BEFORE THE
PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Application of PACIFIC GAS AND ELECTRIC COMPANY, a California corporation, for a Permit to Construct the Sanger Substation Expansion Project Pursuant to General Order 131-D (U 39 E)	Application No.

EXHIBIT B

PROPONENT'S ENVIRONMENTAL ASSESSMENT FOR THE APPLICATION OF PACIFIC GAS AND ELECTRIC COMPANY FOR A PERMIT TO CONSTRUCT THE SANGER SUBSTATION EXPANSION PROJECT

Sanger Substation Expansion Project

Proponent's Environmental Assessment

Prepared for
Pacific Gas and Electric Company

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Acronyms

AADT	annual average daily traffic
AB	Assembly Bill
ACM	asbestos-containing material
APM	applicant-proposed measure
APP	Avian Protection Plan
BAAH	breaker and a half
bgs	below ground surface
BMP	best management practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH_4	methane
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2e	carbon dioxide equivalents
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRS	Cultural Resources Specialist
CSU Fresno	California State University, Fresno
CWA	Clean Water Act

Acronyms

dB	decibels
dBA	A-weighted decibels
DNL	day-night sound level
DOC	California Department of Conservation
DOT	U.S. Department of Transportation
DPM	diesel particulate matter
DPR	California Department of Parks and Recreation
DTSC	Department of Toxic Substances Control
EDR	Environmental Data Resources, Inc.
EFZ	Earthquake Fault Zone
ESA	federal Endangered Species Act
FAA	Federal Aviation Administration
FCFPD	Fresno County Fire Protection District
FEMA	Federal Emergency Management Agency
FHWA	U.S. Department of Transportation, Federal Highway Administration
FICUN	Federal Interagency Committee on Urban Noise
FIRM	Flood Insurance Rate Map
FR	Federal Register
FRA	Federal Railroad Administration
GHG	greenhouse gas
GIS	geographic information system
GO	CPUC General Order
GPS	global positioning system
H_2S	hydrogen sulfide
HAPs	hazardous air pollutants
HCP	Habitat Conservation Plan
HMBP	Hazardous Material Business Plan
ISO	Independent System Operator Corporation
kV	kilovolt
L_{dn}	day-night sound
LDSP	light duty steel pole

Acronyms

L_{eq}	equivalent sound pressure
L_{max}	maximum noise level
L_n	percentile of time that the sound level is exceeded
LOS	Level of service
MBTA	Migratory Bird Treaty Act
MPAC	Modular Protection Automation Control
MPAC	modular protection automation and control
MRZ	mineral resource zones
$MTCO_2e$	metric tons of carbon dioxide equivalents
N2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Communities Conservation Plan
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFIP	National Flood Insurance Program
NHM	Natural History Museum of Los Angeles County
NO2	nitrogen dioxide
NOAA Fisheries	National Oceanic and Atmospheric Administration, National Marine Fisheries Service
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
O&M	operations and maintenance
O_3	ozone
Pb	lead
PEA	Proponent's Environmental Assessment
PG&E	Pacific Gas and Electric Company
PGA	peak ground acceleration
PM	particulate matter
PM_{10}	particulate matter smaller than 10 microns in size

Acronyms

$PM_{2.5}$	particulate matter smaller than 2.5 microns in size
PRC	Public Resources Code
PSD	Prevention of Significant Deterioration
PTC	Permit to Construct
RCRA	Resource Conservation and Recovery Act of 1976
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SF6	sulfur hexafluoride
SHMA	Seismic Hazards Mapping Act
SIP	state implementation plan
SJL&P	San Joaquin Light and Power Company
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SJVR	San Joaquin Valley Railroad
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SR	State Route
SSJVIC	Southern San Joaquin Valley Information Center
SWPPP	Stormwater Pollution Protection Plan
SWRCB	State Water Resources Control Board
TCR	Tribal Cultural Resources
TMP	Traffic Management Plan
TSP	tubular steel pole
UCMP	University of California Museum of Paleontology
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

Index to CPUC PEA Requirements

CPUC Requirement	Section Number
Cover Sheet	
Chapter 1: PEA Summary	
1. The major conclusions of the PEA	1.0
2. Any areas of controversy	Not applicable (N/A)
3. Any major issues that must be resolved including the choice among reasonably feasible alternatives and mitigation measures, if any	NA
4. Description of inter-agency coordination	N/A
5. Description of public outreach efforts, if any	N/A
Chapter 2: Project Purpose and Need and Objectives	
2.1 Overview Explanation of the objective(s) and/or Purpose and Need for implementing the Proposed Project.	2.1; Permit to Construct (PTC) Application
2.2 Project Objectives Analysis of the reason why attainment of these objectives is necessary or desirable. Such analysis must be sufficiently detailed to inform the Commission in its independent formulation of project objectives, which will aid any appropriate CEQA alternatives screening process.	2.1; 2.2; PTC Application
Chapter 3: Project Description	
3.1 Project Location	
1. Geographical Location: County, City (provide project location map(s)).	2.2; Figure 2-1
2. General Description of Land Uses within the project site (e.g., residential, commercial, agricultural, recreation, traverses vineyards, farms, open space, number of stream crossings, etc.).	2.2
3. Describe if the Proposed Project is located within an existing property owned by the Applicant, traverses existing rights of way (ROW) or requires new ROW. Give the approximate area of the property or the length of the project that is in an existing ROW or which requires new ROWs.	2.9
3.2 Existing System	
1. Describe the local system to which the Proposed Project relates; include all relevant information about substations, transmission lines and distribution circuits.	2.3
2. Provide a schematic diagram and map of the existing system.	Figure 2-4
3. Provide a schematic diagram that illustrates the system as it would be configured with implementation of the Proposed Project.	Figure 2-4
3.3 Project Objectives (Can refer to Chapter 2, Project Purpose and Need, if already described there.)	2.4
3.4 Proposed Project	
1. Describe whole of the Proposed Project. Is it an upgrade, a new line, new substations, switching station etc.?	2.5

CPUC Requirement	Section Number
2. Describe how the Proposed Project fits into the Regional system. Does it create a loop for reliability, etc.?	2.5
3. Describe all reasonably foreseeable future phases, or other reasonably foreseeable consequences of the Proposed Project.	N/A
4. Provide capacity increase in MW. If the project does not increase capacity, state it.	N/A
5. Provide GIS (or equivalent) data layers for the Proposed Project preliminary engineering including estimated locations of all physical components of the Proposed Project as well as those related to construction. For physical components, this could include but is not limited to the existing components (e.g., ROW, substation locations, poles, etc.) as well as the proposed pole locations, transmission lines, substations, switching station etc. For elements related to construction include: proposed or likely lay-down areas, work areas at the pole sites, pull and tension sites, access roads (e.g., temporary, permanent, existing, etc.), areas where special construction methods may need to be employed, areas where vegetation removal may occur, areas to be heavily graded, etc. More details about this type of information are provided below.	For security reasons, GIS data layers will be submitted confidentially under California Public Utilities Code (CPUC) Section 583
3.5 Project Components	
3.5.1 Transmission Line	
1. What type of line exists and what type of line is proposed (e.g., single-circuit, double-circuit, upgrade 69 kV to 115 kV).	2.5.2
2. Identify the length of the upgraded alignment, the new alignment, etc.	2.5.2
3. Would construction require one-for-one pole replacement, new poles, steel poles, etc.?	2.5.2
4. Describe what would occur to other lines and utilities that may be collocated on the poles to be replaced (e.g., distribution, communication, etc.).	2.5.1
3.5.2 Poles/Towers Provide the following information for each pole/tower that would be installed and for each pole/tower that would be removed:	
1. Unique ID number to match GIS database information.	For security reasons, unique ID numbers have not been provided. Available GIS data layers will be submitted confidentially under CPUC Section 583.
2. Structure diagram and, if available, photos of existing structure. Preliminary diagram or "typical" drawings and, if possible, photos of proposed structure. Also provide a written description of the most common types of structures and their use (e.g., Tangent poles would be used when the run of poles continues in a straight line, etc.). Describe if the pole/tower design meets raptor safety requirements.	Figures 2-4 to 2-6; Section 2.5
3. Type of pole (e.g., wood, steel, etc.) or tower (e.g., self-supporting lattice).	2.5.2
4. For poles, provide "typical" drawings with approximate diameter at the base and the tip; for towers, estimate the width at base and top.	Figure 2-6
5. Identify typical total pole lengths, the approximate length to be embedded, and the approximate length that would be above ground surface; for towers, identify the approximate height above ground surface and approximate base footprint area.	2.5.2, 2.5.9.1

CPUC Requirement	Section Number
6. Describe any specialty poles or towers; note where they would be used (e.g., angle structures, heavy angle lattice towers, stub guys); make sure to note if any guying would likely be required across a road.	N/A
7. If the project includes pole-for-pole replacement, describe the approximate location of where the new poles would be installed relative to the existing alignment.	Figure 2-2
8. Describe any special pole types (e.g., poles that require foundations, transition towers, switch towers, microwave towers, etc.) and any special features.	2.5.2
3.5.3 Conductor Cable	
3.5.3.1 Above-Ground Installation	
1. Describe the type of line to be installed on the poles/tower (e.g., single circuit with distribution, double circuit, etc.).	2.3.2
2. Describe the number of conductors required to be installed on the poles or tower and how many on each side including applicable engineering design standards.	Figure 2-6
3. Provide the size and type of conductor (e.g., ACSR, non-specular, etc.) and insulator configuration.	2.5.9.3
4. Provide the approximate distance from the ground to the lowest conductor and the approximate distance between the conductors (i.e., both horizontally and vertically) Provide specific information at highways, rivers, or special crossings.	2.5.9.3 – specifics are not provided; instead, standards are stated
5. Provide the approximate span lengths between poles or towers, note where different if distribution is present or not if relevant.	N/A
6. Describe if other infrastructure would likely be collocated with the conductor (e.g., fiber optics, etc); if so, provide conduit diameter of other infrastructure.	N/A
3.5.3.2 Below-Ground Installation	
1. Describe the type of line to be installed (e.g., single circuit cross-linked polyethylene-insulated solid-dielectric, copper-conductor cables).	N/A
2. Describe the type of casing the cable would be installed in (e.g., concrete-encased duct bank system); provide the dimensions of the casing.	N/A
3. Provide an engineering 'typical' drawing of the duct bank and describe what types of infrastructure would likely be installed within the duct bank (e.g., transmission, fiber optics, etc.).	N/A
3.5.4 Substations and Switching Stations	
1. Provide "typical" Plan and Profile views of the proposed substation or switching station and the existing substation or switching station if applicable.	Figures 2-4 & 2-5
2. Describe the basic bus pattern or provide a basic one-line diagram and explain the types of equipment that would be temporarily or permanently installed and provide details as to what the function/use of said equipment would be. Include information such as, but not limited to: mobile substations or switching stations, switchgear, circuit breakers, transformers, capacitors, and new lighting.	2.5.1
3. Provide the approximate or "typical" dimensions (width and height) of new structures including engineering and design standards that apply.	2.5.1
4. Describe the extent of the Proposed Project. Would it occur within the existing fence line, existing property line or would either need to be expanded?	2.2; 2.3.1

CPUC Requirement	Section Number
5. Describe the electrical need area served by the distribution substation or switching station.	2.3.2
3.6 Right-of-Way Requirements	
1. Describe the ROW location, ownership, and width. Would existing ROW be used or would new ROW be required?	2.9
2. If new ROW is required, describe how it would be acquired and approximately how much would be required (length and width).	2.9
3. List properties likely to require acquisition.	N/A
3.7 Construction	
3.7.1 For All Projects	
3.7.1.1 Staging Areas	
1. Where would the main staging area(s) likely be located?	2.5.4
2. Approximately how large would the main staging area(s) be?	2.5.4
3. Describe any site preparation required, if known, or generally describe what might be required (i.e., vegetation removal, new access road, installation of rock base, etc.).	2.5.4
4. Describe what the staging area would be used for (i.e., material and equipment storage, field office, reporting location for workers, parking area for vehicles and equipment, etc.).	2.5.4
5. Describe how the staging area would be secured, would a fence be installed? If so, describe the type and extent of the fencing.	2.5.4 – specifics are not provided; instead, general site preparation is discussed.
6. Describe how power to the site would be provided if required (i.e., tap into existing distribution, use of diesel generators, etc.).	N/A
7. Describe any grading activities and/or slope stabilization issues.	N/A
3.7.1.2 Work Areas	
1. Describe known work areas that may be required for specific construction activities (i.e., pole assembly, hill side construction, etc.).	2.5.4
2. For each known work area, provide the area required (include length and width) and describe the types of activities that would be performed.	2.5.4
3. Identify the approximate location of known work areas in the GIS database.	Available GIS data layers will be submitted confidentially under CPUC Section 583.
4. How would the work areas likely be accessed (e.g., construction vehicles, walk in, helicopter, etc.)?	2.5.4
5. If any site preparation is likely required, generally describe what and how it would be accomplished.	2.5.8
6. Describe any grading activities and/or slope stabilization issues.	N/A
7. Based on the information provided, describe how the site would be restored.	?

CPUC Requirement	Section Number
3.7.1.3 Access Roads and/or Spur Roads	
1. Describe the types of roads that would be used and or would need to be created to implement the Proposed Project. See table below as an example of information required. Road types may include, but are not limited to: new permanent road; new temporary road; existing road that would have permanent improvements; existing road that would have temporary improvements, existing paved road; existing dirt/gravel road, and overland access.	2.5.7
2. For road types that require preparation, describe the methods and equipment that would be used.	2.5.7
3. Identify approximate location of all access roads (by type) in the GIS database.	Available GIS data layers will be submitted confidentially under CPUC Section 583.
4. Describe any grading activities and/or slope stabilization issues. See table in PEA Checklist as an example of information required. Road types may include, but are not limited to: new permanent road; new temporary road; existing road that would have permanent improvements; existing road that would have temporary improvements, existing paved road; existing dirt/gravel road, and overland access	2.5.7
3.7.1.4 Helicopter Access	
1. Identify which proposed poles/towers would be removed and/or installed using a helicopter.	N/A
2. If different types of helicopters are to be used, describe each type (e.g., light, heavy or sky crane) and what activities they will be used for.	N/A
3. Provide information as to where the helicopters would be staged, where they would refuel, where they would land within the Project site.	N/A
4. Describe any Best Management Practices (BMPs) that would be employed to avoid impacts caused by use of helicopters, for example: air quality and noise considerations.	N/A
5. Describe flight paths, payloads, hours of operations for known locations and work types.	N/A
3.7.1.5 Vegetation Clearance	
1. Describe what types of vegetation clearing may be required (e.g., tree removal, brush removal, flammable fuels removal) and why (e.g., to provide access, etc.).	2.5.10
2. Identify the preliminary location and provide an approximate area of disturbance in the GIS database for each type of vegetation removal.	Available GIS data layers will be submitted confidentially under CPUC Section 583.
3. Describe how each type of vegetation removal would be accomplished.	2.5.10
4. For removal of trees, distinguish between tree trimming as required under GO-95D and tree removal.	N/A
5. Describe the types and approximate number and size of trees that may need to be removed.	N/A
6. Describe the type of equipment typically used.	2.5.5

CPUC Requirement	Section Number
3.7.1.6 Erosion and Sediment Control and Pollution Prevention during Construction	
1. Describe the areas of soil disturbance including estimated total areas, and associated terrain type and slope. List all known permits required. For project sites of less than 1 acre, outline the BMPs that would be implemented to manage surface runoff. Things to consider include, but are not limited to, the following: • Erosion and Sedimentation BMPs; • Vegetation Removal and Restoration; and/or • Hazardous Waste and Spill Prevention Plans.	2.2, 2.5.1, 2.5.11, Table 2-2, 3.9.4.2
2. Describe any grading activities and/or slope stabilization issues.	2.5.1
3. Describe how construction waste (i.e., refuse, spoils, trash, oil, fuels, poles, pole structures, etc.) would be disposed.	2.5.12, Table 2-3
3.7.1.7 Cleanup and Post-Construction Restoration	
1. Describe how cleanup and post-construction restoration would be performed (i.e., personnel, equipment, and methods). Things to consider include, but are not limited to, restoration of the following: Natural drainage patterns; wetlands; vegetation, and other disturbed areas (i.e. staging areas, access roads, etc).	2.5.12
3.7.2 Transmission Line Construction (Above Ground)	
3.7.2.1 Pull and Tension Sites	
1. Provide the general or average distance between pull and tension sites.	2.5.4
2. Provide the area of pull and tension sites, include the estimated length and width.	2.5.4
3. According to the preliminary plan, how may pull and tension sites would be required, and where would they be located? Please provide the location information in GIS.	2.5.4 Available GIS data layers will be submitted confidentially under CPUC Section 583.
4. What type of equipment would be required at these sites?	Table 2-1
5. If conductor is being replaced, how would it be removed from the site?	2.5.12
3.7.2.2 Pole Installation and Removal	
1. Describe how the construction crews and their equipment would be transported to and from the pole site location. Provide vehicle type, number of vehicles, and estimated number of trips and hours of operation.	2.5.4, Table 2-1
Pole and Foundation Removal	
1. Describe the process of how the poles and foundations would be removed.	2.5.9.2
2. Describe what happens to the hole that the pole was in (i.e., reused or backfilled)?	2.5.9.2
3. If the hole is to be filled, what type of fill would be used, where would it come from?	2.5.9.2
4. Describe any surface restoration that would occur at the pole site?	N/A
5. Describe how the poles would be removed from the site?	2.5.12

CPUC Requirement	Section Number
Top Removal If topping is required to remove a portion of an existing transmission pole that would now only carry distribution lines, please provide the following:	
1. Describe the methodology to access and remove the tops of these poles	N/A
2. Describe any special methods that would be required to top poles that may be difficult to access, etc	N/A
Pole Tower Installation	
1. Describe the process of how the new poles/towers would be installed; specifically call out any special construction methods (e.g., helicopter installation) for specific locations or for different types of poles/towers.	2.5.9.1
2. Describe the types of equipment and their use as related to pole/tower installation.	2.5.9.1, Table 2-1
3. Describe actions taken to maintain a safe work environment during construction (e.g., covering of holes/excavation pits, etc.).	3.8.4.3
4. Describe what would be done with soil removed from a hole/foundation site.	2.5.8
5. For any foundations required, provide description of construction method(s), approximate average depth and diameter of excavation, approximate volume of soil to be excavated, approximate volume of concrete or other backfill required, etc.	2.5.9.1
6. Describe briefly how poles/towers and associated hardware are assembled.	2.5.9.1
7. Describe how the poles/towers and associated hardware would be delivered to the site; would they be assembled off-site and brought in or assembled on site?	2.5.9.1
8. Provide a table of pole/tower installation metrics and associated disturbance area estimates as in PEA Checklist 3.7.2.2	2.5.2, 2.5.9.1
3.7.2.3 Conductor/Cable Installation	
1. Provide a process-based description of how new conductor/cable would be installed and how old conductor/cable would be removed, if applicable.	2.5.9.3
2. Generally describe the conductor/cable splicing process.	2.5.9.3
3. If vaults are required, provide their dimensions and approximate location/spacing along the alignment.	N/A
4. Describe in what areas conductor/cable stringing/installation activities would occur.	2.5.9.3
5. Describe any safety precautions or areas where special methodology would be required (e.g., crossing roadways, stream crossing).	2.5.9.3
3.7.3 Transmission Line Construction (Below Ground)	
3.7.3.1 Trenching	
1. Describe the approximate dimensions of the trench (e.g., depth, width).	N/A
2. Describe the methodology of making the trench (e.g., saw cutter to cut the pavement, back hoe to remove, etc.).	N/A
3. Provide the total approximate cubic yardage of material to be removed from the trench, the amount to be used as backfill and the amount to subsequently be removed/disposed of off-site.	N/A
4. Provide off-site disposal location, if known, or describe possible option(s).	N/A

CPUC Requirement	Section Number
5. If engineered fill would be used as backfill, provide information as to the type of engineered backfill and the amount that would be typically used (e.g., the top two feet would be filled with thermal-select backfill).	N/A
6. Describe if dewatering would be anticipated, if so, how the trench would be dewatered, what are the anticipated flows of the water, would there be treatment, and how would the water be disposed.	N/A
7. Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants that could be exposed as a result of trenching operations.	N/A
8. If a pre-existing hazardous waste were encountered, describe the process of removal and disposal.	N/A
9. Describe any standard BMPs that would be implemented.	
3.7.3.2 Trenchless Techniques: Microtunnel, Bore and Jack, Horizontal Directional Drilling	
1. Provide the approximate location of the sending and receiving pits.	N/A
2. Provide the length, width and depth of the sending and receiving pits.	N/A
3. Describe the methodology of excavating and shoring the pits.	N/A
4. Describe the methodology of the trenchless technique.	N/A
5. Provide the total cubic yardage of material to be removed from the pits, the amount to be used as backfill and the amount to subsequently be removed/disposed of off-site.	N/A
6. Describe process for safe handling of drilling mud and bore lubricants.	N/A
7. Describe process for detecting and avoiding "fracturing-out" during HDD operations.	N/A
8. Describe process for avoiding contact between drilling mud/lubricants and stream beds.	N/A
9. If engineered fill would be used as backfill, provide information as to the type of engineered backfill and the amount that would be typically used (e.g., the top two feet would be filled with thermal-select backfill).	N/A
10. Describe if dewatering would be anticipated, if so, how the pit would be dewatered, what are the anticipated flows of the water, would there be treatment, and how would the water be disposed.	N/A
11. Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants.	N/A
12. If a pre-existing hazardous waste were encountered, describe the process of removal and disposal.	N/A
13. Describe any grading activities and/or slope stabilization issues.	N/A
14. Describe any standard BMPs that would be implemented.	N/A
3.7.4 Substation and Switching Station Construction	
1. Describe any earth moving activities that would be required; what type of activity and, if applicable, estimate cubic yards of materials to be reused and/or removed from the site for both site grading and foundation excavation.	N/A
2. Provide a conceptual landscape plan in consultation with the municipality in which the substation or switching station is located.	N/A

CPUC Requirement	Section Number
3. Describe any grading activities and/or slope stabilization issues.	N/A
4. Describe possible relocation of commercial or residential property, if any.	N/A
3.7.5 Construction Workforce and Equipment	
1. Provide the estimated number of construction crew members.	2.5.13
2. Describe the crew deployment, would crews work concurrently (i.e., multiple crews at different sites); would they be phased, etc.	2.5.13
3. Describe the different types of activities to be undertaken during construction; the number of crew members for each activity i.e. trenching, grading, etc.; and number and types of equipment expected to be used for said activity. Include a written description of the activity. See example in PEA Checklist 3.7.5.	2.5.13
4. Provide a list of the types of equipment expected to be used during construction of the Proposed Project as well as a brief description of the use of the equipment. See example in PEA Checklist 3.7.5.	Table 2-1
3.7.6 Construction Schedule	
1. Provide a Preliminary Project Construction Schedule; include contingencies for weather, wildlife closure periods, etc. Include Month Year, or Month Year to Month Year for each. See example in PEA Checklist 3.7.6.	2.6
3.8 Operation and Maintenance	
1. Describe the general system monitoring and control (i.e., use of standard monitoring and protection equipment, use of circuit breakers and other line relay protection equipment, etc.).	2.7.1
2. Describe the general maintenance program of the Proposed Project, include items such as: • Timing of the inspections (i.e., monthly, every July, as needed); • Type of inspection (i.e., aerial inspection, ground inspection); and • Description of how the inspection would be implemented. Things to consider, who/how many crew members; how would they access the site (walk to site, vehicle, ATV); would new access be required; would restoration be required, etc.	2.7
3. If additional full time staff would be required for operation and/or maintenance, provide the number and for what purpose.	N/A
3.9 Applicant Proposed Measures	
1. If there are measures that the Applicant would propose to be part of the Proposed Project, please include those measures and reference plans or implementation descriptions.	2.10
Chapter 4: Environmental Setting	
4.1 Aesthetics	
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	
• Local environment (site-specific)	3.1.3.1
• Regional environment	3.1.3.1
2. A description of the regulatory environment/context	
• Federal	3.1.2.1
• State	3.1.2.1

CPUC Requirement	Section Number
• Local	3.1.2.1
4.2 Agriculture Resources	
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	
• Local environment (site-specific)	3.2.3.2
• Regional environment	3.2.3.1
2. A description of the regulatory environment/context	
• Federal	3.2.2.1
• State	3.2.2.1
• Local	3.2.2.1
4.3 Air Quality	
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	
• Local environment (site-specific)	3.3.3
• Regional environment	3.3.3
2. A description of the regulatory environment/context	
• Federal	3.3.2.1
• State	3.3.2.1
• Local	3.3.2.1
4.4 Biological Resources	
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	
• Local environment (site-specific)	3.4.3.2
• Regional environment	3.4.3.1
2. A description of the regulatory environment/context	
• Federal	3.4.2.1
• State	3.4.2.1
• Local	3.4.2.1
4.5 Cultural Resources	
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	
• Local environment (site-specific)	3.5.3
• Regional environment	3.5.3
2. A description of the regulatory environment/context	
• Federal	3.5.2.1

CPUC Requirement	Section Number
• State	3.5.2.1
• Local	3.5.2.1
4.6 Geology, Soils and Seismic Potential	
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	
• Local environment (site-specific)	3.6.3
• Regional environment	3.6.3
2. A description of the regulatory environment/context	
• Federal	3.6.2.1
• State	3.6.2.1
• Local	3.6.2.1
4.7 Hazards and Hazardous Materials	
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	
• Local environment (site-specific)	3.8.3
• Regional environment	3.8.3
2. A description of the regulatory environment/context	
• Federal	3.8.2.1
• State	3.8.2.1
• Local	3.8.2.1
4.8 Hydrology and Water Quality	
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	
• Local environment (site-specific)	3.9.3
• Regional environment	3.9.3
2. A description of the regulatory environment/context	
• Federal	3.9.2.1
• State	3.9.2.1
• Local	3.9.2.1
4.9 Land Use and Planning	
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	
• Local environment (site-specific)	3.10.3.2
• Regional environment	3.10.3.1
2. A description of the regulatory environment/context	

CPUC Requirement	Section Number
• Federal	3.10.2.1
• State	3.10.2.1
• Local	3.10.2.1
4.10 Mineral Resources	
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	
• Local environment (site-specific)	3.11.3
• Regional environment	3.11.3
2. A description of the regulatory environment/context	
• Federal	3.11.2.1
• State	3.11.2.1
• Local	3.11.2.1
4.11 Noise	
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	
• Local environment (site-specific)	3.12.4
• Regional environment	3.12.4
2. A description of the regulatory environment/context	
• Federal	3.12.2.1
• State	3.12.2.1
• Local	3.12.2.1
4.12 Population and Housing	
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	
• Local environment (site-specific)	3.13.3
• Regional environment	3.13.3
2. A description of the regulatory environment/context	
• Federal	3.13.2.1
• State	3.13.2.1
• Local	3.13.2.1
4.13 Public Services	
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	
• Local environment (site-specific)	3.14.3
• Regional environment	3.14.3

CPUC Requirement	Section Number
2. A description of the regulatory environment/context	
• Federal	3.14.2.1
• State	3.14.2.1
• Local	3.14.2.1
4.14 Recreation	
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	
• Local environment (site-specific)	3.15.3.2
• Regional environment	3.15.3.1
2. A description of the regulatory environment/context	
• Federal	3.15.2.1
• State	3.15.2.1
• Local	3.15.2.1
4.15 Transportation and Traffic	
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	
• Local environment (site-specific)	3.16.3
• Regional environment	3.16.3
2. A description of the regulatory environment/context	
• Federal	3.16.2.1
• State	3.16.2.1
• Local	3.16.2.1
4.16 Utilities and Public Services	
1. A description of the physical environment in the vicinity of the project (e.g. topography, land use patterns, biological environment, etc.)	
• Local environment (site-specific)	3.17.3
• Regional environment	3.17.3
2. A description of the regulatory environment/context	
• Federal	3.17.2.1
• State	3.17.2.1
• Local	3.17.2.1

CPUC Requirement	Section Number
Chapter 5: Environmental Impact Assessment Summary	
5.1 Aesthetics Provide visual simulations of prominent public view locations, including scenic highways to demonstrate the before and after project implementation. Additional simulations of affected private view locations are highly recommended.	Figure 3.1-2a to Figure 3.1-2g; Figure 3.1-3d to Figure 3.1-3g
5.2 Agriculture Resources Identify the types of agricultural resources affected.	3.2.4.3
5.3 Air Quality	
1. Provide supporting calculations / spreadsheets / technical reports that support emission estimates in the PEA.	Appendix C
2. Provide documentation of the location and types of sensitive receptors that could be impacted by the project (e.g., schools, hospitals, houses, etc.). Critical distances to receptors is dependent on type of construction activity.	3.3.3.5
3. Identify Project greenhouse gas (GHG) emissions as follows:	
• Quantify GHG emissions from a business as usual snapshot. That is, what the GHG emissions will be from the proposed project if no mitigations were used	3.7.4.3
• Quantify GHG emission reductions from every Applicant Proposed Measure that is implemented. Itemize quantifications and place in a table format	3.7.4.3
• Identify the net emissions of a project after mitigations have been applied.	3.7.4.3
• Calculate and quantify GHG emissions (CO_2 equivalent) for the project including construction & operation.	3.7.4.3
• Calculate and quantify the GHG reduction based on reduction measures proposed for the project.	3.7.4.3
• Propose Applicant Proposed Measures (APMs) to implement and follow to maximize GHG reductions. If sufficient, CPUC will accept them without adding further mitigation measures.	3.7.4.2
• Discuss programs already in place to reduce GHG emissions on a system wide level. This includes Applicant's voluntary compliance with USEPA SF_6 reduction program, reductions from energy efficiency, demand response, LTPP, et al.	3.7.4.2
5.4 Biological Resources - In addition to an impacts analysis:	
1. Provide a copy of the Wetland Delineation and supporting documentation (i.e., data sheets). If verified, provide supporting documentation. Additionally, GIS data of the wetland features should be provided as well.	N/A
2. Provide a copy of special status surveys for wildlife, botanical and aquatic species, as applicable. Any GIS data documenting locations of special-status species should be provided.	Provided separately to CPUC staff. Available GIS data layers will be submitted confidentially under CPUC Section 583.
5.5 Cultural Resources - In addition to an Impacts Analysis:	

CPUC Requirement	Section Number
1. Cultural Resources Report documenting a cultural resources investigation of the Proposed Project. This report should include a literature search, pedestrian survey, and Native American consultation.	Report submitted confidentially under CPUC Section 583. Consultation letters in Appendix D.
2. Provide a copy of the records found in the literature search.	Report submitted confidentially under CPUC Section 583.
3. Provide a copy of all letters and documentation of Native American consultation.	Appendix D
5.6 Geology, Soils and Seismic Potential - In addition to an impacts analysis:	
1. Provide a copy of geotechnical investigation if completed, including known and potential geologic hazards such as ground shaking, subsidence, liquefaction, etc.	Provided separately to CPUC staff.
5.7 Hazards and Hazardous Materials - In addition to an impacts analysis:	
1. Environmental Data Resources report.	Equivalent to be provided separately to the CPUC staff.
2. Hazardous Substance Control and Emergency Response Plan.	Equivalent to be provided separately to the CPUC staff.
3. Health and Safety Plan.	Equivalent to be provided separately to the CPUC staff.
4. Worker Environmental Awareness Program (WEAP).	Equivalent to be provided separately to the CPUC staff.
5. Describe what chemicals would be used during construction and operation of the Proposed Project. For example: fuels, etc. for construction, naphthalene to treat wood poles before installation.	3.8.4.3
5.8 Hydrology and Water Quality – In addition to an impacts analysis:	
1. Describe impacts to groundwater quality including increased run-off due to construction of impermeable surfaces, etc.	3.9.4.3
2. Describe impacts to surface water quality including the potential for accelerated soil erosion, downstream sedimentation, and reduced surface water quality.	3.9.4.3
5.9 Land Use and Planning - In addition to an impacts analysis:	
1. Provide GIS data of all parcels within 300' of the Proposed Project with the following data: APN number, mailing address, and parcel's physical address.	Appendix A; GIS data not available.
5.10 Mineral Resources - Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	3.11.4
5.11 Noise	
1. Provide long term noise estimates for operational noise (e.g., corona discharge noise, and station sources such as substations, switching stations, etc.).	3.12.5.3
5.12 Population and Housing Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	3.13.4

CPUC Requirement	Section Number
5.13 Public Services Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	3.14.4
5.14 Recreation Data needs already specified under Chapter 3 would generally meet the data needs for this resource area	3.15.4
5.15 Transportation and Traffic Describe the likely probable routes that are the subject of the traffic analysis.	3.16.4
1. Discuss traffic impacts resulting from construction of the Proposed Project including ongoing maintenance operations.	3.16.4.3
2. Provide a preliminary description of the traffic management plan that would be implemented during construction of the Proposed Project.	3.16.4.2
5.16 Utilities and Services Systems	
1. Describe how treated wood poles would be disposed of after removal, if applicable.	3.17.4.3
5.17 Cumulative Analysis	
1. Provide a list of projects (i.e., past, present and reasonably foreseeable future projects) within the Project Area that the applicant is involved in.	Table 3.18-1
2. Provide a list of projects that have the potential to be proximate in space and time to the Proposed Project. Agencies to be contacted include but are not limited to: the local planning agency, Caltrans, etc.	3.18.4
5.18 Growth-Inducing Impacts, If Significant	
1. Provide information on the Proposed Project's growth inducing impacts, if any. The information should include, but is not necessarily limited, to the following:	N/A
• Any economic or population growth, in the surrounding environment that will directly or indirectly, result from the Proposed Project	N/A
• Any increase in population that could further tax existing community service facilities (i.e., schools, hospitals, fire, police, etc.), that will directly or indirectly result from the Proposed Project	N/A
• Any obstacles to population growth that the Proposed Project would remove	N/A
• Any other activities, directly or indirectly encouraged or facilitated by the Proposed Project that would cause population growth that could significantly affect the environment, either individually or cumulatively	N/A
Chapter 6: Detailed Discussion of Significant Impacts	
6.3 Growth-Inducing Impacts	
Information required to analyze the Proposed Project's effects on growth would vary depending on the type of project proposed. Generally, for transmission line projects the discussion would be fairly succinct and focus on the following:	
1. Would the Proposed Project foster economic or population growth, either directly or indirectly, in the surrounding environment?	3.13.4.3
2. Would the Proposed Project cause an increase in population that could further tax existing community service facilities (i.e., schools, hospitals, fire, police, etc.)?	3.14.4.3
3. Would the Proposed Project remove obstacles to population growth?	3.13.4.3

CPUC Requirement	Section Number
4. Would the Proposed Project encourage and facilitate other activities that would cause population growth that could significantly affect the environment, either individually or cumulatively?	3.13.4.3
6.4 Applicant Proposed Measures to address GHG Emissions	
See the menu of suggested APMs in PEA Checklist Section 6.4 that applicants can consider. Applicants can and are encouraged to propose other GHG reducing mitigations. Priority is given to on-site and/or nearby mitigation measures. Off-site mitigation measures within California will be considered.	3.7.4
Chapter 7: Other Process-Related Data Needs	
1. Excel spreadsheet that includes all parcels within 300 feet of any project component with the following data: APN number, owner mailing address, and parcels physical address.	Appendix A

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1.0 EXECUTIVE SUMMARY

PG&E's proposed Sanger Substation Expansion Project will expand PG&E's existing Sanger Substation to accommodate a new breaker-and-a-half (BAAH) bus configuration. The substation is located southeast of the City of Fresno in unincorporated Fresno County, at the northwest corner of the intersection of East Jensen Avenue and South McCall Avenue (see Figures 2-1 and 2-2 in Chapter 2.0: Project Description for an overview map of the project area). Sanger Substation is integral to the Central Valley 115 kV transmission system because it serves as a strategic hub for routing Fresno's hydro- and natural gas-generated electricity to the Manchester, Barton, Airways, California, Malaga, McCall, and Reedley substations. Sanger Substation's twelve 115 kV power lines have the capacity to carry approximately 200 MW of generation annually, providing a critical energy path between Fresno metropolitan north and south areas. Sanger Substation will be expanded onto approximately 7 acres adjacent to and generally north and west of the existing substation.

The substation was built in the 1920s and its power transfer facilities are due for a major upgrade. It currently has one antiquated main transfer bus, which serves as a common terminal for all 12 power lines (elements), and sixteen 115 kV circuit breakers, which interrupt power flow in the event of a fault condition to prevent a system shutdown by isolating faults. PG&E is proposing to replace these aging facilities with a new bus configuration having seven BAAH bays, each with two elements (line or transformer connections) and three 115 kV circuit breakers per bay. Using this configuration, only two breakers per BAAH bay are used at one time, allowing one breaker to be taken out of service without taking either of the two lines out of service. Two additional circuit breakers will serve as tie-breakers at the substation. Tie-breakers are located between the two buses and move flow from one to the other, providing flexibility in the event of failure.

PG&E proposes to expand the existing Sanger Substation to accommodate the new BAAH design, and to modify the power lines connecting into the expanded substation. New substation equipment will be constructed adjacent to the existing equipment so that the existing facilities can remain in service. Within the expanded substation, the 12 existing power lines entering and leaving the substation will be reconfigured to terminate at the new equipment; this will require relocating power poles, towers, and conductors located outside the existing substation. Some distribution pole and line relocations will occur if required to accommodate new power line reconfiguration. The project will also include two new control/Modular Protection Automation Control (MPAC) buildings to house protective relaying and communications equipment.

This Proponent's Environmental Assessment (PEA) evaluates the potential impacts that could result from construction, operation, and maintenance of the project. As detailed in Chapter 2.0, PG&E's project design includes applicant-proposed measures (APMs) to avoid project impacts or reduce impacts to less than significant.

As required by the California Public Utilities Commission (CPUC), the California Environmental Quality Act (CEQA) Initial Study Checklist from Appendix G of the CEQA Guidelines was used as the format for describing potential project impacts. Chapter 2.0 provides a detailed discussion of the project, its purpose, and the need for it. The CEQA checklist in Chapter 3.0 provides a summary of all potential impacts likely to result from the project.

Sections 3.1 through 3.18 of this PEA demonstrate how all project impacts either can be avoided or are less than significant through implementation of PG&E's avoidance and protection measures. Appendices to this PEA include a preliminary list of affected properties (Appendix A), a discussion of electric and magnetic fields analysis (Appendix B), and documentation of air quality and greenhouse gas analyses (Appendix C). Appendix D contains correspondence with the Native American Heritage Commission (NAHC) and Appendix E provides a list of the preparers of this PEA.

In accordance with CPUC General Order 131-D (GO 131-D), PG&E is submitting this PEA in support of its application for a Permit to Construct (PTC) the project. The CPUC's "Working Draft Proponent's Environmental Assessment (PEA) Checklist for Transmission Line and Substation Projects" was used to produce this report. Because all project impacts are less than significant, it is anticipated that CPUC will be able to prepare a Mitigated Negative Declaration for its review of this project pursuant to CEQA. PG&E's preliminary target date for start of construction is early 2017, with an in-service date of March 2018 and project completion in December 2018.

2 PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

PG&E's proposed Sanger Substation Expansion Project will expand PG&E's existing Sanger Substation to accommodate a new BAAH bus configuration. The substation, located southeast of the City of Fresno in unincorporated Fresno County, is integral to the Central Valley 115 kV transmission system because it serves as a strategic hub for routing Fresno's hydroelectric and natural gas-generated electricity to the Manchester, Barton, Airways, California, Malaga, McCall, and Reedley substations. Sanger Substation's twelve 115 kilovolt (kV) power lines have the capacity to carry approximately 200 MW of generation annually, providing a critical energy path between Fresno metropolitan north and south areas. The new BAAH bus configuration will provide maximum reliability for the power lines coming into and out of the substation.

The substation was built in the 1920s and its power transfer facilities are due for a major upgrade. It currently has one antiquated main transfer bus, which serves as a common terminal connecting all 12 power lines (elements). It also has 16 outdated 115 kV circuit breakers, which interrupt power flow in the event of a fault condition. PG&E is proposing to replace these aging facilities with a new bus configuration having seven BAAH bays, each with two elements (line or transformer connections) and three 115 kV circuit breakers per bay. Using this configuration, only two breakers per BAAH bay are used at one time, allowing one breaker to be taken out of service without taking either of the two lines out of service. Two additional circuit breakers will serve as tie-breakers at the substation. Tie-breakers are located between the two busses and move power flow from one to the other, providing flexibility in the event of failure.

Within the expanded substation, the 12 existing power lines entering and leaving the substation will be reconfigured to terminate at the new equipment; this will require relocating and removing power poles, towers, and conductors located outside the existing substation. Some distribution pole and line relocations may also occur if required, in order to accommodate the power line reconfiguration. The project will also include two new control/MPAC buildings to house protective relaying and communications equipment.

Due to the lack of space inside the existing substation and the need to maintain electrical service in the area while the new facilities are being constructed, PG&E will build the new 115 kV power transfer facilities adjacent to the existing substation facilities on the expanded site. The existing 115 kV transfer bus and related equipment (circuit breakers, steel structures, switches, and foundations) will remain in use during construction, and will then be removed after the new facilities are in service. The two existing 115/12 kV transformer banks at the substation, and associated distribution facilities, will remain in place and be integrated into the expanded substation facilities. The project consists of the following components.

- Expanded substation and related facilities, which include installing approximately:
  - Twenty-three 115 kV circuit breakers.
  - Up to twenty-four 115 kV switches/disconnects.
  - Eighteen 115 kV steel support structures.

  - Two Modular Protection Automation Control (MPAC) buildings to house sensitive recording and communication equipment;

    and

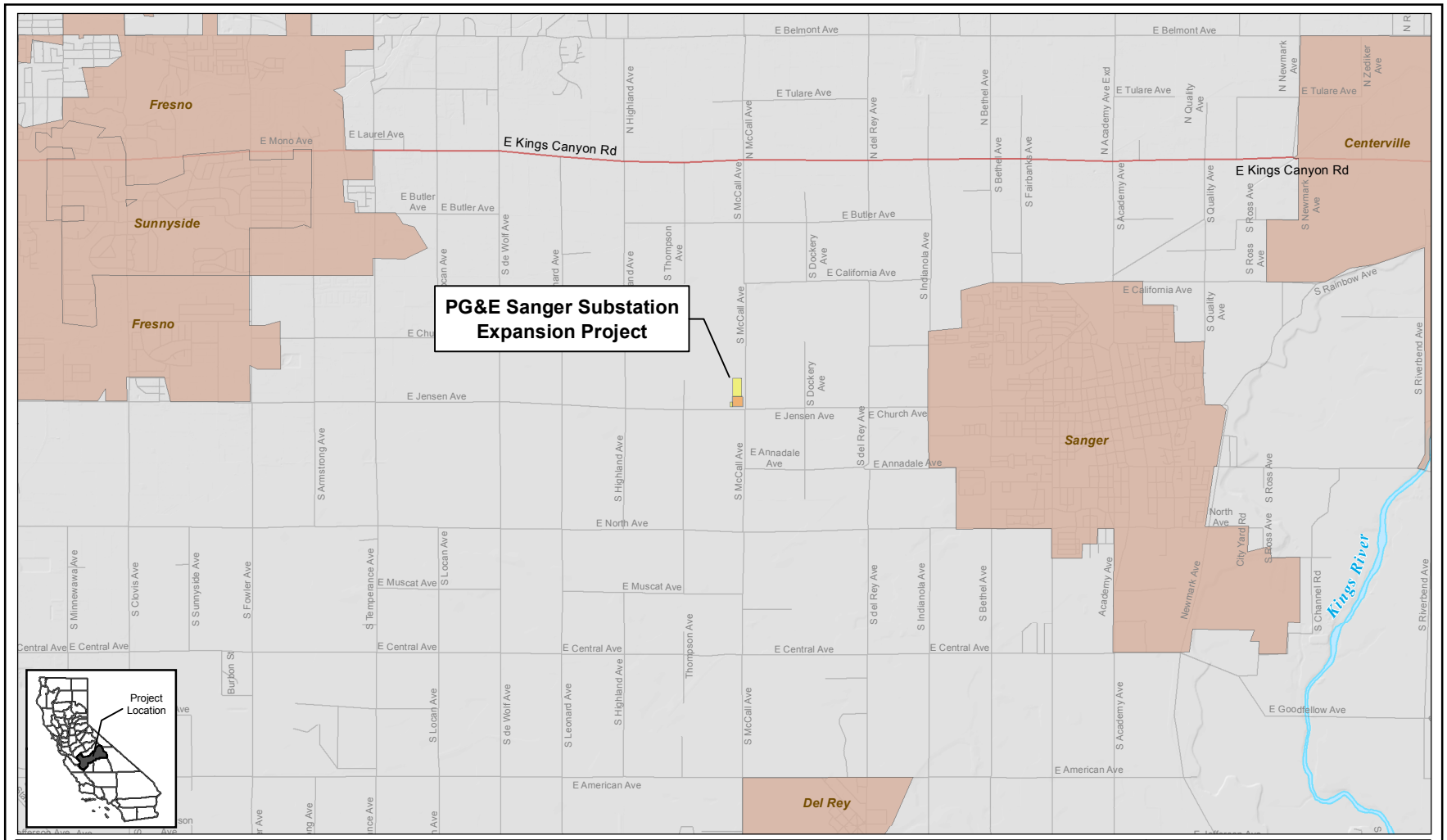
  - Elevating the existing 115 kV transfer bus to meet the minimum vertical clearance between unguarded live parts and roadways inside the substation.
  - Altering the angle of the incoming power lines and replacing the switches, breakers, and structures outside of their existing footprint.
- Power line reconfiguration:
  - Rearranging the existing electric power circuits by removing approximately 17 existing lattice steel towers and 24 wood poles; and installing approximately 41 new tubular steel poles (TSPs) or light duty steel poles (LDSPs).
  - Altering the angle of the incoming power lines and replacing the switches, breakers, and structures outside of their existing footprint.
  - Constructing temporary shoo-fly structures that support the power conductors during circuit reconfiguration.
- Demolishing and replacing the existing substation equipment, including approximately:
  - Sixteen 115 kV circuit breakers.
  - 24 switches/disconnects.
  - 18 steel support structures.
  - One of the existing control buildings.
  - Certain towers and poles inside the substation fence.

Section 2.5 of Chapter 2.0 (Project Description) provides a detailed description of the project and the facilities to be constructed.

2.2 PROJECT LOCATION AND REGIONAL CONTEXT

The project is located in unincorporated Fresno County, approximately 2 miles west of Sanger, California and approximately 3 miles southeast of Fresno (Figure 2-1). The existing Sanger Substation occupies an approximately 4.5-acre parcel (APN 314-08-39) at the northwest corner of East Jensen Avenue and South McCall Avenue. The substation will be expanded onto approximately 7 acres adjacent to and generally north and west of the existing substation, which will be acquired by PG&E (Figure 2-2).

Agriculture is the dominant land use in the project area. The area adjacent to the existing substation is currently in row crops, and surrounding parcels are currently planted in either row crops or vineyards. Rural residences are also located on nearby parcels. The closest residence to the north is on South McCall Avenue, about 200 feet north of the expanded substation area.



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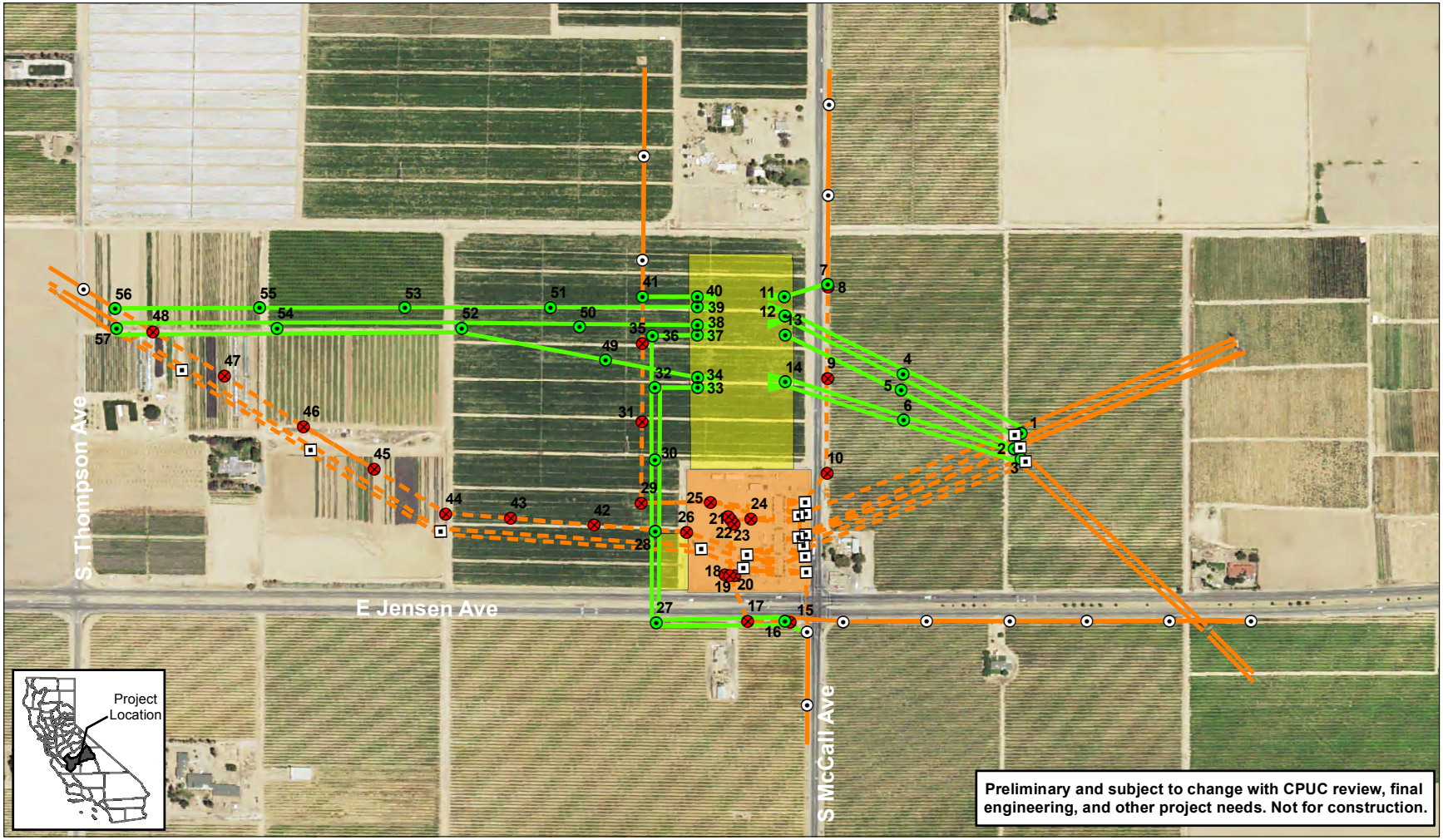

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2.3 EXISTING REGIONAL ELECTRIC SYSTEM

2.3.1 SUBSTATION SYSTEM

The existing substation includes a main-transfer bus configuration, with twelve 115 kV lines, sixteen 115 kV circuit breakers, and a distribution component consisting of two 115/12 kV 30 MVA transformer banks and two 12 kV systems. The existing 115 kV facilities no longer meet PG&E's utility standards and must be updated. The new facilities will comply with PG&E's current utility standards. Of the existing 16 circuit breakers, 8 are oil filled and 8 are SF_6 breakers. All of the existing circuit breakers will be removed and replaced, along with 24 disconnect switches, 18 steel support structures and a control building.

Based on the major civil and electrical requirements of the breakers, structures and switch replacement work, including the difficulties in obtaining clearances, PG&E proposes to rebuild the 115 kV part of the substation on an expanded site of approximately 7 acres, using a BAAH design configuration. The majority of the existing substation equipment and structures will be removed, and the remaining components will be integrated with the expanded substation. The proposed substation expansion is described further in Section 2.5.

Current access to the existing Sanger Substation is provided through an existing gate on South McCall Avenue.

2.3.2 TRANSMISSION SYSTEM

The Fresno Area relies on cogeneration and power from outside the area to serve its load. The amount of transmission imported from outside the area is dependent on electric demand and generation dispatched within the area. This area is characterized by mostly radial 70 kV lines, which go to end points and stop, and long networked 115 kV and 230 kV lines with even longer lines serving as back ties to neighboring systems. Sanger Substation is a critical 115 kV hub for the transfer of power in the Central Valley 115 kV transmission system and is primarily served by McCall Substation.

There are 12 power lines (8 single circuit and 2 double circuit) connected to the 115kV bus at Sanger Substation, which import and export approximately 200 MW of net power under peak conditions. The McCall-Sanger 115 kV lines are the main sources of power to the Sanger Substation. In addition to the power imported from McCall Substation, Sanger Substation also receives power from Sanger Cogen (42 MW), Balch Power House (139 MW), and Kings River Power House (44 MW). The major distribution substations served by Sanger through its 115 kV lines consist of Manchester, Barton, Airways, California Avenue, Malaga, West Fresno, Las Palmas, Clovis, Reedley, and Parlier. Figure 2-3 provides a schematic view of the regional transmission system.

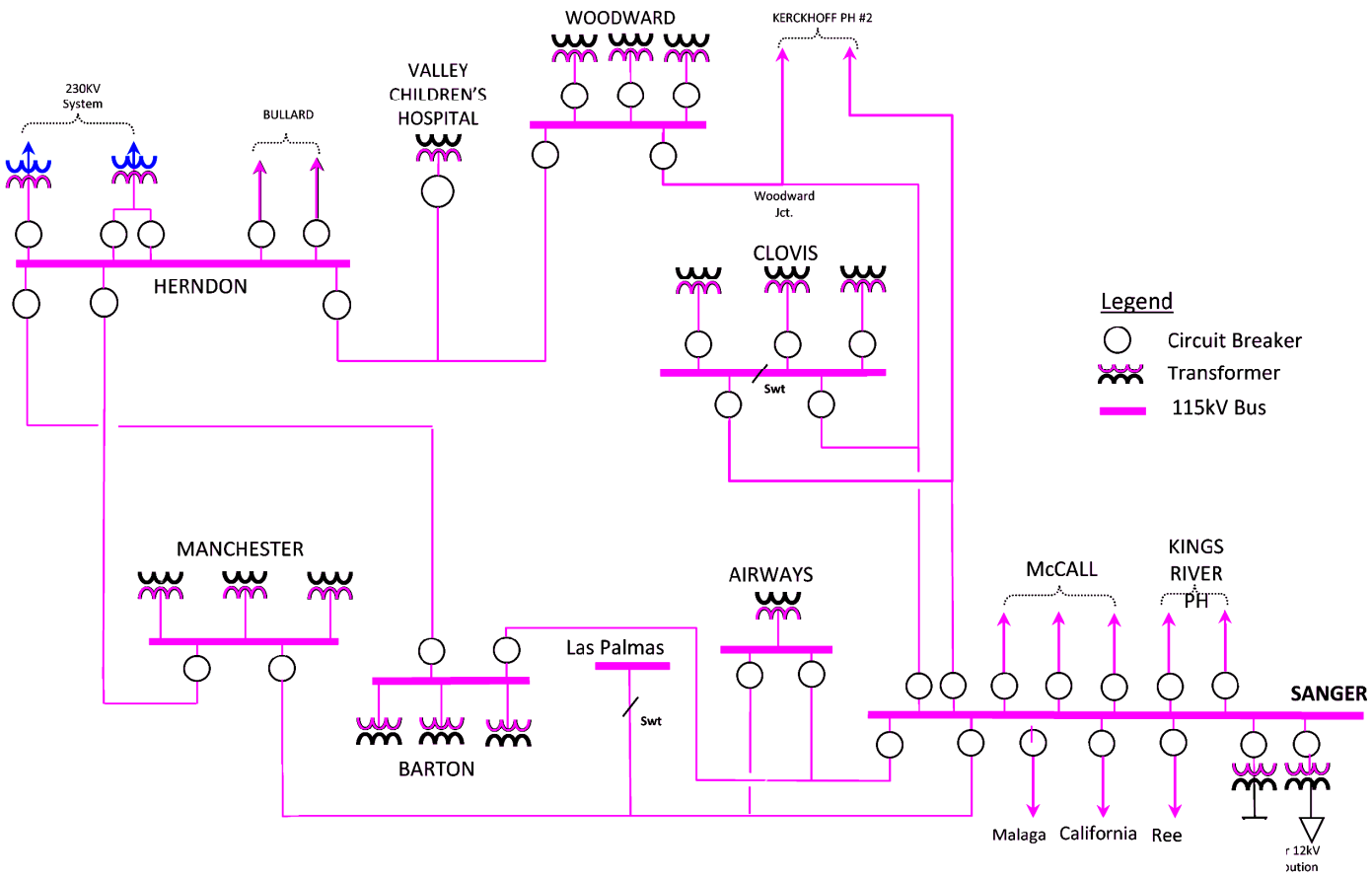

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FIGURE 2-3
Regional Transmission System

Sanger Substation Expansion Project

Note: Preliminary and subject to change based on CPUC requirements, final engineering, and other factors

PG&E

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PG&E completed the reconductoring of Sanger-California Avenue 70 kV power line and converted it to 115 kV operation in 2011. The Sanger-Reedley Area Reinforcement project was completed in 2013, which included reconductoring the Sanger-Reedley 70 kV line and converting it to 115 kV operation. As a result, all 70 kV equipment at Sanger Substation, including a transformer bank and 70 kV bus, has been removed. These projects played a critical role in increasing the capacity and improving service reliability of the 115 kV system served by Sanger Substation in the Fresno area.

2.4 PROJECT OBJECTIVES

The basic objectives of the Sanger Substation Expansion Project include:

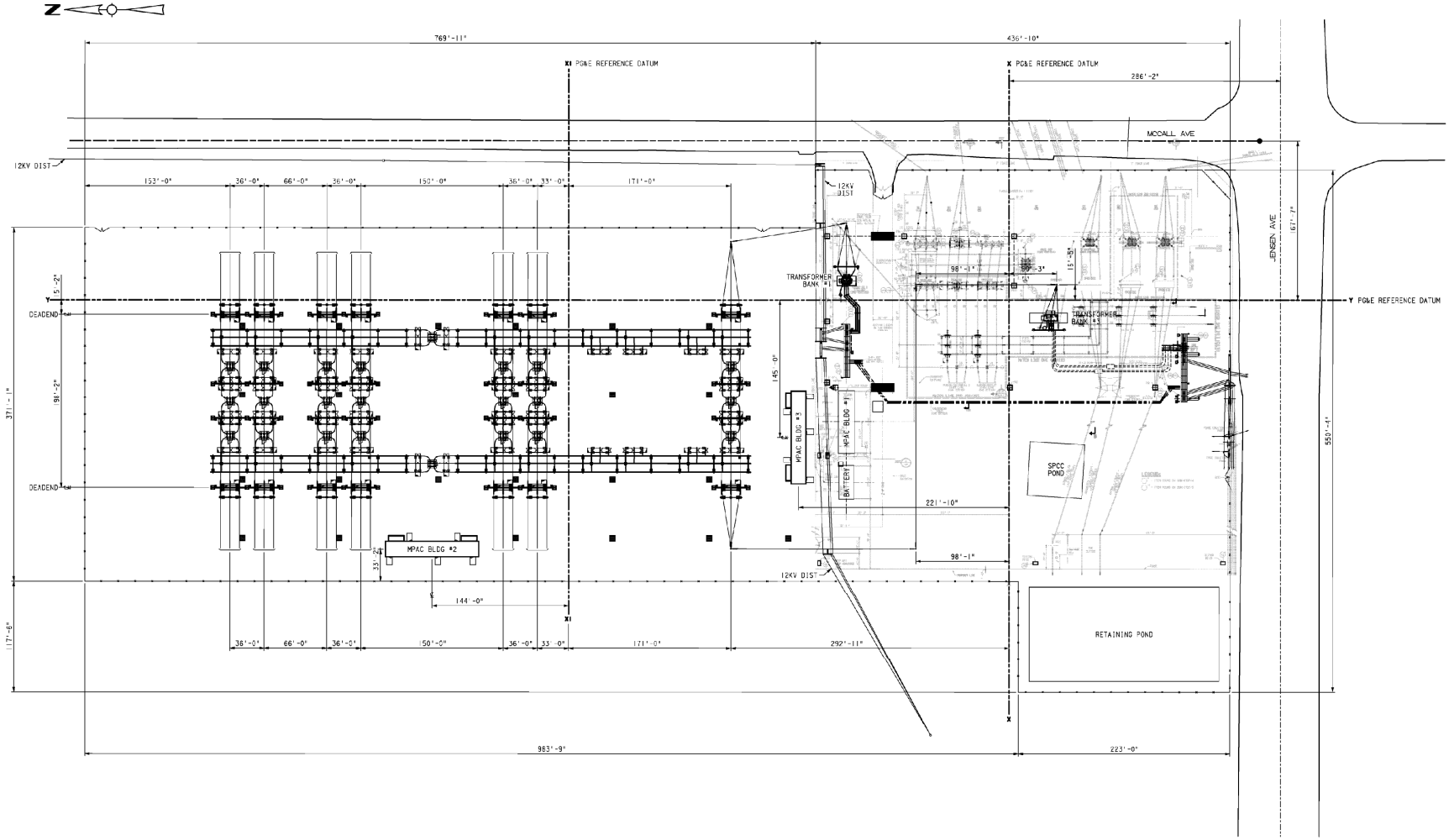
- **Update Equipment to Meet Current Utility Standards:** The project will address electrical and civil engineering requirements in the existing substation by removing dilapidated structures and outdated equipment, and replacing them with new structures and equipment in an expanded substation.
- **Build a More Reliable Substation:** Maximize system efficiency and increase operational flexibility by constructing a more reliable BAAH substation design configuration to serve as the heart of the Central Valley 115 kV transmission system.
- **Maintain Power Delivery During Construction:** Sanger Substation is critical to area power delivery. The project is being constructed so that new facilities will not curtail service over the construction period. The number and duration of customer service interruptions will be minimized by maintaining service from the existing substation during construction. The new facilities will be constructed independently from the current operations of the existing substation.

2.5 PROPOSED PROJECT FACILITIES

PG&E proposes to expand the existing Sanger Substation and to modify the power lines connecting into the expanded substation. New substation equipment will be constructed adjacent to the existing equipment, using a BAAH design configuration.

The BAAH design has three breakers in series between two busses with two circuits connected between the three breakers. This is typically called a BAAH-bay. This configuration allows each circuit to have a dedicated breaker and share a breaker with the adjacent circuit. In this configuration, because the two circuits can remain in operation while a breaker is taken offline, breaker maintenance can be performed with no loss of service, no relay changes, and simple operation of the breaker disconnect switches. This configuration provides superior reliability, maintenance and operating flexibility. A breaker failure will not affect any other circuit, except for the failure of the center breaker, which will cause temporary loss of the entire bay.

A general arrangement of the existing and future substation is shown on Figure 2-4. A profile view of the expanded substation is shown on Figure 2-5.



NOTES

1. X1= X + 463'-11"
2. TRANSMISSION LINE TSP TYPE AND LOCATION OUTSIDE SUBSTATION FENCE TO BE DETERMINED BY PG&E T-LINE DEPT.

REFERENCES	DWG NO.
SINGLE LINE DIAGRAM - 115KV SYSTEM	SLD
SINGLE LINE DIAGRAM - 12KV SYSTEM	622224
GENERAL ARRANGEMENT OUTDOORS - ELEVATIONS	ELEV

0 40 80 120 160 200 FT
SCALE: 1"=40' 0"

Note: Preliminary and subject to change based on CPUC requirements, final engineering, and other factors

Cardno PG&E

Date: 9/24/2015

FIGURE 2-4
Existing and Expanded Substation General Arrangements
Sanger Substation Expansion Project

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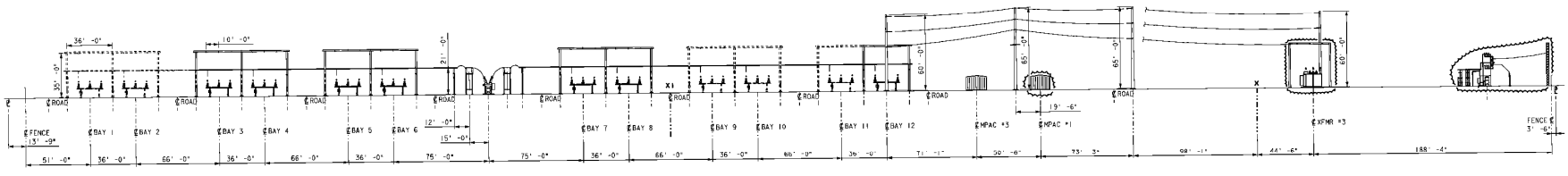
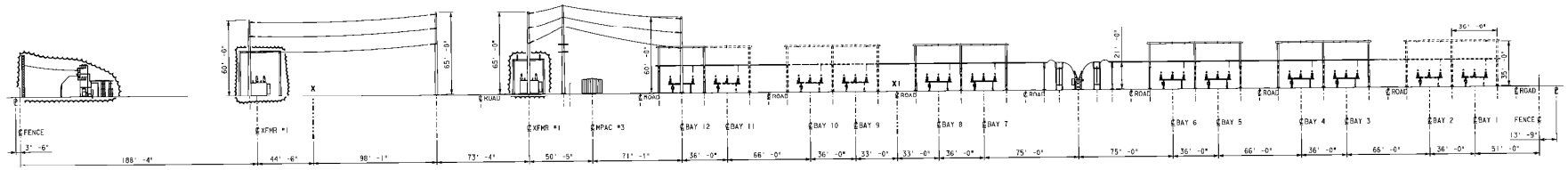
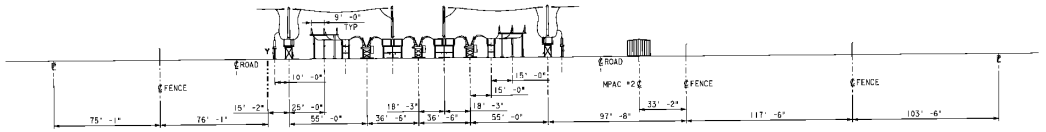


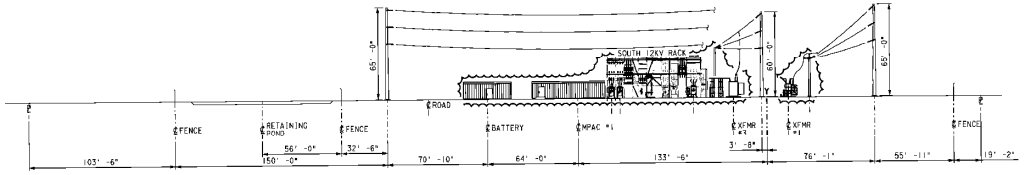
ELEVATION A GAO



ELEVATION B GAO



ELEVATION C GAO



ELEVATION D GAO

NOTES

1. XI = X + 463'-11"

REFERENCES

	DWG NO.
SINGLE LINE DIAGRAM - 115KV SYSTEM	SLD
SINGLE LINE DIAGRAM - 12KV SYSTEM	822224
GENERAL ARRANGEMENT OUTDOORS - PLAN	GAO

0 30 60 90 120 150 FT

SCALE: 1"=30'-0"

Note: Preliminary and subject to change based on CPUC requirements, final engineering, and other factors

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Date: 9/24/2015

FIGURE 2-5
Substation Profile View

Sanger Substation Expansion Project

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Construction access to the expanded area of the substation will be on two new driveways off of South McCall Avenue, which will also be improved to serve as permanent access roads. Access design will take into consideration possible future widening and improvements to South McCall Avenue, and potentially increased traffic volumes. A stormwater impoundment will be constructed in the southwestern portion of the expansion area.

Existing power poles, towers, and conductors located outside the existing substation will require reconfiguration to connect with the new substation equipment. Limited construction of new power line structures and removal of existing structures will be necessary to optimize the power line routing into the expanded substation, taking into consideration land availability and site access to the tower and pole locations.

2.5.1 EXPANDED SUBSTATION

The area proposed for expansion of the substation is located on a level agricultural field; therefore, minimal site grading will be required to accommodate the substation facilities and the temporary construction work area. PG&E will install new electric equipment at the substation, including new circuit breakers, bus structures, 115 kV disconnect switches, instrument transformers, protective relaying, metering and control equipment, remote supervisory control and data acquisition equipment, telemetering equipment, an auxiliary alternating current and direct current power system, an electric grounding system, and underground conduits or trench systems. The expanded substation will be unmanned, with automated features and remote control capabilities. The general arrangement of the expanded substation is provided in Figure 2-4, and a corresponding substation profile view is provided in Figure 2-5.

PG&E will install two MPAC buildings to house sensitive recording and communication equipment that requires weather protection. The buildings will house the controls and relays for the 115 kV lines and circuit breakers. Each building will measure approximately 64 feet long, 15 feet wide and 11 feet tall, and be covered in steel sheeting with a sloped roof. These structures and all the equipment in the expanded substation will be a non-reflective neutral color. For security, an 9-foot-tall fence consisting of an 8-foot-tall chain link fence, topped with 1 foot of barbed wire (6 rows) will enclose the station.

A stormwater retention basin will be constructed in the southwestern portion of the expanded substation site. Based on preliminary design, the rectangular basin will measure approximately 200 by 100 feet with an approximate depth of 6 feet. The basin is designed to provide sufficient capacity to handle runoff from the expanded substation site in conformance with applicable codes. The existing substation area is graded east to west and will tie in to the basin with a swale.

Construction and operations power will be provided from either of the distribution transformer 12 kV busses within the substation. AT&T fiber optic will be installed utilizing the same path entering Sanger Substation as the existing AT&T copper communication line. Both AT&T fiber optic and AT&T copper communication line will be used for communication with PG&E's control system. The existing copper communication line originates from an AT&T overhead pole line located along the south side of Jensen Avenue, transitioning to underground and then crossing Jensen Ave to the north into to pull boxes located within the southwest corner of Sanger Substation. From these pull boxes, the communication path follows on the interior of the

existing western fence line where it eventually transitions to enter into the existing MPAC Building #1. The communication path inside the substation may require some minor re-routing to accommodate the stormwater retention basin.

Security lighting for the substation will consist of non-glare LED (light emitting diode) lamps. Lighting fixtures will be located and designed to avoid casting light or glare toward offsite locations. Fixtures will be placed on lighting standards approximately 10 feet tall constructed of hot-dipped galvanized steel posts, transfer bus structures, control building landings, and around the control building perimeter. MPAC buildings will have dedicated LED lights.

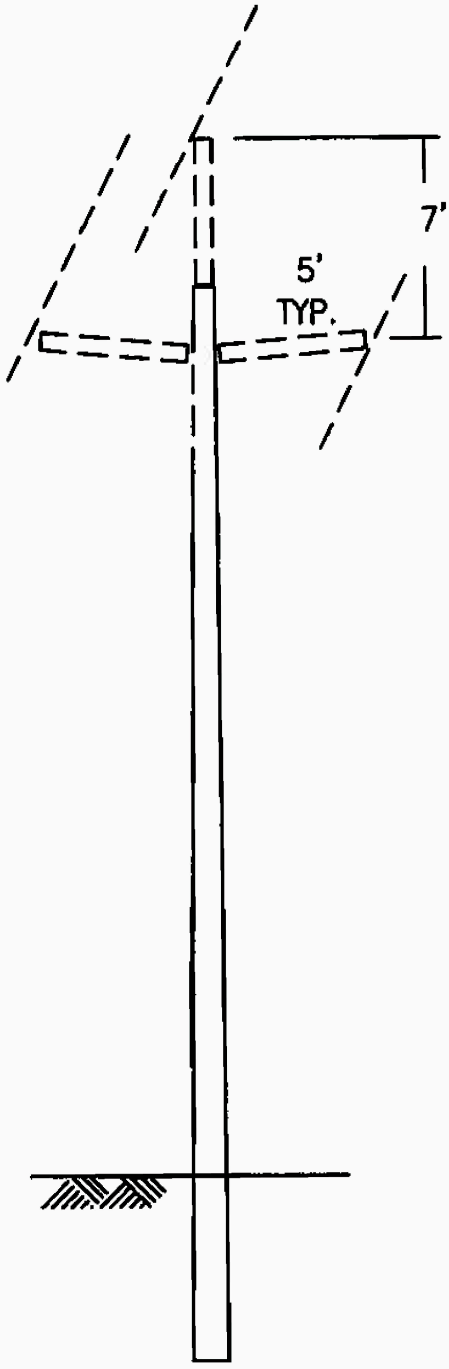
More information on the appearance of the expanded substation, including visual simulations of the project, is provided in Section 3.1, Aesthetics.

2.5.2 POWER LINE RECONFIGURATION

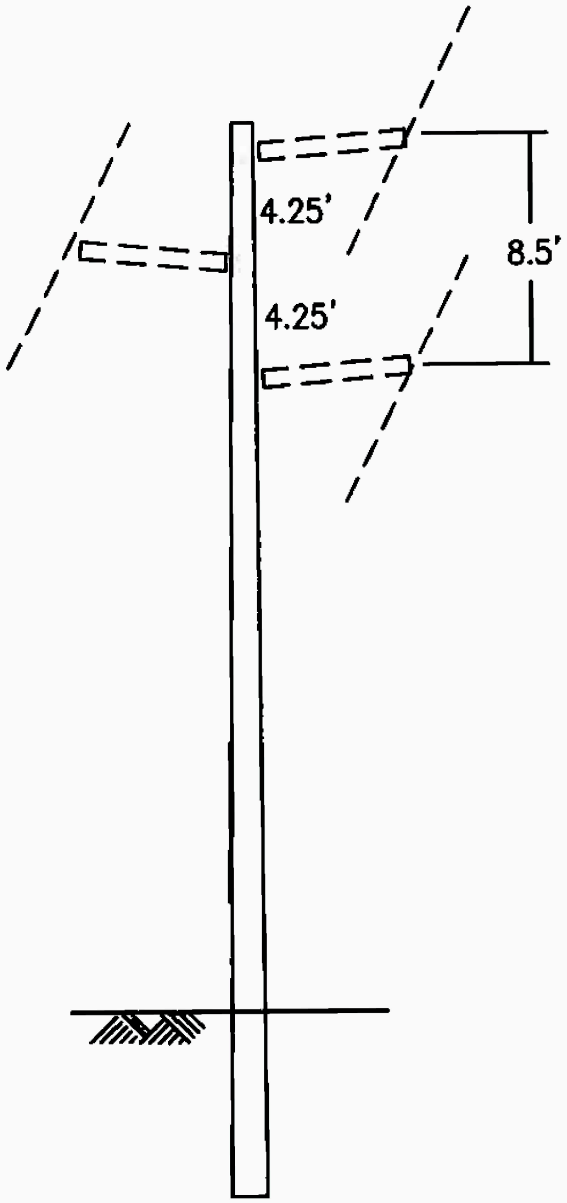
Existing power poles, towers, and conductors located outside the existing substation will require reconfiguration to connect to the new substation equipment. This will be achieved by installing new structures, or by replacing existing structures with new structures, to accommodate the new line angles resulting from the new arrangements, taking into consideration land availability and site access to the power line support locations. No new power lines will be constructed.

The preliminary locations of the new structures are shown on Figure 2-2. Rearranging the existing power lines will require installing approximately 41 new poles, and removing approximately 24 wood poles and 17 lattice steel towers. A number of wood poles may not be removed but may be shortened to allow the existing distribution lines to remain in place. Most new poles will be TSPs, and some may be light duty steel poles (LDSP), which are direct embedded structures, similar to wood poles. This differentiates them from self-supporting TSPs, as the TSPs have a reinforced concrete foundation. No new lattice steel towers are planned.

The new poles will be approximately 60 to 110 feet tall. Typical designs of the structures are provided in Figure 2-6 (Sanger Substation 115 kV Steel Poles, Sheets 1 to 4).



TRP
LDSP



DLP
LDSP

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FIGURE 2-6 Sheet 1
Sanger Sub 115KV LDSP

Sanger Substation Expansion Project

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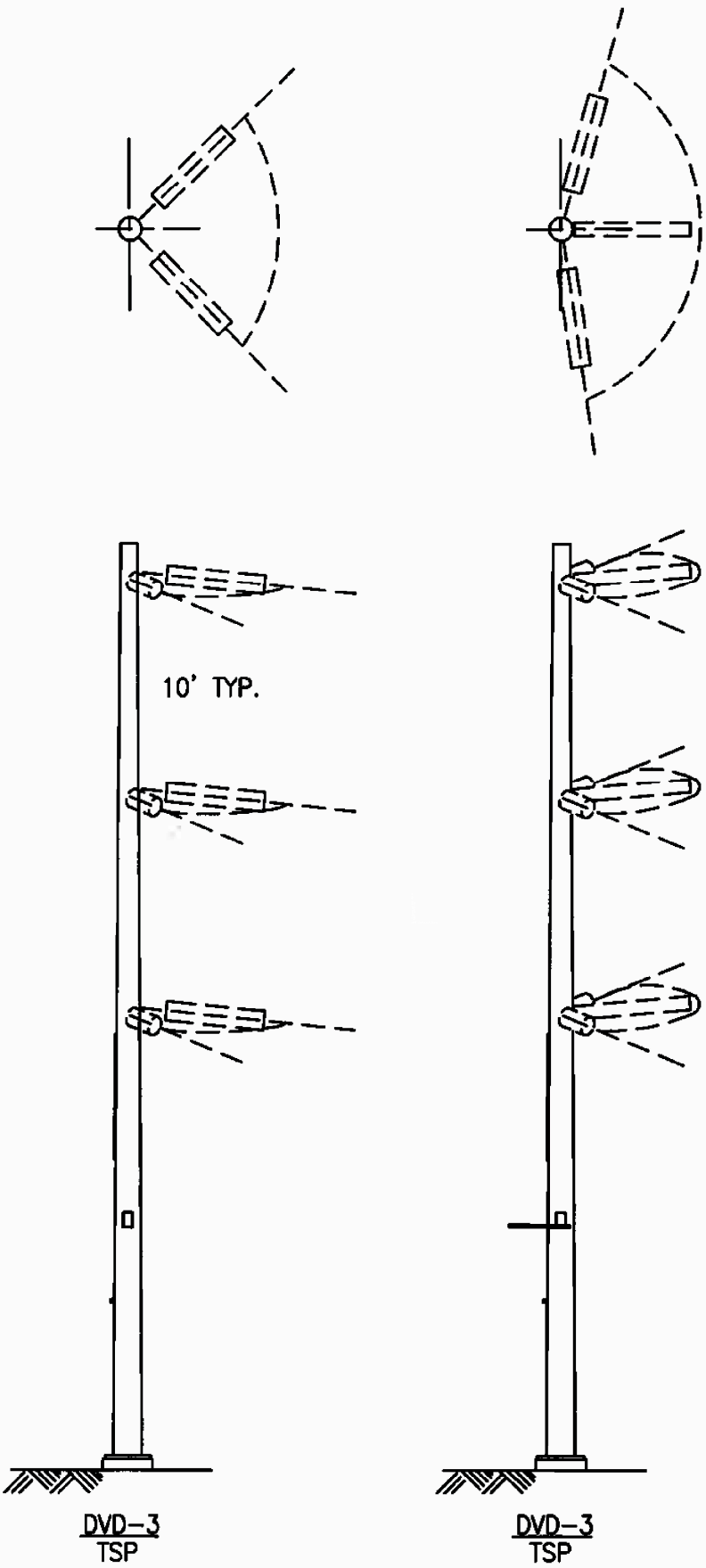

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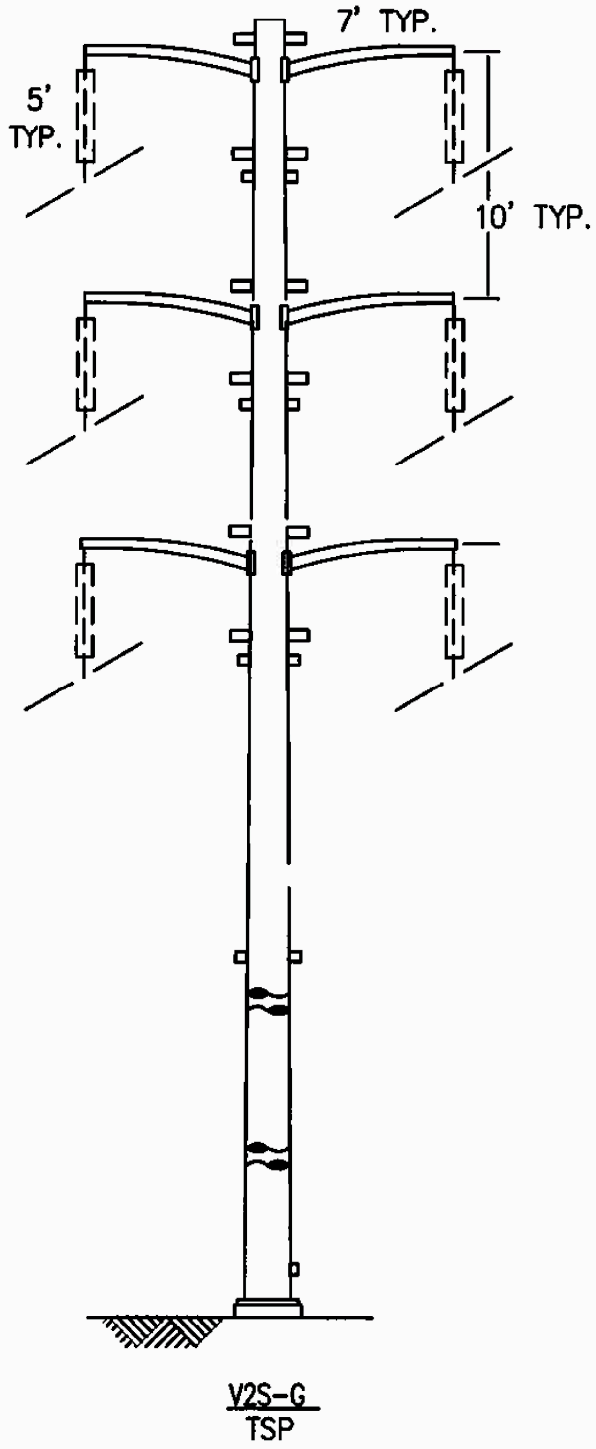
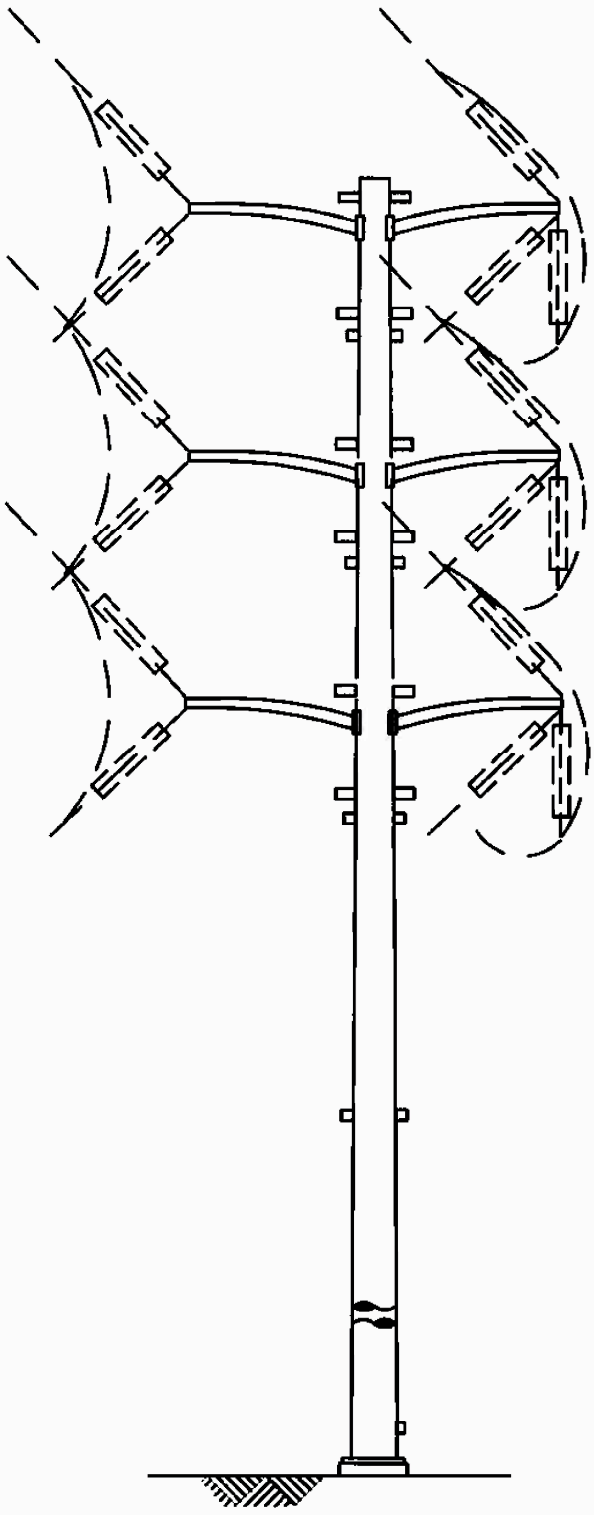
FIGURE 2-6 Sheet 2
Sanger Sub 115KV Steel Poles

Sanger Substation Expansion Project



V2S-G
TSP



V2D-G
TSP

Cardno

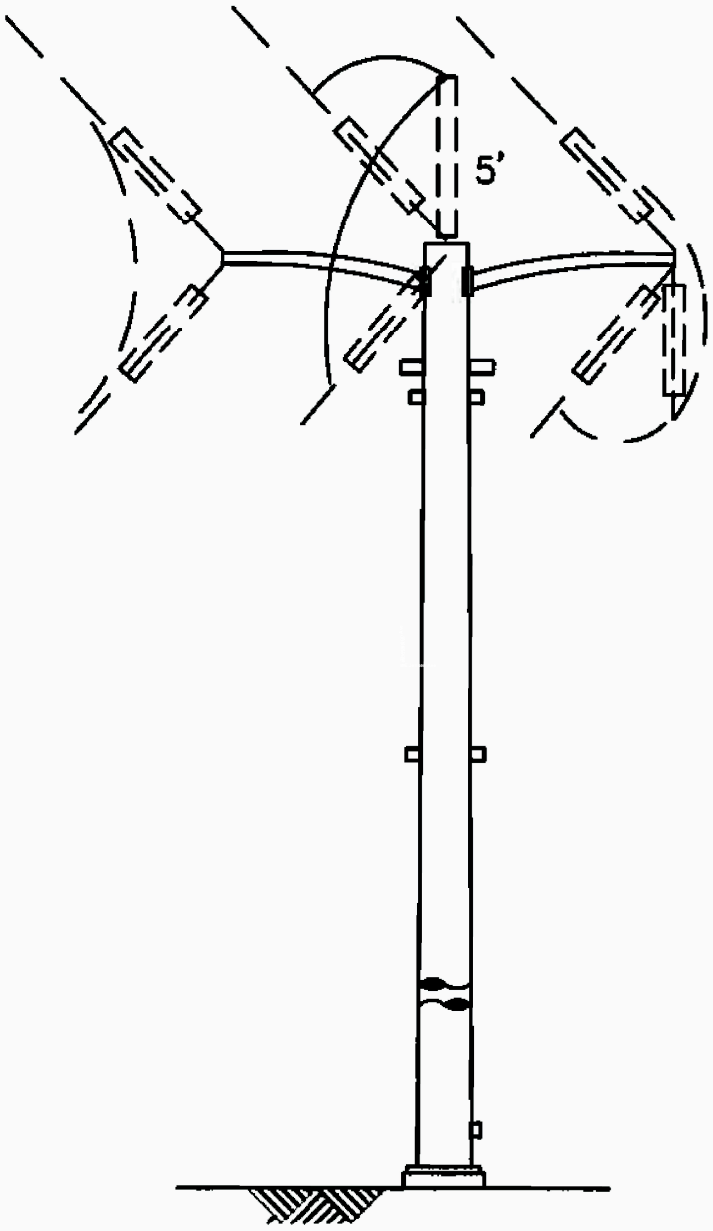
PG&E

Date: 9/22/2015

FIGURE 2-9 Sheet 3
Sanger Sub 115KV TSP

Sanger Substation Expansion Project

CROSS-ARM LENGTH - 10' TYP.



FID-G
TSP

Cardno

PG&E

Date: 9/22/2015

FIGURE 2-6 Sheet 4
Sanger Sub 115KV TSP

Sanger Substation Expansion Project

2.5.3 REMOVING EXISTING SUBSTATION FACILITIES

Figure 2-4 (above) shows the existing and future arrangements of Sanger Substation. Once the new substation facilities are available to handle existing load, the following facilities will be removed:

- Sixteen 115 kV circuit breakers (8 SF_6 and 8 oil filled)
- 24 disconnect switches
- 18 steel support structures
- Main and transfer bus
- Existing concrete control building
- Existing metal sheeted control building used to house station service switching equipment

The 18 steel support structures to be removed will be replaced with 6 TSPs within the substation to bring the 115 kV line connections to the two existing transformer banks. The general arrangement in Figure 2-4 shows the location of the existing substation components to remain in place, including two distribution transformers and associated feeder lines and structures.

2.5.4 ACCESS AND CONSTRUCTION WORK AREAS

Parking, lay down, and staging for construction materials and equipment at the substation site will occupy the eastern portion of the graded pad. Work areas around the lattice towers to be removed will require approximately 0.08 acres, poles to be removed will require approximately a 50-foot radius, and the new power line structures to be installed will each require a 50-foot radius work space. In addition, conductor pull and tension sites for the reconfiguration will required an estimated total of approximately 2.65 acres.

The expanded substation will result in approximately 7 acres of permanent disturbance.

Temporary work areas outside the expanded substation will total approximately 11 acres of temporary disturbance. This includes TSP sites outside the expanded substation resulting in approximately 4.11 acres of temporary disturbance, pole and tower removals outside the substation resulting in approximately 3.19 acres of temporary disturbance, and eight pull sites, resulting in approximately 2.65 acres of temporary disturbance.

During construction, access to the expanded substation area will be through two gates on South McCall Avenue near the northeastern and southeastern corners of the expanded substation. Access to the existing substation area will continue to be provided through an existing gate on South McCall Avenue. After construction, PG&E will convert the two temporary access roads to permanent driveways from South McCall Avenue to serve the expanded substation.

Access to the power line reconfiguration work areas will be on South McCall Avenue and East Jensen Avenue, as well as Thompson Road (for locations in the agricultural field west of the substation). Access to the new pole locations east of South McCall Avenue will be through an existing twin-track road currently used by the vineyard operator for farming and by PG&E to access the existing towers.

New temporary access routes may be required as necessary with prior land owner approval. Temporary access routes (not including substation access) are estimated to total approximately 3.17 acres.

Many of these temporary disturbance features overlap in disturbance areas, for example access routes to pole installation sites, making the total temporary disturbance area outside the expanded substation approximately 11 acres.

The total estimated permanent disturbance area, which includes the expanded substation and areas of net permanent disturbance outside the expanded substation (new pole installation minus existing structure removal) is approximately 7 acres.

2.5.5 TYPICAL CONSTRUCTION EQUIPMENT

Typical construction equipment that will be used during construction of the expanded substation, power lines, and distribution line is listed in Table 2-1.

Table 2-1: Typical Construction Equipment

Equipment	Use
1/2-ton pickup trucks	Transport construction personnel
3/4-ton pickup trucks	Transport construction personnel
Crew-cab trucks (3/4 to 1 ton)	Transport construction personnel
Road grader, six wheel	Grade road and finish site grading
Elevating scraper	Rough site grading
D5 and D9 bulldozer	Rough and finish site grading
Compactor	Grading/shaping/initial compaction
Road roller	Subgrade compaction
Paver	Road construction
Skid-steer bobcat	Move materials
Skip loader	Move materials
Fork lift	Lift/move materials
Water trucks	Dust and fire control
Man lift	Elevate personnel
Boom truck	All construction activities
2-ton flatbed trucks	Haul materials
Dump trucks (5 to 10 ton)	Haul spoil and import materials
Semi-tractor trailer	Haul structure components
Construction trucks and trailers (2- to 60-ton)	Haul materials/equipment
Rigging truck	Haul tools and equipment
15-, 30-, and 80- ton mobile cranes	Erect structures/set buildings; remove existing

Table 2-1: Typical Construction Equipment

Equipment	Use
	substation structures
Mechanic truck	Service and repair equipment
Crawler-mounted auger	Excavate foundations
Mini excavator	Excavate foundations
Hydraulic excavator	Remove existing foundations
Track-mounted backhoe	Excavation
Crawler backhoe	Excavate foundations
Puller	Pull conductor wire
Tensioner	Pull conductor wire
Air compressor	Operate air tools
Air tampers	Compact soil around poles
Portable generators	Power tools
Concrete trucks	Transport concrete for foundations
Light trucks	Provide illumination
Fuel trucks	Refuel equipment
Aerial lift trucks	String conductor wire

2.5.6 GENERAL CONSTRUCTION SEQUENCE

Construction activities will generally occur in the following order:

- Install the Stormwater Pollution Prevention Plan (SWPPP) best management practices (BMPs)
- Construct the temporary access road to the expanded substation pad area, salvage the topsoil, grade and compact the substation pad
- Stabilize the permanent access, which will remain as permanent substation access after construction.
- Perform fine grading to establish the site drainage and placement of surface gravel
- Construct perimeter security fence and Cam-Guard security.
- Install electrical service for construction power, and mobilizing equipment
- Construct all buswork structures, dead-end switch structures, circuit breakers and building foundations
- Set the buildings and install the system control and data acquisition equipment
- Construct the temporary access roads to pull site locations and installing BMPs as necessary
- Install TSP foundations
- Set the temporary shoo-fly poles (if required) and transfer the conductors

- Install the new TSPs and conductor, and remove the existing towers/poles, shoo-fly poles, and conductor
- Connect and test the high voltage line
- Asphalt the permanent access road
- Remove and reconfigure the existing substation structures and equipment
- Clean up and restore project area
- Commission the expanded substation

2.5.7 ACCESS ROAD CONSTRUCTION

Two 20-foot-wide temporary roads will be installed from South McCall Avenue to provide construction access to the expanded substation area. The temporary roads will be installed after all existing vegetation has been removed and during grading of the expansion area. These access roads will be converted to permanent access by installing base rock and asphalt after major construction is completed.

Seven temporary cross-country access routes will be established to existing and new pole work areas, three east from South McCall Avenue and four east from Thompson Avenue. Equipment will be driven over the existing surface and no grading is anticipated. These temporary routes will be restored to approximately pre-project conditions after work occurring in the work sites is completed.

2.5.8 EXPANDED SUBSTATION CONSTRUCTION

Surveyors will stake the access road alignment, establish grading limits, and set grade stakes for the expanded substation pad. Prior to the start of construction, SWPPP BMPs will be installed. Once the access road is rough-graded to the site, site preparation will begin with vegetation clearing, including grasses and other organic material. This vegetation material will be stockpiled within the footprint of the expanded substation and eventually removed from the site. Topsoil will be stripped, stockpiled, and reused for agriculture or site restoration. Rough grading will begin, approximately balancing the cut and fill on the level site. The rough grade will provide site drainage to the newly constructed stormwater retention basin. Engineered fill (gravel) will be spread on the pad surface to create a stable work area for subsequent construction activities. While the engineering design will attempt to balance the cut and fill, some existing soil may not be suitable for the proposed use. To the extent possible, all cut materials will be reused as fill following suitability testing.

Representative samples of excess soil will be collected, analyzed, and profiled for disposal in accordance with all federal, state, and local regulations. Engineered fill material will be imported as needed to accomplish the necessary compaction and final grade.

Rough grading will be followed by installing a 9-foot-tall security fence, excavating and installing the subsurface ground grid, conduit chases, and forming and pouring concrete footings and foundations for all the aboveground structures. After the concrete has cured, PG&E will install the aboveground steel structures, circuit breakers, MPAC buildings, busses, dead ends, and other electrical equipment, including associated control system hardware.

Equipment to be placed on foundation slabs or footings will either be bolted or welded securely to meet the appropriate seismic requirements. All metallic structures within the substation will be connected to the station grounding grid. A final dressing of aggregate will be spread on all unpaved areas in the expanded substation to provide an all-weather stable surface for operations and maintenance (O&M) activities while limiting the amount of impervious surface created to minimize site run-off. Areas where equipment access is needed for maintenance will be stabilized using compacted aggregate base.

2.5.9 POWER LINE RECONFIGURATION/INTERCONNECTION CONSTRUCTION

Once the foundation locations have been surveyed and staked, power line construction will be divided into four phases: (1) Installing TSP foundation, including construction of access to each new TSP location as necessary; (2) Installing TSPs; (3) Stringing power line relocations, which may require shoo-fly poles and temporary work areas to cut-over lines and construct pull sites; (4) Removing existing towers/poles and conductors, access roads, and pull sites, and restoring surfaces as necessary.

2.5.9.1 Installing New Poles

Installing new TSPs will require boring a single foundation hole approximately 4.5 to 7 feet in diameter and 15 to 30 feet deep depending on the soil conditions. Workers will place reinforcing steel in the hole and secure the steel to a bolt assembly plate. Concrete forms that extend 1 to 2 feet above natural ground level will be installed and concrete will be poured around the reinforcing steel up to the level of the bolt assembly plate. The TSPs typically consist of two or three sections, depending on the length or diameter of the pole. The pole base will be lifted by a crane onto the foundation and bolted in place. The crane then will lift the remaining sections and lower them into place. The top section is fitted with arms and insulators prior to being lifted into place.

2.5.9.2 Removing Towers

Prior to removing the existing towers and poles, PG&E will install temporary poles (*shoo-flies*) —as required– to temporarily support the conductors, allowing the lines to remain in service during the reconfiguration process. The shoo-fly structures typically consist of wood poles, fitted with appropriate insulators, installed adjacent to the existing towers and poles. The conductors will be transferred to the shoo-fly poles from the existing towers. Once the conductors are clear of the existing towers, workers will unbolt the tower sections and remove poles so they can be lifted by a crane and placed on an adjacent work area for dismantling. After all tower sections are removed, the concrete foundations will be removed to about 6 feet below ground and the balance abandoned in place. This will be performed with a backhoe or air compressor-powered hand tools. The remaining hole will be backfilled to grade with the excavated material, supplemented as necessary. If deemed practical, substation grading spoils and/or TSP foundation bores will be used to backfill foundation removal excavations.

2.5.9.3 Stringing Conductor

Reconfiguring the lines to tie into the expanded substation will require installing new conductor on the lines. A combination of single-circuit and double-circuit poles will be used. A single-circuit configuration consists of three conductor phases. In the double-circuit configuration, two

circuits of conductor will be strung on the poles with three conductor phases per circuit on each side of the pole. Before installing conductor, temporary clearance structures will be installed to protect the existing 12 kV lines where they cross under the 115 kV lines. This clearance structure typically consists of one or two poles on either side of the line crossed with a "V" shaped cargo net tensioned between the support structures.

The actual conductor stringing operation will begin with installing sheaves or stringing blocks. The sheaves are rollers attached to the cross arm of the supporting structure. The sheaves allow the individual conductor to be pulled through each structure until the conductor is ready to be pulled up to the final tension position.

When the pull and tension equipment is set in place, a sock line (a small cable used to pull in the conductor) will be pulled from pole to pole using mobile tensioning equipment. The tensioning equipment will be staged at the new pole location, and used over a period of a few days. After the sock line is installed, the conductor will be attached to the sock line and pulled in, or strung, using the tension-stringing method. This involves pulling the conductor through each TSP under a controlled tension to keep the conductor above the ground.

After the conductor is pulled into place, sags will be adjusted to a precalculated level. The conductor will then be clamped to the end of each insulator hardware assembly, followed by the removal of the sheaves. The final step in installing conductor is to install vibration dampers or other accessories as required per power line design standards and guidelines.

PG&E anticipates that new conductor will be installed on the new structures, and then a clearance will be taken on the affected 115 kV lines so that the new conductor can be pulled to design tension and connected at the nearest existing tower not affected by the reconfiguration. The lowest conductor will be a minimum of 29 feet above the ground at the specified maximum designed conductor temperature. The conductor phase to phase clearance at structures will be approximately 10 feet vertical and 10 feet horizontal, and the approximate spans between poles will range from approximately 100 to 900 feet. The shoo-fly poles and old conductor will be removed when the new conductor is installed and connected.

At the conclusion of the power line work, pull and tension sites as well as temporary access roads will be restored to the extent possible to pre-existing conditions.

2.5.10 VEGETATION CLEARING

Vegetation (primarily agricultural crops) will be cleared to facilitate access to the project site and construction of the expanded substation and associated power line reconfiguration. Vegetation clearing will require removing grasses and agricultural crops (row crops, orchards and vines). Tree removal and trimming (other than for agricultural trees) is not anticipated. All vegetative materials will be chipped and mulched on site and used during post construction restoration as appropriate. More information on vegetation clearance can be found in Chapter 3.4, Biological Resources.

2.5.11 EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION

PG&E will implement a SWPPP during construction to prevent pollution of nearby drainages with sediment or other polluted runoff related to project construction. The plan will outline

BMPs that will include placing erosion and sediment controls such as fiber rolls, silt fence, mulch, and seed as appropriate during project construction. BMPs will be installed prior to preconstruction vegetation clearing, as appropriate. Further details on erosion and sediment control and pollution prevention can be found in Section 3.7: Hazards and Hazardous Materials and Section 3.8: Hydrology and Water Quality.

2.5.12 CLEANUP

Cleanup operations involve final grading to original contours and cleaning up all disturbed areas, including temporary workspaces and the ancillary access roads to the tower/pole reconfiguration work areas and the temporary access road to the expanded substation. Towers, poles, and conductors removed from the project will be dismantled and taken to appropriate disposal facilities to be reused, recycled, or disposed of properly. PG&E will conduct a final survey to ensure that cleanup activities have been successfully completed.

2.5.13 CONSTRUCTION WORKFORCE

The workforce will vary depending on the activities in progress and the particular phase of construction. The following phases are planned:

Phase 1 – Substation: site grading, access, and security fencing

Phase 2 – Substation: install foundations and footings

Phase 3 – Substation: install equipment and components

Phase 4a – Power line re-routes: install TSP foundations

Phase 4b – Power line re-routes: install TSPs

Phase 4c – Power line re-routes: string power lines

Phase 4d– Power line re-routes: Remove pull sites and restore impacted property

Phase 5 – Substation: remove existing equipment from the existing Sanger Substation and finish post-construction cleanup

Over the course of construction, the peak number of workers on the site at any given time will be up to approximately 30 workers.

2.6 CONSTRUCTION SCHEDULE

PG&E anticipates filing an application for a PTC in September 2015. The target date for start of construction is early 2017, with an in-service date of March 2018 and project completion in December 2018.

While the expanded substation and power line construction will require approximately 19 months of construction activity, there will be gaps in the schedule due to equipment delivery

logistics, power load considerations, and other factors. Moreover, storm events during the rainy season during the construction period could push the in-service date to October 2018.

2.7 OPERATIONS AND MAINTENANCE

2.7.1 SYSTEM MONITORING AND CONTROL

PG&E will operate the expanded 115 kVsubstation remotely from its Grid Control Center (GCC) located in Vacaville, California, consistent with current procedures. Station and line alarms will be transmitted by the dedicated phone line to the control center. If an alarm is triggered that requires an onsite visit, personnel will be dispatched from PG&E's local maintenance center.

The distribution component of Sanger Substation will continue to be operated and controlled from the Fresno Distribution Operations office located at 650 O Street, Fresno, California.

2.7.2 FACILITY INSPECTION

Regular inspection of equipment and electrical lines, support systems, and instrumentation and controls is critical for the safe, efficient, and economical operation of the project, and will not change from existing practices. Under normal circumstances, the expanded substation will be controlled remotely, and routine inspections by PG&E personnel will continue to occur on a monthly basis or as needed under emergency conditions. Permanent parking for facility inspections, operations, and maintenance will be entirely within the expanded substation site or along the access road at the entrance to the expanded substation.

Power line inspections will not change from those on the existing lines. Typically, transmission (power) line inspections occur annually, rotating between ground inspections and flyovers.

Tree trimming is not expected to be necessary; if trimming is necessary, it will be conducted in accordance with the CPUC's General Order 95.

2.8 REQUIRED APPROVALS

The CPUC is the lead state agency for project review under CEQA. In accordance with CPUC General Order No. 131-D, PG&E is submitting a PEA as part of its application for a PTC. In addition to the PTC, Table 2-2 summarizes the permits from other federal, state, and local agencies that may be needed for the project.

Table 2-2: Permits and Approvals That May Be Required

Permit/Approval	Agency
No federal agency permits are required.	
Permit to Construct (PTC)	California Public Utilities Commission (CPUC)
National Pollutant Discharge Elimination System (NPDES)-General Construction Stormwater Permit (ministerial)	State Water Resources Control Board (SWRCB)
Roadway Encroachment Permit (ministerial)	Fresno County
Building Permit (ministerial)	Fresno County

2.9 RIGHT-OF-WAY ACQUISITION

PG&E will acquire the necessary rights for the land needed to accommodate the expanded substation and the use of all anticipated construction work areas associated with the new power line arrangements.

Land entitlement issues are not part of the regulatory proceeding in which the CPUC is considering whether to grant or deny PG&E's application for a PTC. Rather, any land rights issues will be resolved in subsequent negotiations and/or condemnation proceedings in the proper jurisdiction, following the decision by the CPUC on PG&E's application. (See, for example, Jefferson-Martin 230 kV Transmission Project, A.02-04- 043, D.04-08-046, p. 85).

2.10 APPLICANT PROPOSED MEASURES

PG&E is proposing the following applicant proposed measures (APMs) (Table 2-3).

Table 2-3: Applicant Proposed Measures

APM Number	Description
	AESTHETICS
APM AES-1	**Construction site.** Construction activities will be kept as clean and inconspicuous as practical. Where practical, construction storage and staging will be screened from close-range residential views.
APM AES-2	**New source of substantial light or glare avoidance.** Security lighting at the substation will be directed on-site and will be hooded to reduce potential visibility from off-site locations.
APM AES-3	Structures and equipment at the expanded substation will be a non-reflective finish and neutral gray color.
	AGRICULTURAL, LAND USE, AND RECREATIONAL RESOURCES
APM AGR-1	**Agriculture impacts avoidance.** To avoid potential impacts on agriculture, PG&E will work with farmers to conduct its work between their harvest and planting periods where and whenever possible. In areas containing permanent crops (i.e., grapevines or orchards) that must be removed and replaced to gain access to pole sites for construction purposes, PG&E will provide compensation to farmers and/or landowners in accordance with PG&E's Property Damage Settlement Guidelines. Access across active crop areas will be negotiated with the farmers and/or owners in advance of any construction activities.
	AIR QUALITY (NOTE: The first APM includes measures recommended by the San Joaquin Valley Air Pollution Control District (SJVAPCD). APMs 2 and 3 are designed to maximize emission reductions for criteria pollutants as well as greenhouse gases.)
APM AIR-1	**Fugitive dust emissions minimization.** Pursuant to SJVAPCD Regulation VIII, a Dust Control Plan will be prepared and submitted to SJVAPCD for approval within the required timeframe prior to commencing construction activities. Based on the SJVAPCD *Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015b), the following are examples of fugitive dust control measures that may be included in the Dust Control Plan to minimize dust emissions: ▪ Apply water to unpaved surfaces and areas ▪ Use non-toxic chemical or organic dust suppressants on unpaved roads and traffic areas ▪ Limit or reduce vehicle speed on unpaved roads and traffic areas ▪ Maintain areas in a stabilized condition by restricting vehicle access ▪ Install wind barriers ▪ During high winds, cease outdoor activities that disturb the soil. ▪ Keep bulk materials sufficiently wet when handling ▪ Store and handle loose materials that could create dust in a three-sided structure ▪ When storing bulk materials, apply water to the surface or cover the storage pile with a tarp ▪ Don't overload haul trucks. Overloaded trucks are likely to spill bulk materials ▪ Cover haul trucks with a tarp or other suitable cover. Or, wet the top of the load enough to limit visible dust emissions ▪ Clean the interior of cargo compartments on emptied haul trucks prior to leaving a site

Table 2-3: Applicant Proposed Measures

APM Number	Description
	▪ Prevent trackout by installing a trackout control device ▪ Clean up trackout at least once a day. If along a busy road or highway, clean up trackout immediately ▪ Monitor dust-generating activities and implement appropriate measures for maximum dust control
	GREENHOUSE GASES
APM GHG-1	**Minimize GHG emissions.** ▪ Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time will depend on 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 start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a "common sense" approach to vehicle use, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; 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 pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use. ▪ Maintain construction equipment in proper working conditions in accordance with PG&E standards. ▪ Minimize construction equipment exhaust by using low-emission or electric construction equipment where feasible. Portable diesel fueled construction equipment with engines 50 hp or larger and manufactured in 2000 or later will be registered under the CARB Statewide Portable Equipment Registration Program. ▪ Minimize welding and cutting by using compression of mechanical applications where practical and within standards. ▪ Encourage use of natural gas powered vehicles for passenger cars and light-duty trucks where feasible and available. ▪ Encourage the recycling of construction waste where feasible.
APM GHG-2	**Minimize sulfur hexafluoride (SF_6) emissions.** To avoid and minimize fugitive (leakage) SF_6 emissions, PG&E will incorporate the following measures: ▪ Incorporate Sanger Substation into PG&E's system-wide SF_6 emission reduction program. CARB has adopted the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear sections 95350 to 95359, title 17, California Code of Regulations, which requires that company-wide SF_6 emission rate not exceed 1 percent by 2020. Since 1998, PG&E has implemented a programmatic plan to inventory, track, and recycle SF_6 inputs, and inventory and monitor system-wide SF_6 leakage rates to facilitate timely replacement of leaking breakers. PG&E has improved its leak detection procedures and increased awareness of SF_6 issues within the company. X-ray technology is now used to inspect internal circuit breaker components to eliminate dismantling of breakers, reducing SF_6 handling and accidental releases. As an active member of USEPA's SF_6 Emission Reduction Partnership for Electrical Power Systems, PG&E has focused on reducing SF_6 emissions from its transmission and distribution operations and has reduced the SF_6 leak rate by 89 percent and absolute SF_6 emissions by 83 percent. ▪ Require that the breakers at Sanger Substation have a manufacturer's guaranteed maximum leakage rate of 0.5 percent per year or less for SF_6.

Table 2-3: Applicant Proposed Measures

APM Number	Description
	▪ Maintain substation breakers in accordance with PG&E's maintenance standards. ▪ Comply with California Air Resources Board Early Action Measures as these policies become effective.
	BIOLOGY
APM BIO-1	**Work area minimization.** The number of access routes, staging areas, and total area of the work sites will be kept to the minimum necessary.
APM BIO-2	**Erosion and sediment control measures.** A Stormwater Pollution Prevention Plan (SWPPP) will be implemented to ensure effective erosion and sediment control measures will be in place at all times during construction.
APM BIO-3	**Weed management.** To prevent the spread of noxious weeds, only equipment which has been washed and is free of caked on mud, dirt, and other debris, which could house plant seeds, will be allowed in the project area.
APM BIO-4	**Avoidance of impacts to wildlife and natural habitats.** All work will be done in a manner that minimizes disturbance to wildlife and habitat.
APM BIO-5	**Litter and trash management.** All food waste and associated containers will be disposed of in closed lid containers.
APM BIO-6	**Maintenance and refueling.** No vehicle maintenance or refueling will occur within 100 feet of the agricultural irrigation ditch located near the north boundary of the project footprint.
APM BIO-7	**Spill prevention and cleanup.** Proper spill prevention and cleanup equipment will be readily available.
APM BIO-8	**Route limitations.** Vehicles will remain on designated access roads and within designated worksites.
APM BIO-9	**Pets and firearms.** No pets or firearms are permitted within the project area.
APM BIO-10	**Vehicle speed limits.** Construction crews will abide all County road speed limits.
APM BIO-11	**Backfilling.** Prior to backfilling or placement of structures, all excavation sites (e.g., holes excavated for pole butts, trenches, etc.) will be inspected to ensure no small vertebrates have been entrapped. All excavations with a potential for entrapment of wildlife will be backfilled or fully covered at the end of the work day. Alternatively, holes or trenches will include one or more escape ramps constructed of earth fill or wooden planks no less than 10 inches wide and reaching to bottom of trench at the close of each working day.
APM BIO-12	**Avoidance and minimization of potential impacts on Swainson's hawk.** If construction activities are scheduled to occur during the nesting season (February 1 to August 31), a preconstruction survey for nesting Swainson's hawk will be conducted within 0.5 mile of the project area by a qualified biologist. If active nests are found, a qualified biologist will designate an appropriate buffer between construction activities and the nest to avoid disturbance to the nesting. Work within the buffer will not proceed until the nestlings have fledged or the nest becomes inactive.
APM BIO-13	**Avoidance and minimization of potential impacts on burrowing owl.** Within 30 days of beginning ground-disturbing activities, a preconstruction survey for burrowing owl will be conducted along the agricultural irrigation ditch and any other suitable habitat within 500 feet of the project area by a qualified biologist. If no burrowing owls are detected no further measures are required. If burrowing owls are detected, no construction activities will occur within 250 feet of occupied burrows during the nesting season or within 160 feet of occupied burrows during the non-nesting season. For the purposes of this measure, the nesting season is

Table 2-3: Applicant Proposed Measures

APM Number	Description
	February 1st to August 31st. Additionally, the burrowing owls will be monitored by a qualified biologist during construction to assess the sensitivity of the burrowing owls to the construction activities. The size of the avoidance buffer may be increased or decreased as determined by the monitoring biologist based on the planned construction activities and the sensitivity of the burrowing owls. If impacts on an active burrow cannot be avoided, passive relocation may be considered. Relocation will be conducted during the nonnesting season and only after a site-specific plan has been developed and implemented in coordination with the CDFW.
APM BIO-14	**Avoidance and minimization of potential impacts on nesting birds.** If work is scheduled to occur during the avian nesting season (February 1st through August 31st), active work areas will be surveyed by a qualified biologist within 15 days before work begins to determine if any nesting birds are present. Exclusionary buffer zones will be established by a qualified biologist around any active nests within the project area. The size of the buffer zone will be established at the discretion of the biologist based on the following factors: 1) the species' sensitivity to disturbance, 2) the topography surrounding the nest site, and 3) its concealment from project activities. If construction activities are required within an exclusionary buffer zone, the nest will be monitored for disturbance by a qualified biologist until the young have fledged and are independent of the adults. Nest disturbance will be assessed based on behavioral cues such as time off the nest, hesitation approaching the nest, incessant chattering and bill swiping, and other indications. If no nest disturbance is observed, work may continue. If the biologist determines that construction activities are causing nest disturbance, work will not be allowed to continue within the buffer zone until the nest becomes inactive or the young have fledged.
CULTURAL	
APM CUL-1	**Development and implementation of a worker environmental awareness program.** PG&E will design and implement a Worker Education Program that will be provided to all project personnel who may encounter and/or alter historical resources or unique archaeological properties, including construction supervisors and field personnel. No construction worker will be involved in field operations without having participated in the Worker Education Program. The Worker Education Program will include, at a minimum: ▪ A review of archaeology, history, prehistory and Native American cultures associated with historical resources in the project vicinity; ▪ A review of applicable local, state and federal ordinances, laws and regulations pertaining to historic preservation; ▪ A discussion of procedures to be followed in the event that unanticipated cultural resources are discovered during implementation of the project; ▪ A discussion of disciplinary and other actions that could be taken against persons violating historic preservation laws and PG&E policies; and ▪ A statement by the construction company or applicable employer agreeing to abide by the Worker Education Program, PG&E policies and other applicable laws and regulations. The Worker Education Program may be conducted in concert with other environmental or safety awareness and education programs for the project, provided that the program elements pertaining to cultural resources are provided by a qualified instructor meeting applicable professional qualifications standards.
APM CUL-2	**Cultural resources inventory.** If the applicant revises the location of proposed facilities and ground-disturbing activities that affect areas beyond those surveyed for this PEA, those areas will be subjected to a cultural resources inventory to ensure that any newly identified cultural resources are avoided by ground-disturbing activities.

Table 2-3: Applicant Proposed Measures

APM Number	Description
APM CUL-3	**Unanticipated discovery of potentially significant prehistoric and historic resources.** In the unlikely event that previously unidentified cultural resources are uncovered during implementation of the project, all work within 100 feet (30 meters) of the discovery will be halted and redirected to another location. PG&E's cultural resources specialist or his/her designated representative will inspect the discovery and determine whether further investigation is required. If the discovery can be avoided, and no further impacts will occur, the resource will be documented on State of California Department of Parks and Recreation cultural resource records, and no further effort will be required. If the resource cannot be avoided and may be subject to further impact, PG&E will evaluate the significance and California Register of Historic Resources eligibility of the resources, and implement data recovery excavation or other appropriate treatment measures if warranted.
APM CUL-4	**Unanticipated discovery of human remains management.** If human remains are discovered, work in the immediate vicinity will stop immediately and a PG&E Cultural Resources Specialist will be contacted. The location of the discovery will be secured to prevent further impacts and the location will be kept confidential. The Cultural Resources Specialist will evaluate the discovery and will contact the Fresno County Coroner upon verifying that the remains are human. If the coroner determines the remains are Native American, the Native American Heritage Commission will be contacted and the remains will be left in situ and protected until a decision is made on their final disposition.
APM PAL-1	**Worker's environmental resources training.** All construction crew members must receive a paleontologically focused worker's environmental awareness training module prior to ground disturbance activities for the project. The module will be developed by the lead Paleontologist for the project and can be presented in person, through a safety tailboard, or in some other format, such as a brochure or videotape. The training module will cover the following topics: fossil/paleontological resource identification, discovery guidance, and the contact information of both the on-site paleontological monitor and the project paleontologist.
APM PAL-2	**Unanticipated discovery plan.** In the event that paleontological resources are discovered during construction activities, several procedures must be adhered to. All work must stop within 100 feet of the discovery and the appropriate PG&E Cultural Resources Specialist (CRS) must be contacted at the time of discovery. Avoid any impacts to the site, which includes looting, or any other damage to the resource. Work cannot continue within 100 feet of the resource without approval from the PG&E CRS. The PG&E CRS will coordinate with the lead project Paleontologist in order to protect the resource and evaluate its significance. If the resource is determined significant, the PG&E CRS and Paleontologist will develop a plan to evaluate the resource. The plan may include protection and preservation of the resource, additional documentation, and/or subsurface testing.
APM PAL-3	**Paleontological monitoring.** A qualified professional paleontologist must prepare a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) for the project before the onset of ground disturbance activities for the project. Monitoring will consist of spot-checking all ground disturbance activity in undisturbed soils 10 feet below the surface until such time that a paleontological resource is discovered. Monitoring will not be required for soils at a depth of less than 10 feet. Monitoring can be reduced or discontinued in areas of high sensitivity only if 50% of the ground disturbing work within the Riverbank Formation has been completed and no resources have been identified. Ground disturbing work to be monitored if it occurs 10 feet below the surface includes all excavation and grading for the substation, retention basin, and road, as well as any augering that utilizes an auger greater than 5-feet in diameter. The extent and duration of spot-checking will be determined by the PG&E CRS and the lead paleontologist for the project. If a paleontological resource is identified during ground disturbance activities, monitoring will transition from spot-checking to full-time monitoring.

Table 2-3: Applicant Proposed Measures

APM Number	Description
	In the event of a discovery, the monitor can direct the construction crew so that the resource is avoided and can be properly assessed.
	GEOLOGY AND SOILS AND HYDROLOGY AND WATER QUALITY
APM GEO-1	**Geotechnical evaluation and soils report.** A geotechnical evaluation and soils report has been prepared for PG&E. The report concluded that the substation site is geotechnically suitable for construction of the proposed improvements using conventional grading, shallow and deep foundation systems. A copy of the report will be provided separately to CPUC staff.
APM GEO-2/ APM WQ-1	**Development and implementation of a Stormwater Pollution Prevention Plan (SWPPP).** Because the project involves more than an acre of soil disturbance, a SWPPP will be prepared for the project as required by the state National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Stormwater Associated with Construction Activity. This plan will be prepared in accordance with the Water Board guidelines and other applicable erosion and sediment control Best Management Practices (BMPs). Implementation of the plan will help stabilize disturbed areas and will reduce erosion and sedimentation. The SWPPP will designate BMPs that will be followed during and after construction of the project. Examples of erosion-minimizing measures that may be identified in the SWPPP include: ▪ Using drainage control structures (e.g., straw wattles or silt fencing) to direct surface runoff away from disturbed areas. ▪ Strictly controlling vehicular traffic. ▪ Implementing a dust-control program during construction. ▪ Restricting access to sensitive areas. ▪ Using vehicle mats in wet areas. ▪ Revegetating disturbed areas, where applicable, following construction. In areas where soils are to be temporarily stockpiled, soils will be placed in a controlled area and will be managed with similar erosion control techniques. Where construction activities occur near a surface waterbody or drainage channel and drainage from these areas flows towards a waterbody or wetland, stockpiles will be placed at least 100 feet from the waterbody or will be properly contained (such as berming or covering to minimize risk of sediment transport to the drainage). Mulching or other suitable stabilization measures will be used to protect exposed areas during and after construction activities. Erosion-control measures will be installed, as necessary, before any clearing during the wet season and before the onset of winter rains. Temporary measures, such as silt fences or wattles intended to minimize erosion from temporarily disturbed areas, will remain in place until disturbed areas have stabilized. The SWPPP will be designed specifically for the hydrologic setting of the project.
	HAZARDS AND HAZARDOUS MATERIALS
APM HAZ-1	**Spill Prevention, Control, and Countermeasures (SPCC).** In the event of an accidental spill, the substation is equipped with a retention basin that meets SPCC Guidelines (40 CFR 112). The retention basin will be sufficiently sized to accommodate the accidental spill of all mineral oil from the largest transformer located at the substation. The substation will also be equipped with lead-acid batteries to provide backup power for monitoring, alarm, protective relaying, instrumentation and control, and emergency lighting during power outages. Containment will be constructed around and under the battery racks, and the SPCC will address containment from a battery leak. A site-specific SPCC Plan will be prepared prior to the initiation of construction.

Table 2-3: Applicant Proposed Measures

APM Number	Description
APM HAZ-2	**Emergency spill response equipment and training.** Emergency spill response and clean up kits will be available onsite as well as at the Fresno PG&E Service Yard Headquarters, and readily available for the cleanup of an accidental spill at the substation. Construction crews will be trained in safe handling and cleanup responsibilities prior to the initiation of construction.
APM HAZ-3	**Shock hazard**. All authorized personnel working on site, during either construction or maintenance and operation, will be trained according to PG&E standards. To minimize potential exposure of the public to electric shock hazards, an 8-foot-tall chain link fence topped with 1 foot of barbed wire will extend around the perimeter of the expanded substation for a total of approximately 9 feet, thus restricting site access. Warning signs will be posted to alert persons of potential electrical hazards. All electric power lines will be designed in accordance with CPUC General Order 95 Guidelines for safe ground clearances established to protect the public from electric shock.
APM HAZ-4	**Soil testing and disposal.** In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed during site grading activities or excavation activities, the excavated soil will be tested, and if contaminated above hazardous waste levels, will be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil will require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations.
NOISE	
APM NOI-1	**Construction schedule limits.** PG&E will limit construction hours so that construction will not occur before 6:00 a.m. or after 9:00 p.m. on any day except Saturday or Sunday, when construction will not occur before 7:00 a.m. or after 5:00 p.m. If nighttime work is needed because of clearance restrictions on the power line, PG&E will take appropriate measures to minimize disturbance to local residents, including contacting nearby residences to inform them of the work schedule and probable inconveniences.
APM NOI-2	**Construction equipment noise reduction devices.** Construction equipment will use noise reduction devices that are no less effective than those originally installed by the manufacturer.
APM NOI-3	**Placement of stationary construction equipment.** Stationary equipment used during construction will be located as far as practical from sensitive noise receptors.
APM NOI-4 (See APM GHG-1)	**Minimization of unnecessary engine idling.** Unnecessary engine idling will be limited.
APM NOI-5	**Noise minimization with "quiet" equipment.** "Quiet" equipment (i.e., equipment that incorporates noise control elements into the design—compressors have "quiet" models) will be used during construction whenever possible. Where feasible, equipment will be used that is specifically designed for low noise emissions and equipment powered by electric or natural gas as opposed to diesel or gasoline.
APM NOI-6	**Noise disruption minimization through residential notification.** Residents in areas of heavy construction noise will be notified prior to commencing construction activities. Notification will include written notice and the posting of signs in appropriate locations with a contact number that residents can call with questions and concerns.
TRANSPORTATION	
APM TRAN-1	**Traffic Planning.** PG&E will follow its standard safety practices as needed, including installing appropriate barriers between work zones and transportation facilities, posting adequate signs, and using proper construction techniques. PG&E is a member of the California Joint Utility Traffic

Table 2-3: Applicant Proposed Measures

APM Number	Description
	Control Committee, which published the Work Area Protection and Traffic Control Manual (California Joint Utility Traffic Control Committee 1999). PG&E will follow the recommendations in this manual regarding basic standards for the safe movement of traffic on highways and streets in accordance with Section 21400 of the California Vehicle Code. If required for obtaining a local encroachment permit, PG&E will establish a Traffic Management Plan (TMP) to address haul routes, timing of heavy equipment and building material deliveries, potential street and/or lane closures, signing, lighting, and traffic control device placement. Construction activities will be coordinated with local law enforcement and fire protection agencies. Emergency service providers will be notified as required by the local permit of the timing, location, and duration of construction activities.

3.1 AESTHETICS

3.1.1 INTRODUCTION

This section describes existing conditions and potential impacts on aesthetic resources as a result of construction, operation, and maintenance of the PG&E Sanger Substation Expansion Project. Changes in the appearance of Sanger Substation that will result from the expansion will not substantially alter the existing visual character or quality of the landscape setting. The project will have minor incremental impacts on visual conditions of a lightly-settled rural landscape in which similar structures to those of the project are found. The analysis concludes that impacts on aesthetic resources will be less than significant. The APMs described in Section 3.1.4.2 will further reduce the project's less-than-significant impacts on aesthetic resources.

The project's potential effects on aesthetic resources were evaluated using the significance criteria set forth in CEQA Guidelines Appendix G. The conclusions are summarized in Table 3.1-1 and discussed in more detail in Section 3.1.4.

Table 3.1-1 CEQA Checklist for Aesthetics

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially degrade 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?	☐	☐	☒	☐
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

3.1.2 REGULATORY BACKGROUND AND METHODOLOGY

3.1.2.1 Regulatory Background

Federal

No federal regulations apply to the project with respect to visual resources.

State

California Scenic Highway Program

California's Scenic Highway Program, a provision of the Streets and Highways Code, was established by the Legislature in 1963 to preserve and enhance the natural beauty of California. The State Scenic Highway Program includes highways that are either eligible for designation as scenic highways or have been designated as such. The status of a state scenic highway changes

from eligible to officially designated when the local jurisdiction adopts a scenic corridor protection program, applies to the California Department of Transportation (Caltrans) for scenic highway approval, and receives the designation from Caltrans. A city or county may propose to add routes with outstanding scenic elements to the list of eligible highways; however, state legislation is required for a highway to be officially designated.

There are no designated state scenic highways in the vicinity of the project. A review of California Scenic Highway Program indicates that the nearest eligible state scenic highway is a portion of State Route (SR-) 180 east of the Kings River, approximately nine miles northeast of the project area. The project will not be visible from this distance.

Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local discretionary regulations. This section includes a summary of local standards or ordinances that describe the visual character of the project area for informational purposes and to assist with the CEQA review process.

The substation site is located in an unincorporated portion of Fresno County, approximately 2 miles west of the City of Sanger and approximately 3 miles southeast of the City of Fresno. Because the project lies outside the sphere of influence of both cities, only visual resource-related policies and regulations outlined in the Fresno County General Plan are reviewed below.

Fresno County General Plan

Encompassing a variety of agricultural and urban settings along with valley grassland and high mountainous terrain, Fresno County's diverse landscape scenery is recognized in the General Plan for its value both to the general quality of life in the county and the region's economic vitality, including an expanding tourism industry. The Fresno County 2000 General Plan's Open Space and Conservation Element, adopted in October 2000 and amended through 2013, contains a number of goals and policies designed to protect the scenic resources of the county:

Goal OS-K To conserve, protect and maintain the scenic quality of Fresno County and discourage development that degrades areas of scenic quality.

Policy OS-K.1 The County shall encourage the preservation of outstanding scenic views, panoramas and vistas wherever possible.

In addition, the following provisions pertaining to aesthetic resources along the County's roadways, including language addressing placement of electrical utilities is contained in this General Plan Element:

Goal OS-L.1 To conserve, protect and maintain the scenic quality of land and landscape adjacent to scenic roads in Fresno County.

Policy OS-L.1 **Scenic Roadway System:** The County designates a system of scenic roadways that includes landscaped drives, scenic drives and scenic highways.

Policy OS-L.3 **Scenic Roadway Management:** The County shall manage the use of land adjacent to scenic drives and scenic highways based on a number of principles, including the following:

> Proposed high voltage overhead transmission lines, transmission line towers, and cell towers shall be routed and placed to minimize detrimental effects on scenic amenities visible from the right-of-way.

East Jensen Avenue, which borders the project on its south perimeter, is considered a County Designated Scenic Drive (Open Space and Conservation Element, Figure OS-2), and a segment east of South McCall Avenue is part of the Blossom Trail Route, a self-guided motor and bike tour featuring blossoming orchards that can be seen along the rural roadsides in the area.

Fresno County Bicycle Master Plan

In addition to goals and policies in the Open Space and Conservation Element of the Fresno County General Plan that call for development of a **"**system of hiking, riding, and bicycling trails and paths suitable for active recreation and transportation and circulation," the Fresno County 2010 Regional Bicycle and Recreational Trails Master Plan calls for development of a class II bikeway along the Blossom Trail scenic roadway, which includes the portion of East Jensen Avenue adjacent to the project.

3.1.2.2 Methodology

The visual analysis is based on review of technical data, including project maps and drawings provided by PG&E, aerial and ground-level photographs of the project area, local planning documents, and computer-generated visual simulations. Field observations were conducted in April 2012, with updated field verification undertaken in February 2015 to document existing visual conditions in the project area and to identify potentially affected sensitive viewing locations.

The assessment includes a set of photographs that document representative public views of the project corridor. As part of the PEA aesthetics analysis, visual simulations were prepared to illustrate before and after visual conditions in the project area, as seen from key viewpoints that show a subset of the representative views where the project will be most visible to the public and/or be seen at close range from key observation points.

Described briefly below, the technical methodology employs systematic digital photography, computer modeling, and rendering techniques. Photographs were taken using a digital single-lens reflex (SLR) camera. Figure 3.1-2 (Representative Photographs) and the simulation photograph used for Figure 3.1-4 were taken with a standard 50-millimeter (mm) lens equivalent, which represents an approximately 40-degree horizontal view angle. For three of the visual simulation photographs, wider angle views were employed to portray project components including substation modifications and replacement power line structures. Specifically, the photograph used for Figure 3.1-3 was taken with a 28-mm lens equivalent, representing an approximately 65-degree horizontal view angle. The photographs for Figures 3.1-5 and 3.1-6 were taken using 35-mm lens equivalent, representing an approximately 55-degree horizontal view angle. Photography viewpoint locations were documented systematically using photo log

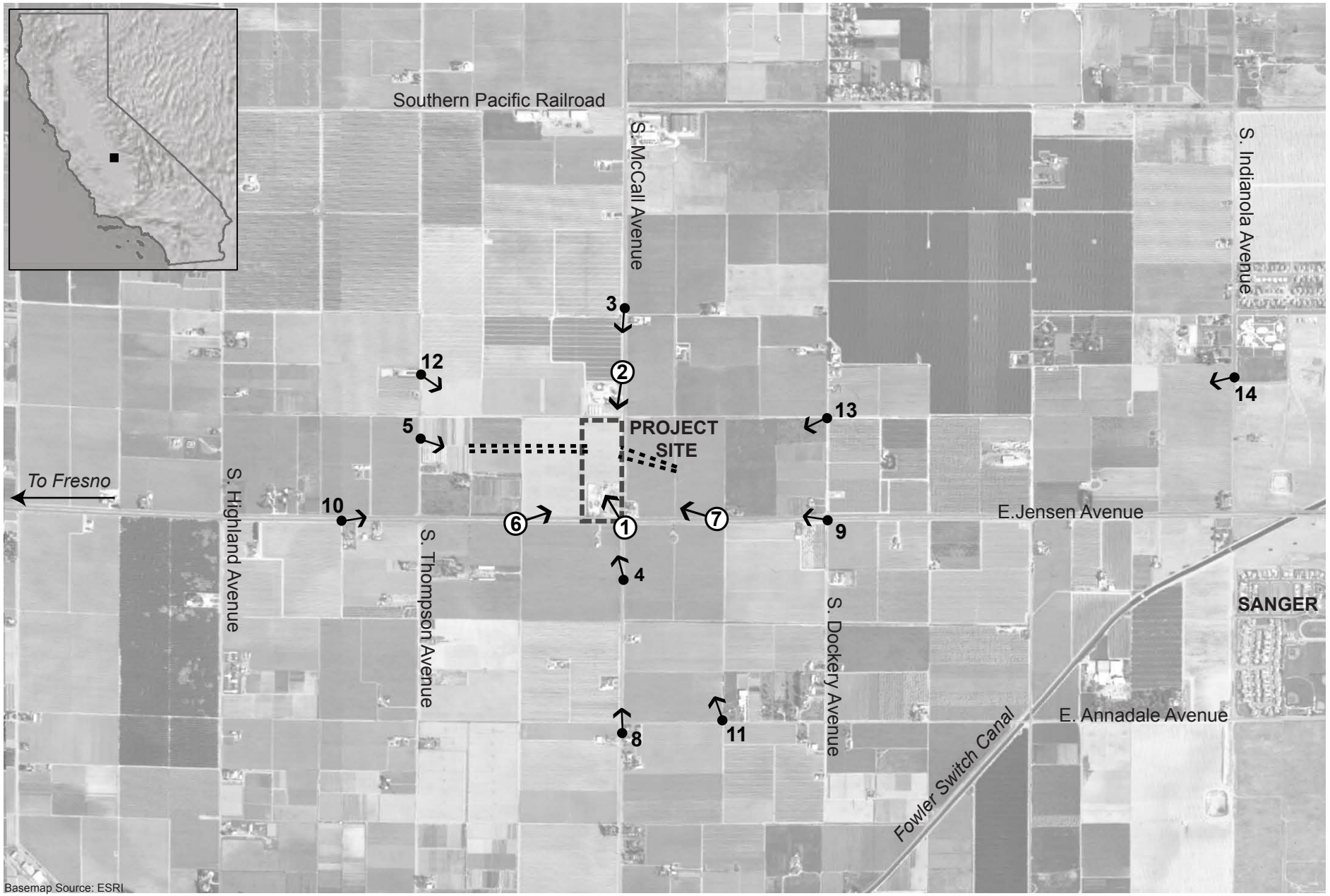
sheet notation, global positioning system (GPS) recording, and basemap annotation. Digital aerial photographs and project design information supplied by PG&E provided the basis for developing a three-dimensional (3-D) computer model of the new project components (poles and conductors). For each simulation viewpoint, viewer location was derived from GPS data, using 5 feet as the assumed eye level. Computer wireframe perspective plots were overlaid on the simulation photographs to verify scale and viewpoint location. Digital visual simulation images were then produced based on computer renderings of the 3-D model, combined with digital versions of the selected site photographs. The simulations are presented in Figures 3.1-3 through 3.1-6 (see Section 3.1.4.3); each of these figures consists of two full-page images designated "a" and "b," with the existing views shown in the "a" figure and views with visual simulations in the "b" figure. Discussion of these simulations is included in Section 3.1.4.3.

This visual study employs assessment methods based, in part, on the U.S. Department of Transportation, Federal Highway Administration's (FHWA) and other accepted visual analysis techniques. This study also addresses the CEQA Guidelines for visual impact analysis. The impact analysis describes the change to existing visual resources and assesses viewer response to that change. Central to this assessment is an evaluation of representative views from which the project will be visible to the public. The visual impact assessment is based on evaluation of the changes to the existing visual resources that will result from the project. These changes were assessed, in part, by evaluating the views provided by the computer-generated visual simulations and comparing them to the existing visual environment.

3.1.3 ENVIRONMENTAL SETTING

3.1.3.1 Regional and Local Landscape Setting

Figure 3.1-1 displays a map and an annotated aerial photograph that show the project location within a regional and local landscape context. The project lies within an unincorporated portion of central Fresno County at the southeastern edge of California's Central Valley. The eastern outskirts of the City of Fresno, the county seat with a population of over half a million, lies approximately four miles to the west. Sanger, a suburban community of some 24,000 is located approximately 2 miles east of the project. Bordering the Sierra Nevada foothills that rise above the valley floor approximately 10 miles to the east, the project area consists of a gently sloping alluvial plain, ranging in elevation from approximately 370 feet at Sanger to 325 feet in Fresno. On clear days, when distant landscape elements are discernible, a number of the higher peaks and mountains of the Sierra Nevada range, some reaching over 10,000 feet above sea level, are visible from some places in the project area.



ENVIRONMENTAL VISION
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Figure 3.1-1
Photograph Viewpoint Locations
PG&E Sanger Substation Expansion

Reflecting its historic proximity near the junction of several important regional transportation corridors and a major regional urban center, the surrounding landscape exhibits a high level of human modification. Commercial agriculture has long been the dominant land use in the area, served by a well-developed network of roadways, railroads, and waterways. SR-99, a major north-south freeway connecting population centers within the Central Valley and beyond is located approximately seven miles southwest of the project, while approximately 1.75 miles to the north is SR-180/East Kings Canyon Road, connecting Fresno and its environs with recreation destinations within the nearby Sierra Nevada mountains. A branch of the San Joaquin Valley Railroad passes approximately 1 mile north of the project. Agricultural facilities, such as a wineries and fruit processing plants, are characteristic features in the project area, while numerous canals and waterways traverse the landscape, including the Fowler Switch Canal, which runs from southwest to northeast within 1 mile of the site, and the Fresno Canal located approximately 3.5 miles to the north.

The comparatively flat terrain surrounding the project area is dominated by vineyards, orchards and row crops organized into rectangular parcels that typically range from appromimately15 to 30 acres in size and are bisected by a grid of paved or unpaved roadways. East Jensen Avenue, which passes adjacent to the project area on the south is a relatively heavily travelled four-lane divided roadway that serves as the main thoroughfare for motorists traveling between the community of Sanger and locations to the west, including SR-99 and the City of Fresno. South McCall Avenue, adjacent to the project's eastern perimeter, is a nearly 18-mile-long two-lane road that connects a number of rural communities between SR-99 south of Fresno and SR-180 some 2 miles north of the project. With the exception of a residential lot and grocery store at the South McCall/East Jensen Avenue intersection, the area in the immediate project vicinity is relatively sparsely inhabited. Rural residential lots, characteristically shaded by dense groves of mature trees, are scattered within the surrounding landscape in isolated clusters, the nearest located approximately 0.25 mile from the facility.

Electric utility structures are established landscape features in the project area. Sanger Substation is the nexus for several regional power lines supported by lattice towers that converge on the project area from the southwest, northeast, and west, in addition to local wood-pole-supported power and distribution lines that run along both sides of East Jensen and South McCall Avenues. Incremental increases in its power and distribution capacity have occurred at the substation's present location since its establishment in 1921. Due to potential safety hazards caused by resulting congestion within the existing facility, and to improve overall system reliability, PG&E proposes removing dilapidated structures and outdated equipment from the existing 4.5-acre substation site and placing new structures and equipment in an expanded substation adding approximately 7 acres immediately north of the present facility.

3.1.3.2 Project Viewshed

The project viewshed is defined as the general area from which a project is visible. Viewing distance is a key factor that affects the degree of project visibility. For purposes of describing a project's visual setting and assessing potential visual impacts, the viewshed can be broken down into foreground, middleground, and background distance zones. The foreground is defined as the zone within 0.25 to 0.5 mile from the viewer. Landscape detail is most noticeable and objects generally appear most prominent when seen in the foreground. The middleground can be defined as a zone that extends from the foreground up to 3 to 5 miles from the viewer, and the

background extends from about 3 to 5 miles to infinity (Smardon et al. 1986 and USDA 1995). Viewing distance is a key factor that affects the potential degree of project visibility. Visual details generally become apparent to the viewer when they are observed in the foreground, at a distance of a quarter to one half mile or less. The focus of the visual analysis included in this PEA is primarily the foreground viewshed zone, or within an area up to one half mile from the project location where visual details will be most apparent and change will be potentially most noticeable. Because the project involves new structures that range from approximately 66 to 101 feet in height within a flat agricultural landscape that affords open views toward the substation, the analysis also considers visual effects up to 1.5 miles away, where the project is potentially visible and change could be noticeable.

3.1.3.3 Representative Views

Figures 3.1-2a through 3.1-2g present a set photographs taken from key representative locations within the project viewshed and that convey a general sense of the visual landscape character found in the vicinity (Photographs 1 to 14). Viewpoint locations and view directions are noted in captions below each photograph. As summarized in Table 3.1-2 the photographs depict views from locations along public view corridors within the project vicinity. Figure 3.1-1 delineates these view corridors and associated photograph viewpoint locations. These viewpoints include locations looking toward the substation from East Jensen Avenue and South McCall Avenues, which constitute the main thoroughfares within the immediate project vicinity and from which the largest number of viewers will see the facility. Included as well are a number of public view locations that depict the substation from less heavily travelled secondary roadways north and south of the facility, and from which residential viewers along with other members of the public could see the project. For purposes of analysis, visual effects of foreground views (within approximately 0.5 mile) are compared with more distant views (up to 1.5 miles) in the following discussion.

1. South McCall Avenue at East Jensen Avenue looking northwest *

2. South McCall Avenue near closest residence to the north looking south *

Refer to Figure 3.1-1 for photograph viewpoint locations

* Simulation Viewpoint

Figure 3.1-2a
Representative Photographs
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3. South McCall Avenue looking south

4. South McCall Avenue looking northwest

Refer to Figure 3.1-1 for photograph viewpoint locations

Figure 3.1-2b
Representative Photographs
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5. South Thompson Avenue looking east

6. East Jensen Avenue looking northeast *

Refer to Figure 3.1-1 for photograph viewpoint locations

* Simulation Viewpoint

Figure 3.1-2c
Representative Photographs
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7. East Jensen Avenue looking northwest *

8. South McCall Avenue near East Annadale Avenue looking north

Refer to Figure 3.1-1 for photograph viewpoint locations

* Simulation Viewpoint

Figure 3.1-2d
Representative Photographs
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9. East Jensen Avenue at South Dockery Avenue looking west

10. East Jensen Avenue near South Thompson Avenue looking east

Refer to Figure 3.1-1 for photograph viewpoint locations

Figure 3.1-2e
Representative Photographs
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11. East Annadale Avenue looking northwest

12. South Thompson Avenue looking southeast

Refer to Figure 3.1-1 for photograph viewpoint locations

Figure 3.1-2f
Representative Photographs
PG&E Sanger Substation Expansion

13. South Dockery Avenue looking southwest

14. South Indianola Avenue looking west

Refer to Figure 3.1-1 for photograph viewpoint locations

Figure 3.1-2g
Representative Photographs
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Table 3.1-2 Summary of Representative Views

Viewpoint Number and Location	Potentially Affected Viewer Type
Foreground Views within approximately 0.5 mile	
1. South McCall Avenue at East Jensen Avenue *	Motorists on a primary roadway
2. South McCall Avenue *	Motorists on a primary roadway Limited number of residents including those at the closest residence to the north
3. South McCall Avenue	Motorists on a primary roadway Limited number of residents
4. South McCall Avenue	Motorists on a primary roadway
5. South Thompson Avenue	Motorists on a secondary rural roadway Limited number of residents
6. East Jensen Avenue *	Motorists on a primary roadway
7. East Jensen Avenue *	Motorists on a primary roadway
More Distant Views from approximately 0.5 mile up to 1.5 miles	
8. South McCall Avenue	Motorists on a primary roadway Limited number of residents
9. East Jensen Avenue	Motorists from a primary roadway Limited number of residents
10. East Jensen Avenue	Motorists from a primary roadway Limited number of residents
11. East Annadale Avenue	Motorists on a secondary rural roadway Limited number of residents
12. South Thompson Avenue	Motorists on a secondary roadway Limited number of residents
13. South Dockery Avenue	Motorists on a secondary rural roadway Limited number of residents
14. South Indianola Avenue	Motorists on a secondary roadway Elementary school students and staff (distant views)

*Denotes key view selected for visual simulations (Figures 3.1-2a through 3.1-2g)

Foreground Views- within approximately half a mile (Photographs 1 through 7)

Seven representative photographs from public roadways show the project area's relatively flat agricultural landscape character with comparatively open foreground views toward the project area (Figures 3.1-2a through 3.1-2d, Photographs 1 through 7). As indicated by these photographs, views toward the project include varied levels of screening depending on the particular combination of vineyard, orchard, row crop, or amount of fallow cropland cover. Photograph 1 is an unobstructed close range view toward the project area from the southeast corner of East Jensen and South McCall Avenues showing a motorist's perspective travelling north on South McCall Avenue. The substation facility, including approximately nine lattice towers carrying overhead power lines, dominates the view from this location. Traffic signals and cobra head street lights at the intersection are noticeable foreground elements and wood utility poles line South McCall Avenue beyond the substation. Part of a corner grocery store and adjoining parking lot enclosed by metal fencing are also discernible at the far right.

As one moves farther away from this intersection, elements of the substation appear less prominent and other intervening elements such as roadside vegetation, power lines and agricultural features are more prevalent and noticeable within the landscape. In photograph 2, a view from South McCall Avenue near the closest residence to the north, the substation is visible beyond a fenced agricultural equipment storage area, residential landscaping, driveways, and a mailbox in the immediate foreground on the right. Along both sides of the roadway wood utility poles appear prominently against the sky and recede toward the horizon where substation components, including several lattice structures, are visible in the center of the view. From this location, the South McCall Avenue/East Jensen Avenue intersection is barely visible in the distance. Taken from approximately 900 feet further north, Photograph 3 is a view along South McCall Avenue with utility poles and overhead conductors as well as agricultural elements including a storage tank, pumping structure and mobile homes. From this location, substation components are considerably less noticeable. A residential driveway is visible on the left, while on the right, the façade of the residence referenced in the previous photograph is discernible. Surrounding mature tree clusters, typical of rural residential landscaping in the vicinity, effectively screen views of the surrounding landscape, including the substation. Photograph 4 is a close range view from South McCall Avenue, taken approximately 750 feet south of the existing substation, that shows portions of the facility with adjacent lattice towers, along with wood utility poles lining the roadway as prominent elements seen against the sky. The mature vineyard that is typical of those found in the project vicinity partially screens substation utility buildings.

Photograph 5 is an open view from South Thompson Avenue, a secondary farm road, at a location approximately 0.4 mile northeast of the site. The substation is noticeable against a distant mountain backdrop; however in combination with the line of lattice towers and utility poles that are silhouetted against the sky and elements in the close range foreground, including highly contrasting protective crop covers, the substation is a subordinate landscape element within the overall view. In Photograph 6, along eastbound East Jensen Avenue, approximately 900 feet west of South McCall Avenue, numerous lattice tower and pole structures concentrated in and around the substation partially obstruct motorists' distant views toward snowcapped peaks of the Sierras. Approximately one quarter mile east of the intersection with South McCall Avenue, Photograph 7 depicts a view looking northwest along East Jensen Avenue. Overhead

lines supported by a combination of wood and steel utility poles are visible against the skyline in the immediate foreground seen from this roadway location, as well as along South McCall Avenue, which together with the substation are prominent elements along the horizon. Intervening tree canopies and structures partially screen substation components seen from this area.

More Distant Views – from approximately half a mile up to approximately 1.5 Miles (Photographs 8 through 14)

As displayed in Photographs 8 through 14, the substation facility and associated power line elements are generally less noticeable at distances of approximately half a mile up to 1.5 miles away, particularly when viewed from locations along East Jensen and South McCall Avenues (Figures 3.1-3d through 3.1-3g). Photograph 8 depicts a view looking north along South McCall Avenue near East Annadale Avenue approximately half a mile from the substation. Although several lattice towers near the substation site are visible beyond orchards on the left side of the road, various foreground elements including wood utility poles and overhead conductors situated on both sides of the roadway dominate the landscape. Additionally, the distinctive white church building on the right provides a strong foreground focal point and visual counterpoint to the less distinct and more distant substation elements. Two different views of the project along East Jensen Avenue also illustrate visual conditions in which more distant substation features appear subordinate in relationship to more prominent elements in the closer range foreground. Photograph 9 is a view looking west along East Jensen Avenue from a distance of approximately half a mile at South Dockery Avenue. Utility poles lining both sides of the roadway dominate the skyline in the immediate foreground and lattice towers of several power lines converging on the substation are also visible. Trees and large shrubs in the roadway median and clusters of mature vegetation surrounding residences along the route punctuate the flat agricultural landscape and the residential vegetation partially screens views of the substation, seen in the distance on the right side of the road. In Photograph 10, looking east along East Jensen Avenue approximately 0.6 mile from the project area, the substation is almost imperceptible when seen within a landscape of competing visual elements that include numerous lattice towers, utility poles and overhead conductors visible on both sides of the roadway against a varied backdrop of foothills and snow covered peaks and a foreground punctuated by a number of tree shaded residences.

Distant views from secondary roads differ with views from along the more heavily traveled East Jensen and South McCall Avenues in that secondary roadway views toward the project area are more oblique and generally more open, largely due to the absence of taller foreground features seen in the previous photographs. Taken approximately one quarter mile from the Photograph 8 viewpoint described above, Photograph 11 is along East Annadale Avenue, a single lane road perpendicular to South McCall Avenue. Lattice towers and taller substation elements are somewhat noticeable when viewed from 0.6 mile southeast of the project area along this secondary road. A dense group of tall trees lining a residential driveway can be seen on the right, and similar to screening described for Photograph 3 above, this vegetation obstructs views toward the substation from this residence, which is the main visual receptor at this location. Seen from a number of secondary roads, surrounding power lines that converge on the project area constitute the most prominent feature in the landscape, and thereby lessen the visibility of the substation itself. This is apparent in Photograph 12, an unobstructed view toward the project

across a cultivated field from a location along South Thompson Avenue approximately half a mile northwest of the substation. Seen from this area and distance, the substation elements appear intermingled among numerous taller lattice towers that converge on the site from three directions and are barely discernible against a backdrop of sky and darker tree canopies. Photograph 13 is a view looking southwest from South Dockery Avenue near several residences located north of East Jensen Avenue, approximately half a mile from the project area. A pair of lattice towers supporting two parallel power lines dominate the foreground amidst fallow cropland and vineyards. The concrete irrigation channel is also a strong linear element in the foreground. Although visible, the substation elements are not prominent when seen at this distance within the overall view. Photograph 14 is a more distant view toward the substation from South Indianola Avenue near an elementary school located at the western edge of the community of Sanger, approximately 1.5 miles away. Although difficult to discern, the project area is slightly visible where the lattice towers converge on the horizon. From this distance, however, the substation facility is not a distinct landscape feature.

3.1.3.4 Potentially Affected Viewers

Accepted visual assessment methods, including those adopted by federal agencies, establish sensitivity levels as a measure of public concern for changes to scenic quality. Viewer sensitivity, typically divided into high, moderate, and low categories, is among the criteria employed for evaluating visual impacts and their degree of significance. Factors considered in assigning a sensitivity level include viewer activity, view duration, viewing distance, adjacent land use, and special management or planning designation. According to the U.S. Department of Transportation *Visual Impact Assessment for Highway Projects,* research on the subject suggests that certain activities tend to heighten viewer awareness of visual and scenic resources, while others tend to be distracting. For example, recreational activities tend to favor attention to scenery, while commuting in heavy traffic tends to be distracting (U.S. Department of Transportation 2015). In general, the degree of visual impact tends to be more substantial where the sensitivity of affected viewers is highest. It should be noted that the existing power lines are established elements visible within the landscape setting.

Motorists represent the largest affected viewer group, consisting primarily of those traveling along East Jensen Avenue and South McCall Avenue. Less numerous are users of single lane rural roadways bisecting the area that primarily serve as access routes to agricultural operations and scattered rural residences. Motorists include a variety of roadway travelers—both local and regional travelers who are familiar with the visual setting, and travelers using the roadway on a less regular basis such as those driving the Blossom Trail or seeking alternate routes to recreation destinations in the mountains east of the project. Roadway speeds are generally 55 mph, and affected views are generally brief in duration, typically lasting less than a few minutes depending on traffic volume. Motorists will be most aware of the project when stopped at the traffic signal at the intersection of East Jensen and South McCall Avenues. Viewer sensitivity is considered low to moderate.

A secondary viewer group is comprised of residents who inhabit the approximately 24 residences that are located within half a mile of the project area. While open views of the surrounding landscape are potentially available to residents at many of these locations due to the flat terrain, surrounding orchards and vineyards provide partial screening of views toward the project in

some areas. In addition, dense clusters of mature trees and other vegetation, which typically surround residences in the project vicinity, constrain views of the surrounding landscape. Residential views tend to be long in duration, and the sensitivity of this viewer group is considered moderate to high.

A third viewer group consists of cyclists who potentially have views of the project. These include recreational cyclists as well as bicycle commuters on nearby roadways. The Fresno County 2010 Regional Bicycle and Recreational Trails Master Plan calls for development of a class II bikeway along the Blossom Trail scenic roadway, which includes a portion of East Jensen Avenue adjacent to the project. Although the total duration of views tends to be short in the case of recreational users of area roadways, for many, the expectation of a naturalistic landscape setting could raise the sensitivity of this view group, which is considered moderate.

Students and staff of the Ronald Reagan Elementary School located at South Indianola Avenue comprise an additional group of viewers. Given the distance of this location from the project (approximately 1.6 miles), project elements are only slightly discernible. Therefore the sensitivity of this group is low.

3.1.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for aesthetic impacts derived from Appendix G of the CEQA Guidelines, provide APMs to reduce impacts, and assess potential project-related construction and operational aesthetic impacts.

3.1.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project-related impacts on aesthetics was evaluated for each of the criteria listed in Table 3.1-1, as discussed in Section 3.1.4.3.

3.1.4.2 Applicant-Proposed Measures

The following APMs will be implemented to further reduce less-than-significant visual impacts associated with the project:

APM AES-1:

Construction site. Construction activities will be kept as clean and inconspicuous as practical. Where practical, construction storage and staging will be screened from close-range residential views.

APM AES-2:

New source of substantial light or glare avoidance. Security lighting at the substation will be directed on-site and will be hooded to reduce potential visibility from off-site locations.

APM AES-3:

Structures and equipment at the expanded substation will be a non-reflective finish and neutral gray color.

3.1.4.3 Potential Impacts

Project impacts related to aesthetics and visual resources were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and the operation and maintenance phase.

The project involves dismantling much of the existing equipment at Sanger Substation and rebuilding the facilities with upgraded equipment and structures on an expanded substation area immediately north of the existing facilities as discussed in Chapter 2.0, Project Description. In addition, to connect the expanded substation to the adjacent existing power lines, the angle of incoming power lines will be reconfigured, which will entail removal of existing wood poles, lattice steel towers, and LDSPs and the installation of new TSPs in the vicinity of the substation.

O&M activities required for the upgraded substation and connecting power lines will not significantly change from those currently required for the existing system.

The impact analysis assesses temporary construction activities that are required to install the new transformers and poles and establish required access and work areas, and permanent visual impacts of substation modification, as described in Chapter 2.0, Project Description. Because the location, form and height of new structures will change somewhat compared to existing structures being replaced, the evaluation of potential permanent visual impacts is focused primarily on analysis of these differences. The extent of the project's visibility from key viewing locations, the degree to which the various project elements will contrast with or be integrated into the existing landscape, and the extent of change in the landscape's composition and character in relation to the number and sensitivity of viewers were taken into account.

a) Would the project have a substantial adverse effect on a scenic vista? No Impact

CEQA requires the project be evaluated as to whether its implementation has a substantial, adverse effect on a scenic vista. For purposes of this evaluation, a scenic vista is defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality. There are no designated scenic vistas within the project viewshed; therefore, there will be no impact from the project on a scenic vista.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? No Impact

As documented in Section 3.1.2, there are no designated state scenic highways within view of the project; therefore, the project will not substantially damage scenic resources within a state scenic highway and no impact will occur.

c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings? *Less-than-significant Impact*

Temporary Construction Impacts

Construction-related visual impacts of the project will not substantially degrade the existing visual character or quality of the site and its surroundings. During construction, visual impacts will include the presence of workers, portable buildings, construction equipment, and vehicles associated with the installation of the substation components and new power poles. Construction is anticipated to last approximately 19 months. To varying degrees, construction activity could be noticeable to some local residents, particularly those in the immediate vicinity of the project, as well as to motorists travelling near the East Jensen/South McCall Avenue intersection. Most of this activity will be limited to locations set back from roadways. In addition, the project is located in a general area where mechanized agricultural production activities occur that typically employ the use of trucks and other equipment that is not unlike project-related construction equipment. Due to the above factors, as well as their limited duration, construction-related visual effects will be less than significant. Implementation of APM AES-01 will further minimize this impact.

Permanent Visual Impacts

The project entails removing much of the existing 115 kV substation equipment from its present location and expanding the substation onto private property approximately 7 acres adjacent to and generally north of the existing substation. The following will be removed as part of the project: sixteen 115 kV circuit breakers, 24 disconnect switches, 18 steel support structures, the main and transfer bus, the existing block/stucco veneer control building, and the existing concrete control building. A 12 kV structure and two transformers will remain. In addition, the expanded substation will include two new MPAC buildings, approximately 11 feet high and similar to one(s) seen at the existing site, as well as a new stormwater retention basin and an expanded chain-link perimeter security fence that will be similar in appearance to the existing fence. As detailed in Chapter 2.0, Project Description and shown on Figure 2-2, some of the existing power poles, towers, and conductors located outside the existing substation perimeter will be reconfigured to accommodate the substation expansion. These modifications include removing approximately 24 wood and steel poles, 17 lattice steel towers, and 4 LDSPs, and rearranging the alignment of incoming power lines. Rearranging the existing electric power circuits will require installing approximately 41 new poles. Most poles will be TSPs ranging in height from 60 to 110 feet and some may be LDSPs. Minimal grading will be required to construct the new facilities, and clearing and/or trimming of trees is not expected to be necessary during project construction. Although permanent removal of grasses and agricultural crops will be required in the expansion area to enable construction of the new facilities, this will take place in an area where vegetation clearing routinely occurs as a result of agricultural operations and therefore the visual change will be minor and not particularly noticeable to the public.

The flat agricultural landscape within the project vicinity affords largely open and, in many cases, unobstructed views of the project from public roads and limited number of residences. At the same time, views of the project are for the most part seen in a setting where other utility structures, including poles and overhead power, distribution, and communication lines are established, visible landscape features. As discussed below and depicted in the Figure 3.1-3a

through 3.1-6b Visual Simulations, the project represents an incremental visual change that will not substantially alter the landscape setting.

Figure 3.1-3a shows the substation as seen by motorists at the South McCall Avenue/East Jensen Avenue intersection. A mixture of lattice towers, substation structures and multiple overhead conductors dominate the view at this intersection. In the Figure 3.1-3b visual simulation, most of the existing substation structures and all of the lattice towers have been removed from the immediate foreground. The expanded substation facility is generally set back from the intersection, revealing an expanded view of the surrounding fields and a distant tree line northwest of the site, as well as creating a reduction in visual clutter, or density of disparate visual elements within the project area. Despite the larger footprint of the expanded substation, a comparison of the existing view and visual simulation demonstrates that the perceived scale of the project is reduced, resulting in a beneficial aesthetic effect when viewed at close range from this heavily used roadway intersection.

Figure 3.1-4a is a roadway view toward the substation from near the residence situated closest to the project area. Lattice towers line the left side road at the edge of the substation and 115 kV power lines, as well as a 12 kV distribution line, are visible along both sides of the roadway in the immediate foreground, with multiple power lines visible in the distance. The Figure 3.1-4b visual simulation shows new substation elements occupying the site, beyond the residential property on the right. Several new TSP's can be seen in this area, as well one along the roadway, and three on the left side of the view. Many of these structures replace lattice towers at the existing substation. Although somewhat taller than the existing utility poles along road, the new poles are similar in form and, to a great extent, blend with elements of the existing visual setting. Power lines crossing the roadway just north of the East Jensen/South McCall Avenue intersection, seen in the existing view, have been relocated approximately 700 feet further north. In comparison to the existing view, the visual simulation indicates that when seen from this location along South McCall Avenue, the project will represent an incremental visual change that will not substantially alter the existing character or composition of the surrounding landscape. Additionally, views of the project from the nearest residence, situated less than 200 feet from the northern perimeter of the expanded substation, will generally be screened by existing landscaping on the residential property, including mature trees that are visible on the right side of the photograph.

Figure 3.1-5a shows the existing view seen by east-bound motorists along East Jensen Avenue, approximately 900 feet from the South McCall/East Jensen intersection. Lattice towers and substation structures dominate the view to the left of the intersection. In addition, numerous utility poles and conductors are visible along both sides of East Jensen Avenue and along South McCall Avenue (seen in the distance north of the facility). Steel poles and lattice structures can also be seen crossing open fields to the left of the roadway as well as beyond the substation in the distance, contributing to an overall cluttered foreground setting. In the Figure 3.1-5b visual simulation, substation elements associated with the proposed expansion are visible on the left, while the lattice structures in the existing view have been replaced by TSP's that in form and scale more effectively blend with the appearance of existing utility structures seen along the roadway. Compared to the dense arrangement of the lattice structures seen in Figure 3.1-5a, the steel poles generally appear less prominent, due their more streamlined profile, in addition to a

more dispersed arrangement in the landscape, which allows for more open and continuous views of the distant mountain backdrop.

In Figure 3.1-6a, a close range motorist's view toward the project area from westbound East Jensen Avenue, power lines converging on the substation are dominant foreground elements along with existing substation components. The Figure 3.1-6b visual simulation shows a set of realigned power lines, silhouetted against the sky, in the immediate foreground to the right. As seen in the previous visual simulation, all of the existing lattice structures have been replaced with TSPs along McCall Avenue. The relocated substation appears beyond these elements near the center and right side of the view. Given the slight increase in distance to the project as seen by motorists along this roadway, and due to the change in the alignment of connecting power lines and the more streamlined visual profile of their supporting structures, the visual simulation shows that the overall impression of the project's visibility is incrementally reduced when viewed within the broader landscape setting.

As a whole, the changes brought about by the project will not substantially degrade the existing visual character or quality of the site and its surroundings. While the project will be noticeable to some viewers, the changes are generally incremental, particularly when viewed in the context of the surrounding landscape. A comparison of the existing views and visual simulations from key viewpoints indicates further that the project represents a reduction in visual clutter and an incremental visual improvement to the character or composition of the surrounding landscape. Therefore the visual impact will be less than significant. Implementation of APM AES-3 will further minimize these less-than-significant impacts.

Existing View from South McCall Avenue at East Jensen Avenue looking Northwest (VP 1)

Refer to Figure 3.1-1 for viewpoint location

Figure 3.1-3a
Existing View from South McCall Avenue at East Jensen Avenue
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Visual Simulation of Proposed Project (VP 1)

Refer to Figure 3.1-1 for viewpoint location

Figure 3.1-3b
Visual Simulation from South McCall Avenue at East Jensen Avenue
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Existing View from South McCall Avenue near Closest Residence looking South (VP 2)

Refer to Figure 3.1-1 for viewpoint location

Figure 3.1-4a
Existing View from South McCall Avenue near Closest Residence
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Visual Simulation of Proposed Project (VP 2)

Refer to Figure 3.1-1 for viewpoint location

Figure 3.1-4b
Visual Simulation from South McCall Avenue near Closest Residence
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Existing View from East Jensen Avenue looking Northeast (VP 6)

Refer to Figure 3.1-1 for viewpoint location

Figure 3.1-5a
Existing View from East Jensen Avenue looking Northeast
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Visual Simulation of Proposed Project (VP 6)

Refer to Figure 3.1-1 for viewpoint location

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Figure 3.1-5b
Visual Simulation from East Jensen Avenue looking Northeast
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Existing View from East Jensen Avenue looking Northwest (VP 7)

Refer to Figure 3.1-1 for viewpoint location

Figure 3.1-6a
Existing View from East Jensen Avenue looking Northwest
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Visual Simulation of Proposed Project (VP 7)

Refer to Figure 3.1-1 for viewpoint location

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Figure 3.1-6b
Visual Simulation from East Jensen Avenue looking Northwest
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d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? *Less-than-Significant Impact*

Glare

Glare exists when a high degree of contrast between bright and dark areas in a field of view make it difficult for the human eye to adjust to differences in brightness. APM AES-3, which calls for the use of a dull grey, non-reflective finish on new chain-link fencing, new substation equipment and equipment enclosures, will minimize the potential effect of glare.

Nighttime Lighting

No nighttime construction is planned as part of the project. However, in the case of an emergency, if work must be accomplished at night, portable temporary lighting will be directed on site and used to illuminate the immediate work area. Current project plans call for construction activities to take place during daylight hours and for nighttime construction activities to be avoided, if possible.

The project is in a rural setting with little roadway lighting adjacent to the site. Lighting sources tend to be localized and associated with agricultural processing facilities, residences, and some roadway crossings including the East Jensen/South McCall Avenue intersection. Substation lighting currently operates all night at the existing substation facility. Lighting for the expanded station will also be on all night and will consist of non-glare light emitting diode (LED) lamps. Lighting fixtures will be located and designed to avoid casting light or glare toward off-site locations. The light standards will be approximately 10 feet high, galvanized steel posts, erected on bus structures and located around the perimeter of the substation. The additional lighting will represent a minor incremental change to existing nighttime lighting conditions in the project area. The impact will be less than significant and implementation of APM AES-2 will further reduce potential night lighting effects.

3.1.5 REFERENCES

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3.2 AGRICULTURAL AND FOREST RESOURCES

3.2.1 INTRODUCTION

This section describes existing conditions and potential impacts on agricultural and forest resources as a result of construction, operation, and maintenance of the project. The analysis concludes that impacts on agricultural and forest resources will be less than significant; the APMs described in Section 3.2.4.2 will further reduce the project's less-than-significant impacts. The project's potential effects on agricultural and forest resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.2-1 and discussed in more detail in Section 3.2.4.

Table 3.2-1: CEQA Checklist for Agricultural and Forest Resources

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural land?	☐	☐	☒	☐
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 by 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 nonforest uses?	☐	☐	☐	☒
e) Involve other changes in the existing environment, which, due to their location or nature, could result in the conversion of Farmland to nonagricultural use or conversion of forest land to nonforest use?	☐	☐	☒	☐

3.2.2 REGULATORY BACKGROUND AND METHODOLOGY

3.2.2.1 Regulatory Background

Federal

No federal regulations related to agricultural or forest resources are applicable to the project.

State

Williamson Act

The California Land Conservation Act, better known as the Williamson Act (California Government Code Section 51200 et seq.), is designed to preserve agricultural and open space land. It establishes a program of private landowner contracts that voluntarily restrict land to agricultural and open space uses. In return, Williamson Act parcels receive a lower property tax rate consistent with their actual use instead of their market rate value. Lands under contract may also support uses that are "compatible with the agricultural, recreational, or open-space use of [the] land" subject to the contract (California Government Code Section 51201[e]).

Farmland Mapping and Monitoring Program

The California Department of Conservation (DOC), under the Division of Land Resource Protection, has established the Farmland Mapping and Monitoring Program (FMMP) to monitor the conversion of the state's farmland to and from agricultural use. The FMMP maps agriculturally viable lands and designates specific categories, including Prime, Unique, non-Prime, or Farmland of Statewide Importance.

Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local discretionary regulations. This section includes a summary of local zoning in the project area for agricultural use or forest land and is provided for informational purposes and to assist with the CEQA review process.

The project area and surrounding area are zoned AE-20 (Exclusive Agricultural District, 20-acre minimum lot size). With the exception of the area east of the project area, the project area and surrounding area is under Williamson Act contracts (DOC 2012). The project does not cross any lands zoned for forest land. See Section 3.10, Land Use and Planning, for additional information about zoning in the project area.

3.2.2.2 Methodology

Information about existing agricultural uses was obtained during site visits conducted in March and April 2012 and January 2015 in addition to review of aerial photographs. Zoning information was obtained through review of Fresno County Zoning Ordinance 2011. Information on the farmland types that will be affected by the project and Williamson Act contract lands was obtained from the DOC and Fresno County. The information was then used to evaluate the project against the CEQA Checklist to determine potential impacts. There are no forest resources in the project area, therefore forest resources will not be discussed in this section.

3.2.3 ENVIRONMENTAL SETTING

3.2.3.1 Regional

The project is located in a predominantly agricultural area within Fresno County near the City of Sanger. Fresno County leads California in agricultural production. Almonds, livestock, grapes, and milk are Fresno County's top commodities (California Department of Food and Agriculture 2014). Agriculture is the primary land use in the county in terms of acreage, as shown in Table 3.2-2. Prime farmland alone accounts for 28 percent of the county's lands.

Table 3.2-2: Inventory of Fresno County Land Use Categories (2012)

Category	Acres	
Prime Farmland	683,925	
Farmland of Statewide Importance	411,483	
Unique Farmland	92,927	
Farmland of Local Importance	179,654	
Important Farmland Subtotal		*1,367,989*
Grazing Land	825,548	
Agricultural Land Subtotal		*2,193,537*
Urban and Built-up Land	122,726	
Other Land	116,235	
Water Area	4,914	
Total Area Inventoried		**2,437,412**

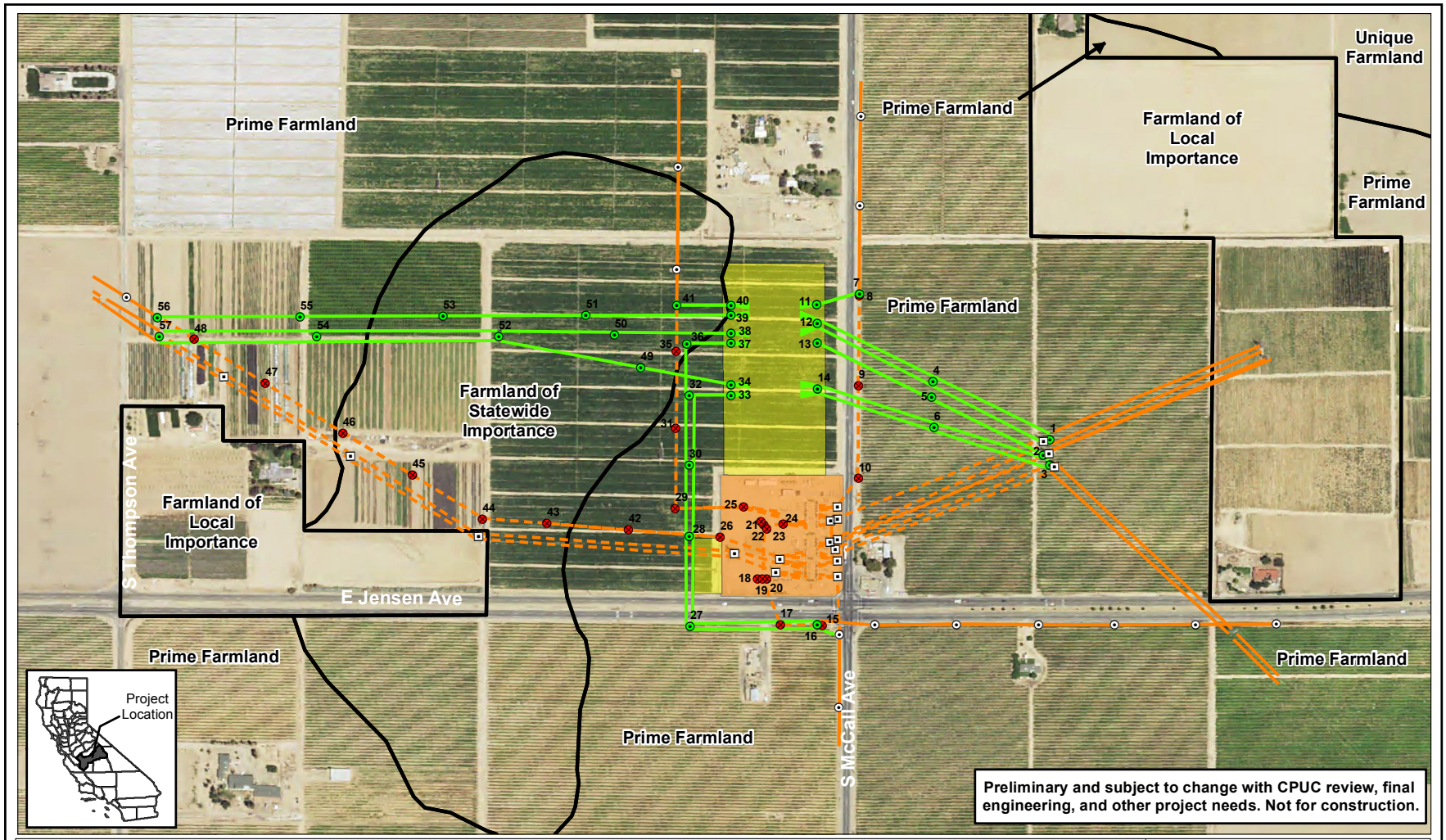
Source: California Department of Conservation 2014a

3.2.3.2 Local

Agricultural resources are described within approximately one-quarter mile of the proposed project. This study area is shown on Figure 3.2-1. Agriculture is the dominant land use in the study area. The substation expansion area is planted with row crops. Specialty crops and greenhouses are adjacent to the expanded substation area on the west, and vineyards are located across the street directly to the east on South McCall Avenue.

Williamson Act and Important Farmland

The existing substation site and most of the expanded substation area are designated as Prime Farmland, although a small portion of the northwest corner of the expanded substation area is Farmland of Statewide Importance (DOC 2014b). The areas immediately surrounding the substation are mostly designated Prime Farmland interspersed with Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance (Figure 3.2-1). The project site is located on agricultural lands subject to a Williamson Act contract, as are several adjacent parcels (Figure 3.2-2).



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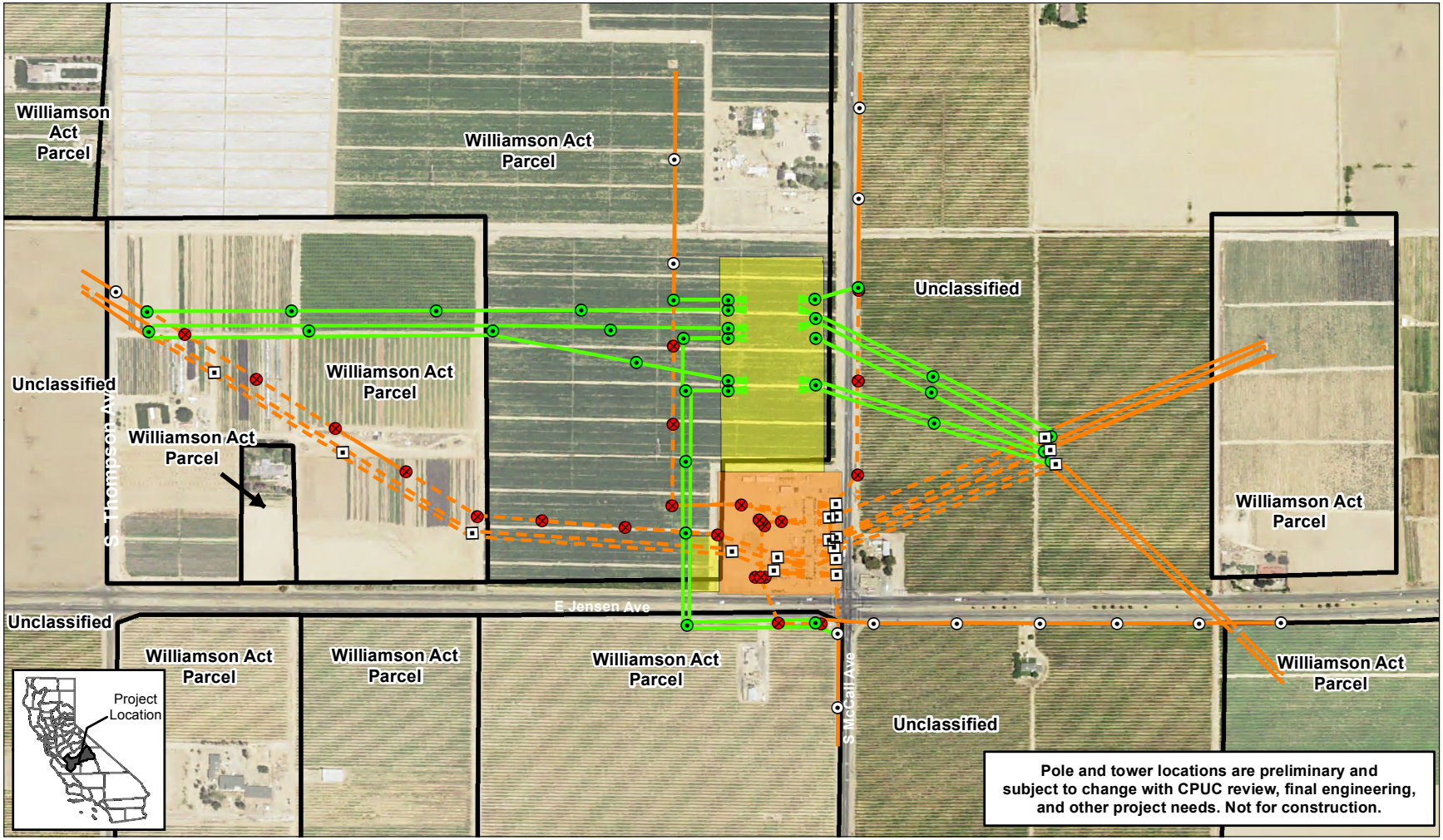

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Zoning Districts

The project and surrounding areas are zoned AE-20 (Exclusive Agricultural District, 20-acre minimum lot size). The AE District is intended to be an exclusive district for agriculture and for those uses that are necessary and an integral part of agricultural operations. Electrical transmission substations and electric distribution substations that are subject to local jurisdiction are permitted uses in AE Districts, subject to review and approval by the director of the Department of Public Works and Planning, who must make the following findings:

- That the site of the proposed use is adequate in size and shape to accommodate said use and all yards, spaces, walls and fences, parking, loading, landscaping and other features required by this Division, to adjust said use with land and uses in the neighborhood.
- That the site for the proposed use relates to streets and highways adequate in width and pavement type to carry the quantity and kind of traffic generated by the proposed use.
- That the proposed use will not be detrimental to the character of the development in the immediate neighborhood or the public health, safety, and general welfare.
- That the proposed development be consistent with the General Plan. Nonagricultural uses are allowed in areas designated by the General Plan as Agriculture under certain conditions.

PG&E's substation facilities are not subject to local jurisdiction or County zoning requirements.

3.2.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for agricultural and forest resources impacts derived from Appendix G of the CEQA Guidelines, provide APMs to reduce impacts, and assess potential project-related construction and operational impacts on agricultural and forest resources.

3.2.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project-related impacts on agricultural and forest resources were evaluated for each of the criteria listed in Table 3.2-1, as discussed in Section 3.2.4.3.

3.2.4.2 Applicant-Proposed Measures

PG&E will implement the following APM:

APM AGR-1. Agriculture Impacts Avoidance

To avoid potential impacts on agriculture, PG&E will work with farmers to conduct its work between their harvest and planting periods where and whenever possible. In areas containing permanent crops (i.e., grapevines or orchards) that must be removed and replaced to gain access to pole sites for construction purposes, PG&E will provide compensation to farmers and/or landowners in accordance with PG&E's Property Damage Settlement Guidelines. Access across active crop areas will be negotiated with the farmers and/or owners in advance of any construction activities.

3.2.4.3 Potential Impacts

The project expands the existing 115 kV Sanger Substation by adding approximately 7 acres to the existing substation footprint. Existing power poles, towers, and conductors located outside the existing substation will require reconfiguration. Limited construction of new poles, and removal of certain existing poles and towers is planned. The operation and maintenance (O&M) activities required for the rerouted power lines will not change from those currently required for the existing system; thus, no operation-related impacts related to agricultural and forest resources will occur. Therefore, the impact analysis is focused only on construction activities that are required to install the new facilities, as described in Chapter 2.0, Project Description. For the purpose of the impact analysis, the location and height of the existing structures is considered part of the existing conditions.

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the FMMP, to nonagricultural use? *Less than Significant*

The project has been designed to minimize impacts on farmland and agricultural resources to the maximum extent feasible. Table 3.2-3 lists temporary and permanent impacts on Prime Farmland, Farmland of Statewide Importance and Farmland of Local Importance. During construction, access to poles, towers and pull sites will be required on adjacent agricultural parcels. Once construction is complete, the pull site and access roads will be returned to agricultural use (Figure 2-8).

Table 3.2-3: Estimated Temporary and Permanent Impacts on Farmland

	Temporary Impacts (acres)*	Permanent Impacts (acres)
Prime Farmland	7.39	7.02
Farmland of Statewide Importance	3.47	0.05
Farmland of Local Importance	0.07	0.00
Total Farmland Impact	10.93	7.07

Source: California Department of Conservation 2012b

*Temporary Impacts include temporary pull sites, access roads and construction work areas for poles and poles and tower removals

The project will require the permanent conversion of approximately 7.02 acres of Prime Farmland and 0.05 acres of Farmland of Statewide Importance to nonagricultural use to accommodate the expanded substation. Existing wood poles and steel lattice towers located in Prime Farmland and Farmland of Statewide Importance will be removed from the area west of the substation. The concrete foundations for the towers will be removed to about 6 feet below ground, and the sites will be returned to their original contours; thus, the areas that were occupied by these structures would be returned to agricultural use. The wood poles and steel towers will be replaced with TSPs and LDSPs in adjacent agricultural parcels. The net loss will be approximately 7.02 acres of Prime Farmland and approximately 0.05 acres of Farmland of Statewide Importance. The amount of Prime Farmland that will be converted to nonagricultural land is less than the significance threshold of 10 acres, which is noted in California Government Code Section 51222 as the size of a parcel large enough to sustain agricultural use in the case of prime agricultural land. The amount of Farmland of Statewide Importance is also less than the

significance threshold of 40 acres as defined in California Government Code Section 51222. The project will, therefore, have a less-than-significant impact from the conversion of approximately 7.02 acres of Prime Farmland and 0.05 acres of Farmland of Statewide Importance to nonagricultural use.

O&M activities primarily include inspection and repair of the power lines and routine inspection of the substation, all of which are currently being conducted under existing conditions and will continue to be conducted within project ROWs and PG&E-owned land. O&M of the project will not result in the conversion of Prime Farmland or Farmland of Statewide Importance to non-agricultural use. Therefore, no impact will occur.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract? *Less than Significant.*

Any contract entered into under the Williamson Act is deemed automatically void when the underlying land is acquired by a public utility in lieu of eminent domain for a public improvement. (Gov. Code § 51295.) Even if the contract were not automatically void, California Government Code Section 51238 states that "the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve." The remaining portion of the parcel will remain under the existing Williamson Act contract. The project will not result in removal of adjacent lands for uses other than agriculture and the project will not conflict with existing zoning for agricultural use. Electrical substations are allowed uses in AE zoning districts provided they meet certain requirements; therefore, the project would be consistent with the adopted General Plan and Zoning Ordinance for Fresno County.

Since the Williamson Act contract will be deemed void for the substation expansion area once acquired in lieu of condemnation, and since electrical facilities are considered compatible uses under the Williamson Act and consistent with existing zoning, any conflict with existing zoning and Williamson Act contracts will be less than significant.

c) Would the project 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))? *No Impact*

No areas of forest land, timberland, or commercial timberland are located within the project area. Therefore, the project will not conflict with the zoning of forest lands or the conversion of timberland, and no impact will occur.

d) Would the project result in the loss of forest land or conversion of forest land to nonforest use? *No Impact*

No areas of forest land are located within the project area. Therefore, the project will not result in loss or conversion of forest land to nonforest use and no impact will occur.

e) Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to nonforest use? *Less than Significant*

As discussed above, the project will result in the permanent loss of 7 acres of agricultural land to nonagricultural uses.

During construction, use of temporary pull sites located in the agricultural fields east and west of the expanded substation will result in a temporary interference with agricultural activities. Additionally, structure removals and construction of new TSPs and LDSPs, will also interfere with adjacent agricultural activities. APM AGR-1 requires PG&E to coordinate with farmers to conduct its work between their harvest and planting periods whenever possible and, where temporary or permanent crops are affected, to compensate farmers and/or landowners in accordance with PG&E's Property Damage Settlement Guidelines. Access across active crop areas will also be negotiated with the owners in advance of any construction activities. The permanent conversion of farmland to nonagricultural use has been minimized to the extent practicable while still meeting the electricity needs in the area. Therefore impacts will be less than significant.

Substation O&M activities will continue consistent with present operations, and will not result in the conversion of farmland or forest land. Stormwater and any potential pollutants or hazardous materials generated at the substation will be retained onsite, and thus will not affect the adjacent agricultural uses. Power line and structure maintenance also will continue consistent with present practices. The use of TSPs in place of existing lattice towers will somewhat reduce the need for long-term structure maintenance activities at certain locations. Therefore, O&M activities will not have an adverse impact on agricultural activities.

3.2.5 REFERENCES

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3.4 BIOLOGICAL RESOURCES

3.4.1 INTRODUCTION

This section describes biological resources (vegetation, fish, wildlife, and wetlands) in the project area, identifies potential impacts on sensitive habitats and species that could result from implementation of the project, and concludes that impacts on biological resources will be less than significant. Incorporation of the APMs described in Section 3.4.4.2 will further minimize potential less-than-significant project impacts on biological resources. No significant impacts on sensitive habitats or species are expected to occur during the construction or O&M of the facility.

The project's potential effects on biological resources were evaluated using the significance criteria set forth in CEQA Guidelines Appendix G. The conclusions are summarized in Table 3.4-1 and are discussed in more detail in Section 3.4.4. The Biological Resources Technical Report referenced in this section will be submitted separately to CPUC staff.

Table 3.4-1: CEQA Checklist for Biological Resources

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☐	☐	☒	☐
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 the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

3.4.2 REGULATORY BACKGROUND AND METHODOLOGY

3.4.2.1 Regulatory Background

Federal

Endangered Species Act

The federal Endangered Species Act (ESA) of 1973 (16 USC 1531–1544), as amended, protects plants, fish, and wildlife that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) or the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries). Section 9 of the ESA prohibits the "take" of listed fish and wildlife, where "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 CFR 17.3). For plants, this statute prohibits removing, possessing, maliciously damaging, or destroying any listed plant under federal jurisdiction and removing, cutting, digging up, damaging, or destroying any listed plant in knowing violation of state law (16 United States Code [USC] 1538).

The ESA allows for issuance of incidental take permits to private parties either in conjunction with a Habitat Conservation Plan (HCP) or as part of a Section 7 consultation (which is discussed in the following paragraph). Under Section 10 of the ESA, a private party may obtain incidental take coverage by preparing an HCP to cover target species within the project area, identifying impacts to the covered species, and presenting the measures that will be undertaken to avoid, minimize, and mitigate such impacts.

Under Section 7 of the ESA, federal agencies are required to consult with USFWS and/or NOAA Fisheries, as applicable, if their actions—including permit approvals or funding—may affect a federally listed species (including plants) or designated critical habitat. If the project is likely to adversely affect a species or designated critical habitat, the federal agency will initiate formal consultation with the USFWS and/or NOAA Fisheries; and these agencies will issue a biological opinion as to whether a proposed agency action(s) is likely to jeopardize the continued existence of a listed species (jeopardy) or adversely modify critical habitat (adverse modification). As part of the biological opinion, the USFWS and/or NOAA Fisheries may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity, provided that the action will not jeopardize the continued existence of the species or adversely modify designated critical habitat.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 USC Sections 703–711) protects all migratory birds, including active nests and eggs. Birds protected under the MBTA include all native waterfowl, shorebirds, hawks, eagles, owls, doves, and other common birds such as ravens, crows, sparrows, finches, swallows, and others, including their body parts (for example feathers and plumes), active nests, and eggs. A complete list of protected species can be found in 50 CFR 10.13. Enforcement of the provisions of the federal MBTA is the responsibility of USFWS.

Waters and Wetlands: Clean Water Act Sections 401 and 404

The purpose of the Clean Water Act (CWA) (33 USC Section 1251 et seq.) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Waters of the United States include rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3).

The U.S. Army Corps of Engineers (USACE) issues permits for work in wetlands and other waters of the United States based on guidelines established under Section 404 of the CWA. Section 404 of the CWA prohibits the discharge of dredged or fill material into waters of the United States, including wetlands, without a permit from USACE. USEPA also has authority over wetlands and may, under Section 404(c), veto a USACE permit.

Section 401 of the CWA requires all Section 404 permit actions to obtain a state Water Quality Certification or waiver, as described in more detail in Section 3.9, Hydrology and Water Quality.

State

California Endangered Species Act

Sections 2050–2098 of the California Fish and Game Code (California Endangered Species Act [CESA]) prohibit the take of state-listed endangered and threatened species unless specifically authorized by the California Department of Fish and Wildlife (CDFW). The state definition of "take" is to hunt, pursue, catch, capture, or kill a member of a listed species or attempt to do so. CDFW administers CESA and authorizes take through permits or memoranda of understanding issued under Section 2081 of CESA, or through a consistency determination issued under section 2080.1. Section 2090 of CESA requires state agencies to comply with threatened and endangered species protection and recovery and to promote conservation of these species.

Fully Protected Species Under the Fish and Game Code

The California Fish and Game Code designates certain fish and wildlife species as "fully protected" under Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish). Fully protected species may not be taken or possessed at any time, and no permits may be issued to PG&E for incidental take of these species.[1]

[1] While take of fully protected species may be authorized by CDFW under a Natural Communities Conservation Plan (NCCP), PG&E activities are not covered by an NCCP so this permitting option is not available.

Protection for Birds: California Fish and Game Code

Fish and Game Code Section 3503 et seq. states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders of Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird.

California Species of Special Concern

Species of Special Concern is a category conferred by CDFW to fish and wildlife species that meet the state definition of threatened or endangered, but have not been formally listed (e.g., federally or state-listed species), or are considered at risk of qualifying for threatened or endangered status in the future based on known threats. Species of Special Concern is an administrative classification only, but these species should be considered "special-status" for the purposes of the CEQA analysis (see the Significance Criteria section of this document).

Porter-Cologne Water Quality Control Act

The State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) have jurisdiction over all surface water and groundwater in California, including wetlands, headwaters, and riparian areas. The SWRCB or applicable RWQCB must issue waste discharge requirements for any activity that discharges waste that could affect the quality of waters of the state, as described in more detail in Section 3.9, Hydrology and Water Quality.

Local

This section includes a summary of local or regional plans, policies, or regulations that identify sensitive or special-status species in the project area, as well as local polices or ordinances that protect biological resources. Because the CPUC has exclusive jurisdiction over the siting, design, and construction of the project, the project is not subject to local discretionary regulations related to biological resources. The following summary is provided for informational purposes and to assist with CEQA review.

Fresno County General Plan

The Fresno County General Plan is "a comprehensive, long-term framework for the protection of the county's agricultural, natural, and cultural resources and for development in the county" (2000). The Open Space and Conservation Element in the General Plan focuses on "protecting and preserving natural resources, preserving open space areas, managing the production of commodity resources, protecting and enhancing cultural resources, and providing recreational opportunities."

The Fresno County General Plan Open Space Element goal calls for a Biological Resource Evaluation (Plan Policy OS-E.9). Specifically, this planning element states that "prior to approval of discretionary development permits" the county shall require "a biological resources evaluation of the project area by a qualified biologist" to determine potential significant impacts on "significant resources and/or special-status plants or animals."

3.4.2.2 Methodology

This section summarizes the methods used to identify and analyze potential impacts on special-status species and sensitive natural communities that may occur in the project area. As described below, biologists began their research with database searches and literature reviews to determine which special-status plants, natural communities, and wildlife might have potential to occur in the project area. Using this information, the biologists conducted detailed field surveys of the biological resources survey area, as defined below. A more detailed description of these methods is provided in the project's Biological Resources Technical Report, which will be provided separately to CPUC staff.

Species Considered to be of Special Status

Special-status species include those that are:

- Listed or candidates for listing as rare, threatened, or endangered under the ESA or CESA;
- Plants included in the online version of the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California as CRPR 1A, 1B, 2A, or 2B;
- Fish or wildlife designated as a Species of Special Concern or a fully protected species by the CDFW; and
- Migratory birds with active nests, defined as containing eggs or dependent young.

Natural communities were considered to be special-status if they were identified on the most recent CDFW List of Vegetation Alliances and Associations as being highly imperiled.

Database Searches

Prior to completing biological field surveys of the project area, databases and aerial photographs were reviewed to develop a preliminary assessment of the potential for occurrence of special-status species, wetlands and other waters of the United States, and other sensitive biological resources.

The following biological databases were queried for records of special-status plants, natural communities, and wildlife that might have potential to occur in the project area:

- USFWS list of federally listed and proposed endangered, threatened, and candidate species and their designated critical habitat (2015)
- CNPS online Inventory of Rare and Endangered Vascular Plants of California (2015)
- California Natural Diversity Database (CNDDB) (CDFW 2015)

A CNDDB database search for special-status species typically includes nine U.S. Geological Survey 7.5-minute quadrangle maps for a project located within a single quadrangle—the quadrangle that covers the project area, and the eight quadrangles that surround the project quadrangle.

The USFWS database was queried for Fresno County.

Other information sources consulted to determine which special-status species could potentially occur in the project area included:

- A Biological Resources Technical Report for the project (NSR 2015);
- Soil maps (NRCS 2015);
- CDFW's List of Vegetation Alliances and Associations (CDFW 2010);
- A Manual of California Vegetation (Sawyer et al. 2009);
- eBird, an online database of bird distribution and abundance (eBird 2015);
- Aerial photographs (Google Earth 2015); and
- Jepson Manual: Vascular Plants of California (Baldwin et al. 2012).

Field Surveys

The survey area included all areas within approximately 500 feet of the project area. As described below, reconnaissance-level surveys were completed within the survey area on March 30, 2012 and April 14, 2015.

Reconnaissance Surveys

General biological reconnaissance surveys entailed walking meandering transects in the biological resources survey area (as defined previously), and surveying areas that appeared to have potential support special-status species or aquatic resources as identified in desktop-level reviews. The following tasks were conducted during the reconnaissance-level surveys:

- Characterization of habitat types and plant communities.
- Evaluation of habitat types to determine their suitability to support special-status plant and animal species.
- Presence/absence determination of waters of the United States and/or isolated wetlands.
- Presence/absence determination of other sensitive biological resources (e.g., riparian habitats).
- Documentation of observed species and sensitive biological resources such as nests protected under the MBTA.

Surveys for nesting Swainson's hawks, white-tailed kites, and other raptors were conducted within the study area during the field reconnaissance investigations. Biologists also surveyed areas accessible by vehicle within 0.5 mile of the survey area for active raptor nests.

Likelihood of Presence for Special-Status Species

Using the information generated from literature reviews and field surveys, the list of special-status species with the potential to occur was further refined to reflect the species that have potential to occur within the project area. The likelihood of special-status species occurrence was determined based on natural history parameters, including but not limited to the species' range, habitat, foraging needs, migration routes, and reproductive requirements, using the following general categories:

- *Present* – Reconnaissance-level, focused, or protocol-level surveys documented the occurrence or observation of a species in the project area.

- *Seasonally present* – Individuals were observed in the project area only during certain times of the year.

- *Likely to occur* (*on site*) – The species has a strong likelihood to be found in the project area prior to or during construction but has not been directly observed to date during project surveys. The likelihood that a species may occur is based on the following considerations: suitable habitat that meets the life history requirements of the species is present on or near the project area; migration routes or corridors are near or within the project area; records of sighting are documented on or near the project area; and there is an absence of invasive predators of the species. The main assumption is that records of occurrence have been documented within or near the project area, the project area falls within the range of the species, suitable habitat is present, but it is undetermined whether the habitat is currently occupied.

- *Potential to occur* – There is a possibility that the species can be found in the project area prior to or during construction, but has not been directly observed to date. The likelihood that a species may occur is based on the following conditions: suitable habitat that meets the life history requirements of the species is present on or near the project area; migration routes or corridors are near or within the project area; and there is an absence of invasive predators. The main assumption is that the project area falls within the range of the species, suitable habitat is present, but no records of sighting are located within or near the project area and it is undetermined whether the habitat is currently occupied.

- *Unlikely to occur* – The species is not likely to occur in the project area based on the following considerations: lack of suitable habitat and features that are required to satisfy the life history requirements of the species (e.g., absence of foraging habitat; lack of reproductive areas, and lack of sheltering areas); presence of barriers to migration/dispersal; presence of predators or invasive species that inhibit survival or occupation; lack of hibernacula, hibernation areas, or estivation areas on site.

- *Absent* – Suitable habitat does not exist in the project area, the species is restricted to or known to be present only within a specific area outside of the project area, or focused or protocol-level surveys did not detect the species.

Unless otherwise noted, the methodology and environmental information presented in this section are summarized from the Biological Resources Technical Report for the Sanger Substation Expansion Project, which will be provided separately to CPUC staff.

3.4.3 ENVIRONMENTAL SETTING

3.4.3.1 Regional

The project area is located approximately 4 miles southeast of the City of Fresno and 2 miles west of the City of Sanger at the intersection of East Jensen and South McCall Avenues in an unincorporated area of Fresno County, California.

This area lies along the eastern edge of the San Joaquin Valley on stream terraces of the lower King's River watershed at an approximate elevation of 345 feet. The topography in this region is nearly level and gently sloping to the southwest. The primary land use in the region is agricultural, consisting primarily of vineyards and row crops. Agricultural conversion has resulted in a heavily modified landscape with relatively little native vegetation in the vicinity of the project.

3.4.3.2 Local

The area that was evaluated for biological resources (i.e., the biological resources survey area) includes the existing substation, adjacent portions of South McCall Avenue to the west and East Jensen Avenue to the south, the adjacent proposed substation expansion area, proposed transmission line and tower removal and installations areas, and the surrounding agricultural lands within approximately 500 feet of all proposed activities.

Land Cover, Vegetation, and Wildlife Habitats

Plant communities/habitat types within the survey area were identified during the field reconnaissance surveys. The entire survey area consists of a heavily modified, farmed agricultural landscape with associated agricultural/rural infrastructure and housing, as well as the existing PG&E Sanger Substation. No areas within the survey area are dominated by native vegetation/plant communities. The primary habitat types within the survey area include vineyards, row crops, specialty crops and temporary greenhouse structures, urban/semi-urban areas, and orchards. An agricultural irrigation ditch bisects the northern portion of the survey area, flowing east to west.

Vineyards

Vineyards are found in the eastern and southern portions of the survey area, with a small isolated vineyard located in the western portion of the survey area (see Figure 3.4-1). These areas are intensively farmed, but, in some areas, contained abundant ruderal groundcover dominated by nonnative plants, including Mediterranean barley (*Hordeum murinum*), ripgut brome (*Bromus diandrus*), common bur clover (*Medicago polymorpha*), and redstem stork's bill (*Erodium cicutarium*).

Figure 3.4-1 Vineyards – View southwest through vineyard toward existing Sanger Substation (center of photograph in distance). Photograph dated April 14, 2015.

Row Crops

Areas of row crops are located largely in the central portion of the survey area, but also fringe the northern, western, and eastern boundaries of the survey area. These areas were largely disked and unvegetated at the time of the March 30, 2012, field survey. During the April 14, 2015 field survey the majority of row crops area was planted with squash (*Cucurbita* sp.) (see Figure 3.4-2). The footprint of the proposed substation expansion is located entirely within the existing row crop area found in the central portion of the survey area. Along the edges of these planted fields and the access roads passing through these areas there were periodic occurrences of nonnative annual grasses and forbs, including Bermuda grass (*Cynodon dactylon*), common mallow (*Malva neglecta*), redstem stork's bill, shepherd's purse (*Capsella bursa-pastoris*), annual bluegrass (*Poa annua*), common purslane (*Portulaca oleracea*), pineapple weed (*Matricaria discoidea*), and common knotweed (*Polygonum aviculare ssp. depressum*) as well as ruderal native species such as fiddleneck (*Amsinckia* sp.).

Figure 3.4-2 Row Crops – View southeast toward existing Sanger Substation and proposed substation expansion across disked row crop area. Photograph dated April 14, 2015.

Specialty Crops/Greenhouses

Specialty crops and greenhouse structures are located within the northwestern portion of the survey area and in a small area in the northern portion of the survey area along the agricultural irrigation ditch (see Figure 3.4-3). These areas consist of intensively farmed mixed plots containing a variety of annual and perennial crops, including Chinese broccoli, Chinese spinach, kohlrabi, lemongrass, sugar pea, peppers, cucumbers, yams, and lettuce.

Figure 3.4-3 Specialty Crops/Greenhouses – View southeast toward existing Sanger Substation (in distance to left side of photograph) showing area of specialty crops and greenhouse structures in foreground. Photograph dated March 30, 2012.

Urban/Semi-Urban

Urban/semi-urban areas consisting of agricultural/rural infrastructure and housing, as well as the existing Sanger Substation, are found along East Jensen Avenue and South McCall Avenue and at isolated residences within the agricultural matrix of the survey area (Figure 3.4-4). These areas are largely unvegetated, but contain some ornamental trees and other plantings associated with residences.

Figure 3.4-4 Urban/Semi-Urban – View east toward the intersection of East Jensen Avenue and South McCall Avenue immediately south of the existing Sanger Substation (to left side of photograph). Photograph dated March 30, 2012.

Orchards

Young orchards occur along the western portion of the survey area west of the residences and east of South Thompson Avenue. These trees were estimated to have been planted less than two years ago based on their size. A young plum orchard occurs northwest of the survey area center just south of the irrigation ditch (see Figure 3.4-5). These trees are estimated to be approximately 3 years old. The surrounding soils in these orchard areas are well maintained with few occurrences of non-native vegetation/weeds similar in composition to those described previously under row crops.

Figure 3.4-5 Orchard – View southwest from edge of agricultural ditch across recently pruned plum orchard area. Photograph dated April 14, 2015.

Agricultural Ditch

An agricultural irrigation ditch (ditch) is located in the northern portion of the survey area and north of the proposed substation expansion footprint (see Figure 3.4-6). This is an actively managed irrigation ditch that is regularly cleared of vegetation both within the ditch (mechanically) and on the levee banks (mechanically and chemically). Sparse vegetation within the ditch bottom was largely disturbed and mechanically cleared. Common species observed in the ditch bottom included smartweed (*Polygonum lapathifolium*), white sweet clover (*Melilotus alba*), fringed willowherb (*Epilobium ciliatum*), Bermuda grass, shepherd's purse, and redstem stork's bill. The banks of the ditch were largely cleared of vegetation during both the March 30, 2012, and the April 14, 2015 field surveys, but did contain scattered patches of nonnative vegetation including mouse-tail (*Festuca bromoides*), Canada horseweed (*Erigeron canadensis*), common mallow, and ripgut brome.

Figure 3.4-6 Irrigation ditch – View of irrigation ditch looking west toward South McCall Avenue. Photograph dated April 14, 2015.

Wetlands and Aquatic Resources

An assessment for potential waters of the United States within the survey area was conducted on March 30, 2012, and again on April 14, 2015. There were no areas or features observed within the survey area that meet wetland criteria. Surface water conveyance features within the survey area are limited to the agricultural irrigation ditch located approximately 15 feet north of the proposed substation expansion setback along the northern boundary of the survey area. Within the vicinity of the survey area, the ditch flows from east to west, and consists of an open dirt channel, which is regularly cleared of vegetation. The ditch is supplied with water from the Fowler Switch Canal, approximately 1.6 miles east of the survey area. From the survey area, the ditch flows approximately 2.3 miles west to the Briggs Canal.

The irrigation ditch is a constructed feature that was excavated in uplands and does not qualify as waters of the United States. The Clean Water Rule: Definition of "Waters of the United States" was published in the Federal Register (FR) on June 29, 2015 (80 FR 124: 37054-37127) by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency, and became effective on August 28, 2015. In accordance with the Clean Water Rule, the irrigation ditch is not a water of the United States because it: (1) carries only intermittent or ephemeral flow, (2) is not a relocated tributary or excavated in a tributary, and (3) does not drain wetlands. The project does not involve making any modifications to the ditch, and no waters of the United States are present within the project area.

Special-Status Species

This section describes special-status species considered to be likely to occur, have potential to occur, or that are seasonally present. Special-status species that are unlikely to be found in the project area are not discussed in this section.

Special-Status Plant Species

The project area consists of a heavily modified, intensively farmed agricultural area, associated agricultural/rural infrastructure and housing, as well as the existing Sanger Substation. No special-status plant species or potential habitat for these species occurs within the survey area.

The database search identified 14 special-status plant species in the regional vicinity of the project. Based on the two field reconnaissance visits, it was determined that no suitable habitat (e.g., native or natural grasslands, natural alkaline flats, chenopod scrub, or vernal pools) occurs within the survey area for any of these species.

Special-Status Wildlife Species

The project area consists of a heavily modified, intensively farmed agricultural area, associated agricultural/rural infrastructure and housing, as well as the existing Sanger Substation. Given the current agricultural land use and level of disturbance, the project area has a low potential to support special-status wildlife species.

The database search identified 36 special-status wildlife species in the regional vicinity of the project. Thirty two of these species were eliminated from further consideration based on either the lack of suitable habitat in the project area, or the project area being outside of the species' current range. Four special-status wildlife species have the potential to occur in the project area;

these species are identified in Table 3.4-3: Special-Status Wildlife Species with Potential to Occur in the Project Area and are discussed below.

Table 3.4-2: Special-Status Species with Potential to Occur within the Survey Area

Species Name	Listing Status[1] (Fed/State)	Natural History	Occurrence Assessment
Swainson's hawk (*Buteo swainsoni*)	--/T	Breeds along riparian forest edges, isolated stands of trees, and oak savannah. Sometimes uses manmade structures, such as power poles, for nesting; forages in adjacent livestock pasture, grassland, or grain fields. This is a large-sized raptor with distinctive underwings with white wing linings that contrast strongly with blackish flight feathers.	**Potential to occur** Marginal nesting habitat occurs where power poles and towers occur and where a small number of trees occur (primarily in the western portion of the survey area). Marginal foraging habitat, in the form of low-growing row crops, occurs within 0.5 mile of the project area. The nearest CNDDB nesting occurrence for this species is approximately 10 miles west of the project area.
White-tailed kite (*Elanus leucurus*)	---/FP	Nests in tops of dense medium-large sized shrubs and trees, forages in grasslands, agricultural fields, and marshes. This is a medium-sized raptor with a long, white tail and grey back and wings	**Potential to occur** Trees near the residences and other buildings within the survey area provide marginal nesting habitat for this species. Marginal foraging habitat is present in the agricultural regions of the project area and vicinity. There are no recorded CNDDB occurrences for this species within 10 miles of the project area.
Burrowing owl (*Athene cunicularia*)	--/SC	Grasslands and ruderal habitats. Typically found in association with fossorial mammals (e.g., ground squirrels or American badger), that provide burrows required by this species. May use manmade structures such as old culverts for burrows. This is a small ground dwelling owl with long legs, short tail, spotted back, and barred front.	**Potential to occur** Ground squirrel burrows located along the agricultural irrigation ditch to the north of the project area provide marginally suitable habitat for nesting. No evidence of burrowing owl or burrowing owl sign (white wash, pellets, feathers, etc.) was observed during either of the two field surveys. The nearest CNDDB occurrence for this species is approximately 10 miles northeast of the project area.

Table 3.4-2: Special-Status Species with Potential to Occur within the Survey Area

Species Name	Listing Status[1] (Fed/State)	Natural History	Occurrence Assessment
Loggerhead shrike (*Lanius ludovicianus*)	--/SC	Forages in open grassland habitats throughout the Central Valley of California. Nests in shrubs and trees. Generally requires thorny trees, shrubs and barbed-wire fences, which it uses to help store and tear apart larger prey items. This is a stocky, medium-sized, gray songbird with a black mask, black bill, white throat, and black and white wings and tail.	**Potential to occur** Ornamental shrubs and small trees associated with residences and other buildings outside of the project area may provide suitable nesting habitat. There are no recorded CNDDB occurrences for this species within 10 miles of the project area.

[1] Status Codes:

FP = Fully Protected

SC = California Species of Special Concern

T = State Threatened

Swainson's Hawk

Swainson's hawk is a state-listed threatened species. The project area is located along the eastern fringe of the range for this species in the Central Valley. Swainson's hawks are predominantly migratory with populations breeding in western North America and wintering as far south as Argentina. Annual grasslands and row crops are typically used as foraging habitat for this species. One recorded CNDDB occurrence exists for this species within 10 miles of the project area. The location of the occurrence is approximately 10 miles west of the project area and was documented in 1956. The Swainson's hawk described in this occurrence is presumed extant; however, no new documentation of this occurrence has been received by the CNDDB since 1956. Marginal foraging (e.g., row crops) and nesting (e.g., scattered trees and utility poles/towers) habitat is found both within and near the project area.

Surveys for nesting Swainson's hawks were conducted within the survey area during the March 30, 2012 and April 14, 2015 field reconnaissance investigations. Potential nesting habitat was limited to a small number of trees, primarily in the western portion of the survey area and where power poles and towers occur. No Swainson's hawks or their nests were observed within the survey area. Following each of the field reconnaissance investigations, biologists surveyed areas accessible by vehicle within 0.5 mile of the survey area for active nests of Swainson's hawk and other raptors (i.e., birds of prey). Most of the area within 0.5 mile of the survey area consists of vineyards and row crops and potential nesting habitat for Swainson's hawk and other raptors is limited to scattered trees around residences and other buildings, and power poles and lattice towers along the transmission route. No Swainson's hawks or their nests were observed within 0.5 mile of the survey area.

Portions of the survey area (e.g., row crops) provide potential foraging habitat for Swainson's hawk. However, these areas are considered to be of marginal quality for foraging because they are highly fragmented and intermixed with unsuitable foraging habitat (i.e., vineyards and

orchards), which forms the dominant landscape component in the region. There is a low potential for Swainson's hawk to nest within the project area and within 0.5 mile of the project area.

White-Tailed Kite

White-tailed kite is a California fully protected species. This species generally nests in the tops of dense medium-large sized shrubs and trees generally located in and around open grasslands, and ruderal agricultural settings throughout the Central Valley of California.

There are no recorded CNDDB occurrences for this species within 10 miles of the project area. However, the trees located near the residences and other buildings within the survey area provide potential nesting habitat for this species. Surveys for nesting white-tailed kites were conducted within the survey area during the March 30, 2012 and April 14, 2015, field reconnaissance investigations. Potential nesting habitat was limited to a small number of trees, primarily in the western portion of the survey area. No white-tailed kites or their nests were observed within the survey area. Following each field reconnaissance of the survey area, biologists surveyed areas accessible by vehicle within 0.5 mile of the survey area for active nests of white-tailed kites and other raptor species. Most of the area within 0.5 mile of the survey area consists of vineyards and row crops and potential nesting habitat for white-tailed kites is limited to scattered trees around residences and other buildings. No white-tailed kites or their nests were observed within 0.5 mile of the survey area. Given the limited amount of nesting habitat (scattered trees), the level of existing human disturbance (most trees located near residences), and absence of observations of white-tailed kites and nests during the field surveys, biologists determined that there is a low potential for white-tailed kites to nest within or near the project area.

Portions of the survey area (e.g., row crops) provide potential foraging habitat for white-tailed kite. However, these areas are considered to be of marginal quality for foraging because they are highly fragmented and intermixed with unsuitable foraging habitat (i.e., vineyards and orchards), which forms the dominant landscape component in the region.

Burrowing Owl

Burrowing owl is designated by the CDFW as a species of special concern. The survey area is located along the eastern fringe of the range for this species in the Central Valley. Burrowing owls are typically found in association with burrow systems initiated by fossorial mammals but are known to use suitable manmade structures such as buried pipe. Burrows are often used perennially for both breeding and non-breeding cover.

There is one CNDDB occurrence of burrowing owls recorded within 10 miles of the project area, approximately 10 miles northeast of the project area. No burrowing owls were observed in the survey area during the March 30, 2012 or the April 14, 2015, field reconnaissance investigations, however, ground squirrel burrows in the banks of the agricultural ditch north of the project area provide potentially suitable habitat for this species. Rodent bait stations were observed sporadically along the agricultural ditch. No ground squirrels were observed during either of the field investigations. All burrows within the project area were inspected for evidence of use by burrowing owls (e.g., pellets, whitewash, and feathers) during each field reconnaissance and no evidence of use by burrowing owls was observed. Given the single CNDDB reported occurrence within 10 miles of the project area and the absence of evidence of use by burrowing owls during

both field reconnaissance investigations, biologists determined that there is a low potential for burrowing owls to occur within or near the project area, or to establish territories prior to project development.

Loggerhead Shrike

Loggerhead shrike is designated by the CDFW as a species of special concern. This species is generally found in open grasslands, shrublands, and ruderal agricultural settings throughout the Central Valley of California. Loggerhead shrikes nest in trees or shrubs and use thorny vegetation or barbed-wire fences, to store and tear apart larger prey items.

There are no recorded CNDDB occurrences of loggerhead shrike within 10 miles of the project area. However, small trees and shrubs within the survey area provide potential nesting habitat for this species. These small trees and shrubs are primarily associated with the residences and other buildings. No observations of thorny vegetation were made during either of the two field reconnaissance investigations; however, barbed wire fences were present around the substation and at a greenhouse area due north of the substation. No evidence of prey storage on the fences was observed during either of the field reconnaissance investigations. Given the level of existing human disturbance (most trees located near residences), the absence of any CNDDB-reported occurrences within 10 miles of the project area, and the limited amount of barbed-wire fences in the area, biologists determined that there is a low potential for loggerhead shrike to nest within or near the project area.

Habitat Conservation Plans

PG&E has an HCP for its O&M activities in the San Joaquin Valley (Jones & Stokes 2006). This HCP authorizes incidental take of 23 wildlife and 42 plant species for 33 routine O&M activities for PG&E's electric and gas transmission and distribution systems within nine counties of the San Joaquin Valley, including Fresno County. Although construction of the project is not a covered activity, it is located within the boundaries of this HCP. The HCP primarily covers O&M activities and covers certain O&M components of the project. Construction practices and APMs for this project have been designed to be compatible with the HCP avoidance and minimization measures, which have been reviewed and approved previously by USFWS and CDFW.

Nesting Birds

The survey area consists of a heavily modified, intensively farmed agricultural area, associated agricultural/rural infrastructure and housing, as well as the existing PG&E Sanger Substation. Based on the informational review and field reconnaissance, other sensitive biological resources with potential to occur within the survey area are limited to nesting habitat for raptors and other birds afforded protection under state and federal laws (e.g., California Fish and Game Code, MBTA) previously discussed. Raptors and other birds may potentially nest in trees, shrubs, on the ground, or on structures located within, or in the immediate vicinity of, the study area. All raptors, including common species and their nests, are protected under California Fish and Game Code. Nearly all native birds and their nests are protected from take under the federal MBTA.

During the March 30, 2012 field survey an active red-tailed hawk (*Buteo jamaicensis*) nest was observed in a large steel lattice tower east of South McCall Avenue and north of East Jensen

Avenue. During the April 14, 2015 field survey a red-tailed hawk was observed incubating eggs in a nest in the same lattice tower. Several additional nesting birds were observed during the April 14, 2015 survey. Within the infrastructure of the existing Sanger substation, birds were observed constructing nests on various structures. A western kingbird (*Tyrannus verticalis*) nest was observed in a small lattice structure, a mourning dove (*Zenaida macroura*) nest was observed on a frame structure, and several house finch (*Haemorhous mexicanus*) nests were observed on support arms within the eastern half of the facility.

3.4.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for impacts related to biological resources derived from Appendix G of the CEQA Guidelines, provide APMs to reduce impacts, and assess potential project-related construction and operational impacts on biological resources.

3.4.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per CEQA Guidelines Appendix G, the potential significance of project-related impacts on biological resources was evaluated for each of the criteria listed in Table 3.4-1, as discussed in Section 3.4.4.3.

3.4.4.2 Applicant-Proposed Measures

PG&E will implement the following APMs.

APM BIO-1. Work Area Minimization

The number of access routes, staging areas, and total area of the work sites will be kept to the minimum necessary.

APM BIO-2. Erosion and Sediment Control Measures

A Stormwater Pollution Protection Plan (SWPPP) will be implemented to ensure effective erosion and sediment control measures will be in place at all times during construction.

APM BIO-3. Weed Management

To prevent the spread of noxious weeds, only equipment that has been washed and is free of caked on mud, dirt, and other debris, which could house noxious or invasive plant seeds, will be allowed in the project area.

APM BIO-4. Avoidance of Impacts on Wildlife and Natural Habitats

All work will be done in a manner that minimizes disturbance to wildlife and habitat.

APM BIO-5. Litter and Trash Management

All food waste and associated containers will be disposed of in closed lid containers.

APM BIO-6. Maintenance and Refueling

No vehicle maintenance or refueling will occur within 100 feet of the agricultural irrigation ditch located near the north boundary of the project footprint.

APM BIO-7. Spill Prevention and Cleanup

Proper spill prevention and cleanup equipment will be readily available.

APM BIO-8. Route Limitations

Vehicles will remain on designated access roads and within designated worksites.

APM BIO-9. Pets and Firearms

No pets or firearms are permitted within the project area.

APM BIO-10. Vehicle Speed Limits

Construction crews will abide all County road speed limits.

APM BIO-11. Backfilling

Prior to backfilling or placement of structures, all excavation sites (e.g., holes excavated for pole butts, trenches, etc.) will be inspected to ensure no small vertebrates have been entrapped. All excavations with a potential for entrapment of wildlife will be backfilled or fully covered at the end of the work day. Alternatively, holes or trenches will include one or more escape ramps constructed of earth fill or wooden planks no less than 10 inches wide and reaching to bottom of trench at the close of each working day.

APM BIO-12. Avoidance and Minimization of Potential Impacts on Swainson's Hawk

If construction activities are scheduled to occur during the nesting season (February 1 to August 31), a preconstruction survey for nesting Swainson's hawk will be conducted within 0.5 mile of the project area by a qualified biologist. If active nests are found, a qualified biologist will designate an appropriate buffer between construction activities and the nest to avoid disturbance to the nesting. Work within the buffer will not proceed until the nestlings have fledged or the nest becomes inactive.

APM BIO-13. Avoidance and Minimization of Potential Impacts on Burrowing Owl

Within 30 days of beginning ground-disturbing activities, a preconstruction survey for burrowing owl will be conducted along the agricultural irrigation ditch and any other suitable habitat within 500 feet of the project area by a qualified biologist. If no burrowing owls are detected no further measures are required. If burrowing owls are detected, no construction activities will occur within 250 feet of occupied burrows during the nesting season or within 160 feet of occupied burrows during the non-nesting season. For the purposes of this measure, the nesting season is February 1st to August 31st. Additionally, burrowing owls will be monitored by a qualified biologist during construction to assess the sensitivity of the burrowing owls to the construction activities. The size of the avoidance buffer may be increased or decreased as determined by the monitoring biologist based on the planned construction activities and the sensitivity of the burrowing owls. If impacts on an active burrow cannot be avoided, passive relocation may be

considered. Relocation will be conducted during the nonnesting season and only after a site-specific plan has been developed and implemented in coordination with the CDFW.

APM BIO-14. Avoidance and Minimization of Potential Impacts on Nesting Birds

If work is scheduled to occur during the avian nesting season (February 1st through August 31st), active work areas will be surveyed by a qualified biologist within 15 days before work begins to determine if any nesting birds are present. Exclusionary buffer zones will be established by a qualified biologist around any active nests within the project area. The size of the buffer zone will be established at the discretion of the biologist based on the following factors: (1) the species' sensitivity to disturbance, (2) the topography surrounding the nest site, and (3) its concealment from project activities. If construction activities are required within an exclusionary buffer zone, the nest will be monitored for disturbance by a qualified biologist until the young have fledged and are independent of the adults. Nest disturbance will be assessed based on behavioral cues such as time off the nest, hesitation approaching the nest, incessant chattering and bill swiping, and other indications. If no nest disturbance is observed, work may continue. If the biologist determines that construction activities are causing nest disturbance, work will not be allowed to continue within the buffer zone until the nest becomes inactive or the young have fledged.

3.4.4.3 Potential Impacts

Potential project impacts on biological resources were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and O&M phase.

The project will expand the existing Sanger Substation facilities to include 7 acres of adjacent property to the north and west of the existing substation. The majority of the existing substation equipment and structures will be removed, and the remaining components will be integrated into the project, as discussed in Chapter 2.0, Project Description.

a) Would the project 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? *Less than Significant*

Raptors and/or migratory birds, including special-status species such as Swainson's hawk (federally threatened), white-tailed kite (state fully protected), burrowing owl (state species of special concern), and loggerhead shrike (state species of special concern), have the potential to nest in or near the project area. Nesting birds may be adversely affected if construction activities occur near active nests during the breeding season. Direct impacts could include the destruction of bird nests during site-clearing activities. Indirect impacts could include nest abandonment or premature fledging due to construction-related noise and other disturbance (e.g., from heavy equipment, vehicles, generators, human presence).

All of the project activities occur on highly disturbed agricultural or urban landscapes that contain no trees or shrubs; therefore, tree nesting birds are not expected to occur in the project area. Ground nesting birds could occur in the project area; however, due to the highly disturbed nature of the agricultural landscape, nesting in the area is unlikely. Implementation of APM

BIO-12 through APM BIO-14 will allow for the detection of any nesting birds in or around the project area, prior to the commencement of work activities, and will establish protective measures/buffers around detected nests to further reduce less-than-significant impacts on raptors, burrowing owls, and/or migratory birds.

Trees and shrubs beyond the project area but within the survey area could accommodate tree nesting birds. Ground nesting birds could also be present in any of the agricultural/urban areas outside of the project area. Any nesting bird outside of the project area could be indirectly affected by construction related noise or disturbance; however, implementation of APM BIO-12 through APM BIO-14, will further reduce less-than-significant indirect impacts on raptors, burrowing owls, and/or migratory birds.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? *No Impact*

The project is located in a heavily modified agricultural area that is generally lacking in sensitive natural communities. The ditch located north of the project area is actively maintained for agricultural purposes, and it does not provide riparian habitat. The ditch is separated from the project area by an agricultural road and earthen berm that will prevent any potentially polluted runoff originating from the project area from entering the ditch. Moreover, implementation of APMs HYD-1, Erosion Control and Sediment Transport Plan (see Section 3.8 Hydrology and Water Quality) and APM HAZ-1, emergency spill response equipment and training (see Section 3.7, Hazards and Hazardous Materials), will further reduce the potential for impacts to offsite resources. Thus, no impacts on riparian habitat or other sensitive natural communities will occur.

c) Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? *No Impact*

No wetland features as defined by Section 404 of the CWA were identified in the project area. As noted above, the ditch located north of the project area is actively maintained for agricultural purposes and does not provide riparian/wetland habitat. This feature will not be directly or indirectly affected by construction. No impacts on wetlands will occur.

d) Would the project 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? *No Impact*

The project is located in a heavily modified agricultural area that is generally lacking in sensitive natural communities that support wildlife species or provide wildlife nursery sites. The ditch located north of the project area provides very marginal habitat that may also function as a wildlife corridor. This feature will not be directly or indirectly affected by construction, therefore no impact on wildlife corridors will occur.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? ***No Impact***

Although PG&E is not subject to local land-use regulations, local regulations relating to biological resources were reviewed to ensure that the project will not be in conflict with local policies or ordinances protecting biological resources. As noted above, one of the Fresno County General Plan Open Space Element goals calls for a Biological Resource Evaluation to be prepared by a qualified biologist prior to approval of discretionary development permits to determine potential significant impacts on "significant resources and/or special-status plants or animals". A Biological Resources Technical Report was prepared by a qualified biologist for the Sanger Substation Expansion project and satisfies the objectives set forth in the plan. The project does not conflict with any local policies or ordinances regarding protection of biological resources. No impacts will occur.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? ***No Impact***

Project construction will not conflict with the PG&E's San Joaquin Valley Operations and Maintenance HCP during either construction or O&M. The HCP is not applicable to project construction because the project exceeds the 0.5-acre limit for coverage. The expanded substation will be operated and maintained in accordance with the HCP. No other HCPs or natural community conservation plans have been adopted in the project area. No impacts will occur.

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3.5 CULTURAL RESOURCES

3.5.1 INTRODUCTION

This section describes existing conditions and potential impacts on cultural and paleontological resources as a result of construction, operation, and maintenance of the project. It presents the methods and results of cultural and paleontological resources studies of the project area. There are no known sensitive cultural or paleontological resources within the project area. The analysis concludes that impacts on cultural and paleontological resources will be less than significant. Incorporation of the APMs described in Section 3.5.4.2 will further minimize potential less-than-significant impacts on cultural and paleontological resources. The project's potential effects on cultural and paleontological resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.5-1 and discussed in more detail in Section 3.5.4. The following summary concerning cultural and paleontological resources is derived from the confidential Cultural Resources Survey Report and Paleontological Report, which will be submitted separately to CPUC staff under Public Utilities Code section 583.

Table 3.5-1: CEQA Checklist for Cultural and Paleontological Resources

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

3.5.2 REGULATORY BACKGROUND AND METHODOLOGY

3.5.2.1 Regulatory Background

Federal

No federal regulations related to cultural or paleontological resources are applicable to the project. Section 106 of the National Historic Preservation Act does not apply because no federal agency discretionary action is required for the project, and no federal lands or monies are involved.

State

California Health and Safety Code and Public Resources Code

Broad provisions for the protection of Native American cultural resources are contained in the California Health and Safety Code, Division 7, Part 2, Chapter 5 (Sections 8010 through 8030).

Several provisions of the Public Resources Code (PRC) also govern archaeological finds of human remains and associated objects. Procedures are detailed under PRC Section 5097.98 through 5097.996 for actions to be taken whenever Native American remains are discovered. Furthermore, Section 7050.5 of the California Health and Safety Code states that any person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in PRC Section 5097.99. Any person removing human remains without authority of law or written permission of the person or persons having the right to control the remains under PRC Section 7100 has committed a public offense that is punishable by imprisonment.

PRC Chapter 1.7, Section 5097.5/5097.9 (Stats. 1965, c. 1136, p. 2792), entitled Archaeological, Paleontological, and Historical Sites, defines any unauthorized disturbance or removal of a fossil site or remains on public land as a misdemeanor and specifies that state agencies may undertake surveys, excavations, or other operations as necessary on state lands to preserve or record paleontological resources.

Assembly Bill 52

Assembly Bill 52 (AB 52) established that Tribal Cultural Resources (TCR) must be considered under CEQA and also provided for additional Native American consultation requirements for the Lead Agency. A TCR is a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American Tribe. A TCR is either:

1. On the California Register of Historical Resources (CRHR) or a local historic register;

2. Eligible for the CRHR or a local historic register; or

3. The lead agency determines that the resource meets the register criteria.

A project that has potential to impact a TCR such that it would cause a substantial adverse change constitutes a significant effect on the environment unless mitigation reduces such effects to a less-than-significant level. The Governor's Office of Planning and Research (OPR) must issue revised CEQA Guidelines to incorporate AB 52 requirements by July 1, 2016. However, compliance with the law is required beginning July 1, 2015 (prior to issuance of guidance).

Local

Background research indicates that no cultural resources designated for local listing are located in the project area. Because the CPUC has exclusive jurisdiction over the siting, design, and construction of the project, the project is not subject to local discretionary land use regulations. No local regulations related to cultural or paleontological resources apply to the project or provide information to assist with CEQA review.

3.5.2.2 Methodology

Information on the character and location of cultural resources at the project site and local vicinity was compiled from background and archival research at the California Historical Resources Information System (CHRIS), Southern San Joaquin Valley Information Center (SSJVIC) and PG&E Records Center in Brisbane, California. The Native American Heritage Commission (NAHC) and interested Native American individuals also were contacted. The research and Native American outreach was supplemented by an intensive survey of the project site and the documentation and historical evaluation of the Sanger Substation and Control Building. The information was then used to evaluate the project against the CEQA Checklist to determine potential impacts.

Information on paleontological resources was obtained from the University of California Museum of Paleontology (UCMP). The report documenting the results of the records search (Finger 2012) is included in the Paleontological Report to be provided separately to CPUC staff.

Cultural Resources

Records Search and Historical Research

On March 12, 2012, the SSJVIC staff conducted a records search of the project site and a 0.5-mile radius around the site to ascertain whether prior surveys had been conducted and whether any cultural resources were known to be present in this area. Sources consulted included known and recorded archaeological and historical site records, inventory and excavation reports, the Historic Property Data File (August 15, 2011), properties listed or recommended eligible for listing on the National Register of Historic Places and CRHR, and listings for California State Historical Landmarks, CHRIS, and California Points of Historical Interest.

In addition to the records search, historical information was gathered from the Map Room at California State University, Fresno (CSU Fresno) Henry Madden Library and Applied EarthWorks' own extensive in-house library.

Buried Site Sensitivity

Archaeological Buried Site Sensitivity

Applied Earthworks conducted an archaeological buried site sensitivity assessment that took into consideration the potential for the presence of buried cultural deposits by considering the project area and the underlying geomorphology and by reviewing available records search data from the SSJVIC (Mirro 2015). The project area is located within an alluvial valley, with 0 to 1 percent slopes, in an area characterized as rural/agricultural in use. The project area is underlain by soils from the Riverbank Formation, which is Middle Pleistocene in age. Soils within this area are described as Hanford fine sandy loam and Hanford sandy loam, which are composed of alluvium derived from granite. Alluvium of this age is not associated with buried archaeological deposits. Although Holocene age alluvium was identified in association with an incised valley in association with the Kings River and on an alluvial fan near the Kings River intersection point, both areas are outside of the project area. The project area is not within the vicinity of any known ethnographic villages and is not located within close proximity (within 500 feet) of a perennial source of freshwater or to sources of lithic material; thus, the potential of encountering buried archaeological deposits within the project area is low.

Paleontological Sensitivity

Soils which underlie the project area consist of granite, sand, silt, and clay and are of the Riverbank Formation (Qc), which dates to the Middle Pleistocene (130,000 to 450,000 years before present [BP]) and has a thickness of between 65 and 260 feet (Shiplee 2015). The Riverbank Formation (Qc) within the project area is further divided into three layers: lower, middle and upper units. The middle layer, which is composed of alluvial deposits derived from rivers, is the likeliest layer to underlie the project area. The Riverbank Formation is highly sensitive for the presence of paleontological resources. Numerous fossils dating to the Late Pleistocene have been identified between 13 and 30 feet below ground surface within the Riverbank Formation in California's Central Valley. As the project area overlies the Riverbank Formation, ground disturbing work occurring below recent alluvial deposits (roughly 5 feet or greater), should be considered to have a high potential for encountering buried paleontological resources (Mirro 2015).

Archaeological Survey

A reconnaissance level pedestrian survey of the areas that will be potentially disturbed by project construction was conducted on March 30, April 2, and April 27, 2012. The total area surveyed encompassed 131.8 acres, 14 acres including and surrounding expanded substation site (excluding the 4.5-acre existing substation site because the existing substation area is gravel covered, severely diminishing the effectiveness of pedestrian inventory, and the significant safety concerns working within an operating substation) and 117.8 acres around the pole proposed power line alignments, pole replacement locations, and tensioning sites. A PG&E archaeologist conducted a supplemental intensive pedestrian survey of 10.6 additional acres on June 28, 2012. In addition to the planned substation expansion footprint, cultural resources specialists inspected a greater than 200-foot buffer around the proposed relocated power lines and TSPs, a greater than 150-foot buffer around existing power lines and poles planned for removal, and a 500-foot buffer around proposed pull and tensioning sites, which encompassed both sides of the substation. The total area surveyed was approximately 142.4 acres. The survey was conducted by archaeologists who meet the professional qualification standards for archaeology established by the Secretary of the Interior. The archaeologists walked the survey area using parallel and meandering transects spaced 10-15 meters apart. When dense vegetation or other obstructions diminished ground visibility, patches of vegetation were scraped away with a hand trowel to expose the mineral soil. Where feasible, surveyors examined rodent hole backdirt and other subsurface exposures for evidence of cultural material constituents.

Native American Coordination

On November 30, 2011, the NAHC in Sacramento was contacted to request a search of the sacred lands file to determine if any Native American cultural resources have been recorded in the immediate project area. A list of Native American contacts for the project area was also requested.

On March 7, 2012, emails were sent to the contacts identified by the NAHC. The correspondence provided the location and a brief description of the project and asked if the tribe or individual would like to share any information or concerns regarding sacred or other sites of cultural importance in the project area. Individuals were contacted from the following organizations:

- Big Sandy Rancheria of Mono Indians
- Choinumni Tribe; Choinumni/Mono
- Cold Springs Rancheria of Mono Indians
- Dumna Wo Wah Tribe
- Dunlap Band of Mono Historical Preservation Society
- Esohm Valley Band of Indians/Wuksache Tribe
- Kings River Choinumni Farm Tribe
- Santa Rosa Rancheria
- Santa Rosa Tachi Rancheria
- Sierra Nevada Native American Coalition
- Table Mountain Rancheria
- The Choinumni Tribe of Yokuts
- Traditional Choinumni Tribe

A follow-up email was sent to those contacts with a listed email address on April 12, 2012. Phone calls were placed on April 25, 2012, to contacts that either did not have an email address or to whom the follow-up email was unsuccessfully delivered. A log documenting all communication efforts is provided in the cultural resources inventory and evaluation report (Mortlet et al. 2012). Correspondence associated with the coordination effort is provided in Appendix D.

A new sacred lands search was requested from the NAHC in September 2015. The results were again negative for the presence of sacred lands known by NAHC. A new list of contacts was provided containing 15 individuals and organizations not appearing on the previous list from the NAHC was provided. Some of the organizations remain the same but with different individuals identified as points of contact. On September 17, 2015 letters and project maps were sent to the following:

- Kings River Choinumni Farm Tribe—Stan Alec
- Chowchilla Tribe of Yokuts—Jerry Brown
- Dunlap Band of Mono Indians—Benjamin Charley, Senior Chairperson
- Cold Springs Rancheria of Mono Indians—Tribal Administrator
- Dunlap Band of Mono Indians—Florence Dick, Tribal Secretary
- North Fork Mono Tribe—Ron Goode
- Dumna Wo-Wah Tribal Government—John Ledger
- Cold Springs Rancheria of Mono Indians—Jeffrey Lee
- Picayune Rancheria of Chukchansi —Reggie Lewis
- Picayune Rancheria of Chukchansi—Mary Matola
- Table Mountain Rancheria—Michael Russell
- Dumna Wo-Wah Tribal Government—Eric Smith
- Cold Springs Rancheria of Mono Indians—Jamie Smith

- Dunlap Band of Mono Indians--Jeneen Tex
- Table Mountain Rancheria- Leanne Walker-Grant

No responses have been received as of September 21, 2015.

Architectural Inventory and Evaluation

An architectural historian conducted archival research to gather general information to develop a historical context for the substation and surrounding area, as well as specific data about the history and operation of Sanger Substation, for the evaluation of the substation and modular protection automation and control (MPAC) Building. The historian visited the PG&E Records Center in Brisbane, California, on February 9 and 10, 2012 to review company files on Sanger Substation. Other sources of information included the California Room of the Fresno County Library; the Woodward Special Collections and the Map Room at the Henry Madden Library, CSU Fresno. On March 15, 2012, the historian documented the substation on the appropriate California Department of Parks and Recreation (DPR) forms. These forms describe the substation features and summarize its significance. The historical significance of the substation as a whole, and Control Building individually, was then evaluated by applying the criteria of the CRHR with reference to the historic context presented in the cultural resources inventory and evaluation report (Morlet et al. 2012).

Paleontological Resources

The paleontological resource assessment did not identify any paleontological resources within the project area due to agricultural activity and development obscuring the ground surface. Although no direct evidence for paleontological resources was identified during pedestrian surveys, review of NHM and UCMP records and geology source material, indicated that the project area has a high sensitivity for paleontological resources (Clifford and DeBusk 2015). A review of previous records indicated that at least three paleontological resources have been identified within the Riverbank Formation, which overlies the project area as well as much of the Central Valley. As a result of the assessment, the project area, which is underlain by the Riverbank Formation, was categorized as having a high (PFYC Class 4b) paleontological research potential; therefore, the likelihood of impacting subsurface paleontological resources within the project area 13-30 feet below the surface is high.

Existing Information Review

A museum records search conducted by the Natural History Museum of Los Angeles County (NHM) on March 10, 2015, indicated that there were no fossils discovered within the project area. The search also indicated that at least two paleontological resources from within the Pleistocene Riverbank Formation or similar deposits between 12-30 feet below the ground surface have been recovered in Fresno County and in the eastern San Joaquin Valley. One of the paleontological resources discovered included an elephantoid. A review of online museum collections records for Fresno County was also conducted by NHM. The search yielded a fossil specimen of *Equus*, which was identified within the Riverbank Formation. Geological maps, the UCMP database and conducted literature review of applicable sources, were also all consulted.

Paleontological Sensitivity

The results of the paleontological assessment, including literature review, museum records search results, and field reconnaissance survey, indicates that the Riverbank Formation (Qc), which underlies the project area, a high potential for intact paleontological resources 13-30 feet below the surface in the Riverbank formation which has yielded fossils elsewhere in Fresno County but not in the immediate project vicinity. Areas underlain by the Riverbank Formation are known to have a high sensitivity for significant vertebrate fossils in the San Joaquin Valley; numerous Late Pleistocene fossils have been identified within the Central Valley in deposits between 13 and 30 feet below ground surface. Therefore, ground disturbing work occurring below recent alluvial deposits (roughly 5 feet or greater), should be considered to have a high potential for encountering buried paleontological resources. This is corroborated by the results of a records search conducted for the project which indicated the presence of three paleontological resources identified outside of the current project area but that were within the Riverbank Formation and by other recent projects conducted in Fresno County, including PG&E's Shepherd Substation and the California High-Speed Rail (California High-Speed Rail Authority and Federal Railroad Administration, 2014; PG&E, 2014).

Paleontological Survey

An intensive pedestrian survey of the project area was conducted, which included the proposed Sanger Substation and expansion area and surrounding pole reconfiguration area. The pedestrian survey was completed March 19, 2015. A windshield survey that assessed the project area's geology was also conducted. The survey indicated that the Riverbank Formation deposits, or those soil deposits most indicative of the presence or absence of paleontological resources, was obscured completely by alluvial soil development and agricultural activity. Soil survey mapping suggests that the average depth of soil development within this region/project vicinity is approximately 5 feet below ground surface. Moreover, the paleontological resources identified outside of the current project area but within the Riverbank Formation have been discovered between 13-30 feet below ground surface. If paleontological resources are discovered within the project area, they will likely be more than 5 feet below ground surface level.

3.5.3 ENVIRONMENTAL SETTING

The project is located on the east side of the San Joaquin Valley just west of the Sierra Nevada foothills. The San Joaquin Valley forms the southern half of California's Great Valley and runs parallel to the Sierra Nevada Geomorphic Province. The upper levels of the Great Valley floor are composed of alluvium and flood materials. Below these strata are layers of marine and nonmarine rocks, including claystone, sandstone, shale, basalt, andesite, and serpentine. Waters began to diminish about 10 million years ago, eventually dwindling to the drainages, tributaries, and small lakes that exist today. Playas, remnants of the extinct lakes, are currently used for agricultural activities in the valley (Norris and Webb 1990). The substation expansion area is currently a fallow field used for row crops.

3.5.3.1 Prehistory

Late Pleistocene/Early Holocene Period (Prior to 6500 BC). The Great Valley's prehistory spans the entire Holocene and possibly extends to the late Pleistocene times. Fluted Clovis-like projectile points have been found at several inland sites in Tulare Lake and elsewhere in the project vicinity. These early occupations possibly reflect relatively few small social groupings

that utilized simple technology to acquire plants, shellfish, and some larger animals for subsistence. These sites are marked by the absence of ground stone. Very few sites have been identified; this could be due to the small population or to site destruction through erosion and other natural forces.

There is a long history of regional archaeological research for the project area. The earliest archaeological surveys in the San Joaquin Valley date to the 1920s, and were accomplished by Gifford and Schenck (1926) and Schenck and Dawson (1929). Subsequent research broadened both the scope and database of earlier work, and also became more systematic and intensive. Some of this more recent research includes work at Little Panoche Reservoir (Olsen and Paven 1968) and Buchanan Reservoir (Moratto 1972).

The prehistory of the San Joaquin Valley is generally divided into three periods (Moratto 1984, Wallace 1978a). The first period is characterized by big game hunting and is dated approximately 8,000 years ago. The second period is dated from approximately 5,000 BP to AD 1200, and is characterized by a shift in subsistence strategy from hunting to the collection of plant resources. This shift in economic pursuits is evidenced in typical artifact assemblages from this period that include seed-grinding implements. The third period dates from approximately AD 1200-1700, and represents habitation of the area by Yokuts.

Olsen and Paven (1968) presented a cultural chronology for the eastern edge of the San Joaquin Valley based on their investigations at Little Panoche Reservoir. They identified the: Positas Complex, 5,300-2,800 BP Pacheco Complex, 2,800 BP to AD 300; Gonzaga Complex, AD 300-1000; and Panoche Complex, 1500-1850. Similarly, Moratto (1972) presented a cultural chronology for the eastern edge of the San Joaquin Valley and foothills of the southern Sierra Nevada based on investigations at Buchanan Reservoir. Moratto identified the: Chowchilla Phase, 2,300 BP to AD 300; Raymond Phase AD 300 to 1500; and the Madera Phase 1500 to 1850.

The Pacheco, Gonzaga, and Panoche Complex and the Raymond and Madera Phase are generally characterized by the use of relatively small projectile points that are probably associated with the introduction of the bow and arrow and an economic shift toward increasing exploitation of plant resources including the acorn. The Panoche Complex and Madera Phase also appear to represent occupation of the area by ethnographically documented groups of Native Americans.

3.5.3.2 Ethnographic Period

The project area was inhabited by the Wet-chi-Kit Yokuts, an autonomous tribe within the broader Northern Valley Yokuts. Prior to the arrival of Euroamericans in the region, California was inhabited by groups of Native Americans speaking more than 100 different languages and occupying a variety of ecological settings. Kroeber (1925, 1936) subdivided California into four subculture areas, Northwestern, Northeastern, Southern, and Central. The Central area encompasses the project area, which includes the territory of Northern Valley Yokuts. Northern Valley Yokuts inhabited the Central Valley surrounding the San Joaquin River from Mendota in the south to the area between the Calaveras and Mokelumne rivers in the north (Wallace 1978b). Latta (1977) is the principal ethnographic source for the Northern Valley Yokuts.

The basic social and economic group of Northern Valley Yokuts is the family or household unit, with the nuclear and/or extended family forming a corporate unit. These basic units were combined into distinct, named village or hamlet groups which functioned as headquarters of a localized patrilineage (Wallace 1978b). Lineage groups were important political and economic units that combined to form tribelets numbering between 300 and 500 persons. Each tribelet had a chief or headman who exercised political control over the villages that comprised it. The office of tribelet chief was hereditary, with the chieftainship being the property of a single patrilineage within the tribelet.

Subsistence activities of Northern Valley Yokuts included hunting, fishing, and collection of plant resources, particularly acorns. They built a variety of structures including residential dwellings, ceremonial structures, and semi-subterranean sweat lodges (Wallace 1978b). The typical dwelling was a thatched house covered by brush, grass, or tules. A variety of flaked and ground stone tools (e.g., knives, arrow and spear points, and rough cobble and shaped pestles) were common among Northern Valley Yokuts. Obsidian was a highly valued material for tool manufacture, and was generally imported. Northern Valley Yokuts also engaged in trading relationships with surrounding groups for commodities such as salt, marine shells, and basketry.

3.5.3.3 Historical Period

Gabriel Moraga led a Spanish expedition into the project area in 1806. Initial expeditions into the San Joaquin Valley were exploratory in nature, but were soon followed by campaigns to either convert and/or relocate Native Americans to missions. Missions dominated the social, political, and economic lives of both Spanish and Native Americans across much of California during the Spanish Period (ca. 1769-1821). Many Native American groups, however, were reluctant to adapt to the mission "system" and convert to Catholicism. This factor in combination with the onset of many European diseases virtually ended the traditional lifeways of many Native American groups in California.

The Mexican Period (ca. 1821-1848) in California is an outgrowth of the Mexican Revolution, and its accompanying social and political views affected the mission system. In 1833, the missions were secularized and their lands divided among the Californios as ranchos in the form of land grants. The ranchos facilitated the growth of a semi-aristocratic group that controlled large ranchos or land grants. Local Native American populations, who were essentially used as forced labor, worked on these large tracts of land. This was a period of growing antagonism of Native Americans toward Euroamericans and also declines in Native American populations due to both disease and abuse.

The American Period (ca. 1848-present) in California history begins with the end of the Mexican-American War and the signing of the Treaty of Guadalupe Hidalgo in 1848. The onset of this period, however, did not initiate a change in the economic condition of most Native American populations. For example, militia groups such as the Mariposa Battalion were established to "control" Native Americans (Crampton 1957). The Mariposa Battalion reports armed encounters with Native Americans in the upper drainage of the Kings and Kaweah Rivers (Crampton 1957). The rancho system also generally remained intact until 1862-1864 when a drought forced many landowners to sell off or subdivide their holdings. At this time open ranges began to be fenced and the economy began to shift from cattle ranching to dairy farming and agriculture based on new crops such as wheat.

The Gold Rush was the catalyst for major settlement and development of the region. As miners migrated south from the Columbia-Sonora goldfields, many settled on the valley floor. The population increased steadily as the Central Pacific Railroad established lines in the San Joaquin Valley in 1872. Although the area was initially used for cattle ranching, agriculture became the dominant economy with the development of transportation and the construction of irrigation systems in the late 19th century.

The City of Sanger was established in March 1888 following the filing of the town map with the Fresno County Recorder's Office. In 1891, Sanger had grown to a population of 1,000 and included two livery stables, a blacksmith shop, a large hotel, several boardinghouses, a Masonic Hall, and many small businesses such as a furniture store, restaurants, barber shops, a drug store, a jeweler, a tobacconist, a bakery, a bicycle shop, general merchandise, and grocers. The Sanger School District was founded in 1889 and a brick building with a steeple was constructed for the expanding student population. Within 10 years of the town founding, most local needs could be met without traveling to Fresno.

During the last quarter of the nineteenth century, many entrepreneurs began developing electric services for their local communities. The Sanger Herald (1920) reports that in about 1892, A.W. Chase and E. de Rainier constructed the Sanger Electric Light Works steam power plant. Sometime after 1898, the company was sold to Anton Borel (Clough et al. 1984) and renamed the Sanger Light and Power Company. In 1909, the Sanger Light and Power Company was sold to the San Joaquin Light and Power Company (SJL&P) (Railroad Commission of the State of California 1916).

In order to meet the needs of the region, the SJL&P increased hydroelectric output on the San Joaquin River by constructing four new powerhouses: Crane Valley Powerhouse No. 3; Powerhouse No. 1 (renamed A.G. Wishon Powerhouse); Crane Valley Powerhouse No. 2; and Crane Valley Powerhouse 1-A. The Kerckhoff Powerhouse, dedicated August 15, 1920, was completed ahead of schedule with substations in Sanger, Corcoran, Semitropic, and Merced not finished until early the following year. Located 30 miles northeast of Fresno, Kerckhoff Powerhouse distributed electricity to the new substations through two 110 kV power lines. By 1920, SJL&P was an established and significant public utility with 11 powerhouses and a vast array of transmission lines throughout the valley (Coleman 1952). In 1930, SJL&P merged with Great Western Power Company; both companies became part of PG&E in 1938.

3.5.3.4 Record Search Results

The records search conducted by the SSJVIC revealed that the project area has not been previously surveyed and there are no known or previously recorded cultural resources within the project area. The records search indicated that no prior surveys or cultural resources have been conducted or identified within 0.5 mile of the project area. Additional data sources, including the Map Room at CSU Fresno's Henry Madden Library, were consulted, revealing that a canal, three existing building complexes, and one nonextant historical complex dating to the historic period lie within the project area, adjacent to the proposed areas of direct impact.

3.5.3.5 Results of Native American Coordination

The NAHC responded to the sacred lands search request on December 6, 2012. Their response did not indicate the presence of any known Native American cultural resources within the project area. Emails and follow-up phone calls were made to the individuals and organizations provided on the NAHC contact list from their December 6, 2012 response. Input from those individuals and organizations are provided below.

On April 12, 2012, Lorrie Planas replied by e-mail that she had no issues or comments about the project. Bob Pennell, who responded in a letter received on March 28, 2012, declined participation at the time yet expressed the desire to be contacted in the unlikely event that cultural resources are identified. Lalo Franco replied by e-mail on April 13, 2012 with no immediate concerns. He did recommend, however, that construction be monitored by an archaeologist and that all parties be made aware of the prescribed actions to be taken in the event of an unanticipated discovery of any cultural resources.

3.5.3.6 Results of Field Inventory

No cultural resources had been previously recorded within 0.5 mile of the project. The field inventory noted a small number of glass and ceramic fragments present in the area where some buildings associated with Sanger substation had existed, but these fragments were not recorded as cultural resources because they could not definitively be dated to the historic period.

As a result of the built environment inventory, Sanger substation was recorded as a cultural resource. Sanger substation was constructed in 1921 to support the SJL&P Kerckhoff Hydroelectric Power Plant as the first substation in a 205-mile long transmission line that terminated in northern Santa Barbara County. Initial construction at Sanger substation consisted of building a tank house, Control Building, cooling tower, shed, residential cottage and detached garage. Additional cottages and garages were added in the late 1920s. All original buildings, with the exception of the Control Building, were removed between 1956, 1958, and 1968. By the late 1960s most of the original construction had been removed and the substation was fully automated in 1967. The only remaining structure dating to the first phase of construction is the Control Room (c. 1921). Other modern components include the battery building, high voltage circuit breakers, 115 kV transfer bus, 115/12 kV transformers, towers, poles, lights and galvanized risers. The remaining historic period Control Room and Sanger Substation were evaluated and recommended them not eligible for the CRHR, primarily as a result of the lack of integrity of design, materials, workmanship and feeling. This assessment was based on the fact that the majority of the original substation is no longer intact. They considered the CRHR eligibility of the Control Room structure both as part of Sanger substation and as a standalone property. As part of the architectural inventory of the project area, several historic structures and one canal were noted as being located within or directly adjacent to the project area. There are no project activities that will impact any of these items.

3.5.3.7 Paleontological Resources

Pedestrian survey that did not directly identify paleontological resources within the project area due to surface visibility limitations; however, review of background literature, museum records, and geological contexts, indicates that the project is within an area of high paleontological sensitivity. Although previously disturbed soil likely extends up to 2-4 feet below surface, soils

encountered below 5 feet may be within undisturbed sediments that would have a higher likelihood of containing paleontological resources, with high likelihood in sediments 13-30 feet below surface (Soil Survey Staff 2003).

3.5.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for impacts related to cultural and paleontological resources derived from Appendix G of the CEQA Guidelines, provide APMs to reduce impacts, and assess potential project-related construction and operational impacts on cultural and paleontological resources.

3.5.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts to cultural and paleontological resources were evaluated for each of the criteria listed in Table 3.5-1, as discussed in Section 3.5.4.3.

3.5.4.2 Applicant-Proposed Measures

PG&E will implement the following APMs:

APM CUL-1. Development and Implementation of a Worker Environmental Awareness Program

PG&E will design and implement a Worker Education Program that will be provided to all project personnel who may encounter and/or alter historical resources or unique archaeological properties, including construction supervisors and field personnel. No construction worker will be involved in field operations without having participated in the Worker Education Program. The Worker Education Program will include, at a minimum:

- A review of archaeology, history, prehistory and Native American cultures associated with historical resources in the project vicinity;
- A review of applicable local, state and federal ordinances, laws and regulations pertaining to historic preservation;
- A discussion of procedures to be followed in the event that unanticipated cultural resources are discovered during implementation of the project;
- A discussion of disciplinary and other actions that could be taken against persons violating historic preservation laws and PG&E policies; and
- A statement by the construction company or applicable employer agreeing to abide by the Worker Education Program, PG&E policies and other applicable laws and regulations.

The Worker Education Program may be conducted in concert with other environmental or safety awareness and education programs for the project, provided that the program elements pertaining to cultural resources are provided by a qualified instructor meeting applicable professional qualifications standards.

APM CUL-2. Cultural Resources Inventory

If the applicant revises the location of proposed facilities and ground-disturbing activities that affect areas beyond those surveyed for this PEA, those areas will be subjected to a cultural resources inventory to ensure that any newly identified cultural resources are avoided by ground-disturbing activities.

APM CUL-3. Unanticipated Discovery of Potentially Significant Prehistoric and Historic Resources

In the unlikely event that previously unidentified cultural resources are uncovered during implementation of the project, all work within 100 feet (30 meters) of the discovery will be halted and redirected to another location. PG&E's cultural resources specialist or his/her designated representative will inspect the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts will occur, the resource will be documented on State of California Department of Parks and Recreation cultural resource records and no further effort will be required. If the resource cannot be avoided and may be subject to further impact, PG&E will evaluate the significance and CRHR eligibility of the resources, and implement data recovery excavation or other appropriate treatment measures if warranted.

APM CUL-4. Unanticipated Discovery of Human Remains

If human remains are discovered, work in the immediate vicinity will stop immediately and a PG&E Cultural Resources Specialist (CRS) will be contacted. The location of the discovery will be secured to prevent further impacts and the location will be kept confidential. PG&E's CRS will evaluate the discovery and will contact the Fresno County Coroner upon verifying that the remains are human. If the coroner determines the remains are Native American, the NAHC will be contacted and the remains will be left in situ and protected until a decision is made on their final disposition.

APM PAL-1. Worker's Environmental Resources Training

All construction crew members must receive a paleontologically focused worker's environmental awareness training module prior to ground disturbance activities for the project. The module will be developed by the lead Paleontologist for the project and can be presented in person, through a safety tailboard, or in some other format, such as a brochure or videotape. The training module will cover the following topics: fossil/paleontological resource identification, discovery guidance, and the contact information of both the on-site paleontological monitor and the project paleontologist.

APM PAL-2. Unanticipated Discovery Plan

In the event that paleontological resources are discovered during construction activities, several procedures must be adhered to. All work must stop within 100 feet of the discovery and the appropriate PG&E CRS must be contacted at the time of discovery. Avoid any impacts to the site, which includes looting, or any other damage to the resource. Work cannot continue within 100 feet of the resource without approval from the PG&E CRS. The PG&E CRS will coordinate with the lead project paleontologist to protect the resource and evaluate its significance. If the resource is determined significant, the PG&E CRS and Paleontologist will develop a plan to

evaluate the resource. The plan may include protection and preservation of the resource, additional documentation and/or subsurface testing.

APM PAL-3. Paleontological Monitoring

A qualified professional paleontologist must prepare a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) for the project before the onset of ground disturbance activities for the project. Monitoring will consist of spot-checking all ground disturbance activity in undisturbed soils 10 feet below the surface until such time that a paleontological resource is discovered. Monitoring will not be required for soils at a depth of less than 10 feet. Monitoring can be reduced or discontinued in areas of high sensitivity only if 50 percent of the ground disturbing work within the Riverbank Formation has been completed and no resources have been identified. Ground disturbing work to be monitored if it occurs 10 feet below the surface includes all excavation and grading for the substation, retention basin, and road, as well as any augering that utilizes an auger greater than 5-feet in diameter. The extent and duration of spot-checking will be determined by the PG&E CRS and the lead paleontologist for the project. If a paleontological resource is identified during ground disturbance activities, monitoring will transition from spot-checking to full-time monitoring. In the event of a discovery, the monitor can direct the construction crew so that the resource is avoided and can be properly assessed.

3.5.4.3 Potential Impacts

Potential project impacts related to cultural and paleontological resources were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and the O&M phase.

PG&E's proposed project will expand PG&E's existing Sanger Substation to accommodate a new BAAH bus configuration. The substation will be expanded onto approximately 7 acres of land adjacent to and generally north of the existing substation. Sanger Substation currently has one antiquated main transfer bus, which serves as a common terminal for all 12 power lines (elements) and sixteen 115 kV circuit breakers. PG&E is proposing to replace these aging facilities with a new bus configuration having seven BAAH bays, each with two elements (line or transformer connections) and three 115 kV circuit breakers per bay. Within the expanded substation, the 12 existing power lines entering and leaving the substation will be reconfigured to terminate at the new equipment; this will require relocating power poles, towers, and conductors located outside the substation. Some distribution pole and line relocations will occur if required to accommodate new power line reconfiguration.

Project impacts on cultural resources are defined by CEQA as a change in the characteristics of a resource that convey its significance or justify its eligibility for inclusion in the CRHR or local register. Direct impacts may occur by (1) physically damaging, destroying, or altering all or part of a resource, (2) altering characteristics of the surrounding environmental setting that contribute to the significance of a resource, (3) allowing a resource to deteriorate through neglect, or (4) incidental discovery of archaeological resources without proper notification. Direct impacts can be assessed by determining the exact location of historical resources and assessing their significance under CEQA criteria, identifying the types and extent of the proposed impacts and their effect on significant resources, and determining appropriate measures to reduce impacts to

less-than-significant levels. Indirect impacts may include changes to the viewshed of a significant resource through introduction of a new project element.

CEQA recommends avoidance or preservation in place as the preferred treatment for eligible properties and unique or significant archaeological or historical resources (PRC 21083.2). If avoidance is not a feasible option, data recovery is a common treatment. For architectural resources, if physical changes to a property—excluding demolition—can be treated following the Secretary of Interior Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, the project-related impact on the historical resource will generally be considered reduced below a level of significance.

Project impacts on paleontological resources were evaluated based on an assessment of the paleontological sensitivity of identified geologic formations in relation to project activities. In accordance with Appendix G of the CEQA Guidelines, project impacts on paleontological resources were considered significant if the project will directly or indirectly destroy a unique paleontological resource or site. Sensitivity ratings were employed to assess the likelihood and/or severity of project impacts. The sensitivity ratings taken from the Applied Earthworks technical report (2015) are provided in Table 3.5-2. The ratings combine a number of relevant considerations, and are considered in light of the nature of subsurface disturbance associated with the project, and the significance of impacts is determined based on that information.

Table 3.5-2: Paleontological Sensitivity Categories

Potential Fossil Yield Classification*	Criteria	Mitigation Recommendations
Class 1 Very Low	Rock units that are formed under or exposed to immense heat and pressure, such as high-grade metamorphic rocks and plutonic igneous rocks; volcanic rocks, excluding reworked ash deposits; Precambrian age or older rocks.	No mitigation required.
Class 2 Low	Sedimentary rock units that have yielded few, if any, vertebrate fossils or significant invertebrate fossils in the past, based upon review of available literature and museum collections records. Geologic units of low potential also include those that yield fossils only on rare occasion and under unusual circumstances; eolian deposits, rock units deposited less than 10,000 years before present; and deposits that exhibit a high degree of diagenetic alteration.	Mitigation is not typically required.

Table 3.5-2: Paleontological Sensitivity Categories

Potential Fossil Yield Classification*	Criteria	Mitigation Recommendations
Class 3 3a: Moderate 3b: Unknown**	A fossiliferous rock unit with moderate potential is a sedimentary deposit where the significance, abundance, and predictability of recovery of fossils vary. In some cases, available literature on a particular geologic unit will be scarce and a determination of whether or not it is fossiliferous or potentially fossiliferous will be difficult to make. Under these circumstances, the sensitivity is unknown and further study is needed to determine the unit's paleontological resource potential.	Due to the unknown potential or moderate or infrequent occurrence of fossils, surface-disturbing activities will require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action. Management recommendations may include a preconstruction field survey, monitoring, or avoidance.
Class 4 4a: High Buried 4b: High Covered	Geologic units with high potential for paleontological resources are those that have been proven to yield vertebrate or significant invertebrate, plant, or trace fossils in the past or are likely to contain new vertebrate materials, traces, or trackways, but may vary in occurrence and predictability. A unit with high sensitivity is susceptible to surface-disturbing activities and includes fossiliferous sedimentary deposits that are well exposed with little vegetative cover as well as those shallowly covered by soil, alluvium, or vegetation.	Typically, a field survey as well as on-site construction monitoring will be required. Any significant specimens discovered will need to be prepared, identified, and curated in a museum. A final report documenting the significance of the finds will also be required.
Class 5 5a: Very High Buried 5b: Very High Covered	Geologic units with very high potential for paleontological resources are those that consistently and predictably yield vertebrate or significant invertebrate, plant, or trace fossils. A unit with very high sensitivity is highly susceptible to surface-disturbing activities and includes fossiliferous sedimentary deposits that are well exposed with little vegetative cover as well as those shallowly covered by soil, alluvium, or vegetation.	Typically, a field survey as well as on-site construction monitoring will be required. Any significant specimens discovered will need to be prepared, identified, and curated in a museum. A final report documenting the significance of the finds will also be required.

* Source: BLM (2007); PG&E (2013).

** Generally, this classification is only used when limited or no research has been conducted and minimal or no background information regarding a rock unit's paleontological resource potential is available. Given adequate research and evaluation, a geologic unit can be categorized as having a very high, high, moderate, low, or very low sensitivity.

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5? *Less than Significant*

The project will result in removal of extant structures including the MPAC building constructed in 1921. The Sanger Substation site and the 1921 Control Building were recommended not eligible for the CRHR and therefore demolition of structures, including the MPAC building, will result in a less than significant impact.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? *Less than Significant*

The project will result in ground disturbing activities in and around the potentially historic material noted in the vicinity of the previously demolished residence structures in the southwest portion of the current substation area. APM CUL-3 will reduce less than significant impacts if previously unidentified cultural resources are encountered during construction, especially in those areas where non-time diagnostic debris possibly associated with initial phase construction of Sanger Substation was noted.

c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? *Less than Significant*

There is a high potential for discovering paleontological resources (buried fossils) within the project area as it is underlain by Riverbank Formation deposits. Although soils within 5 feet of the surface are previously disturbed and paleontological resources discovered outside the project area in the Riverbank Formation have been discovered 13 to 30 feet below ground surface, it is possible given the sensitivity of the area that previously undiscovered paleontological resources may exist below ground surface in this area.

APM PAL-1 requires that workers be trained in the procedures to be implemented in the event fossil remains are encountered by ground-disturbing activities, and outlines the procedures that will be followed to determine the significance of the find and the treatment measures that will be implemented if the find is significant. Implementing APM PAL-1 will further minimize potential less-than-significant impacts on cultural and paleontological resources.

APM PAL-2 requires that all work within 100 feet of any discovered paleontological resource cease, so that the resource can be evaluated for its potential significance. PG&E's cultural resources specialist will inspect the discovery and determine whether further investigation is required. If the resource cannot be avoided and may be subject to further impact, PG&E and the project paleontologist will evaluate the significance and protect the resource. Measures implemented may include protection and preservation of the resource, additional documentation and/or subsurface testing. Implementing APM PAL-2 will further reduce potential less-than-significant impacts on cultural and paleontological resources.

APM PAL-3 requires spot check monitoring by a professional paleontologist of all ground disturbance activities for the project that are below a depth of 10 feet. The monitoring duration will change to full time if any paleontological resources are identified. In the event of a discovery, the monitor can direct the construction crew so that the resource is avoided and can be properly assessed.

Implementing APM PAL-1, PAL-2 and PAL-3 will further minimize potential less-than-significant impacts on cultural and paleontological resources.

d) Would the project disturb any human remains, including those interred outside of formal cemeteries? *No Impact*

The project will not impact any known graves. No impacts to human remains are anticipated. If human remains are discovered, PG&E will implement APM CUL-3.

3.5.5 REFERENCES

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3.6 GEOLOGY AND SOILS

3.6.1 INTRODUCTION

This section describes the existing geological and soil conditions, and potential geologic and geotechnical hazards at the project area and surrounding areas, and concludes that any impacts will be less than significant. Potential geologic hazards along the project route include ground shaking, liquefaction, and other ground-failure mechanisms. The implementation of APMs described in Section 3.6.4.2 will further reduce less-than-significant impacts on geology and soils. As discussed in Section 3.6.3.4, no impacts will result from fault rupture, landslides, unstable soils, expansive soils, or wastewater systems and no impacts will occur during operations and maintenance of the project.

The project's potential effects on geology and soils were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.6-1 and discussed in more detail in Section 3.6.4.

Table 3.6-1: CEQA Checklist for Geology and Soils

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on 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, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste-water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

3.6.2 REGULATORY BACKGROUND AND METHODOLOGY

3.6.2.1 Regulatory Background

Federal

No federal regulations related to geology, soils, and seismicity are applicable to the project.

State

Alquist-Priolo Earthquake Fault Zoning Act

California enacted the Alquist-Priolo Special Studies Zones Act in 1972, which was renamed the Alquist-Priolo Earthquake Fault Zoning Act in 1994. Also known as the Alquist-Priolo Act, it requires the establishment of "earthquake fault zones" along known active faults in California. Regulations on development within these zones are enforced to reduce the potential for damage resulting from fault displacement. Information on earthquake fault zones is provided for public information purposes (see Section 3.6.3.4, Seismicity, for further discussion).

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (SHMA) addresses earthquake hazards other than fault rupture, including liquefaction and seismically induced landslides. Seismic hazard zones are to be mapped by the State Geologist to assist local governments in land use planning. The SHMA states that "it is necessary to identify and map seismic hazard zones in order for cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety."

California Building Standards Code

The California Building Standards Commission is responsible for coordinating, managing, adopting, and approving building codes in California. The State of California provides minimum standards for building design through the 2010 California Building Standards Code (CBC) (CCR, Title 24). Chapter 18 of the CBC regulates the excavation of foundations and retaining walls and specifies required geological reports. Appendix J of the 2010 CBC regulates grading activities, including drainage and erosion control and construction on unstable soils, such as expansive soils and areas subject to liquefaction.

Local

Because the CPUC has exclusive jurisdiction over the siting, design, and construction of the project, the project is not subject to local discretionary regulations. PG&E will coordinate with

the County of Fresno on the required ministerial permits for construction related to the substation expansion.

3.6.2.2 Methodology

Information on the geology and soils was compiled from published literature, maps, and examination of aerial photographs, including publications from the U.S. Geological Survey, the U.S. Soil Conservation Service, and the Department of Conservation-California Geological Survey. The Fresno County General Plan and supporting documentation were also reviewed for specific information relating to seismicity and geologic hazards in the region. Information obtained from these sources was used to evaluate the project against the CEQA Checklist to determine potential impacts.

3.6.3 ENVIRONMENTAL SETTING

3.6.3.1 Regional Setting

The project area is located near the geographic center of California in the San Joaquin Valley, which is the southern portion of California's Central Valley. The Central Valley is also referred to as the Great Valley Geomorphic Province. It extends for approximately 450 miles from low-lying hills near Red Bluff in the north to the San Emigdio and Tehachapi Mountains near Bakersfield in the south. The Central Valley is bounded on the northeast by a volcanic plateau of the Cascade Range; on the east by the Sierra Nevada, which rise to a maximum height of over 14,000 feet above mean sea level; and on the west by the Coast Ranges, including the Diablo Range. Elevations in the Central Valley range from slightly below mean sea level to 400 feet above mean sea level at its northern and southern ends. The northern one-third of the valley is known as the Sacramento Valley and the southern two-thirds as the San Joaquin (Norris and Webb 1990, DOC 2002).

The Central Valley is directly underlain by unconsolidated sedimentary deposits that are in turn underlain by a sequence of marine and continental sedimentary rocks consisting of shale, siltstone, and sandstone. Beneath these rocks lies an impermeable basement complex of igneous and metamorphic rocks that are up to 13,000 feet below ground surface (bgs). These basement rocks are a subsurface extension of the same rocks that occur in the Sierra Nevada.

The Central Valley is often regarded as one continuous but heterogeneous aquifer system. The chief source of groundwater in the Central Valley is located within the upper 1,000 feet of deposits. These deposits include intercalated lenses of clay, silt, silty and sandy clay, clayey and silty sand, sand, gravel, cobbles, and boulders. The eastern portion of the San Joaquin Valley contains aquifer material characterized as coarse-grained, well-sorted, medium-to-coarse-grained, fluvial sediments, ranging between 400 and 500 feet thick in the valley center, and thinner toward the east and west.

Because the Kings River drains a portion of the Sierra Nevada where glaciation previously carved out valleys, and there has been a relatively high rate of tectonic basin subsidence realized in the vicinity of the project area, the Kings River alluvial fan is relatively thick compared to other fans located in the eastern Great Valley (Faunt et al. 2009). Alluvial materials in the project vicinity are composed of the same granitic materials as the parent rocks of the Sierra Nevada.

The alluvial aquifer in the project vicinity is mostly unconfined and regional groundwater flow is generally toward the southwest, although pumping depressions in certain areas have caused localized deviant flow patterns. Surface waters in the area consist of natural rivers and manmade canals, seepage from which is the greatest source of groundwater recharge. Rainfall averages less than 10 inches per year.

In Fresno County, small intermittent streams enter the valley from the semi-arid Diablo Range on the west. Some streams terminate on alluvial fans and others have been dammed to form reservoirs for irrigation. To the east, perennial rivers flow from the more humid, larger drainage areas of the Sierra Nevada and have been dammed to provide irrigation and electrical power generation. In the past, runoff from these drainages deposited sand, silt, and clay and built up large alluvial fans along each side of the valley. The larger, more gently sloping fans on the east side of the valley are primarily composed of sediment deposits derived from granitic rock, which have created extensive foothills. Alluvial fans on the west side of the San Joaquin River are composed of sediment derived primarily from sedimentary source rock deposits and generally have steeper slopes. The valley floor is composed of alluvial, floodplain, and delta plain deposits from the surrounding ranges.

During the late Mesozoic and Cenozoic, the region existed as a lowland or shallow marine embayment. In the late-Cenozoic, much of the area was occupied by shallow brackish and freshwater lakes, particularly in the San Joaquin Valley (Norris and Webb 1990, DOC 2002).

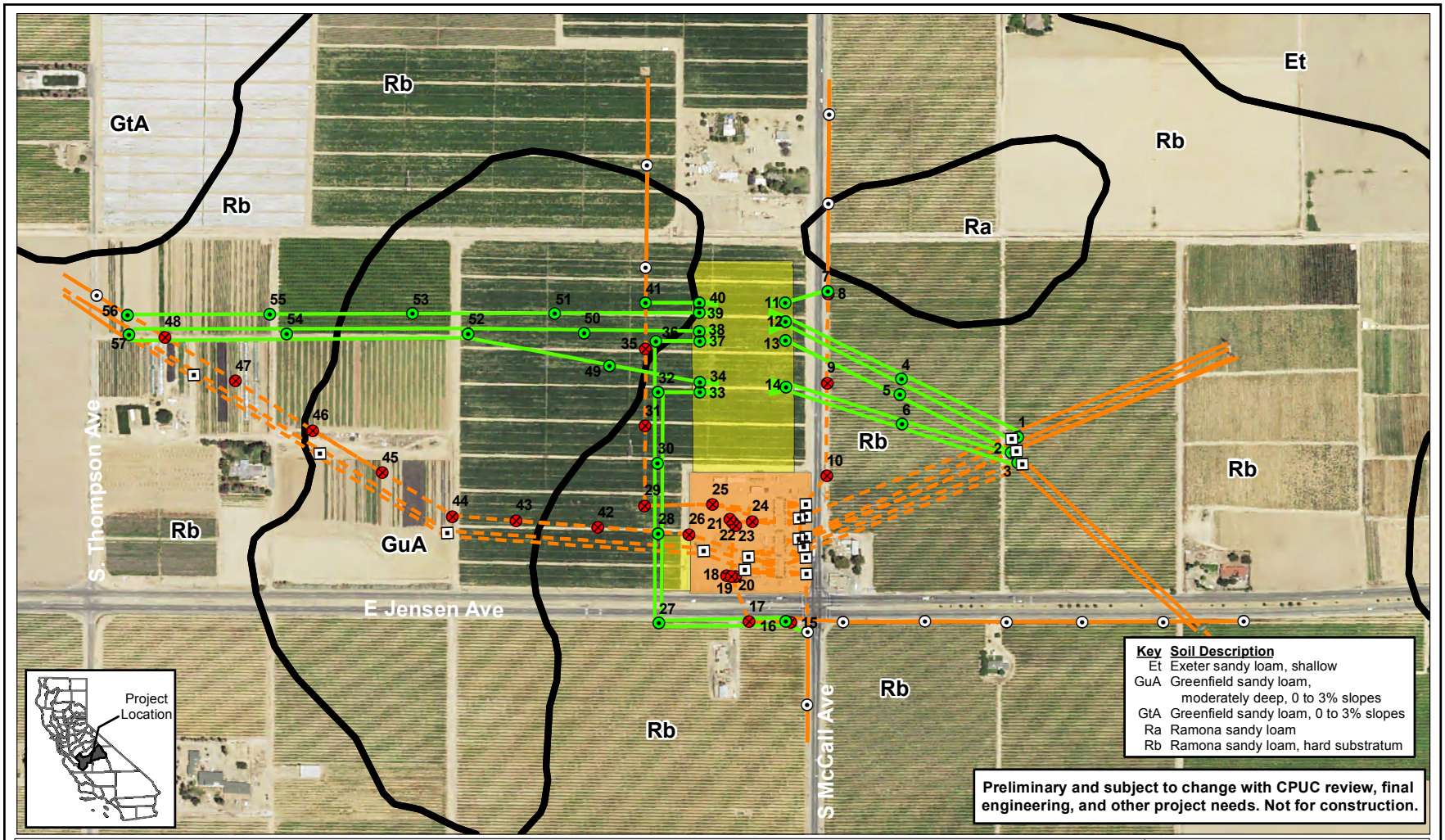
The project area and the surrounding area are level agricultural land, located at approximately 345 feet above mean sea level, as shown on the U.S. Geological Survey Topographic Quadrangle, Sanger, California (2012). The surface topography is relatively flat with an overall slope of 0 to 1 percent. Agriculture is the dominant land use in the project area. The project area is currently in row crops, and surrounding parcels are currently in either row crops, orchards or vineyards. Several residences, a grocery store, and a church are also located in proximity to the project area.

3.6.3.2 Stratigraphic Units

The project is located within the San Joaquin Valley in the Central Valley geomorphic province. The valley is underlain by thick marine sedimentary sequences of Jurassic age overlain by alluvial sedimentary deposits derived from the Sierra Nevada to the east and the Coast Range to the west. The geologic materials directly underlying the project area are Pleistocene age nonmarine soils (Matthews and Burnett 1965).

3.6.3.3 Soils

Soil types as discussed in this section are based on review of the NRCS Soils maps (2012). The project area surface soils are predominantly mapped as well-drained, sandy loams of the Ramona sandy loam, hard substratum, with slopes of 0 to 2 percent, and Greenfield sandy loam, with slopes of 0 to 3 percent as mapped by the NRCS (Figure 3.6-1). Sandy loams are not expansive (i.e., have low linear extensibility) and compact well for construction. The County of Fresno also has determined that the project area does not contain expansive soils (Fresno County 2000b). Soils at the project area have a low risk of corrosion of concrete and a moderate risk of corrosion of uncoated steel, and they are moderately susceptible to erosion from wind and water.



Data Sources: Aerial: NAIP, 2014 **Soil Data:** Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database for California. Available online at http://soildatamart.nrcs.usda.gov Accessed April, 2012

T:\sharegis\gisnt\31782850_Sanger\map\Fig3.6-1_PGE_Sanger_SoilsMap.mxd 9/22/2015 1:26:48 PM

The Ramona soils are formed from alluvium-derived material mostly from granitic and related rock sources and are generally level in the project area. Typically, Ramona soils have slightly to medium acid sandy loam and fine sandy loam A horizons (topsoil), which extend from 0 to 23 inches below the ground surface; slightly acid sandy clay loam B horizons (subsoil) from 23 and 68 inches below the surface (subsoil); and neutral fine sandy loam C horizons (parent material) from 60 to 74 inches below the surface. The A and B horizons have more than 15 percent combined coarse and very coarse sand and 5 to 35 percent fine rock fragments (2 to 5 mm in size). Rock fragments larger than 5 mm are present at less than 5 percent. The C horizons are variable in the distribution of coarse sand, fine gravel, and rock fragments larger than 5 mm, but are generally coarser than the A and B horizons. Ramona soils are well drained, with slow to rapid runoff and moderately slow permeability.

The Greenfield series consists of deep, well-drained soils that formed in moderately coarse and coarse-textured alluvium derived from granitic and mixed rock sources. Greenfield soils are present on alluvial fans and terraces with slopes of 0 to 30 percent. The A horizon is loamy sand, sandy loam, fine sandy loam, or gravelly equivalents of each. This horizon contains less than 1 percent organic matter and is slightly acid to mildly alkaline. The B horizon is heavy sandy loam, heavy fine sandy loam, or gravelly equivalents of each and has 3 to 6 percent more clay than the A horizon. This horizon is slightly acid to mildly alkaline. The C horizon is loamy sand, coarse sandy loam, sandy loam, fine sandy loam, or gravelly equivalents of each. Rock fragments range from less than 1 to 25 percent in the A and B horizons. Coarse and very coarse sand averages more than 20 percent.

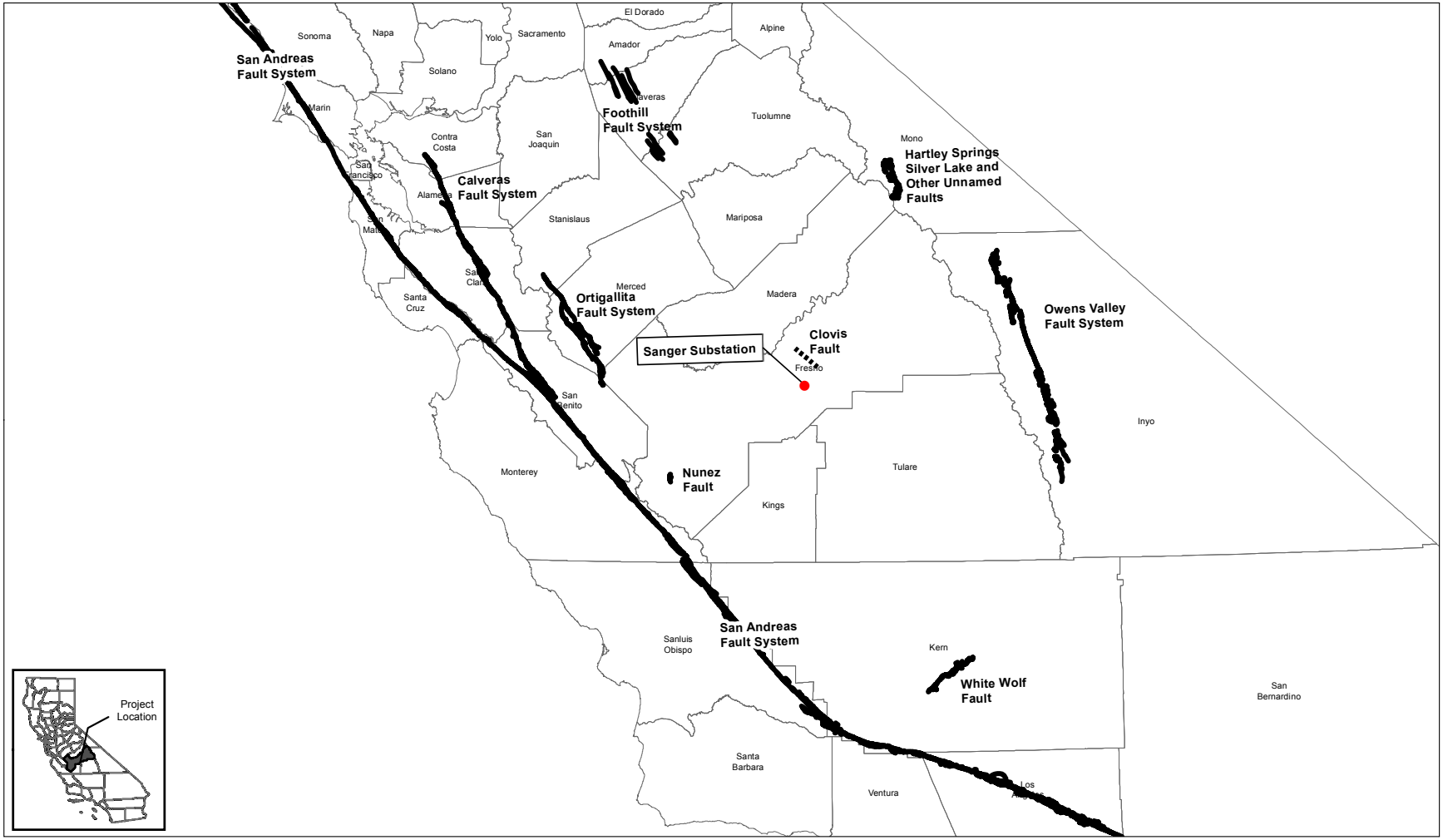
3.6.3.4 Seismicity

Fault Zones

The Alquist-Priolo Act requires the establishment of earthquake fault zones along known active faults in California. A fault is considered active if it has generated earthquakes accompanied by surface rupture during historic time (approximately the last 200 years) or has shown evidence of fault displacement during the Holocene period (approximately the last 11,000 years){Bryant, 2007 #105} (Bryant and Hart 2007). A fault is considered potentially active if there is evidence of fault displacement during the Quaternary period (approximately the last 1.6 million years). A fault is considered inactive if the most recent documented fault displacement pre-dates the Quaternary period. A number of active and potentially active faults are located in and near Fresno County, although no mapped active fault traces traverse the project area. A regional map of the fault zones in proximity to the site is included as Figure 3.6-2.

The nearest active faults are the Nunez fault, located approximately 50 miles southwest of the project area in the Alcalde Hills; the Ortigalita fault system, located approximately 70 miles northwest of the project area; and the San Andreas fault, located over 70 miles to the west (California Geological Survey 2010). Other faults in and near Fresno County include a possible trace of the Clovis fault, the Owens Valley fault zone, and Foothills fault system (Fresno County 2000a).

The Nunez fault is located approximately 6 to 7 miles northwest of Coalinga. This fault ruptured during the 1983 Coalinga earthquake and is designated as an Earthquake Fault Zone (EFZ) under the Alquist-Priolo Earthquake Fault Zoning Act of 1994 (Fresno County 2000a).



Data Sources:
Fault Data: U.S. Geological Survey and California Geological Survey, 2006, Quaternary fault and fold database for the United States, accessed 5/17/2012, from USGS web site: http//earthquakes.usgs.gov/regional/qfaults/.

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The Ortigalita fault zone is approximately 50 miles long and extends southwestward from western Stanislaus County to a few miles north of Panoche in western Fresno County. Most of the fault is considered active, and it is designated as an EFZ under the Alquist-Priolo Earthquake Fault Zoning Act (Fresno County 2000a).

The Owens Valley fault zone is a north-west trending fault zone that contains active and potentially active faults. Historically it has been a source of seismic activity in the region. The Foothills fault system has not been active in the last 1.6 million years; however, geologic investigations have suggested that these faults are potentially active (Fresno County 2000a).

The Clovis fault is northwest-trending and is believed to be located approximately 5 to 6 miles east of the City of Clovis, extending from an area just south of the San Joaquin River to a few miles south of Fancher Creek. At its closest point, the fault is about 13 miles from the project area. The Clovis fault is considered a pre-Quaternary fault with no recognized Quaternary displacement. The fault is not necessarily inactive (Fresno County 2000a).

The nearest faults of major historical significance are the San Andreas Fault, which passes within a distance of approximately 75 miles of the project area, and the associated Calaveras fault, which passes within a distance of approximately 100 miles of the project area. These active right-lateral, strike-slip faults extend in a northwest-southeast direction to the northwest and west Fresno County. The San Andreas Fault also extends to the southwest of Fresno County as it traverses from the Gulf of California in Mexico to the Mendocino coast in northern California. This fault accommodates the majority of movement between the Pacific and North American plates.

Strong Ground Motion

The project area is not located within an active fault zone as defined by the Alquist-Priolo Act; however, the faults and fault systems that lie along the eastern and western boundaries of Fresno County, as well as the other regional faults, have the potential to produce high-magnitude earthquakes throughout the county. A high-magnitude earthquake on one of these faults could cause moderate intensity ground shaking in Fresno County. Most of Fresno County, from approximately Interstate 5 east, is located in Seismic Zone 3, as defined by the most recent California Uniform Building Code (Fresno County 2000a).

Shaking from an earthquake can result in structural damage and can trigger other geologic hazards such as liquefaction. Ground shaking is determined by the earthquake magnitude, duration, and distance from the source. Ground conditions will also influence impacts from strong ground motions. Seismic waves attenuate with distance from their sources, so estimated bedrock accelerations are highest in areas closest to the source. Local soil conditions may amplify or dampen seismic waves as they travel from the underlying bedrock to the ground surface. The valley portion of Fresno County is located on alluvial deposits, which tend to experience greater ground shaking intensities than areas located on hard rock. Therefore, structures in the area of the project would tend to suffer greater damage from ground shaking than those located in the foothill and mountain areas.

Ground motions for the site were calculated using the California Geological Survey Probabilistic Seismic Hazard Assessment (PSHA) online tool. This program uses the California Geological

Survey PSHA Model (2008) to obtain the ground motions for the site. The peak ground acceleration (PGA) was obtained for the ground motion with a 10 percent probability of being exceeded in 50 years, or a 475-year return period at the project area located at longitude 119.610986 and latitude 36.707208. According to available information and the calculated PGA values below, the project area will likely be categorized as alluvium, with a PGA of 0.163 gravity (g). This is considered a low to moderate value for the state. PGA values across California range from about 0.1 g to over 1.0 g (California Geological Survey 2011).

3.6.3.5 Landslides

A landslide is a mass of rock, soil, or debris that has been displaced downslope by sliding, flowing, or falling. There is a low probability for landslides in the project area because of the relatively flat (0 to 1 percent slope) topography and distance from hills, mountains, or slopes. The project area is not located within a landslide hazard area, as indicated by the Fresno County General Plan (Fresno County 2000b).

The Waverly Ditch, a bermed agricultural ditch that stems from the Fowler Switch Canal, is located along the northern border of the expanded substation area and runs parallel to East Jensen Avenue. The canal varies between concrete-lined and compacted earthen material. This ditch and the various canals and ditches in the surrounding area are too shallow to pose a landslide hazard.

3.6.3.6 Subsidence

Subsidence, which is the downward displacement of a large portion of land, has affected many areas in California, including portions of western Fresno County. There are various causes of subsidence, most of which happen slowly. The exception is tectonic subsidence, which occurs suddenly as a result of soil compaction due to strong ground shaking during earthquakes. Fresno County is most affected by subsidence caused by groundwater withdrawal, hydrocompaction, and earthquakes.

Large parts of the western San Joaquin Valley have been affected by subsidence resulting from extensive groundwater withdrawal that began in the 1920s; ground subsidence reached a maximum of 29.7 feet below historic ground surface levels in 1981 (Ireland 1986). In some parts of western Fresno County, groundwater pumping has caused considerable subsidence of the land surface, particularly in the Westlands Water District and the Pleasant Valley Water District (Fresno County 2000a, 2000b). The County of Fresno has not identified the project area as an area where subsidence has occurred (Fresno County 2000a).

Hydrocompaction occurs when open-textured soils become saturated with water for the first time, lose strength, and consolidate under their own weight. About 124 square miles of land surface in California has experienced or is subject to subsidence due to hydrocompaction. Hydrocompaction on the west side of the San Joaquin Valley required special consideration and engineering treatment during construction of the California Aqueduct. The Delta-Mendota Canal was built without knowledge of the problem, and subsidence of portions of it has required costly repair.

Tectonic subsidence results in the compaction of loose, non-cohesive soils, and could occur in parts of Fresno County where the groundwater surface is deep. Loose to medium dense, uniformly graded sands are most susceptible. In areas with shallow groundwater, liquefaction is more likely in the event of significant seismic shaking. The potential for ground subsidence due to earthquake motion is largely dependent on the magnitude, duration, and frequency of the earthquake waves. Probable seismic ground shaking for the site is expected to be minimal, as presented in Section 3.6.3.5; therefore, tectonic subsidence is also anticipated to be minimal.

3.6.3.7 Erosion

Erosion is the process by which rocks, soil, and other land materials are abraded or worn away from Earth's surface over time. The rate of erosion depends on many factors, including soil type and geologic parent materials, slope and placement of soils, and human activity. The potential for erosion is highest in loose, unconsolidated soils. The steepness of slopes and absence of vegetation are also factors that increase the natural rates of erosion. Thus, erosion potential is high in steep, unvegetated areas, especially those disturbed by grading or other construction activities.

A soil's susceptibility to erosion varies and is a function of its characteristics, such as soil texture, soil structure, topography, amount of vegetative cover, and climate. Erosion from water mainly occurs in loose soils on moderate to steep slopes, particularly during high-intensity storm events. Because the topography at the project area is relatively flat, erosion potential is low.

3.6.3.8 Liquefaction

Liquefaction is a seismic phenomenon in which loose, saturated, fine-grained granular soils behave similar to a fluid when subjected to high-intensity ground shaking. An increase in pore water pressure occurs as the soil attempts to compact in response to the shaking, resulting in less grain-to-grain soil contact, and therefore, loss of strength. Liquefaction occurs when three general conditions exist: shallow groundwater (40 feet bgs or less); low density, fine-grained sandy soils; and high-intensity ground motion. Effects of liquefaction on level ground can include sand boils, settlement, and bearing capacity failures below structural foundations. The soil types in the valley, where the project area is located, are not conducive to liquefaction because they are either too coarse or too high in clay content (Fresno County 2000a); moreover, based on information from the City of Fresno, depth to groundwater in the project area is believed to be greater than 100 feet below the ground surface (City of Fresno 2009), further minimizing the potential for liquefaction.

3.6.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for impacts related to geology and soils derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational geologic impacts.

3.6.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the

significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts related to geology and soils were evaluated for each of the criteria listed in Table 3.6-1, as discussed in Section 3.6.4.3.

3.6.4.2 Applicant-Proposed Measures

PG&E will implement the following APMs (see Section 3.9, Hydrology and Water Quality, for APMs related to erosion control):

APM GEO-1. Geotechnical Evaluation and Soils Report

A geotechnical evaluation and soils report has been prepared for PG&E (Kleinfelder 2015). The report concluded that the substation site is geotechnically suitable for construction of the proposed improvements using conventional grading, shallow and deep foundation systems. A copy of the report will be provided separately to CPUC staff.

APM GEO-2/APM WQ-1. Development and Implementation of Stormwater Pollution Prevention Plan

Because the project involves more than an acre of soil disturbance, a SWPPP will be prepared for the project as required by the state NPDES General Permit for Discharges of Stormwater Associated with Construction Activity. This plan will be prepared in accordance with the Water Board guidelines and other applicable erosion and sediment control BMPs. Implementation of the plan will help stabilize disturbed areas and will reduce erosion and sedimentation. The SWPPP will designate BMPs that will be followed during and after construction of the project. Examples of erosion-minimizing measures that may be identified in the SWPPP include the following:

- Using drainage control structures (e.g., straw wattles or silt fencing) to direct surface runoff away from disturbed areas.
- Strictly controlling vehicular traffic.
- Implementing a dust-control program during construction.
- Restricting access to sensitive areas.
- Using vehicle mats in wet areas.
- Revegetating disturbed areas, where applicable, following construction.

In areas where soils are to be temporarily stockpiled, soils will be placed in a controlled area and will be managed with similar erosion control techniques. Where construction activities occur near a surface waterbody or drainage channel and drainage from these areas flows towards a waterbody or wetland, stockpiles will be placed at least 100 feet from the waterbody or will be properly contained (such as berming or covering to minimize risk of sediment transport to the drainage). Mulching or other suitable stabilization measures will be used to protect exposed areas during and after construction activities. Erosion-control measures will be installed, as necessary, before any clearing during the wet season and before the onset of winter rains. Temporary measures, such as silt fences or wattles intended to minimize erosion from temporarily disturbed areas, will remain in place until disturbed areas have stabilized.

The SWPPP will be designed specifically for the hydrologic setting of the project.

3.6.4.3 Potential Impacts

Potential project impacts related to geology and soils were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and the operation and maintenance phase.

The project includes the expansion of the existing 115 kV Sanger Substation to include an area of approximately 7 additional acres , as discussed in Chapter 2.0, Project Description. PG&E will install two MPAC buildings along with other substation components. Existing power poles, towers, and conductors located outside the existing substation will require reconfiguration, including construction of new poles and removal of existing poles and towers. The O&M activities required for the upgraded facilities will not change from those currently required for the existing system.

a) Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault as on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides?

i) Rupture of a known earthquake? ***No Impact***

No known active faults are located on or near the project area, nor is the project area within an Alquist-Priolo EFZ. Therefore, no impacts related to fault rupture will occur.

ii) Strong seismic ground shaking? ***Less than Significant***

Fresno County (2000a) has determined that a high-magnitude earthquake on one of the regional faults (Figure 3.6-2) could result in moderate intensity ground shaking in the county and notes that the valley portion of the county, including the project area, is located on alluvial deposits, which tend to experience greater ground shaking intensities than areas located in hard rock. The potential for an earthquake to occur during the construction period is small, and all work will comply with Occupational Safety and Health Administration requirements, which will minimize risks to workers. Moreover, the project structures are located in a rural area and will not be located immediately adjacent to occupied structures. Therefore, risks to people or structures from strong seismic ground-shaking will be less than significant. APM GEO-1 requires preparation of a site-specific geotechnical evaluation and soils report, and the power lines will be designed in accordance with the CPUC's General Order 95, which includes safety measures. Incorporation of APM GEO-1 will further reduce less-than-significant impacts.

iii) Seismic-related ground failure, including liquefaction? ***Less than Significant***

As discussed under Potential Impact ii), the expanded substation will be engineered based on site-specific conditions and, as discussed under Section 3.6.3.8, the potential for liquefaction at the project area is low. Risks associated with seismic-related ground failure will be less than significant.

iv) Landslides? ***No impact***

The project area is located within level agricultural fields, several miles from any slopes, and no new slopes will be created; therefore, no impacts related to landslides will occur.

b) Would the project result in substantial soil erosion or the loss of topsoil? ***Less than Significant***

Site soils are moderately susceptible to erosion during construction. However, the project site has level topography distant from any slopes, which will minimize the potential for erosion during construction. Impacts will be less than significant. APM GEO-2/APM WQ-1 will require the preparation of a SWPPP. The SWPPP will be prepared in accordance with the Water Board guidelines and other applicable BMPs and will include measures that will stabilize disturbed areas and reduce erosion and loss of topsoil. Construction BMPs will remain in place at the completion of construction until final site stabilization is achieved with asphalt driveways and graveled surfaces. APM AIR-1 also includes dust emissions minimization measures that will protect soil from wind erosion. The potential for substantial soil erosion or loss of topsoil will be further reduced with the incorporation of APM-GEO-2/APM WQ-1 and APM AIR-1.

Operation will not cause soil erosion or loss of topsoil. Occasional minor surface disturbance will be required during inspections and maintenance, but such disturbance already occurs at the existing substation, and the impact will not change as a result of the project. Thus, no impacts associated with erosion or loss of topsoil will occur during operation and maintenance.

c) Would the project 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? ***No Impact***

The project will not result in soil instability due to site topography and soils. The site has level topography distant from any slopes, and site soils are described as well-drained sandy loams, typically consisting of less than or equal to 25 percent clays. These soils compact well for construction and are not conducive to on- or off-site landslide, lateral spreading, liquefaction or collapse; therefore, no impacts related to unstable geologic units or soils will occur. The project will not require the extraction of groundwater, oil, or natural gas, and thus, will not result in subsidence. Therefore, no impacts will occur.

d) Would the project be located on expansive soil, as defined in Section 1802.3.2 of the California Building Code (2007 or 2010), creating substantial risks to life or property? ***No Impact***

Based on the available references, the project is not located in an area with expansive surficial soil; therefore, no impact will occur.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste-water disposal systems where sewers are not available for the disposal of waste water? ***No Impact***

The project does not include a waste disposal system; therefore, no impact will occur.

3.6.5 REFERENCES

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3.7 GREENHOUSE GAS EMISSIONS

3.7.1 INTRODUCTION

This section discusses potential GHG emissions associated with the project construction, operation, and maintenance, and concludes that impacts will be less than significant. GHG emissions were calculated and reported in CO_2 equivalents (CO_2e) for CO_2, nitrous oxide (N_2O), and methane (CH_4) emissions from on-road and off-road emissions. Additionally, operational emissions of sulfur hexafluoride (SF_6) associated with potential leakage from gas-insulated switchgear at the switching stations were estimated. The implementation of the APMs described in Section 3.7.4.2, as well as those described in Section 3.3, Air Quality, will further reduce less-than-significant impacts.

The project's potential effects on GHG emissions were evaluated using the criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.7-1 and discussed in more detail in Section 3.7.4.

Table 3.7-1: CEQA Checklist for Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

3.7.2 REGULATORY BACKGROUND AND METHODOLOGY

3.7.2.1 Regulatory Background

Federal

The Supreme Court decision in *Massachusetts et al. v. Environmental Protection Agency et al.* (Supreme Court Case 05-1120) found that USEPA has the authority to list GHGs as pollutants and to regulate emissions of GHGs under the federal CAA. On April 17, 2009, USEPA found that CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride may contribute to air pollution and may endanger public health and welfare. USEPA has established reporting regulations that require specific facilities and industries to report their GHG emissions annually.

40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule. This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 metric tons of CO_2e emissions per year (USEPA 2013).

40 CFR Part 52. Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule. USEPA has mandated that Prevention of Significant Deterioration (PSD) and Title V requirements applies to facilities whose stationary source CO_2e emissions exceed 100,000 tons per year (USEPA 2010).

This project is not impacted by these regulations.

State

In 2006, the California State Legislature signed the Global Warming Solutions Act of 2006 (AB 32), which provides the framework for regulating GHG emissions in California. This law requires the CARB to design and implement emission limits, regulations, and other measures such that statewide GHG emissions are reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020. The statewide 2020 emissions limit is 427 million metric tons CO_2e.

State Executive Order S-3-05 established GHG reductions targets for the State of California. The targets called for a reduction of GHG emissions to 2000 levels by 2010; a reduction of GHG emissions to 1990 levels by 2020; and a reduction of GHG emissions to 80 percent below 1990 levels by 2050. The California Environmental Protection Agency secretary is required to coordinate development and implementation of strategies to achieve the GHG reduction targets.

Part of CARB's direction under AB 32 was to develop a scoping plan that contains the main strategies California would use to reduce GHG emissions that cause climate change. The scoping plan includes a range of GHG reduction actions, which 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.

CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions came into effect in January 2009. However, this project is not impacted by these regulations and mandatory reporting is not required.

CARB published a Preliminary Draft Staff Proposal titled *Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act* in October 2008 that included a proposal that non-transportation-related sources with GHG emissions less than 7,000 metric tons of CO_2e per should be presumed to have a less than significant impact.

On December 30, 2009, the California Resources Agency adopted amendments to the CEQA Guidelines to include analysis of GHG emissions in CEQA documents, deferring significance thresholds to the lead agency. The amendments became effective on March 18, 2010.

A Regulation for Reducing SF_6 Emissions from Gas Insulated Switchgear was implemented as part of AB 32, mandating utility-wide reduction of SF_6 emissions to a 1 percent leak rate by 2020.

Regional

The California Air Pollution Control Officer's Association has established the Greenhouse Gas Reduction Exchange (GHG Rx) for GHG emission credits in California. Credits listed on the GHG Rx come from voluntary emission reduction projects and can be purchased to offset GHG emissions. Local air districts act under state law and their discretionary requirements apply to PG&E utility projects.

In August 2008, the SJVAPCD's Governing Board adopted the Climate Change Action Plan (SJVAPCD 2008). The plan directed the SJVAPCD's Air Pollution Control Officer to develop guidance to assist lead agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project-specific GHG emissions on global climate change. On December 17, 2009, the SJVAPCD adopted Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009). The guidance and policy rely on the use of performance based standards, otherwise known as Best Performance Standards (BPS), to assess the significance of project-specific GHG emissions on global climate change during the environmental review process, as required by CEQA. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project-related impacts on global climate change. For traditional stationary source projects, BPS includes equipment type, equipment design, and operational and maintenance practices for the identified service, operation, or emissions unit class and category. For development projects, BPS focuses on measures that improve energy efficiency and those that reduce vehicle miles travelled. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual, is required to determine that a project would have a less than cumulatively significant impact. Construction impacts are not addressed under the SJVAPCD's GHG emissions guidance.

Local

Because the CPUC has exclusive jurisdiction over project siting, design and construction, the project is not subject to local (i.e., city and county) discretionary regulations.

3.7.2.2 Methodology

Emissions of criteria pollutants for offroad equipment and onroad vehicles were estimated using emission factors published by the South Coast Air Quality Management District (2015a, b) and USEPA (2011). The project schedule and equipment/vehicle list served as the basis for the analysis. Section 3.3.2.2 of the Air Quality section describes the estimation methodology in greater detail. The results of the analysis are presented in detail in Appendix C, and are summarized in tables contained in this section and compared against applicable significance thresholds.

Global Warming Potential (GWP) coefficients developed by the Intergovernmental Panel on Climate Change were used to quantify the globally averaged relative radiative forcing effects of a given GHG, using CO_2 as the reference gas. Accordingly, GWP coefficients of 1 for CO_2, 21 for CH_4, and 310 for N_2O were applied to aggregate GHGs as CO_2 equivalents (CO_2e) (CCAR 2009, USEPA 2012).

GHG emission calculations in this document were based on worst-case estimates of emissions to ensure presentation of a conservative environmental analysis.

3.7.3 ENVIRONMENTAL SETTING

3.7.3.1 Regional Setting

GHGs are global concerns, unlike criteria air pollutants or toxic air contaminants that are of regional and/or local concern. Scientific research indicates that observed climate change is most likely a result of increased GHG emissions associated with human activity (Intergovernmental Panel on Climate Change 2007), Global climate change describes a collection of phenomena, such as increasing temperatures and rising sea levels, occurring across the globe due to increasing anthropogenic emissions of GHGs. GHGs contribute to climate change by allowing ultraviolet radiation to enter the atmosphere and warm the Earth's surface, but also prevent some infrared radiation from the Earth from escaping back into space. The largest anthropogenic source of GHGs is the combustion of fossil fuels, which result primarily in CO_2 emissions.

As defined in AB 32, greenhouse gases include, but are not limited to CO_2, CH_4, NO_x, hydrofluorocarbons, perfluorocarbons, and SF_6. California is a substantial contributor to global GHG emissions. It is the second largest contributor in the United States and the 16th largest in the world (California Energy Commission 2006).

3.7.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for GHG emission impacts derived from Appendix G of the CEQA Guidelines, APMs, and potential project-related construction and operational air quality impacts.

3.7.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of the project's GHG emissions were evaluated for each of the criteria listed in Table 3.7-1, as discussed in Section 3.7.4.3.

Some California air districts, such as Monterey Bay Unified, San Luis Obispo County, Ventura County, South Coast, and San Diego County, have adopted, or have recommended for adoption, a significance threshold of 10,000 metric tons CO_2e per year for stationary source projects (MBUAPCD, 2013). This threshold was derived from emissions data from the four largest air districts in California and is based on the Executive Order S-3-05 GHG emissions reductions goal of 80 percent below 1990 levels by 2050, which is roughly equivalent to 90 percent below current levels by 2050. This emissions reduction goal goes beyond the AB 32 emissions reduction goal established for 2020. The emissions data suggests that approximately 1 percent of all stationary sources emit greater than 10,000 metric tons CO_2e per year and are responsible for 90 percent of GHG emissions. This significance threshold represents a capture rate of 90 percent of all new and modified stationary source-related projects. (SCAQMD 2008)

As noted above, this GHG significance threshold is intended for long-term operational GHG emissions associated with stationary sources; none of the air districts mentioned above have adopted or have recommended GHG significance thresholds for construction emissions. Therefore, in recent CEQA documents, the CPUC has adopted an approach to the determination of significance of GHG construction emissions based on guidance developed by the South Coast Air Quality Management District (SCAQMD). For construction related GHGs, SCAQMD recommends that total emissions from construction be amortized over 30 years and added to operational emissions and then compared to the operation-based significance threshold of 10,000 metric tons CO_2e per year (SCAQMD 2008).

3.7.4.2 Applicant-Proposed Measures

PG&E will implement the following APMs:

Construction

APM GHG-1 Minimize GHG Emissions

- Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time will depend on 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 start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a "common sense" approach to vehicle use, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law; 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 pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use.
- Maintain construction equipment in proper working conditions in accordance with PG&E standards.
- Minimize construction equipment exhaust by using low-emission or electric construction equipment where feasible. Portable diesel fueled construction equipment with engines 50 hp or larger and manufactured in 2000 or later will be registered under the CARB Statewide Portable Equipment Registration Program.
- Minimize welding and cutting by using compression of mechanical applications where practical and within standards.
- Encourage use of natural gas powered vehicles for passenger cars and light-duty trucks where feasible and available.
- Encourage the recycling of construction waste where feasible.

Operation and Maintenance

APM GHG-2: Minimize SF_6 E missions

- Incorporate Sanger Substation into PG&E's system-wide SF_6 emission reduction program. CARB has adopted the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear sections 95350 to 95359, title 17, California Code of Regulations,

which requires that company-wide SF_6 emission rate not exceed 1 percent by 2020. Since 1998, PG&E has implemented a programmatic plan to inventory, track, and recycle SF_6 inputs, and inventory and monitor system-wide SF_6 leakage rates to facilitate timely replacement of leaking breakers. PG&E has improved its leak detection procedures and increased awareness of SF_6 issues within the company. X-ray technology is now used to inspect internal circuit breaker components to eliminate dismantling of breakers, reducing SF_6 handling and accidental releases. As an active member of USEPA's SF_6 Emission Reduction Partnership for Electrical Power Systems, PG&E has focused on reducing SF_6 emissions from its transmission and distribution operations and has reduced the SF_6 leak rate by 89 percent and absolute SF_6 emissions by 83 percent.

- Require that the breakers at Sanger Substation have a manufacturer's guaranteed maximum leakage rate of 0.5 percent per year or less for SF_6.
- Maintain substation breakers in accordance with PG&E's maintenance standards.
- Comply with California Air Resources Board Early Action Measures as these policies become effective.

3.7.4.3 Potential Impacts

Potential project impacts related to GHG emissions were evaluated against the CEQA significance criteria are discussed in further detail in the following paragraphs. The impact analysis evaluates potential project impacts during the construction phase and the operation and maintenance (O&M) phase. In accordance with recent CPUC precedent, this analysis follows the SCAQMD's recommended approach for construction emissions by amortizing the construction emissions over a 30-year project lifetime then compares those emissions to the significance threshold of 10,000 metric tons CO_2e per year. The project includes the expansion of an existing 115 kV substation in unincorporated Fresno County, approximately two miles west of the City of Sanger. Substation expansion is proposed on approximately 7 acres of land contiguous to the existing substation. The O&M activities required for the expanded substation will not change from those currently required for the existing substation, with the exception of a slight increase in the number of circuit breakers and switchgear associated with the expanded substation and power line interconnections. The impact analysis is therefore focused the GHG implications of construction activities that are required for the expansion.

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? *Less than Significant*

Construction

Estimated construction emissions of GHGs (as CO_2e) are detailed in Table 3.7-2. These estimates assume implementation of APM GHG-1, with the total project emissions estimated to be 645 metric tons of CO_2e ($MTCO_2e$).

Table 3.7-3 indicates the reductions in GHG emissions from various construction activities, after implementation of applicant-proposed measures described in APM GHG-1. As shown in Table 3.7-3, these measures will reduce overall construction emissions by 4.4 percent (97 $MTCO_2e$).

Table 3.7-2: Estimated Construction Greenhouse Gas Emissions

Greenhouse Gas Emissions	Maximum lbs/day	Total Project metric tons
Carbon Dioxide (CO_2e)	16,110	631
Methane (CO_2e)	20	2
Nitrous Oxide (CO_2e)	195	12
Total (CO_2e)	16,325	645

Sources: SCAQMD 2015a, b, USEPA 2011, 2012, CCAR 2009

CO_2e = carbon dioxide equivalents, lbs = pounds

Notes:

1 short ton = 2,000 lbs

1 metric ton = 1,000 kg or 2,204.6 lbs

Table 3.7-3: Estimated Emissions Reductions from APMs Addressing GHG Impacts During Construction

Mitigation Measure	Unmitigated $MTCO_2e$	Reduction $MTCO_2e$	Mitigated $MTCO_2e$	Reduction % of unmitigated	Notes
Construction worker carpooling	214	64	150	8.7%	Reduce average number of commute vehicle trips by 30%
Minimize equipment idling	248	25	223	3.3%	Reduce average hours of operation from 10 to 9 hours per day
Maintain correct tire inflation	125	8	118	1.0%	Effective for onroad vehicles under project control
Recycle demolition/construction wastes (metals, concrete, etc.)	—	—	—	—	Will implement as feasible - not readily quantifiable from available information
Minimize welding and torch cutting	—	—	—	—	Will implement as feasible - not readily quantifiable from available information
Natural gas/electric/hybrid light duty vehicles for routine O&M service trips	—	—	—	—	Will implement as feasible - not readily quantifiable from available information
Not readily mitigable construction emissions	154	0	154	0.0%	
Total construction emissions	742	33	709	4.4%	

Sources: SCAQMD 2015a, 2015b, USEPA 2011, 2012, CCAR 2009, Applicant (PG&E)

CO_2e = carbon dioxide equivalents (calculated per USEPA global warming potentials [GWP])

BMPs = Best Management Practices

MT = metric ton (1 MT = 1,000 kg or 2,204.6 lbs)

Applying the SCAQMD's stationary source threshold of 10,000 $MTCO_2e$ as a proxy for a construction (nonstationary) sources, the emissions from project construction (645 $MTCO_2e$) will be well below the threshold. Therefore, GHG emissions from construction will not have a significant impact on the environment. Impacts would be less than significant, and no mitigation is needed.

Operations and Maintenance

PG&E will continue to periodically monitor and inspect the expanded substation at the same level of frequency as for the existing substation – and, for unscheduled maintenance events, at a reduced level of frequency due to the new equipment. Thus, there will be no noticeable change in GHG emissions from vehicular use during travel to and from the site or from general onsite maintenance and repair activities.

Onsite at Sanger Substation, there are currently sixteen 115kV circuit breakers; eight are oil-filled and eight contain SF_6. All of the existing circuit breakers will be replaced with 23 new SF_6 circuit breakers. This results in an overall increase of fifteen SF_6 circuit breakers. The impact of the fifteen additional 115kV SF_6 circuit breakers will be partially offset by the replacement of old SF_6 circuit breakers with more efficient SF_6 circuit breakers, which have an improved leakage rating. Nevertheless, there will be a slight increase in the potential for leakages of nontoxic GHG (SF_6 dielectric gas) from this equipment.

SF_6 is used as an insulator and arc suppresser in circuit breakers. Under normal conditions, SF_6 is completely contained in the equipment and is not released to the atmosphere. SF_6 will be released only if a leak occurs in one of the joints in the circuit breaker tank, or if a crack occurs in the breaker. In either case, the loss of gas pressure/density will cause an alarm to be sent directly to the control center. This alarm will enable operators to minimize loss of SF_6 because any potential leaks will be detected automatically and actions (including, but not limited to APM GHG-2) will be implemented so that any SF_6 leaks are fixed immediately. In addition, the new SF_6 circuit breakers are more efficient and will have a manufacturer's guaranteed annual maximum leakage rate of 0.5 percent.

Estimated GHG emissions from project operations associated with the incremental increase in SF_6-containing equipment are presented in Table 3.7-4. As shown, the estimated emissions (211.5 $MTCO_2e$) will be substantially less than the 10,000 $MTCO_2e$ threshold of significance.

Table 3.7-4: Operation and Maintenance GHG Emissions

Operations Activity	Emissions ($MTCO_2e$ per Year)
Sulfur hexafluoride (SF_6) leakage from 15 additional breakers	211.5

Sources: SCAQMD (2015a, 2015b), USEPA (2011, 2012) CCAR 2009, Applicant (PG&E)

$MTCO_2e$ = metric tons of carbon dioxide equivalents

Notes:

Assumes 15net additional breakers and an annual SF_6 mass leakage rate of 0.5 percent per breaker.

MT = metric ton (1 MT = 1,000 kg or 2,204.6 lbs)

This impact will be less than significant. Implementation of APM GHG-2, SF_6 emission reduction measures will further reduce less-than-significant impacts. APM GHG-2 is intended specifically to minimize fugitive SF_6 emissions through a programmatic, company-wide approach that includes inventorying, tracking and recycling SF_6 inputs, monitoring SF_6 leakage rates in order to facilitate timely replacement of leaking circuit breakers and switchgear, and using X-ray technology to inspect internal circuit breaker components to eliminate dismantling of breakers and thus reduce SF_6 handling and accidental releases.

b) Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases? *Less than Significant*

The project will not conflict with an applicable plan, policy, or regulation adopted to reduce GHG emissions during construction. The SJVAPCD does not have any plans, policies, or regulations relating to construction impacts, and the minimal, short-term construction GHG emissions will not interfere with the long-term goal of AB 32 to reduce GHG emissions to 1990 levels by 2020 or with the goals established by Executive Order S-3-05 (a reduction of GHG emissions to 1990 levels by 2020 and a reduction of GHG emissions to 80 percent below 1990 levels by 2050). Moreover, implementation of APM GHG-1 will further reduce construction GHG emissions by an estimated 4.4 percent (from 742 to 645 $MTCO_2e$). Therefore, any impacts will be less than significant, and no mitigation is needed.

No impacts associated with the emission of criteria pollutants will occur during O&M, nor will impacts occur from GHG emissions with the exception of those from SF_6.

Existing O&M crews will continue to operate and maintain the new substation equipment as they have the existing substation equipment. Consequently, O&M activities will not change and operation of the project will not conflict with air quality plans, violate an air quality standard, or result in a cumulatively considerable net increase in emissions. Implementation of APM GHG-2 will control operations-phase GHG emissions from SF_6-containing equipment to the extent practical. Therefore, no mitigation is needed.

The project will not conflict with an applicable plan, policy, or regulation adopted to reduce GHG emissions. The minimal short-term construction GHG emissions will not interfere with the long-term goal of AB 32 to reduce GHG emissions to 1990 levels by 2020. Additionally, GHG emissions from O&M activities will not increase significantly as a result of this project. While additional circuit breakers have the potential to emit a minor additional amount of SF_6 due to leakage during project operations, these emissions do not occur during normal operations and, if they did occur, would be promptly contained and would generate a minor and insignificant amount of CO_2e emissions. Therefore, the project will not conflict with plans, policies, or regulations intended to reduce GHGs.

3.7.5 REFERENCES

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3.8 HAZARDS AND HAZARDOUS MATERIALS

3.8.1 INTRODUCTION

This section describes existing conditions and potential impacts related to hazards and hazardous materials associated with construction, operation, and maintenance of the project. The analysis concludes that any impacts related to hazards and hazardous materials will be less than significant; the implementation of APMs described in Section 3.8.4.2 will further reduce less-than-significant impacts. No impacts will occur from the release of hazardous materials within 0.25 mile of a school or from activities within 2 miles of an airport or airstrip. Impacts will be limited to the construction phase because no changes to O&M will occur that would adversely affect hazards at the project site.

The project's potential effects associated with hazards and hazardous materials were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.8-1 and discussed in more detail in Section 3.8.4.

Table 3.8-1: CEQA Checklist for Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

3.8.2 REGULATORY BACKGROUND AND METHODOLOGY

3.8.2.1 Regulatory Background

The following paragraphs contain an overview of the regulations related to the use of hazardous materials, the disposal of hazardous wastes, and other potential hazards.

Federal

Resource Conservation and Recovery Act

Under the Resource Conservation and Recovery Act of 1976 (RCRA; 42 USC section 6901 et seq.), individual states may implement their own hazardous waste programs in lieu of RCRA as long as the state program is at least as stringent as the federal RCRA requirements (USEPA 2015a). RCRA (42 USC section 6901 et seq.) regulates hazardous waste from the time that waste is generated until its final disposal through management, storage, transport, and treatment. The federal government approved California's RCRA program, called the Hazardous Waste Control Law (HWCL), in 1992. In California, the RCRA program is administered by the California Environmental Protection Agency's (CalEPA) Department of Toxic Substances Control (DTSC), per direction of the USEPA.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; 42 USC Chapter 103) and associated Superfund Amendments provide the USEPA with the authority to identify hazardous sites, to require site remediation, and to recover the costs of site remediation from polluters (USEPA 2015b). CERCLA also enabled the revision of the National Oil and Hazardous Substances Pollution Contingency Plan, also known as the National Contingency Plan (NCP). The NCP provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants.

U.S. Department of Transportation Hazardous Materials Regulations

The U.S. Department of Transportation (DOT) Hazardous Materials Regulations (Title 49 CFR Parts 100–172) cover all aspects of hazardous materials packaging, handling, and transportation (DOT 2015).

State

Hazardous Waste Control Law

The HWCL (California Health and Safety Code [HSC], Chapter 6.5 section 25100 et seq.) authorizes Cal/EPA's DTSC to regulate the generation, transportation, treatment, storage, and disposal of hazardous wastes (State of California 2014). DTSC can also delegate enforcement responsibilities to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of HWCL.

Hazardous Substance Account Act

The Hazardous Substance Account Act (HSAA) (California HSC Chapter 6.8 section 25300 et seq.) is California's equivalent to CERCLA (State of California 2015). It addresses hazardous waste sites and apportions liability for them. The HSAA also provides that owners are responsible for the cleanup of such sites and the removal of toxic substances, where possible.

The two state agencies with primary responsibility for enforcing federal and state regulations related to hazardous material transport, and responding to hazardous materials transportation emergencies, are the California Highway Patrol (CHP) and California Department of Transportation (Caltrans), respectively.

Occupational Health and Safety

The California Division of Occupational Safety and Health (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within the state (California Code of Regulations [CCR] Title 8). Cal/OSHA standards are more stringent than federal Occupational Safety and Health Administration regulations and take precedence.

Hazardous Materials Management

The California Office of Emergency Services is the state office responsible for establishing emergency response and spill notification plans related to hazardous materials accidents. CCR Title 26 is a compilation of the chapters or titles of the CCR that are applicable to hazardous materials management.

Porter-Cologne Water Quality Control Act

As discussed in more detail in Section 3.9, Hydrology and Water Quality, the Porter-Cologne Water Quality Control Act (California Water Code, Division 7) is the provision of the California Water Code that regulates water quality in California and authorizes the SWRCB and nine RWQCBs to implement and enforce the regulations. The RWQCBs regulate discharges under Porter-Cologne primarily through the issuance of waste discharge requirements. Anyone discharging or proposing to discharge materials that could affect water quality must file a report of waste discharge. The SWRCB and the RWQCBs can make their own investigations or may require dischargers to carry out water quality investigations and report on water quality issues. Porter-Cologne provides several means of enforcement, including cease and desist orders, cleanup and abatement orders, administrative civil liability orders, civil court actions, and

criminal prosecution. The project area is under the jurisdiction of the Central Valley RWQCB – Fresno Office.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) (CCR Title 27) was mandated by the State of California in 1993. The Unified Program was created to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities for six hazardous materials programs. The program has six elements:

- Hazardous Waste Generators and Hazardous Waste Onsite Treatment
- Underground Storage Tanks
- Aboveground Petroleum Storage Act
- Hazardous Materials Release Response Plans and Inventories
- California Accidental Release Prevention
- Uniform Fire Code Hazardous Materials Management Plans and Hazardous Materials Inventory Statements

At the local level, this is accomplished by identifying a Certified Unified Program Agency (CUPA) that coordinates all of these activities to streamline the process for local businesses. The Fresno County Department of Public Health is approved by Cal/EPA as the CUPA for Fresno County.

Rules for Overhead Electric Line Construction

Under Section 35 of General Order 95, the CPUC regulates all aspects of design, construction, and O&M of electrical power lines and fire safety hazards for utilities subject to their jurisdiction (CPUC 2015).

Fire Prevention Standards for Electric Utilities

The Fire Prevention Standards for Electric Utilities (CCR Title 14, sections 1250-1258) provide definitions, maps, specifications, and clearance standards for projects under the jurisdiction of California Public Resources Code (PRC) sections 4292 and 4293 in State Responsibility Areas (SRAs).

California Fire Code

The California Fire Code 2010 (CCR Title 24, Part 9) is based on the International Fire Code from the International Code Council and contains consensus standards related to establishing good practices to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new or existing buildings, structures, and premises.

California Public Utilities Commission

The CPUC's Utilities Safety and Reliability Branch of the Consumer Protection and Safety Division was established, in part, to oversee the safety of privately owned electric, communications, natural gas, and propane gas systems. It enforces CPUC rules and regulations, investigates and recommends ways to reduce utility related accidents, and advises the CPUC on

related matters. The CPUC has created a list of safety-related General Orders to govern the construction and operation of power and communication lines subject to its jurisdiction.

California Department of Toxic Substances Control

The California Hazardous Waste Control Act governs hazardous waste management and cleanup in the State (HSC Chapter 6.5-6.98). The act mirrors RCRA and imposes a cradle-to-grave regulatory system for handling hazardous waste in a manner that protects human health and the environment. It requires all businesses to report the quantity and locations of hazardous materials on an annual basis if the business stores (1) more than 55 gallons of a liquid or 500 pounds of a solid hazardous material, (2) more than 200 cubic feet of a compressed gas, or (3) a radioactive material that is handled in quantities for which an emergency plan is required. Businesses falling within these limits must prepare a Hazardous Material Business Plan (HMBP), which includes spill prevention, containment, emergency response measures, and a contingency plan. Implementation of the Hazardous Waste Control Act is the responsibility of the DTSC.

Local

Because the CPUC has exclusive jurisdiction over the siting, design, and construction of the project, the project is not subject to local discretionary regulations. This section provides information on adopted emergency response plans or evacuation plans for informational purposes and to assist with CEQA review.

Adopted Emergency Response Plans/Evacuation Plans

The following emergency plans are in effect in the project area:

Fresno County Operational Area Master Emergency Services Plan. Fresno County Office of Emergency Services (OES) coordinates the development and maintenance of the Fresno County Operational Area Master Emergency Services Plan. This plan serves as a guide for the County's response to emergencies/disasters in the unincorporated areas of the county. The purpose of this plan is to ensure the most effective and economical use of all resources, material and manpower, for the maximum benefit and protection of effected populations in an emergency/disaster. In the County's role as the Operational Area lead agency, County OES maintains ongoing communication with local government agencies (County Departments, Incorporated Cities, Special Districts, and Public School Districts) as well as many state and federal agencies and nonprofit organizations to maintain and enhance the communities capability to respond to and recover from disasters. During disasters, these communications concern situation reports, damage assessments, declarations of emergency for local, state and federal agencies, mutual aid requests, and disaster cost reimbursement application procedures and coordination.

Fresno County Multi-Hazard Mitigation Plan. The Fresno County Multi-Hazard Mitigation Plan was developed in 2009 through cooperation between the county and 12 other jurisdictions (incorporated and unincorporated communities, flood control districts, fire safe council) allowing for the geographical coverage of everything within Fresno County's jurisdictional boundaries. The plan identifies and analyzes existing hazards (such as earthquakes, fire, drought, and severe weather), assesses community vulnerability and mitigation capabilities, and provides mitigation strategies, a mitigation action plan, and an implementation program.

Airport Land Use Plans

The nearest airport to the project area is located approximately 6.5 miles away. There are no applicable airport land use plans that apply to the project area.

3.8.2.2 Methodology

Methodology used to analyze impacts resulting from hazards and hazardous materials includes identifying general types of hazardous materials and activities used during project construction, operation, and maintenance. Potential impacts on the environment and public health from hazards and hazardous materials were further evaluated using information on the existing uses of the project site and adjacent properties, historical uses, and recorded occurrences of contamination to determine the likelihood of encountering hazardous materials.

A report was obtained from Environmental Data Resources, Inc. (EDR 2012) and reviewed to screen for hazardous waste sites in the proposed project area. The EDR report includes (1) information on sites within 0.25 mile on either side of the project area that were identified in federal, state, and local databases related to hazardous materials and wastes; and (2) maps showing the locations of these sites. The database search process reviews multiple lists for historically contaminated properties and businesses that use, generate, or dispose of hazardous materials or petroleum products in their operation. In addition, the EDR search reviews lists of active contaminated sites that are currently undergoing monitoring and remediation.

As specified by CEQA significance criterion (Table 3.8-1), the EDR report was used to identify sites along the routes that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Cortese List). Because the Cortese List is no longer specifically updated by the state, those requesting a copy of the Cortese List are now referred directly to the appropriate information resources contained on the Internet web sites of the boards or departments that are referenced in the statute. Therefore, the EDR report's listing of Cortese List sites was supplemented by reviewing the following:

- Sites listed on DTSC's EnviroStor database (DTSC 2014)
- Sites listed on the SWRCB's GeoTracker database (SWRCB 2015)
- SWRCB lists of sites: (1) with reported waste constituents above hazardous waste levels outside the waste management unit, (2) with active Cease and Desist Orders and Cleanup and Abatement Orders for hazardous wastes, or (3) identified by DTSC as subject to corrective action pursuant to Section 25187.4 of the California Health and Safety Code (Cal/State Board of Equalization 2015)

The EDR report was also used to screen for nearby hazardous waste sites that could potentially affect the project based on the significance criteria summarized in Table 3.8-1.

The potential for activities and equipment that could pose fire hazards was evaluated through review of state fire hazard maps (California Department of Forestry and Fire Protection [CAL FIRE] 2012).

3.8.3 ENVIRONMENTAL SETTING

3.8.3.1 Hazardous Materials Use/other Safety Hazards at Sanger Substation

The unstaffed Sanger Substation, which has been in operation since the 1920s, houses mineral oil-filled electrical equipment (e.g., transformers, regulators, oil circuit breakers) and associated equipment, material, and controls. The current HMBP (PG&E 2015) includes an inventory of hazardous materials utilized at Sanger Substation, including wet cell batteries needed to provide backup power for monitoring, alarm, protective relaying, instrumentation and control, and emergency lighting during power outages; nitrogen gas; SF_6 gas; and insulating oil containing greater than or equal to 500 ppm polychlorinated biphenyls (PCBs) used to insulate the current oil-filled circuit breakers. Diesel and gasoline are needed for motor vehicle operation during routine inspections and maintenance, as well as to temporarily operate generators that might be needed to perform maintenance activities. Other potential operational hazards associated with the substation include fires and the presence of a high voltage, open-air conductor or "overhead electric bus," which can create a high-temperature electrical arc between the electrical conductor and persons or objects.

Based on known agricultural use, there is potential for the presence of pesticides and herbicides in soil in the project site.

The regulatory database searches described in Section 3.8.2.2, Methodology, identified no known contaminated sites at Sanger Substation or within a 1-mile search radius of the project area.

3.8.3.2 Safety Procedures at Sanger Substation

A 9-foot-high fence—8 feet of chain link topped with an additional 1 foot of barbed wire—extends around the entire perimeter of the existing substation yard. There is only one vehicle entrance into the yard, and this entrance is gated; thus, public access to the substation is restricted.

At least once a month, the substation is formally inspected by qualified PG&E personnel trained to verify that all oil-filled equipment/containers show no evidence of active leakage or resultant spills. In addition, substation equipment is monitored remotely from the Fresno PG&E Service Yard Headquarters for any oil or gas releases. Various sized mobile tankers and tanks are brought on site for interim oil storage during the repair of large volume mineral oil-filled equipment. They are constructed of steel or other materials that are compatible with insulating oils. The Substation Maintenance Supervisor is responsible for the tanks and their contents. During monthly facilities inspections, the perimeter fencing is also examined.

Because it is unstaffed, Sanger Substation is remotely monitored by PG&E's Fresno District Office, which is staffed 24 hours per day, 7 days per week. If equipment malfunctions, O&M personnel are dispatched to the substation to investigate the problem and take appropriate corrective action. PG&E uses high-speed relay equipment that senses a broken-line condition and actuates circuit breakers to de-energize the line in milliseconds.

PG&E's power lines and station facilities are designed and constructed with grounding devices. In the event of a lightning strike on a power line, this safety feature ensures that the strike is discharged to appropriate ground.

An SPCC Plan (PG&E 2013) has been prepared for the existing Sanger Substation. PG&E's procedures require the reporting of all PCB spills above the reportable quantity, or with concentrations of 50 ppm or greater, and any oil spills reaching navigable waters or that may pose a hazard or potential hazard to human health, property, or the environment. The SPCC Plan outlines procedures to be followed by PG&E personnel in the event of a spill. Small spills may occur during handling and maintenance of equipment or transfer operations. These incidental spills are not reported. All oil spills are contained immediately and cleaned up as soon as practicable. PG&E procedures include spill prevention measures for every aspect of the facility that involves use of mineral oil-filled equipment or containers.

The Sanger Substation HMBP outlines emergency evacuation routes, agreements with emergency response agencies, and emergency response procedures, as well as provides a hazardous materials inventory. HMBP inspection logs are retained electronically at the Fresno PG&E Service Yard Headquarters.

3.8.3.3 Fire Hazard Ratings in the Project Area

Fire hazard ratings in Fresno County are based on ratings assigned by the Insurance Services Office, an agency that evaluates the fire protection features for all fire departments for the purpose of establishing rates for underwriters. The availability of both water and fire protection services form the basis of the rating scale that ranges from 1 (best) to 10 (worst). The project site is located in an area rated as 5 by the Insurance Services Office (Fresno County 2000). The presence of roads and cultivated fields, and the absence of urban development decrease the risk of significant hazard to the public posed by wildfire in the area around Sanger Substation. Fire protection services near the project vicinity are discussed in detail in Section 3.14, Public Services.

3.8.3.4 Airports

There are no airports in the project vicinity. The nearest airport is approximately 6.5 miles from the project area.

3.8.3.5 Schools

The public school nearest the project site is the Ronald W. Reagan Elementary School, located approximately 1.6 miles northeast of the substation. There are also several private schools throughout Fresno County; however, there are no private schools within 0.5 mile of the project site.

3.8.3.6 Existing Hazardous Materials/Sites

A review of the online databases and EDR as described in Section 3.8.2.2 determined that there are no known existing hazardous materials sites within 0.25 mile of the project area.

3.8.3.7 Wildland Fire Hazards

As defined by CAL FIRE, the project area and vicinity are located within a Local Responsibility Area (LRA). Irrigated and cultivated agricultural fields and paved road corridors reduce the potential for wildland fire in the project vicinity. Fire protection services and equipment near the project alignment are discussed in detail in Section 3.14, Public Services.

3.8.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for impacts related to hazards and hazardous materials derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational impacts related to hazards and hazardous materials.

3.8.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts related to hazards and hazardous materials was evaluated for each of the criteria listed in Table 3.8-1, as discussed in Section 3.8.4.3.

3.8.4.2 Applicant-Proposed Measures

PG&E will implement the following APMs:

APM HAZ-1. SPCC

In the event of an accidental spill, the substation is equipped with a retention basin that meets SPCC Guidelines (40 Code of Federal Regulations 112). The retention basin will be sufficiently sized to accommodate the accidental spill of all mineral oil from the largest transformer located at the substation. The substation will also be equipped with lead-acid batteries to provide backup power for monitoring, alarm, protective relaying, instrumentation and control, and emergency lighting during power outages. Containment will be constructed around and under the battery racks, and the SPCC will address containment from a battery leak.

A site-specific SPCC Plan will be prepared prior to the initiation of construction.

APM HAZ-2. Emergency Spill Response Equipment And Training

Emergency spill response and clean up kits will be available onsite as well as at the Fresno PG&E Service Yard Headquarters, and readily available for the cleanup of an accidental spill at the substation. Construction crews will be trained in safe handling and cleanup responsibilities prior to the initiation of construction.

APM HAZ-3. Shock Hazard

All authorized personnel working on site, during either construction or maintenance and operation, will be trained according to PG&E standards. To minimize potential exposure of the public to electric shock hazards, an 8-foot-tall chain link fence topped with 1 foot of barbed wire will extend around the perimeter of the expanded substation for a total of approximately 9 feet,

thus restricting site access. Warning signs will be posted to alert persons of potential electrical hazards. All electric power lines will be designed in accordance with CPUC General Order 95 Guidelines for safe ground clearances established to protect the public from electric shock.

APM HAZ-4. Soil Testing and Disposal

In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed during site grading activities or excavation activities, the excavated soil will be tested, and if contaminated above hazardous waste levels, will be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil will require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations.

3.8.4.3 Potential Impacts

Project impacts related to hazards and hazardous materials were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and the O&M phase.

The project consists of expanding the existing Sanger Substation into an adjacent agricultural field. The expansion will include installing additional electrical equipment and buildings to house the equipment, and associated power line modifications. O&M activities will remain consistent with current procedures.

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? *Less than Significant*

The project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Project construction will require the use of motorized heavy equipment, including trucks, cranes, backhoes, and air compressors. This equipment requires the use of hazardous materials, such as gasoline, diesel, oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids. These materials will be transported to the substation work site according to DOT standards and utilized in designated construction staging areas or other suitable locations identified prior to the onset of construction. APM HAZ-2 requires construction crews to be trained in safe handling of hazardous materials prior to the initiation of construction. PG&E will follow its existing worker training programs. Treated wood poles and other hazardous waste material that cannot be recycled by PG&E will be disposed of at a landfill authorized to handle such materials.

Other potential construction hazards associated with construction at the electrical substation include the presence of a high voltage, open-air conductors, which can create a high temperature electrical arc between the electrical conductor and persons or objects. PG&E's power lines and station facilities are designed and constructed with grounding devices, however, and in the event of a lightning strike on a power line, this safety feature ensures that the strike is discharged to appropriate ground, and all workers will be trained in appropriate safety procedures, as described in APM HAZ-3.

Because hazardous materials will be transported, used, and disposed in accordance with appropriate procedures, and PG&E will follow its existing worker safety training programs to

ensure worker safety that will include implementation of APM HAZ-2 and APM HAZ-3, the project will not create a significant hazard to the public or environment. Any impacts will be less than significant, and no mitigation is needed.

O&M of the substation will require the routine use of the same types of hazardous materials used at the existing substation (e.g., nitrogen gas, SF_6), and they will be handled in accordance with the HMBP and SPCC (APM HAZ-1), which will be updated to include the expanded substation, and other standard safety practices. As part of the project, the older oil-filled circuit breakers will be replaced with newer circuit breakers so that, in the future, oil-filled circuit breakers that could contain small amounts of PCBs will no longer be used. Other potential hazards associated with the electrical substation include the presence of a high voltage, open-air conductors and power lines. Such hazards are already present at the existing substation; moreover, the proposed upgrades are being implemented, in part, to maintain conformance with the Institute of Electrical and Electronic Engineers' safety standards. Additionally, all workers will be trained in appropriate safety procedures, as described in existing PG&E safety training programs and in APM HAZ-2 and APM HAZ-3, and the substation site will continue to be fenced in order to prevent public access. No impacts will occur during O&M because the risks present at the existing substation will not change with the substation expansion, and appropriate safety measures and practices will continue to be implemented. Impacts will be less than significant.

b) Would the project 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? ***Less than Significant***

As discussed above, project construction will require the use of motorized heavy equipment and hazardous materials. The potential exists for accidental spills during all phases of construction, but all work will be conducted in accordance with appropriate regulations, existing PG&E safety programs and procedures, and implementation of APM HAZ-1, APM HAZ-2, APM HAZ-3, and APM HAZ-4. The project will not create a significant hazard to the public or environment through accidental releases of hazardous materials given the implementation of APM HAZ-1, APM HAZ-2, APM HAZ-3, and APM HAZ-4, and any impacts during project construction will be less than significant.

There will be no change in the potential for the project to create a hazard to public health or the environment through accidents involving the release of hazardous materials during O&M. As described under APMs HAZ-1 and HAZ-2, existing PG&E O&M policies to address the potential release of hazardous materials in upset or accident conditions will be updated prior to completion of project construction. Impacts associated with O&M activities will be less than significant.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school? ***No Impact***

No schools are located within 0.25 mile of the project site. The public school nearest the project area is the Ronald W. Reagan Elementary School located approximately 1.6 miles northeast of the substation. Therefore, no impacts will occur.

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? ***No Impact***

No known or suspected hazardous materials sites were identified in the project vicinity that could create a significant hazard to the public or the environment. There is a potential for unidentified areas of contamination from pesticides or herbicide use or from other sources to be present in the expansion area, however. In the event of an unanticipated discovery of contaminated soils at the project site, the measures identified in APM HAZ-4 will be implemented, which will require the appropriate testing and disposal of the contaminated soil, and thus will prevent hazards to the public or the environment. Therefore, no impacts will occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? ***No Impact***

The project is not located near any public or private airstrip. Fresno Yosemite International Airport, which is a public airport, is located approximately 6.5 miles northwest of the project area. Therefore, no impacts will occur.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? ***No Impact***

The project is not located near any public or private airstrip. Turner Field, a privately owned airport, is located approximately 6.5 miles southwest of the project vicinity in the community of Malaga (a suburb of Fresno). Therefore, no impacts will occur.

g) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? ***Less than Significant***

All construction will occur on PG&E lands or other private lands, although some activities, such as equipment delivery, could temporarily affect access. This effect will be temporary and localized, however, and any impacts will be less than significant because the equipment could be readily moved aside in the event of an emergency. Moreover, in accordance with APM TRAN-l, all construction activities will be coordinated with local law enforcement and fire protection agencies, and emergency service providers will be notified of the timing, location, and duration of construction activities.

No impacts will occur during O&M because there will be no change in traffic patterns.

h) Would the project 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***

The project area is located in an area of irrigated and cultivated agricultural fields and road corridors. Heat or sparks from vehicles or equipment have the potential to ignite dry vegetation and cause a fire, as do any welding activities required for construction of towers or support structures. Equipment used during construction could create sparks and ignite a fire. Other potential fire hazards include worker behavior such as smoking and disposing of cigarettes, or parking vehicles on dry vegetation. The project area is characterized by presence of roads and cultivated fields, and the absence of urban development which decreases the risk to the public posed by wildfire in the area around Sanger Substation. The project is not in a high fire hazard

area and there is not be a lot of dry vegetation in the project area. Impacts from wildland fires will be less than significant.

No impacts will occur during O&M because there will be no change in the types of risks present at the existing substation, and appropriate safety measures and practices will continue to be implemented.

3.8.5 REFERENCES

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3.9 HYDROLOGY AND WATER QUALITY

3.9.1 INTRODUCTION

This section describes existing conditions and potential impacts to hydrological resources, water quality, and flood control as a result of construction, operation, and maintenance of the project. The analysis concludes that impacts will be avoided or less than significant in these areas; the implementation of APMs described in Section 3.9.4 will further reduce less-than-significant impacts. The project's potential effects on hydrology, water quality, and flood control were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.9-1 and discussed in more detail in Section 3.9.4.

Table 3.9-1: CEQA Checklist for Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of 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, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

3.9.2 REGULATORY BACKGROUND AND METHODOLOGY

3.9.2.1 Regulatory Background

Federal

National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) is responsible for determining flood elevations and floodplain boundaries based on U.S. Army Corps of Engineers studies. FEMA is also responsible for distributing the Flood Insurance Rate Maps (FIRMs) used in the National Flood Insurance Program (NFIP) (42 USC Ch. 50, Section 4102). These maps identify the locations of special flood hazard areas, including 100-year floodplains (FEMA 2015). FEMA allows non-residential development in the floodplain; however, FEMA has criteria to "constrict the development of land which is exposed to flood damage where appropriate" and "guide the development of proposed construction away from locations which are threatened by flood hazards." Federal regulations governing development in a floodplain are set forth in Title 44, 60 CFR, enabling the FEMA to require municipalities that participate in the NFIP to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains.

State

Clean Water Act Section 402

Under CWA Section 402 (33 USC Section 1251 et seq.), the National Pollutant Discharge Elimination System (NPDES) controls water pollution by regulating point sources of pollution to waters of the U.S. The California SWRCB administers the NPDES permit program in California. Projects that disturb one or more acres of soil are required to obtain coverage under the state NPDES General Permit for Discharges of Stormwater Associated with Construction Activity. A SWPPP must be developed and implemented for each project covered by the general permit. The SWPPP must include BMPs designed to reduce potential impacts to surface water quality during project construction and operation.

Sustainable Groundwater Management Act

In September 2014, legislation was passed to strengthen local management and monitoring of groundwater basins most critical to the state's water needs. The Sustainable Groundwater Management Act prioritizes groundwater basins that are currently overdrafted and sets a timeline for implementation:

- By 2017 local groundwater management agencies must be identified;
- By 2020 over-drafted groundwater basins must have sustainability plans;
- By 2022 other high and medium priority basins not currently in overdraft must have sustainability plans; and
- By 2040 all high and medium priority groundwater basins must achieve sustainability

The Sustainable Groundwater Management Act also provides measurable objectives and milestones to reach sustainability and a state role of limited intervention when local agencies are unable or unwilling to adopt sustainable management plans.

California Statewide Groundwater Elevation Monitoring (CASGEM) Program

In 2009, SB X7-6 was passed and aims to modify the California Water Plan by requiring parties who wish to monitor their groundwater supply to notify and begin reporting to DWR. SB X7-6 is now known as California DWR Statewide Groundwater Elevation Monitoring (CASGEM) program. As part of this effort, DWR prepared the Groundwater Basin Prioritization, which is a statewide ranking of groundwater basin importance that incorporates groundwater reliance and focuses on basins producing more than 90 percent of the state's annual groundwater. Finalized in June 2014, the Basin Prioritization indicates that 127 of California's 515 groundwater basins and subbasins are High and Medium priority. These basins account for 96 percent of California's annual groundwater pumping and supply 88 percent of the population which resides over groundwater basins. The remaining 388 basins are Low and Very Low priority and comprise 75 percent of the groundwater basins in the State (DWR 2014a). Basins ranked as High or Medium priority by the CASGEM Basin Prioritization Process, including the San Joaquin Valley have been estimated to have higher potential for future subsidence (DWR 2014b).

Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local discretionary regulations. PG&E will secure ministerial permits, as required. The Fresno County Public Works and Planning Department requires and enforces standards contained in the California Building Code related to grading and construction, including those that may directly or indirectly affect surface water quality by contributing to erosion or siltation or alter existing drainage patterns.

3.9.2.2 Methodology

The description of the hydrologic setting is based on a site visit in March 2012, the Biological Resources Technical Report prepared for this project (North State Resources, Inc. 2015), discussed in Section 3.4, Biological Resources and provided separately to CPUC staff), and information from the County of Fresno, City of Fresno, FEMA, and the U.S. Geological Survey (USGS). The information was then used to evaluate the project against the CEQA Checklist to determine potential impacts.

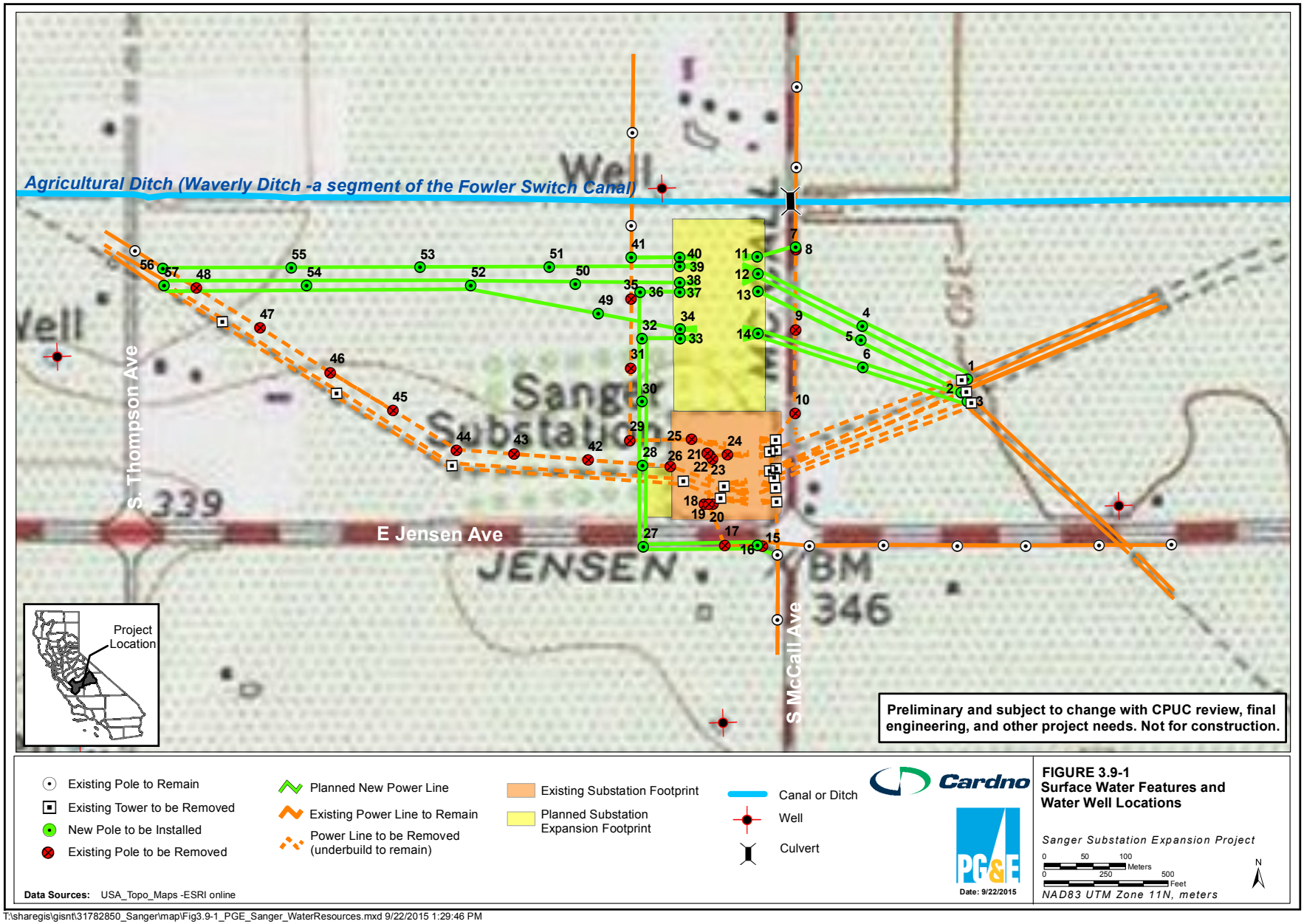
3.9.3 ENVIRONMENTAL SETTING

3.9.3.1 Regional Setting

The project site is located in the San Joaquin Valley, which is separated into two hydrologic regions by an indistinct divide consisting of accumulated alluvium that interrupts the lengthwise slope of the Valley. The Tulare Lake Hydrologic Region is the southern region and drains internally except when rare flooding carries its water north across the divide into the San Joaquin River. The rivers in the Tulare Lake Hydrologic Region include the Kings, Kaweah, Tule, and Kern Rivers. The San Joaquin River Hydrologic Region encompasses the northern San Joaquin Valley and is drained toward the Sacramento-San Joaquin Delta by the San Joaquin River and its tributaries, including the Fresno, Merced, Tuolumne, and Stanislaus rivers (DWR 2003). The San Joaquin River Hydrologic Region relies heavily on groundwater, which makes up approximately 30 percent of the annual supply for agricultural and urban uses (DWR 2003).

The project site is located in the San Joaquin River Hydrologic Region, which covers approximately 9.7 million acres and includes all of Calaveras, Tuolumne, Mariposa, Madera, San Joaquin, and Stanislaus counties; most of Merced and Amador counties; and parts of seven other counties (DWR 2003). The region contains the entire Yosemite Valley Basin and Los Banos Creek Valley Basin, and part of the San Joaquin Valley Groundwater Basin. The project site is located within the San Joaquin Valley Groundwater Basin in the Kings Subbasin (USGS and SWRCB 2012). Recent groundwater levels in portions of the San Joaquin Valley are more than 100 feet below previous historical lows (DWR 2014b). Within Fresno County, there are two major river systems–the San Joaquin River and the Kings River–and several creeks and streams (County of Fresno 2000a). The project site is located in a level agricultural area approximately 5 miles west of the Kings River; this river flows in a southwesterly direction east of the City of Sanger. The San Joaquin River is located over 10 miles north of the project. The only surface water feature in the project vicinity is a bermed agricultural ditch (the Waverly Ditch of the Consolidated Irrigation District [Provost & Pritchard 2010]) that adjoins the private road that borders the expanded substation on the north (Figure 3.9-1). The agricultural ditch is a constructed feature and does not qualify as waters of the U.S. as further discussed below and in Section 3.4 (Biological Resources).

The project site elevation ranges from approximately 348 to 352 feet above mean sea level from Jensen Avenue in the south to the northern expanded project boundary, respectively. The surface topography is flat with a slope of approximately 0 to 1 percent (Google Earth, Inc. 2015). The majority of the expanded project site is along County roads and consists of agricultural land.



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3.9.3.2 Climate

The project site is located in a Mediterranean-type climate zone typical of central California. This zone is characterized by cool, wet winters and hot, dry summers, with winds typically blowing from the northwest. Typical of the San Joaquin Valley, the project site is situated in the rain shadow of the Coast Ranges, resulting in normal annual precipitation of approximately 11.5 inches and a range of approximately 3 to 21 inches per year. The vast majority of all rain falls between the months of October and April (NOAA 2015). Periods of abundant rainfall and prolonged droughts are frequent in the historical record.

3.9.3.3 Surface Water

Although no rivers or streams flow through the project site, Fowler Switch Canal and several smaller irrigation canals are located within the vicinity of the project. For a description of wetlands in the project area, refer to Section 3.4, Biological Resources.

The only surface water feature in the project vicinity is a bermed agricultural ditch, which adjoins the private road that borders the expanded substation on the north (Figure 3.9-1). This agricultural ditch is the Waverly Ditch, an offshoot of the Fowler Switch Canal, operated by the Consolidated Irrigation District (Provost and Pritchard 2010). Within the project vicinity, the ditch flows from east to west and consists of an open dirt channel, which is regularly cleared of vegetation. Upstream and downstream of the project site, the ditch construction alternates between concrete channels, open dirt canal, and underground conveyance. The ditch is supplied with water from the Fowler Switch Canal, approximately 1.6 miles east of the project site. The project site does not drain to the ditch. From the project site, the ditch flows approximately 2.3 miles west to the Briggs Canal. The site photographs in Section 3.4 provide views of the agricultural ditch in the project vicinity.

The agricultural ditch is a constructed feature and does not qualify as waters of the U.S. as discussed in Section 3.4 (Biological Resources). The canals in the project vicinity provide an important source of water for the surrounding agricultural lands. Canals and irrigation ditches primarily include concrete or other hard structure banks with some unvegetated dirt banks. Limited vegetation is present on dirt banks or in mud bottoms.

3.9.3.4 Groundwater

The project site is located within the Kings subbasin of the San Joaquin Valley Groundwater Basin. The two major rivers within or bordering the subbasin are the San Joaquin River, which runs along its northern border, and the Kings River, which is within the eastern portion of the subbasin (DWR 2006a, as cited in Burton et al. 2012). The Kings Subbasin includes lands south of the San Joaquin River, east of the Sierra Nevada Mountains, north of the Kaweah and Tulare Lake groundwater subbasins, and west of the Delta-Mendota and Westside groundwater subbasins.

This aquifer system consists of alluvial deposits of Quaternary age underlain by older unconsolidated marine and continental deposits of the Tertiary and Quaternary ages (Burton et al. 2012). Deposits in the eastern portion of the Kings subbasin, where the project site is located, are generally highly permeable. Groundwater flow in the subbasin is generally from northeast to southwest.

Large overdrafts of groundwater in the general vicinity of the project site are associated with the major cities that locally lower the water table (Fresno and Clovis) (County of Fresno 2000a). The Kings subbasin has been identified by the DWR as in a critical condition of overdraft (DWR 2003). Depth to groundwater has not been observed at the project site, but typically is encountered at greater than 100 feet bgs in the area (City of Fresno 2009). Agricultural operations at and near the project site rely on groundwater wells; the closest well is just north of the expanded substation near its northwest corner (Figure 3.9-1).

3.9.3.5 Flood Potential

The major flood issues in Fresno County are associated with the San Joaquin River, the Kings River, and their tributaries (County of Fresno 2000b). The project is not near streams or rivers, and the closest surface water is the bermed agricultural ditch located north of the expanded substation.

There are four major dams in Fresno County with known populations in their respective inundation areas. Pine Flat Dam, located on the Kings River, is approximately 18 miles northwest of the project site and creates a reservoir capacity of approximately 1,000,000 acre-feet. Although the project site is within the Kings River floodplain, FEMA has issued a FIRM (06019C2155H), which shows that the project site is not within or adjacent to a designated 100-year flood hazard area. However, the project site is located within the dam failure inundation area associated with Pine Flat Dam, as identified by the 2000 Background Report for the Fresno County General Plan and confirmed by the County of Fresno Office of Emergency Services (K. Austin pers. comm. 2015). Under a full reservoir total dam failure scenario, it would take approximately one hour for the leading edge of flood waters to travel from the dam to the project vicinity.

3.9.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for hydrology and water quality impacts derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational hydrology and water quality impacts.

3.9.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts related to hydrology and water quality were evaluated for each of the criteria listed in Table 3.9-1, as discussed in Section 3.9.4.3.

3.9.4.2 Applicant-Proposed Measures

PG&E will implement the following APM:

APM GEO-2/APM WQ-1. Development and Implementation of Stormwater Pollution Prevention Plan

Because the project involves more than an acre of soil disturbance, a SWPPP will be prepared for the project as required by the state NPDES General Permit for Discharges of Stormwater Associated with Construction Activity. This plan will be prepared in accordance with the Water Board guidelines and other applicable erosion and sediment control BMPs. Implementation of the plan will help stabilize disturbed areas and will reduce erosion and sedimentation. The SWPPP will designate BMPs that will be followed during and after construction of the project, examples of which may include the following erosion-minimizing measures:

- Using drainage control structures (e.g., straw wattles or silt fencing) to direct surface runoff away from disturbed areas.
- Strictly controlling vehicular traffic.
- Implementing a dust-control program during construction.
- Restricting access to sensitive areas.
- Using vehicle mats in wet areas.
- Revegetating disturbed areas, where applicable, following construction.

In areas where soils are to be temporarily stockpiled, soils will be placed in a controlled area and will be managed with similar erosion control techniques. Where construction activities occur near a surface waterbody or drainage channel and drainage from these areas flows towards a waterbody or wetland, stockpiles will be placed at least 100 feet from the waterbody or will be properly contained (such as berming or covering to minimize risk of sediment transport to the drainage). Mulching or other suitable stabilization measures will be used to protect exposed areas during and after construction activities. Erosion-control measures will be installed, as necessary, before any clearing during the wet season and before the onset of winter rains. Temporary measures, such as silt fences or wattles intended to minimize erosion from temporarily disturbed areas, will remain in place until disturbed areas have stabilized.

The SWPPP will be designed specifically for the hydrologic setting of the project.

3.9.4.3 Potential Impacts

Project impacts related to hydrology and water quality were evaluated against the CEQA significance criteria, as discussed below. This section evaluates potential project impacts from the construction phase and the operation and maintenance phase. For impacts to federally protected wetlands and other sensitive natural communities, refer to Section 3.4, Biological Resources.

The project includes construction of an expanded configuration of the existing Sanger Substation and associated power line modifications, as discussed in Chapter 2.0, Project Description. A stormwater retention basin will be constructed in the expansion area. The O&M activities required for the expanded substation will not change from those currently required for the

existing system (mainly remotely operated from the PG&E's Fresno Control Center with regular inspections of facilities and equipment); thus, no operation-related impacts will occur.

a) Would the project violate any water quality standards or waste discharge requirements? *No Impact*

The project will not violate any water quality standards or waste discharge requirements. No surface water bodies are in proximity to the project site, with the exception of an agricultural ditch, which is separated from the project site by an agricultural road and earthen berm. The berm will prevent any potential polluted runoff originating from the project site from entering the ditch.

PG&E will assess the risk to water quality—based on site-specific soil characteristics, slope, and the construction schedule—and will develop a SWPPP that addresses potential water quality concerns. The SWPPP will specify measures for each activity that has the potential to degrade surrounding water quality through erosion, sediment runoff, and the presence of other pollutants. These measures will be implemented and monitored throughout the project by a qualified stormwater pollution prevention plan practitioner (QSP). With implementation of APM GEO-2 / APM WQ-1, PG&E will further reduce the temporary and short-term construction-related effects on water quality. Therefore, the impact will be less than significant.

b) Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level? *Less than Significant*

Water supply for construction requirements is expected to be provided by the City of Sanger or one or more local land owners near the project site. PG&E plans to secure the appropriate approvals and will enter into agreements with land owners as appropriate. Although PG&E explored local recycled water options, no nearby sources were identified that will meet the project needs. The estimated total water needs of the project are 1.1 million gallons for dust control, compaction, and concrete work (based on a typical 4,000 gallon capacity water truck, one load per day, for 270 construction days; refer to Appendix C, Table C-5 for construction equipment schedules). The substation expansion area is currently planted with row crops, which require irrigation, and this water demand will cease prior to the onset of construction. Thus, overall there will be a reduction in the use of groundwater at the site. A retention basin will be constructed within the expanded substation that will capture runoff from the substation and allow the water to percolate into the ground; thus, groundwater recharge will not be affected by the construction of impervious surfaces, such as the control building and paved areas. Moreover, the amount of impervious surface that will be constructed is only about 10 percent of the overall substation footprint (about 1.2 acres), which is minor in relation to the surrounding area that is primarily in agricultural use. Thus, impacts will be less than significant on groundwater supplies.

c) Would the project 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 sedimentation on- or off-site)? *Less than Significant*

Ground disturbance will occur during construction, primarily as a result of grading and vegetation removal, but the area proposed for expansion of the substation is located on a level agricultural field; therefore, minimal site grading will be required to accommodate the substation

facilities and the temporary construction work areas. The construction schedule also calls for all grading or other construction activities affected by rain to be completed before the onset of the rainy season. These factors will minimize the potential for erosion and siltation. Implementation of APM GEO-2/WQ-1 involves implementation of a SWPPP, which will help stabilize disturbed areas and further reduce this potential impact. The project will not result in substantial erosion or siltation, either onsite or offsite; therefore, impacts from construction will be less than significant, further reduced with implementation of AMPs.

No impacts will occur during operation and maintenance because the only soil disturbance will result from periodic maintenance, which already occurs.

d) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? *Less than Significant*

The project will be constructed on level land and will require minimal grading; thus, the drainage pattern of the site will not be substantially altered. Additionally, the project includes a stormwater retention basin that will provide approximately 350,000 cubic feet of storage for the proposed facility. The site drainage system and retention basin will be designed to collect and allow infiltration of the volume of runoff generated by impervious (10 percent), semi-pervious (70 percent) and pervious (20 percent) surfaces of the facility during a 50-year storm event. Thus, the project will not result in flooding either onsite or offsite, and impacts will be less than significant.

e) Would the project create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? *Less than Significant*

The project site is not served by any existing or planned public or private stormwater drainage systems, and construction will not result in activities that generate stormwater runoff. No hazardous materials will be stored at the project site during construction; however, materials such as lubricant oils, diesel fuel and gasoline will be present in construction equipment. In the event of a spill or leak from equipment, the spill will be cleaned up promptly in accordance with the provisions of APM HAZ-1, the SWPPP described in APM GEO-2/WQ-1, and emergency spill response equipment and training protocols. Thus, project construction will not result in substantial sources of polluted runoff. Any impacts from construction will be less than significant.

The site drainage system and retention basin are designed to collect and retain at least the volume of runoff generated by the facility during a 50-year storm event. Thus, during ongoing O&M activities, stormwater runoff will be retained onsite and will not affect adjacent areas. Further, the proposed stormwater retention basin will include an oil-water separator to reduce the potential for discharge of polluted stormwater in the event of a leak or spill. The current HMBP and SPCC Plan will be updated to reflect the changes to the substation, and their implementation will further reduce the potential for polluted runoff. Any impacts from operation and maintenance will be less than significant.

f) Would the project otherwise substantially degrade water quality? *Less than Significant*

No additional impacts to water quality beyond those previously described are anticipated. Therefore, the project will not substantially degrade water quality and no impact will occur.

g) Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? *No Impact*

The project does not include housing; therefore, no impacts will occur.

h) Would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows? *No Impact*

The project site is not within a 100-year flood hazard zone as identified by FEMA; thus, no impacts will occur.

i) Would the project 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? *Less than Significant*

The project site is located within a potential dam failure inundation area associated with Pine Flat Dam, as identified by the 2000 Background Report for the Fresno County General Plan. The inundation map shows the potentially affected project area to be in zones where released water could spread out onto the alluvial floodplain. Based on correlation of topographic maps (USGS 2012) and the inundation map, it appears that the project area might be temporarily flooded by the initial water surge following a catastrophic failure of Pine Flat Dam. The project area is 100 or more feet higher in elevation than the mapped inundation area boundary to the southwest. Thus, water will drain in a southwesterly direction towards the low-lying town of Riverdale, and the project area will likely not remain under flood waters. The project will have a less-than-significant impact.

j) Would the project cause inundation by seiche, tsunami, or mudflow? *No Impact*

Tsunamis are waves in large lakes or the ocean usually generated by seismic events that displace a large volume of water. Seiches are waves generated in closed water bodies generally in response to oscillations caused by the propagation of seismic waves. Even though the project is located within a seismically active region, no waterbodies are located in the vicinity of the project that are capable of generating seiches or tsunamis that could result in inundation at the project site. Mudflows require super-saturated slope conditions. The topography at and adjacent to the project site is generally level. Slopes capable of generating mudflows are not present and will not be created by project implementation. Thus, no impacts associated with seiches, tsunamis, or mudflow will occur.

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3.9 HYDROLOGY AND WATER QUALITY

3.9.1 INTRODUCTION

This section describes existing conditions and potential impacts to hydrological resources, water quality, and flood control as a result of construction, operation, and maintenance of the project. The analysis concludes that impacts will be avoided or less than significant in these areas; the implementation of APMs described in Section 3.9.4 will further reduce less-than-significant impacts. The project's potential effects on hydrology, water quality, and flood control were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.9-1 and discussed in more detail in Section 3.9.4.

Table 3.9-1: CEQA Checklist for Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of 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, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

3.9.2 REGULATORY BACKGROUND AND METHODOLOGY

3.9.2.1 Regulatory Background

Federal

National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) is responsible for determining flood elevations and floodplain boundaries based on U.S. Army Corps of Engineers studies. FEMA is also responsible for distributing the Flood Insurance Rate Maps (FIRMs) used in the National Flood Insurance Program (NFIP) (42 USC Ch. 50, Section 4102). These maps identify the locations of special flood hazard areas, including 100-year floodplains (FEMA 2015). FEMA allows non-residential development in the floodplain; however, FEMA has criteria to "constrict the development of land which is exposed to flood damage where appropriate" and "guide the development of proposed construction away from locations which are threatened by flood hazards." Federal regulations governing development in a floodplain are set forth in Title 44, 60 CFR, enabling the FEMA to require municipalities that participate in the NFIP to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains.

State

Clean Water Act Section 402

Under CWA Section 402 (33 USC Section 1251 et seq.), the National Pollutant Discharge Elimination System (NPDES) controls water pollution by regulating point sources of pollution to waters of the U.S. The California SWRCB administers the NPDES permit program in California. Projects that disturb one or more acres of soil are required to obtain coverage under the state NPDES General Permit for Discharges of Stormwater Associated with Construction Activity. A SWPPP must be developed and implemented for each project covered by the general permit. The SWPPP must include BMPs designed to reduce potential impacts to surface water quality during project construction and operation.

Sustainable Groundwater Management Act

In September 2014, legislation was passed to strengthen local management and monitoring of groundwater basins most critical to the state's water needs. The Sustainable Groundwater Management Act prioritizes groundwater basins that are currently overdrafted and sets a timeline for implementation:

- By 2017 local groundwater management agencies must be identified;
- By 2020 over-drafted groundwater basins must have sustainability plans;
- By 2022 other high and medium priority basins not currently in overdraft must have sustainability plans; and
- By 2040 all high and medium priority groundwater basins must achieve sustainability

The Sustainable Groundwater Management Act also provides measurable objectives and milestones to reach sustainability and a state role of limited intervention when local agencies are unable or unwilling to adopt sustainable management plans.

California Statewide Groundwater Elevation Monitoring (CASGEM) Program

In 2009, SB X7-6 was passed and aims to modify the California Water Plan by requiring parties who wish to monitor their groundwater supply to notify and begin reporting to DWR. SB X7-6 is now known as California DWR Statewide Groundwater Elevation Monitoring (CASGEM) program. As part of this effort, DWR prepared the Groundwater Basin Prioritization, which is a statewide ranking of groundwater basin importance that incorporates groundwater reliance and focuses on basins producing more than 90 percent of the state's annual groundwater. Finalized in June 2014, the Basin Prioritization indicates that 127 of California's 515 groundwater basins and subbasins are High and Medium priority. These basins account for 96 percent of California's annual groundwater pumping and supply 88 percent of the population which resides over groundwater basins. The remaining 388 basins are Low and Very Low priority and comprise 75 percent of the groundwater basins in the State (DWR 2014a). Basins ranked as High or Medium priority by the CASGEM Basin Prioritization Process, including the San Joaquin Valley have been estimated to have higher potential for future subsidence (DWR 2014b).

Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local discretionary regulations. PG&E will secure ministerial permits, as required. The Fresno County Public Works and Planning Department requires and enforces standards contained in the California Building Code related to grading and construction, including those that may directly or indirectly affect surface water quality by contributing to erosion or siltation or alter existing drainage patterns.

3.9.2.2 Methodology

The description of the hydrologic setting is based on a site visit in March 2012, the Biological Resources Technical Report prepared for this project (North State Resources, Inc. 2015), discussed in Section 3.4, Biological Resources and provided separately to CPUC staff), and information from the County of Fresno, City of Fresno, FEMA, and the U.S. Geological Survey (USGS). The information was then used to evaluate the project against the CEQA Checklist to determine potential impacts.

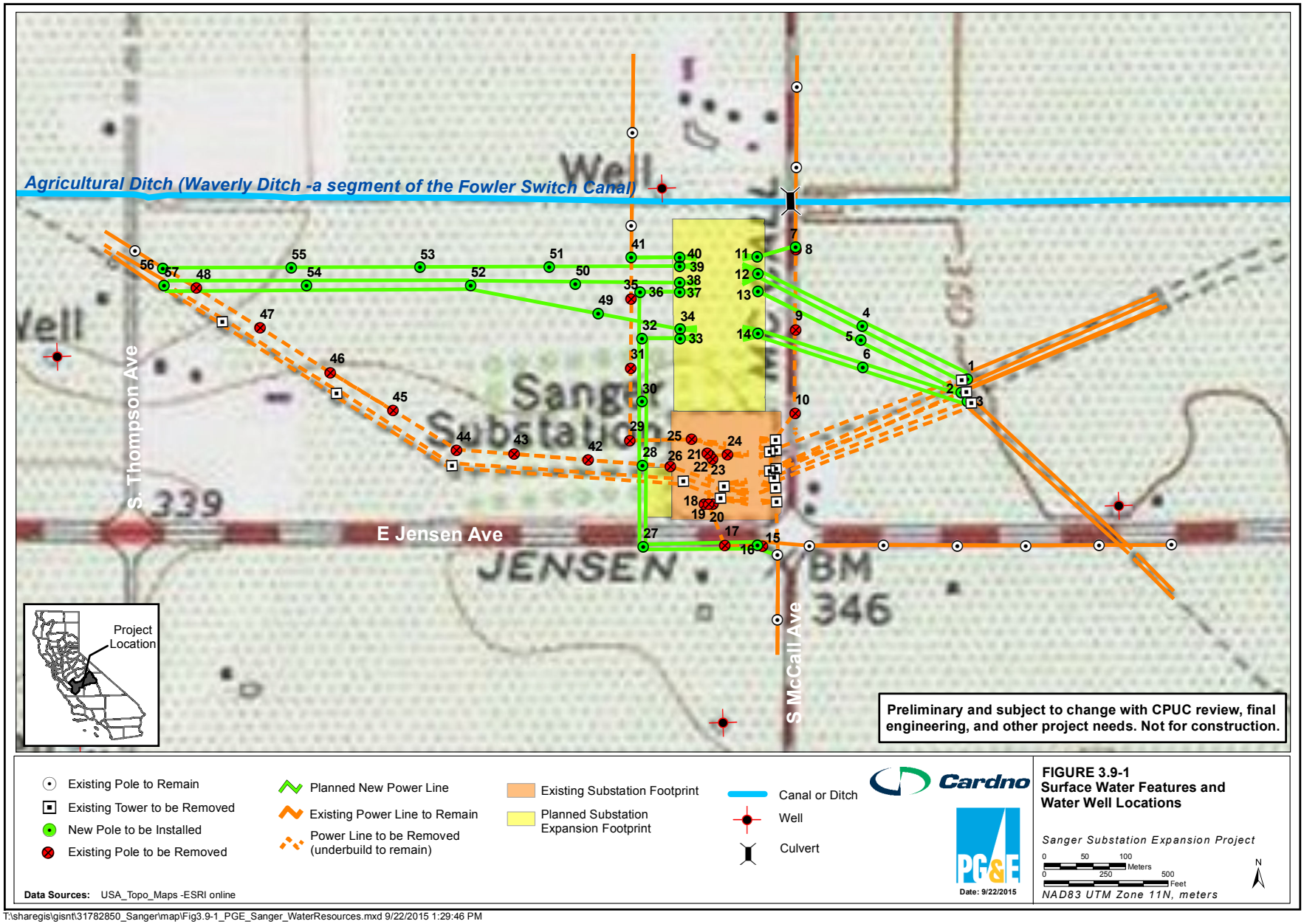
3.9.3 ENVIRONMENTAL SETTING

3.9.3.1 Regional Setting

The project site is located in the San Joaquin Valley, which is separated into two hydrologic regions by an indistinct divide consisting of accumulated alluvium that interrupts the lengthwise slope of the Valley. The Tulare Lake Hydrologic Region is the southern region and drains internally except when rare flooding carries its water north across the divide into the San Joaquin River. The rivers in the Tulare Lake Hydrologic Region include the Kings, Kaweah, Tule, and Kern Rivers. The San Joaquin River Hydrologic Region encompasses the northern San Joaquin Valley and is drained toward the Sacramento-San Joaquin Delta by the San Joaquin River and its tributaries, including the Fresno, Merced, Tuolumne, and Stanislaus rivers (DWR 2003). The San Joaquin River Hydrologic Region relies heavily on groundwater, which makes up approximately 30 percent of the annual supply for agricultural and urban uses (DWR 2003).

The project site is located in the San Joaquin River Hydrologic Region, which covers approximately 9.7 million acres and includes all of Calaveras, Tuolumne, Mariposa, Madera, San Joaquin, and Stanislaus counties; most of Merced and Amador counties; and parts of seven other counties (DWR 2003). The region contains the entire Yosemite Valley Basin and Los Banos Creek Valley Basin, and part of the San Joaquin Valley Groundwater Basin. The project site is located within the San Joaquin Valley Groundwater Basin in the Kings Subbasin (USGS and SWRCB 2012). Recent groundwater levels in portions of the San Joaquin Valley are more than 100 feet below previous historical lows (DWR 2014b). Within Fresno County, there are two major river systems–the San Joaquin River and the Kings River–and several creeks and streams (County of Fresno 2000a). The project site is located in a level agricultural area approximately 5 miles west of the Kings River; this river flows in a southwesterly direction east of the City of Sanger. The San Joaquin River is located over 10 miles north of the project. The only surface water feature in the project vicinity is a bermed agricultural ditch (the Waverly Ditch of the Consolidated Irrigation District [Provost & Pritchard 2010]) that adjoins the private road that borders the expanded substation on the north (Figure 3.9-1). The agricultural ditch is a constructed feature and does not qualify as waters of the U.S. as further discussed below and in Section 3.4 (Biological Resources).

The project site elevation ranges from approximately 348 to 352 feet above mean sea level from Jensen Avenue in the south to the northern expanded project boundary, respectively. The surface topography is flat with a slope of approximately 0 to 1 percent (Google Earth, Inc. 2015). The majority of the expanded project site is along County roads and consists of agricultural land.



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3.9.3.2 Climate

The project site is located in a Mediterranean-type climate zone typical of central California. This zone is characterized by cool, wet winters and hot, dry summers, with winds typically blowing from the northwest. Typical of the San Joaquin Valley, the project site is situated in the rain shadow of the Coast Ranges, resulting in normal annual precipitation of approximately 11.5 inches and a range of approximately 3 to 21 inches per year. The vast majority of all rain falls between the months of October and April (NOAA 2015). Periods of abundant rainfall and prolonged droughts are frequent in the historical record.

3.9.3.3 Surface Water

Although no rivers or streams flow through the project site, Fowler Switch Canal and several smaller irrigation canals are located within the vicinity of the project. For a description of wetlands in the project area, refer to Section 3.4, Biological Resources.

The only surface water feature in the project vicinity is a bermed agricultural ditch, which adjoins the private road that borders the expanded substation on the north (Figure 3.9-1). This agricultural ditch is the Waverly Ditch, an offshoot of the Fowler Switch Canal, operated by the Consolidated Irrigation District (Provost and Pritchard 2010). Within the project vicinity, the ditch flows from east to west and consists of an open dirt channel, which is regularly cleared of vegetation. Upstream and downstream of the project site, the ditch construction alternates between concrete channels, open dirt canal, and underground conveyance. The ditch is supplied with water from the Fowler Switch Canal, approximately 1.6 miles east of the project site. The project site does not drain to the ditch. From the project site, the ditch flows approximately 2.3 miles west to the Briggs Canal. The site photographs in Section 3.4 provide views of the agricultural ditch in the project vicinity.

The agricultural ditch is a constructed feature and does not qualify as waters of the U.S. as discussed in Section 3.4 (Biological Resources). The canals in the project vicinity provide an important source of water for the surrounding agricultural lands. Canals and irrigation ditches primarily include concrete or other hard structure banks with some unvegetated dirt banks. Limited vegetation is present on dirt banks or in mud bottoms.

3.9.3.4 Groundwater

The project site is located within the Kings subbasin of the San Joaquin Valley Groundwater Basin. The two major rivers within or bordering the subbasin are the San Joaquin River, which runs along its northern border, and the Kings River, which is within the eastern portion of the subbasin (DWR 2006a, as cited in Burton et al. 2012). The Kings Subbasin includes lands south of the San Joaquin River, east of the Sierra Nevada Mountains, north of the Kaweah and Tulare Lake groundwater subbasins, and west of the Delta-Mendota and Westside groundwater subbasins.

This aquifer system consists of alluvial deposits of Quaternary age underlain by older unconsolidated marine and continental deposits of the Tertiary and Quaternary ages (Burton et al. 2012). Deposits in the eastern portion of the Kings subbasin, where the project site is located, are generally highly permeable. Groundwater flow in the subbasin is generally from northeast to southwest.

Large overdrafts of groundwater in the general vicinity of the project site are associated with the major cities that locally lower the water table (Fresno and Clovis) (County of Fresno 2000a). The Kings subbasin has been identified by the DWR as in a critical condition of overdraft (DWR 2003). Depth to groundwater has not been observed at the project site, but typically is encountered at greater than 100 feet bgs in the area (City of Fresno 2009). Agricultural operations at and near the project site rely on groundwater wells; the closest well is just north of the expanded substation near its northwest corner (Figure 3.9-1).

3.9.3.5 Flood Potential

The major flood issues in Fresno County are associated with the San Joaquin River, the Kings River, and their tributaries (County of Fresno 2000b). The project is not near streams or rivers, and the closest surface water is the bermed agricultural ditch located north of the expanded substation.

There are four major dams in Fresno County with known populations in their respective inundation areas. Pine Flat Dam, located on the Kings River, is approximately 18 miles northwest of the project site and creates a reservoir capacity of approximately 1,000,000 acre-feet. Although the project site is within the Kings River floodplain, FEMA has issued a FIRM (06019C2155H), which shows that the project site is not within or adjacent to a designated 100-year flood hazard area. However, the project site is located within the dam failure inundation area associated with Pine Flat Dam, as identified by the 2000 Background Report for the Fresno County General Plan and confirmed by the County of Fresno Office of Emergency Services (K. Austin pers. comm. 2015). Under a full reservoir total dam failure scenario, it would take approximately one hour for the leading edge of flood waters to travel from the dam to the project vicinity.

3.9.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for hydrology and water quality impacts derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational hydrology and water quality impacts.

3.9.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts related to hydrology and water quality were evaluated for each of the criteria listed in Table 3.9-1, as discussed in Section 3.9.4.3.

3.9.4.2 Applicant-Proposed Measures

PG&E will implement the following APM:

APM GEO-2/APM WQ-1. Development and Implementation of Stormwater Pollution Prevention Plan

Because the project involves more than an acre of soil disturbance, a SWPPP will be prepared for the project as required by the state NPDES General Permit for Discharges of Stormwater Associated with Construction Activity. This plan will be prepared in accordance with the Water Board guidelines and other applicable erosion and sediment control BMPs. Implementation of the plan will help stabilize disturbed areas and will reduce erosion and sedimentation. The SWPPP will designate BMPs that will be followed during and after construction of the project, examples of which may include the following erosion-minimizing measures:

- Using drainage control structures (e.g., straw wattles or silt fencing) to direct surface runoff away from disturbed areas.
- Strictly controlling vehicular traffic.
- Implementing a dust-control program during construction.
- Restricting access to sensitive areas.
- Using vehicle mats in wet areas.
- Revegetating disturbed areas, where applicable, following construction.

In areas where soils are to be temporarily stockpiled, soils will be placed in a controlled area and will be managed with similar erosion control techniques. Where construction activities occur near a surface waterbody or drainage channel and drainage from these areas flows towards a waterbody or wetland, stockpiles will be placed at least 100 feet from the waterbody or will be properly contained (such as berming or covering to minimize risk of sediment transport to the drainage). Mulching or other suitable stabilization measures will be used to protect exposed areas during and after construction activities. Erosion-control measures will be installed, as necessary, before any clearing during the wet season and before the onset of winter rains. Temporary measures, such as silt fences or wattles intended to minimize erosion from temporarily disturbed areas, will remain in place until disturbed areas have stabilized.

The SWPPP will be designed specifically for the hydrologic setting of the project.

3.9.4.3 Potential Impacts

Project impacts related to hydrology and water quality were evaluated against the CEQA significance criteria, as discussed below. This section evaluates potential project impacts from the construction phase and the operation and maintenance phase. For impacts to federally protected wetlands and other sensitive natural communities, refer to Section 3.4, Biological Resources.

The project includes construction of an expanded configuration of the existing Sanger Substation and associated power line modifications, as discussed in Chapter 2.0, Project Description. A stormwater retention basin will be constructed in the expansion area. The O&M activities required for the expanded substation will not change from those currently required for the

existing system (mainly remotely operated from the PG&E's Fresno Control Center with regular inspections of facilities and equipment); thus, no operation-related impacts will occur.

a) Would the project violate any water quality standards or waste discharge requirements? *No Impact*

The project will not violate any water quality standards or waste discharge requirements. No surface water bodies are in proximity to the project site, with the exception of an agricultural ditch, which is separated from the project site by an agricultural road and earthen berm. The berm will prevent any potential polluted runoff originating from the project site from entering the ditch.

PG&E will assess the risk to water quality—based on site-specific soil characteristics, slope, and the construction schedule—and will develop a SWPPP that addresses potential water quality concerns. The SWPPP will specify measures for each activity that has the potential to degrade surrounding water quality through erosion, sediment runoff, and the presence of other pollutants. These measures will be implemented and monitored throughout the project by a qualified stormwater pollution prevention plan practitioner (QSP). With implementation of APM GEO-2 / APM WQ-1, PG&E will further reduce the temporary and short-term construction-related effects on water quality. Therefore, the impact will be less than significant.

b) Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level? *Less than Significant*

Water supply for construction requirements is expected to be provided by the City of Sanger or one or more local land owners near the project site. PG&E plans to secure the appropriate approvals and will enter into agreements with land owners as appropriate. Although PG&E explored local recycled water options, no nearby sources were identified that will meet the project needs. The estimated total water needs of the project are 1.1 million gallons for dust control, compaction, and concrete work (based on a typical 4,000 gallon capacity water truck, one load per day, for 270 construction days; refer to Appendix C, Table C-5 for construction equipment schedules). The substation expansion area is currently planted with row crops, which require irrigation, and this water demand will cease prior to the onset of construction. Thus, overall there will be a reduction in the use of groundwater at the site. A retention basin will be constructed within the expanded substation that will capture runoff from the substation and allow the water to percolate into the ground; thus, groundwater recharge will not be affected by the construction of impervious surfaces, such as the control building and paved areas. Moreover, the amount of impervious surface that will be constructed is only about 10 percent of the overall substation footprint (about 1.2 acres), which is minor in relation to the surrounding area that is primarily in agricultural use. Thus, impacts will be less than significant on groundwater supplies.

c) Would the project 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 sedimentation on- or off-site)? *Less than Significant*

Ground disturbance will occur during construction, primarily as a result of grading and vegetation removal, but the area proposed for expansion of the substation is located on a level agricultural field; therefore, minimal site grading will be required to accommodate the substation

facilities and the temporary construction work areas. The construction schedule also calls for all grading or other construction activities affected by rain to be completed before the onset of the rainy season. These factors will minimize the potential for erosion and siltation. Implementation of APM GEO-2/WQ-1 involves implementation of a SWPPP, which will help stabilize disturbed areas and further reduce this potential impact. The project will not result in substantial erosion or siltation, either onsite or offsite; therefore, impacts from construction will be less than significant, further reduced with implementation of AMPs.

No impacts will occur during operation and maintenance because the only soil disturbance will result from periodic maintenance, which already occurs.

d) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? *Less than Significant*

The project will be constructed on level land and will require minimal grading; thus, the drainage pattern of the site will not be substantially altered. Additionally, the project includes a stormwater retention basin that will provide approximately 350,000 cubic feet of storage for the proposed facility. The site drainage system and retention basin will be designed to collect and allow infiltration of the volume of runoff generated by impervious (10 percent), semi-pervious (70 percent) and pervious (20 percent) surfaces of the facility during a 50-year storm event. Thus, the project will not result in flooding either onsite or offsite, and impacts will be less than significant.

e) Would the project create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? *Less than Significant*

The project site is not served by any existing or planned public or private stormwater drainage systems, and construction will not result in activities that generate stormwater runoff. No hazardous materials will be stored at the project site during construction; however, materials such as lubricant oils, diesel fuel and gasoline will be present in construction equipment. In the event of a spill or leak from equipment, the spill will be cleaned up promptly in accordance with the provisions of APM HAZ-1, the SWPPP described in APM GEO-2/WQ-1, and emergency spill response equipment and training protocols. Thus, project construction will not result in substantial sources of polluted runoff. Any impacts from construction will be less than significant.

The site drainage system and retention basin are designed to collect and retain at least the volume of runoff generated by the facility during a 50-year storm event. Thus, during ongoing O&M activities, stormwater runoff will be retained onsite and will not affect adjacent areas. Further, the proposed stormwater retention basin will include an oil-water separator to reduce the potential for discharge of polluted stormwater in the event of a leak or spill. The current HMBP and SPCC Plan will be updated to reflect the changes to the substation, and their implementation will further reduce the potential for polluted runoff. Any impacts from operation and maintenance will be less than significant.

f) Would the project otherwise substantially degrade water quality? *Less than Significant*

No additional impacts to water quality beyond those previously described are anticipated. Therefore, the project will not substantially degrade water quality and no impact will occur.

g) Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? *No Impact*

The project does not include housing; therefore, no impacts will occur.

h) Would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows? *No Impact*

The project site is not within a 100-year flood hazard zone as identified by FEMA; thus, no impacts will occur.

i) Would the project 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? *Less than Significant*

The project site is located within a potential dam failure inundation area associated with Pine Flat Dam, as identified by the 2000 Background Report for the Fresno County General Plan. The inundation map shows the potentially affected project area to be in zones where released water could spread out onto the alluvial floodplain. Based on correlation of topographic maps (USGS 2012) and the inundation map, it appears that the project area might be temporarily flooded by the initial water surge following a catastrophic failure of Pine Flat Dam. The project area is 100 or more feet higher in elevation than the mapped inundation area boundary to the southwest. Thus, water will drain in a southwesterly direction towards the low-lying town of Riverdale, and the project area will likely not remain under flood waters. The project will have a less-than-significant impact.

j) Would the project cause inundation by seiche, tsunami, or mudflow? *No Impact*

Tsunamis are waves in large lakes or the ocean usually generated by seismic events that displace a large volume of water. Seiches are waves generated in closed water bodies generally in response to oscillations caused by the propagation of seismic waves. Even though the project is located within a seismically active region, no waterbodies are located in the vicinity of the project that are capable of generating seiches or tsunamis that could result in inundation at the project site. Mudflows require super-saturated slope conditions. The topography at and adjacent to the project site is generally level. Slopes capable of generating mudflows are not present and will not be created by project implementation. Thus, no impacts associated with seiches, tsunamis, or mudflow will occur.

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3.10 LAND USE AND PLANNING

3.10.1 INTRODUCTION

This section describes existing land use in the vicinity of the project and assesses potential project-related impacts on land use and planning, including an analysis of project compatibility with land use and/or habitat plans. The analysis concludes that no significant impacts related to land use and planning will occur as a result of construction, operation, and maintenance of the project and no APMs are needed. The project's potential effects on land use and planning were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.10-1 and discussed in more detail in Section 3.10.4.

Table 3.10-1: CEQA Checklist for Land Use and Planning

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

3.10.2 REGULATORY BACKGROUND AND METHODOLOGY

3.10.2.1 Regulatory Background

Federal

Habitat Conservation Plans

Section 10 of the federal ESA allows for the creation of HCPs to protect listed and candidate species in connection with the issuance of an incidental take permit for federally listed species. PG&E has an HCP to cover O&M activities in the San Joaquin Valley (PG&E San Joaquin Valley O&M HCP [Jones & Stokes 2006]). This HCP covers O&M activities for PG&E's electric and gas transmission and distribution systems within nine counties of the San Joaquin Valley, including Fresno County. Although construction of the Sanger Substation Expansion Project is not a covered activity, the project area is located within the boundaries of this HCP.

State

California Public Utilities Commission

The CPUC has exclusive jurisdiction over the design, siting, installation, operation, maintenance, and repair of electric transmission facilities, pursuant to Article XII, Section 8 of the California Constitution. The CPUC is the lead agency for CEQA review for this project and has authority over the discretionary project approval.

Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local land use and zoning regulations or discretionary permits. This section identifies local land use plans and regulations for informational purposes and to assist with CEQA review.

The project area is located within Fresno County. Local land use is guided by the Fresno County Zoning Ordinance (2011) and General Plan (County of Fresno 2000).

Agriculture and Land Use Element

The 2000 Fresno County General Plan encourages maintaining agriculturally-designated lands for agriculture use, directing urban growth away from agricultural land to areas of the county where public facilities and infrastructure are available or can be provided consistent with the adopted General Plan or Community Plan.

Open Space and Conservation Element

The Open Space and Conservation Element provides policy direction for land use planning. The main objective of these policies is to protect natural resources, such as significant habitats, and recreational resources from encroachment of development and construction activities.

Although PG&E is not subject to local discretionary permitting, ministerial permits will be secured as required.

3.10.2.2 Methodology

Analysis of land use and planning included a review of the following plans and policies:

- Fresno County General Plan
- Fresno County Zoning Ordinance
- PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan (Jones & Stokes 2006)

Information about existing land uses was obtained during site inspections conducted during March and April 2012, subsequent inspections in January 2015, and by review of aerial photographs. Information regarding potential planned developments in the project area and any other potential areas of concern was obtained during a meeting between PG&E and Fresno County planners in September 2015. Land use designations and zoning were identified through review of the Fresno County General Plan (2000) and Fresno County Zoning Ordinance (2011), respectively. The information was then used to evaluate the project against the CEQA Checklist to determine potential impacts.

3.10.3 ENVIRONMENTAL SETTING

3.10.3.1 Regional Setting

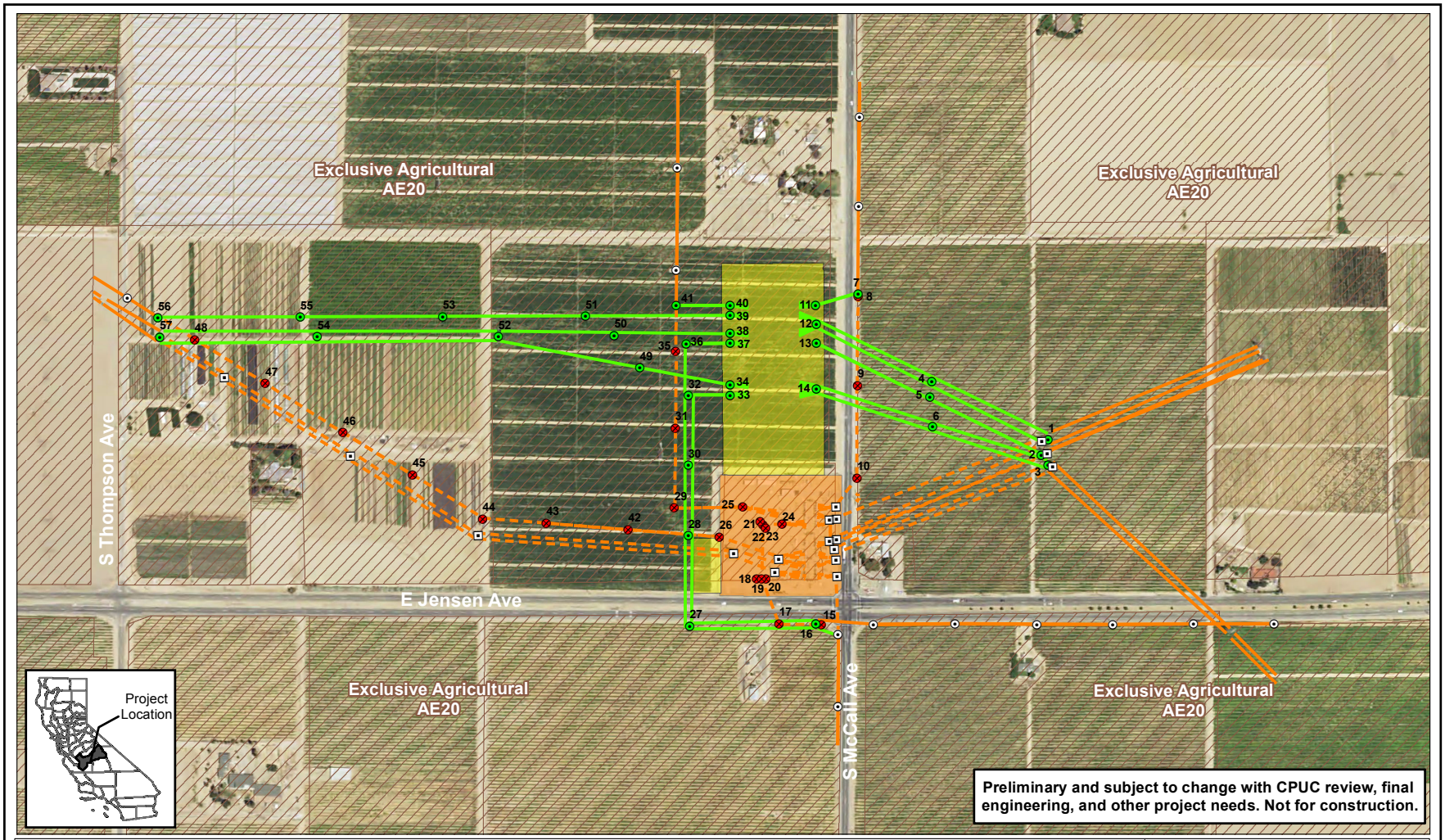
Fresno County historically has been California's top agricultural producing county (Fresno County 2000). Agriculture continues to be a very important part of the local economy and is the dominant land use in Fresno County (California Department of Conservation [DOC] 2008). Table 3.2-2 in Section 3.2.3.1 shows the acreage of the different categories of important farmland in the county. The project is located in an area of predominantly agricultural land uses, between the urban land uses associated with the City of Sanger and the Fresno metropolitan area.

3.10.3.2 Local Land Use Setting (Existing Land Use)

The expanded substation site and the reconfiguration of the existing power line adjacent to the substation are in unincorporated Fresno County, approximately 1.75 miles west of the City of Sanger and approximately 2.75 miles southeast of the City of Fresno. Like the existing substation, the project area is not located within a Fresno County-designated regional planning area, community plan area, or specific plan area, and is not within the sphere of influence of either the City of Sanger or City of Fresno; however, the entire project area is located within the sphere of influence 3-mile buffer for these cities (Figure 3.10-1).

Agriculture is the dominant land use in the project area. To the west of the existing substation, the land is planted with row crops and specialty crops, with greenhouses adjacent to the substation expansion area. This area also contains the existing power lines and poles that will be relocated. East of the existing substation are vineyards located across South McCall Avenue, as well as existing power lines to be relocated and poles to be replaced. The expansion area is designated as both Prime Farmland and Farmland of Statewide Importance. The areas immediately surrounding the substation are also mostly designated Prime Farmland interspersed with Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance (Figure 3.2-1). The project area is located on agricultural lands subject to a Williamson Act contract, as are several adjacent parcels (DOC 2009) (Figure 3.2-2). See Section 3.2 for further discussion.

In accordance with CPUC filing requirements, a preliminary list of parcels within 300 feet of the project, including the APN number, mailing address, and parcel's physical address, is provided in Appendix A. Geographic information system (GIS) data for parcels within 300 feet of the project have not been obtained.



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Zoning and General Plan Land Use Designations

The project area and surrounding area are zoned AE-20 (Exclusive Agricultural District, 20-acre minimum lot size) (County of Fresno 2015). The AE District is intended to be an exclusive district for agriculture and for those uses that are necessary and an integral part of the agricultural operation. This district is intended to protect the general welfare of the agricultural community from encroachments of nonrelated agricultural uses, which by their nature would be injurious to the physical and economic well-being of the agricultural district. PG&E's project is not subject to local zoning ordinances. However, for informational purposes, Fresno County's Zoning Ordinance indicates that, electric transmission substations and electric distribution substations are permitted uses in AE Districts, subject to review and approval by the Fresno County Director of the Department of Public Works and Planning.

The General Plan designation is Agriculture. This designation provides for the production of crops and livestock, and for location of necessary agriculture commercial centers, agricultural processing facilities, and certain nonagricultural activities.

3.10.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for land use impacts derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational land use impacts.

3.10.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts on land use and planning were evaluated for each of the criteria listed in Table 3.10-1, as discussed in Section 3.10.4.3.

3.10.4.2 Applicant-Proposed Measures

The project will have no impact on land use planning and no APMs are proposed.

3.10.4.3 Potential Impacts

The project involves expansion of the existing 115 kV Sanger Substation by adding approximately 7 acres to the existing substation footprint. Existing power poles, towers, and conductors located outside the existing substation to the east and west will require reconfiguration, including construction of new poles and removal of existing poles and towers. The O&M activities required for the upgraded power line will not change from those currently required for the existing system; thus, no operation-related impacts related to land use and planning will occur. Therefore, the impact analysis is focused only on construction activities that are required to install the new facilities, as described in Chapter 2.0, Project Description.

a) Would the project physically divide an established community? *No Impact*

The project will expand an existing substation on an adjacent parcel of land in an agricultural area. The existing power poles, towers, and conductors located outside the existing substation

are also located on agricultural land. The project will require reconfiguration of the existing 115 kV lines in order to terminate at the new substation equipment. Limited construction of new poles (and removal of certain existing poles and towers) is proposed, taking into consideration land availability and site access to the tower and pole locations. These changes will not physically divide an established community or otherwise impede pedestrian or vehicle access to community features or services; thus, no impacts will occur.

b) Would the project conflict with applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? *Less than Significant*

The project includes expansion of the existing Sanger Substation and reconfiguring the existing power lines on adjacent parcels to the east and west of the existing substation, as well as construction of new tubular steel poles (TSPs). The project area is designated AE for Exclusive Agriculture, which provides protection of agricultural land from conversion to other uses. No change in zoning will be required as part of the project.

Because the CPUC has regulatory authority over the project, the project is not under the jurisdiction of Fresno County and therefore is not subject to local agency regulations. Nonetheless, as determined in Section 3.2, Agricultural and Forest Resources, the project will not conflict with existing General Plan Land Use Element and other policies protecting agriculture since the AE designation allows for certain nonagricultural activities if specified requirements are met. The project meets these requirements because the proposed site is adequate in size and shape to accommodate all necessary features, the project will not contribute operational traffic to local roadways, and the project is being designed to accommodate the potential future widening of South McCall Avenue. The project will not be detrimental to the character of the development in the immediate neighborhood because it is not changing the existing uses. The project will expand an existing substation and reconfigure the existing power lines. These changes will not create an incompatible land use with existing uses. The project will not adversely affect public health, safety, or general welfare, as discussed in Section 3.8. In addition, the project will improve the reliability of a needed service to the surrounding agricultural area and it is an efficient use of land because an existing substation is already present at the site.

The project will convert less than 10 acres of farmland to nonagricultural uses, but the project will meet the County's requirements allowing for such a conversion. As discussed in Section 3.2, with implementation of APM AGR-1, the conversion of farmland to nonagricultural use will be minimized to the extent practicable while still meeting the electricity needs in the area. For these reasons, the project will not conflict with the Fresno County General Plan or zoning (Section 3.2). Therefore, the impact will be less than significant.

c) Would the project conflict with any applicable habitat conservation plan or natural community conservation plan? *No impact*

Sanger Substation is located within the planning area of PG&E's San Joaquin Valley O&M HCP. The HCP enables PG&E to continue to conduct current and future O&M activities in the San Joaquin Valley while minimizing, avoiding, and compensating for possible direct, indirect, and cumulative adverse effects on threatened and endangered species that could result from such

management activities. Minor construction activities covered by the HCP include installing new or replacement structures to upgrade existing facilities or to extend service to new customers. These activities are limited to constructing 1 mile or less of new electric or gas line and 0.5 acre or less of permanent facilities (e.g., substations) (Jones and Stokes 2006).

The HCP is not applicable to construction of the expanded substation because the expansion exceeds the 0.5-acre limit for coverage. Construction activities, however, will not conflict with the HCP. Project O&M will continue to be covered by this HCP, and PG&E will operate and maintain the facility in accordance with the plan. No other habitat conservation plans or natural community conservation plans have been adopted in the project area. No impacts will occur.

3.10.5 REFERENCES

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3.11 MINERAL RESOURCES

3.11.1 INTRODUCTION

This section describes existing conditions and potential impacts on mineral resources as a result of construction, operation, and maintenance of the project. The analysis concludes that no impacts on mineral resources will occur. APMs, as described in Section 3.11.4.2, will not be required because there will be no impacts on mineral resources. The project's potential effects on mineral resources were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.11-1 and discussed in more detail in Section 3.11.4.

Table 3.11-1: CEQA Checklist for Mineral Resources

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.11.2 REGULATORY BACKGROUND AND METHODOLOGY

3.11.2.1 Regulatory Background

Federal

No federal regulations related to mineral resources are applicable to the project.

State

The California Surface Mining and Reclamation Act (SMARA) of 1975 requires that the State Geologist classify land into mineral resource zones (MRZ) according to the known or inferred mineral potential of the land.

Local

No local regulations related to geology, mineral resources, or paleontology are applicable to the project. Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local discretionary regulations. This section includes a brief summary of information on mineral resources from Fresno County's General Plan and supporting documents; it is included for informational purposes and to assist with the CEQA review process.

3.11.2.2 Methodology

The General Plan of Fresno County and supporting documentation were reviewed for their information on mineral resources (County of Fresno 2000a, 2000b, 2000c). These included the Geologic Map of California and mineral land classification maps of the Fresno area created by the California Department of Conservation, Division of Mines and Geology. The U.S. Energy Mapping System was also utilized for current distribution of oil and gas wells.

3.11.3 ENVIRONMENTAL SETTING

Fresno County has a variety of mineral resources, including sand and gravel; fossil fuels (oil and coal); metals (chromite, copper, gold, mercury, and tungsten); and other minerals used in construction or for industrial purposes (asbestos, high-grade clay, diatomite, granite, gypsum, and limestone). The project area and surrounding areas are in agricultural use and are not located near areas where known mineral resources are present. The project area is located in MRZ-3, which is an area "containing mineral deposits the significance of which cannot be evaluated from available data" (Young 1998a, Young 1998b).

There are no mineral extraction operations in the vicinity of the project. The project is located on San Joaquin shale basin; the nearest oil wells are located approximately 25 miles to the southwest near the town of Riverdale (U.S. Energy Information Administration 2015). The nearest aggregate mining operation is approximately 6 miles to the east of the project area along the Kings River (Young 1998b).

3.11.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for mineral impacts derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational mineral impacts.

3.11.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts on mineral resources were evaluated for each of the criteria listed in Table 3.11-1, as discussed in Section 3.11.4.3.

3.11.4.2 Applicant-Proposed Measures

No APMs will be required as no impacts to mineral resources will occur.

3.11.4.3 Potential Impacts

Project impacts related to mineral resources were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and the operation and maintenance phase.

The project expands the existing 115 kV Sanger Substation by adding approximately 7 acres to the existing substation footprint. Existing power poles, towers, and conductors located outside

the existing substation will be reconfigured, requiring limited construction of new poles and removal of existing poles and towers. The operation and maintenance (O&M) activities required for the expanded substation associated power lines will not change from those currently required for the existing system; thus, no operation-related impacts related to mineral resources will occur. Therefore, the impact analysis is focused only on construction activities that are required to install the new facilities, as described in Chapter 2.0, Project Description. For the purpose of the impact analysis, the location and height of the existing structures is considered part of the existing conditions.

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state? *No Impact*

Based on the project area being designated as MRZ-3, which is an area "containing mineral deposits the significance of which cannot be evaluated from available data," the project area is not believed to contain mineral resources. Additionally, the project area and surrounding area is primarily agricultural in nature and has not historically been used for mineral extraction. Therefore, no impacts will occur.

b) Would the project 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? *No Impact*

The project will not result in the loss of availability of a locally important mineral recovery site delineated on any local land use plans; therefore, no impacts will occur.

3.11.5 REFERENCES

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3.12 NOISE

3.12.1 INTRODUCTION

This section describes potential noise impacts associated with construction, operation, and maintenance of the project, and concludes that impacts will be less than significant in these areas. The APMs described in Section 3.12.5.2 will further reduce potential less-than-significant impacts. The project's potential noise-related effects were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.12-1 and discussed in more detail in Section 3.12.5.3.

Table 3.12-1: CEQA Checklist for Noise

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne 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 or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

3.12.1.1 Fundamentals of Noise

Noise is generally defined as unwanted sound. Airborne sound is the fluctuation of air pressure above and below atmospheric pressure. Several ways exist to measure sound, depending on the source, receiver, and reason for the measurement.

Community sound levels are generally presented in terms of A-weighted decibels (dBA). The A-weighting network measures sound in a similar fashion to how a person perceives or hears sound, thus achieving a strong correlation with how people perceive acceptable and unacceptable sound levels. Table 3.12-2: Typical Sound Levels measured in the Environment and Industry, presents A-weighted sound levels and the general subjective responses associated with common sources of noise in the physical environment.

A-weighted sound levels are typically measured or presented as the equivalent sound pressure level (L_{eq}), which is defined as the average noise level on an equal-energy basis for a stated period of time and commonly is used to measure steady-state sound that is usually dominant. Statistical methods are used to capture the dynamics of a changing acoustical environment. Statistical measurements are typically denoted by L_n, where "n" represents the percentile of time that the sound level is exceeded. Therefore, L_{90} represents the noise level that is exceeded during 90 percent of the measurement period, which typically represents a continuous noise source. Similarly, L_{10} represents the noise level exceeded for 10 percent of the measurement period.

Another metric used in determining the impact of environmental noise is the difference in response that people have to daytime and nighttime noise levels. During the evening and at night, exterior background noises generally are lower than daytime levels. However, most household noise also decreases at night, and exterior noise becomes more noticeable. Furthermore, most people sleep at night and are sensitive to intrusive noises. To account for human sensitivity to evening and nighttime noise levels, the day-night sound level (L_{dn}) (also referred to as DNL) and the community noise equivalent level (CNEL) were developed. The L_{dn} is a noise metric that accounts for the greater annoyance of noise during the nighttime hours (10 p.m. to 7 a.m.). The CNEL is a noise index that accounts for the greater annoyance of noise during both the evening hours (7 p.m. to 10 p.m.) and nighttime hours.

Table 3.12-2: Typical Sound Levels Measured in the Environment and Industry

Noise Source at a Given Distance	Sound Level in A-weighted Decibels (dBA)	Qualitative Description
Carrier deck jet operation	140	
	130	Pain threshold
Jet takeoff (200 feet)	120	
Auto horn (3 feet)	110	Maximum vocal effort
Jet takeoff (1,000 feet) Shout (0.5 foot)	100	
New York subway station Heavy truck (50 feet)	90	Very annoying; Hearing damage (8-hour, continuous exposure)
Pneumatic drill (50 feet)	80	Annoying
Freight train (50 feet) Freeway traffic (50 feet)	70 to 80 70	Intrusive (telephone use difficult)
Air conditioning unit (20 feet)	60	

Table 3.12-2: Typical Sound Levels Measured in the Environment and Industry

Noise Source at a Given Distance	Sound Level in A-weighted Decibels (dBA)	Qualitative Description
Light auto traffic (50 feet)	50	Quiet
Living room Bedroom	40	
Library Soft whisper (5 feet)	30	Very quiet
Broadcasting/Recording studio	20	
	10	Just audible

Source: Adapted from Table E, "Assessing and Mitigating Noise Impacts" (New York Department of Environmental Conservation 2001).

L_{dn} values are calculated by averaging hourly L_{eq} sound levels for a continuous 24-hour period on an energy basis, applying a weighting factor of 10 decibels (dB) to the nighttime values. CNEL values are calculated similarly, except that a 5-dB weighting factor also is added to evening L_{eq} values. The applicable adjustments, which reflect the increased sensitivity to noise during evening and nighttime hours, are applied to each hourly L_{eq} sound level for the calculation of L_{dn} and CNEL. For the purposes of assessing noise, the 24-hour day is divided into three time periods, with the following adjustments:

- Daytime hours: 7 a.m. to 7 p.m. (12 hours)—adjustment of 0 dBA
- Evening hours (for CNEL only): 7 p.m. to 10 p.m. (3 hours)—adjustment of +5 dBA
- Nighttime hours (for both CNEL and L_{dn}): 10 p.m. to 7 a.m. (9 hours)—adjustment of +10 dBA

The hourly adjusted time-period noise levels are then averaged (on an energy basis) to compute the overall L_{dn} or CNEL value. For a continuous noise source, the L_{dn} value can be computed by adding 6.4 dBA to the overall 24-hour noise level (L_{eq}). For example, if the expected continuous noise level from a noise source is 60.0 dBA, the resulting L_{dn} from the source would be 66.4 dBA. Similarly, the CNEL for a continuous noise source is computed by adding 6.7 dBA to the overall 24-hour L_{eq}.

The general human response to changes in noise levels that are similar in frequency content (such as comparing increases in continuous [L_{eq}] traffic noise levels) are summarized as follows:

- A 3-dB change in sound level is considered to be a barely noticeable difference.
- A 5-dB change in sound level typically is noticeable.
- A 10-dB increase is considered to be a doubling in loudness.

3.12.1.2 Fundamentals of Vibration

Ground-borne vibration consists of waves transmitted through solid material. Several types of wave motions exist in solids, unlike air, including compressional, shear, torsional, and bending.

The solid medium can be excited by forces, movements, or pressure fields. 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 Hz. Most environmental vibrations consist of a composite, or "spectrum" of many frequencies, and are generally classified as broadband or random vibrations. The normal frequency range of most ground-borne vibration that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz (Federal Transit Administration 2006).

Vibration may be defined in terms of the displacement, velocity or acceleration of the particles in the medium material. In environmental assessments, where human response is the primary concern, velocity is commonly used as the descriptor of vibration level, expressed in millimeters per second (mm/s). The amplitude of vibration can be expressed in terms of the wave peaks or as an average, called the root mean square (rms). The rms level is generally used to assess the effect of vibration on humans. Vibration levels for typical sources of ground-borne vibration are shown in Table 3.12-3 below.

Vibration can produce several types of wave motion in solids, including compression, shear and torsion, so the direction in which vibration is measured is significant and should generally be stated as vertical or horizontal. Human perception also depends to some extent on the direction of the vibration energy relative to the axes of the body. In whole-body vibration analysis, the direction parallel to the spine is usually denoted as the z-axis, while the axes perpendicular and parallel to the shoulders are denoted as the x- and y-axes respectively.

Table 3.12-3: Typical Levels of Ground-Borne Vibration

Source	Typical Velocity at 50 feet (mm/s, rms)	Human or Building Response
Blasting from Construction Projects	2.54	Minor Cosmetic Damage to Fragile Buildings
Bulldozers and Other Heavy Tracked Construction Equipment	1.42	Workplace Annoyance; Difficulty with Vibration Sensitive Tasks
Commuter Rail, Upper Range	0.56	
Rapid Transit Rail, Typical Range	0.25	Distinctly Perceptible. Residential Annoyance for Infrequent Events
Commuter Rail, Typical Range	0.20	
Bus or Truck Over Bump	0.10	Barely Perceptible. Residential Annoyance for Frequent Events.
Rapid Transit Rail, Typical Range	0.08	
Bus or Truck Typical	0.05	Threshold of Perception
Background Vibration	0.01	None

Source: Adapted from Transit Noise and Vibration Assessment (Federal Transit Administration 2006).

rms = root mean square, mm/s = millimeters per second

Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

3.12.2 REGULATORY BACKGROUND AND METHODOLOGY

3.12.2.1 Regulatory Background

Federal

Noise Control Act of 1972

The EPA, pursuant to the Noise Control Act of 1972, established guidelines for acceptable noise levels for sensitive receivers such as residential areas, schools, and hospitals. The levels set forth are 55-dBA L_{dn} for outdoor use areas and 45-dBA L_{dn} for indoor use areas, and a maximum level of 70-dBA L_{dn} is identified for all areas to prevent hearing loss (EPA 1974). These levels provide guidance for local jurisdictions, but do not have regulatory enforceability. In the absence of applicable noise limits, the EPA levels can be used to assess the acceptability of project-related noise.

U.S. Department of Housing and Urban Development

The U.S. Department of Housing and Urban Development (HUD) has also established guidelines for acceptable noise levels for sensitive receivers such as residential areas, schools, and hospitals (24 CFR 51). HUD's noise levels include a two-pronged guidance, one for the desirable noise level and the other for the maximum acceptable noise level. The desirable noise level established by HUD conforms to the EPA guidance of 55-dBA L_{dn} for outdoor use areas of residential land uses and 45-dBA L_{dn} for indoor areas of residential land uses. The secondary HUD standard establishes a maximum acceptable noise level of 65-dBA L_{dn} for outdoor use areas of residential areas.

State

The California Code of Regulations has guidelines for evaluating the compatibility of various land uses as a function of community noise exposure, as shown in Table 3.12-4 below. The State has also established noise insulation standards for new multi-family residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise. These requirements are collectively known as the California Noise Insulation Standards (Title 24, California Code of Regulations). The noise insulation standards set forth an interior standard of DNL 45 dBA in any habitable room. They require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than DNL 60 dBA.

Table 3.12-4: Land Use Compatibility for Community Noise Environments.

Land Use Category	Community Noise Exposure L_{dn} or CNEL, dBA						
	55	60	65	70	75	80	
Residential: Low-density Single Family, Duplex, Mobile Homes							
Residential: Multiple Family							

Table 3.12-4: Land Use Compatibility for Community Noise Environments.

Land Use Category	Community Noise Exposure L_{dn} or CNEL, dBA 55 60 65 70 75 80
Transient Lodging: Motels, Hotels	
Schools, Libraries, Churches, Hospitals, Nursing Homes	
Auditoriums, Concert Halls, Amphitheaters	
Sports Arena, Outdoor Spectator Sports	
Playgrounds, Neighborhood Parks	
Golf Courses, Riding Stables, Water Recreation, Cemeteries	
Office Buildings, Business Commercial and Professional	
Industrial, Manufacturing, Utilities, Agriculture	

INTERPRETATION

	Normally Acceptable: specified land use is satisfactory, based upon the assumption that any buildings involved are of normal construction without any special noise insulation requirements.
	Conditionally Acceptable: New construction or development should only be undertaken after a detailed analysis of the noise reduction requirements is made and the needed insulation features included in the design.
	Normally Unacceptable: New construction or development should generally be discouraged. If new development is to proceed, a detailed analysis of the noise reduction requirements is made and the needed insulation features included in the design.
	Clearly Unacceptable: New development or construction should not be undertaken.

Source: California Office of Planning and Research, 2003

The extensive State regulations pertaining to worker noise exposure are applicable to the construction phase of the project (for example California Occupational Safety and Health

Administration Occupational Noise Exposure Regulations [8 CCR General Industrial Safety Orders, Article 105, Control of Noise Exposure, Section 5095, et seq.]), or for workers in a central plant and/or maintenance facility, or involved in the use of maintenance equipment or heavy machinery.

Local

Because the CPUC has exclusive jurisdiction over the siting, design, and construction of the project, the project is not subject to local discretionary noise requirements. This section includes a summary of local noise standards or ordinances in the project area for informational purposes and to assist with CEQA review.

Fresno County General Plan Health and Safety Element

Fresno County General Plan noise policies are listed below.

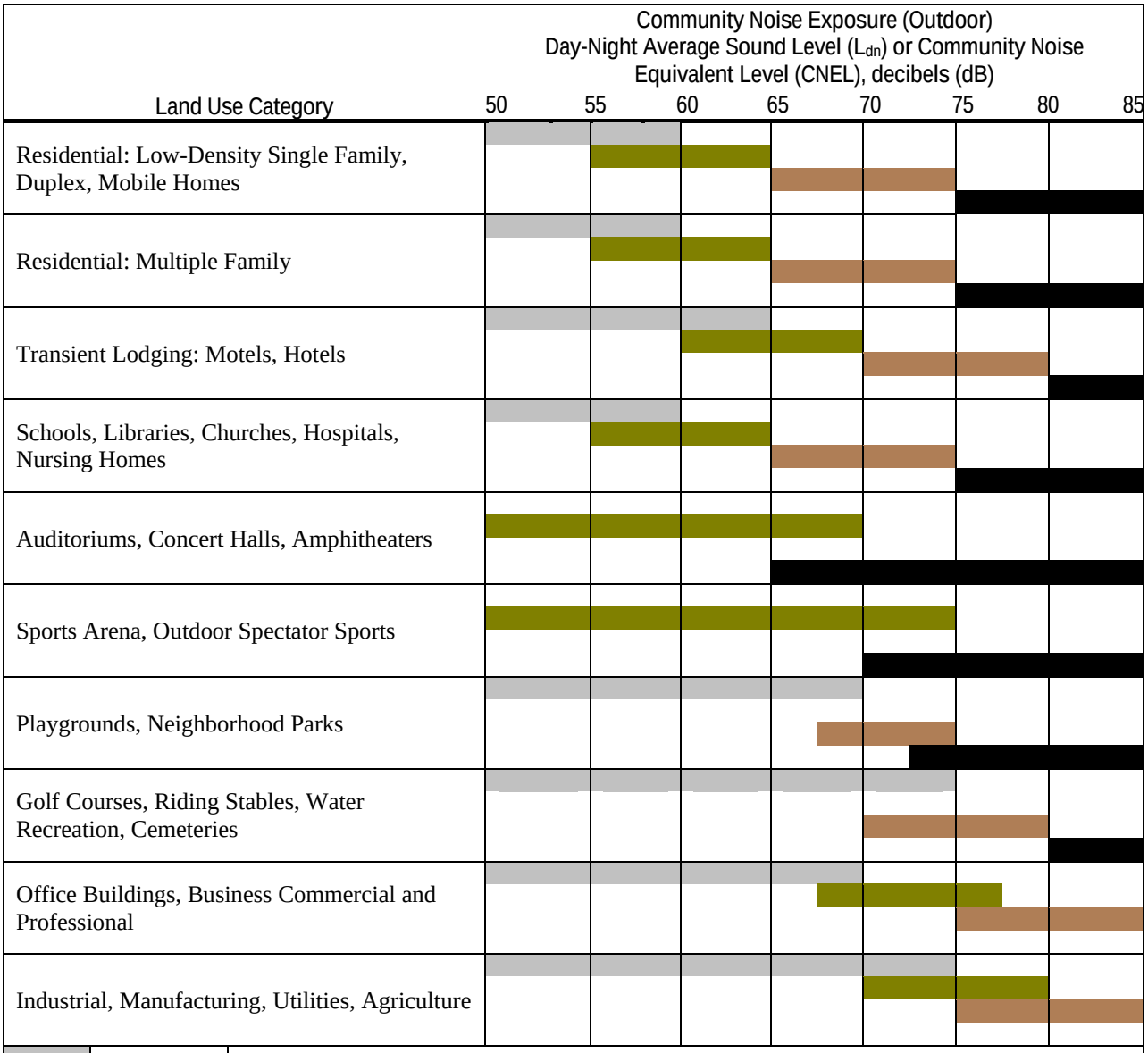
Policy HS-G.5: Where noise mitigation measures are required to achieve acceptable levels according to land use compatibility or the Noise Control Ordinance, the County shall place emphasis of such measures upon site planning and project design. These measures may include, but are not limited to, building orientation, setbacks, earthen berms, and building construction practices. The County shall consider the use of noise barriers, such as sound walls, as a means of achieving the noise standards after other design-related noise mitigation measures have been evaluated or integrated into the project.

Policy HS-G.6: The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County's Noise Control Ordinance.

Policy HS-G.8: The County shall evaluate the compatibility of proposed projects with existing and future noise levels through a comparison to Chart HS-1 (refer to Table 3.12-5 below which is equivalent to Chart HS-1 in the Fresno County General Plan).

Policy PF-J.2: The County shall work with local gas and electric utility companies to design and locate appropriate expansion of gas and electric systems, while minimizing impacts to agriculture and minimizing noise, electromagnetic, visual, and other impacts on existing and future residents.

Table 3.12-5: Land Use Compatibility for Community Noise Environments



	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 of development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning would normally suffice.
	Generally Unacceptable	New construction of 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.
	Land Use Discouraged	New construction or development should generally not be undertaken.

Source: Fresno County Public Works and Planning Department 2000

Fresno County Noise Control Ordinance (Fresno County Code Chapter 8.40)

Fresno County Code Section 8.40.040 (Municipal Code Corporation 2015) establishes outdoor noise standards for noise-sensitive receptors, such as residences, as shown in Table 3.12-6, but specifies that the following activities are exempt from these standards:

- Noise sources associated with construction provided such activities do not take place before 6:00 a.m. or after 9:00 p.m. on weekdays, or before 7:00 a.m. or after 5:00 p.m. on Saturday or Sunday (8.40.060 C).
- Noise sources associated with work performed by private or public utilities in the maintenance or modification of its facilities (8.40.060 G).

Table 3.12-6: Fresno County Exterior Noise Standards

Category	Cumulative Number of Minutes in any 1-Hour Time Period	Noise Level Standards, dBA	
		Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
1	30	50	45
2	15	55	50
3	5	60	55
4	1	70	60
5	0	70	65

Section 8.40.090 states that "Notwithstanding the provisions of Section 8.40.040, noise sources associated with the operation of electrical substations [within County jurisdiction] shall not exceed 50 dBA when measured as provided in Section 8.40.030." Section 8.40.030 states that exterior noise levels are to be measured within 50 feet of the affected residence, school, hospital, church or public library and that interior noise levels are to be measured within the affected dwelling unit.

3.12.3 METHODOLOGY

Evaluation of potential noise impacts from the project included reviewing applicable county and community noise standards, characterizing the existing noise environment, evaluating land use compatibility levels outlined in the Fresno County General Plan Noise Element, and predicting construction and operational noise levels and potential for impacts at the nearest noise-sensitive receptors.

3.12.4 ENVIRONMENTAL SETTING

The project area is in a generally rural area, and the primary source of noise and vibration is vehicular traffic on East Jensen Avenue and South McCall Avenue, with noise and vibration levels greater during peak traffic hours. Agricultural activities also generate intermittent noise and vibration primarily associated with agricultural machinery including tractors, harvesters, pumps, moveable irrigation lines, etc. Agricultural activities may occur during day, evening, or nighttime hours. The existing substation contains two 30 MVA distribution transformers, which are the primary sound sources associated with the operation of the power lines and substation

and contribute a constant low-level humming noise (noise associated with this size of transformer is typically on the order of 60 dBA at the source [Heathcote 2007]).

Based on noise measurements performed as part of the Fresno County Noise Background Report (Fresno County Public Works and Planning Department 2000), noise levels in this portion of Fresno County can be generally characterized as follows: maximum short-term daytime levels of high 50s to 60s dBA; L_{eq} from high 40s to low 50s dBA; and L_{dn} of about 61 dBA.

3.12.4.1 Sensitive Receptors

Noise-sensitive receptors are defined as locations where people reside or where the presence of unwanted sound may adversely affect the existing land use. Typically, noise-sensitive land uses include residences, hospitals, places of worship, libraries, performance spaces, offices, and schools, as well as nature and wildlife preserves, recreational areas, and parks. Sensitive receptors within 1.5 miles of the project were analyzed for potential impacts as a result of project construction and operation.

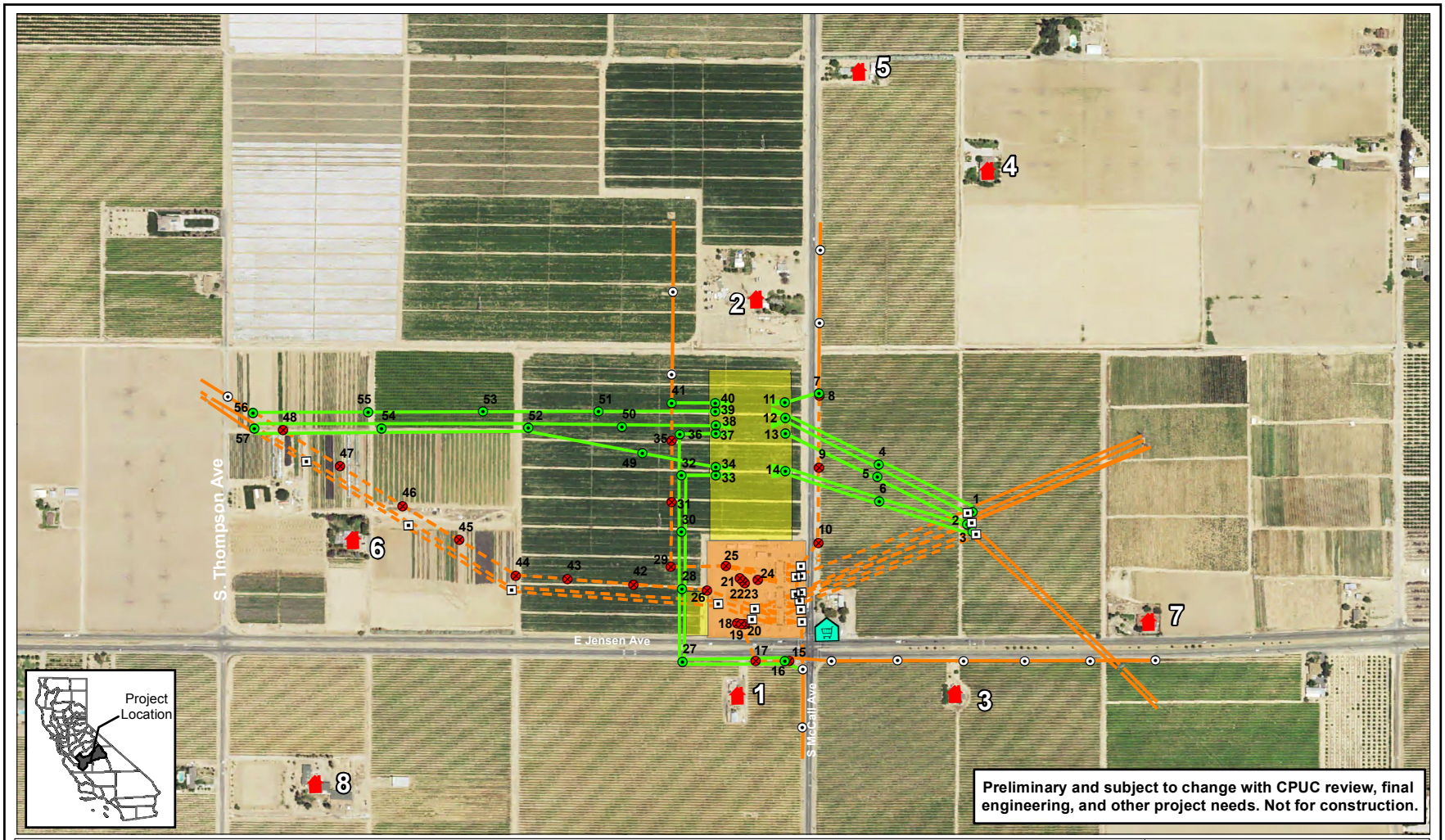
The noise-sensitive receptors near the project area include several residences, which are shown on Figure 3.12-1. The residences closest to the expanded substation are located just south of the existing substation on the south side of Jensen Avenue (Residence 1), and just north of the expanded substation on the west side of South McCall Avenue (Residence 2). Another residence is located about 1,000 feet west of the existing substation, near a pole replacement location (Residence 6). Several other residences are located within 1,500 feet of the areas where construction will occur. There are no schools, hospitals, parks, or other noise-sensitive facilities within 0.5 mile of the project area. There are no airports within 2 miles of the project area.

3.12.5 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for noise-related impacts derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational noise impacts.

3.12.5.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts related to noise were evaluated for each of the criteria listed in Table 3.12-1, as discussed in Section 3.12.5.3.



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3.12.5.2 Applicant-Proposed Measures

PG&E will implement the following APMs:

APM NOI-1. Construction schedule limits.

PG&E will limit construction hours so that construction will not occur before 6:00 a.m. or after 9:00 p.m. on any day except Saturday or Sunday, when construction will not occur before 7:00 a.m. or after 5:00 p.m. If nighttime work is needed because of clearance restrictions on the power line, PG&E will take appropriate measures to minimize disturbance to local residents, including contacting nearby residences to inform them of the work schedule and probable inconveniences.

APM NOI-2. Construction equipment reduction devices.

Construction equipment will use noise reduction devices that are no less effective than those originally installed by the manufacturer.

APM NOI-3. Placement of stationary construction equipment.

Stationary equipment used during construction will be located as far as practical from sensitive noise receptors.

APM NOI-4. Minimization of unnecessary idling.

Unnecessary engine idling will be limited. (See APM GHG-1.)

APM NOI-5. Noise minimization with "quiet" equipment.

"Quiet" equipment (i.e., equipment that incorporates noise control elements into the design—compressors have "quiet" models) will be used during construction whenever possible. Where feasible, equipment will be used that is specifically designed for low noise emissions and equipment powered by electric or natural gas as opposed to diesel or gasoline.

APM NOI-6. Noise disruption minimization through residential notification.

Residents in areas of heavy construction noise will be notified prior to commencing construction activities. Notification will include written notice and the posting of signs in appropriate locations with a contact number that residents can call with questions and concerns.

3.12.5.3 Potential Impacts

Project impacts related to noise were evaluated against the CEQA significance criteria and are discussed below. This section evaluates potential project impacts during the construction phase and the O&M phase.

The project includes the expansion of an existing 115 kV substation and reconfiguring of power lines and their supporting poles located outside the existing substation in unincorporated Fresno County, approximately 2 miles west of the City of Sanger. Substation expansion is proposed on land contiguous to the existing substation with power lines to be realigned in the areas surrounding the substation. PG&E will install related electric equipment at the station, including 115 kV disconnect switches, instrument transformers, protective relaying, metering and control equipment, remote supervisory control and data acquisition equipment, telemetering equipment,

an auxiliary alternating current and direct current power system, an electric grounding system, and underground conduits or trench systems. These features will not contribute to any change in noise from the noise currently generated at the substation. As such, the O&M activities required for the expanded substation will not change from those currently required for the existing substation; thus, no operation-related noise impacts will occur. The impact analysis is, therefore, focused only on construction activities that are required for the expansion.

a) Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? *Less than Significant*

Construction

During construction, noise will be generated from the use of construction equipment and from vehicles used to transport crews and materials to the project area. Noise levels for typical construction equipment listed in the project description at various distances from the equipment have been calculated previously and published in various reference documents. Typical expected equipment noise levels listed in the *FHWA Roadway Construction Noise Model User's Guide* (FHWA 2006) were used for this evaluation. The User's Guide provides the most recent comprehensive assessment of noise levels from construction equipment. Table 3.12-7 summarizes typical usage factors, and maximum noise levels, for representative construction equipment expected to be used.

Table 3.12-7: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor (%)	Specified L_{max} at 50 feet (dBA)	Calculated L_{eq} at 100 feet (dBA)	Calculated L_{eq} at 1,000 feet (dBA)	Calculated L_{eq} at 2,000 feet (dBA)	Calculated L_{eq} at 4,000 feet (dBA)
All Other Equipment > 5 horsepower	50	85	76	56	50	44
Auger Drill Rig	20	85	72	52	46	40
Backhoe	40	80	70	50	44	38
Crane	16	85	71	51	45	39
Dump Truck	40	84	74	54	48	42
Grader	40	85	75	55	49	43
Pickup Truck	40	55	45	25	19	13
Tractor	40	84	74	54	48	42

Notes:

dBA = A-weighted decibels; L_{eq} = equivalent sound pressure level

Source: FHWA Roadway Construction Noise Model User's Guide (FHWA 2006).

Equation to calculate L_{max} at 1,000, 2,000 and 4,000 feet is as follows:

$$L_{eq}(h) = L_{max} + 10*\log(A.U.F.) - 20*\log(D/Do)$$

where:

L_{max} = Maximum noise emission level of equipment based on work cycle at D/Do (decibel).

A.U.F. = Acoustical usage factor, which accounts for the percent time that equipment is in use over the time period of interest (1 hour).

D = Distance from the equipment to the receptor (feet).

Do = Reference distance (generally, 50 feet) at which the L_{max} was measured for the equipment of interest (feet).

As shown in Table 3.12-7, the loudest typical construction equipment generally emits noise in the range of 80 to 90 dBA at 50 feet, with usage factors of up to 40 percent and 50 percent.

Noise at any specific receptor is dominated by the closest and loudest equipment. The types and numbers of construction equipment near any specific receptor location will vary over time. Construction of the project will temporarily increase noise levels in the vicinity of the project area. Because noise decreases with distance and varies according to the construction phase, noise levels at the nearest sensitive receptors (residences) will vary depending on the equipment being used and the distance between the construction activity and the residences. Table 3.12-8 shows estimated maximum noise level (L_{max}), and L_{eq} in dBA, at the nearest nine residences when construction equipment at the substation site is operating closest to each of the residences.

Table 3.12-8: Construction Noise at Sensitive Receptors Near the Project Area

Residence	Approximate Distance from Substation Site (feet)*	Direction from Substation Site	Construction Noise Levels at Sensitive Receptors dBA	
			(L_{max})	(L_{eq})
1	185	South	44-74	40-71
2	190	North	43-73	39-70
3	720	Southeast	32-62	28-59
4	1,120	Northeast	28-58	24-55
5	1,265	Northeast	27-57	23-54
6	1,435	West	26-56	22-53
7	1,500	East	25-55	21-52
8	1,660	Southwest	25-55	21-52

* Distance from substation area was measured from the closest point at the substation to the closest point of each residence.

As shown in Table 3.12-8, noise levels at the two nearest residences (within 200 feet of the project area) could increase above ambient levels if construction equipment is operated near the existing and proposed substation boundaries. Noise levels at the other nearby residences will be considerably less. As shown in Table 3.12-8, at the closest residence, maximum noise levels from any single piece of equipment could range from 43 to 74 dBA, and the equivalent noise level (L_{eq}) could range from 39 to 71 dBA. However, this impact will be temporary, and most, if not all, of the work will be conducted in compliance with the local noise ordinance, which restricts noise-generating activities to daylight hours, and otherwise exempts construction from noise thresholds.

Construction activities within the substation will comply with the Fresno County Ordinance to the extent feasible, as described in APM NOI-1, and will implement additional measures to reduce temporary construction noise impacts. Construction activities will not take place before 6:00 a.m. or after 9:00 p.m. on any day except Saturday or Sunday, when construction will not occur before 7:00 a.m. or after 5:00 p.m., except as necessary for safety reasons or to perform certain construction activities when electrical clearances are available. For example, cut-over activities (transferring of conductors from the existing to the new structures) are sometimes performed at night when electricity loads are at their lowest levels. PG&E will employ APMs NOI-1 through NOI-6 to further minimize construction noise impacts at the nearby sensitive receptors. Impacts during construction will be less than significant with implementation of APMs NOI-1 through NOI-6.

Activities to remove existing power lines or install new power lines will generate temporary noise near Residences 1, 2, and 6 but these activities will be conducted during daytime hours and will only last for a few days. In addition, APMs NOI-1 through NOI-6 will be implemented, which will further reduce noise impacts by notifying residents of the construction and providing an avenue to ask questions and voice concerns and by minimizing the amount of noise that is generated by construction activities. Impacts will be less than significant with implementation of APM NOI-1 through NOI-6.

Construction activities associated with realignment of power lines will be designed to be compatible with applicable Fresno County noise standards. Construction activities will be short-term at each pole installation location (1 or 2 days), temporary, and limited to daytime hours, compatible with the local requirements. If nighttime construction is necessary to continue work until a safe stopping point is reached or if planned electrical outages (clearances) are scheduled at night, activities will be infrequent and short-term.

The amount of truck traffic generated during construction will be minor in comparison to that which currently exists. Doubling of vehicular traffic will increase noise levels by 3 dBA, which is not a perceptible difference; thus, vehicular traffic associated with project construction will not cause a perceptible increase in noise along local roadways. Any noise impacts from truck traffic will be less than significant, and no mitigation is needed.

Construction of the project will result in a less-than-significant impact under this criterion. The implementation of APM NOI-1, APM NOI-2, APM NOI-3, APM NOI-4, APM NOI-5, and APM NOI-6 will further minimize exposure to less-than-significant construction noise.

Operations

The existing transformers, which are the primary source of noise associated with the substation, will remain at their current location. No new noise-generating equipment will be installed at the substation; therefore, no new noise impacts will occur from substation operation.

Operation of the electrical power lines typically will not generate noise. The conductor size selected for the project's power line (115 kV) is of sufficient diameter to lower the localized electrical stress on the air at the conductor surface and will further reduce already low conductor surface gradients so that little or no corona activity will exist under most operating conditions. Moreover, only two sensitive receptors are located within 500 feet of the new power lines. The project will result in the realigning power lines that are currently adjacent to Residence 6 to approximately 375 feet to the north, which will lessen the potential for audible noise. The existing power line that is adjacent to Residence 1 would be replaced with a new line that is slightly closer but would not result in any measurable increase in potential corona noise at the residence from existing conditions. Therefore, no noise impacts from corona will occur. Because no noise impacts will occur, project operation will not expose receptors to noise that exceeds applicable standards. Power line maintenance will generate periodic noise, but will be comparable to existing noise due to line maintenance and, in any event, is specifically exempt from the standards established by the Fresno County Noise Control Ordinance.

Maintenance activities currently performed at Sanger Substation will continue. Maintenance activities will typically occur over short timeframes and generate minimal noise. Therefore, noise impacts from maintenance of the project will remain less than significant.

As described above, Fresno County's General Plan Policy HS-G.8 states that the County shall evaluate the compatibility of proposed projects with existing and future noise levels through a comparison to Chart HS-1, "Land Use Compatibility for Community Noise Environments" (Table 3.12-5). The project will be classified as "Industrial, Manufacturing, Utilities, Agriculture" with a day-night noise level (L_{dn}) of up to 75 dBA considered "Normally Acceptable." As described above, the typical L_{dn} in the project area is about 61 dBA, far less than this upper limit. Therefore, the project is compatible with existing noise levels in terms of the Fresno County land use compatibility criteria as outlined in the Fresno County General Plan.

b) Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? *No Impact*

Vibration from construction may result from heavy equipment driving on uneven surfaces, tamping the ground surface, and rock drilling. The level of vibration will depend upon the distance to the receptor, the type of soil, and the intensity of the equipment creating the vibration. Generally, construction-related groundborne vibration is not expected to extend beyond 25 feet from the generating source, and no sensitive receptors are located within 25 feet of areas of construction. Vibration also will be generated by trucks bringing construction materials to the site, but any changes will be imperceptible given the small number of truck trips generated in relation to the volume of traffic that is currently present. No vibration will result from operation of the substation and power lines. Therefore, no vibration-related impacts to sensitive receptors such as local residents will occur due to attenuation of vibration beyond 25 feet.

c) Would the project result in substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? *No Impact*

Project construction will not result in a permanent increase in ambient noise levels. O&M activities for the power line and substation will be similar in scope to existing O&M activities. The new and modified power components will not change the amount of corona noise (the crackling, hissing, or humming that can be heard during foggy or wet conditions) generated by operation of the power line beyond the existing conditions. No permanent increase in ambient noise levels will occur in the project vicinity. Therefore, no impacts will occur.

d) Would the project result in substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? *Less than significant*

Any increases in ambient noise levels in the project vicinity during construction will be short-term, intermittent, and temporary. Adverse construction noise impacts (e.g., nighttime construction near residences) are not anticipated. Construction noise impacts from the project will be a less-than-significant impact under this criterion. Implementation of APM NOI-1, APM NOI-2, APM NOI-3, APM NOI-4, APM NOI-5, and APM NOI-6 will further minimize construction equipment noise.

As discussed above, no noise impacts will result from operation of the expanded Sanger Substation. Routine inspection and maintenance activities currently performed at the station and

on surrounding lines will continue and will include all new project components. Maintenance activities will typically occur over short timeframes each year and generate minimal noise. Operation will not change from existing conditions to result in substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels. Therefore, noise impacts from O&M of the project will be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, will the project expose people residing or working in the project area to excessive noise levels? *No Impact*

Construction, operation, and maintenance of the project will occur at a distance greater than 2 miles from a public airport and the project area is not located within an airport land use plan. Therefore, the project will result in no impact under this criterion.

f) For a project within the vicinity of a private airstrip, will the project expose people residing or working in the project area to excessive noise levels? *No Impact*

No private airstrips are located within 2 miles of the project; therefore, the project will result in no impact under this criterion.

3.12.6 REFERENCES

California Office of Planning and Research. 2003. General Plan Guidelines. http://opr.ca.gov/docs/General_Plan_Guidelines_2003.pdf. October 2003.

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3.13 POPULATION AND HOUSING

3.13.1 INTRODUCTION

This section describes existing conditions and potential impacts on population and housing, as a result of project construction, operation, and maintenance. The analysis concludes that the project will have no impact to population and housing resources. The project's potential effects on population and housing were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.13-1 and discussed in more detail in Section 3.13.4.

Table 3.13-1: CEQA Checklist for Population and Housing

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.13.2 REGULATORY BACKGROUND AND METHODOLOGY

3.13.2.1 Regulatory Background

No regulatory background information is relevant to addressing project-related impacts on population and housing.

3.13.2.2 Methodology

To evaluate potential effects on population and housing resources, demographic and economic data were obtained from literature searches and statistical reports from the U.S. Census Bureau. The information was then used to evaluate the project against the CEQA Checklist to determine potential impacts.

3.13.3 ENVIRONMENTAL SETTING

Population

Fresno County had a population of approximately 955,272 in 2013 (U.S. Census Bureau 2013). The county is projected to grow by approximately 13 percent between 2010 and 2020 and by

approximately 14 percent between 2020 and 2030 (California Department of Finance 2014). Total population for Fresno County and the cities of Fresno and Sanger is shown in Table 3.13-2.

Table 3.13-2: Total Population

Geographic Region	2000	2010	2014 (estimated)	% Change between 2000 and 2010
Fresno County	799,407	930,450	965,974	16.4
City of Fresno	427,652	494,665	515,986	15.7
City of Sanger	18,931	24,270	24,810	28.2

Source: U.S. Census Bureau 2014

Housing

Table 3.13-3 depicts the total housing units, owner-occupancy rates, and vacancy rates in 2013 for Fresno County and the cities of Fresno and Sanger.

Table 3.13-3: Total Housing Units and Vacancy Rates

Geographic Region	Total Housing Units	Owner-Occupied Housing (%)	Vacancy Rate (%)
Fresno County	324,126*	53.8	8.8
City of Fresno	173,000	48.0	8.0
City of Sanger	7,136	60.5	7.2

Source: U.S. Census Bureau 2013 & 2014*

3.13.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for impacts on population and housing derived from Appendix G of the CEQA Guidelines, and assess potential project-related construction and operational impacts. APMs are not required for this section.

3.13.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts on population and housing were evaluated for each of the criteria listed in Table 3.13-1, as discussed in Section 3.13.4.3.

3.13.4.2 Applicant-Proposed Measures

No APMs are suggested because project construction, operation, and maintenance will have no impact on population and housing.

3.13.4.3 Potential Impacts

The project includes expansion of the existing Sanger Substation and associated power line modifications, as discussed in Chapter 2.0, Project Description. Project impacts on population and housing were evaluated against the CEQA significance criteria, as discussed below. This section evaluates potential project impacts from both the construction phase and operation and maintenance phase.

a) Would the project induce substantial population growth in area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure? *No Impact*

The project will expand an existing, unstaffed substation and therefore will not construct new homes or businesses or otherwise directly induce substantial population growth. Construction activities will last approximately 19 months, and a maximum of approximately 30 workers are expected to be onsite at any given time. Construction workers will be drawn primarily from Fresno County or adjacent areas and will not permanently increase the local population or affect available housing. The project will not indirectly induce substantial population growth. Project objectives are outlined in Section 2.4.1 and include addressing electrical and civil engineering requirements on the existing substation in order to replace dilapidated structures and equipment, maintaining connectivity with other PG&E substations, and reinforcing the existing electrical system. The latter objective is related to maximizing electrical system efficiency by increasing operational flexibility and reliability. The project does not propose construction or extension of major infrastructure facilities that do not presently exist in the project area, nor does the project propose changes in existing regulations pertaining to land development.

This project will not add additional capacity to the system or directly or indirectly foster growth or remove obstacles to economic or population growth in the area. While an improvement in reliability could potentially attract additional residents and businesses, this effect will be minimal because there will not be any additional capacity to support significant growth.

b) Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? *No Impact*

Construction of the expanded substation and subsequent operations will not displace existing residences or necessitate the construction of housing elsewhere, thus no impacts will occur.

c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? *No Impact*

The project will not displace people or necessitate the construction of housing elsewhere, thus no impacts will occur.

3.13.5 REFERENCES

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3.14 PUBLIC SERVICES

3.14.1 INTRODUCTION

This section describes existing conditions and potential impacts on public services as a result of construction, operation, and maintenance of the project, and concludes no impacts will occur. Public services include fire and emergency protection, police protection, and maintenance of public facilities such as schools and parks. Emergency access is discussed in Section 3.16, Transportation and Traffic. Temporary construction-related impacts on schools and parks—such as dust and noise—are discussed in Sections 3.3, Air Quality, and 3.12, Noise, respectively. Project compatibility with future park-planning efforts is discussed in Section 3.10, Land Use and Planning. Potential impacts on parks and recreational facilities are discussed in Section 3.15, Recreation.

The project's potential effects on public services were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.14-1 and discussed in more detail in Section 3.14.4.

Table 3.14-1: CEQA Checklist for Public Services

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Would the project 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:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

3.14.2 REGULATORY BACKGROUND AND METHODOLOGY

3.14.2.1 Regulatory Background

No regulatory background information for public services is relevant to the project.

3.14.2.2 Methodology

Public services include fire and police protection, and maintenance of public facilities such as schools and parks. This section was prepared on the basis of reviews of the Fresno County General Plan (2000a) and the 2014 Revised Draft General Plan Policy Document (2000b), the Fresno County Ordinance Code, the Fresno County Public Works and Planning Department Special Districts Administration (2015a), the Fresno County Public Works and Planning Department Building and Safety requirements (2015b), Fresno County Fire Protection District (FCFPD) website, the Fresno County Sheriff's website, and other local service information resources. The information was then used to evaluate the project against the CEQA Checklist to determine potential impacts.

3.14.3 ENVIRONMENTAL SETTING

Sanger Substation is a part of the California Independent System Operator (CAISO) power grid and is maintained and operated by PG&E. It is located in an unincorporated, predominantly agricultural setting in rural Fresno County.

3.14.3.1 Fire Protection

FCFPD is a full-service fire department providing emergency services to approximately 2,655 square miles of the central San Joaquin Valley and serves a population of more than 220,000 citizens in both incorporated and unincorporated areas of Fresno County (Fresno County Fire Protection District 2015). In cooperation with the CAL FIRE, FCFPD provides emergency services from 13 district-staffed fire stations and five district-paid call fire stations. A minimum of two to three career firefighters are on duty 24 hours per day at any given fire engine company, which allows for a minimum of 48 firefighters to be on duty daily providing fire suppression, emergency medical services, and rescue. An Emergency Command Center serves CAL FIRE, FCFPD, and 13 other emergency agencies in the region, including the California Emergency Management Agency Region V Coordination Center. Fire protection and emergency services for the project area are provided by FCFPD Battalion 18, which is based in the City of Sanger, with cooperation from CAL FIRE. FCFPD will be designated as the first responder for all project-related incidents.

3.14.3.2 Police Protection

The Fresno County Sheriff's Department provides law enforcement services to all unincorporated areas of the county, including the project area. The project area is located in Patrol Area 3 of the Southwest Field Services Bureau, which provides 24-hour law enforcement for about 150,000 residents in the southern Fresno County area. Typically, the Southwest Field Services Bureau is composed of approximately 53 sworn officers; however, current staffing levels may vary due to numerous layoffs resulting from budget reductions (Fresno County Sheriff's Office 2015).

3.14.3.3 Schools

There are a total of 33 public school districts and 341 public schools in Fresno County. The project site is within District 4 of the Sanger Unified School District (Fresno County Office of Education 2015), which includes 22 elementary, charter, and high schools. Public primary education is overseen by the Fresno County Office of Education. The public school nearest the project site is the Ronald W. Reagan Elementary School, located approximately 1.6 miles northeast of the substation. There are also several private schools throughout Fresno County; however, there are no private schools within 0.5 mile of the project site.

3.14.3.4 Parks

The project is located in an area composed of privately owned, mostly agricultural lands. There are no parks or other recreational areas (e.g., golf courses) within 0.5 mile of the project area. The closest public parks are more than 2 miles to the east in Sanger. Additional information about impacts on recreational resources is provided in Section 3.15, Recreation.

3.14.3.5 Other Public Facilities

No medical or mental health hospitals are in the immediate vicinity of the project site. The nearest available emergency care centers are in Fresno and Clovis, approximately 10 miles west and 9 miles northeast of Sanger Substation, respectively.

3.14.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for impacts on public services derived from Appendix G of the CEQA Guidelines and assess potential project-related construction and operational impacts.

3.14.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. As required by Appendix G of the CEQA Guidelines, the potential significance of project-related impacts on public services was evaluated for each of the criteria listed in Table 3.14-1, as discussed in Section 3.14.4.3.

3.14.4.2 Applicant-Proposed Measures

No APMs are suggested because project construction, operation, and maintenance will have no impact on public services.

3.14.4.3 Potential Impacts

Project impacts on public services were evaluated against the CEQA significance criteria and are discussed in further detail below. The impact analysis evaluates potential project impacts during the construction phase and the O&M phase.

The project consists of expanding the existing Sanger Substation into an adjacent agricultural field. The project will include removing aging equipment, installing additional electrical

equipment and buildings to house the equipment, and rearranging adjacent power lines. O&M activities will remain consistent with current procedures.

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government 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 following public services: fire protection, police protection, schools, parks, other public facilities? ***No Impact***

Project construction will result in a temporary, short-term increase of a maximum of approximately 30 construction workers on any given day. Although construction workers traveling to the project area may use existing public services or amenities, this potential increase in demand will be minimal and temporary, and will not require new or altered government facilities. The project will not include development of new residential units that will directly or indirectly increase population; therefore, no increase in the demand for public services in the area will occur.

Fire and Fire Protection

As described in Section 3.16, Transportation and Traffic, during project construction, PG&E will coordinate any road closures with emergency service providers so that response times will not be affected.

Schools

As described in Section 3.14.3.3, no schools are located within 0.5 mile of the project alignment. Therefore, no impact on schools will occur.

Parks

As described in Section 3.14.3.4, no parks are located within 0.5 mile of the project alignment. Therefore, no impact on parks will occur.

3.14.5 REFERENCES

Fresno County Fire Protection District. 2015. Fresno County Fire Protection District. Online: (http://fresnocountyfire.org/). Accessed on February 4, 2015.

Fresno County Office of Education. 2015. Fresno County School Districts. Online: http://ww2.fcoe.org/?n=363. Accessed on February 4, 2015.

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3.15 RECREATION

3.15.1 INTRODUCTION

This section describes existing conditions and potential impacts on recreation as a result of construction, operation, and maintenance of the project and concludes that no impacts will occur in this area. The project will not introduce new housing or a significant number of jobs into the area that could increase the use of existing parks and will not require the introduction of new park facilities. The project's potential effects on recreation were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.15-1 and discussed in more detail in Section 3.15.4.

Table 3.15-1: CEQA Checklist for Recreation

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Would the project 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?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

3.15.2 REGULATORY BACKGROUND AND METHODOLOGY

3.15.2.1 Regulatory Background

No federal, state, or local regulations related to recreation are applicable to the project.

3.15.2.2 Methodology

Recreation resources include recreational facilities such as state, local, and regional parks. The California Department of Parks and Recreation (DPR) website and the City of Sanger Parks and Recreation website were reviewed as part of the recreational resources evaluation within 2 miles of the project. Additionally, information about recreational resources was obtained during site inspections conducted in March and April 2012, subsequently in January 2015, and from review of aerial photographs. The information was then used to evaluate the project against the CEQA Checklist to determine potential impacts.

3.15.3 ENVIRONMENTAL SETTING

3.15.3.1 Regional Setting

3.15.3.2 Local Setting

No parks are adjacent to the project area (DPR 2015). The project is not located on any land used or proposed for recreation (Fresno County Public Works and Planning Department 2000a). The nearest recreational resources are Lincoln Park located approximately 3 miles southeast of the project, Rotary Ball Park located 2.2 miles southeast of the project, and Greenwood Park located 2.45 miles east of the project. (Google Earth Pro 2015). All three parks are located within the City of Sanger and maintained by the Sanger Parks and Recreation Department (City of Sanger Parks and Recreation 2015).

3.15.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for recreation impacts derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational recreation impacts.

3.15.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts on recreation were evaluated for each of the criteria listed in Table 3.15-1, as discussed in Section 3.15.4.3.

3.15.4.2 Applicant-Proposed Measures

No APMs are identified for recreation because no impacts will occur.

3.15.4.3 Potential Impacts

Potential project impacts on recreation were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and the operation and maintenance phase.

a) Would the project 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? *No Impact*

As discussed in Section 3.13, Population and Housing, and Section 3.14, Public Services, the project will not directly or indirectly result in increased population; therefore, the use of existing neighborhood and regional parks or other recreational facilities will not increase, and no impact will occur.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?
No Impact

The project will not include recreational facilities or require the construction or expansion of recreational facilities. Therefore, no impact will occur.

3.15.5 REFERENCES

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City of Sanger Parks and Recreation Information. 2015. Online: https://www.ci.sanger.ca.us/parksrecfac.asp. Accessed February 11, 2015.

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3.16 TRANSPORTATION AND TRAFFIC

3.16.1 INTRODUCTION

This section describes existing conditions and potential impacts on transportation and traffic on the roads that will be used to access the project as a result of construction, operation, and maintenance of the project. The analysis concludes that, although existing traffic conditions will be temporarily affected by project construction, project-related impacts on traffic and transportation will be less than significant. The APMs as described in Section 3.16.4.2 will further reduce impacts. The project's potential effects on transportation and traffic were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.16-1 and discussed in more detail in Section 3.16.4.

Table 3.16-1: CEQA Checklist for Transportation and Traffic

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.16.2 REGULATORY BACKGROUND AND METHODOLOGY

3.16.2.1 Regulatory Background

Federal

Transportation of Hazardous Materials

The U.S. Department of Transportation (DOT) and Caltrans are the administrating agencies for the following regulations:

- Title 49 Code of Federal Regulations Sections 171 through 177 (49 CFR 171–177) governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.
- 49 CFR 350-399 and Appendixes A through G, Federal Motor Carrier Safety Regulations, address safety considerations for the transport of goods, materials, and substances over public highways.
- 49 CFR 397.9, the Hazardous Materials Transportation Act of 1974, directs DOT to establish criteria and regulations for the safe transportation of hazardous materials.

State

The project is located in Caltrans District 6. Caltrans owns the rights-of-way for State Routes (SRs), including any on- and off-ramps that provide access to the project area. Any project-related work within SR rights-of-way requires a ministerial encroachment permit from Caltrans.

Caltrans is also the administrating agency for regulations related to traffic safety, including the licensing of drivers, weight and load limitations, transportation of hazardous and combustible materials, and the safe operation of vehicles.

Local

Because the CPUC has exclusive jurisdiction over project siting, design, and construction, the project is not subject to local discretionary regulations. This section includes a summary of local transportation policies, plans or programs for informational purposes and to assist with CEQA review.

Fresno County

The Fresno County General Plan (2000b) indicates that a level of service (LOS) C—stable flows with acceptable delays—is to be maintained on county roadways, except for urban roadways within the spheres of influence of the cities of Fresno and Clovis, where the LOS is D. The Fresno County Congestion Management Process is based on these standards (Council of Fresno County Governments 2009, 2010).

The Fresno County Regional Transportation Plan (RTP) 2040, adopted in 2014, guides connectivity between Fresno County communities. The RTP provides an action plan of projects and programs to address needs consistent with adopted transportation policies (Council of Fresno County Governments 2014).

Fresno County is currently working on developing an extensive regional bikeway and recreational trail network that connects cities and unincorporated areas countywide (Fresno County Department of Public Works and Planning 2013). Recreational bicycling and other non-motorized forms of transportation (e.g., hiking, equestrian) are generally localized, although there are a few existing segments of Class I (pathway separated from the roadway) and Class II (designated bike lane adjacent to roadway) recreational trails in the county, primarily located in the urban Fresno area.

3.16.2.2 Methodology

Traffic data and other transportation system information were obtained from maps, literature searches, aerial photographs, and personal communication with state and local government officials. The information was used to evaluate the project, using the CEQA checklist to determine potential impacts. Project activities during construction and operation were evaluated within the context of surrounding transportation and traffic facilities and resources, to determine whether the project may result in changes that will directly or indirectly affect those facilities or resources. Because the project construction and O&M traffic will be similar to current conditions on area roads, traffic circulation modeling and additional traffic studies are not expected to be necessary for the project.

3.16.3 ENVIRONMENTAL SETTING

This section includes a description of the roadways that will be used by workers and delivery trucks during construction. Access routes will vary depending on the origin of the worker or truck, and the type of activity that day. Therefore, the roads that are most likely to be affected are described. The highest-volume roadways are described first.

3.16.3.1 Regional Roadways

Fresno County's circulation system consists of a roadway network that is primarily rural in character, with the exception of the urban areas surrounding the cities of Fresno and Clovis and various smaller communities in the southern and western parts of the county (Fresno County Department of Public Works and Planning 2000a).

Major transportation routes include Interstate 5 (I-5), SR 99, SR 168, and SR 41, which traverse the county from north to south, and SR 180, which traverses the county from east to west. These roadways contribute to a significant volume of long-distance trucking traffic through Fresno County. The two major roadways most likely to be routinely used by personnel accessing the construction site are SR 180 and SR 168. SR 180, which may be used to access the project site, carries annual average daily traffic (AADT) of approximately 140,000 at its junction with SR 99 at peak hours and approximately 159,000 AADT during peak hours at its junction with SR 41 (Caltrans 2013a). Up to 15 percent of these trips are truck trips. Some segments of SR 180 have undergone improvements in recent years and more are planned in order to improve regional traffic conditions. SR 168 carries AADT of approximately 77,000 at its junction with SR 180 at peak hours (Caltrans 2013a). The percentage of truck traffic using SR 168 in the city of Fresno is typically nor more than 12 percent (Caltrans 2013b). In addition to federal and state roadways, the rural local (county) highway system also must be capable of handling the relatively high number of large trucks needed to meet the demands of the local agricultural economy and dispersed field production/distribution patterns. Vehicles that exceed the legal height, width,

length, or weight limits established in the State vehicle code require special permits to operate on Fresno County roads.

3.16.3.2 Local Roadways

The local transportation system in the project vicinity consists of county-maintained arterial roadways—East Jensen Avenue and South McCall Avenue—both of which are also important regional roadways as described in Section 3.16.3.1. In the vicinity of the project site, East Jensen Avenue is characterized as a regionally significant four-lane expressway that links Sanger and other east county communities with Fresno (Fresno County Department of Public Works and Planning 2000b; Council of Fresno County Governments 2010), and has an LOS of C during peak hours. Its primary purpose is to maintain traffic flow between Fresno and Sanger. South McCall Avenue is a designated county arterial (Fresno County Department of Public Works and Planning 2000b); it is a relatively narrow, undivided two-lane roadway with a soft shoulder. It also operates at LOS C during peak hours. Arterials provide for mobility within the county by connecting major traffic routes including freeways, expressways, super arterials, and other arterials. The County of Fresno Public Works and Planning Department has plans to widen South McCall Avenue from 60 to 126 feet in the future, but no schedule has been set to date.

3.16.3.3 Existing Traffic Volumes and Levels of Service

To evaluate the operational characteristics of a roadway segment, a simple grading system is used to compare the traffic volume carried by a road with the capacity of that road. The volume/capacity ratio is an indicator of traffic conditions, speeds, and driver maneuverability. Table 3.16-2: Definitions of Study Area Roadway Characteristics presents roadway traffic flow characteristics for LOS.

Table 3.16-2: Definitions of Study Area Roadway Characteristics

LOS	V/C1 Ratio	Traffic Flow Characteristics
A	0.00 – 0.60	Free flow; insignificant delays
B	0.61 – 0.70	Stable operations; minimal delays
C	0.71 – 0.80	Stable operation, acceptable delays
D	0.81 – 0.90	Approaching unstable flow; queues develop rapidly but no excessive delays
E	0.91 – 1.00	Unstable operation; significant delays
F	>1.00	Forced flow; jammed conditions

Source: Transportation Research Board 2000

LOS = Level of Service

V/C1 = volume/capacity ratio, an indicator of traffic conditions, speeds, and driver maneuverability.

3.16.3.4 Bicycle Facilities

The Fresno County Regional Bicycle and Recreational Trails Master Plan (2013) describes the bikeways in unincorporated Fresno County. Although not yet implemented, a Class II bike route is proposed along East Jensen Avenue between Sanger (Academy Avenue) and South McCall Avenue (Fresno County Department of Public Works and Planning 2013). West of its

intersection with South McCall Avenue, East Jensen Avenue's road shoulder narrows, making it unsafe for bicyclists; thus, the currently designated bike route will turn south onto South McCall Avenue then west on East North Avenue. Right of way, environmental, and jurisdictional issues have delayed the creation of a Class II bikeway along East Jensen Avenue. Class II bikeways are defined as on-street routes intended to provide continuity to bikeway systems.

3.16.3.5 Air Traffic

The Del Rey Juice Airstrip is located approximately 4 miles south of the project vicinity. This is the closest air field to the project. Turner Field, a privately owned airport, is located approximately 6.5 miles southwest of the project vicinity in the community of Malaga (a suburb of Fresno), and Fresno Yosemite International Airport is located approximately 6.5 miles northwest of the project (California Public Records 2015).

3.16.3.6 Transit and Rail Services

Orange Cove Transit, a privately owned public transit service, operates buses between Fresno and Sanger on East Jensen Avenue. The bus system makes multiple round trips per day, Monday through Friday between the hours of 8:15 a.m. and 5:05 p.m.

The San Joaquin Valley Railroad (SJVR) tracks are aligned east/west along E. California Avenue, approximately 1 mile north of the project site. The SJVR interchanges with Union Pacific Railroad and Burlington Northern Santa Fe Railroad in Fresno. Primary commodities it transports include petroleum products, cattle feed, building products, and dry and liquid fertilizers. The SJVR operates seven days per week (Genesee and Wyoming, Inc. 2015).

3.16.4 Applicant-Proposed Measures and Potential Impacts

The following sections describe significance criteria for transportation and traffic impacts derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and O&M impacts on transportation and traffic.

3.16.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. As required by Appendix G of the CEQA Guidelines, the potential significance of project impacts related to transportation and traffic were evaluated for each of the criteria listed in Table 3.16-1, as discussed in Section 3.16.4.3.

3.16.4.2 Applicant-Proposed Measures

PG&E will implement the following APMs:

APM TRAN-1. Traffic Planning.

PG&E will follow its standard safety practices as needed, including installing appropriate barriers between work zones and transportation facilities, posting adequate signs, and using proper construction techniques. PG&E is a member of the California Joint Utility Traffic Control Committee, which published the Work Area Protection and Traffic Control Manual

(California Joint Utility Traffic Control Committee 1999). PG&E will follow the recommendations in this manual regarding basic standards for the safe movement of traffic on highways and streets in accordance with Section 21400 of the California Vehicle Code. If required for obtaining a local encroachment permit, PG&E will establish a Traffic Management Plan (TMP) to address haul routes, timing of heavy equipment and building material deliveries, potential street and/or lane closures, signing, lighting, and traffic control device placement. Construction activities will be coordinated with local law enforcement and fire protection agencies. Emergency service providers will be notified as required by the local permit of the timing, location, and duration of construction activities.

3.16.4.3 Potential Impacts

Project impacts on transportation and traffic were evaluated against the CEQA significance criteria and are discussed below. The impact analysis evaluates potential project impacts during the construction phase and the operation and maintenance phase.

The project consists of expanding the existing Sanger Substation into an adjacent agricultural field. The expansion will include installing additional electrical equipment and buildings to house the equipment, and associated power line modifications. O&M activities will remain consistent with current procedures.

a) Would the project 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? *Less than Significant*

During construction, trips will be generated by construction workers, equipment deliveries, and materials delivery trucks. The amount of traffic will vary according to construction phase, as shown in Table 3.16-3. It is anticipated that during construction a maximum of approximately 30 workers a day will be needed onsite, each taking approximately two trips per day between the substation and the surrounding communities. Trucks, such as crew trucks, semi-trucks, dump trucks, concrete trucks, and water trucks, also will be required throughout construction, for varying lengths of time. The transportation of equipment to the project site will occur less frequently (i.e., materials and most construction equipment, once delivered, will remain onsite during construction). Assuming, as a worst-case scenario, that all worker vehicle and truck trips for each phase occurred on the same day, the maximum number of trips on a given day (worker trips plus construction-related truck trips) would be 112 during equipment and component installation for the expected duration of the project construction activities (approximately 19 months). This is not likely to occur, however, and as indicated in Table 3.16-3, not all trucks will be required on all days. Additionally, these trips will not occur at the same time, since they include vehicles arriving at and departing the site, and not all trips will affect the same roads. It is likely that most vehicles will access the project site via SR 180, exiting at McCall Avenue and heading south to the project site. Others may approach from East Jensen Avenue.

Table 3.16-3: Estimated Daily Worker and Truck Trips

Construction Phase	Daily Worker Trips	No. of Days	Daily Truck Trips[1]	No. of Days	Maximum No. of Daily Trips[2]
Site Grading and Access	32	60	20 8	20 60	60
Foundations and Footings	38	60	14	60	52
Equipment and Component Installation	46	210	2 2 10 50 2	200 60 120 5 60	112
Line and Tower Configuration	24	90	30 2 8 8 2 2	15 1 4 6 30 45	76
Equipment Removal/Cleanup	10	210	2	45	12

Notes:

1. Different types of trucks may be used for varying lengths of time.

2. Assumes as a worst-case scenario that all trucks during a given phase are used on the same day (i.e., worker trips plus construction trucks).

The addition of project traffic will be imperceptible on SR 180 given the current traffic volume The East Jensen Avenue/South McCall Avenue intersection is signalized, which regulates traffic movement, improves safety, and prevents project-related flow disruption related to construction vehicle traffic turning at this intersection. Short-duration delays could result from construction traffic turning into or leaving the substation work site from South McCall Avenue or East Jensen Avenue; however, such delays are consistent with existing conditions (i.e., vehicles accessing lands adjacent to the roadway). Similarly, construction traffic accessing proposed pull sites and infrastructure removal sites on lands near the substation could temporarily delay traffic as they turn onto or exit access roads. The project will not require temporary road or lane closures, and the slight, temporary increase in traffic as a result of project construction will not reduce the level of service on East Jensen and South McCall avenues below LOS C. Thus, the project will not conflict with the performance standard established by the Fresno County General Plan, and any impacts will be less than significant.

Construction activities will not conflict with pedestrian or bicycle paths or mass transit; thus, these issues are not discussed further. Vehicular traffic associated with the expanded substation will be essentially the same as existing substation-related traffic. Substation access will continue to be from South McCall Avenue (refer to the general arrangement drawing provided on Figure 2-4 in Chapter 2.0: Project description). Therefore, no impacts on traffic and transportation will occur during operation and maintenance.

b) Would the project 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? *Less than Significant*

The project will not conflict with the Fresno County Congestion Management Process. As discussed above, construction activities will not reduce traffic circulation on East Jensen Avenue or South McCall Avenue below LOS C (the designated current level). Traffic related to construction activities will consist of the daily arrival and departure of construction personnel, trucks hauling equipment and materials to the project area, and the hauling of debris from the project area. The approximate number of construction-related truck trips is summarized in Table 3.16-3.

Project construction traffic will be temporary and therefore will not result in any long-term degradation in operating conditions or LOS on any project area roadways. The primary off-site impacts from the movement of construction trucks will include minor short-term and intermittent effects on through traffic operations due to slower movements and larger turning radii of project trucks compared to passenger vehicles. Impacts on traffic during construction will be less than significant.

Similar to existing conditions, the expanded substation will continue to be unstaffed, and traffic during operation and maintenance will not increase beyond current levels. Therefore, no impacts will occur during operation and maintenance.

c) Would the project 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? *No Impact*

The project will not impact air traffic operations, nor will it result in any aviation safety risks. The project consists of expanding an existing substation facility and relocating some existing power lines with no substantial changes in vertical height. New poles and electrical lines associated with the expanded substation infrastructure will have no impact on regional air traffic patterns since the new features will be no taller than structures that already exist in the immediate area and there are no airports or heliports located within 2 miles of the project area. As a result, no impact on air traffic patterns will occur.

d) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? *Less than Significant*

The project does not require the modification of existing roads or include design features that will increase hazards. The project is designed to accommodate the potential future expansion of South McCall Avenue by setting back project structures an appropriate distance. The East Jensen Avenue/South McCall Avenue intersection is regulated by a lighted signal; thus, the movement of construction-related equipment through this intersection will not pose a significant hazard. Most traffic is expected to access the site via SR 180 and South McCall Avenue, requiring a right-hand turn into the substation construction area, which will not pose a hazard. Access to the substation construction site on South McCall Avenue from the south will require construction-related vehicles to cross the opposing traffic lane; however if required, given implementation of APM TRAN-1, this impact will be less than significant because standard appropriate practices will be followed. Construction equipment could operate in proximity to

farm equipment, but appropriate safety practices will be followed and PG&E will comply with local encroachment permit requirements. Impacts associated with project design features or potentially incompatible uses in the project vicinity will be less than significant.

e) Would the project result in inadequate emergency access? *Less than Significant*

Emergency access routes will be maintained throughout project construction and operation. Access routes are addressed under APM TRAN-1. Construction vehicles accessing proposed pull areas and infrastructure removal sites will use private driveways and/or agricultural access roads. Once on site, construction vehicles will operate within the footprint of the project and will not encroach onto adjacent public roads. The movement of construction-related materials and vehicles to and from the project construction site will not significantly affect emergency response vehicles using East Jensen Avenue or South McCall Avenue. As shown in Table 3.16-3, only minor amounts of construction related traffic will be generated to and from the site. Moreover, East Jensen Avenue consists of four traffic lanes that allow slower moving traffic sufficient room to yield to emergency responders. South McCall Avenue has a soft shoulder on both sides of the road that could be used by traffic yielding to emergency response vehicles. In addition, project construction vehicles approaching from East Jensen Avenue will use only a short segment of South McCall Avenue (less than 500 feet) before reaching the access road into the substation. As a result, impacts on emergency access on roads adjacent to the project will be less than significant. Additionally, APM TRAN-1 requires PG&E to implement standard safety practices and recommendations for safe traffic movement, which will further reduce any construction impacts.

f) Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? *No Impact*

East Jensen Avenue between Sanger (Academy Avenue) and the East Jensen Avenue/South McCall Avenue intersection is a proposed bike route that to date has not been realized; therefore, no impacts associated with a bike route will occur. The East Jensen Avenue expressway is used by regional public transit. The movement of project construction-related traffic along area roads will be managed in accordance with APM TRAN-1 and will be consistent with existing conditions. The project will not conflict with policies or programs associated with alternative transportation. Construction will occur on PG&E-owned property and will not conflict with any transportation policies, plans, or programs. The project will not conflict with adopted policies, plans, or programs supporting alternative transportation; therefore, no impacts will occur.

3.16.5 REFERENCES

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3.17 UTILITIES AND SERVICE SYSTEMS

3.17.1 INTRODUCTION

This section describes existing conditions and potential impacts on utilities and service systems as a result of construction, operation, and maintenance of the project, and concludes that no impacts will occur in these areas. Under CEQA, utilities and service systems include water, wastewater, and solid waste collection and treatment. This section also addresses potential impacts on power, natural gas, and communications systems.

The proposed project's potential effects on utilities and service systems were evaluated using the significance criteria set forth in Appendix G of the CEQA Guidelines. The conclusions are summarized in Table 3.17-1 and discussed in more detail in Section 3.17.4.

Table 3.17-1: CEQA Checklist for Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the Provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

3.17.2 REGULATORY BACKGROUND AND METHODOLOGY

3.17.2.1 Regulatory Background

Federal

No federal regulations pertaining to utilities and service systems are applicable to the proposed project.

State

California Government Code

Section 4216 of the California Government Code protects underground structures during excavation. Under this law, excavators are required to contact a regional notification center at least 2 days prior to excavation of any subsurface installations. In the project area, Underground Service Alert (USA) is the regional notification center. USA notifies utility providers with buried lines within 1,000 feet of the excavation, and those providers are required to mark the specific location of their facilities prior to excavation. The code also requires excavators to probe and expose existing utilities, in accordance with state law, before using power equipment. CCR Title 20 (2014) contains statutes relating to power plant siting and certification.

Local

Because the CPUC has exclusive jurisdiction over the siting, design, and construction of the project, the project is not subject to local discretionary regulations. The following summary of local statues and regulations relating to solid waste is provided for informational purposes and to assist with CEQA review.

Fresno County

The Fresno County Code of Ordinances Title 8, Chapters 8.25 (Construction and Demolition Debris Disposal Ban) and 8.28 (Industrial Waste) provides guidelines for removal and disposal of industrial waste materials, including fluids and solid materials incidental to the construction and O&M of the project. Other Fresno County ordinances include Title 14, Chapter 14.13 (Regulation of Wastewater Discharge in the County of Fresno) that addresses stormwater runoff, and Title 15, which includes multiple chapters regarding building and construction guidelines.

3.17.2.2 Methodology

The Fresno County General Plan, Fresno County Ordinance Code, CCR, and local relevant websites were reviewed for regulatory information and for background information related to wastewater collection and treatment, water supply, stormwater drainage, solid waste disposal, electricity and natural gas, and communications service providers for the project area (Fresno County Public Works and Planning Department 2000a, 2000b). Utilities and service system providers relevant to the project include Consolidated Irrigation District (CID), Sunset Waste Systems, and AT&T Communications. The information was then used to evaluate the project against the CEQA Checklist to determine potential impacts.

3.17.3 ENVIRONMENTAL SETTING

Operation and maintenance of the existing Sanger Substation requires little or no use of utilities and service systems that are publicly available in the project vicinity. The substation is unmanned and remotely controlled with workers being onsite for monthly inspections or as needed in emergency situations.

3.17.3.1 Wastewater Collection and Treatment Services

There are approximately 80 special districts in unincorporated Fresno County that provide sewage collection and treatment. Of these, only 30 are also capable of providing wastewater services. The County owns and operates nine sewage and wastewater treatment facilities used by some of these districts. However, if a public system is unavailable, many rural areas rely on private onsite septic systems for wastewater treatment and disposal. Accumulated solids pumped from onsite leach fields or leach pits can be disposed of at the Fresno-Clovis Regional Wastewater Treatment and Reclamation Facility. Because it is unmanned and does not generate wastewater, the existing substation and the adjacent agricultural field that will be used for the planned expansion are not connected to any sort of wastewater collection system.

3.17.3.2 Water Supply

Unincorporated areas of Fresno County receive municipal and industrial water from one of approximately 370 water service entities; however, private wells continue to be used in many of these areas, including the project area. Consolidated Irrigation District is the primary source of irrigation water used for lands in the project area vicinity (Consolidated Irrigation District 2010).

3.17.3.3 Stormwater Drainage

As described in Section 3.17.3.1, many parts of unincorporated Fresno County are not served by a wastewater (including stormwater runoff) treatment facility. Stormwater drainage in the project area percolates into pervious soils or drains to nearby roadside ditches.

3.17.3.4 Solid Waste Disposal

Solid waste disposal services in the vicinity of the project site are provided by Sunset Waste Systems (Sunset Waste Systems 2015). Landfills within Fresno County include the City of Clovis Landfill and the American Avenue Disposal Site, located in Tranquility. The City of Clovis Landfill has a permitted throughput of 600 tons per day of industrial and municipal waste and is expected to be operational until 2047. The American Avenue Disposal Site has a permitted throughput of 2,200 tons per day of a variety of waste materials, including agricultural, asbestos, construction/demolition, industrial, mixed municipal, and tires, and is expected to be operational until 2031 (California Department of Resources Recycling and Recovery 2012). The American Avenue Landfill also provides an oil recycling program, a triple-rinse pesticide container recycling program, and a green waste recovery program. The County operates a Recycling Market Development Zone for businesses using recyclable goods, and also has a used oil recycling program. PG&E maintains an active recycle rate of materials used in its construction and O&M activities.

3.17.3.5 Electricity and Natural Gas

PG&E provides electrical power and natural gas to Fresno County. The Sanger Substation is an integral part of the Central Valley 115 kV transmission system importing and exporting hydro- and natural gas-generated electricity to other substations in the region.

3.17.3.6 Communications

Telephone service in the project vicinity is provided by AT&T and cable television service is provided by several providers, including Dish Network and Direct TV. Several internet providers service the part of Fresno County in which the project area is located, including AT&T and People PC Online.

3.17.4 APPLICANT-PROPOSED MEASURES AND POTENTIAL IMPACTS

The following sections describe significance criteria for utilities and service systems impacts derived from Appendix G of the CEQA Guidelines, provide APMs, and assess potential project-related construction and operational impacts on utilities and service systems.

3.17.4.1 Significance Criteria

According to Section 15002(g) of the CEQA Guidelines, "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." As stated in Section 15064(b) of the CEQA Guidelines, the significance of an activity may vary with the setting. Per Appendix G of the CEQA Guidelines, the potential significance of project impacts on utilities and service systems was evaluated for each of the criteria listed in Table 3.17-1, as discussed in Section 3.17.4.3.

3.17.4.2 Applicant-Proposed Measures

No APMs are included because project construction, operation, and maintenance will have a less-than-significant impact on utilities and service systems.

3.17.4.3 Potential Impacts

The project consists of expanding the existing Sanger Substation into an adjacent agricultural field. The expansion will include installing additional electrical equipment and buildings to house the equipment, and associated power line modifications. O&M activities will remain consistent with current procedures.

Project impacts on utilities and service systems were evaluated against the CEQA significance criteria as discussed below. This section evaluates potential project impacts from both the construction phase and the operation and maintenance phase.

PG&E's engineering team has taken into consideration the location of other underground and overhead utilities in designing the project. Additional utilities identification will occur in the final design stages. As required by state law, PG&E will notify other utility companies (through the Underground Service Alert system) to locate and mark existing underground structures along the proposed alignments prior to any excavation or augering activities. In addition, PG&E will probe and expose existing utilities, in accordance with state law, before using power equipment. PG&E has conducted existing utilities surveys as part of its feasibility study and routing analysis.

Based on these surveys and during detailed design, PG&E will design the project to have no permanent impact on power, natural gas, communications systems, or any other utilities that are specifically documented.

Also during the detailed design phase, PG&E will assess whether the temporary interruption of other utilities will be necessary. If deemed necessary, PG&E will obtain timely approval from other utilities and closely coordinate with them until those utilities are returned to service. Prior to construction, PG&E will obtain emergency contact information for utilities that may be in close proximity or require monitoring during construction of the project. In case of accidental service interruption to another utility, PG&E will immediately contact the affected utility to coordinate actions to restore service in a safe and timely manner.

a) Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? ***No Impact***

A minimal amount of effluent will be generated temporarily by a maximum of approximately 30 workers daily during project construction. Because the construction workforce is relatively small, the amount of wastewater generated will be negligible and wastewater treatment requirements will not be exceeded. Therefore, no impact will occur.

b) Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? ***No Impact***

Project construction will require the temporary use of water and wastewater facilities by construction workers. Water used for construction activities, such as for dust suppression, will be trucked in from off site. Potable water will also be provided from an offsite source during construction. Wastewater service will be provided by portable toilets, and waste will be disposed at appropriately licensed offsite facilities. The construction workforce will be relatively small (maximum of approximately 30 workers on a given day) and minimal water use and wastewater generation is anticipated. The new substation will be unstaffed and will not require a source of potable water. O&M activities will not require new or expanded water or wastewater treatment facilities. Therefore, no impact will occur.

c) Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? ***Less than Significant***

The project footprint will minimally increase the amount of impervious surface at the substation site. Construction of the project will include a stormwater detention basin in the southwestern portion of the expanded substation site. It will be constructed in heavily cultivated farmlands and will not significantly impact any existing stormwater drainage patterns. Runoff from the expanded substation facility will drain to the basin where it will then filter through the underlying soils or evaporate. Runoff will be contained entirely onsite. The new basin will be designed to provide sufficient capacity to handle runoff from the expanded substation. Onsite stormwater will be managed consistent with the project's SWPPP and SPCC Plans. This impact will be less than significant.

d) Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? *No Impact*

The project will not have permanent onsite staff requiring water; therefore, no impacts will occur during operations and maintenance. It is not anticipated that water will be needed for O&M activities. Potable water will be supplied to construction workers for drinking and will be delivered to project work areas by construction vehicles and equipment. During construction, water will be used for dust control and worker needs, but the existing water supplies will be sufficient to serve the project's needs, and no new or expanded entitlements will be required. Existing water entitlements and resources will be sufficient to accommodate the project's minimal temporary and short-term water needs. No impact will occur.

e) Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? *No Impact*

Portable toilets will be provided for construction workers during construction. Wastewater will be disposed of at appropriately licensed facilities that have adequate capacity to accommodate project needs. The project will be unstaffed and will not have permanent sanitary facilities. Portable toilet facilities will be available onsite for use during O&M activities. Therefore, no impact will occur.

f) Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? *Less than Significant*

Construction activities will generate solid waste and construction debris through the removal of some of the existing substation equipment and structures, including towers, poles, and conductors. PG&E will recycle construction debris and materials whenever practicable. Towers, poles, and conductors removed from the project area will be dismantled and taken to appropriate disposal facilities to be reused, recycled, or disposed of in accordance with applicable legal requirements. Construction waste that cannot be reused will be disposed of at a suitable facility, and the landfills in the general vicinity have sufficient capacity to accommodate the project demand. All vegetative materials removed during construction will be chipped and mulched onsite and used during post construction restoration, as appropriate. PG&E will conduct a final survey to determine whether cleanup activities have been successfully completed as required. This impact is less than significant.

The project will also generate minimal solid waste from the food, glass, paper, plastic, and packing materials consumed by the maximum of approximately 30 construction workers who will be on site at peak construction periods. Existing landfills in the project area have adequate capacity to accommodate this negligible amount of solid waste. No impact will occur.

g) Would the project comply with federal, state, and local statutes and regulations related to solid waste? *No Impact*

Any solid waste generated by the construction, operation, or maintenance of the project that cannot be reused by PG&E will be collected and hauled offsite for disposal at an approved landfill or recycling center in compliance with local, state, and federal regulations pertaining to solid waste disposal. Therefore, no impact will occur.

3.17.5 REFERENCES

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3.18 MANDATORY FINDINGS OF SIGNIFICANCE AND CUMULATIVE IMPACT ANALYSIS

3.18.1 INTRODUCTION AND METHODOLOGY

This section discusses mandatory findings of significance as well as potential cumulative impacts related to the Sanger Substation Expansion Project. Cumulative impacts, as defined in Section 15355 of the CEQA Guidelines, refer to two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. A cumulative impact is the change in the environment that results from the incremental impact of a project when added to other closely related past, present, or reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant impacts occurring over time.

An analysis of potential cumulative impacts for each relevant resource topic is provided in Section 3.18.5, immediately following Table 3.18-2, which lists projects within 2 miles of the project area. The projects listed in Table 3.18-2, developed from available information on websites and with input and review by the involved agencies, were included if they had potential environmental impacts, geographic scope and location, and/or timing and duration of implementation similar to those of the Sanger Substation Expansion Project. The analysis considered the potential cumulative impacts that could result when impacts of the project are considered in combination with impacts of other past, present, and reasonably foreseeable future projects. Some reasonably foreseeable future projects listed in Table 3.18-2 might not be approved or could be modified prior to approval; however, for the purpose of this analysis, approval and construction of identified projects was assumed.

As explained further below, although the project will increase electrical service reliability in the surrounding area, implementation of the project will not result in any significant growth-inducing or cumulative environmental impacts.

3.18.2 MANDATORY FINDINGS OF SIGNIFICANCE

The analysis presented in this section is based on consideration of the CEQA checklist questions presented in Table 3.18-1. As discussed in this section, it has been determined that no substantial evidence exists that the project, when considering the whole record, will have a significant effect on the environment.

Table 3.18-1: CEQA Checklist for Mandatory Findings of Significance

Would the project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?	☐	☐	☐	☒
c) Have possible environmental effects that are individually limited, but cumulatively considerable? Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
d) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

a) Would the project have the potential to substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; substantially reduce the number or restrict the range of an endangered, rare or threatened species; or eliminate important examples of the major periods of California history or prehistory? ***Less than Significant***

The project is located in heavily modified and highly disturbed agricultural and urban lands. These areas generally lack habitat for special-status species, sensitive aquatic resources, and sensitive natural communities. No special-status plants have a potential to occur within the project area. Special-status animals with a potential to occur are limited to four special-status bird species, each with a low potential for occurrence. The project area lacks trees and shrubs, and few trees and shrubs are located in the vicinity of the project area. However, there is a potential for raptors and migratory birds to nest on the ground, on structures, or on vegetation located within, or in the immediate vicinity of, the project area. No wetlands or streams are present within the project area. An agricultural ditch is located north of the substation expansion area, but it does not support riparian habitat, is not a jurisdictional feature, and will not be affected by project activities. Impacts on biological resources are less than significant. PG&E

will implement APMs BIO-1 through APM BIO-14, which will further reduce the potential for impacts.

The project will result in the removal of structures including the MPAC building constructed in 1921. The Sanger Substation site and the 1921 control building were recommended not eligible for the CRHR and therefore demolition of structures, including the MPAC building, will result in a less than significant impact. No previously recorded archaeological sites were found within the project area. There is a high potential for discovering paleontological resources (buried fossils) within the project area as it is underlain by Riverbank Formation deposits. Although soils within 5 feet of the surface are previously disturbed, it is possible given the sensitivity of the area that previously undiscovered paleontological resources may exist below this depth. In the unlikely event that archaeological, historical or paleontological resources are discovered during construction activities, APM CUL 1, CUL-2, CUL-3, CUL 4 and PAL-1, PAL-2, PAL-3 will be implemented so that the project will not eliminate important examples of major periods of California history or prehistory. The impact will be less than significant.

b) Would the project have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals*? No Impact*

The Sanger Substation Expansion Project will not achieve short-term environmental goals to the disadvantage of long-term environmental goals and will result in either no impact or less-than-significant impacts in both the short and long-term. The project will be compatible with local environmental goals and will not conflict with federal or state environmental policies and regulations. Therefore, no impact will occur.

c) Would the project have possible environmental effects that are individually limited, but cumulatively considerable? Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)*? Less than Significant*

A cumulative impact analysis for each resource area is presented in Section 3.18.5, Cumulative Impacts. The Sanger Substation Expansion Project will contribute incrementally to cumulative impacts during construction in the project area related to air quality, GHG emissions, hazardous materials, traffic and water quality; however, the project will not contribute substantially to those cumulative impacts. Thus, the project will not have environmental effects that are individually limited but cumulatively considerable. Therefore, the impact will be less than significant.

d) Would the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? *Less than Significant*

The Sanger Substation Expansion Project will not adversely affect human beings, either directly or indirectly. Potential construction impacts associated with human health include the presence of hazards, hazardous materials use and temporary air quality and greenhouse gas impacts. As discussed previously, construction impacts associated with air quality, greenhouse gases and with hazards and hazardous materials will be less than significant. APMs will further reduce the potential for adverse effects. The project will have a beneficial effect on human beings in the project area by increasing electrical service reliability. Therefore, the impact will be less than significant.

3.18.3 CUMULATIVE IMPACTS

Projects included in the cumulative impact assessment were identified by using a list approach (CEQA Guidelines Section 15130[b][1][A]), including all pending development projects within an approximately 2-mile radius of the Sanger Substation Expansion Project area. This area includes central Fresno County and the City of Sanger. Table 3.18-2: Cumulative Projects in the Project Vicinity (presented at the end of this section) summarizes these pending development projects.

Table 3.18-2: Planned and Current Projects in the Vicinity of the Project

Project Name	Address	Proximity to Project (approx.)	Type of Development	Description	Size (approx.)	Status	Anticipated Construction Schedule
Residential develop-ment	Western portion of the City of Sanger	1.5 miles east of Sanger Substation	Residential development	Ongoing construction of approximately 100 single-family residences in an approved subdivision, located north of East Jensen Ave. and east of South Indianola Ave., 1.5 miles east of Sanger Substation. Construction is ongoing in phases as homes are sold.	40 acres	Approved	Phased construction is in progress
Mohinder Poonia agricultural market	10021 E. Kings Canyon Highway	2 miles north of Sanger Substation	Agricultural market	Agricultural market located at the southeast corner of S. McCall Ave. and Hwy 180.	Unknown	In process	Unknown

Source: Motta, pers. comm, 2015

3.18.4 KEY PROJECTS IN THE PROJECT VICINITY

Of the projects in Table 4-2: Cumulative Projects in the Project Vicinity, the following projects may overlap with construction of the Sanger Substation Expansion Project. Therefore, additional information is provided on the timeline and status of these projects.

3.18.4.1 City of Sanger Northern Sanger Area Master Plan

The City of Sanger is in the process of preparing a master plan for the northern growth area of its adopted Sanger Sphere of Influence (SOI). The approximately 1,800-acre area is located 1.8 miles northeast of Sanger Substation (about 1.4 miles east of the intersection of Highway 180 and South McCall Avenue), and is predominately in agricultural use, with limited commercial uses along South Academy Avenue. The master plan is intended to facilitate potential new commercial developments desiring to locate adjacent to the Highway 180 expressway corridor and Academy Avenue widening projects (City of Sanger 2012). The current use is agricultural,

with minor commercial uses on Academy Avenue. This is a long-range planning process that will entail continued development of the master plan; preparation of conceptual development plan; consideration and approval by the Fresno are Local Agency Formation Commission for annexation to the City; environmental review; and various project-specific reviews and entitlements. Given the current ongoing status of the master plan, there is not likely to be an overlap between proposed project construction and buildout of the master plan approved projects.

3.18.4.2 City of Sanger Residential Development

Ongoing construction of approximately 80 single-family residences in an approved subdivision, located north of East Jensen Avenue and east of South Indianola Avenue, 1.5 miles east of Sanger Substation. Construction is ongoing in phases as homes are sold, and there is no certainty as to the timing and rate of construction (Motta, pers. comm, 2015).

3.18.4.3 Vita Pakt Citrus Products Conditional Use Permit

This project will be located at 8899 E. Central Avenue in Fresno County. The applicant is applying for a Conditional Use Permit to construct 27,261 square feet of warehousing and processing facilities. The new development would replace 31,261 square feet of existing fruit and vegetable processing facilities, resulting in a net reduction of 3,441 square feet of development at a 4.42-acre site (Motta, pers. comm, 2015).

3.18.5 ANALYSIS OF CUMULATIVE IMPACTS

The intent of this project is to improve reliability for existing users, and no long-term impacts have been identified. Implementation of APMs will further minimize less-than-significant short-term construction impacts related to aesthetics, air quality and greenhouse gases, agricultural resources, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, and traffic and transportation. As shown in Chapter 3.0, for land use and planning, mineral resources, population and housing, public services, recreation, and utilities and service systems, either the project has no impacts or the impacts are so minor they will have no contribution to cumulative impacts in the area.

Aesthetic Resources: The project area is surrounded by relatively flat terrain dominated by vineyards, orchards and row crops organized into rectangular parcels that typically range from appromimately15 to 30 acres in size and are bisected by a grid of paved or unpaved roadways. The existing Sanger Substation is also a prominent visual feature at the intersection of South McCall and East Jensen Avenues. Viewers in the area primarily include motorists, local residents and recreational cyclists. There are no designated scenic vistas or designated state highways within the project area. The project is located in a general area where mechanized agricultural production activities occur that typically employ the use of trucks and other equipment that is not unlike project-related construction equipment.

Although permanent removal of grasses and agricultural crops will be required in the expansion area to enable construction of the new facilities, this will take place in an area where vegetation clearing routinely occurs as a result of agricultural operations and therefore the visual change will be minor and not particularly noticeable to the public. As a whole, the changes brought

about by the project will not substantially degrade the existing visual character or quality of the site and its surroundings. While the project will be noticeable to some viewers, the changes are generally incremental, particularly when viewed in the context of the surrounding landscape. The project will not contribute to any cumulative impacts to aesthetic resources in the project vicinity.

Agricultural Resources: The project is located in a predominantly agricultural area within Fresno County near the City of Sanger. The area proposed for the expanded substation north of the existing substation is planted with row crops. The existing substation site and most of the expanded substation area are designated as Prime Farmland, with a small portion of the northwest corner of the expanded substation area designated as Farmland of Statewide Importance. The expanded substation area is on a parcel currently under a Williamson Act contract.

The project has been designed to minimize impacts on farmland and agricultural resources to the maximum extent feasible and will permanently impact approximately 7 acres of designated farmland. O&M activities will be consistent with existing conditions and will have no additional impacts during operations. While the project will take a small acreage out of agricultural production, it is a minimal percentage of the area farmland and will not result in cumulatively considerable impacts to agricultural resources in the project vicinity.

Air Quality: The project is located in the San Joaquin Valley with a climate that is characterized by long, hot summers and stagnant, foggy, winters. Precipitation is low and temperature inversions are common. These characteristics are conducive to the formation and retention of air pollutants. The San Joaquin Valley Air Basin (SJVAB) is designated as being in extreme nonattainment for the federal 8-hour ozone standard and in nonattainment for the federal $PM_{2.5}$ standard (federal and state standards are discussed above under Regulatory Framework). It is also designated as being in severe nonattainment for the state 1-hour ozone standard and nonattainment for the state 8-hour ozone, PM_{10}, and $PM_{2.5}$ standards. For all other pollutants for which there are federal or state standards, the SJVAB is either in attainment or unclassified. The project facilities will be located in a rural area that is not in proximity to hospitals, schools, or convalescent facilities. Nearby sensitive receptors do include several residences.

The project will not cause population growth or otherwise increase emissions beyond what is accounted for in the applicable plans, therefore the project will not conflict with or obstruct implementation of an applicable air quality plan, and no impacts will occur. The worst case emission rate calculated for the project will be less than the San Joaquin Valley Air Pollution Control District CEQA significance threshold of 15 tons per year for PM_{10} and air quality calculations take into account implementation of the air quality APM AIR-1, which will reduce fugitive dust emissions as presented in Section 3.3.4.2. Therefore, the project will have a minimal contribution to any cumulative impacts to air quality in the project vicinity.

Biological Resources: The project will occur on highly disturbed agricultural or urban landscapes that contain no trees or shrubs; therefore, tree nesting birds are not expected to occur in the project area. Ground nesting birds could occur in the project area; however, due to the highly disturbed nature of the agricultural landscape, nesting in the area would be unlikely.

Migratory birds could nest on structures at the existing Sanger Substation and birds nesting offsite near roads and the expanded rea project area could be indirectly impacted by vibration and noise associated with project construction, and operation and maintenance activities. Implementation of APM BIO-12 through APM BIO-14 will avoid impacts or reduce impacts to less-than-significant levels. It is anticipated that other projects would be subject to similar protection measures. Therefore, the project's impacts will not be cumulatively considerable even if other projects occur in the project vicinity. There are no other sensitive biological resources (e.g., fish, mammals, invertebrates) in the project area or vicinity. The project will not contribute to any overall cumulative impacts on terrestrial-based resources.

The heavily modified agricultural fields and road corridors that are included in the project area and vicinity lack sensitive natural communities including riparian habitats, wetlands, wildlife corridors or wildlife nursery sites. The agricultural ditch north of the substation expansion area will not be affected by project activities. O&M activities will be consistent with existing conditions and will have no impact on surrounding terrestrial features.

With implementation of the biological resources APMs presented in Section 3.4.4.2, the Sanger Substation Expansion Project will not contribute to any cumulative impacts on biological resources in the project vicinity.

Cultural and Paleontological Resources: The project will result in the removal of structures at the Sanger Substation site, including the MPAC Building constructed in 1921, however, they were recommended not eligible for the CRHR and therefore demolition of structures, including the MPAC building, will result in a less than significant impact. No previously recorded archaeological sites were found in project area. There is a high potential for discovering paleontological resources (buried fossils) within the project area as it is underlain by Riverbank Formation deposits. Although soils within 5 feet of the surface are previously disturbed, it is possible, given the sensitivity of the area, that previously undiscovered paleontological resources may exist below this depth. In the unlikely event that archaeological, historical or paleontological resources are discovered during construction activities, APMs presented in Section 3.5.4.2 such as worker awareness training, monitoring and inadvertent discovery procedures will be implemented so that the project will result in less than significant impacts to archaeological, paleontological or historical resources. Additionally, with implementation of the APMs discussed above, the project will not contribute to any cumulative impacts to cultural resources in the project area.

Geology and Soils: The project is located in a seismically active area with underlying young geologic deposits. Geologic and seismic hazards with the greatest potential to impact the project include strong ground shaking and seismic-induced ground failure, and hazards with the greatest potential to impact the project include expansive, soft, loose, and/or compressible soils. However, with implementation of the APMs presented in Section 3.6.4.2, which provide for geotechnical investigations and appropriate engineering and construction measures, any potential impacts will be reduced to less-than-significant levels or eliminated entirely. The impacts of the project are not individually significant and will not contribute significantly to any potential hazard when considered in the context of each other and along with other related projects that have been identified for development in the area.

Greenhouse Gas Emissions: GHG emissions directly generated during construction will result in a less-than-significant, short-term impact to climate change. GHG emissions will be further reduced with implementation of APM GHG-1. As shown in Table 3.7-3, the GHG emissions from the construction phase of the project, with or without APM GHG-1, are expected to be well below CARB's proposed threshold of 10,000 metric tons of CO_2e per year. As a result, the project will not contribute significantly to the emissions associated with the construction of other projects planned in the area, and thus it will not be cumulatively considerable.

While Sanger Substation circuit breakers may emit a minor amount of SF_6 due to leakage during project operations, these emissions will generate a minor and insignificant amount of CO_2e emissions and will be tracked annually per CARB's Regulation for Reducing SF_6 Emissions from Gas Insulated Switchgear. In addition, the new SF_6 circuit breakers are more efficient and will have a manufacturer's guaranteed annual maximum leakage rate of 0.5 percent. Therefore, operation of the project will not contribute substantially to climate change.

Hazards and Hazardous Materials: All potential impacts related to hazards and hazardous materials are less than significant or nonexistent with implementation of the APMs described in Section 3.8.4.2. During construction activities, there is an increased potential for accidental release of fluids from a vehicle or motorized piece of equipment. Any impacts associated with such an accidental release will be reduced to a less-than-significant level by implementation of APMs. The implementation of PG&E's standard hazardous substance control, emergency response, and health and safety procedures will further minimize less-than-significant impacts. No impacts will occur during O&M because the risks present at the existing substation will not change with the substation expansion, and appropriate safety measures and practices will continue to be implemented.

Other projects in the project vicinity could involve hazards and hazardous materials similar to those identified for the project, but it is anticipated that other projects would be required to follow applicable regulations for characterization, handling, and disposing of any hazards or hazardous materials.

The impacts of the project related to hazards or hazardous materials are not individually significant and cumulative effects of this and other related transmission system projects will not be significant since each project must similarly follow the applicable federal and state rules and regulations required to ensure that no significant cumulative impacts occur.

Hydrology and Water Quality: The APMs include preparation and implementation of a construction SWPPP and spill prevention and response measures, among others. Implementation of these measures will ensure that any impacts at the project site are less than significant and that cumulatively considerable impacts will not occur.

Noise: The project will not have any long-term ambient noise level impacts. The project will result in a temporary increase in noise at the project site during construction. No other projects are sufficiently close to contribute to a cumulative impact from construction at the site. The traffic generated during construction will cause a small increase in noise, but this will be temporary and minor. The project will not contribute substantially to a cumulative noise impact.

Transportation and Traffic: The Sanger Substation Expansion Project will have short-term temporary and minor effects on traffic near the South McCall Avenue/East Jensen Avenue intersection during construction. Construction vehicles accessing proposed pull site areas and infrastructure removal sites will use private driveways, overland access routes and/or agricultural access roads. Once onsite, construction vehicles will operate within the footprint of the project and will not encroach onto adjacent public roads. A maximum of approximately 30 construction workers will access the site daily during the approximately 19-month work schedule, with most tasks requiring far fewer workers on a day-to-day basis. Short-duration delays could result from construction traffic turning into or leaving the substation work site via South McCall Avenue or East Jensen Avenue; however, such delays are consistent with existing conditions (i.e., vehicles accessing lands adjacent to the roadway). With implementation of the APMs—including traffic planning measures—the project will not have a substantial contribution to traffic impacts even if other projects involving the same area roadways are under construction concurrent to the substation expansion project. It is anticipated that other projects will have their own traffic control measures, and required permits, which will have similar benefits. Operation and maintenance (O&M) activities at the expanded Sanger Substation will remain consistent with current procedures. The project will not result in a substantial contribution to significant cumulative impacts in the project vicinity or on area roadways.

Although a bike route was proposed along East Jensen Avenue, including through the East Jensen Avenue/South McCall Avenue intersection, the route is currently conceptual and to date has not been realized. If the bike route is realized concurrent to project construction, the movement of project construction-related traffic along area roads will be managed in accordance with APM TRAN-1 and will be consistent with existing conditions. Project impacts will not be cumulatively considerable.

3.18.6 REFERENCES

City of Sanger. 2012. Planning Commission Meeting of April 26, 2012. Agenda Item #G-1 Updated List of Land Use Planning Projects FY 2011-2012.

Motta, Chris. County of Fresno Senior Planner. 2015. Email communication with S. Ramaker, Cardno. April 23 and July 16, 2015. cmotta@co.fresno.ca.us regarding pending projects in Fresno County in the vicinity of Sanger Substation.

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4.0 ALTERNATIVES

CEQA does not require a review of alternatives[1] where, as here, the proposed project would result in no significant environmental impacts. (See Atlantic-Del Mar Reinforcement Project, A.01-07-004, Assigned Commissioner's Ruling dated 10-16-02.) However, General Order 131-D (GO 131-D) requires that an application for a Permit to Construct (PTC) include the "reasons for adoption of the power line route or substation location selected, including comparison with alternative routes or locations, including the advantages and disadvantages of each" (GO 131-D, section IX.B.1.c). As required by GO 131-D, Section IX.B.1(c), a brief discussion of the reasons for selecting the location for expansion of the substation, and a comparison with other potential locations, is included in the application.

[1] CEQA defines a "feasible alternative" as one that would attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. Economic viability is also taken into account when determining the feasibility of alternatives. (CEQA Guidelines, CCR, Title 14, Section 15126.6.)

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