9. Glossary and Acronyms

9.1 Glossary of Terms

Acre-foot. A unit of measure for water demand and supply. The volume of 1 acre-foot would cover 1 acre to a depth of 1 foot and is equal to 325,851 gallons.

Air Pollution Control District (APCD). A regional government bureau responsible for attainment and management of air quality standards through permitting and regulating of the emission sources.

Air Quality Management Plan (AQMP). Outlines rules and regulations for improving and maintaining the quality of air in the region.

Air quality standard. The specified average concentration of an air pollutant in ambient air during a specified time period, at or above which level the public health may be at risk; equivalent to Ambient Air Quality Standard (AAQS).

Alternating current. An electric current that reverses direction in a circuit at regular intervals.

Ambient. Surrounding on all sides.

Ambient air. Any unconfined portion of the atmosphere; the outside air.

Ambient Air Quality Standard (AAQS). A federal and state measure of the level of air contamination that is not to be exceeded in order to protect human health.

Ampere. A unit of electric current in the meter-kilogram-second system.

Average Daily Trip (ADT). Number of vehicles traveling per normal day on a roadway.

Backfill. Earth that is replaced after a construction excavation.

Bar. Accumulations of bed material (in a stream or river) positioned successfully downstream on the opposite side of the channel.

Baseflow. Groundwater seepage into a stream channel.

Baseline. A set of existing conditions against which change is to be described and measured.

Bioregion. Area where species turnover and habitat zone transitions are pronounced in relation to changes in landform and other environmental features.

Brackish. Pertaining to water, generally estuarine, in which the salinity ranges from 0.5 to 17 parts per thousand by weight.

Carbon dioxide (CO_2). A colorless, odorless gas produced when any carbon-based fuel is burned. Also produced via animal respiration.

Carbon monoxide (CO). A colorless, odorless, toxic gas produced by incomplete combustion of carbon in fossil fuels.

Cathodic protection. An anti-corrosion technique for metal installations; pipelines, tanks, and buildings in which weak electric currents are established to offset the current associated with metal corrosion.

Circuit. An electrical device that provides a path for electrical current to flow.

Concentration. The relative content of a component (as dissolved or dispersed material) and measured by weight or volume of material per unit of volume of the medium.

Concentration, average. The average of a series of measurements of concentration.

Concentration, maximum. The highest individual or average measurement of concentration.

Conductor. A substance or medium (wire) that conducts an electrical charge.

Conductor, bundled. Multiple conductors per phase used to increase the amount of current that may be carried.

Corona Noise. Noise, dependent on weather conditions, caused by partial discharges on insulators and in air surrounding electrical conductors of overhead power lines.

Corrosivity. An estimate of the potential for soil-induced chemical action that dissolves or weakens uncoated shell.

Cultural resource. Places or objects important for scientific, historical, and religious reasons to cultures, communities, and individuals.

Current. The amount of electric charge flowing past a specified circuit point per unit time.

Decibel. A unit used to express relative difference in power or intensity, usually between two acoustic or electric signals. The A-weighted decibel scale (dBA) represents the relative insensitivity of the human ear to low-pitched sounds; decibels are logarithmic units that compare the wide range of sound intensives to which the human ear is sensitive.

Dielectric. A material such as glass or porcelain with negligible electrical or thermal conductivity. A dielectric is an electrical insulator that is highly resistant to flow of electrical current.

Direct current. An electrical current flowing in one direction only.

Double-circuit. A transmission line where two circuits are carried on the same structure.

Electric field. A region of space characterized by the existence of a force generated by electric charge.

Emission. Unwanted substances released by human activity into air or water.

Emission limit. A regulatory standard that restricts the discharge of an air pollutant into the atmosphere.

Emission, primary. An emission that is treated as inert (non-reactive).

Emission, secondary. Unwanted substances that are chemical byproducts of reactive primary emissions.

Environmental Impact Report (EIR). An environmental impact assessment document prepared in accordance with the California Environmental Quality Act (CEQA).

Environmental Impact Statement (EIS). An environmental impact assessment document prepared in accordance with the National Environmental Policy Act (NEPA).

Ephemeral stream. A stream or reach of a channel that flows only in direct response to precipitation in the immediate locality and is at all times above the saturation zone.

Fault. A fracture or zone of fractures in rock strata which have undergone movement that displaces the sides relative to each other, usually in a direction parallel to the fracture. Abrupt movement on faults is a cause of most earthquakes.

Fugitive dust. Pulverized soil particles that are introduced into the air through activities such as soil cultivation or vehicles operating on dirt roadways.

Generation. The production of electricity from other forms of energy such as combustion, falling water or thermal transfer.

Generation capacity. Maximum electric production limit for which a generator is rated. The maximum limit fluctuates with changes in temperature or other environmental circumstances, depending on the type of machine.

Hazard Index. The estimated exposure to a given substance being discharged from a facility divided by the acceptable exposure level for that substance summed over all pollutants.

Hertz (Hz). A unit of frequency equal to one cycle per second.

Hoop strength. A physical property that describes the ability of a tube to withstand internal pressure, bending forces, and crushing forces.

Hydrocarbons, nonmethane. Mixture or concentration of hydrocarbons with the methane fraction ignored. One of many formulations for reactive hydrocarbons.

Hydrocarbons, reactive. Mixture or concentration of hydrocarbons with fraction assumed to be non-reactive removed from consideration.

Insulator. A material such as glass or porcelain with negligible electrical or thermal conductivity.

Inversion. A layer of air in the atmosphere in which the temperature increases with altitude at a rate greater than normal (adiabatic). Pollutants tend to be trapped below the inversion.

Key Observation Point (KOP). One or a series of points on a travel route or at a use area where the view of the proposed Project would be most revealing.

Kilohertz (KHz). A unit of alternating current or electromagnetic wave frequency equal to one thousand hertz (1,000 Hz).

Kilovolt (kV). A unit of electromotive force equal to 1,000 volts.

Kilowatt (kW). A unit of power equal to 1,000 watts.

L_{10}. An average of noise levels that are exceeded 10 percent of the time during the measurement period.

Leq. Average level of sound determined over a specific period of time.

Level of Service (LOS). A measure of roadway congestion, ranging from A (free-flowing) to F (highly congested).

Liquefaction. The process of making or becoming liquid (soils). Earthquakes can cause liquefaction where intense shaking forces loosely packed, water-logged sediments to become loose.

Load centers. Major areas of electricity consumption such as large cities or large industrial facilities.

Magnetic field. A condition found in the region around a magnet or an electric current, characterized by the existence of a detectable magnetic force at every point in the region and by the existence of magnetic poles.

Megawatt (MW). A unit of power equal to one million watts.

Monitoring station. A mobile or fixed site equipped to measure instantaneous or average ambient air pollutant concentrations.

National Forest System lands. Lands owned and managed by the United States Department of Agriculture (USDA) Forest Service.

Nitric oxide (NO). A molecule of one nitrogen and one oxygen atom. Usually results from combustion of organic substances containing nitrogen and from recombination of nitrogen decomposed in air during high-temperature combustion.

Nitrogen dioxide (NO_2). A molecule of one nitrogen and two oxygen atoms. Results usually from further oxidation of NO in the atmosphere. Ozone accelerates the conversion.

Nitrogen oxides (NO_x). Poisonous and highly reactive gases produced when fuel is burned at high temperatures, causing nitrogen in the air to combine with oxygen.

Noise level, median. The level of noise exceeded 50 percent of the time. Usually specified as either the daytime or the nighttime median noise level. Also given the designation L_{50}.

Oxidant. A mixture of chemically oxidizing compounds formed from ultraviolet stimulated reactions in the atmosphere, with ozone a principal fraction.

Ozone(O_3). A molecule of three oxygen atoms. A colorless gas formed by a complex series of chemical and photochemical reaction of reactive organic gases, principally hydrocarbons, with the oxides of nitrogen, which is harmful to the public health, the biota, and some materials.

Particulate matter (particulates). Very fine sized solid matter or droplets, typically averaging one micron or smaller in diameter. Also called “aerosol.”

Proponent’s Environmental Assessment (PEA). Required by the California Public Utilities Commission (CPUC) when filing application for a Certificate of Public Convenience and Necessity (CPCN).

Polyethylene. A lightweight thermoplastic.

Pool. Deep zones (in a stream or river) located directly opposite from bars.

Project. Tehachapi Renewable Transmission Project (TRTP).

Proposed Project. Tehachapi Renewable Transmission Project (TRTP).

Remedial Action Scheme (RAS). A protection system, or plan of action, which automatically initiates one or more remedial actions to ensure transmission system reliability. Also called Special Protection System (SPS).

Riffle. Shallow zones (in a stream or river) between pools.

Right-of-way (ROW). The strip of land over which facilities such as power lines are built.

Riparian. Area along the banks of a river or lake supporting specialized plant and animal species.

Ruderal. Growing where the natural vegetation cover has been disturbed.

Saturation zone. Area of ground with ground water: the zone below the water table that is saturated with ground water.

Seedbank. The layer of topsoil containing native plant seed material, which is frequently used as a "seed bank" for revegetation of native plants.

Seismicity. The relative frequency and distribution of earthquakes.

Sensitive receptor. Land uses adjacent to or within proximity to the proposed Project that could be impacted by construction, operation, and maintenance activities.

Shrink-swell potential. The expansion or contraction of primarily clay-rich soils during alternating wetting and drying cycles.

Single-circuit. A transmission line where one circuit is carried on a structure.

Special Protection Scheme (SPS). A protection system, or plan of action, which automatically initiates one or more remedial actions to ensure transmission system reliability. Also called Remedial Action Scheme (RAS).

Substation. A subsidiary station where electricity is transformed for distribution by a low-voltage network.

Substrate. Geologic term describing soil or geologic layers underlying the ground surface.

Sulfates. Compounds in air or water that contain four oxygen atoms for each sulfur atom. See SO_x.

Sulfur dioxide (SO_2). A corrosive and poisonous gas produced from the complete combustion of sulfur in fuels.

Sulfur oxides (SO_x). The group of compounds formed during combustion or thereafter in the atmosphere of sulfur compounds in the fuel, each having various levels of oxidation, ranging from two oxygen atoms for each sulfur atom to four oxygen atoms.

Terrestrial. Related to or living on land. Terrestrial biology deals with upland areas as opposed to shorelines or coastal habitats.

Transmission service customers. Wholesale electricity utilities or other entities which pay for the use of another utility's facilities to transmit electric power from one point to another.

Tributary. A stream that flows into a larger stream or other body of water.

Turbidity. Cloudiness or muddiness of water, resulting from suspended or stirred up particles.

Utility corridor. A strip of land, or an easement, on which linear utility facilities such as power lines and pipelines are constructed.

Viscosity. Term applied to a fluid indicating its resistance to sheer. In common terms, how "sticky" the fluid is.

Visual sensitivity. Consideration of people's uses of various environments and their concerns for maintenance of scenic quality and open-space values; examples of areas of high visual sensitivity would be areas visible from scenic highways, wilderness areas, parks, recreational water bodies, etc.

Volt. A unit of electric potential difference across a conductor when a current of one ampere dissipates one watt of power.

Voltage. The rate at which energy is drawn from a source that produces a flow of electricity in a circuit, expressed in volts.

Volume to Capacity (V/C) Ratio. A measure of the capacity of a roadway. When V/C is 100 percent, no more traffic can be accommodated.

Watershed. The area contained within a drainage divide above a specified point on a stream.

Watt. A unit of power that measures a rate of energy use or production.

Wetland. Lands transitional between obviously upland and aquatic environments. Wetlands are generally highly productive environments with abundant fish, wildlife, aesthetic, and natural resource values. For this reason, coupled with the alarming rate of their destruction, they are considered valuable resources, and several regulations and laws have been implemented to protect them.

Wheeling. An electric operation wherein transmission facilities of one system are utilized to transmit power of another system.

Williamson Act. Also California Land Conservation Act of 1965.

9.2 Acronyms and Units

2B
Two-conductor bundled

A
Ampere

AADT
Annual Average Daily Traffic

AAQS
Ambient Air Quality Standard

AC
Alternating Current

ACEC
Area of Critical Environmental Concern

ACHP
Advisory Council on Historic Preservation

ACI
American Concrete Institute

ACSR
Aluminum Conductor Steel Reinforced

ADA
American Disabilities Act

ADT
Average daily traffic/trip

AFB
Edwards Air Force Base

AFH
Angeles Forest Highway

AHM
Acutely Hazardous Material

AISC
American Institute of Steel Construction

ALJ
Administrative Law Judge

ALUC
Airport Land Use Commissions

ALUCP
Airport Land Use Compatibility Plan

AMNH
American Museum of Natural History

AMP
Applicant Proposed Measure

ANF
Angeles National Forest

ANSI
American National Standards Institute

APA
Administrative Procedures Act

APCD
Air Pollution Control District

APEFZ
Alquist-Priolo Earthquake Fault Zone

API
American Petroleum Institute

APM
Applicant-Proposed Measure

AQMD
Air Quality Management District

AQMP
Air Quality Management Plan

AQRV
Air Quality-Related Value

ARB
Air Resources Board

ARP
Accidental Release Plan

ASCE
American Society of Civil Engineers

ASI
Archaeological Sensitivity Index

ASL or **asl**
Above sea level

ASME
American Society of Mechanical Engineers

ASTM
American Society for Testing and Materials

ATP
Antelope Transmission Project

AVAQMD
Antelope Valley Air Quality Management District

AVATP
Antelope Valley Area Trails Plan

AVEK
Antelope Valley – East Kern Water Agency

AVSD
Antelope Valley School District

AVTA
Antelope Valley Transit Authority

AWG
American Wire Gauge

AWS
American Welding Society

BC
Back Country

BCMUR
Back Country Motor Use Restricted

BCNM
Back Country Non-Motorized

BEIG
Built Environmental Image Guide

BLM
Bureau of Land Management

BMP
Best Management Practices

BOE
State of California Board of Equalization

BPA
Bonneville Power Administration

CAA
Clean Air Act (Federal)

CAAA
Clean Air Act Amendments

CAAQS
California Ambient Air Quality Standard

CalARP
California Accidental Release Prevention (Program)

Cal-EPA
California Environmental Protection Agency

Cal-IPC
California Invasive Plant Council

CAISO
California Independent System Operator

Cal-OSHA
California Occupational Safety and Health Administration

CALTRANS
California Department of Transportation

CAR
Center for Archaeological Research

CARB
California Air Resources Board

CASQA
California Stormwater Quality Association

CB
Critical Biological

CBC
California Building Code

CCAA
California Clean Air Act

CCR
California Code of Regulations

CDCA
California Desert Conservation Area

CDE
California Department of Education

CDF
California Department of Forestry and Fire Protection

CDFG
California Department of Fish and Game

CDMG
California Division of Mines and Geology

CDOC
California Department of Conservation (see also **DOC**)

CDPH
California Department of Public Health

CEC
California Energy Commission

CEQ
Council on Environmental Quality

CEQA
California Environmental Quality Act

CERCLA
Comprehensive Environmental Response, Compensation and Liability Act ("Superfund")

CESA
California Endangered Species Act

CFM
Cubic feet per minute

CFR
Code of Federal Regulations

CFS
Cubic feet per second

CGP
Construction General Permit

CGS
California Geological Survey

CGTL
Compressed Gas Insulated Transmission Lines

CHP
California Highway Patrol

CHRIS
California Historical Resources Information System

CHSC
California Health and Safety Code

CHSP
Chino Hills State Park

CHSPIA
Chino Hills State Park Interpretive Association

CIWMB
California Integrated Waste Management Board

CLADPR
County of Los Angeles Department of Parks and Recreation

CLAGP
County of Los Angeles General Plan

CLCA
California Land Conservation Act of 1965

CLWA
Castaic Lake Water Agency

CNDDB
California Natural Diversity Data Base

CNEL
Community Noise Equivalent Level

CNPS
California Native Plant Society

COE
Corps of Engineers, U.S. Army (see also **USACE** and **USACOE**)

CPCN
Certificate of Public Convenience and Necessity

CPUC
California Public Utilities Commission

CRA
Colorado River Aqueduct

CRHR
California Register of Historic Resources

CRT
Cathode Ray Tube

CSLC
California State Lands Commission

CSUB
California State University, Bakersfield

CSUF
California State University, Fullerton

CTP
Construction Transportation Plan

CUP
Conditional Use Permit

CUPA
Certified Unified Program Agency

CWA
Clean Water Act

CWHR
California Wildlife Habitat Relationships

DAI
Developed Area Interface

dB
Decibel

dBA
A-weighted decibel

DBH
Diameter at Breast Height

DC
Direct current

DDE
Dichlorodiphenyldichloroethylene

DDT
Dichlorodiphenyltrichloroethane

DG
Distributed generation

DHS
Department of Health Services, California

DOC
California Department of Conservation

DOD
United States Department of Defense

DOGGR
Division of Oil, Gas, and Geothermal Resources

DOI
United States Department of Interior

DOSH
Division of Occupational Safety and Health

DOT
Department of Transportation

DPR
Department of Parks and Recreation, California

DRR
District Ranger's Representative

DSM
Demand-side management

DTSC
Department of Toxic Substances Control, California

DWR
Department of Water Resources

EA
Environmental Assessment

EAP
Energy Action Plan

ECNCA
Eaton Canyon Nature Center Associates

EDD
Employment Development Department, California

EDR
Environmental Data Resources

EERI
Earthquake Engineering Research Institute

EF
Experimental Forest

EHV
Electric high-voltage

EIR
Environmental Impact Report

EIS
Environmental Impact Statement

ELF
Extremely Low Frequency

EMF
Electric and Magnetic Field; also Electro-Magnetic Field

EMS
Emergency Medical Services

EPA
United States Environmental Protection Agency

EPR
Ethylene propylene rubber (used for cable insulation)

EPRI
Electric Power Research Institute

ERP
Erosion Reduction Plan

ESA
Environmental Site Assessment

ESI
Environmental Site Investigation

EW
Existing Wilderness

FAA
Federal Aviation Administration

FCC
Federal Communication Commission

FEMA
Federal Emergency Management Agency

FERC
Federal Energy Regulatory Commission

FIRM
Flood Insurance Rate Map

FLM
Federal Land Manager

FLMP
Forest Land Management Plan

FLPMA
Federal Land Policy and Management Act

FMMP
Farmland Mapping and Monitoring Program

FONSI
Finding of No Significant Impact

FPPA
Farmland Protection Policy Act

FPRP
Fire Prevention and Response Plan

FR
Forest Road

FRAP
Fire and Resource Assessment Program

FS
Forest Service

FSH
Forest Service Handbook

FSM
Forest Service Manual

FWS
United States Fish and Wildlife Service

GEP
Good Engineering Practice

GHG
Greenhouse Gas

GIL
Gas-Insulated Line

GIS
Geographic Information System

GO
General Order (CPUC)

gpd
Gallons per day

gpm
Gallons per minute

gps
Gallons per second

GPS
Global Positioning System

HA
Hydrologic Area

HAZWOPER
Hazardous Waste Operations and Emergency Response

HCA
Habitat Conservation Area

HCP
Habitat Conservation Plan

HIRA
High-Impact Recreation Area

HMBP
Hazardous Materials Business Plan

HMD
Hazardous Materials Division

HMMP
Hazardous Materials Management Plan

hp
Horsepower

HPFF
High-Pressure Fluid-Filled

HR
Hydrologic Region

HSA
Hydrologic Sub-Area

HSWA
Hazardous and Solid Waste Act

HU
Hydrologic Unit

Hz
Hertz

I
Interstate Highway

IARC
International Agency for Research on Cancer

IEEE
Institute of Electrical and Electronics Engineers

IIPP
Injury and Illness Prevention Program

INIRC
International Non-Ionizing Radiation Committee

IOU
Investor-Owned Utility

IPCEA
Insulated Power Cable Engineers Association

IPP
Independent Power Producers

IRA
Inventoried Roadless Areas

IRPA
International Radiation Protection Association

IVCS
International Vegetation Classification System

IWMB
Integrated Waste Management Board

IWMC
Interagency Watershed Mapping Committee

kcmil
1,000 circular mills (unit of area)

KCAPCD
Kern County Air Pollution Control District

KCESS
Kern County Engineering and Survey Service

KCFD
Kern County Fire Department

KCPD
Kern County Planning Department

kHz
Kilohertz

KOP
Key Observation Point

KRT
Kern Regional Transit

kV
Kilovolt

kV/m
Kilovolts per meter

KVA
Key Viewing Area

kVA
Kilovolt amperes

kW
Kilowatt

LAA
Los Angeles Aqueduct

LACDPW
Los Angeles County Department of Public Works

LACFD
Los Angeles County Fire Department

LACSD
Los Angeles County Sheriff's Department

LADWP
Los Angeles Department of Water and Power

Ldn
Day-night level (of noise)

Leq
Equivalent level (of noise)

LESA
Land Evaluation and Site Assessment (for use with FPPA compliance)

LESD
Lancaster Elementary School District

Lmax
Maximum level (of noise)

LMP
Land Management Plan

LORS
Laws, Ordinances, Regulations, and Standards

LOS
Level of Service

LRWQCB
Lahontan Regional Water Quality Control Board

LST
Lattice steel tower

LUST
Leaking Underground Storage Tank

LWSP
Light Weight Steel Pole

M
Moment Magnitude

mA
Milliampere (unit of electric current)

MBTA
Migratory Bird Treaty Act

MCE
Maximum considered earthquake

MCL
Maximum Containment Level

MCV
Manual of California Vegetation

MDAB
Mojave Desert Air Basin

MEER
Mechanical Electrical Equipment Room

mG
Milligauss (unit of magnetic field strength)

mg/L
Milligram per liter

$\mu g/m^3$
Micrograms per cubic meter

MGD
Million gallons/per day

MGS
Mojave ground squirrel

MMCRP
Mitigation, Monitoring, Compliance, and Reporting Program

MMRP
Mitigation Monitoring and Reporting Plan

MMT
million metric tons

MOS
Method of Service

MOU
Memorandum of Understanding

MP
Milepost

MRCA
Mountains Recreation and Conservation Authority

MRDS
Mineral Resource Data System

MSDS
Material Safety Data Sheet

MSHCP
Multiple Species Habitat Conservation Plan

msl
Mean sea level

MW
Megawatt

MWD
Metropolitan Water District of Southern California

NAAQS
National Ambient Air Quality Standards

NAGPRA
Native American Graves Protection and Repatriation Act

NAHC
Native American Heritage Commission

NAWS
Naval Sir Weapons Station

NCIC
North Central Information Center

NCCP
Natural Community Conservation Plan

NCP
National Contingency Plan

NDMA
N-Nitrosodimethylamine

NEC
National Electric Code

NEPA
National Environmental Policy Act

NERC
North American Electric Reliability Council

NESC
National Electrical Safety Code

NFMA
National Forest Management Act

NFP
National Fire Plan

NFS
National Forest System

NHD
National Hydrography Dataset

NHPA
National Historic Preservation Act

NIEHS
National Institute of Environmental Health Sciences

NOA
Notice of Availability

NOAA
National Oceanographic and Atmospheric Administration

NOD
Notice of Determination

NOI
Notice of Intent

NOP
Notice of Preparation

NPDES
National Pollutant Discharge Elimination System

NRC
U.S. Nuclear Regulatory Commission

NRCS
National Resources Conservation Service (formerly Soil Conservation Service, [SCS])

NREL
National Renewable Energy Laboratory

NRHP
National Register of Historic Places

NRT
National Recreation Trail

NSR
New Source Review

NVUM
National Visitor Use Monitoring

NWI
National Wetland Inventory

NWIS
National Water Information System

OEHHA
Office of Environmental Health Hazard Assessment

OES
Office of Emergency Services, California

OHL
Overhead line

OHP
Office of Historic Preservation

OHV
Off-highway vehicle

OHW
Ordinary High Water

O&M
Operations and Maintenance

OML
Operational Maintenance Level

OPGW
Optical Ground Wire

ORV
Off-road recreational vehicle

OSHA
Occupational Safety and Health Administration

PCA
Pest Control Advisor

PCT
Pacific Crest National Scenic Trail

PCTA
Pacific Crest Trail Association

PEA
Proponent's Environmental Assessment

PEL
Permissible Exposure Limit

PERP
Portable equipment registration program

PGA
Peak Ground Acceleration

PG&E
Pacific, Gas & Electric

PHLNHPA
Puente Hills Landfill Native Habitat Preservation Authority

$PM_{2.5}$
Particulate matter smaller than 2.5 microns

PM_{10}
Particulate matter smaller than 10 microns

ppm
Parts per million

PPP
Polypropylene–paper, or high-quality kraft Paper

PRC
Public Resources Code

PSD
Prevention of Significant Deterioration

PSHA
Probabilistic Seismic Hazards Assessment

psi
Pounds per square inch

psig
Pounds per square inch gage

PSR
Policy Screening Report

Qal
Quaternary alluvium

RAREII
Roadless Area Review and Evaluation

RAS
Remedial Action Scheme

RCA
Riparian Conservation Area

RCPG
Regional Comprehensive Plan and Guide

RCRA
Resource Conservation and Recovery Act

RCTP
Renewable Conceptual Transmission Plan

REA
Federal Lands Recreation Enhancement Act

RHNA
Regional Housing Needs Assessment

RMC
San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy

RMP
Resource Management Plan

ROD
Record of Decision

ROS
Recreation Opportunity Spectrum

ROW
Right-of-way

RPS
Renewables Portfolio Standard

RW
Recommended Wilderness

RWQCB
Regional Water Quality Control Board

SAA
Streambed Alteration Agreement

SAC
Stranded Aluminum Conductor

SARWQCB
Santa Ana Regional Water Quality Control Board

SBCDPW
San Bernardino County Department of Public Works

SBCFD
San Bernardino County Fire Department

SBNF
San Bernardino National Forest

SCAB
South Coast Air Basin

SCADA
Supervisory Control and Data Acquisition

SCAG
Southern California Association of Governments

SCAQMD
South Coast Air Quality Management District

SCE
Southern California Edison

SCFF
Self-contained fluid-filled

SCREMP
Santa Clara River Enhancement and Management Plan

SCS
Soil Conservation Service (see NRCS)

SDLAC
Sanitation Districts of Los Angeles County

SEA
Significant Ecological Area

SEATAC
Significant Ecological Area Technical Advisory Committee

SERRF
Southeast Resource Recovery Facility

SHMP
Seismic Hazards Mapping Program

SHPO
State Historic Preservation Officer

SIA
Special Interest Area

SIO
Scenic Integrity Objective

SIP
State Implementation Plan

SJVAB
San Joaquin Valley Air Basin

SLR
Single Lens Reflex

SMARA
Surface Mining and Reclamation Act

SMS
Scenery Management System

SOC
Statement of Overriding Considerations

SOW
Scope of Work

SPCC
Spill Prevention, Control and Countermeasure

SPS
Special Protection Scheme

SR
State Route

SRA
State Responsibility Area

SRP
Special Recreation Permit

SUA
Special-Use Authorization

SUP
Special-Use Permit

SUSMP
Standard Urban Stormwater Mitigation Plan

SVC
Static VAR Compensator

SVOC
Semi-Volatile Organic Compound

SWMP
Storm Water Management Plan

SWP
State Water Project

SWPPP
Storm Water Pollution Prevention Plan

SWRCB
State Water Resources Control Board

T/L
Transmission line

TAC
Toxic air containment

TBD
To be determined

TCCWD
Tehachapi Cummings County Water District

TCM
Transportation Control Measure

TCP
Traffic Control Plan

TCSG
Tehachapi Collaborative Study Group

TDS
Total dissolved solids

TMDL
Total Maximum Daily Load

TPA
Transportation Planning Agency

TRTP
Tehachapi Renewable Transmission Project

TSDF
Treatment, Storage, and Disposal Facility

TSP
Tubular steel pole

TVI
Television interference

TWRA
Tehachapi Wind Resource Area

UBC
Uniform Building Code

UCMP
University of California Museum of Paleontology

UFC
Uniform Fire Code

UMC
Uniform Mechanical Code

UPC
Uniform Plumbing Code

UPRR
Union Pacific Railroad

USACE
Corps of Engineers, United States Army (see also **COE** and **USACOE**)

USACOE
Corps of Engineers, United States Army (see also **COE** and **USACE**)

USC
United States Code

USDA
United States Department of Agriculture

USDI
United States Department of the Interior

USDOT
United States Department of Transportation

USEPA
United States Environmental Protection Agency

USFWS
United States Fish and Wildlife Service

USGS
United States Geological Survey

UST
Underground Storage Tank

UWCD
United Water Conservation District

V/m
Volt per meter

VAC
Volts AC (alternating current)

VAR
Volt-amperes reactive

VC
Visual Change

VDC
Volts DC (direct current)

VM
Visual Modification (Class)

VOC
Volatile organic compound

VQO
Visual Quality Objective

VRM
Visual resource management

VS
Visual Sensitivity

WA
Wilderness Area

WAN
Wide Area Network

WATCH
Work Area Traffic Control Handbook

WCA
Watershed Conservation Authority

WE
Wind Energy

WEAP
Worker Environmental Awareness Program

WECC
Western Electricity Coordinating Council

WHO
World Health Organization

WMP
West Mojave Plan

WRCC
Western Regional Climate Center

WSCC
Western Systems Coordinating Council

XLPE
Solid Dielectric Cross-linked Polyethylene

9.3 Summary of Proposed Project Elements

TRTP Segments 4 through 11 (Alternative 2 – the Proposed Project)

Segment 4. Build two new single-circuit 220-kV transmission lines (T/Ls) for approximately four miles (travelling parallel) in new ROW between the proposed (not part of project) Cottonwind Substation to the proposed new Whirlwind Substation; A new single-circuit 500-kV T/L, for approximately 15.6 miles in new ROW between the proposed new Whirlwind Substation to the existing Antelope Substation.

Segment 5. Rebuild approximately 17.8 miles of the existing Antelope-Vincent 220-kV T/L and the existing Antelope-Mesa 220-kV T/L to 500-kV standards along existing ROW between the existing Antelope and Vincent Substations.

Segment 6. Rebuild approximately 31.9 miles of existing 220-kV T/L to 500-kV standards from the existing Vincent Substation to the southern boundary of the ANF, including approximately 26.9 miles of the existing Antelope-Mesa 220-kV T/L and approximately five miles of the existing Rio Hondo-Vincent 220-kV No. 2 T/L.

Segment 7. Rebuild approximately 15.8 miles of existing Antelope-Mesa 220-kV T/L to 500-kV standards from the southern boundary of the ANF to the existing Mesa Substation.

Segment 8. Rebuild approximately 33 miles of existing Chino-Mesa 220-kV T/L to 500-kV standards from a point approximately two miles east of the existing Mesa Substation (the "San Gabriel Junction") to the existing Mira Loma Substation. Also rebuild approximately seven miles of the existing Chino-Mira Loma No. 1 line from single-circuit to double-circuit 220-kV structures.

Segment 9. Build the new Whirlwind Substation, a 500/220-kV substation located approximately four to five miles south of the proposed (not part of project) Cottonwind Substation near the intersection of 170th Street and Holiday Avenue in Kern County near the TWRA; Upgrade the existing Antelope, Vincent, Mesa, Gould, and Mira Loma Substations to accommodate new T/L construction and system compensation elements.

Segment 10. Build a new single-circuit 500-kV T/L traveling approximately 16.8 miles over new ROW between the approved Windhub Substation and the proposed new Whirlwind Substation.

Segment 11. Rebuild approximately 18.7 miles of existing 220-kV T/L to 500-kV standards between the existing Vincent and Gould Substations and construct a new 220-kV circuit on the vacant side of the existing double-circuit structures of the Eagle Rock-Mesa 220-kV T/L between the existing Gould and Mesa Substations.

Substations

Antelope Substation. The existing Antelope Substation represents the southern end point of Segment 4 and the northern end of Segment 5, and is located south of West Avenue J in the city of Lancaster in the Antelope Valley. Segment 9 includes an upgrade of the Antelope Substation in order to accommodate new 500-kV transmission equipment. The proposed expansion to 500 kV of the Antelope Substation has been licensed and was addressed in the Proponent's Environmental Assessment (PEA) submission to support the Antelope Transmission Project, Segment 1. The exceptions to the licensing were the installation of a 200 MVAR Static VAR Compensator (SVC) and two 500-kV, 150 MVAR each, shunt capacitor banks. The installation of the new equipment would be in an area of approximately 12 acres. Approximately 18 acres of the additional land

would be acquired by SCE; the additional land at the substation site would accommodate the additional new construction at the Antelope Substation.

Chino Substation. The existing Chino Substation is located along Segment 8 in the city of Chino on the northwest corner of the intersection of Edison Avenue and Oaks Avenue. The existing Chino-Mesa 220-kV T/L connects to this substation. Chino-Mira Loma No. 1, 2 and No. 3 220-kV T/Ls leave this substation and connect to the existing Mira Loma Substation in Ontario. No improvements are proposed for the Chino Substation as part of TRTP.

Cottonwind Substation. This substation is currently undergoing environmental review by Kern County in conjunction with a proposed wind energy development project. Two new single-circuit 220-kV T/Ls traveling approximately four miles along new ROW would be constructed from the Cottonwind Substation to the proposed new Whirlwind Substation, as part of Segment 4. Cottonwind Substation is not part of the proposed Project.

Gould Substation. The existing Gould Substation is located along Segment 11 in the city of La Cañada Flintridge, immediately south of the ANF. The Gould Substation portion of Segment 9 includes upgrade of the existing 220-kV switchyard to accommodate the connection of the new Eagle Rock – Gould 220-kV T/L, as well as the 220-kV connections of the existing transformer banks to double breaker positions. All upgrades at the Gould Substation would take place within the existing fence line.

Mesa Substation. The existing Mesa Substation is located at the southern end point of Segment 11 and near the south/eastern end point of Segment 7 in the city of Monterey Park, immediately southeast of Potrero Grande Drive. The Mesa Substation portion of Segment 9 includes upgrades of the existing 220-kV switchyard with additional equipment to accommodate the connection of the new Mesa – Vincent No. 1 220-kV T/L in Segment 11. All upgrades at the Mesa Substation would take place within the existing fence line.

Mira Loma Substation. The existing Mira Loma Substation is located at the western end point of Segment 8 in the City of Ontario, immediately north of East Edison Avenue and east of South Haven Avenue. The Mira Loma Substation portion of Segment 9 would include the construction of a new 500-kV position to terminate the new Mira Loma – Vincent 500-kv T/L, as described under Segment 8. All work would take place within the existing Mira Loma fence line.

Rio Hondo Substation. The existing Rio Hondo Substation is located along Segment 7 in the city of Irwindale, immediately east of the 605 Freeway and south of Live Oak Avenue. Approximately five miles of the existing Antelope – Mesa 220-kV T/L would be replaced with 500-kV double-circuit structures to accommodate the new Rio Hondo – Vincent No. 2 500-kV T/L (initially energized at 220-kV) (east circuit) and the new Mira Loma – Vincent 500-kV T/L (west circuit). The new Rio Hondo – Vincent No. 2 500-kV T/L would connect to the Rio Hondo Substation.

Vincent Substation. In order to accommodate the proposed transmission connections, Segment 9 requires an upgrade of the existing 500/220-kV Vincent Substation which would include two separate extensions of existing switchyards. At the southwestern corner of the facility, the south 220-kV bus extension would require an addition to the existing limits of the graded pad. To match the existing site grade, a retaining wall would be constructed and back-filled. The 500-kV switchyard would be extended to the west by approximately 880 feet where extensive new grading would be required. The 500-kV substation expansion would be on the existing SCE-fee owned property. The 220-kV switchyard expansion would require approximately 0.2 acre of new property acquisition, and would disturb approximately 18 acres of existing and new substation land.

Whirlwind Substation. As part of Segment 9, a new 500/220-kV substation would be located approximately four to five miles south of the Cottonwind Substation near the intersection of 170th Street and Holiday Avenue in Kern County near the TWRA. The site chosen for the new substation would require approximately 106 acres, which would need to be acquired by SCE. Facilities associated with the proposed new substation, such as the substation pad and access road, would represent a permanent land disturbance of approximately 65 acres.

Windhub Substation. This substation was included as "Substation One" in SCE's proposed Antelope Transmission Project Segments 2 and 3 application (A.04-12-008) (D.07-03-045) submitted to the CPUC for approval in December 2004. The application was amended in September 2005. A new single-circuit 500-kV T/L traveling approximately 16.8 miles over new ROW would be constructed between the new Windhub Substation and the proposed new Whirlwind Substation, as part of Segment 10.

Lead Agencies

California Public Utilities Commission (CPUC). The CPUC is the lead agency for the California Environmental Quality Act (CEQA) review of the TRTP. For the Project to be implemented on non-federal land, the CPUC would need to approve a Certificate of Public Convenience and Necessity (CPCN) for the Project.

United States Department of Agriculture (USDA) Forest Service. The USDA Forest Service is the lead agency for the National Environmental Policy Act (NEPA) review of the TRTP. For the Project to be implemented on National Forest System land, the Forest Service would need to adopt a Record of Decision approving the Project and a Special Use permit(s) for its construction and operation.

Other Public Agencies

California Department of Parks and Recreation. Because a portion of Alternative 4 (Routes A, B, C, and D) traverses Chino Hills State Park, the California Department of Parks and Recreation is a responsible agency under CEQA for Alternative 4. The California Department of Parks and Recreation manages more than 270 park units across the State consisting of nearly 1.4 million acres and including over 280 miles of coastline.

California State Park and Recreation Commission. Because a portion of Alternative 4 (Routes A, B, C, and D) traverses Chino Hills State Park, the State Park and Recreation Commission is a responsible agency under CEQA for Alternative 4. The Commission would need to approve necessary amendments to the Chino Hills State Park General Plan in order to allow the implementation of Alternative 4. The State Park and Recreation Commission has specific authorities and responsibilities including approving general plans for units of the State Park System, classifying units of the System, establishing general policies for the guidance of the Director of State Parks in the administration, protection and development of the System, and recommending to the Director a comprehensive recreation policy for the State.

U.S. Army Corps of Engineers (USACE). Because a portion of the transmission line alignment crosses lands owned by the USACE, they have elected to participate as a Cooperating Agency for the NEPA review of the Project. The USACE also has separate regulatory jurisdiction pursuant to Section 404 of the Clean Water Act for the discharge of fill or dredged material into waters of the United States. The USACE's mission is to provide vital public engineering services in peace and war to strengthen our Nation's security, energize the economy, and reduce risks from disasters.

California Department of Toxic Substances Control (DTSC). A portion of Alternative 4 (Routes C and D) would traverse the Aerojet Chino Hills Facility, which is the subject of Corrective Action for the cleanup of explosive chemicals, perchlorate, uranium, and ordnance. As part of the Feasibility Study process for the Corrective Action for the facility, the DTSC will select a proposed future land use for the site and that future land use selection would need to allow the construction of transmission infrastructure in order for Route 4C or 4D to be implemented. The DTSC's mission is to provide the highest level of safety, and to protect public health and the environment from toxic harm.

California Independent System Operator (CAISO). The CAISO is a not-for-profit public benefit corporation established in 1998 to operate the majority of California's high-voltage wholesale power grid. The CAISO is the impartial link between power plants and the utilities that serve the State's electrical power consumers. The CAISO provides equal access to the grid for all qualified users and strategically plans for transmission needs.

Puente Hills Landfill Native Habitat Preservation Authority (PHLNHPA). The PHLNHPA is a Joint Powers Authority with a Board of Directors consisting of the City of Whittier, County of Los Angeles, Sanitation Districts of Los Angeles County, and the Hacienda Heights Improvement Association. It came into existence in 1994 as mitigation for the Puente Hills Landfill, its main funding source, and is dedicated to the acquisition, restoration, and management of open space in the Puente Hills for preservation of the land in perpetuity, with the primary purpose to protect biological diversity. Additionally, the agency endeavors to provide opportunities for outdoor education and low-impact recreation.

Watershed Conservation Authority (WCA). The WCA was created April 17, 2003, and is a joint powers entity of the Rivers and Mountains Conservancy (RMC) and the Los Angeles County Flood Control District. The WCA functions as a partnership between the RMC and Los Angeles County to conduct joint projects. The focus of the WCA is on projects that will provide open space, habitat restoration, and watershed improvement in the San Gabriel River and the Lower Los Angeles River watersheds.

Project Applicant

Southern California Edison (SCE). If approved, the TRTP would be constructed and operated by SCE. SCE provides electrical power in a 50,000-square-mile service area, encompassing 11 counties in central, coastal, and southern California. SCE is an investor-owned utility that is regulated by the CPUC.

Places and Projects

Alta-Oak Creek Mojave Project. The proposed Alta-Oak Creek Mojave Project is located at the center of the TWRA, adjacent to the Windhub Substation (see Figure 6.2-2). It is proposed to be located on approximately 11,000 acres of land with up to 350 wind turbines to produce up to 800 MW of wind energy. It would be the first project of the Alta Wind Energy Center which is designed to produce 1,500 MW of wind power. Kern County is currently beginning the environmental review process for this project. An Initial Study was completed by Kern County in December 2008. Since this project is located within the TWRA, it is included in the programmatic analysis (see Chapter 6).

Angeles National Forest (ANF). The ANF is predominantly characterized by undeveloped lands and open space which is managed by the USDA Forest Service for the purposes of recreation and natural resources management, among various other uses. A wide variety of recreational resources are available within the ANF, including hiking, mountain biking, horseback riding, off-highway vehicle (OHV) use, camping,

picnicking, fishing, water sports, and general outdoor relaxation and appreciation. Most of the Central Region of the proposed project falls within the jurisdictional boundaries of the ANF.

Chino Hills State Park (CHSP). CHSP occupies 12,452 acres and stretches for nearly 31 miles between the Santa Ana Mountains and the Whittier Hills, making it a major component in the Puente-Chino Hills biological corridor. This park provides a largely undeveloped open space area for outdoor appreciation and recreational opportunities. A 60-mile network of trails and fire roads within the Park accommodate recreational uses such as hiking, horseback riding, and bicycling. Some trails are restricted to non-motorized use only, for safety and habitat conservation purposes. Recreational resources provided within the park include picnic areas and equestrian facilities (staging area, pipe corrals and a historic barn).

Pacific Crest National Scenic Trail (PCT). The PCT is 2,650 miles long, extending from Mexico to Canada and running generally along the north-south oriented mountain ridges of California (Sierra Nevada), Oregon, and Washington (Cascade Range). It crosses three national monuments, seven national parks, 24 national forests, and 33 federally mandated wildernesses. The PCT crosses through the North Region in a south-to-north direction. Although the trail is usually situated on ridgelines, it is routed off ridges in several places within the North Region due to a lack of necessary easements through private property. Please see Figure 3.15-2 (Pacific Crest National Scenic Trail).

PdV Wind Energy Project. The proposed PdV Wind Energy Project is located at the southern end of the TWRA, just north of the Cottonwind Substation (see Figure 6.2-2). It is proposed to be located on 5,820 acres of land with up to 300 wind turbines to produce 300 MW of wind energy. The project will also include a substation to step up the voltage generated by the turbines to meet the electrical system's 220-kV or 500-kV voltages. The Final Environmental Impact Report (EIR) for this project was completed in February 2008 and has been recommended for approval by Kern County. A summary of the EIR for this project can be found in Appendix E.

Tehachapi Wind Resource Area (TWRA). The TWRA is considered the largest wind resource area in California and is situated at the southern end of the San Joaquin Valley and spreads into the adjacent Mojave Desert. Wind power plants in this area are responsible for over 40 percent of California's wind energy generation and produce more power than any other wind development in the United States.