The County's CEQA significance guidelines are based on the County's General Plan Noise Element and the County Noise Abatement and Control Ordinance.

County of San Diego General Plan

The County of San Diego General Plan's Noise Element describes the existing noise environment in the unincorporated County, identifies the noise element's uses relative to other elements of the general plan (i.e., land use), establishes noise/land use compatibility standards, and describes the County's goals for achieving the standards.

The County's General Plan establishes "acceptable," "conditionally acceptable," and "unacceptable" noise levels for various land uses throughout the County to determine land use compatibility when evaluating proposed development projects. For its most noise-sensitive land use category, single-family residences, the General Plan establishes an acceptable exterior noise (CNEL) standard of 60 dB and an interior acceptable noise standard of 45 dB. For projects within or near these residential land uses, conditionally acceptable exterior noise levels would be between 60 and 75 dBA CNEL, and a project noise analysis would be required to determine if levels could be lowered, via noise reduction measures, to the acceptable standard. Projects generating unacceptable exterior noise levels in excess of 75 dBA at sensitive receptor locations would generally not be approved (County of San Diego 2011).

To implement these noise standards, the Noise Element (County of San Diego 2011) contains the following relevant policies to noise and the Proposed Project:

- **Goal N-1: Land Use Compatibility.** A noise environment throughout the unincorporated County that is compatible with the land uses.

- **Policy N-1.1 – Noise Compatibility Guidelines.** Use the Noise Compatibility Guidelines (Table N-1) and the Noise Standards (Table N-2) as a guide in determining the acceptability of exterior and interior noise for proposed land uses.

- **Policy N-1.2 – Noise Management Strategies.** Require the following strategies as higher priorities than construction of conventional noise barriers where noise abatement is necessary:

  — Avoid placement of noise sensitive uses within noisy areas
  — Increase setbacks between noise generators and noise sensitive uses
  — Orient buildings such that the noise sensitive portions of a project are shielded from noise sources
  — Use sound-attenuating architectural design and building features

- Employ technologies when appropriate that reduce noise generation (i.e. alternative pavement materials on roadways)

- **Policy N-1.3 – Sound Walls.** Discourage the use of noise walls. In areas where the use of noise walls cannot be avoided, evaluate and require where feasible, a combination of walls and earthen berms and require the use of vegetation or other visual screening methods to soften the visual appearance of the wall.

- **Goal N-2: Protection of Noise Sensitive Uses.** A noise environment that minimizes exposure of noise sensitive land uses to excessive, unsafe, or otherwise disruptive noise levels.

- **Policy N-2.1 – Development Impacts to Noise Sensitive Land Uses.** Require an acoustical study to identify inappropriate noise level where development may directly result in any existing or future noise sensitive land uses being subject to noise levels equal to or greater than 60 CNEL and require mitigation for sensitive uses in compliance with the noise standards listed in Table N-2.

- **Goal N-3: Groundborne Vibration.** An environment that minimizes exposure of sensitive land uses to the harmful effects of excessive groundborne vibration.

- **Policy N-3.1 – Groundborne Vibration.** Use the Federal Transit Administration and Federal Railroad Administration guidelines, where appropriate, to limit the extent of exposure that sensitive uses may have to groundborne vibration from trains, construction equipment, and other sources.

- **Goal N-6: Temporary and/or Nuisance Noise.** Minimal effects of intermittent, short-term, or other nuisance noise sources to noise sensitive land uses.

- **Policy N-6.2 – Recurring Intermittent Noise.** Minimize impacts from noise in areas where recurring intermittent noise may not exceed the noise standards listed in Table N-2, but can have other adverse effects.

- **Policy N-6.3 – High-Noise Equipment.** Require development to limit the frequency of use of motorized landscaping equipment, parking lot sweepers, and other high-noise equipment if their activity will result in noise that affects residential zones.

- **Policy N-6.4 – Hours of Construction.** Require development to limit the hours of operation as appropriate for non-emergency construction and maintenance, trash collection, and parking lot sweeper activity near noise sensitive land uses.

San Diego County Noise Ordinance

The County's Noise Ordinance (County of San Diego 2009b), which is included in the County Code's Chapter 4, Noise Abatement and Control (Sections 36.401 through 36.435), recommends general noise level limits, establishes sound level limitations on impulsive and construction noises, and stipulates acceptable hours of operation for construction equipment. For areas zoned as residential, general agriculture, or open space lands, including the Proposed Project site, the ordinance establishes general noise level limits of 50 dB between 7 am and 10 pm, and 45 dB between 10pm and 7am. The Ordinance requires that

construction equipment only be operated between 7 a.m. and 7 p.m. and not on Sundays or holidays. Construction equipment noise is restricted to an average sound level of 75 decibels for an eight-hour period (between the allowable 7 a.m. and 7 p.m. window) measured at the boundary of the property where the noise source is located or on any occupied property where the noise is being received.

In addition to the general and construction noise limits, the ordinance establishes that impulsive noises will not exceed 82 dBA at the boundary line for properties with residential uses and 85 dBA for properties with agricultural, commercial, or industrial uses for more than 25 percent of any one-hour measurement period. The ordinance defines impulsive noise as a "single noise event or a series of single noise events, which causes a high peak noise level of short duration (one second or less), measured at a specific location. Examples include, but are not limited to, a gunshot, an explosion or a noise generated by construction equipment" (County of San Diego 2009b).

15.4 Environmental Setting

Noise sources in the County are typically transportation-related, including from automobiles, trucks, aircraft operations, and railroads. Other noise sources in the County include industrial and commercial operations, construction activities, agricultural field machinery, and temporary neighborhood noise (County on San Diego 2011). Along the Interstate 8 highway, located approximately 1.8 miles north of the Project site, ambient noise levels due to vehicular traffic range from 55 to 75 dB CNEL (County of San Diego 2011). San Diego County has numerous private airports and eight public airports, including Gillespie Field, which is located approximately 16 miles northwest of the Project site (County of San Diego 2016, TollFreeAirline 2016).

The Project site is located on unoccupied parcels of land in a remote area of San Diego County. As described in Chapter 13, *Land Use and Planning*, the site is surrounded by natural/undeveloped areas, with the exception of the Suncrest Substation, which is located near the western terminus of the Proposed Project. Land use and zoning designations for the Project site and the immediate surrounding areas, including adjacent occupied parcels, are Rural Lands (RL-80) and agriculture (A72).

Ambient noise levels at the Project site were determined by measuring noise levels over a 48-hour period in spring 2015. A Larson Davis LD 831 Sound Level Meter was placed as close to Bell Bluff Truck Trail as possible at the proposed SVC site. The Leq and CNEL noise levels at the project site were determined to be 49.8 dBA and 52.1 dBA, respectively. The Project site and surrounding area receives some surface transportation noise from vehicular traffic to/from the Suncrest Substation and San Diego Gas & Electric's (SDG&E's) water tank/pump on Bell Bluff Truck Trail, and from vehicular traffic on residential roads in the Project vicinity. Vehicular noise from Interstate 8 is not detectable at the Static VAR compensator (SVC) site (NEET West 2015).

Noise-sensitive receptor types that could be affected by excessive noise levels in the County include residential uses, hospitals, daycares and schools, and passive recreational parks. As described above, the land surrounding the Proposed Project is generally undeveloped. Residential and commercial developments are located more than a 0.5 mile to the southeast and northwest.

The distance to nearby sensitive receptors was determined from the center of the proposed SVC site to the sensitive receptor land use (building). The nearest residence to the Project site is approximately 0.62 mile to the southeast of the proposed SVC site and approximately 0.96 mile from the center of the transmission line. From the center of the proposed SVC site, the nearest property line is approximately 458 feet (parcel owned by SDG&E) and the nearest occupied property line is 856 feet (owned by the Wilson Dean Living Trust). The Cottonwood Canyon Healthcare is the nearest hospital or long-term care facility to the SVC project site at approximately 15 miles. The nearest school or daycare facility to the SVC project site is the County Treehouse Day Care, which is approximately 4.6 miles from the site.

15.5 Impacts Analysis

15.5.1 Criteria for Determining Significance

The Proposed Project would have a significant effect related to noise if it would meet any of the following conditions:

A. Exposure of persons to or generation of noise levels in excess of standards established in a local general plan or noise ordinance or in the applicable standards of other agencies.

B. Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.

C. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

D. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

E. For a project located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public-use airport, exposure of people residing or working in the project area to excessive noise levels.

F. For a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels.

San Diego County Noise Significance Thresholds

San Diego County's noise significance thresholds are based on the County's general plan and the County's noise ordinance, and are designed to assist in addressing the State CEQA Guidelines Appendix G criteria related to noise (see above). The County thresholds are as follows:

Criterion 1) Expose noise-sensitive land uses to exterior noise levels of 60 dB CNEL or an increase of 10 dB CNEL over the pre-existing noise; or to interior noise levels of 45 dB CNEL.

Criterion 2) Generate construction-related noise greater than 75 dB for an eight-hour period between 7am and 7pm at the property line of the property where

the noise source is located or on any occupied property where the noise is being received;

Criterion 3) Generate impulsive maximum sound levels of 85 dB at the boundary line of the property where the noise source is located or on any occupied property where the noise is received, for 25 percent of the minutes in an hour (15 minutes per hour).

Criterion 4) Create non-construction noise in excess of a one-hour average 50 dB between 7am and 10pm, or in excess of a one-hour average 45 dB between 10pm and 7am at defined residential, open space, or agricultural zoning areas, including the local zoning A-72.

Criterion 5) Result in occasional or infrequent ground-borne vibration levels of 0.010 inches/second root-mean-square (rms), or occasional or infrequent ground-borne noise levels of 43 dBA.

In addition, although not San Diego County thresholds, the FTA's (2006) building damage threshold of peak particle velocity (PPV) greater than 0.12 inches/second and the FTA's ground-borne vibration annoyance threshold of 80 VdB were considered in the analysis.

15.5.2 Methodology

Project construction noise impacts were assessed by applying the FTA's *Transit Noise and Vibration Impact Assessment* (FTA 2006) recommended methodology. This methodology assumes that the two loudest pieces of construction equipment would operate simultaneously at the same location under full power, assuming the following:

- full power operation for a full 1-hour,
- there are no obstructions to the noise travel paths,
- typical noise levels from construction equipment are used, and
- all pieces of equipment operate at the center of the project site.

Using these assumptions, the noise levels at specific distances can be obtained using the following equation:

$$L_{eq}(equip) = EL_{50ft} - 20log_{10}(D/50)$$

Where:

Leq (equip) = the noise emission level at the receiver at distance D over 1 hour

EL50ft = noise emission level of a particular piece of equipment at a reference distance of 50 feet

D = the distance from the receiver to the piece of equipment in feet

To add the two loudest pieces of equipment together, the following equation applies:

$$L_{total} = 10\ log_{10}(10^{\frac{L1}{10}} + 10^{\frac{L2}{10}})$$

Where:

Ltotal = the noise emission level of two pieces of equipment combined

L1 = the noise emission level of equipment type 1

L2 = the noise emission level of equipment type 2

Noise levels from the Proposed Project's noise-generating construction equipment were estimated at the Proposed Project's nearest sensitive receptor location and occupied property parcel boundary by using the FTA reference guide (FTA 2006). SDG&E's property (APN 523-030-130) boundary is closer to the proposed SVC site (approximately 458 feet away) than the residential occupied property boundary (approximately 856 feet); however, this property does not contain any sensitive receptors/uses. Calculated noise levels resulting from the Proposed Project were compared to the significance criteria identified in Section 15.5.1, *Criteria for Determining Significance*.

L_{eq} noise levels at the two nearest sensitive receptor locations were determined using the equations provided above. The two loudest pieces of equipment were determined to be a rock drill and a scraper. These pieces of equipment have reference noise levels of 98 dBA and 89 dBA at a distance of 50 feet. The loudest construction activity was determined to be blasting, which has a noise reference level of 94 dBA (L_{max}) at 50 feet (FHWA 2016). It was assumed that other construction equipment would not be operated during blasting activities. Estimated CNEL values were calculated by inputting the Project's estimated L_{eq} during construction hours and the measured existing ambient L_{eq} at the Project site during non-construction hours into a CNEL calculator (NoiseMeter 2016). It was assumed that the existing CNEL near the Project site is the same at the nearest residence.

Ground-borne vibration-related human response impact levels were calculated using the occasional or infrequent thresholds identified in Criterion 5 of the County's thresholds, described in Section 15.5.1. Potential impacts on buildings or structures in the project vicinity were determined based on the FTA reference guide (FTA 2006). The vibration analysis assumed that the equipment with the greatest vibration potential would have vibration sound levels similar to those of an impact hammer (also known as a hoe ram) and that blasting activities would be considered separately. Ground-borne noise-related human responses were evaluated qualitatively.

The operation-related noise assessment was performed similar to the construction-related noise approach where the two loudest pieces of equipment at the Project site were considered. Estimated noise-levels associated with potential operational equipment were based on those provided by NEET West (2015). A qualitative approach was used to analyze impacts associated with other operation or maintenance-related components (e.g., infrequent maintenance vehicle trips) of the Proposed Project. The qualitative analysis considered distances to sensitive receptors, project information and design, and duration of maintenance or other activities. Noise calculations are detailed in Appendix J, *Noise Data*.

15.5.3 Environmental Impacts

Impact NOISE-1: Exposure of Persons to or Generation of Noise Levels in Excess of Applicable Standards (Less than Significant with Mitigation)

The Proposed Project would generate noise associated with construction activities. This noise would be temporary and would cease once construction is complete. Operational noise sources would include the proposed SVC's electrical equipment, and maintenance-related vehicle traffic.

Construction

The Proposed Project's construction activities would include the use of conventional earthwork and grading equipment, as detailed in Chapter 2, *Project Description*. Additionally, in areas where bulldozers or backhoes are not able to remove the material, scraping, ripping, drilling, hammering, cutting, and/or low-energy, localized blasting may be used to break up the material. The two loudest pieces of equipment to be used during Project construction would be a rock drill and scraper. Use of this equipment would be anticipated to result in noise levels of 73.8 dBA at the nearest occupied property line and 62.2 dB at the nearest residence. This would translate to a CNEL of 60.9 dB at the nearest residence.

These anticipated noise levels are below the County's Criterion 2 threshold of 75 dB for construction-related noise, but slightly above the County's Criterion 1 threshold of 60 dB CNEL exterior noise for noise-sensitive land uses, a potentially significant impact. To reduce noise generated during construction activities, the Proposed Project would implement **Mitigation Measure NOI-1**. This mitigation measure would require the construction contractor to use temporary sound barriers between portions of construction sites and sensitive land uses, and to notify residences or noise-sensitive land uses within 500 feet of the construction site. Implementation of Mitigation Measure NOI-1 would be anticipated to reduce Project construction noise below applicable County standards.

Blasting-related noise levels would be approximately 69 dBA at the occupied property line and approximately 58 dBA at the nearest residence. This would translate to a CNEL value of 58.4 dB at the nearest residence. Since the blasting-related noise reference level is less than the loudest potential construction equipment (i.e., rock drill), noise due to blasting would be less than that generated by use of the rock drill. Blasting noise also would be reduced through implementation of Mitigation Measure NOI-1 and would be anticipated to below County thresholds.

In summary, with implementation of Mitigation Measure NOI-1, Project construction activities would not be anticipated to result in noise levels exceeding San Diego County's standards. Therefore, this impact would be less than significant with mitigation.

Mitigation Measure NOI-1: Construction-Noise Mitigation Plan

NEET West and/or its contractors shall develop and implement a construction-noise mitigation plan in close coordination with adjacent noise-sensitive land uses so that construction activities can be scheduled to minimize noise disturbance. The plan must be approved by the CPUC prior to the initiation of construction activities. The

construction-noise mitigation plan shall consider the following available controls to reduce construction-noise levels to as low as practicable.

- Equip all internal combustion-driven equipment with mufflers that are in good condition and appropriate for the equipment.

- Construct temporary sound barriers using plywood or similar material bearing the same sound attenuating effectiveness as plywood between portions of the construction sites and sensitive receptors. These temporary sound barriers, which could also consist of construction grade sound blankets/curtains, should be at least 12 feet in height. Sound barriers shall be used during activities involving use of a rock drill, scraper, and/or blasting. Alternatively, if a rock drill was not required for the project, construction equipment with a reference noise level of 89 dB or less could be used and would not require construction of temporary sound barriers.

- Residences or noise-sensitive land uses within 500 feet of the construction site should be notified in writing of construction at least seven (7) days prior to the onset of construction activities. A "construction liaison" contact person should be designated in the notifications; he/she would be responsible for responding to any local complaints about construction noise. The liaison would determine the cause of the noise complaints (e.g., starting too early, bad muffler, etc.) and institute reasonable measures to correct the problem. The phone number of the liaison should be conspicuously posted at the construction site.

Operation

Operation of the proposed SVC would include the use of electrical equipment, including but not limited to capacitors, transformers, reactors, and a heating, ventilation, and air conditioning unit (HVAC). Each of these equipment types could generate sound levels ranging from 67 to 87 dB at 1 meter from the source (NEET West 2015). The two loudest pieces of equipment would be the transformer and HVAC unit, which would each potentially result in a noise level of 87 dB at 1 meter. Operation of this equipment would result in approximate noise levels of 41.7 dB at the nearest occupied property line and 30 dB at the nearest residence. As shown in Appendix J, if the operational equipment was operated for a 24-hour period it would result in a CNEL of approximately 56.5 dB at the residence. This is less than the County's CNEL threshold of 60 dB and less than a 10 dB increase over the existing CNEL of 52.1 dB. Therefore, this operation noise would be less than significant. Project maintenance and repair-related activities would consist of infrequent vehicle trips to the site, and would not be anticipated to generate substantial noise. Therefore, this impact would be less than significant.

Impact NOISE-2: Expose Persons to Excessive Ground-borne Vibration or Ground-borne Noise Levels (Less than Significant with Mitigation)

Potential ground-borne vibration levels caused by Project construction activities are shown in Table 15-3. Both the nearest residence and occupied property boundary to the project site would not be located within the FTA human annoyance vibration threshold's distance (43 feet from the impact hammer site or 232 feet from the blast site). In addition, the Project's

ground-borne vibration levels would be below the County threshold of 0.010 inches/second root-mean-square (rms) at the occupied project boundary as shown in Table 15-3. Thus, the Project would not be anticipated to result in groundborne vibration-related impacts on human response.

Table 15-3. Construction Equipment and Vibration Distance

Equipment	PPV at 25 ft.	Distance to PPV of 0.12 in./sec.	Noise Vibration Level at 25 ft.	Distance to FTA Ground-borne Vibration-related Human Impact of 80 VdB	RMS Value of Project Activity (inches/second)
Impact hammer	0.089 in./sec.	20.5 feet	87 VdB	43 feet	0.00011
Construction Method	PPV at 25 ft.	Distance to PPV of 0.12 in./sec.	Noise Vibration Level at 50 ft.	Distance to FTA Ground-borne Vibration-related Human Impact of 80 VdB	RMS Value of Project Activity (inches/second)
Blasting	N/A	N/A	100 VdB	232 feet	0.0014

Notes: The vibration impact threshold of 80 VdB is the federal vibration annoyance threshold. The rms ground-borne vibration level corresponds to the San Diego County Criterion #5.

Source: FTA 2006; San Diego County 2009a; Appendix J.

No buildings would occur within the PPV building structural impact threshold distance from the impact hammer's activities. A similar building vibration reference level (PPV) is not readily available for blasting (FTA 2006). In general, vibration impacts on structures are not anticipated to be significant because there are no sensitive buildings (e.g., research and manufacturing facilities with special vibration constraints, buildings where people normally sleep, etc.) within immediate proximity to the Project site. Vibration impacts to the existing Suncrest Substation, however, could be possible for the Project construction activities that may occur in close proximity to the existing substation (e.g., possible blasting during installation of the riser pole and intermediate pole). It may be possible that ground-borne vibration from blasting or other activities near the existing substation could disrupt sensitive instruments or controls, or possibly damage structures.

To ensure these concerns are adequately addressed, the Proposed Project would implement **Mitigation Measure HAZ-2**, which would require preparation and implementation of a blasting plan. As described in Chapter 11, *Hazards and Hazardous Materials,* the blasting plan would include a pre-blast survey for structures within 1,000 feet from the identified blast site; advanced notification to owners of identified structures prior to commencement of blasting; and provisions to monitor and assess compliance with the air-blast, ground vibration, and peak particle velocity requirements, and ensure compliance with criteria established in Chapter 3 (Control of Adverse Effects) in the Blasting Guidance Manual of the U.S. Department of Interior Office of Surface Mining Reclamation and Enforcement. With implementation of this mitigation measure, potential vibration impacts from Project construction would be less than significant.

Ground-borne noise from at-grade or open excavation construction activities is rarely a concern because the air-borne noise from the activity would likely dominate the noise environment. While not likely, some ground-borne noise from underground Project construction activity, such as scraping, could occasionally be audible; however, this ground-borne noise would be temporary and of short duration as the construction activity moves along the project alignment. Project construction activities, including blasting activities, would not be anticipated to exceed the ground-borne noise threshold identified in the County's Criterion 5 (43 dBA).

Overall, construction and operation of the Proposed Project would not conflict with applicable standards, and would be less than significant with mitigation.

Impact NOISE-3: Cause a Substantial Temporary or Permanent Increase in Ambient Noise Levels (Less than Significant)

Construction

As described in Impact NOISE-1, Project construction activities would potentially generate noise levels at the nearest residence to the proposed SVC site of 62.2 dBA L_{eq} and 60.9 dB CNEL. This CNEL level would be less than 10 dB greater than the existing measured CNEL of 52.1 dB and would be within the conditionally acceptable range for residential land uses identified by state land use compatibility standards (see Table 15-2) and the County of San Diego General Plan. In addition, the use of diesel-powered construction equipment would be temporary and episodic, affecting only a single nearby receptor (residence) for a limited period. Construction activities would be generally conducted in compliance with the construction hour limits (7 a.m. to 7 p.m.) defined in the County's noise ordinance, although certain time-sensitive activities and/or activities which are not noise-intensive may occur outside these hours. The performance of time-sensitive activities outside of the construction hour limits would not be anticipated to result in a significant impact due to the infrequent nature of these activities and the anticipated CNEL levels associated with the two loudest pieces of construction equipment. Therefore, the temporary increases in ambient noise levels associated with the Proposed Project's construction would be less than significant.

Operation

Operational noise sources would include operation of on-site electrical equipment and periodic maintenance-related vehicle traffic. As described in Impact NOISE-1, the Proposed Project's electrical equipment operation would be anticipated to result in approximate noise levels of 41.7 dB at the nearest occupied property line and 30 dB at the nearest residence. These noise values would be less than the County's Criterion 1 and 4 thresholds. The minor, infrequent traffic associated with Proposed Project's maintenance activities would not substantially change the permanent ambient noise levels at nearby sensitive receptors. Therefore, this impact would be less than significant.

Impact NOISE-4: Potential to Expose People Residing or Working in the Project Site to Excessive Noise Levels due to Proximity to a Public Airport or Public-Use Airport or Private Airstrip (No Impact)

The Project is not located within 2 miles of any private or public airports. Therefore, it would not expose people working at the site to excessive noise levels from any airport activities. Therefore, no impact would occur.

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Chapter 16
Population and Housing

16.1 Overview

This chapter presents an overview of population and housing in and adjacent to the Proposed Project site and summarizes the overall federal, State, and local regulatory framework related to population and housing. It includes an analysis of the potential impacts of the Proposed Project on population and housing.

16.2 Regulatory Setting

16.2.1 Federal Laws, Regulations, and Policies

No federal regulations are applicable to population and housing in relation to the Proposed Project.

16.2.2 State Laws, Regulations, and Policies

No state regulations are applicable to population and housing in relation to the Proposed Project.

16.2.3 Local Laws, Regulations, and Policies

Because the California Public Utilities Commission (CPUC) is a State agency, it generally is not subject to local laws and land use and zoning regulations; however, local laws, regulations, and policies are considered here for the evaluation of potential population and housing impacts that could result from the Proposed Project to the extent that they may inform the analysis and allow for full disclosure of potentially significant impacts.

San Diego County General Plan

The Housing Element of the San Diego County General Plan provides the framework by which the County identifies long term housing needs, assesses the adequacy of existing housing, and identifies sites for future housing development in sufficient quantity and variety based on projected population growth. The General Plan accommodates 80 percent of the unincorporated County's future population in communities located within the County Water Authority boundary, where water and other public services are more readily available. The plan also establishes efficient and cost effective land use through compact development patterns that form distinct communities. The site of the Proposed Project is located outside of the County Water Authority boundary. It is also outside of the Smart Growth Opportunity Areas that the Housing Element identifies within the Alpine community – which are focused on Alpine Village, approximately 4 miles west of the Proposed Project site (San Diego County 2011a).

General Plan Housing Element goals and policies that may be applicable to the Proposed Project include:

- **Goal H-1: Housing Development and Variety.** A housing stock comprising a variety of housing and tenancy types at a range of prices, which meets the varied needs of existing and future unincorporated County residents, who represent a full spectrum of age, income, and other demographic characteristics.

- **Policy H-1.1 – Sites Inventory for Regional Housing Needs Assessment (RHNA).** Maintain an inventory of residential sites that can accommodate the RHNA.

- **Policy H-1.3 – Housing near Public Services.** Maximize housing in areas served by transportation networks, within close proximity to job centers, and where public services and infrastructure are available.

- **Policy H-1.6 – Land for All Housing Types Provided in Villages.** Provide opportunities for small-lot single-family, duplex, triplex, and other multi-family building types in Villages.

- **Policy H-1.8 – Variety of Lot Sizes in Large-Scale Residential Developments.** Promote large-scale residential development in Semi-Rural that include a range of lot sizes to improve housing choice.

Alpine Community Plan

The Alpine Community Plan is a subcomponent of the County General Plan that implements the goals and policies of the County General Plan for the Alpine area, which covers l08 square miles. Alpine is a rural community, and the intent of the Community Plan is to maintain the rural atmosphere of the planning area (County of San Diego 2011b).

Goals and policies of the Housing Element of the Alpine Community Plan that may be applicable to the Proposed Project include:

- **Goal 1** – Promote a variety of housing types in all economic ranges in existing and future development while maintaining and promoting housing stability in harmony with alpine's natural rural environment.

- **Goal 2** – Encourage community involvement in planning activities and in projects affecting housing policies and programs.

- **Goal 3** – To encourage and reinforce the goal of keeping ~~alpine~~Alpine a safe, pleasant and rural place to live, it is the goal of the ~~alpine planning group~~Alpine Planning Group to promote and encourage the safety and tranquility of private residences.

- **Policy 1** – The housing stock should be monitored at future census counts to assure that an adequate supply of affordable housing is provided to meet the community's needs for price and housing types.

16.2.4 Environmental Setting

Unincorporated San Diego County encompasses 3,570 squares miles that represent 84 percent of the total land area of San Diego County, yet its 2008 population of 491,764 persons represented only 15.6 percent of the total County population (County of San Diego 2011c). The 2010 US Census identified a population of 486,604 in unincorporated San Diego County (San Diego Association of Governments [SANDAG] 2016a).

The community of Alpine is a rural community within unincorporated San Diego County. US Census data for the Alpine Community Plan Area show a population of 16,542 persons in the year 2000, and 17,393 in 2010 (SANDAG 2016b). In 2000, there were 6,108 housing units, and 5,853 occupied housing units, in the Alpine Community Plan Area (County of San Diego 2011d). In 2010, there were 5,849 housing units, and 5,539 occupied housing units, in the Alpine Census County Division (U.S. Census 2016).

Two hotels were identified in Alpine: one in town, and one at the Viejas Casino, as well as a few bed and breakfast and other specialty lodging in Alpine and nearby Descanso. Fourteen hotels were identified in El Cajon, which is approximately 13 miles from the project site (TripAdvisor 2016).

As described in Chapter 13, *Land Use and Planning*, the site of the Proposed Project is located in an area that consists primarily of undeveloped land zoned for agricultural use, but includes some low-density residential development, and there is a proposal to rezone for low-density residential use.

16.3 Impact Analysis

16.3.1 Methodology

This impact analysis describes the impacts on population and housing associated with implementation of the Proposed Project. Impacts of the Proposed Project were evaluated qualitatively, based on the potential for the Project to affect population and housing.

16.3.2 Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines and professional expertise, it was determined that the Proposed Project would result in a significant impact on recreation if it would:

A. Induce substantial population growth in an area, either directly (for example, by proposed new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);

B. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or

C. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

16.3.3 Environmental Impacts

Impact POP-1: Inducement of Substantial Population Growth (Less than Significant)

During operations of the Project, no workers would be located at the site. Based on information presented in Chapter 2, *Project Description*, the onsite activities by workers would consist of periodic inspections. The most frequent inspections would be the inspections of SVC equipment, which would occur on a monthly basis. Other types of inspections and maintenance would occur every 6 to 8 months, annually, or once every five years, as described in Chapter 2. This work would be performed by a small crew of one to two NEET West technicians and personnel provided by the equipment vendor. The requirement for monthly and less frequent site visits by a crew of several workers is not anticipated to induce substantial population growth, and the Proposed Project would have less than significant impact on long-term population growth.

During construction, the peak employment is anticipated to be 64 workers, though on average, the workforce on site would be less (approximately 40 to 50 persons [or less] per day). The total number of unique construction workers over the entire construction period would be approximately 120.

The workers for the more common development tasks of grading and building foundations for the SVC and riser pole structure are likely to be hired from within San Diego County. Workers for installing the SVC and underground transmission line would have specialized skills and may be drawn from either San Diego County or further away. If local, workers would commute from their residences. If living too great a distance to commute, workers would likely stay in hotels or other temporary lodging. Based on nearby hotel availability and distances, nonlocal workers are likely to stay in El Cajon or San Diego. Due to the short-term duration of construction, it is unlikely that non-local workers would take up permanent residence in the local area, and any short-term growth inducement would be less than significant.

Impact POP-2: Displace Substantial Numbers of Existing Housing (No Impact)

The Proposed Project would not displace any existing housing, and would not require construction of replacement housing. There would be no impact.

Impact POP-3: Displace Substantial Numbers of People (No Impact)

The Proposed Project would not displace any people, and would not require construction of replacement housing. There would be no impact.

Chapter 17
Public Services and Utilities

17.1 Overview

This chapter describes the setting and potential impacts on public services and utilities that could occur from the Proposed Project. Impacts to public services and utilities under the California Environmental Quality Act (CEQA) are generally related to increased demand for, or use of, public services (e.g., fire protection, police protection, schools, or parks) or utilities, such as to require construction of new or expanded facilities, or being served by utilities with insufficient capacity to serve the project. The State CEQA Guidelines also have significance criteria for public services and utilities related to non-compliance with existing solid waste laws and regulations and inefficient use of energy.

Resources used to prepare this section include the County of San Diego General Plan, information from the applicable service providers in the Project area, and the proponent's environmental assessment (PEA) submitted to the California Public Utilities Commission (CPUC) by NextEra Energy Transmission West, LLC (NEET West).

17.2 Regulatory Setting

17.2.1 Federal Laws, Regulations and Policies

Cleveland National Forest Land Management Plan

The U.S. Forest Service (USFS) Cleveland National Forest (CNF) Land Management Plan guides the management of the CNF and identifies strategies for addressing forest issues, such as fire. Goals and policies in the CNF Land Management Plan related to public services and utilities and the Proposed Project include reducing the number of high and moderate fire risk areas by using mechanical treatments and prescribed fire; improving wildland fire suppression capability when in proximity to communities or improvements; focusing on communities within the national forest direct protection area during periods of limited firefighter availability; conducting inspections to ensure that defensible space requirements are met around structures within delegated USFS jurisdiction; and maintaining the existing system of fuel breaks to minimize fire size and the number of communities threatened by fire (USFS 2005).

17.2.2 State Laws, Regulations and Policies

California Fire Code

The California Fire Code (Title 24 California Code of Regulations [CCR] Part 9) establishes minimum requirements to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings. Chapter 33

of the Code contains requirements for fire safety during construction and demolition activities, such as development of a prefire plan in coordination with the fire chief; maintaining vehicle access for firefighting at construction sites, and requirements related to safe operation of internal combustion engine construction equipment.

California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act (CIWMA) of 1989 (Pub. Res. Code Division 30), enacted through Assembly Bill (AB) 939 and modified by subsequent legislation, required all California cities and counties to implement programs to reduce, recycle, and compost at least 50 percent of wastes by 2000 (Public Resources Code Section 41780). A jurisdiction's diversion rate is the percentage of its total waste that a jurisdiction diverts from disposal through reduction, reuse, and recycling programs. The state, acting through the California Integrated Waste Management Board (CIWMB), determines compliance with this mandate. Per capita disposal rates are used to determine if a jurisdiction's efforts are meeting the intent of the act. In recent years, unincorporated San Diego County has not been meeting its target disposal rates under the CIWMA. In 2014, the latest year of record, San Diego County's annual per capita disposal rate per resident was 5.2, compared to its target of 6.8 (California Department of Resources Recovery and Recycling [CalRecycle] 2016a). Its annual per capita disposal rate per employee was 26.1 in 2014, compared to its target rate of 32.4 (CalRecycle 2016a).

California Integrated Energy Policy

Senate Bill 1389, passed in 2002, requires the California Energy Commission (CEC) to prepare an Integrated Energy Policy Report every two years and transmit it to the Governor and State Legislature (CEC 2016). The report analyzes data and provides policy recommendations on trends and issues concerning electricity and natural gas, transportation, energy efficiency, renewable energy, and public interest energy research (CEC 2016). The 2014 Final Integrated Energy Policy Report Update was released in November 2015 (CEC 2015). The report includes several policy recommendations, including increasing investments in electric vehicle charging infrastructure at workplaces, multi-unit dwellings, and public sites (CEC 2015).

California Public Resources Code, Division 4, Part 2: Protection of Forest, Range and Forage Lands

Division 4, Part 2 of the California Public Resources Code (PRC) contains requirements for structures and land uses with respect to prevention and control of forest fires. Section 4291 of the Code requires any person who owns or operates a structure in a mountainous area or brush-covered lands shall at all times maintain defensible space[1] of 100 feet from each side and from the front and rear of the structure. This section also requires persons owning or operating an electrical transmission or distribution line in mountainous or forest- or brush-covered land to maintain around and adjacent to any pole or tower that supports a switch, fuse, transformer, lightning arrester, line junction, or dead end or corner pole, a firebreak

[1] Defensible space is generally defined as the natural and landscaped area around a structure that has been maintained and designed to reduce fire danger, such as through fire-resistive plant selection and pruning.

which consists of a clearing of not less than 10 feet in each direction from the outer circumference of the pole or tower.

California Public Utilities Commission General Order 95

CPUC's General Order (G.O.) 95 sets requirements for overhead transmission line design, construction, and maintenance to ensure adequate service and secure safety for construction and maintenance workers and the public. G.O. 95 specifies clearance and vegetation management requirements for overhead lines, as well as strength requirements for conductors, towers, and cables and other factors. G.O. 95 specifies that the radial clearance of bare line conductors from vegetation in Extreme and Very High Fire Threat Zones in Southern California shall be 120 inches for supply conductors and supply cables from 300 to 550 kilovolt (kV).

California Code of Regulations, Title 8, Section 1541: Excavations

Section 1541 of the California Code of Regulations (CCR) requires excavators to determine the approximate locations of subsurface installations, such as sewer, telephone, fuel, electric, and water lines, before opening an excavation.

17.2.3 Local Laws, Regulations, and Policies

The CPUC has exclusive jurisdiction over the siting and design of electric transmission facilities. Therefore, it is exempt from local land use and zoning regulations. However, CPUC G.O. 131-D states that in locating electric transmission facilities, the public utilities shall consult with the local agencies regarding land use matters. CPUC and NEET West have been in contact with applicable local agencies for the Proposed Project, and local laws and regulations are presented here for consideration of potential impacts related to public services and utilities.

County of San Diego General Plan

The County of San Diego General Plan (County of San Diego 2011) guides land use and development in the unincorporated areas of the County of San Diego. Goals and policies contained in the General Plan related to public services and utilities and the Proposed Project include the following:

> **Policy LU-4.6 – Planning for Adequate Energy Facilities.** Participate in the planning of regional energy infrastructure with applicable utility providers to ensure plans are consistent with the County's General Plan and Community Plans and minimize adverse impacts to the unincorporated County.

> **Policy LU-6.11 – Protection from Wildfires and Unmitigable Hazards.** Assign land uses and densities in a manner that minimizes development in extreme, very high and high fire threat areas or other unmitigable hazardous areas.

> **Policy S-6.3 – Funding Fire Protection Services.** Require development to contribute its fair share towards funding the provision of appropriate fire and emergency medical services as determined necessary to adequately serve the project.

Policy S-6.4 – Fire Protection Services for Development. Require that new development demonstrate that fire services can be provided that meets the minimum travel times identified in Table S-1 (Travel Time Standards from Closest Fire Station).

County of San Diego General Plan Table S-1: Travel Time Standards from the Closest Fire Station

Travel Time	Regional Category (and/or Land Use Designation)	Rationale for Travel Time Standards
5 min	▪ Village (VR-2 to VR-30) and limited Semi-Rural Residential Areas (SR-0.5 and SR-1) ▪ Commercial and Industrial Designations in the Village Regional Category ▪ Development located within a Village Boundary	In general, this travel time standard applies to the County's more intensely developed area, where resident and business expectations for service are the highest.
10 min	▪ Semi-Rural Residential Area (>SR-1 and SR-2 and SR-4) ▪ Commercial and Industrial Designations in the Semi-Rural Regional Category ▪ Development located within a Rural Village Boundary	In general, this travel time provides a moderate level of service in areas where lower-density development, longer access routes and longer distances make it difficult to achieve shorter travel times.
20 min	▪ Limited Semi-Rural Residential areas (>SR-4, SR-10) and Rural Lands (RL-20) ▪ *All* Commercial and Industrial Designations in the Rural Lands Regional Category	In general, this travel time is appropriate for very low-density residential areas, where full-time fire service is limited and where long access routes make it impossible to achieve shorter travel times.

Goal COS-21: Park and Recreational Facilities. Park and recreation facilities that enhance the quality of life and meet the diverse active and passive recreational needs of County residents and visitors, protect natural resources, and foster and awareness of local history, with approximately ten acres of local parks and 15 acres of regional parks provided for every 1,000 persons in the unincorporated County.

Alpine Community Plan

The Alpine Community Plan is a sub-component of the County of San Diego General Plan, and policies in the Alpine Community Plan are consistent with those in the General Plan. Policies and recommendations in the Alpine Community Plan related to public services and utilities and the Proposed Project include the following:

- Any extensions of facilities and services to new developments should be borne by new developments so as to not affect the cost or quality of services to the community.
- Public agencies shall consider the cumulative impacts of land use decisions on facilities and services on an on-going basis.
- Land use decisions shall be considered on the basis of their impacts on the quality and availability of services to the Alpine Area and the entire County.

- Direct the appropriate County agency to require an acceptable level of fire protection for all approved development through appropriate discretionary permit processes.
- Promote expansion of fire, police, and emergency health or other services, as needed.

County of San Diego Construction and Demolition Debris Recycling Ordinance

The County of San Diego's Construction Demolition Debris Recycling Ordinance requires that applicable construction projects recycle 90 percent of inerts and 70 percent of all other construction demolition debris materials (County of San Diego 2016). To comply with the ordinance, applicants must submit a Construction and Demolition Debris Management Plan and a refundable Performance Guarantee prior to building permit issuance. The Ordinance applies to construction, demolition, or renovation projects of 40,000 square feet or greater located in unincorporated San Diego County (County of San Diego 2016).

County of San Diego Consolidated Fire Code

The County of San Diego's Consolidated Fire Code contains amendments to the California Fire Code, and includes the ordinances of the 16 local fire protection districts in San Diego County, including the Alpine Fire Protection District. In accordance with the California Health and Safety Code, Section 13869.7(a), these amendments and the standards in the Consolidated Fire Code are more stringent than the State Fire Code. Requirements in the Consolidated Fire Code include those related to fire apparatus access roadways, fire hydrant spacing, automatic fire extinguishing systems in new buildings and structures, and landscaping requirements.

17.3 Environmental Setting

17.3.1 Public Services

Fire Protection and Emergency Services

The primary agency providing fire protection services to the Project area is the California Department of Forestry and Fire Protection (CAL FIRE). In cooperation with the San Diego County Fire Authority (County Fire Authority) and other fire protection districts, CAL FIRE provides fire protection and emergency response services to rural portions of unincorporated San Diego County. Recently, the County Fire Authority assumed primary oversight and coordination responsibilities for rural areas of the unincorporated County. The U.S. Forest Service also provides wildland fire suppression services to the Project area. The Proposed Project would be within the service area of CAL FIRE's Descanso Station 45 (Rainey pers. comm. 2016), which is located approximately 4.5 miles northeast of the Project site, as shown on Figure 17-1.

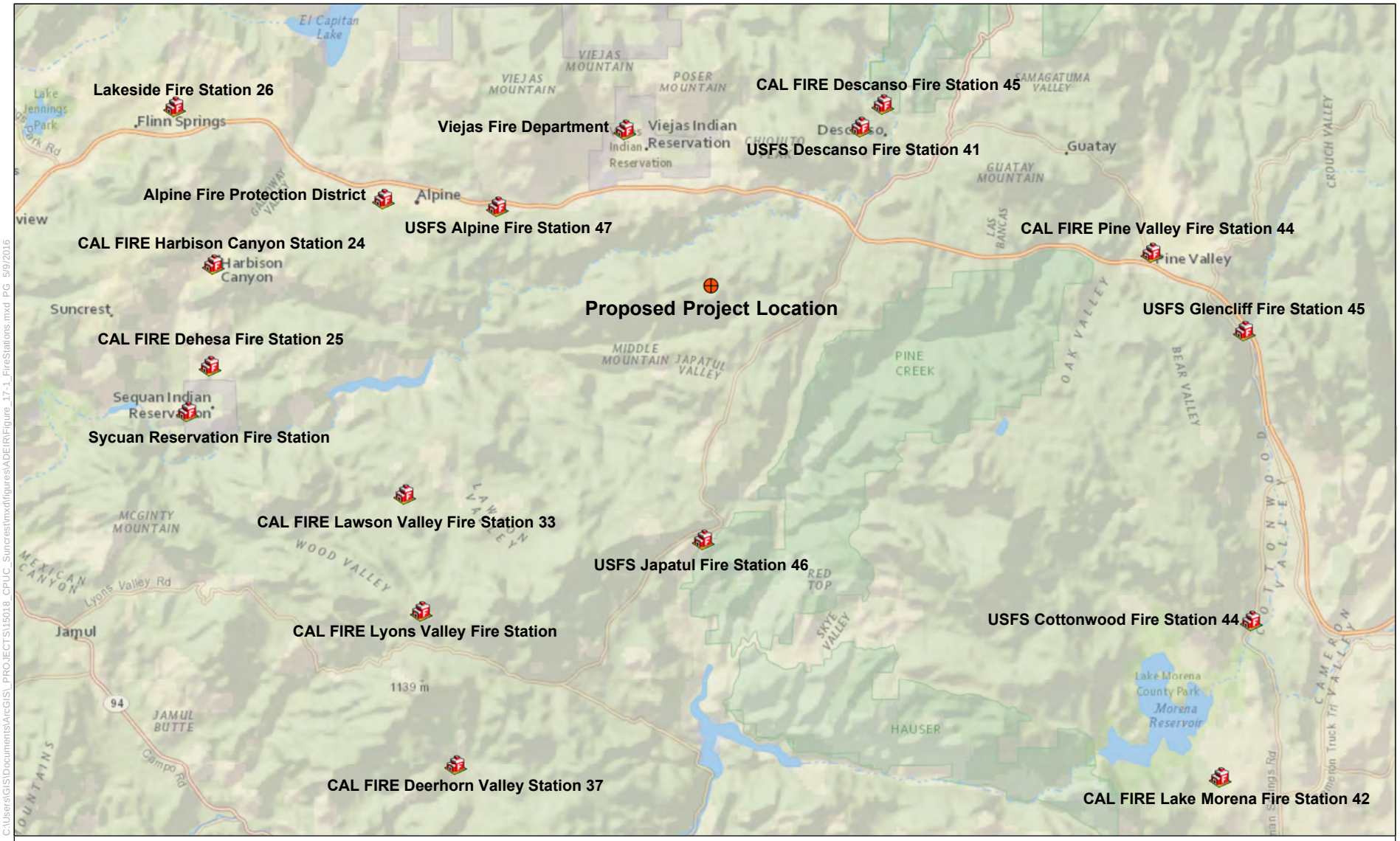

Figure 17-1
Fire Stations in the Project Vicinity

Prepared by:
Horizon WATER and ENVIRONMENT

Sources: Content may not reflect National Geographic's current map policy.
Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
Fire stations: San Diego County Fire Authority

Suncrest Dynamic Reactive Power Support Project

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The Descanso Station 45 is equipped with one two-person type 1 engine capable of carrying 500 gallons of water (Rainey pers. comm. 2016). The captain at the Descanso Station 45 indicated that they also have a foam trailer specifically for a potential fire at San Diego Gas & Electric's (SDG&E's) existing Suncrest Station, which was supplied by SDG&E. This equipment may or may not be available for an incident not located at the SDG&E substation. The captain indicated their engine is also capable of carrying 30 gallons of foam. The foam is needed for the mineral oil in transformers (Rainey pers. comm. 2016). The captain estimated a travel time of five~~5~~ to six minutes from the Descanso Station 45 to the Bell Bluff Truck Trail area; however, NEET West's Fire Protection Plan (FPP) prepared in coordination with the County calculated a travel time of approximately 11.7 minutes (Dudek 2016). The captain at the Descanso station also indicated that for a large fire, they could request assistance from the Viejas Reservation Fire Protection District or the Alpine Protection District (see station locations in Figure 17-1). Additionally, if needed, they could request additional apparatus from other CAL FIRE stations in Pine Valley or Moreno (Rainey pers. comm. 2016).

Additionally, USFS would respond to any vegetation fire located within the Proposed Project area. The nearest USFS fire stations to the Proposed Project are the Japatul Station 46 and the Descanso Station 41, shown in Figure 17-1. USFS indicated that the engines from these two stations would be the first to respond to any fire in the Project area, but, during the summertime, five engines in total plus aircraft (including a large Sikorsky helicopter) would be available to respond (Anderson pers. comm. 2016). USFS estimated a response time of 10-15 minutes for the Japatul and Descanso engines (Anderson pers. comm. 2016).

The captain at the CAL FIRE Descanso 45 station indicated that Mercy Ambulance is the contracted emergency medical transport service provided for the area. The nearest hospital to the Proposed Project is the Sharp Grossmont Hospital, which is located approximately 20 miles to the west in the City of El Cajon.

Police Protection

The San Diego County Sheriff's Department is the chief law enforcement agency in San Diego County (San Diego County Sheriff's Department 2015). The Department consists of approximately 4,000 employees, including both sworn officers and professional support staff, which provides law enforcement services to an area of approximately 4,200 square miles. State highways in the Project vicinity are policed by the California Highway Patrol (CHP).

Schools

The San Diego County Office of Education (SDCOE) provides administration and oversight for school districts in San Diego County. The Project area would be most directly served by Alpine Union School District (AUSD), which is a Kindergarden through 8th grade district serving the Alpine area. AUSD schools include Alpine Elementary School, Boulder Oaks Elementary School, Creekside Early Learning Center, iDream Academy, Joan MacQueen Middle School, Mountain View Learning Academy, and Shadow Hills Elementary. Other schools serving the Project vicinity include Julian Charter School and Pine Valley Academy. School-aged children residing in the Project vicinity also may attend schools in the Mountain Empire Unified School District. The nearest high schools to the Proposed Project are Mountain Empire High School, approximately 11 miles southeast of the Project site, or one of a number of schools in the greater El Cajon area (Valhalla High School, El Capitan High School, Steele Canyon High

School, Granite Hills High School, El Cajon Valley High School), all of which are approximately 11-15 miles west of the Project site.

Parks

No existing parks are located in the immediate vicinity of the Proposed Project. The nearest parks are located in the community of Alpine, approximately 6 miles northwest of the Project site. In general, parks and recreational facilities are provided to unincorporated San Diego County by the San Diego County Department of Parks and Recreation. The County maintains several parks in the Alpine area as well as one in Pine Valley. Although no recreational facilities are located in the immediate Project vicinity, the Proposed Project would be located nearby to lands of the CNF. The CNF is generally maintained as open space to provide for a variety of uses, including recreation (e.g., hiking and hunting).

17.3.2 Utilities

Water Supply

Nearby water purveyors include the Padre Dam Municipal Water District (PDMWD), Descanso Community Water District, San Diego County Water Authority (SDCWA), and Sweetwater Authority. At this time, NEET West anticipates obtaining water from either PDMWD or from the current proposed Static VAR compensator (SVC) property owner's storage ponds, which are supplied by local runoff and water from the Sweetwater Authority (NEET West 2015)

PDMWD provides water, wastewater, and recycled water services to 100,000 residents in the cities/communities of Santee, El Cajon, Lakeside, Flinn Springs, Harbison Canyon, Blossom Valley, Alpine, Dehesa, and Crest (PDMWD 2016a). PDMWD imports 100 percent of its potable water supply from SDCWA, who in turn receives the majority of its supply from the Metropolitan Water District of Southern California (MWD) (PDMWD 2016b). The water PDMWD imports comes from the State Water Project (i.e., Northern California) and the Colorado River Aqueduct. In addition to imported potable supplies, PDMWD produces two million gallons of recycled water per day at its Water Recycling Facility. This recycled water currently provides irrigation water throughout Santee and provides the water that fills Santee Lakes (PDMWD 2016b). According to its 2010 Urban Water Management Plan (UWMP), PDMWD delivered a total of 1,874 acre-feet (AF) of recycled water to customers in 2010 (PDMWD 2010: page 46). It projected its production and delivery of recycled water would increase to 4,817 AF per year by 2015, based on planned expansion of the Water Reclamation Facility (WRF) (PDMWD 2010). PDMWD published an Initial Study/Mitigated Negative Declaration in July 2015 for proposed expansion of its WRF from 2 million gallons per day (MGD) to 6 MGD (PDMWD 2015).

Sweetwater Authority provides water to approximately 191,500 people in a 32-square-mile service area, including National City, Bonita, and parts of Chula Vista (Sweetwater Authority 2016a). Sweetwater Authority delivers water to customers procured from four sources: (1) deep freshwater wells located in National City; (2) capture of local runoff in the Sweetwater River with subsequent storage at Loveland Reservoir in Alpine, and Sweetwater Reservoir in Spring Valley; (3) San Diego Formation wells in the lower Sweetwater River Basin; and (4) purchase of imported water delivered by the SDCWA and MWD (Sweetwater Authority 2016a). Sweetwater Authority owns and operates both the Sweetwater Reservoir, which has

an approximate capacity of 28,079 AF, and the Loveland Reservoir, which has an approximate capacity of 25,387 AF (Sweetwater Authority 2016b). The Sweetwater Authority operates the Perdue Water Treatment Plant located adjacent to the Sweetwater Reservoir, which has a treatment capacity of 30 MGD. According to its Public Draft 2015 UWMP, the Sweetwater Authority delivered a total of 19,232 AF of potable and raw water to customers in 2015 (Sweetwater Authority 2016b).

The storage ponds owned by the current owner of the SVC property have an annual availability of 40 AF per year (AFY) (NEET West 2015). These ponds were successfully used as the primary water source during construction of the existing SDG&E Suncrest Substation, supplying approximately 32 AFY to support the substation construction (NEET West 2015).

At the Project site, currently, there is a 4-inch-diameter water line that lies beneath a portion of ~~runs underneath~~ Bell Bluff Truck Trail. Additionally, SDG&E maintains a small water storage tank just north of Bell Bluff Truck Trail near the northeast corner of the existing substation. This water tank provides emergency fire water supply for the substation. The storage ponds near the SVC site are connected via polyvinyl chloride (PVC) piping to an existing small temporary water tank on the western portion of the former Wilson Construction Yard and proposed SVC site. As noted above, this water tank and the property owner's storage ponds were used during construction of the SDG&E Suncrest Substation.

Wastewater and Stormwater

Centralized wastewater collection and treatment service is not provided to the Project area. No sanitary sewer lines extend to the area of the Proposed Project. Residences and farms in the Project vicinity use septic tanks for treatment of wastewater.

As described in Chapter 12, *Hydrology and Water Quality,* the only stormwater infrastructure in the Project area is along Bell Bluff Truck Trail. The existing stormwater conveyance features along Bell Bluff Truck Trail consist of concrete "v-ditches" on either side of the road, as well as culverts underneath the roadway in several locations. The v-ditches channel stormwater flows from the road surface and adjacent land downgradient for discharge at culvert locations.

Solid Waste

Three large solid waste landfills exist in San Diego County, including Otay Landfill, West Miramar Sanitary Landfill, and Sycamore Landfill. Non-recyclable solid waste from the Proposed Project would be transported to one of these large landfills, either directly or via other transfer and/or processing facilities in the County. Table 17-1 presents information on existing landfills in San Diego County.

Table 17-1. Landfills in San Diego County

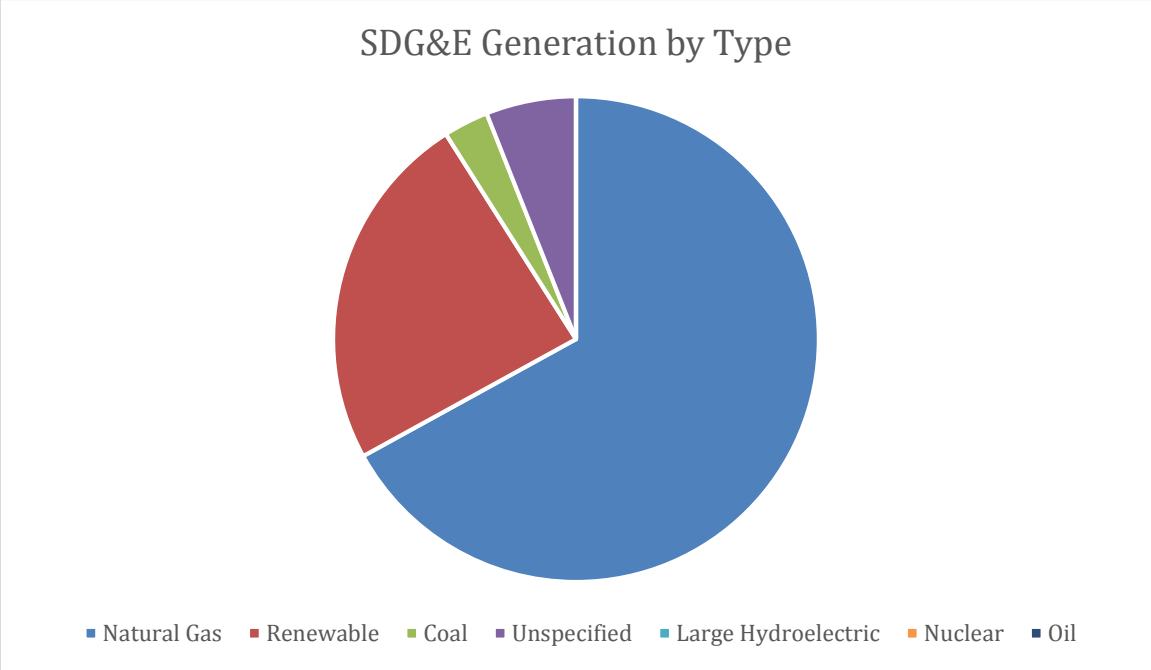
Landfill	Operator	Location	Distance from Project Site (miles, by road)	Max Permitted Capacity (cy)	Remaining Capacity (cy) (percent [%] of total)	Remaining Capacity Date	Estimated Closure Date
Otay	Otay Landfill Inc.	Chula Vista, CA	32	61,154,000	25,514,904 (42%)	2012	2028
West Miramar	City of San Diego	San Diego, CA	41	87,760,000	15,527,878 (18%)	2014	2025
Sycamore	Sycamore Landfill, Inc.	San Diego, CA	36	71,233,171	39,608,998 (56%)	2014	2042

Source: CalRecycle 2016b

Electricity and Natural Gas

The primary electric service provider in the Project vicinity and in San Diego County is SDG&E. SDG&E provides energy service to 3.5 million people through 1.4 million electric meters and 870,000 natural gas meters in San Diego and southern Orange counties (SDG&E 2016). SDG&E owns and contracts with generation facilities both within and outside its service territory, and power is also produced in local facilities that are non-utility-owned (SDG&E 2014). SDG&E's local generation resources are currently capable of producing approximately 3,100 megawatts (MW) of power. Figure 17-2 shows SDG&E's power mix by generation type.

Figure 17-2. San Diego Gas & Electric's 2013 Power Mix by Generation Type



Source: SDG&E 2014

In the immediate Project vicinity, SDG&E has a 12-kV electric distribution line that runs underneath Bell Bluff Truck Trail. SDG&E also owns and operates the existing Suncrest Substation at the Project's western terminus. As described in Chapter 2, *Project Description,* the Suncrest Substation was built as part of SDG&E's Sunrise Powerlink project. The Sunrise Powerlink is a high-voltage (i.e., 500/230-kV) electric transmission system that transmits energy from production areas in the Imperial Valley eastward to demand centers in the San Diego metropolitan area. Figure 2-1 shows the existing transmission system in the Project vicinity, including the Sunrise Powerlink.

Communications

AT&T maintains fiber optic telecommunications lines underneath Bell Bluff Truck Trail.

17.4 Impact Analysis

17.4.1 Methodology

Potential impacts on public services and utilities were evaluated qualitatively by considering aspects of the Proposed Project in light of the State CEQA Guidelines Appendix G significance criteria (see below) and the existing regulatory and environmental setting. Identified potential impacts are not necessarily considered significant unless they result in changes to the physical environment, such as to trigger one of the State CEQA Guidelines significance criteria listed below. In the evaluation of potential impacts, it was assumed that NEET West would follow all existing laws and regulations when constructing and operating the Proposed Project. Where applicable, feasible mitigation measures are prescribed to mitigate potential impacts that could occur in spite of existing laws and regulations.

17.4.2 Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines, the Proposed Project would result in a significant impact on public services and utilities if it would:

A. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

    a. Fire protection

    b. Police protection

    c. Schools

    d. Parks

    e. Other

B. Exceed waste water treatment requirements of the applicable Regional Water Quality Control Board;

C. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

D. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

E. Have insufficient water supplies available to serve the project from existing entitlements and resources;

F. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;

G. Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or

H. Fail to comply with federal, state, and local statutes and regulations related to solid waste.

Criteria Dismissed from Further Consideration

Because the Proposed Project would generate only minimal amounts of wastewater during construction, and no wastewater during operation, significance criteria B and F above are considered inapplicable and are not evaluated further. The Proposed Project would use portable sanitary restrooms during construction, which would be serviced on a regular basis by a license service provider. It is anticipated that wastewater from the portable restrooms would be taken to a nearby wastewater treatment plant, but the relatively small anticipated volumes of wastewater (resulting from approximately 40-50 workers or less (on average) per day over the approximately 11-month construction period [peak employment periods estimated to be approximately 64 workers per day]) would not be anticipated to significantly affect wastewater treatment provider's capacity or treatment capability. During operation, no employees would be located on-site and the facility would not be connected to the municipal sewer system. Therefore, the Proposed Project would have no potential to affect wastewater treatment.

17.4.3 Environmental Impacts

Impact PUB/UTL-1: Effects on Fire Protection Service (Less than Significant with Mitigation)

The Proposed Project would involve use of internal-combustion construction equipment during construction, which could potentially generate a spark or provide an ignition source. Additionally, the Project may involve blasting during Project construction and potentially may require storage of explosives on-site, which could create fire hazard risk. The Project area also is located in a Very High Fire Hazard Area, as designated by CAL FIRE, indicating that the physical conditions in the area are susceptible to fire, and potentially that a fire started in the area could be difficult to control and destructive. During Project operation, the

energized SVC facility and transmission line could potentially provide an ignition source; for example, if vegetation were to come in close contact with the energized lines.

If the Proposed Project were to start a fire during construction or operation, it could place a strain on fire protection resources in the area and endanger the residential homes to the east of the Project area and nearby communities of Alpine, Viejas, and Descanso. The Project is located in a relatively undeveloped, rural area, with substantial potential fuels for forest fires in the form of chaparral scrub and oak woodland landscapes. While there are a number of fire stations in the area (see Figure 17-1), and substantial fire-fighting resources available to assist in the event of a large fire, the San Diego County area is extremely fire prone, and there could be other on-going incidents, especially during the peak fire season of summer and fall. In this respect, any additional strain placed on fire protection services caused by the Proposed Project could potentially be significant in light of other possible demands on these services. Because the Project area is rural and undeveloped, any large incident could potentially increase response times substantially for other persons requiring fire protection service.

In accordance with existing State and local laws, the Proposed Project would implement a number of measures to mitigate potential fire risk. These include establishing defensible space surrounding the proposed SVC facility and riser pole, implementing minimum clearance requirements for overhead transmission lines, and ensuring access roadways are suitable for fire apparatus. NEET West, in coordination with the County, has developed a Project-specific FPP (Appendix K, *Fire Protection Plan;* see Volume 2) compliant with the County's standards, CPUC G.O. 95, and other applicable regulations. Adherence to the Project FPP (as required by **Mitigation Measure HAZ-5**), as well as implementation of **Mitigation Measure HAZ-3** to prepare and implement a construction FPP) and **HAZ-4** to implement fire-safe working conditions and best management practices will reduce the potential fire risk from the Proposed Project and the potential impact on fire services.

To ensure the Proposed Project does not have adverse effects on fire protection services, in accordance with the County of San Diego General Plan Policy S-6.3, **Mitigation Measure PUB/UTL-1** will require that the Project sponsor (NEET West) fund its fair share toward any necessary fire protection service improvements. With implementation of this mitigation measure, the Proposed Project would not be anticipated to adversely affect fire protection service, response times, or require or result in the construction of expanded facilities. This impact would be less than significant with mitigation.

Mitigation Measure PUB/UTL-1: Fund Fair Share toward Any Necessary Fire Protection Service Improvements.

NEET West shall coordinate with the County of San Diego, CAL FIRE, and USFS to determine if any additional apparatus, equipment, personnel, or facilities are necessary to provide adequate fire service to the Proposed Project. If recommended improvements or upgrades to facilities, and/or additional apparatus, equipment, or personnel are identified, NEET West shall contribute its fair share toward the attributed costs. The Proposed Project's, or NEET West's, fair share will be proportionate to its contribution to the need for improvements.

Impact PUB/UTL-2: Possible Effects on Police Protection, School, and Parks Service (Less than Significant)

The Proposed Project would not include any residential housing and would not be anticipated to directly increase population. During construction, it is anticipated that construction workers would commute from the Chula Vista and San Diego areas. During Project operation, the Proposed Project would be operated remotely and no employees would be stationed on-site. Only periodic testing and maintenance of the SVC and transmission line equipment would be anticipated, and would be conducted by a small crew of one to two NEET West technicians.

The Project may result in increased availability of renewable energy from the Imperial Valley to San Diego, which may have the potential to indirectly result in growth, but any such growth would not be anticipated to occur within the Project area. Any growth indirectly caused by the Proposed Project also would be anticipated to occur consistent with the applicable jurisdiction's General Plan, which includes planning for adequate public services. It would be speculative to say what specific impacts on public services may occur from indirect growth caused by the Project because it is unknown where such growth may occur and at what magnitude. For these reasons, the Proposed Project is not anticipated to substantially increase demand for police protection, school, or parks service. This impact would be less than significant.

Impact PUB/UTL-3: Potential to Require or Result in the Construction of New or Expanded Water Facilities (Less than Significant)

It is anticipated that the Project would require approximately 2,600,000 gallons (approximately 8 AF) of water during the 11-month construction period. The amount of water needed on a daily basis will vary by construction phase and activity, but it is estimated that the Project will require approximately 13,160 gallons per day on average. Following Project construction, it is estimated that approximately 9,200 gallons of water per year will be required for equipment washing, maintenance activities, and for restoration of temporary impact areas.

NEET West is currently considering two primary possible sources of water for the Proposed Project: the current SVC property owner's storage ponds (supplied by local runoff and water from the Sweetwater Authority) and/or recycled water trucked in from PDMWD's WRF. Analysis of both of these sources indicates that water is likely available to supply the Proposed Project without construction or expansion of new or existing facilities. PDMWD's WRF is currently capable of producing approximately 2 MGD, and planning is underway to expand its capacity to 6 MGD. These upgrades to the WRF would occur regardless of the Proposed Project. The Project's construction water demand of approximately 8 AF would be a relatively small fraction of PDMWD's annual recycled water deliveries (PDMWD delivered 1,874 AF of recycled water to customers in 2010). Likewise, the Project's construction water demand would be within the SVC property owner's storage ponds' capacity (40 AF) (NEET West 2015) and would be a relatively small fraction of Sweetwater Authority's total supplies (it delivered 19,232 AF in 2015). The SVC property also has demonstrated the capability of supplying the much larger SDG&E Suncrest Substation construction in the recent past, and existing infrastructure is in place for delivery of water from the ponds to the SVC site (i.e., PVC piping and a temporary storage tank adjacent to the SVC site).

For these reasons, it is anticipated that the Proposed Project's construction water demands could be met with existing facilities. The amount of water required for the Project following construction (9,200 gallons per year) would be less than the typical consumption of an American family of four, which uses 400 gallons per day or 146,000 gallons per year (USEPA 2016). As such, it would not be anticipated to substantially affect any existing water supplier's capacity or require construction or expansion of facilities. Overall, this impact would be less than significant.

Impact PUB/UTL-4: Potential to Require or Result in the Construction or Expansion of Stormwater Facilities (Less than Significant)

As described in Chapter 12, *Hydrology and Water Quality,* the Proposed Project may result in increased stormwater generation from addition of impervious surface area; however, the Project area is in a rural and undeveloped portion of San Diego County, and is not connected to any municipal stormwater system. The only existing stormwater infrastructure in the area are the "v-ditches" and culverts along and underneath Bell Bluff Truck Trail. Stormwater generated and discharged by the SVC facility would be anticipated to flow via natural drainages to Taylor Creek and/or Sweetwater River. The Proposed Project would include construction of a stormwater detention basin on the SVC site, as well as a stormwater drainage system to manage stormwater that may flow onto or off of the Project site. These features are included as part of the Project and are evaluated throughout this Draft EIR. Installation of the transmission line underneath Bell Bluff Truck Trail would not be anticipated to alter the existing stormwater drainage system, and the road surface would be restored following trenching. The proposed riser pole and intermediate pole would add a small area of impervious surface, but stormwater generated by this feature would not be anticipated to require or result in the construction or expansion of stormwater facilities. Stormwater from the riser pole and intermediate pole would flow overland to the adjacent land surface. Overall, this impact would be less than significant.

Impact PUB/UTL-5: Potential to Have Insufficient Water Supplies to Supply the Project from Existing Entitlements and Resources (Less than Significant)

As described in Impact PUB/UTL-3 above, the Proposed Project's water demands would not be anticipated to exceed the capacities of existing water suppliers such as to require the construction or expansion of any new facilities. The Project would require approximately 8 AF over the 11-month construction period, but this would be a one-time demand and would seem to be within either the PDMWD's or the SVC property owner's storage ponds' existing capacities and/or entitlements. The Project's water demand following construction would be negligible (i.e., less than the average annual demand of a family of four). Therefore, this impact would be less than significant.

Impact PUB/UTL-6: Effects on Existing Landfill Capacity (Less than Significant ~~with Mitigation~~)

As described in Chapter 2, *Project Description,* it is anticipated that excavation for construction of the proposed SVC would result in up to 4,030 cubic yards (cy) of excess material that would need to be removed from the site. Additionally, trenching for installation of the transmission line is anticipated to result in a total of 3,000 cy being generated and

hauled off-site, for a total of 7,030 cy of material that may require disposal due to the Proposed Project. On a daily basis, it is anticipated that construction activities are expected to produce 30 cy of solid waste per week on average, and a peak of 60 cy per week. During operation, the Project would not be anticipated to generate substantial amounts of solid waste. The likely types of solid waste are packaging for replacement parts, used cleaning materials, and used parts. It is estimated that roughly 5 cy of solid waste will be generated annually during Project operation.

As shown in Table 17-1, the large landfills in San Diego County all have substantial remaining capacity and would be anticipated to accommodate the Proposed Project's solid waste disposal needs. Even if all the solid waste generated was disposed of at a single landfill, it would not be anticipated to have an appreciable effect on capacity, and would not require construction or expansion of any existing facilities. As described in Mitigation Measure PUB/UTL-2 (see Impact PUB/UTL-7 below), the Project would recycle at least 90 percent of inerts and at least 70 percent of other materials, in accordance with the County's Construction and Demolition Debris Recycling Ordinance. With implementation of this mitigation measure, depending on the type and composition of solid waste generated by the Proposed Project, much less than 7,030 cy of material would be disposed of at a landfill. Even without mitigation, this impact would be less than significant.

Impact PUB/UTL-7: Potential Failure to Comply with Existing Statutes and Regulations Related to Solid Waste (Less than Significant with Mitigation)

Existing State and local laws related to solid waste include the CIWMA and San Diego County's Construction and Demolition Debris Recycling Ordinance. Under CIWMA, unincorporated San Diego County is currently not meeting its per capita disposal rate targets, as described under Section 17.2, "Regulatory Setting." Therefore, failure to recycle, or otherwise divert from the landfill, waste generated by the Proposed Project could exacerbate the County's existing state of non-compliance with the targets set under CIWMA.

Although CPUC is exempt from local laws and regulations as a State agency, the Proposed Project would implement **Mitigation Measure PUB/UTL-2** to require diversion of solid waste at the same levels as is required in the County's Construction and Demolition Debris Recycling Ordinance. Implementation of this mitigation measure would ensure that the Proposed Project does not have significant adverse effects on the County's ability to meet its jurisdiction disposal rate targets under CIWMA. No other existing laws or regulations related to solid waste are considered applicable to the Proposed Project. This impact would be less than significant with mitigation.

Mitigation Measure PUB/UTL-2: Diversion of Solid Waste in Accordance with San Diego County's Construction and Demolition Debris Recycling Ordinance.

NEET West and/or its contractors shall follow the requirements specified in the County of San Diego's Construction and Demolition Debris Recycling Ordinance. This will include recycling of 90 percent of inerts and 70 percent of all other construction demolition debris materials, and preparation of a Construction and Demolition Debris Management Plan (DMP). In accordance with Section 68.511 of the San Diego County Code, the DMP shall provide the following information:

1. The type of project;

2. The total square footage of the project;

3. The estimated volume or weight of project construction and demolition debris, by material type that the project will generate;

4. The maximum volume or weight of construction and demolition debris that can feasibly be diverted via reuse or recycling;

5. The estimated volume or weight of construction demolition debris that will be disposed of in a landfill; and

6. The name and address of any person and/or recycling facility the applicant proposes to use to collect, process or receive construction and/or demolition debris the project will generate.

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Chapter 18
Recreation

18.1 Overview

This chapter presents an overview of recreational activities in the vicinity of the Proposed Project site and summarizes the overall federal, State, and local regulatory framework related to recreation. It includes an analysis of the potential impacts of the Proposed Project on recreational resources.

18.2 Regulatory Setting

18.2.1 Federal Laws, Regulations, and Policies

Cleveland National Forest Land Management Plan

The Proposed Project would be located on private property within the administrative boundary of the Cleveland National Forest (CNF) (refer to Chapter 13, *Land Use and Planning*, for a more detailed description). The Proposed Project would be located in the Sweetwater Place area within the CNF.

Sweetwater Place is the primary entry to the CNF area, containing the Interstate 8 road corridor, and the communities of Alpine, Descanso, Pine Valley, Guatay, Japatul Valley, Carveacre, and the Viejas Indian Reservation. U.S. Forest Service (USFS) management of Sweetwater Place seeks to ensure that activities originating from neighboring private land are consistent with national forest land management objectives. Efforts to develop recreation focus on establishing a trail network for day-use, as well as links to long-distance trail networks (USFS 2005b). Applicable goals and design criteria identified in the CNF Land Management Plan include:

- **Goal 3.1** – Provide for Public Use and Natural Resource Protection (USFS 2005a).
- **S35** – Manage dispersed recreation activities to ensure that environmental sustainability is maintained.
- **S50** – Mitigate negative long-term impacts from recreation use to soil, watershed, riparian or heritage resources (USFS 2005c).

18.2.2 State Laws, Regulations, and Policies

No state regulations are applicable to recreation in relation to the Proposed Project.

18.2.3 Local Laws, Regulations, and Policies

Because the California Public Utilities Commission (CPUC) is a State agency, it generally is not subject to local laws, regulations, and policies. Local laws, regulations, and policies are considered here for the evaluation of potential recreational impacts that could result from the Proposed Project to the extent that they may inform the analysis and allow for full disclosure of potential impacts.

San Diego County General Plan

The Conservation and Open Space Element of the San Diego County General Plan (County of San Diego 2011a) has a primary focus of providing direction to future growth and development in the County of San Diego with respect to the protection and preservation of open space; the provision of park and recreation resources; and the conservation, management, and utilization of natural and cultural resources. The following policies for the designation and review of new public facilities are included in the County General Plan and are applicable to the Proposed Project.

- **Goal COS-21:** Park and recreation facilities that enhance the quality of life and meet the diverse active and passive recreational needs of County residents and visitors, protect natural resources, and foster an awareness of local history, with approximately ten acres of local parks and 15 acres of regional parks provided for every 1,000 persons in the unincorporated County.

- **Policy COS-21.1 – Diversity of Users and Services.** Provide parks and recreation facilities that create opportunities for a broad range of recreational experiences to serve user interests.

- **Goal COS-23: Recreational Opportunities in Preserves.** Acquisition, monitoring, and management of valuable natural and cultural resources where public recreational opportunities are compatible with the preservation of those resources.

- **Policy COS-23.2 – Public Access.** Provide public access to natural and cultural (where allowed) resources through effective planning that conserves the County's native wildlife, enhances and restores a continuous network of connected natural habitat and protects water resources.

Alpine Community Plan

The Alpine Community Plan (County of San Diego 2011b) is a subcomponent of the County General Plan that implements the goals and policies of the County General Plan for the Alpine area. Alpine is a rural community, and the intent of the Community Plan is to maintain the rural atmosphere of the Planning Area.

Goals of the Recreation Element of the Alpine Community Plan include:

- **Goal 1** – Support the establishment of a balanced system of both natural and improved parks with recreational facilities and services which will incorporate outstanding natural features for recreational opportunities, enrich the lives of Alpine residents, and meet the needs of the community.

- **Goal 2** – To encourage recreational uses which are compatible and do not interfere with the safety and tranquility of private residences

18.3 Environmental Setting

Recreation activities supported by Sweetwater Place include hiking, equestrian use, mountain biking, and hang-gliding. Trail-based activities are popular. Segments of the California Riding and Hiking Trail pass though Sweetwater Place, but there is no continuous system of trails (USFS 2005b). The CNF recreation area located closest to the Proposed Project site is the Pine Creek Wilderness, approximately 2.2 miles southeast of the Proposed Project (Wilderness.net 2016). The Pine Creek Wilderness is a 13,480-acre area managed by USFS. There are several trails within this Wilderness area. Recreation visitor days are estimated at 7,272 days annually (USFS 2005b). The Pine Creek was designated as a Wilderness in 1984 (USFS 2005c).

The California Riding and Hiking Trail, a multi-use trail identified in the County Regional Trail Plan (County of San Diego 2008), runs north to south along the western border of Palo Verde Lake, and is located approximately 3.3 miles west of the Proposed Project. Recreationists have described accessing the top of Bell Bluff, a peak approximately 1.2 miles west to southwest of the Proposed Project, by exiting the California Riding Hiking Trail at Spanish Bit Road. There is no formal trail to the peak, and reaching it requires access to private property (Geocaching 2016). No data was identified regarding the level of use this peak receives.

The County Parks and Recreation Department operates and maintains approximately 100 parks and other recreational facilities, including camping parks, open space preserves, sports parks, community centers, and day use parks (County of San Diego 2016). The County recreation facility closest to the Proposed Project site is the Alpine Community Center, a 7-acre public local park, approximately 7 miles northwest of the Project site (County of San Diego 2011b). Alpine Community Plan identifies two future park facilities, both approximately 7 miles west of the Project site, at the Joan MacQueen Middle School, and at another school/park site at Tavern Road (County of San Diego 2011b).

18.4 Impact Analysis

18.4.1 Methodology

This impact analysis describes the impacts on recreation associated with implementation of the Proposed Project. Impacts of the Proposed Project were evaluated qualitatively, based on the potential for the Project to disrupt existing recreational facilities, access, and uses. Generally, construction activities may result in a short-term loss of recreational opportunities by disrupting use of or access to recreation areas or facilities. A long-term effect could occur if a recreational opportunity is eliminated as a result of implementation and/or operation of the Proposed Project.

18.4.2 Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines and professional expertise, it was determined that the Proposed Project would result in a significant impact on recreation if it would:

A. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, or

B. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical impact on the environment.

18.4.3 Environmental Impacts

Impact REC-1: Increased Use of Parks/Other Recreational Facilities (Less than Significant)

As described in Chapter 16, *Population and Housing*, the Proposed Project would have a less-than-significant impact on long-term and short-term population growth. During project operation, the crews conducting inspections and maintenance may choose to visit nearby recreation areas in the region. However, the inspection and maintenance activities would involve monthly and less frequent site visits by a crew of several workers. Any park or recreation facility use by these groups would have a less-than-significant impact to the facilities.

During construction, workers may similarly visit nearby recreation areas; however, the use of parks and other recreation facilities by this temporary population (peak employment is anticipated to be approximately 64 workers) would be too low to have a substantial impact. The impacts would be less than significant.

Impact REC-2: Include, or Require Construction or Expansion of, Recreational Facilities (No Impact)

The Proposed Project does not include the construction or expansion of recreational facilities. As noted in Impact REC-1, the use of parks and other recreation facilities resulting from the project would be too low to have a substantial impact on existing recreational facilities. Therefore, the Proposed Project would not result in any requirements to construct or expand recreational facilities. There would be no impact.

Chapter 19
Transportation and Traffic

19.1 Overview

This chapter summarizes the environmental and regulatory settings related to traffic and transportation, the findings of the traffic and transportation analysis, and presents impact analysis methodology and thresholds. On this basis, the section evaluates the potential traffic impacts associated with the Proposed Project.

19.1.1 Traffic and Transportation Terminology

Following are definitions of key traffic and transportation terms used in this section, based on the Highway Capacity Manual, 4th edition (Transportation Research Board 2000), and the Mobility Element of the San Diego County General Plan (County of San Diego 2011a).

Level of Service – a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. Roadway level of service (LOS) is defined according to methodologies presented in the Highway Capacity Manual (Transportation Research Board 2000). Using the Highway Capacity Manual procedures, the quality of traffic operation is graded using six designations, LOS A through F, as indicated in Table 19-1.

Mobility Element roads – These roads are County-maintained roads shown on the Mobility Element map and adopted in the General Plan. They provide for the movement of people and goods between and within communities in the County. The Mobility Element displays these roads showing both the road classification and its general alignment.

Light Collector Series – These Mobility Element roads have a lower design speed and wider parkway. Light Collector roads can be used in rural areas with medium physical constraints or in urbanized areas with moderate levels of non-motorized circulation.

Light Collector with Reduced Shoulder – These Light Collector roads have a roadway with two-foot shoulder, a rolled curb with graded pathway, and a narrow right-of-way. In some instances, the shoulder can be widened to six feet to serve as a bicycle lane.

Local public roads – These roads are County-maintained roads that feed traffic onto Mobility Element roads. These roads are not adopted in the General Plan; therefore, deviations from planned networks do not require a general plan amendment.

Table 19-1. Level of Service Descriptions

Level of Service	Description
A	This LOS represents a completely free-flow conditions, where the operation of vehicles is virtually unaffected by the presence of other vehicles and only constrained by the geometric features of the highway and by driver preferences.
B	This LOS represents a relatively free-flow condition, although the presence of other vehicles becomes noticeable. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.
C	At this LOS the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream is clearly affected by other vehicles.
D	At this LOS, the ability to maneuver is notably restricted due to traffic congestion, and only minor disruptions can be absorbed without extensive queues forming and the service deteriorating.
E	This LOS represents operations at or near capacity. LOS E is an unstable level, with vehicles operating with minimum spacing for maintaining uniform flow. At LOS E, disruptions cannot be dissipated readily thus causing deterioration down to LOS F.
F	At this LOS, forced or breakdown of traffic flow occurs, although operations appear to be at capacity, queues forms behind these breakdowns. Operations within queues are highly unstable, with vehicles experiencing brief periods of movement followed by stoppages.

Sources: Transportation Research Board 2000; San Diego County 2011a.

19.2 Regulatory Setting

19.2.1 Federal Laws, Regulations, and Policies

Federal Aviation Administration

Under 14 Code of Federal Regulations (CFR) Part 77.9, projects must notify the Federal Aviation Administration (FAA) of construction or alteration that involves the following:

- Any construction or alteration that is more than 200 feet above ground level.
- Any construction or alteration located at specified distances from an airport runway, at heights determined based on slope ratios identified in 14 CFR Part 77.9(b).
- Any highway, railroad, or other traverse way, which, if adjusted upward by specified vertical distances, would exceed a standard identified in 14 CFR Part 77.9(a) or (b).
- Any construction or alteration on airports and heliports as described in 14 CFR Part 77.9(d).

19.2.2 State Laws, Regulations, and Policies

The California Department of Transportation (Caltrans) manages the State highway system and ramp interchange intersections. The State agency is also responsible for highway, bridge,

and rail transportation planning, construction, and maintenance. Caltrans also requires transportation permits for the movement of vehicles or loads exceeding the limitations on the size and weight contained in Division 15, Chapter 5, Article 1, Section 35551, of the California Vehicle Code. Due to the likelihood of heavy truck loads, the Proposed Project may require ministerial transportation permits from Caltrans.

California Vehicle Code (CVC) Section 21200 allows bicyclists the same rights and responsibilities as drivers of motor vehicles. CVC Section 21956 allows pedestrians to walk in roadways within a business or residential district. Outside of business and residential districts, a pedestrian may walk close to his or her left-hand edge of the roadway, or, if there is no means of safely crossing the roadway, a pedestrian may walk close to his or her right-hand edge of the roadway.

19.2.3 Local Laws, Regulations, and Policies

The California Public Utilities Commission (CPUC) has exclusive jurisdiction over the siting and design of electric transmission facilities. Therefore, it is exempt from local land use and zoning regulations. However, CPUC General Order (G.O.) 131-D states that in locating electric transmission facilities, the public utilities shall consult with the local agencies regarding land use matters. CPUC and NEET West have been in contact with applicable local agencies for the Proposed Project, and local laws and regulations are presented here for consideration of potential impacts related to transportation and traffic.

San Diego County General Plan

The Mobility Element of the San Diego County General Plan (County of San Diego 2011a) provides the framework for San Diego County decisions concerning the countywide transportation system. It also provides for coordination with the cities and unincorporated communities within the County with the Regional Transportation Plan (RTP), adopted by the San Diego Association of Governments (SANDAG), and with State and federal agencies that fund and manage transportation facilities within the County.

Alpine Community Plan

The Alpine Community Plan implements the Goals and Policies of the County General Plan for the Alpine area. The Mobility Element of the Alpine Community Plan has the goal of establishing a circulation system of streets and roads which will serve the general convenience and safety of Alpine citizens and enhance the beauty, quality and atmosphere of the Alpine area (San Diego County 2011b). The Alpine Mobility Element Network map (San Diego County 2011c) identifies transportation facilities, including roadway classifications in the Alpine area. The following policies and recommendations in the Mobility Element may be relevant to the Proposed Project:

- Policy 1: Support timely and adequate public notification and review of all proposed changes in the community circulation system.
- Policy 3: Encourage the consideration of all feasible alternatives for dealing with congested roads.

- Policy 10: Road design within the community shall minimize grading and also be compatible with the topography and landscape of the Alpine Area.

19.3 Environmental Setting

A description of the transportation network and available traffic count data are provided below.

Transportation Network

As shown in Figure 19-1, the Proposed Project site is located off of Bell Bluff Truck Trail, a private, paved road that runs generally parallel to, and is located approximately 1.8 miles south of, Interstate 8 (I-8). In the area of the Proposed Project, Bell Bluff Truck Trail is a secured road. Approximately one mile east of the proposed Static VAR compensator (SVC) site, there is a security gate operated by San Diego Gas & Electric (SDG&E) restricting public access to the existing substation site. Bell Bluff Truck Trail is approximately 30 feet wide from the proposed SVC site west to the intersection with the access road to the existing Suncrest Substation (this portion of the road was widened and newly constructed as part of the Suncrest Substation construction), and approximately 12 feet wide west of the intersection with the substation access road. During construction and operations of the Proposed Project, vehicles would generally access the site from I-8 via the interchange with State Route 79 and Japatul Valley Road; this interchange is the southern terminus of State Route (SR) 79 (Caltrans 2011). From the interchange, vehicles would travel south on Japatul Valley Road, and turn right (east) on Avenida de los Arboles, which connects with Bell Bluff Truck Trail.

West of SDG&E's existing 230-kilovolt transmission line (which crosses over Bell Bluff Truck Trail to connect existing Suncrest Substation), Bell Bluff Truck Trail transitions from a paved road to a dirt/gravel road. SDG&E maintains Bell Bluff Truck Trail, including the roadway segment east of the security gate approaching Avenida de los Arboles, where it provides access to a number of ~~several~~ residences and trails, and the roadway segment west of the security gate, in which Bell Bluff Truck Trail is closed to the public. Residential land uses occur on the segment of Bell Bluff Truck Trail north of Avenida de los Arboles. Access to residential properties on Bell Bluff Truck Trail is via Avenida de los Arboles and Japatul Valley Road. There is no alternate access to these properties.

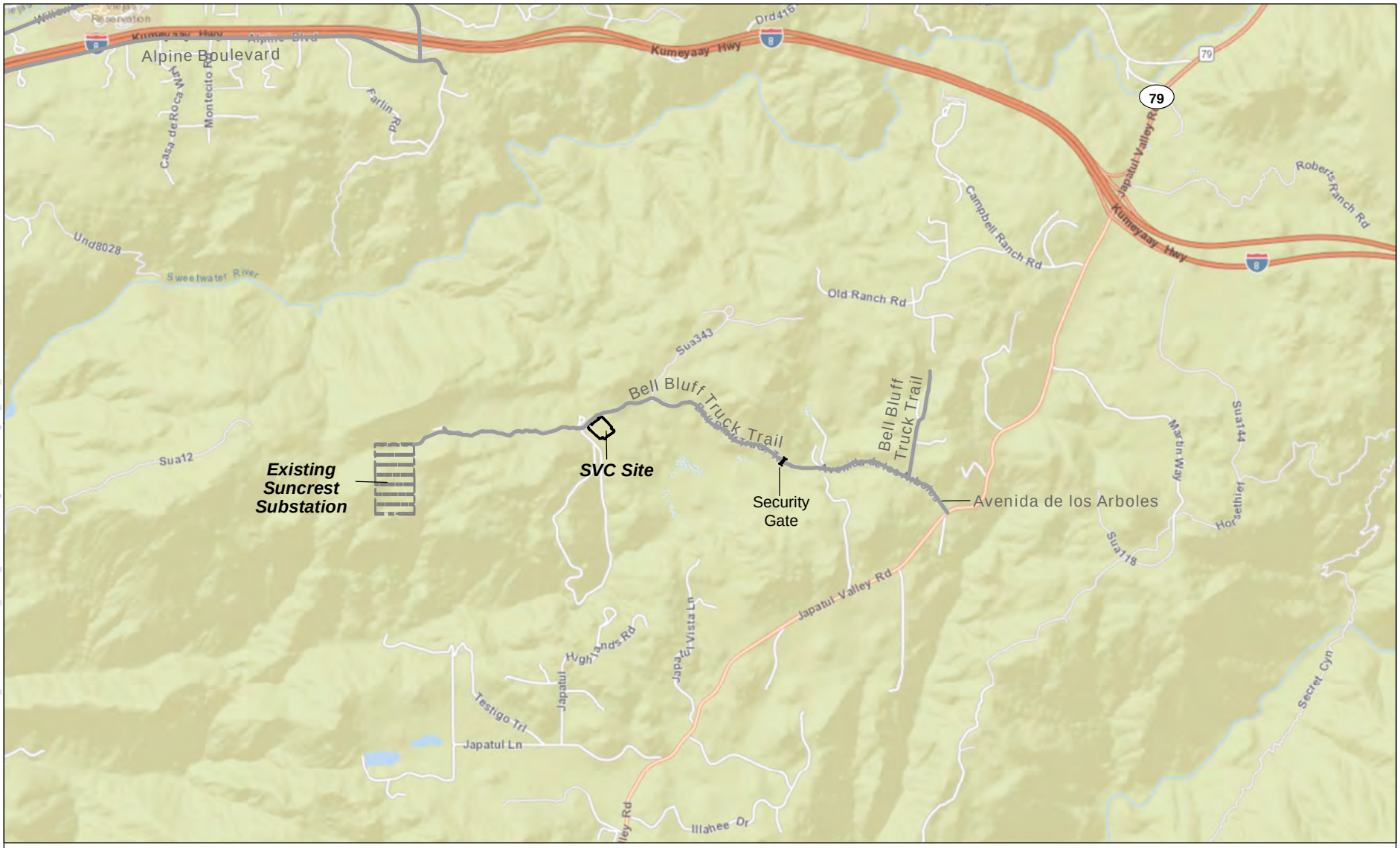
Avenida de los Arboles is a paved local road that connects Bell Bluff Truck Trail to Japatul Valley Road. Access to residential properties on Bell Bluff Truck Trail and Avenida de los Arboles is via Japatul Valley Road. There is no alternate access to these properties.

Avenida de los Arboles and Bell Bluff Truck Trail serve approximately 20 single family residences. These roadways also serve the unmanned Sunrise Powerlink facility located on the access-controlled portion of Bell Bluff Truck Trail.

Residential land uses occur on Avenida de los Arboles. Access to residential properties on Avenida de los Arboles is via Japatul Valley Road. There is no alternate access to these properties.

Japatul Valley Road is a north-south light collector road with reduced shoulder (San Diego County 2011b), which connects to I-8 and the south terminus of SR 79 at an interchange approximately 1.8 miles north of its intersection with Avenida de los Arboles.

I-8 is an east-west limited access freeway on the federal interstate highway system, providing direct access into San Diego and the greater metropolitan area.



C:\Users\GIS\Documents\ArcGIS_PROJECTS\15018_CPUC_Suncrest\mxd\figures\ADEIR\Figure_19-1_Roads.mxd PG 4/5/2017

Figure 19-1
Roadways in the Project Vicinity

Prepared by:

Horizon WATER and ENVIRONMENT

Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User

Suncrest Dynamic Reactive Power Support Project

None of the roadways described above include sidewalks. No pedestrian or bicycle facilities are located in the vicinity, although pedestrian and bicycle traffic is allowed on public roadways that lack dedicated pedestrian or bicycle facilities, in accordance with the California Vehicle Code. The nearest identified bicycle facility is I-8, which allows bicycle access on the interstate shoulder, from Willows Road in Alpine to the SR 79/Japatul Valley Road interchange (SANDAG 2016a). The nearest public transit access point is the terminus of the San Diego Metropolitan Transit System's Bus Route 864, at Willows Road and the Viejas Casino, approximately 3 miles from the Project site (San Diego Metropolitan Transportation System 2016). The nearest airport is the On the Rocks Airport, a private airport in Alpine, located approximately 5 miles southwest of the Project site (FAA 2016).

The County Trails Master Plan identifies a community trail alignment (#23/Bell Bluff Trail) approximately 0.5-mile north of the Proposed Project site, but this trail has not yet been constructed (County of San Diego 2009).

Traffic Count Data

No traffic data are available for Bell Bluff Truck Trail and Avenida de los Arboles.

Existing traffic conditions for Japatul Valley Road are based on traffic data reported in the 2008 EIR/Environmental Impact Statement (EIS) and Draft Land Use Amendment for the Sunrise Powerlink Project (CPUC 2008). The segment of Japatul Valley Road from Avenida de Los Arboles to I-8 was found to have an average daily traffic volume of 3,250. The roadway segment's capacity at LOS E was identified as 16,200, resulting in a volume-to-capacity ratio of 0.2, and Level of Service B.

The adequacy of the 2008 data reported above was verified by reviewing changes in traffic data for the period of 2009 to 2013 for the following nearby roadway segments for which traffic counts are available:

- Japatul Road (a light collector with reduced shoulder) from Tavern Road to Lyons Road – approximately 3.8 miles south of the intersection of Japatul Valley Road and Bell Bluff Truck Trail

- SR 79 (a two-lane highway on the State Highway System) – immediately north of the I-8/SR 79/Japatul Valley Road interchange.

The average daily traffic (ADT) for the above segment of Japatul Road was reported as 1,000 in 2009, and 400 in 2013 (SANDAG 2016b). The ADT for SR 79 north of I-8 was reported as 5,000 in 2008 (Caltrans 2008), and 4,800 in 2013 (Caltrans 2013). These statistics suggest that there has been no growth in traffic on roadways in the vicinity of the Proposed Project since the traffic counts reported in the Sunrise Powerlink Project EIR/EIS.

Existing traffic conditions for I-8 are based on 2014 traffic data reported by the Caltrans Traffic Data Branch (Caltrans 2014). At the interchange with SR 79 and Japatul Valley Road, I-8 was found to have an ADT of 24,600 west of the interchange, and 19,900 east of the interchange. For reference purposes, the Sunrise Powerlink Project EIR/EIS reported an ADT of 27,000 for I-8. The highway segment's capacity at LOS E was identified as 80,000, resulting in a volume-to-capacity ratio of 0.33, and LOS A (CPUC 2008).

19.4 Impact Analysis

19.4.1 Methodology

Traffic impacts that would result from the Proposed Project were identified by evaluating Project activities in the context of local and regional circulation patterns, impacts to existing roadway configurations, lane closures, local traffic operation requirements during Project activities, and relevance to standard traffic control plan requirements and strategies. The criteria for determining the significance of potential impacts are outlined below. The discussion below identifies key assumptions used in the impact analysis.

19.4.2 Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines and professional expertise, it was determined that the Proposed Project would result in a significant impact related to transportation and traffic if it would:

A. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;

B. Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;

C. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;

D. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

E. Result in inadequate emergency access or interfere with an adopted emergency evacuation plan; or

F. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

19.4.3 Environmental Impacts

Impact TR-1: Conflict with an Applicable Plan, Ordinance, or Policy Establishing Measures of Effectiveness (No Impact)

The Proposed Project would not result in any changes to existing plans, ordinances, or policies that establish measures of effectiveness for the performance of the circulation system. Upon completion, there would be no changes to the existing designs or capacities of the circulation system. Therefore, it would not affect the provisions of any such policies or plans. There would be no impact**.**

Impact TR-2: Increase in Area Traffic Volumes and Degradation of LOS Due to Project-Generated Traffic (Less than Significant with Mitigation)

During ongoing operation of the Project, traffic would be negligible, consisting of periodic visits to the site by a small crew for the purposes of conducting inspections and testing. The increase in the number of vehicles and trips associated with the Project would not noticeably increase traffic on local roadways. Therefore, long-term operational effects would be less than significant.

The Proposed Project would generate construction-related traffic during the nine-month construction period, and the subsequent two-month cleanup period, described in Chapter 2, *Project Description*. Construction-related traffic would consist primarily of daily commutes by construction workers and periodic delivery and removal of materials to and from the site over the course of the construction period. The addition of construction traffic to roadway volumes could result in minor increases in congestion and delay for vehicles. Furthermore, the presence of construction truck traffic would temporarily reduce roadway capacity because of the slower travel speeds and larger turning radii of trucks.

Construction workers accessing the work sites would add vehicle traffic to area roadways. The construction industry is recognized as one of two industries in which carpooling is most evident – the other is the manufacturing industry (AASHTO 2014). ~~Typically, construction workers travel together to the work site.~~ However, ~~E~~even if each worker drove his or her own vehicle and traveled alone, based on the anticipated number of workers at peak activity (64 workers) the additional vehicle trips generated by construction would be negligible considering the average daily traffic and existing LOS on I-8 and State Route 79, as well as the low number of developed properties served by Avenida de los Arboles and Bell Bluff Truck Trail ~~and the local roadways~~. Minor, temporary traffic increases are common for all construction projects and generally are not considered a significant impact because of the small number of trips, their limited duration, and intermittent activity. Thus, even the maximum number of additional commute trips likely to result from construction (64 round trips per day) would not result in a substantial change in traffic flow or intersection operations on regional and local access routes.

Installation of the proposed 1-mile long transmission line/duct bank, splice vaults, and riser pole components of the Project could temporarily affect traffic flow for SDG&E workers or other individuals with access to the secured portion of Bell Bluff Truck Trail by closing or narrowing lanes within the secured portion of ~~on~~ Bell Bluff Truck Trail. Trenching within the roadway would be required to install the duct bank/transmission line along a 1-mile length

of Bell Bluff Truck Trail. Additional excavation would occur in the location up to five proposed splice vaults, spaced approximately 900 feet apart along the roadway. Further excavation would occur at the site of the riser pole, proposed in the roadway shoulder, which would have a seven-foot-diameter base and would permanently disturb the area within a 15-foot radius from the pole. The affected segment of Bell Bluff Truck Trail is located entirely within the secured portion of the road. The intermediate riser pole would be constructed on the hillside on the north side of the SDG&E's existing graveled service road, between 5 and 10 feet from the road edge. Installation of the riser pole and intermediate pole may require localized blasting or other alternative excavation techniques to install the poles (see Section 2.4.2, "Project Construction," for more detail).

On the 30-foot-wide section of Bell Bluff Truck Trail, the plan of construction is to confine construction work areas to only one side of the roadway to maintain an unobstructed access lane to the SDG&E Suncrest Substation and for emergency purposes. Between SDG&E's substation access road and the riser pole structure, Bell Bluff Truck Trail is approximately 12 feet wide. Trenching activities for installation of the underground location in this area may require temporary closure of the 12-foot-wide portion of Bell Bluff Truck Trail.

Construction activities that affect roadway operations could result in significant impacts to traffic flow. Implementation of **Mitigation Measure TR-1** would reduce the effects of construction activities and construction traffic on roadways in the vicinity of the Project site. Mitigation Measure TR-1 includes measures, such as maintaining traffic flow to the extent feasible, and restricting heavy equipment and haul traffic in residential areas. In addition, **Mitigation Measure TR-2** requires the development and implementation of a project-specific traffic control plan (TCP), including advanced notification for any necessary road closures and employment of adequate controls, signage, and detour routes to minimize traffic impacts. Adherence to these measures would ensure that construction-generated traffic and temporary road closures would be less than significant.

In addition, the Proposed Project would involve additional truck haul traffic associated with the removal of excavated material~~, and may require daily water truck trips, if it is not possible to convey water to the construction site via an existing PVC pipe as discussed in Chapter 2, Project Description~~. Based on the 4,030-cubic-yard (-cy) estimated range of excavated material requiring disposal (note: this number could increase to some degree depending on the level of "bulking"[1] that may occur; see further discussion below), a total of approximately 403 truck haul round trips would be generated using standard 10-cu. yd. capacity trucks. During peak excavation and grading activities, Project construction could generate a maximum of approximately 62 haul truck round trips per day. ~~Assuming that construction activities would last 11 months (approximately 220 working days), this translates to approximately one to two truck trips per day. With larger 20-cu. yd. trucks, this could be halved, to approximately one-half to one truck trip per day. If it is necessary to deliver water to the site by truck, this would result in an average of three water truck trips per day, with a peak of up to 6 water trucks per day. The combined number of haul truck and water truck trips, on average, would range from four to 6 trips per day (0.5 to 0.75 truck trips per hour,~~

[1] "Bulking rate" refers to the swelling of excavated materials to a greater volume than the volume of the excavated hole or holes. The amount of bulking depends on the material excavated. Ordinary soil or dry gravel swells to a volume 20 to 30 percent greater than the size of the excavation; dolomite swells to a 50 to 60 percent greater volume than the hole; limestone and sandstone swell to volumes 75 to 80 percent greater than the volume of the hole (Engineering Tool Box 2017).

~~assuming an 8-hour work day). Because these truck haul trips would be intermittent and temporary, the addition of approximately four to five truck trips per day (0.5 to 0.75 trips per hour) over 220 work days would not cause substantial degradation of LOS or delay for motorists in the vicinity of the Proposed Project.~~ When added to the maximum number of worker vehicle commute round trips per day of 64 (assuming no carpooling), this would result in 126 total vehicle round trips, or 252 single-direction trips, associated with the Proposed Project during peak construction activity. Adding this number to existing ADT on Japatul Valley Road would result in 3,502, for a volume-to-capacity ratio of 0.22, and LOS B. Likewise, adding the maximum Project construction vehicle traffic to existing ADT on I-8 would result in 24,852, for a volume-to-capacity ratio of 0.31, and LOS A.

Because the precise type and composition of materials underlying the Proposed Project site is not currently known, it is not possible to know the degree of bulking that may be expected. However, even assuming that all material removed from the Project site were to swell to a volume of 80 percent greater than the hole it was dug from (i.e., the maximum amount of bulking that could occur), it would not increase the number of necessary haul truck trips to a level that would have a significant impact. This hypothetical situation would result in approximately 725 total haul truck round trips during the Project construction period, or a peak of approximately 112 haul truck round trips per day. Adding this number to the maximum number of worker commute trips that could occur of 64 results in 176 vehicle round trips, or 352 single-direction trips. The addition of 352 vehicle trips to existing ADT on Japatul Valley Road results in 3,602, for a volume-to-capacity ratio of 0.22, and LOS B. The addition of 352 vehicle trips to existing ADT on I-8 results in 24,952, for a volume-to-capacity ratio of 0.31, and LOS A.

Therefore, even assuming maximum, worst-case conditions with respect to bulking, worker commuting (i.e., no carpooling), and peak excavation and grading activity, Project construction vehicle trips would not adversely affect existing LOS on nearby roadways. However, as described previously, the presence of construction truck traffic related to heavy equipment transport and haul trucks could temporarily reduce roadway capacity due to the slower travel speeds and larger turning radii of trucks. Implementation of Mitigation Measures TR-1 and TR-2 would ensure that the effects of construction traffic on local roadways would remain less than significant.

Mitigation Measure TR-1: Maintain Traffic Flow.

NEET West or their contractor(s) shall implement the following measures:

- To the extent feasible, work shall be staged and conducted in a manner that maintains two-way traffic flow on roadways in the vicinity of the work site.
- Heavy equipment and haul traffic shall be prohibited in residential areas to the greatest extent feasible. When no other route to and from the site is available, heavy equipment and haul traffic through residential areas shall be restricted to the hours of 8 a.m. to 5:30 p.m., Monday through Friday.
- If heavy equipment or hauling is required beyond the hours above, NEET West or their contractor would provide notice to adjacent property owners 48 hours in advance of such activities.

Mitigation Measure TR-2: Minimize Effects of Temporary Roadway Disturbances.

NEET West or their contractor(s) shall implement the following measures:

- Prepare and implement a Traffic Control Plan (TCP) to describe procedures to guide traffic (such as signage and flaggers), safeguard construction workers, provide safe passage of traffic, and minimize traffic impacts, as necessary, through the duration of construction. In the event that closure of any portion of the private Bell Bluff Truck Trail were to become necessary, notification shall be provided to SDG&E at least 5 days in advance of anticipated closures~~. In the event that road closure were to become necessary for any publicly-accessible road segment, notification shall be posted and/or circulated to the public at least 5 days in advance of anticipated closures. NEET West shall employ adequate control devices, signage, a detour route, and flaggers, as necessary, through the duration of construction.~~

Impact TR-3: Result in a Change in Air Traffic Patterns (No Impact)

The Proposed Project does not contain any components that would affect air traffic. The tallest element of the Project, identified in Chapter 2, *Project Description*, is the intermediate pole, which would have a height of approximately 116 feet above ground level. This is below the threshold of 200 feet for FAA notification. The Project would not require FAA notification, and there would be no impact**.**

Impact TR-4: Increase in Safety Hazards (Less than Significant with Mitigation)

Construction activities associated with the Proposed Project could result in the temporary closing or narrowing of lanes on Bell Bluff Truck Trail, as described in Impact TR-1.

Construction activities would temporarily suspend the normal function of roadways, and would introduce the potential for an increase in traffic safety hazards during construction of the Proposed Project. This potential increase in safety hazards would result from the increased potential for conflicts between construction vehicles, conflicts between the movement of traffic and construction activities, and confusion of drivers, resulting from temporary alterations to roadway conditions.

Mitigation Measures TR-1 and **TR-2** would be implemented to ensure that work would be staged and conducted in a manner that would maintain two-way directional flow to the extent feasible, and to ensure that a TCP is developed and implemented, including provision of advanced notice to affected parties regarding any necessary temporary road closures. Implementation of these measures would ensure proper planning of traffic management during maintenance activities, and would provide adequate awareness by affected parties of temporarily altered road conditions and potential hazards.

The Proposed Project does not propose any changes that would permanently reconfigure or alter roadways; therefore, the Project would not result in a permanent impact on roadway safety conditions. With the adherence to the Mitigation Measures TR-1 and TR-2, described above, the Proposed Project's impact on traffic safety hazards would be less than significant**.**

Impact TR-5: Interference with Emergency Access and Circulation (Less than Significant with Mitigation)

Temporary r~~R~~oad closures along the private portion of Bell Bluff Truck Trail, ~~detours,~~ and construction-related traffic could delay or obstruct the movement of emergency vehicles in the vicinity of the Proposed Project. If construction activities interfere with emergency response efforts such that response times would be extended, a significant impact would result. In addition, safe access to the Suncrest Substation may be disrupted by equipment, staging, or construction activity, including potential local blasting along Bell Bluff Truck Trail and the SDG&E service road to construct the riser pole and intermediate riser pole. However, the implementation of **Mitigation Measures TR-1** and **TR-2**, described above, would ensure that work would be staged and conducted in a manner that would maintain two-way directional flow to the extent feasible, and would ensure that a TCP is developed and implemented. If road closures on the private Bell Bluff Truck Trail are anticipated, **Mitigation Measure TR-3** would be implemented to ensure the timely notification of maintenance schedules and consultation with all affected agencies (including police and fire departments) for all activities that could affect emergency access. Given that the proposed SVC site is located approximately one mile west of the security gate on Bell Bluff Truck Trail, construction workers would park within the private portion of the road (to which the public does not have access), adjacent to the Project construction site. Additionally, as shown in Figure 2-3, all construction equipment and materials staging would occur adjacent to the SVC site and along the proposed transmission line route, within the private portion of Bell Bluff Truck Trail.

The Proposed Project does not propose any structures that would permanently block or constrain roadways; therefore, the Project would not result in a permanent impact on emergency and residential access. With the adherence to the Mitigation Measures TR-1 through TR-3, the Proposed Project's impact on emergency access would be less than significant**.**

Mitigation Measure TR-3: Emergency Coordination and Access Considerations.

NEET West or their contractor(s) shall implement the following measures:

- When work is conducted on ~~roads~~ the private portion of Bell Bluff Truck Trail and may have the potential to affect traffic flow, work shall be coordinated with local emergency service providers, as necessary, to ensure that emergency vehicle access and response is not impeded.

- ~~Access for driveways and private roads shall be maintained to the extent feasible. If brief periods of construction work would temporarily block access, property owners shall be notified prior to construction activities.~~

- If closure of any portion of the private Bell Bluff Truck Trail is necessary during Project construction, NEET West shall have staff available on-site at all times to place plates over open trenches, move construction equipment, or clear any other obstructions to allow for 24-hour emergency vehicle access to SDG&E facilities.

Impact TR-6: Conflicts with Alternative Transportation (Less than Significant)

No public transit, bicycle, or pedestrian facilities are located in the Project vicinity, although bicycles are allowed to use the shoulder of I-8 for approximately 3.5 miles, from Willows Road to the SR 79/Japatul Valley Road interchange. Despite the absence of bicycle or pedestrian facilities, bicyclists and pedestrians may use roadways in the project vicinity, as allowed by the California Vehicle Code. ~~With the implementation of Mitigation Measures TR-1 and TR-2, described above, any~~ As described in Section 2.4.2.2, Transmission Line Construction, the segment of Bell Bluff Truck Trail on which construction activities such as trenching are proposed is inaccessible to the public. The potential impacts to alternative transportation are anticipated to be limited to the need for any bicyclists and pedestrians to share local roads with heavy equipment and haul traffic during the construction period. The impacts would be less than significant.~~impacts to alternative transportation would be less than significant.~~

Chapter 20
Alternatives

20.1 Introduction

This chapter describes the alternatives considered for the Proposed Project and evaluates their environmental impacts as compared to the Proposed Project. The purpose of the alternatives analysis in an environmental impact report (EIR) is to describe a range of reasonable, potentially feasible alternatives to the project that can feasibly attain most of the identified project objectives, but reduce or avoid one or more of the project's significant impacts. This chapter provides a detailed description of the California Environmental Quality Act (CEQA) regulatory requirements for alternatives analysis, describes the alternatives development process for the Proposed Project, and evaluates the impacts of the selected alternatives. This chapter relies on information provided in NextEra Energy Transmission West, LLC's (NEET West's) Proponent's Environmental Assessment (PEA).

20.1.1 Regulatory Requirements

CEQA requires that an EIR evaluate a reasonable range of potentially feasible alternatives to the proposed project, including the No Project Alternative. The No Project Alternative allows decision-makers to compare the impacts of approving the action against the impacts of not approving the action. While there is no clear rule for determining a reasonable range of alternatives, CEQA provides guidance that can be used to define the range of alternatives for consideration in the environmental document.

The alternatives described in an EIR must feasibly accomplish most of the basic project objectives, should reduce or eliminate one or more of the significant impacts of the proposed project (although the alternative could have greater impacts overall), and must be potentially feasible (State CEQA Guidelines Section 15126.6(a)). In determining whether alternatives are potentially feasible, Lead Agencies are guided by the definition of feasibility found in State CEQA Guidelines Section 15364: "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." In accordance with State CEQA Guidelines Section 15126.6(f), the Lead Agency should consider site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, ~~and~~ jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent) in determining the feasibility of alternatives to be evaluated in an EIR. An EIR must briefly describe the rationale for selection and rejection of alternatives and the information that the Lead Agency relied on in making the selection. It also should identify any alternatives that were considered by the Lead Agency but were rejected as infeasible during the scoping process and briefly explain the reason for their exclusion (State CEQA Guidelines Section 15126.6[c]).

In addition, alternatives with effects that cannot be reasonably ascertained and for which implementation is remote and speculative are screened from full analysis (State CEQA Guidelines Section 15126.6[f][3]).

An EIR's analysis of alternatives is required to identify the environmentally superior alternative among all those considered (State CEQA Guidelines Sections 15126.6[a] and [e][2]). If the No Project Alternative is identified as the environmentally superior alternative, then the EIR must also identify an environmentally superior alternative amongst the other alternatives.

These guidelines were used in developing and evaluating the alternatives as described below.

20.2 Alternatives Development Process

The Proposed Project's purpose and objectives, as well as its potentially significant environmental impacts were considered in developing alternatives. Alternatives were developed to achieve most of the basic objectives of the Proposed Project while reducing one or more of its significant adverse environmental impacts. Alternatives also were developed based on potential feasibility.

20.2.1 Project Purpose and Objectives

As described in Chapter 2, *Project Description,* the purpose of the Proposed Project is to provide reactive power support to the existing Suncrest Substation to allow for improved operation following system disturbances and importation of renewable generation from the Imperial Valley to demand centers in San Diego and Los Angeles. This was identified as a policy-driven need in the California Independent System Operator's (CAISO's) 2013-2014 Transmission Plan. Specifically, the objectives of the Proposed Project are as follows:

1. Provide reactive support to Suncrest Substation;

2. Improve and maintain transmission grid reliability; and

3. Support achievement of the state's RPS by f~~F~~acilitat~~e~~ing delivery of a higher percentage of renewable energy generation from the Imperial Valley area to population centers to the west ~~and support achievement of California's Renewables Portfolio Standard.~~

20.2.2 Significant Environmental Impacts of the Proposed Project

A number of impacts have been identified as significant but would be mitigated to a level of less-than-significant through implementation of mitigation measures. These impacts are listed in Table ES-1 in the Executive Summary of this final EIR (FEIR). No impacts were identified as significant and unavoidable.

20.2.3 Alternatives Screening and Development

Numerous alternatives were identified during development of the Proposed Project. These alternatives were screened based on the following factors:

- Does the alternative meet most of the project objectives?
- Is the alternative feasible?
- Does the alternative avoid or substantially lessen any of the environmental impacts of the Proposed Project?
- Is the alternative speculative?

Based on this initial screening, alternatives were either dismissed from further consideration or carried forward for detailed analysis. Table 20-1 shows all of the alternatives considered and the results of the screening process.

As shown in Table 20-1, the EIR analysis considered the No Project Alternative, as required by CEQA, as well as several technology alternatives, hypothetical system alternatives, siting alternatives, and one transmission line alternative. Due either to their inability to meet most of the project objectives, be feasibly implemented, or avoid or substantially ~~less~~ lessen one or more of the Proposed Project's environmental impacts, ~~of~~ if they were deemed speculative, a number of these initial alternatives were dismissed from further consideration.

Alternatives Dismissed from Further Consideration

Technology Alternatives

The California Independent System Operator's (CAISO's) 2013-2014 Transmission Plan (CAISO 2014) identified a need for a +300/-100 megavar dynamic reactive power device at the Suncrest Substation's 230-~~kilovot~~kilovolt (-kV) bus. The reactive power device would provide continuous or quasi-continuous reactive power response following system disturbances and assist in the deliverability of renewable generation from the Imperial Valley zone. The Transmission Plan did not specify the type of device, but the CAISO's Functional Specifications for the Suncrest 230-kV 300 Mvar Dynamic Reactive Power Support Project requested that project applicants submit a bid for one of the following types of devices:

- Static VAR Compensator (SVC)
- Static Synchronous Compensator (STATCOM)
- Synchronous Condenser

SVCs and STATCOMs are devices within the Flexible AC Transmission Systems (FACTS) family. They use power electronics to control power flow and improve transient stability on power grids. A synchronous condenser is essentially a spinning, electromagnetic, synchronous motor, but its shaft spins freely, rather than being connected to a machine. A voltage regulator controls the electrical field to either generate or absorb reactive power in response to system conditions.

In preparing its bid package for the CAISO, NEET West considered several commercially-available transmission technologies that would meet the CAISO's description and functional specifications. In addition to the Proposed Project, which is a SVC, NEET West considered three other technology combinations, as follows:

- Hybrid SVC with Mechanically-Switched Capacitors
- Hybrid STATCOM with Mechanically-Switched Capacitor
- Synchronous Condensers

Table 20-1. Alternatives Screening Summary

Type of Alternative	Alternative	Does it meet most of the basic project objectives?	Is it feasible?	Does it avoid or substantially lessen any environmental impacts of the Proposed Project?	Is it speculative?	Carry forward for detailed analysis?
No Project Alternative	No Project Alternative	No	Yes	Yes	No	Yes
Technology Alternatives	Hybrid SVC with Mechanically-switched Capacitors	Yes	Yes	No	No	No
	Hybrid STATCOM with Mechanically-switched Capacitor	Yes	Yes	No	No	No
	Synchronous Condensers	Yes	Yes	No	No	No
System Alternatives	Traditional Generator Reactive Power Support	Yes	Yes	No	No	No
	CAISO Initiative for Reactive Power Support from Asynchronous Generators	Yes	Yes	Yes	Yes	No
	Energy Conservation/Energy Efficiency	No	Yes	Yes	Yes	No
	Demand Response/Load Management	No	No	Yes	Yes	No

Type of Alternative	Alternative	Does it meet most of the basic project objectives?	Is it feasible?	Does it avoid or substantially lessen any environmental impacts of the Proposed Project?	Is it speculative?	Carry forward for detailed analysis?
Siting Alternatives	Northeast Site Alternative	Yes	Yes	Yes	No	Yes
	West Site Alternative	Yes	No	Yes	No	No
	Suncrest Substation Alternative	Yes	Yes	Yes	No	Yes
Transmission Line Alternative	Overhead Transmission Line Alternative	Yes	Yes	Yes	No	Yes

1

All three of these technology combinations would require a similar construction footprint as a proposed SVC, but they would be more expensive. None of these three technology alternatives would avoid or reduce any environmental impacts of the Proposed Project. All of these options would involve similar ground disturbance and similar impacts to the physical environment. Therefore, these alternatives were not carried forward for detailed analysis in the EIR.

System Alternatives

Traditional Generator Reactive Power Support

One hypothetical system alternative to the Proposed Project is development of traditional generating facilities in the area of the existing Suncrest Substation. Traditional fossil-fuel, hydroelectric, geothermal, solar-thermal, and nuclear power generating units create reactive power along with real power. These are synchronous generators, meaning that they have a mechanical rotor that rotates in synchronization with the system frequency. It is estimated that a 500 to 600 MW combined-cycle gas-fired power plant may provide approximately +240 Mvar, or close to the +300 Mvar required of the Proposed Project. Therefore, a new synchronous generator could theoretically meet the CAISO's identified need for reactive power at the Suncrest Substation 230-kV bus.

A new fossil-fuel generating plant in California would likely be a natural gas-fired combined-cycle or peaker unit. Such facilities would require a natural gas supply. A new hydroelectric power plant would likely involve raising an existing dam and installing one or more new turbines. Geothermal power resources are not in the vicinity of the Suncrest Substation and would require a lengthy transmission line. Solar thermal devices using a mechanical motor generator could provide reactive power capability, but would not have the same flexibility as a gas-fired unit has for ramping up and down to absorb or inject reactive power. The construction requirements for a nuclear power plant would be extensive.

System alternatives involving traditional generator reactive power support would not substantially avoid or lessen any of the environmental impacts of the Proposed Project. Instead, these alternatives would result in greater impacts as compared to the Proposed Project. It is also questionable whether any of these traditional generators could be feasibly planned, permitted, and constructed within an acceptable time frame for CAISO. For these reasons, this subset of system alternatives was dismissed from further consideration in the EIR.

CAISO Initiative for Reactive Power Support from Asynchronous Generators

Another alternative identified in the alternatives development and screening process was reliance on CAISO's initiative for reactive power support from asynchronous generators. In contrast to traditional generating facilities, most renewable electricity generating resources, such as solar, wind, and energy storage, do not use mechanical rotors rotating in synchronicity with the system. These "asynchronous" resources do not inherently have reactive power capability (or, in the case of wind, do not have the same reactive power capability as a synchronous resource). By adding inverters, capacitors, or using other methods, however, asynchronous resources may provide reactive power to the grid.

CAISO's Board of Governors recently (August 31, 2016) approved a new policy for reactive power requirements and financial compensation for asynchronous resources (CAISO 2016).

This policy, currently under review by the Federal Energy Regulatory Commission (FERC), would require that new or repowered asynchronous resources provide reactive power and voltage regulation. ~~In its PEA submitted to the California Public Utilities Commission (CPUC), NEET West theorized that if the new CAISO requirements were to go into effect and several large solar or wind facilities were to be required to provide reactive power capability, it could reduce the amount of reactive power needed at the Suncrest Substation.~~ Therefore, ~~instead of building the SVC,~~ the transmission grid could potentially receive reactive power support from new renewable generating facilities built in compliance with CAISO's initiative.

Several problems were identified with this alternative. First, at the time of writing of the DEIR, FERC was reviewing the proposed policy and it was unknown if or when it would be approved. Second, it is unknown if and what size renewable generating facilities may be constructed in the future in close enough proximity to the existing Suncrest Substation to address the reactive power deficit identified by CAISO. Reliance on reactive power provided by new or repowered renewable generating facilities may avoid the environmental impacts of the Proposed Project (by avoiding the need to construct the proposed SVC and transmission line), but it is unknown what impacts the new generating facilities may have. Altogether, it was determined that this alternative may not be feasible, its effects cannot be reasonably ascertained, and its implementation is considered remote and speculative at this time (State CEQA Guidelines Section 15126.6[f][3]).

Energy Conservation/Energy Efficiency

Energy conservation and energy efficiency are ways to reduce load and avoid the need for providing real power. These approaches, however, would not address the identified need for reactive power at the Suncrest Substation 230-kV bus. As described in Chapter 2, *Project Description,* reactive power is the component of electricity that functions to maintain adequate voltages for system reliability<u>, e.g., when increasing the amount of electric generation from renewable sources</u>. Real power, by contrast, is the element of electricity that performs useful work and is measured in watts. Therefore, while this alternative would reduce the amount of real power or generation needed to meet demands in the San Diego area, it would not reduce the amount of reactive power needed at the existing Suncrest Substation and would not meet the project objectives. This alternative also was considered speculative in that it was not known how or where the energy conservation/energy efficiency measures would be implemented. As such, this alternative was dismissed from further consideration.

Demand Response/Load Management

Similar to energy conservation/energy efficiency, demand response/load management are techniques for reducing loads, specifically peak loads. Demand response is a change in the power consumption of an electric utility customer to better match the demand for power with the supply. For example, utilities may provide incentives or signals to their customers encouraging them to use electricity during off-peak hours, such as through off-peak metering, when power is cheaper at certain times of the day. As described above, reactive power is distinct from real power and does not perform any useful work or meet load demands. Rather, reactive power serves to maintain voltage levels for transmission system reliability. Demand response/load management would not meet project Objective 1 or 3 of the Proposed Project. Reactive power support would not be provided at Suncrest Substation (Objective 1), and the delivery of renewable energy would not be facilitated (Objective 3). This alternative

was also considered speculative in that it was not known how or where it would be implemented. Therefore, this alternative was dismissed from further consideration.

West Site Alternative

The West Site Alternative is not feasible because it would be located on the Lightner Mitigation site and is scheduled to be transferred to the U.S. Forest Service for conservation in perpetuity. This alternative could not be accomplished within a reasonable period of time taking in account environmental and legal factors and regulatory limitations and jurisdictional boundaries. Therefore, this siting alternative was screened out from further consideration.

Alternatives Carried Forward for Analysis

The remaining alternatives shown in Table 20-1 and not dismissed due to infeasibility, lack of environmental impact reduction, or other reasons were carried forward for analysis. In addition to the No Project Alternative, which was analyzed as required by CEQA, these include the following alternatives:

- Northeast Site Alternative
- Suncrest Substation Alternative
- Overhead Transmission Line Alternative

These alternatives were determined to: (1) meet most of the project objectives; (2) be feasible; (3) avoid or reduce one or more of the Proposed Project's significant impacts, and (4) not be too speculative or ill-defined. These alternatives are evaluated in the following section, "Alternatives Analysis."

20.2.4 California Public Utilities Code Section 1002.3

California Public Utilities Code Section 1002.3 requires that CPUC consider cost-effective alternatives to transmission facilities when evaluating project applications for a Certificate of Public Convenience and Necessity. The following alternatives would be cost-effective alternatives that meet Section 1002.3 requirements: Energy Conservation/Energy Efficiency, Demand Response/Load Management, and the CAISO Initiative for Reactive Power Support from Asynchronous Generators. In addition, the Suncrest Substation Alternative would be a cost-effective alternative that does not require construction of the proposed mile-long 230-kV underground transmission line.

As described in Section 20.2.3, the Suncrest Substation Alternative was carried forward for full analysis in this FEIR. The Energy Conservation/Energy Efficiency, Demand Response/Load Management, and CAISO Initiative for Reactive Power Support from Asynchronous Generators alternatives were screened out from further analysis.

20.3 Alternatives Analysis

20.3.1 No Project Alternative

Characteristics of this Alternative

Under the No Project Alternative, NEET West would not construct the SVC and underground transmission line and the Proposed Project would not be built. The No Project Alternative would not provide any reactive power at the Suncrest Substation's 230-kV bus and would not meet any of the project objectives.

Impact Analysis

The No Project Alternative would avoid all of the environmental impacts associated with construction and/or operation of the Proposed Project. These include dust and air pollutant emissions, noise and traffic effects during construction, impacts that may occur by disrupting previously undiscovered cultural resources, and impacts on existing views and aesthetic effects during operation.

20.3.2 Northeast Site Alternative

Characteristics of this Alternative

Under the Northeast Site Alternative, the SVC would be located approximately 0.3 mile north of Bell Bluff Truck Trail, as shown on Figure 20-1. This site is relatively undeveloped and is accessed via an existing dirt road. Use of this site for the SVC would require a slightly longer (1.4-mile) transmission line to connect to the existing Suncrest Substation. Figure 20-1 shows the transmission line alignment under the Northeast Site Alternative.

Impact Analysis

Relative to the Proposed Project, the Northeast Site Alternative would reduce some biological resources impacts. As shown in Figure 20-2, the Northeast Site Alternative is located predominantly in chamise chapparal. No part of the site is mapped as California Buckwheat Scrub habitat. In this respect, the Northeast Site Alternative would reduce potential impacts on Hermes copper butterfly habitat. As described in Chapter 7, *Biological Resources,* Hermes copper butterfly is a candidate for listing as Federally Endangered which depends on its host plant, spiny redberry (*Rhamnus crocea*) as a larval food source, and nectars mainly on California buckwheat. Given that buckwheat would not be a dominant plant in the Northeast Site Alternative location, suitable habitat for Hermes copper butterfly is unlikely to be present.

In other ways, the Northeast Site Alternative would increase environmental impacts compared to the Proposed Project. As noted above, the Northeast Site Alternative would require a longer (1.4-mile) transmission line component to connect the SVC to the existing Suncrest Substation, some of which would go through relatively undisturbed habitat. Additional trenching for installation of the longer underground transmission line would result in additional air and greenhouse gas emissions, and greater potential for disturbance of biological resources (including wetlands) or buried cultural resources.

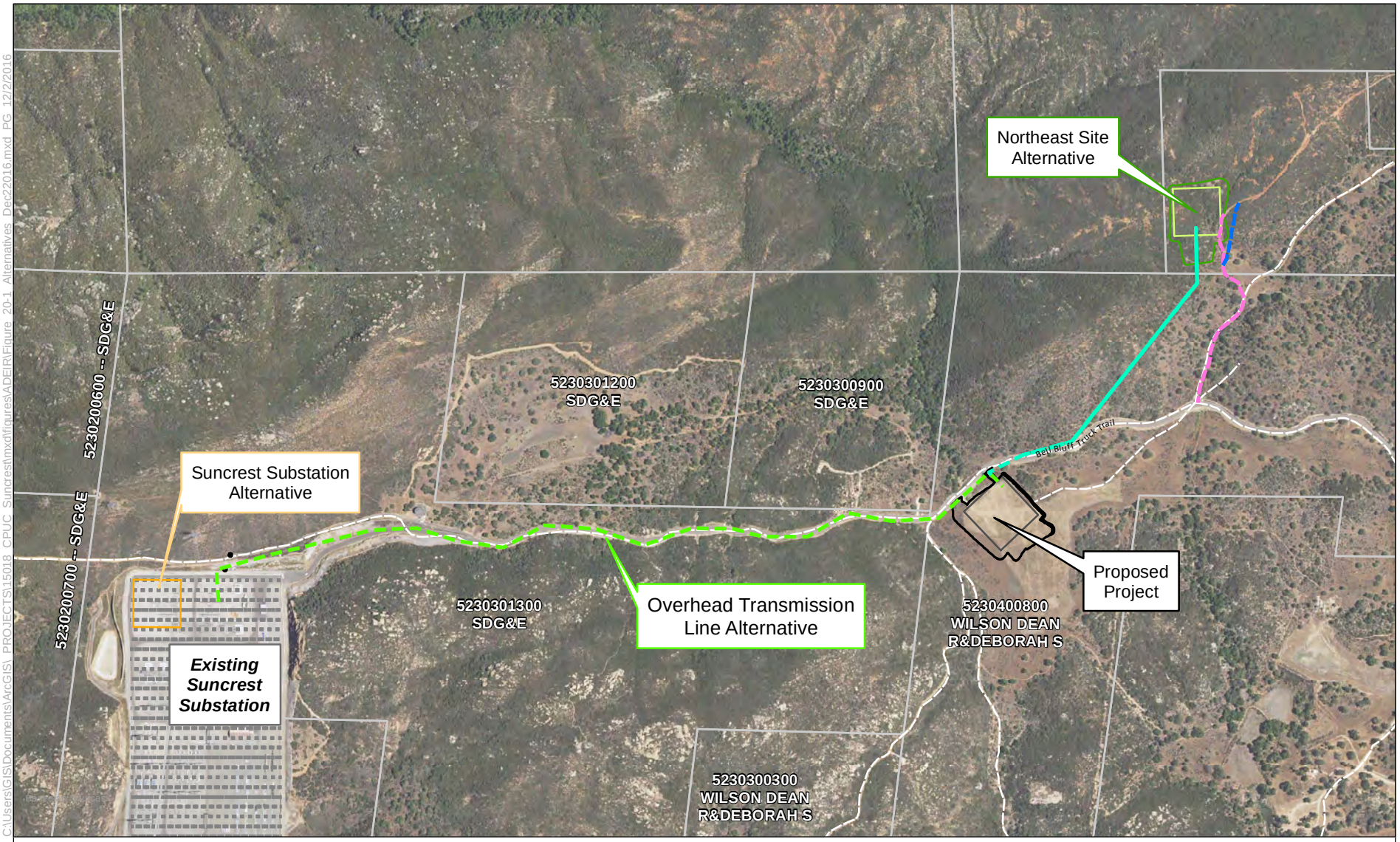
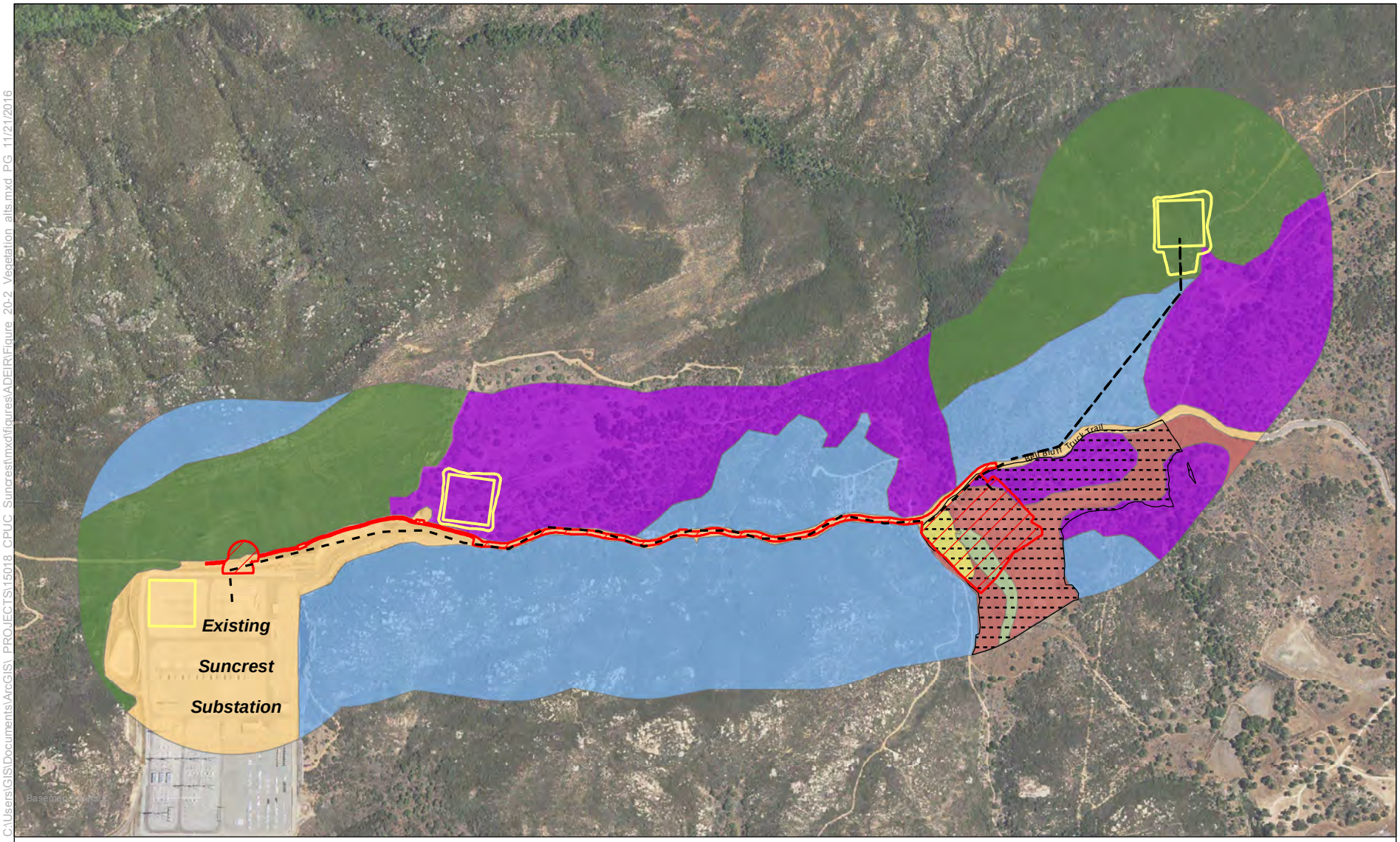


Figure 20-1
Alternative Site Locations

Suncrest Dynamic Reactive Power Support Project


Existing
Suncrest
Substation
Trail
Bluff Trail
Trail
N
0
500
1,000
Feet
Prepared by:
Horizon
WATER and ENVIRONMENT
Vegetation Communities
Bigberry Manzanita – Chamise Chaparral
California Buckwheat Scrub
Chamise Chaparral
Engelmann Oak-Coast Live Oak/Poison Oak/Grass Association
Non-native Grassland
Ruderal
Urban/Developed
Source: SCWA 2015a
Project Area (limit of disturbance)
Subject to repeated disturbance
Alternative Transmission Lines
Alternative SVC Areas
Figure 20-2
Vegetation Types
Alternatives
Suncrest Dynamic Reactive
Power Support Project

20.3.3 Suncrest Substation Alternative

Characteristics of this Alternative

Under the Suncrest Substation Alternative, the SVC would be installed within the existing Suncrest Substation and, therefore, no transmission line would be required. San Diego Gas & Electric (SDG&E) has indicated that there is room within the existing substation to construct the SVC without expanding the substation footprint.[1,2] Under this alternative, NEET West would construct, own, and operate the SVC.

Impact Analysis

The Suncrest Substation Alternative would avoid virtually all of the potential environmental impacts of the Proposed Project. Under the Suncrest Substation Alternative, there would be no land disturbance, trenching, or installation of new structures outside of the existing substation. As such, there would be no potential for impacts to aesthetics, biological resources, cultural resources, geology and soils, or hydrology and water quality. The Suncrest Substation Alternative would require use of some construction equipment and therefore would generate some air emissions, greenhouse gas emissions, and noise; however, these would all be substantially less than under the Proposed Project. Earth-moving construction equipment would not be required under the Suncrest Substation Alternative.

20.3.4 Overhead Transmission Line Alternative

Characteristics of this Alternative

Under the Overhead Transmission Line Alternative, the SVC would be at the same location as the Proposed Project, but the transmission line would be overhead instead of underground. The overhead transmission line connecting the SVC to the existing Suncrest Substation would be approximately 1 mile in length and would generally parallel Bell Bluff Truck Trail, as shown on Figure 20-1. A 70- to 100-foot-wide transmission line right-of-way would be required to account for the land needed for operations and maintenance, as well as transmission line clearance requirements under CPUC General Order 95. This alternative would include installation of approximately 17 tubular steel pole transmission structures between the SVC and existing Suncrest Substation. The types of transmission line structures would vary depending on location, and may include tangent, running angle, and dead-end structures, but pole heights would range between 80 and 140 feet above the ground.

[1] SDG&E submitted a data response to CPUC Energy Division staff on April 15, 2016, that stated the footprint required to install the SVC device within Suncrest Substation would be 1.72 acres. Additional space would be needed for the 230-kV breaker area, access road, and working clearances, resulting in a total area requirement of 2.4 acres. SDG&E's response was to a CPUC data request to estimate the project footprint for the device and all associated new facilities that would achieve the same objectives achieved by NEET West's proposed facility but would be installed within Suncrest Substation.

[2] In its February 8, 2016, comment on the Notice of Preparation of the DEIR, SDG&E requested that an alternative be evaluated that locates a dynamic reactive device within Suncrest Substation and stated that such an alternative would be feasible. SDG&E submitted a project sponsor bid to CAISO to locate an SDG&E-owned dynamic reactive device within the Suncrest Substation based on SDG&E's determination that doing so was feasible.

Impact Analysis

Compared to the Proposed Project, the Overhead Transmission Line Alternative would reduce impacts associated with trenching within Bell Bluff Truck Trail. These include emissions from hauling of spoils, and traffic impacts from temporary closures of the roadway. The Overhead Transmission Line Alternative would have greater aesthetic impacts than the Proposed Project because the steel pole transmission structures would be visible from Bell Bluff Truck Trail, as well as several nearby residences, and would contrast with the surrounding landscape. By locating the poles outside the roadbed, the Overhead Transmission Line Alternative would have greater biological and cultural resources impacts compared to the Proposed Project. Other environmental impacts of the Overhead Transmission Line Alternative would be similar to the Proposed Project.

20.3.5 Summary of Alternatives Analysis and Comparison with the Proposed Project

Table 20-2 contains a summary of the alternatives analysis. The Proposed Project and alternatives are ranked in terms of having the least overall impacts to the physical environment. The No Project Alternative was assigned a rank of 1 because it would not result in any impacts to the physical environment. The Suncrest Substation Alternative was assigned a rank of 2, and the Proposed Project received a rank of 3.

20.4 Environmentally Superior Alternative

An EIR must identify the environmentally superior alternative. Of the alternatives evaluated in this FEIR, the No Project Alternative is the environmentally superior alternative because it would avoid all construction- and operation-related impacts of the Proposed Project. However, in cases when the No Project Alternative is the environmentally superior alternative, an EIR must also identify an environmentally superior alternative from among the other alternatives (State CEQA Guidelines Section 15126.6[e][2]). Accordingly, in addition to the No Project Alternative, the Suncrest Substation Alternative is considered to be the environmentally superior alternative.

As described above, the Suncrest Substation Alternative would avoid virtually all of the environmental impacts of the Proposed Project. Because this alternative would be located within an existing substation, substantial construction impacts to biological or cultural resources would not occur. Likewise, the Suncrest Substation Alternative would have no substantial impact on aesthetics or hydrology and water quality, and would avoid the need for a transmission line. The Suncrest Substation Alternative would still generate some construction-related emissions from transport of equipment and materials to the site and use of construction equipment to install the SVC, but these emissions would be substantially less than under the Proposed Project or any of the other alternatives.

Table 20-2. Summary of Alternatives and Comparison to the Proposed Project

Alternative	Characteristics	Relationship to Project Objectives	Impacts Compared to the Proposed Project	Rank
Proposed Project	▪ NEET West would construct an SVC facility at the former Wilson Construction Yard and an approximately one-mile-long transmission line connecting the SVC to the existing Suncrest Substation	▪ Would meet all of the project objectives	▪ Would generate air and GHG emissions, noise, and limited traffic associated with Project construction ▪ Would impact biological resources due to site clearing and ground disturbance, including possible impacts to Hermes copper butterfly ▪ Could disrupt previously undiscovered, buried cultural resources from ground disturbance ▪ Would adversely affect existing visual quality of the Project site ▪ Would adversely affect existing drainage patterns at the site and increase potential for water quality impacts due to addition of impervious surface area to the site	3
No Project Alternative	▪ NEET West would not construct the SVC or transmission line	▪ Would not meet any of the project objectives	▪ Would avoid all environmental impacts associated with the Proposed Project	1

Alternative	Characteristics	Relationship to Project Objectives	Impacts Compared to the Proposed Project	Rank
Northeast Site Alternative	▪ NEET West would construct the SVC at an alternative site northeast of the Proposed Project site ▪ Alternative would require a longer (1.4-mile) transmission line compared to the Proposed Project, a portion of which would pass through relatively undisturbed habitat	▪ Would meet all of the project objectives	▪ Would increase air emissions, greenhouse gas emissions, energy consumption, and potential impacts to biological and cultural resources due to longer transmission line ▪ Would reduce potential for impacts to Hermes copper butterfly, as butterfly individuals and habitat would be less likely to occur on this site ▪ Would have similar aesthetic impacts, though the facility may be less visible from Bell Bluff Truck Trail and certain sensitive receptors, while possibly more visible from other locations ▪ Would have similar hydrology/water quality impacts associated with addition of impervious surface to the area ▪ Would impact ephemeral drainages within site footprint	5

Alternative	Characteristics	Relationship to Project Objectives	Impacts Compared to the Proposed Project	Rank
Suncrest Substation Alternative	▪ NEET West would construct the SVC within the existing Suncrest Substation ▪ No transmission line or expansion of existing substation footprint would be required	▪ Would meet all of the project objectives	▪ Would avoid virtually all of the environmental impacts associated with the Proposed Project ▪ No potential for impacts to aesthetics, biological and cultural resources, geology and soils, and hydrology and water quality ▪ Would emit some air emissions, greenhouse gas emissions, and generate noise, but these would all be substantially less than the Proposed Project	2
Overhead Transmission Line Alternative	▪ SVC would be constructed in same location as Proposed Project, but transmission line connecting SVC to existing Suncrest Substation would be above-ground rather than below-ground ▪ Would include installation of 17 tubular steel poles primarily along Bell Bluff Truck Trail	▪ Would meet all of the project objectives	▪ Assumed to generate similar or less air and greenhouse gas emissions, noise, and traffic from construction of steel poles compared to underground transmission line ▪ Would have the potential for additional impacts to unknown buried archaeological resources ▪ Would increase aesthetic/visual impacts, as steel pole transmission structures would be visible from roadway and nearby residences and would contrast with surrounding landscape ▪ Would increase biological resources impacts from installing poles outside roadway	4

1

The Suncrest Substation Alternative would produce reactive power at the same level as the Proposed Project and would meet all of the project alternatives. The Proposed Project is not environmentally superior to the Suncrest Substation Alternative because it would have a number of environmental impacts that could be avoided by the Suncrest Substation Alternative. These impacts include biological and potential cultural resources impacts from ground-disturbing activities for construction of the SVC and underground transmission line; aesthetic impacts from the SVC and associated facilities; and stormwater/water quality impacts from development of a new impervious surface. As the SVC would be placed within the existing Suncrest Substation under the Suncrest Substation Alternative, there would be no potential for any of these impacts under this alternative.

The other alternatives were not selected as the environmentally superior alternative for the following reasons:

- **Northeast Site Alternative.** The Northeast Site Alternative was not selected as the environmentally superior alternative because it would have a number of impacts that could be avoided by the Suncrest Substation Alternative. While it would reduce impacts to Hermes copper butterfly compared to the Proposed Project, it would have greater overall biological resources impacts by disturbing a previously undisturbed site. Like the Proposed Project, it would involve constructing the SVC at a distance from the existing Suncrest Substation and connecting it to the existing substation via a transmission line, all of which would be avoided by the Suncrest Substation Alternative.

- **Overhead Transmission Line Alternative.** The Overhead Transmission Line Alternative was not selected as the environmentally superior alternative because it would have a number of impacts which could be avoided entirely by the Suncrest Substation Alternative. As described above, by placing the SVC on the existing Suncrest Substation, the Suncrest Substation Alternative would avoid the need for a transmission line altogether. As such, the Suncrest Substation Alternative would avoid the aesthetic impacts, possible biological resources impacts, and construction-related emissions associated with constructing an overhead transmission line.

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Chapter 21
Other Statutory Considerations

21.1 Introduction

This chapter presents discussions of significant and unavoidable impacts, growth-inducing impacts, and cumulative impacts as required by the California Environmental Quality Act (CEQA) Guidelines.

21.2 Significant and Unavoidable Impacts

Section 15126.2(b) of the CEQA Guidelines requires an Environmental Impact Report (EIR) to describe any significant impacts that cannot be mitigated to a less-than-significant level. All of the impacts associated with the Proposed Project would be reduced to a less-than-significant level through the implementation of identified mitigation measures. The Proposed Project would not result in any significant and unavoidable impacts.

21.3 Growth Inducement

Section 15126.2(d) of the CEQA Guidelines requires an EIR to include a detailed statement of a proposed project's anticipated growth-inducing impacts. The analysis of growth-inducing impacts must discuss the ways in which a proposed project could foster economic or population growth or the construction of additional housing in the surrounding environment. The analysis must also address project-related actions that would remove existing obstacles to population growth, tax existing community service facilities and require construction of new facilities that cause significant environmental effects, or encourage or facilitate other activities that could, individually or cumulatively, significantly affect the environment. A project would be considered growth inducing if it induces growth directly (through the construction of new housing or increasing population) or indirectly (increasing employment opportunities or eliminating existing constraints on development). Under CEQA, growth is not assumed to be either beneficial or detrimental.

The Proposed Project would not involve new development or infrastructure installation that could directly induce significant population growth in the project area. Construction-related jobs would be short-term and would be anticipated to draw from the existing work force. The Proposed Project would not displace any existing housing units or persons, or create any housing units. Additionally, operation of the Proposed Project would not require any on-site workers as NextEra Energy Transmission West, LLC (NEET West) anticipates remotely operating the facility from ~~it's~~ a NextEra affiliate's ~~Lone Star~~ control Center ~~in Austin, Texas~~. Maintenance of the Proposed Project would likely include routine monthly inspections of the Static VAR compensator (SVC) equipment and inspections of the transmission line would occur every 6 to 8 months. This work would be conducted by a small crew of NEET West technicians (1 to 2 workers). The small amount of job growth associated with the Proposed

Project's operation is not anticipated to generate sufficient economic activity, such that it would result in substantial population growth.

As described in Chapter 2, *Project Description,* the Proposed Project would increase operational efficiencies by providing reactive support at the Suncrest Substation. With the loss of a large producer of reactive power (i.e., the San Onofre Nuclear Generating Station (SONGS)) and projected increases in renewable energy, the Proposed Project would ensure that the transmission system reliably delivers new solar photovoltaic and other renewable power generation from Imperial Valley to consumers in the San Diego and Los Angeles areas. Although it is possible that the Proposed Project could remove an obstacle to growth (e.g., lack of reliable electric transmission) and contribute to secondary effects of growth, it would be speculative to determine the extent to which the Proposed Project could result in growth inducement in the San Diego and Los Angeles areas. Even if the Proposed Project did induce growth indirectly or directly, any growth would be negligible. In conclusion, any growth inducement that may be caused by the Proposed Project would not be substantial.

21.4 Cumulative Impacts

According to State CEQA Guidelines Section 15130(a)(1), a cumulative impact is created by the combination of a proposed project with other past, present, and probable future projects causing related impacts. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines Section 15355[b]). Under CEQA, an EIR must discuss the cumulative impacts of a project when the project's incremental contribution to the group effect is "cumulatively considerable." An EIR does not need to discuss cumulative impacts that do not result, in part, from the project evaluated in the EIR. Where an incremental effect is not cumulatively considerable, the basis for concluding that the incremental effect is not cumulatively considerable must be described.

To meet the adequacy standard established by State CEQA Guidelines Section 15130, an analysis of cumulative impacts must contain the following elements:

- an analysis of related past, present, and reasonably foreseeable projects or planned development that would affect resources in the project area similar to those affected by the proposed project;
- a summary of the environmental effects expected to result from those projects with specific reference to additional information stating where that information is available; and
- a reasonable analysis of the combined (cumulative) impacts of the relevant projects.

21.4.1 Approach to Analysis: List Approach

The following analysis of cumulative impacts focuses on whether the impacts of each alternative are cumulatively considerable within the context of impacts resulting from the alternative and other past, present, or reasonably foreseeable future projects. The cumulative

impact scenario considers other projects proposed within the area defined for each resource that have the potential to contribute cumulatively considerable impacts.

State CEQA Guidelines Section 15130 provides the following two alternative approaches for analyzing and preparing an adequate discussion of significant cumulative impacts:

- the list approach, which involves listing past, existing, and probable future projects or activities that have or would produce related or cumulative impacts, including, if necessary, those projects outside the control of the lead agency; or
- the projection approach, which uses a summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions and their contribution to the cumulative effect.

This Draft EIR uses the list approach for analyzing potential cumulative impacts. Activities related to the Proposed Project that are included in the cumulative analysis were determined using several factors, including the location and type of activity and the characteristics of the activity related to resources with the potential to be affected by the Proposed Project. In addition, regional or global conditions that might lead to cumulative impacts are also described.

Resource Topics Considered and Dismissed

The Proposed Project has been determined to have the potential to make a considerable contribution to cumulative impacts related to the following resource topics: Air Quality, Biological Resources, Hazards and Hazardous Materials, Public Services and Utilities, and Transportation and Traffic. Greenhouse gas emissions are a cumulative issue and are already addressed in Chapter 10, *Greenhouse Gas Emissions;* therefore this topic is not discussed further in this section. For all other resource topics, as shown in **Table 21-1**, either significant cumulative impacts do not exist, or the Proposed Project would not have the potential to make a considerable contribution to any significant cumulative impacts. These resource topics have been dismissed from consideration in the analysis of cumulative impacts and are not discussed further.

Table 21-1. Resource Topics Dismissed from Further Consideration in the Analysis of Cumulative Impacts

Resource Topic Not Discussed Further	Rationale
Agricultural and Forest Resources	As described in Chapter 5, *Agriculture and Forestry,* the Proposed Project would not convert agricultural lands or forest lands to non-agricultural uses; therefore it would not have the potential to contribute to any cumulative impacts related to agricultural resources or forestry uses.
Cultural Resources	The Proposed Project would not result in any impacts to known significant cultural resources, and the possibility of the Proposed Project affecting unknown significant cultural resources is speculative (and very low). Therefore, the Proposed Project would not contribute to any significant cumulative impacts related to cultural resources.

Resource Topic Not Discussed Further	Rationale
Geology, Soils, and Seismicity	Similar to the Proposed Project, other construction projects that involve new structures would be required to withstand seismic hazards including liquefaction, expansive soils, and corrosive soils. Because no cumulative projects would overlap the Proposed Project area (aside from the existing Suncrest Substation), there would be no cumulative geologic, soils, or seismic impacts.
Hydrology and Water Quality	As described in Chapter 12, *Hydrology and Water Quality,* the Proposed Project would be required to obtain a General Construction Stormwater Permit from San Diego Regional Water Quality Control Board, which includes preparation and implementation of a SWPPP and a number of construction BMPs that prevent erosion and potential water quality impacts to nearby waters. Similarly, due to the scale of other nearby projects listed in Table 21-2, those projects would also be required to obtain a General Construction Stormwater Permit and implement Best Management Practices that would reduce construction-related impacts to adjacent waters. For these reasons, there would be no significant cumulative impact to which the Proposed Project would contribute.
Land Use and Planning	This topic has been dismissed from the cumulative analysis because, similar to the Proposed Project, other major projects are subject to planning, environmental review, and a permitting process. Through these processes, inconsistencies with relevant plans and policies would be resolved before project implementation. Therefore, consistency with local plans and policies would not apply in the cumulative context.
Mineral Resources	As described in Chapter 14, *Mineral Resources*, the Proposed Project is not located on or in the vicinity of any known mineral resources. Therefore, there is no cumulative impact regarding mineral resources to which the Proposed Project could contribute.
Noise and Vibration	The geographic extent of any cumulative noise impacts is generally within approximately 0.62 mile of the project work area. As described in Chapter 15, *Noise and Vibration*, this represents the farthest extent where the loudest construction activities at the project work area might be audible from a sensitive noise receptor (e.g., resident). As discussed in Chapter 15, construction activities for the Proposed Project would not exceed noise level standards established by San Diego County. Even if construction of the Proposed Project occurs simultaneously with one or more projects listed in Table 21-3, below, given that the closest projects are located over 1 mile away from the Proposed Project, there would be no significant cumulative noise impact.

Resource Topic Not Discussed Further	Rationale
Population and Housing	Information collected during the preparation of this environmental document suggests that substantial population growth is not an issue in the project area, and that sufficient housing exists to accommodate construction employees at either site. As such, there is no cumulative impact to which the Proposed Project could contribute.
Recreation	As described in Chapter 18, *Recreation,* the Proposed Project would not substantially increase population and therefore would not increase demand for recreational facilities. For this reason, there is no cumulative recreation impact to which the Proposed Project could contribute.

Geographic Scope of Analysis

The level of detail of a cumulative impact analysis should consider a proposed project's geographic scope and other factors (e.g., a project's construction or operation activities, the nature of the environmental resource being examined) to ensure that the level of detail is practical and reasonable. The discussion focuses on the potential cumulative impacts of the Proposed Project for environmental resources that could be expected to be cumulatively affected by the Proposed Project in conjunction with other past, present, and reasonably foreseeable future projects. The specific geographic scope for each environmental resource topic analyzed in this Draft EIR for cumulative impacts is provided below.

The defined specific geographic scope for each environmental resource area analyzed in this Draft EIR to which the Proposed Project could contribute to cumulative impacts is provided below in **Table 21-2**.

Table 21-2. Geographic Scope for Resources with Cumulative Impacts Relevant to the Proposed Project

Resource	Geographic Scope	Explanation for the Geographic Scope
Aesthetics	Areas immediately adjacent to the Proposed Project.	This area covers the viewshed of the project vicinity and the immediate surroundings that might affect viewers of the Proposed Project.
Air Quality	Generally limited to areas within 1 mile of any Project work area.	This maximum area is defined because air quality impacts quickly disperse, or dissipate, over distance from the source of emissions and would not have a substantial additive effect with other emissions sources that are located more than a mile away.
Biological Resources	Wetlands and other waters, riparian habitat, sensitive natural communities, and other habitats within the Project vicinity that might	This area covers habitats and wildlife species that could be affected by the Proposed Project and the cumulative projects identified in Table 21-3, including areas that might be disturbed during project construction activities.

Resource	Geographic Scope	Explanation for the Geographic Scope
	support special-status species	
Hazards and Hazardous Materials	Generally, within 3 miles of the Proposed Project	This area generally includes SDG&E-owned lands and lands within the Cleveland National Forest.
Public Services and Utilities	Generally, the area within 5 miles of the Proposed Project	This includes fire protection services within Very High Fire Hazard areas in the vicinity of the Proposed Project.
Traffic and Transportation	Roadway segments in the vicinity of the Proposed Project (e.g., Bell Bluff Truck Trail, Japatul Valley Road, and I-8)	This area includes roads and intersections within the vicinity of the Proposed Project where Level of Service could be adversely affected from construction of the Proposed Project in combination with other planned projects.

Table 21-3 lists projects planned in San Diego County that could affect resources that would also be affected by the Proposed Project. The list was developed by reviewing sources available on the San Diego County website, the Governor's Office of Planning and Research CEQAnet database, Caltrans website, California Public Utility Commissions (CPUC) website, and U. S. Forest Service (USFS) Cleveland National Forest website. While it is unlikely that every potential cumulative project is listed, the list of cumulative projects is considered sufficiently comprehensive and representative of the types of impacts that would be generated by other projects similar to or related to the Proposed Project. The evaluation of cumulative impacts assumes that the impacts of past and present projects are represented by baseline conditions, and that cumulative impacts are considered in the context of baseline conditions alongside reasonably foreseeable future projects.

Table 21-3. Reasonably Foreseeable Future Projects that Might Cumulatively Affect Resources of Concern for the Proposed Project

Project Title	Brief Project Description	Distance from Project Site
Sunrise Powerlink Transmission Project	Construction and operation of 500 kilovolt (kV) and 230 kV electric transmission lines; transmission level substation operating at 500 kV and 230 kV. Construction was completed in 2012.	Adjacent to the project site. The western terminus of the Proposed Project ends at the Suncrest Substation.

Project Title	Brief Project Description	Distance from Project Site
San Diego Gas and Electric (SDG&E) Master Special Use Permit (MSUP) and Permit to Construct Power Line Replacement Projects	SDG&E proposes to combine over 70 individual use permits and easements for SDG&E electric facilities within the Cleveland National Forest into one Master Special Use Permit, which would be issued by the U.S. Forest Service. As part of this project, SDG&E also proposes to replace certain electric power lines within and outside the Cleveland National Forest. Most distribution facilities would be built 14 miles east of the city of El Cajon, in the vicinity of unincorporated communities of Pauma Valley, Warner Springs, Santa Ysabel, Descanso, Pine Valley, Alpine, and Campo. The Final EIR/EIS was certified June 2015.	Wood-to-steel pole conversion would occur approximately 2.6 miles north of the Proposed Project (Viejas Grade Road).
USFS Alpine Community Defense (hazardous fuel treatment) Project	The Descanso Ranger District of the Cleveland National Forest is planning a fuels management project near the community of Alpine. The project would involve fuel management activities on approximately 448 acres in three areas: Anderson Truck Trail toward Interstate(I)-8, from Viejas Creek Road eastward in eastern Alpine, and around the Carveacre Community and access road. The purpose of the project is to provide wildfire protection for communities, infrastructure, and the National Forest. This project is currently undergoing National Environmental Policy Act (NEPA) analysis.	The nearest fuel management location (Viejas Creek Trail) to the Proposed Project is approximately 2.34 miles away.
USFS Greater Alpine Community Defense Fuels	This project entails constructing fuel breaks on private lands in the greater Alpine area to reduce wildland fire risks and improve fire suppression effectiveness and safety. The proposed treatment areas are located in the Carveacre, Japatul Valley, Rancho Nuevo, and Viejas Creek neighborhoods. This project is currently undergoing NEPA analysis.	While the actual fuel break areas are unknown, the Japatul Valley neighborhood is approximately 1.5 miles east of the Proposed Project.
Cleveland National Forest Forest-wide Unauthorized Route Decommissioning	The USFS proposes to decommission the highest priority unauthorized routes in the Cleveland National Forest and restoring those routes to a more natural condition, and educate the public and vehicle users to legal opportunities. Some unauthorized routes would be added to the National Forest System as either administrative or public roads. The project area covers unauthorized routes throughout three Ranger Districts of the Cleveland National Forest: the Trabuco Ranger District, Palomar Ranger District, and Descanso Ranger District.	Various; decommissioning of an unauthorized route near Japatul Valley Road is approximately 2.75 miles northeast of the Proposed Project
Invasive Weed Management on the Cleveland National Forest	The project involves conducting invasive species control and/or eradication efforts on Cleveland National Forest lands for certain invasive weed species and specific infestations. Combination of mechanical and chemical treatments would occur as funding allows.	Throughout Trabuco, Palomar, and Descanso Ranger Districts

Project Title	Brief Project Description	Distance from Project Site
AT&T Master Permit Renewal for Telephone Lines	The project involves renewal of AT&T's authorizations on the Cleveland National Forest. Under this permit, AT&T would renew one master permit with 135 amendments, one 50-year right-of-way, one telephone booth, and one for access on a private road to telephone facilities.	Throughout Trabuco, Palomar, and Descanso Ranger Districts
Caltrans Drainage Improvements	The project involves drainage improvements at various locations near Descanso junction from Route 8/79 Separation to 1.3 miles east of Route 8/79.	Approximately 2.7 miles

Sources: USFS 2014, 2016a, 2016b, 2016c, and 2016d; CPUC and USFS 2014; and Caltrans 2016

21.4.2 Cumulative Setting

This section describes the cumulative setting for which the Proposed Project could potentially contribute a cumulative impact.

Aesthetics

The visual character of the project area and surrounding area is described in Chapter 4, Section 4.3. Of the projects listed in Table 21-3, projects that could contribute to cumulative aesthetics impacts include the Suncrest Substation which was constructed as part of the Sunrise Powerlink Transmission Project, and the SDG&E MSUP and Permit to Construct Power Line Replacement Project. These two projects in combination with the Proposed Project would result in a cumulative effect on the visual character or quality of the area if they adversely affect the same scenic resources or views from nearby roads such as Bell Bluff Truck Trail and Japatul Road.

Air Quality

The existing ambient air quality conditions are summarized in Chapter 6, Section 6.3. The Proposed Project is located in a portion of the San Diego Air Basin (SDAB) that is designated as nonattainment of the federal and State ozone standards, and State Particulate Matter $(PM)_{10}$ and $PM_{2.5}$ standards. Air quality has improved over time as various regulations affecting emissions sources, such as the mobile and stationary sources regulations enacted by California Air Resources Board (CARB) and San Diego Air Pollution Control District (SDAPCD), have started to take effect. Even considering significant population growth, concentrations of all criteria pollutants within the SDAB have generally gone down over time since major air quality regulations were enacted in the 1970s. Air quality is forecast to improve slowly within the SDAB as current regulations continue to reduce air pollutant emissions from stationary, mobile, and area emission sources.

Biological Resources

Ongoing and future development activities in the project vicinity, including Cleveland National Forest, would result in impacts on many of the same habitat types and species that would be affected by the proposed project. Table 21-3 identifies several planned projects near the project area that could potentially affect biological resources during the same time period as the proposed project. This is considered a potentially significant cumulative impact.

Hazards and Hazardous Materials

The existing wildfire risks for the project area and greater San Diego are described in Chapter 11, Section 11.3.4. The Proposed Project and surrounding areas are within a Very High Fire Hazard Severity Zone (CAL FIRE 2007), which indicates that the physical conditions create a very high likelihood that the area will burn over a 30 to 50-year timeframe. In general, San Diego County is also subject to extreme fire danger due to both physical and climatic reasons. In the fall season, extreme fire weather conditions include low humidity, sustained wind-speeds, and strong wind gust. The Santa Ana can create a fire danger with winds typically blowing from the northeast over the Peninsular Ranges. Such winds can have sustained speeds of 40 miles per hour (mph) and gusts over 100 mph.

Public Services and Utilities

The Proposed Project area is located in a Very High Fire Hazard Area and is therefore susceptible to fire. Past, present, and reasonably foreseeable projects – particularly the Sunrise Powerlink Project's Suncrest Substation – have substantially increased the likelihood of accidental wildfires in the region. The existing Suncrest Substation and associated Sunrise power lines had a significant and unavoidable impact on the ability to suppress fires in the vicinity of the Suncrest Substation. This is a significant cumulative impact on fire protection services.

Transportation and Traffic

The existing traffic conditions for roadways in the project vicinity are described in Chapter 19, Section 19.3. The Proposed Project is located off of Bell Bluff Truck Trail, which is a private, paved road that runs parallel to and is located approximately 1.8 miles south of I-8. Japatul Valley Road, located east of the Proposed Project, is a north-south light collector road that connects to I-8 and the south terminus of State Route 79. I-8 is an east-west limited access freeway that provides direct access into San Diego and the greater metropolitan area.

21.4.3 Cumulative Impact Analysis

Impact CUM-1: Cumulative Impacts on Aesthetics.

As described in Chapter 4, *Aesthetics,* the Proposed Project would permanently alter views of the project area through construction of the new SVC, riser pole, and 300-foot overhead span connecting with the existing Suncrest Substation. In general, introduction of these new aboveground facilities would not substantially alter the visual character given the presence of other industrial features within the visual setting (e.g., the Sunrise Powerlink transmission lines and Suncrest Substation). While the proposed rise pole and 300-foot-long overhead span next to the Suncrest Substation would incrementally alter the views from Bell Bluff Truck Trail at the western end of the project area, such structures would be similar in character to the existing Suncrest Substation and Sunrise Powerlink transmission lines and would not substantially degrade the visual character of the project area. In addition, because the proposed SVC is located far (over one mile away) from the existing Suncrest Substation, the SVC in combination with the Suncrest Substation would not substantially degrade scenic views or the visual character of the project area.

It is possible that some views of the Proposed Project along with one or more transmission lines of SDG&E's MSUP Project may be visible. For example, TL625 would be approximately 1.5 miles away from the Proposed Project. Because this transmission line would be far from the aboveground components of the Proposed Project, there would be no significant cumulative impact on aesthetics associated with these two projects. In conclusion, the Proposed Project's contribution to cumulative impacts regarding aesthetics would not be considerable (less than significant).

Impact CUM-2: Cumulative Impacts Related to Increase of Criteria Pollutants.

As discussed in Chapter 6, *Air Quality*, construction of the Proposed Project would involve ground-disturbing activities that require use of construction equipment and vehicles. With implementation of APMs AIR-1, AIR-2, and Mitigation Measure AQ-1, which requires use of U.S. Environmental Protection Agency/CARB Tier 3 or better compliant engines, the Proposed Project would not result in construction emissions exceeding the County of San Diego emissions significance thresholds.

Even if construction of the Proposed Project occurs at the same time as one or more of the projects listed in Table 21-3, with implementation of the measures mentioned above, the Proposed Project's contribution to cumulatively significant impacts regarding air pollutant emissions would not be considerable (less than significant).

Impact CUM-3: Cumulative Impacts on Biological Resources.

The Proposed Project could potentially affect biological resources through habitat alterations or losses. Project activities would involve vegetation clearance, grubbing, ground-disturbing activities, and blasting. As described in Chapter 7, *Biological Resources,* ~~T~~these activities would potentially affect various biological resources including:

- Temporary disturbance or permanent loss of special-status plants such as felt-leaved monardella, San Diego milk-vetch, delicate clarkia, and other plant species.
- Temporary construction-related impacts to nesting birds protected by the MBTA and special status birds including Golden Eagles.
- Temporary disturbance, loss of habitat, or direct mortality of special-status mammals and reptiles, including red-diamond rattlesnake, coastal whiptail, coast horned lizard, coast patch-nosed snake, pallid bat, Dulzura pocket mouse, northwestern San Diego pocket mouse, Townsend's big-eared bat, Stephens' kangaroo rat, western mastiff bat, and San Diego desert woodrat.
- Temporary and permanent loss of Engelmann Oak – Coast Live Oak/Poison Oak/ Grass Association (a sensitive natural community).
- Temporary sediment-related impacts on nearby waters.
- Temporary barriers to wildlife movement and temporary construction-related impacts to wildlife breeding.

The cumulative impact on biological resources resulting from the Proposed Project in combination with other projects listed in Table 21-3 ~~and the greater San Diego County~~ would depend upon the relative magnitude of adverse effects of those projects on biological resources compared to the relative benefit of impact avoidance and minimization efforts prescribed by planning documents, CEQA and NEPA mitigation measures, and permit requirements for each project. The cumulative impact on biological resources would also depend on the benefits that would be realized from adopted habitat conservation plans such as the San Diego Multiple Species Conservation Program.

The EAs for the Cleveland National Forest Forest-wide Unauthorized Route Decommissioning, Invasive Weed Management on the Cleveland National Forest, and Alpine Community Defense Zone Project concluded that these projects would have no negative effects on wetlands or sensitive species on the Regional Forester's list (including San Diego horned lizard, San Diego milk-vetch, felt-leaved monardella, and red-diamond rattlesnake) (USFS 2014, 2016b, and 2016c). The EAs for the Forest-wide Unauthorized Route Decommissioning and Invasive Weed Management on the Cleveland National Forest also acknowledge that these projects would have long-term benefits to plants and wildlife in the area, by removing invasive species and decommissioning environmentally damaging unauthorized routes. Similar to the Proposed Project, the SDG&E MSUP and Permit to Construct Power Line Replacement Projects, USFS Greater Alpine Community Defense Fuels, and other projects listed in Table 21-3 could result in impacts on special-status species habitat and/or individual special-status species (e.g., red-diamond rattlesnake, coast horned lizard, pallid bat, and Townsend's big-eared bat). In the event that construction of the Proposed Project overlaps in duration with other projects listed in Table 21-3, potentially significant cumulative noise effects could occur on avian species like golden eagles. In addition, like the Proposed Project, the SDG&E MSUP and Permit to Construct Power Line Replacement Projects and USFS Greater Alpine Community Defense Fuels project and other projects listed in Table 21-3 could also result in temporary and/or permanent impacts to waters and wetlands of the U.S., and other sensitive natural habitats. Although completed, the Final EIR/EIS for the Sunrise Powerlink Project identifies significant effects related to loss of sensitive plants (e.g., felt-leaf monardella, delicate clarkia), and sensitive wildlife species (e.g., red-diamond rattlesnake, pallid bat, Dulzura pocket mouse), some of which are similar or more severe than those associated with the Proposed Project.

In the absence of avoidance and minimization measures, compensatory mitigation, and conservation measures, the Proposed Project in combination with projects such as the SDG&E MSUP and Permit to Construct Power Line Replacement Projects and USFS Greater Alpine Community Defense Fuels, and other projects listed in Table 21-3 would have a potentially significant cumulative impact~~s~~ on biological resources such as wetlands ~~would occur~~. The Final EIR/EIS prepared for the SDG&E MSUP and Permit to Construct Power Line Replacement Projects identified several APMs and mitigation measures that are intended to reduce impacts on special-status plants like San Diego milk-vetch and special-status animals (e.g., golden eagles, coast patch-nosed snake, pallid bat, Dulzura pocket mouse, red-diamond rattlesnake) (CPUC and USFS 2014). According to the USFS Greater Alpine Community Defense Fuels Treatment on Non-Federal Lands Project EA, no substantial adverse effects on San Diego milk-vetch, felt leaved monardella, and delicate clarkia are anticipated to occur; BMPs and design features would be implemented to reduce potential effects on biological resources (USFS 2016b). ~~However,~~In addition, the County of San Diego General Plan contains conservation measures that would benefit biological resources, as well as measures to avoid, minimize, and mitigate impacts to these resources. Potential BMPs and mitigation measures

for ~~the~~ other ~~above-listed~~ cumulative projects listed in Table 21-3 may include pre-construction surveys and avoidance measures to protect plants, wildlife, waters of the U.S. and state, and sensitive natural communities and breeding. ~~Projects such as the SDG&E MSUP and Permit to Construct Power Line Replacement Projects, USFS Alpine Community Defense Project, and USFS Greater Alpine Community Defense Fuels would likely have impacts on resources such as special status species habitat and sensitive natural habitats which are similar to the Proposed Project. Projects such as the Cleveland National Forest Forest-wide Unauthorized Route Decommissioning and Invasive Weed Management on the Cleveland National Forest would likely have long-term benefits to plants and wildlife in the area, by removing invasive species and decommissioning environmentally damaging unauthorized routes.~~

The Proposed Project would implement Mitigation Measures BIO-1 through BIO-18, described in Chapter 4, *Biological Resources,* to avoid, reduce, or compensate its impacts on special-status plants and animals, birds protected under the MBTA, wetlands and other sensitive habitats, and movement of wildlife and use of breeding sites to less-than-significant levels. Through BMPs, mitigation measures contained in ~~this EIR as well as~~ other CEQA and NEPA documents for nearby projects, and compliance with permit conditions, other projects in the region would ~~mitigate~~minimize their contributions to biological resources impacts and thereby reduce cumulative impacts. Based on publicly available information, the efficacy of BMPs, mitigation measures, and permit conditions for other projects in the region is not known. However, ~~B~~by implementing Mitigation Measures BIO-1 through BIO-18, the Proposed Project would ensure that its contributions to cumulative impacts on biological resources would not be considerable.

Impact CUM-4: Cumulative Impacts related to Hazards and Hazardous Materials.

As described in Chapter 11, project construction would involve use of combustion-engine construction equipment as well as storage of potentially flammable materials, such as fuel or lubricating oil. These activities could provide a spark or ignition source, or introduce materials that could combust or burn at high intensity if exposed to a heat source. During the construction phase, use of such equipment and use or storage of flammable materials could increase the risk of initiating a wildland fire. Similarly, other cumulative projects would potentially involve use of combustion-engine construction equipment and flammable materials that could increase the risk of a wildland fire. Therefore, a potentially significant cumulative impact regarding wildland fires would occur. As described in Chapter 11, Mitigation Measure HAZ-2, which requires preparation and implementation of a Construction Fire Prevention Plan, would reduce the potential for wildland fire risk under the Proposed Project. Because development of such plans is a requirement in the San Diego County Consolidated Fire Code, other cumulative projects may be required to prepare an implement a similar fire prevention plan. It should also be noted that the purpose of several nearby projects is to reduce hazardous fuels (e.g., the USFS Alpine Community Defense Project and the USFS Greater Alpine Community Defense Fuels). In conclusion, given the nature of nearby projects and because the Proposed Project would implement a fire prevention plan, the Proposed Project's contribution to this cumulative impact would not be considerable (less than significant).

Impact CUM-5: Cumulative Impacts on Fire Protection Services.

As described in Chapter 17, the Proposed Project would involve use of internal-combustion construction equipment during construction, which could potentially generate a spark or provide an ignition source. Additionally, the Project may involve blasting during Project construction and potentially may require storage of explosives on-site, which could create fire hazard risk.

Implementation of Mitigation Measure PUB/UTL-1 would ensure that NEET West coordinates with the County of San Diego, California Department of Forestry and Fire Protection, and U.S. Forest Service~~Fish and Wildlife Service~~ to determine if additional fire protection improvements are needed to ensure adequate fire protection services for the Proposed Project. With implementation of this measure and given that other proposed projects in the vicinity would also be required to implement measures to that minimize wildland fire hazards (e.g., the Alpine Community Defense Project and Greater Alpine Community Defense Fuels Project), there would be no considerable contribution to this significant cumulative impact regarding fire protection services.

Impact CUM-6: Cumulative Impacts on Traffic during Construction of the Proposed Project.

As described in Chapter 19, construction workers accessing the work sites would add vehicle traffic to area roadways which could result in temporary traffic increases. However, these trips would be negligible considering the average daily traffic and existing Level of Service on I-8 and local roadways. In addition, as discussed in Chapter 19, Mitigation Measures TR-1 and TR-2 would reduce the effects of construction activities and construction traffic on roadways by conducting traffic flow measures and implementing a traffic control plan. Several of the construction projects listed in Table 21-3 are undergoing NEPA analysis and the construction schedules for those projects are not yet clearly defined. Even if construction of the Proposed Project overlaps with the construction schedule of one or more of the projects listed in Table 21-3, because the levels of service on nearby roads is relatively high, the number of vehicle trips generated by the Proposed Project would not considerably contribute to a cumulative traffic impact (less than significant).

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Chapter 22
Report Preparation

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Agencies and Organization Contacted

Federal, state, and local agencies and tribes were consulted during the preparation of the EIR. The agencies and individuals that were consulted during the preparation of this document are identified below. Additional agencies and tribes were contacted during the preparation of the NextEra Energy Transmission West PEA, as identified in the PEA.

Federal Agencies and Organizations

U.S. Fish and Wildlife Service	Eric Porter
U.S. Forest Service	Spencer Bleadorn, Donn Christiansen, Steve Harvey, Kristen Winter, Jeff Heys, Maureen Anderson

State Agencies and Organizations

California Department of Fish and Wildlife	Eric Weiss
California Dept. of Forestry & Fire Protection	Jason Rainey
California Regional Water Quality Control Board	Eric Becker
State Water Resources Control Board	Cliff Harvey

Local Agencies and Organizations

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Tribes

Viejas Band of Kumeyaay Indians	Julie Hagen, Carmen Lucas, Frank Brown

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Chapter 23
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Executive Summary

None.

Chapter 1. Introduction

None.

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Chapter 22. Report Preparers

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