

ENVIRONMENTAL IMPACT REPORT

Incidental Take Permit and Lake and Streambed Alteration Agreements for Pacific Gas and Electric Company's Southern California Desert Gas Pipeline Operation and Maintenance Activities

SCH No. 2021030571



Prepared for
California Department of Fish and Wildlife
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APPENDICES

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- E Gas Safety Plan
- F General Plan Land Use in the Study Area

Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
ACEC	Area of Critical Environmental Concern
APE	area of potential effect
APM	applicant proposed measure
ARS	Aesthetic Resource Specialist
AUF	acoustical usage factor
BGEPA	Bald and Golden Eagle Protection Act
bgs	below ground surface
BLM	Bureau of Land Management
BMP	best management practice
BO	Biological Opinion
BP	before present
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards
Cal/OSHA	California Occupational Safety and Health Administration
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	criteria air pollutant
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDCA	California Desert Conservation Area
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	California Fire Code
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH ₄	methane
CJU	California Joint Utility
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency

Acronym/Abbreviation	Definition
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
COG	Council of Governments
CPUC	California Public Utilities Commission
CRCR	cultural resource constraints report
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CRS	Cultural Resource Specialist
CRTF	complaint response tracking form
CSLC	California State Lands Commission
CTS	cathodic test station
CWA	Clean Water Act
dBA	A-weighted decibel
DFM	distribution feeder main
DoD	U.S. Department of Defense
DOT	U.S. Department of Transportation
DPM	diesel particulate matter
DRECP	Desert Renewable Energy Conservation Plan
DTSC	Department of Toxic Substances Control
DWMA	Desert Wildlife Management Area
EIA	U.S. Energy Information Administration
EIR	environmental impact report
EISA	Energy Independence and Security Act
EKAPCD	Eastern Kern Air Pollution Control District
EO	Executive Order
EOC	emergency operations center
EOP	emergency operations plan
EPA	U.S. Environmental Protection Agency
Ercon mat	erosion control mat
ERMA	Extensive Recreation Management Area
ESA	federal Endangered Species Act
ETS	electronic test system
EV	electric vehicle
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
FLPMA	Federal Land Policy and Management Act
FMMP	Farmland Mapping and Monitoring Program
FP	fully protected
FRA	Federal Responsibility Area
FRAP	Fire and Resource Assessment Program
FTA	Federal Transit Administration
GHG	greenhouse gas

Acronym/Abbreviation	Definition
GO	General Order
GSP	Groundwater Sustainability Plan
GWP	global warming potential
HAP	hazardous air pollutant
HCA	high-consequence area
HCP	habitat conservation plan
HDD	horizontal directional drilling
HFC	hydrofluorocarbon
HMBP	Hazardous Materials Business Plan
HMMP	Hazardous Materials Management Plan
hp	horsepower
HPR	high-pressure regulator
HR	hydrologic region
HS	hydrologic subbasin
HU	hydrologic unit
I	Interstate
IFC	International Fire Code
IM	Instruction Memorandum
in/sec	inches per second
ISTEA	Intermodal Surface Transportation Efficiency Act
ITP	incidental take permit
kBtu	thousand British thermal units
KCFD	Kern County Fire Department
kg/MT CO ₂ /gal	kilograms per metric ton of carbon dioxide per gallon
kWh	kilowatt-hour
L _{dn}	day-night sound level
L _{eq}	equivalent sound pressure level
L _{eq} (24)	24-hour equivalent sound pressure level
L _{max}	maximum noise value
L _{min}	minimum noise value
LRA	Local Responsibility Area
LSAA	Lake and Streambed Alteration Agreement
LUPA	Land Use Plan Amendment
MCA	moderate-consequence area
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
MESA	Mapping Episodic Stream Activity
MLRA	Major Land Resource Area
MMRP	mitigation monitoring and reporting program
MMT	million metric tons
MMWA	Marble Mountains Wildlife Area
MNPGMP	Mojave National Preserve General Management Plan
MPO	metropolitan planning organization
MT	metric ton

Acronym/Abbreviation	Definition
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NEHRP	National Earthquake Hazards Reduction Program
NHTSA	National Highway Traffic Safety Administration
NO ₂	nitrogen dioxide
NOAA Fisheries	National Oceanic and Atmospheric Administration's National Marine Fisheries Service
NOP	notice of preparation
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRC	Noise Resource Coordinator
NRHP	National Register of Historic Places
NSLU	noise-sensitive land use
NWR	National Wildlife Refuge
O&M	operation and maintenance
O ₃	ozone
OES	Office of Emergency Services
OHV	off-highway vehicle
ONAC	Office of Noise Abatement and Control
OPLMA	Omnibus Public Land Management Act
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PBO	programmatic Biological Opinion
PCB	polychlorinated biphenyl
PFC	perfluorocarbon
PFYC	Potential Fossil Yield Classification
PG&E	Pacific Gas and Electric Company
PM	particulate matter
PM _{2.5}	fine particulate matter
PM ₁₀	coarse particulate matter
PPI	Paleontological Principal Investigator
ppm	parts per million
PPV	peak particle velocity
PRIER	paleontological resources impact evaluation report
RCRA	Resource Conservation and Recovery Act
RFS	Renewable Fuel Standard
ROG	reactive organic gas
ROW	right-of-way
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAFE	Safer Affordable Fuel-Efficient

Acronym/Abbreviation	Definition
SANBAG	San Bernardino Associated Governments
SB	Senate Bill
SBCFD	San Bernardino County Fire Department
SBCTA	San Bernardino County Transportation Authority
SCADA	supervisory control and data acquisition
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SF ₆	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SO ₂	sulfur dioxide
SO _x	sulfur oxides
SR	State Route
SRA	State Responsibility Area
SRMA	Special Recreation Management Area
SWMD	Solid Waste Management Division
SWP	State Water Project
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCR	tribal cultural resource
TEG	thermoelectric generator
TPZ	timberland production zone
TSA	temporary staging area
TSCA	Toxic Substances Control Act
UN	United Nations
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VIS	vehicle information system
VMT	vehicle miles traveled
VRM	Visual Resource Management
VOC	volatile organic compound
WDR	Waste Discharge Requirement
WQC	Water Quality Certification
ZEV	zero-emission vehicle

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ES Executive Summary

This section provides a summary of this Environmental Impact Report (EIR) prepared by California Department of Fish and Wildlife (CDFW) in response to Pacific Gas and Electric Company's (PG&E's) application requesting an Incidental Take Permit (ITP), as well as for PG&E's expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements under the California Fish and Game Code (CFGC).

ES.1 Project Overview and Location

PG&E has applied to CDFW under Section 2081 of the California Endangered Species Act (CESA) (CFGC Section 2050 et seq.) for an ITP for Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) (collectively, "the covered species"). The ITP, if issued, would be for a 30-year term and would authorize "take" as defined by CFGC Section 86, subject to various conditions, of both species incidental to PG&E's otherwise lawful ongoing operation and maintenance (O&M) activities along approximately 645 miles of natural gas pipelines in the Mojave Desert Region, specifically in San Bernardino and Kern Counties. In this respect, the ITP would condition how PG&E implements ongoing O&M activities where those activities may cause impacts to the covered species that are subject to CDFW's regulatory authority and permitting jurisdiction under CESA. The proposed issuance of the ITP requested by PG&E is the proposed discretionary approval of a project requiring CDFW to comply with the California Environmental Quality Act (CEQA) (refer to California Public Resources Code Section 21080[a]). The term "project" for the purposes of the impact analysis in this EIR does not mean each separate approval by CDFW under the CFGC. The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

In addition, PG&E could notify CDFW that certain O&M activities may be subject to the jurisdiction of CDFW's LSA Program (refer to CFGC Section 1600 et seq.). PG&E may submit those notifications on an individual-activity-specific basis or, as provided by CFGC Section 1605, it may submit notification for O&M activities more broadly and seek a Master LSA Agreement from CDFW. The proposed issuance of an LSA Agreement or Master LSA Agreement, like the requested ITP, is the proposed discretionary approval of a project requiring CDFW to comply with CEQA.

CDFW will consider PG&E's ongoing O&M activities conditioned by the CDFW permits (the proposed project) as provided by the CFGC, informed by, among other things, the broader CEQA lead agency analysis in this EIR of the potentially significant environmental effects of the "whole of the action" under CEQA. In addition to CEQA, CDFW will consider whether the proposed issuance of the permits is consistent with its central mission, its trustee mandate, and its public trust obligations. CDFW's mission under the CFGC is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public (CFGC Section 712.1[a][1]; also refer to CFGC Sections 703.3 and 703.5). CDFW is California's trustee agency for fish and wildlife, and it holds those resources in trust and exercises related jurisdiction by statute for all the people of the state (CFGC Sections 711.7[a] and 1802; also refer to California Public Resources Code Section 21070 and 14 CCR 15386[a]). CDFW will also consider the proposed project and related effects on fish and wildlife in the broader context of the public trust.

PG&E's Southern California desert gas pipeline system consists of high-pressure transmission pipelines, distribution pipelines, and associated pipelines that transport natural gas throughout California. The boundary of the natural gas transmission system in the Mojave Desert region is generally located from the City of

Tehachapi east to the California border, approximately 15 miles southeast of Needles, and from the City of Ridgecrest south to the City of Victorville. PG&E's planned O&M activities involve approximately 645 miles of transmission pipelines and associated facilities. The western extent of the planned O&M activities area ("the study area") is located southwest of the City of Mojave, and the eastern terminus of the study area is located adjacent to the Colorado River, approximately 15 miles southeast of the City of Needles, California, in San Bernardino and Kern Counties, California.

PG&E's gas pipeline system has been in place for more than 70 years. PG&E has operated and maintained the system since the time of its installation. PG&E's related O&M activities are also underway currently and PG&E's need and obligation to operate and maintain the system will continue in the future regardless of whether CDFW issues the requested permits or, as it has in the past, issues permits under the CFGC as needed by PG&E for individual O&M activities, on a case-by-case basis. In general, accordingly, PG&E's ongoing O&M activities are part of the existing environmental setting, or "baseline," for purposes of CDFW's lead agency analysis set forth in this EIR (14 CCR 15125).

ES.2 Project Objectives

The purpose of PG&E's O&M activities is to maintain the safety of their gas pipeline facilities in the Mojave Desert region. Conducting ongoing O&M activities in the region requires PG&E to do so consistent with the protective measures CESA provides by law to state listed species, including for the covered species. Certain O&M activities will also be subject to CDFW's regulatory authority governed by its LSA Program. PG&E has established the following objectives for its ongoing O&M activities:

- Implement a plan for the safe and reliable operation of PG&E's gas pipeline facilities in accordance with California Public Utilities Commission regulations.
- Continue PG&E's ongoing O&M activities and focus on testing, inspecting, replacing, and automating the gas transmission system.
- Obtain a long-term ITP under CESA for the covered species and coverage under CDFW's LSA Program for PG&E's ongoing O&M activities in the Mojave Desert region.

CDFW's project objectives associated with issuing the permits to PG&E include the following:

- Protect and conserve fish and wildlife resources and minimize environmental impacts and land disturbance by, among other things, implementing O&M activities and siting work areas within PG&E's existing pipeline right-of-way (ROW) corridors or in already-disturbed areas adjacent to the ROW and along access roads.
- Promote environmentally responsible project activities that minimize incidental take by implementing species-specific minimization and avoidance measures.
- Protect and conserve the resources of the State of California and mitigate any impacts on these resources, consistent with CDFW's mission, its status as California's trustee agency for fish and wildlife, and the public trust doctrine.

ES.3 Summary of Project Alternatives

Section 15126.6(a) of the CEQA Guidelines states that an EIR “shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives.” An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An alternatives discussion is required even if the alternatives “would impede to some degree the attainment of the project objectives, or would be more costly” (14 CCR 15126.6[b]). The inclusion of an alternative in an EIR does not constitute definitive evidence that the alternative is in fact “feasible.” The final decision regarding the feasibility of alternatives lies with the decision maker for a given project, who must make the necessary findings addressing the potential feasibility of an alternative, including whether it meets most of the basic project objectives or reduces the severity of significant environmental effects per CEQA (California Public Resources Code, Section 21081; see also 14 CCR 15091).

ES.3.1 Alternatives Considered but Rejected

Three alternatives to the proposed project, other than the No Project Alternative, were considered, but were rejected from further consideration. Because the pipeline system is existing, and the associated historic and ongoing O&M activities must and will occur with or without CDFW’s issuance of the permits, there are no other reasonable or feasible alternatives to the proposed project that would also ensure the continued reliability, safety, and security of the Mojave Desert region natural gas pipeline system. Furthermore, the EIR analysis did not identify any significant impacts that cannot be mitigated to less-than-significant levels. As such, the proposed project (i.e., CDFW’s issuance of the permits conditioning PG&E’s ongoing O&M activities) is considered to be the environmentally superior alternative. The following alternatives were considered but rejected from further analysis:

- **Changed Practices Alternative:** Changed practices considered in this alternative involved changing construction methods, modifying activities, and/or seasonally restricting activities (e.g., prohibiting all activities during a defined breeding season). Because implementing changed practices would no longer be a continuation of existing practices and may not be part of baseline environmental conditions, changing practices could result in additional impacts compared to currently ongoing practices under baseline conditions (refer to Section 5.3.1).
- **Fewer Covered Species Alternative:** Under this alternative, PG&E would remove one of the covered species (Mojave desert tortoise or Mohave ground squirrel) from its ITP application. Processing multiple ITP applications for listed species on an activity-by-activity basis would not only delay O&M activities required for safety purposes, but could also result in a smaller-scale mitigation and conservation strategy for either of these species if one of them has to be covered by multiple separate ITPs (refer to Section 5.3.2).
- **Alternative Locations Alternative:** Only locations that would avoid or substantially lessen the significant effects of the project need be considered for inclusion in the EIR (14 CCR 15126.6[f][2]). Because the proposed project involves issuance of permits that will condition ongoing O&M activities involving the maintenance, repair, and upkeep of an existing 645-mile gas pipeline system and associated facilities, an analysis of an alternative location to avoid or minimize resources covered by the permits would not be appropriate for this project (refer to Section 5.3.3).

ES.3.2 No Project Alternative

Under the No Project Alternative, O&M activities are ongoing and would continue to be implemented as they currently are, following PG&E's environmental programs and practices and in compliance with any permits necessary for implementation. CDFW would not issue a long-term ITP, nor would it issue one or more LSA Agreements, as analyzed in this EIR for the proposed project; therefore, all construction activities would be subject to additional CDFW review and permitting, and additional CEQA reviews and documentation, as applicable, to comply with existing regulations. The No Project Alternative would preclude the ability to capture the efficiencies of CDFW's required avoidance, minimization, and mitigation measures that, in combination, result in enhanced larger-scale conservation practices. The No Project Alternative is not the environmentally superior alternative because increased biological resources impacts would result under the No Project Alternative as compared to the proposed project and its associated comprehensive mitigation strategy. Furthermore, PG&E has a legal and public safety obligation to maintain its facilities. The proposed project's comprehensive approach with issuance of the permits would provide greater avoidance, minimization, and mitigation for biological resources impacts on special-status species and jurisdictional waters of the state as compared to the No Project Alternative (refer to Section 5.4). In addition, the No Project Alternative would not meet the project objectives identified by PG&E and CDFW. Therefore, the proposed project (i.e., CDFW's issuance of the permits conditioning the ongoing O&M activities) is considered to be the environmentally superior alternative.

ES.4 Contents of the Environmental Impact Report

This EIR serves as an informational document for the public agency decision makers and for the public regarding the characteristics and objectives of the project; potential environmental impacts, with consideration of PG&E's commitment to incorporating standard practices, best management practices (BMPs), applicant proposed measures (APMs), and biological resources mitigation measures that would lessen or reduce potentially significant impacts; and consideration of project alternatives. This EIR is organized as follows:

- An **Executive Summary** is provided at the beginning of this document that presents a summary of the proposed project, a description and objectives of PG&E's O&M activities, a summary of alternatives, contents of this EIR, a description of the areas of known controversy and issues to be resolved, and a table summarizing impacts from the proposed project, including a list of applicable APMs, BMPs, and mitigation measures that would be incorporated by PG&E into its O&M activities.
- **Chapter 1, Introduction/Overview**, serves as a foreword to the EIR and provides an overview and background of the proposed project (i.e., issuance of the permits), PG&E's ongoing O&M activities, guiding regulations, and the applicable environmental review procedures; identifies anticipated permits and approvals; and presents the format of the EIR.
- **Chapter 2, Project Description**, provides a thorough description of the proposed project and PG&E's ongoing O&M activities, including the study area and the location and description of O&M activities, and describes standard practices, BMPs, and APMs that are incorporated into PG&E's O&M activities.
- **Chapter 3, Cumulative Impacts Analysis Methodology**, describes the methodology used to evaluate cumulative impacts. The proposed project's cumulative impacts are evaluated in Chapter 4 within each resource section.
- **Chapter 4, Environmental Analysis**, provides an overview of the section format and outlines the environmental topics included in Sections 4.1 through 4.17. The environmental impacts, including

cumulative impacts associated with the proposed project (i.e., PG&E's ongoing O&M activities as conditioned by CDFW's issuance of the permits), are evaluated in Sections 4.1 through 4.17, which analyze whether causally related project-specific impacts due to the issuance of the permits are below or exceed significance thresholds. Biological resources mitigation measures are provided in Section 4.4.4.4.

- **Chapter 5, Alternatives**, discusses the three alternatives considered but rejected, as well as the No Project Alternative.
- **Chapter 6, Other CEQA Considerations**, includes a summary of potential environmental topics that have been found to have no impact on the environment. This chapter also discusses significant irreversible environmental effects. The chapter includes a growth-inducement section that addresses any growth-inducing impacts associated with the proposed project.
- **Chapter 7, List of Preparers**, provides the names of the EIR authors, as well as the agencies or individuals consulted during preparation of the EIR.
- **Figures** are included in several resource sections to support the findings presented in the text of the EIR.
- **References** for documents cited in this EIR are presented at the end of each chapter except for Chapter 4, in which a references section appears at the end of each resource section.
- **Appendices** include various supporting information and technical studies prepared for the analysis in this EIR, as listed in the table of contents.

ES.5 Areas of Controversy/Issues to Be Resolved

Section 15123(b)(2) of the CEQA Guidelines requires that areas of controversy known to the lead agency must be stated in the executive summary prepared as part of the EIR. Issues of interest to public agencies were identified during the 30-day public comment period for the Notice of Preparation. In compliance with CEQA Guidelines Section 15082(c), CDFW conducted a public scoping meeting to inform the public about the project and provide information regarding the environmental review process. This scoping meeting was hosted by CDFW and was held virtually on April 7, 2021. The scoping process is described in EIR Section 1.4.2, Notice of Preparation and Scoping Process, and the public input received during scoping is provided in Appendix B4, NOP Comment Letters. A total of five scoping comments were received during the scoping period from state and local agencies, and one from a tribe indicating they had no comments. Based on input received from the agencies, areas of controversy and issues to be resolved related to PG&E's ongoing O&M activities and potential issuance of the permits include the following:

- Compliance with Assembly Bill 52 and Senate Bill 18, as well as other applicable laws and regulations related to cultural and tribal cultural resources
- Ongoing adherence to the PG&E and California Department of Transportation (Caltrans) Joint Use Agreements and Consent to Common Use Agreements for pipeline facilities within state highway right-of-way
- Compliance with Lahontan Regional Water Quality Control Board Water Quality Control Plan (Basin Plan), as well as other applicable laws and regulations related to water quality
- Consultation with the U.S. Army Corps of Engineers regarding jurisdictional waters
- Potential hydrology and water quality impacts due to ongoing O&M activities

There are no known issues to be resolved nor a need for an alternative to address significant impacts. All significance conclusions in this EIR have been determined to be “no impact,” “less than significant,” or “less than significant with mitigation incorporated.”

ES.6 Summary of Environmental Impacts, APMs, BMPs, Mitigation Measures, and Significance Conclusions Following Implementation of Measures

Table ES-1 summarizes the conclusions of the environmental analysis contained in this EIR. The impact analysis in this EIR assumes incorporation of all these APMs and BMPs, as well as regulatory requirements, into PG&E's ongoing O&M activities. The APMs and BMPs are considered part of the O&M activities and PG&E is committed to complying with and implementing these measures to reduce potential impacts. However, where other significant or potentially significant impacts are identified that are not addressed by the APMs and/or BMPs, or where the APMs and BMPs are not adequate to reduce impacts to less-than-significant levels, additional feasible mitigation measures are identified to avoid or substantially lessen potentially significant impacts to the extent feasible. All APMs and BMPs, as well as all mitigation measures that CDFW determines to be feasible and necessary to avoid or substantially lessen significant impacts, will be included in CDFW's Mitigation Monitoring and Reporting Program. PG&E will implement all monitoring and reporting obligations for the APMs, BMPs, and mitigation measures as detailed in this EIR. Table ES-1 identifies the impacts and the APMs and BMPs to be incorporated into the O&M activities, identifies whether the impact is potentially significant or less than significant, and, for all potentially significant impacts, provides mitigation measures. The level of significance after implementation of the mitigation measures is also presented in the table.

Table ES-1 Summary of Proposed Project Impacts

Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
Aesthetics	Impact AES-1: Would the project have a substantial adverse effect on a scenic vista?	Less than significant	APM AES-1: Restoration of Disturbed Areas. Previously vegetated areas greater than 0.10 acres that are disturbed and also visible from a scenic vista, designated state scenic highway, or public viewpoint would be recontoured to their original conditions and reseeded with an appropriate native seed mix to minimize scarring. APM AES-2: Evaluation of Proposed Aboveground Facilities. PG&E would conduct an assessment for visual impacts at all aboveground facilities larger than 0.10 acres and within a scenic vista; within, adjacent to, or visible from a designated scenic highway; or visible from a public viewpoint. If PG&E determines that there is a potential for visual impacts, one or more of the following measures would be implemented: <ul style="list-style-type: none">▪ The facility would be assessed to determine whether it can be relocated to an area not visible within the scenic vista, designated state scenic highway, or public viewpoint.▪ All disturbed areas would be revegetated by using species that are consistent with the facility’s setting.▪ Local jurisdictions and parks agencies would be consulted, as appropriate, to ensure that the aesthetic treatment of facilities meets the adopted guidelines. APM AES-3: Temporary Construction Lighting. If temporary construction lighting is required, PG&E would use shielded construction light fixtures, and lighting would be directed away from nearby residences except in the cases of emergency. APM AES-4: Permanent Lighting. If permanent lighting for a facility is required, the lighting would be motion activated or controlled by a manual switch. The lighting would also be directed downward to avoid glare. APM BIO-13 (refer to Impact BIO-2)	Not applicable
	Impact AES-2: Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	Significant	APM AES-1 through APM AES-4 (refer to Impact AES-1) APM BIO-13 (refer to Impact BIO-2)	Not applicable
	Impact AES-3: In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from [a] publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	Less than significant	APM AES-1 through APM AES-4 (refer to Impact AES-1) APM BIO-13 (refer to Impact BIO-2)	Not applicable
	Impact AES-4: 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	APM AES-3 and APM AES-4 (refer to Impact AES-1)	Not applicable

Table ES-1 Summary of Proposed Project Impacts

Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
	Cumulative: Would the project have a cumulative effect on visual resources?	Less than significant	APM AES-1 through APM AES-4 (refer to Impact AES-1)	Not applicable
Agriculture and Forestry	Impact AG-1: Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	Less than significant	APM BIO-3 (refer to Impact BIO-1)	Not applicable
	Impact AG-2: Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?	Less than significant	APM BIO-3 (refer to Impact BIO-1)	Not applicable
	Impact AG-3: 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	—	Not applicable
	Impact AG-4: Would the project result in the loss of forest land or conversion of forest land to non-forest use?	No impact	—	Not applicable
	Impact AG-5: Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	Less than significant	—	Not applicable

Table ES-1 Summary of Proposed Project Impacts

Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
	Cumulative Impacts: Would the project have a cumulative effect on agriculture and resources?	Less than significant	APM BIO-3 (refer to Impact BIO-1)	Not applicable
Air Quality	Impact AQ-1: Would the program conflict with or obstruct implementation of the applicable air quality plan?	Less than significant	Air Quality BMPs <ul style="list-style-type: none">▪ The crew would not allow visible dust to pass beyond the Air Quality Program boundary. The crew would abate dust through the following methods:<ul style="list-style-type: none">- Applying dust suppressants (e.g., water) to disturbed areas being disturbed, areas that have the potential to be disturbed, and storage stockpiles- Limiting vehicle speeds to 15 mph for off-road travel and posting speed limits- Loading haul trucks with a freeboard (i.e., the space between the top of the truck and the load) of 6 inches or greater- Covering or applying water to the top of the haul truckload- Cleaning up carryout and trackout at least daily- Washing vehicles and equipment as necessary and permitted▪ Encourage construction workers to carpool to the job site to the extent feasible. The ability to develop an effective carpool program would depend on the proximity of carpool facilities to the area, the geographical commute departure points of construction workers, and the extent to which carpooling would not adversely affect worker arrival time and the construction schedule for O&M activities.▪ Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time would 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 that limit their immediate use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The program would 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 would be shut off. Construction foremen would include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings would 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 that are 50 horsepower or larger and manufactured in 2000 or later would be registered under the 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.	Not applicable
	Impact AQ-2: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	Less than significant	Air Quality BMPs (refer to Impact AQ-1)	Not applicable
	Impact AQ-3: Would the project expose sensitive receptors to substantial pollutant concentrations?	Less than significant	Air Quality BMPs (refer to Impact AQ-1)	Not applicable

Table ES-1 Summary of Proposed Project Impacts

Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
	Impact AQ-4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less than significant	Air Quality BMPs (refer to Impact AQ-1)	Not applicable
	Cumulative: Would the project have a cumulative effect on air quality resources?	Less than significant	Air Quality BMPs (refer to Impact AQ-1)	Not applicable
Biological Resources	Impact BIO-1: 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?	Significant	<p>APM BIO-1: Worker Education. A worker education program would be implemented for all activities, as determined to be appropriate on an activity-by-activity basis. The worker education program would be carried out during all phases of the O&M activities (e.g., site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or abandonment, and restoration/reclamation activities). The worker education program will provide interpretation for non-English-speaking workers and instruction for new workers prior to beginning work on site. As appropriate based on the activity, the worker education program would contain the following information:</p> <ul style="list-style-type: none">▪ Site-specific biological and nonbiological resources▪ Information on legal protections for protected resources, penalties for violation of federal and state laws, and administrative sanctions for failure to comply with requirements intended to protect site-specific biological and nonbiological resources▪ Required measures for avoiding and minimizing effects during all O&M activity phases (e.g., resource setbacks, trash, speed limits, fire prevention)▪ Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirements for notification of the Designated Biologist(s)▪ Measures that personnel can take to promote the conservation of biological and nonbiological resources <p>APM BIO-2: Designated Biologist. A Designated Biologist would be approved as “qualified” by CDFW, BLM, and/or USFWS, as appropriate for the location of the program activities. The Designated Biologist is responsible for overseeing compliance with applicable APMs.</p> <p>APM BIO-3: Disturbance Minimization. PG&E would use state-of-the-art construction and installation techniques that are appropriate for the specific activity, program, and site. These techniques should minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation. In addition, PG&E would implement the following actions:</p> <ul style="list-style-type: none">▪ The area of disturbance would be confined to the smallest practical area, considering topography, placement of facilities, locations of burrows, public health and safety, and other limiting factors.▪ As needed, work area boundaries would be delineated with flagging or other markings to minimize surface disturbance associated with the work activity.▪ Exclusion areas or special habitat features, such as burrows identified by the Designated Biologist, would be avoided to the extent possible.▪ To the extent possible, previously disturbed areas within the activity sites would be used for stockpiling of excavated materials, storing equipment, digging slurry and borrow pits, staging or parking trailers and vehicles, and any other surface-disturbing activity.▪ When possible, natural vegetation removal shall be minimized through the implementation of crush-and-drive or cut-or-mow of vegetation, rather than removing it entirely.▪ The Designated Biologist, in consultation with PG&E, would ensure compliance with these measures. <p>APM BIO-4: Invasive Weeds. The following would be implemented to prevent the spread of invasive weeds during all phases of O&M activities, as appropriate:</p> <ul style="list-style-type: none">▪ During O&M activities involving ground disturbance, mud and/or accumulated soils would be removed from equipment and vehicles, to the extent feasible. Vehicles and equipment would be cleaned or washed before entering a new program site.▪ O&M vehicles would be stored in paved or cleared areas whenever possible.▪ Certified weed-free mulch, straw, hay bales, or equivalent materials would be used for all O&M activities.	Less than significant

Table ES-1 Summary of Proposed Project Impacts

Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
			<p>APM BIO-5: Special-Status Wildlife Encounters. Any special-status wildlife encountered during the course of an activity—including construction, operation, and decommissioning—would be allowed to leave the area unharmed. Encounters with a special-status species would be reported to a Designated Biologist and/or PG&E Environmental staff. Designated Biologists/PG&E Environmental staff members shall maintain records of all special-status species encountered during permitted activities. Encounters with special-status species would be documented and provided to CDFW in an annual report. If a Designated Biologist encounters a special-status species, the following information would be reported for each species:</p> <ul style="list-style-type: none">▪ The locations (i.e., narrative, vegetation type, and maps) and dates of observations▪ The general conditions and health▪ Any apparent injuries and state of healing▪ If moved, the location where the species was captured and the location where it was released (for desert tortoises, include whether animals voided their bladders)▪ Diagnostic markings (i.e., identification numbers or, on desert tortoises, marked lateral scutes) <p>APM BIO-6: Inspections of Construction Materials. All construction materials would be inspected for the presence of special-status wildlife prior to their movement or use. Any special-status wildlife encountered during the course of these inspections would be allowed to leave the construction area unharmed.</p> <p>APM BIO-7: Waste and Equipment Removal. All work areas would be kept free of trash and debris. Particular attention would be paid to “micro-trash” (e.g., screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny) and organic waste that may attract predators. All trash would be covered, kept in closed containers, or otherwise removed from the work site at the end of each day or at regular intervals prior to periods when workers are not present at the site. Upon the completion of each maintenance action in the ROW, all unused material and equipment would be removed from the site. The removal of all unused material and equipment does not apply to fenced stations.</p> <p>APM BIO-8: Open Trenches. All steep-walled trenches or excavations would be covered, except when they are actively being used, to prevent the entrapment of wildlife. If trenches cannot be covered, they would be constructed with escape ramps, following up-to-date design standards to facilitate and allow wildlife to exit, or wildlife exclusion fencing would be installed around the trench(es) or excavation(s). Open trenches or other excavations shall be inspected for the presence of wildlife immediately before backfilling, excavation, or other earthwork. After a work area is fenced, escape ramps would not be necessary for O&M activities.</p> <p>APM BIO-9: O&M Activity Habitat Assessments. Prior to the commencement of the planned O&M activities that would impact 0.10 acres or more of potential habitat, a PG&E biologist would assess the location and the potential for impacts to special-status species and would recommend additional avoidance and minimization measures (e.g., pre-construction clearance surveys, biological monitoring, buffers, physical barriers) as needed to ensure that that behaviors necessary for the survival of such special-status species (e.g., breeding, lambing, nesting, burrowing, migration, foraging) are not significantly disrupted by the planned activity and associated noise.</p> <p>APM BIO-10: Domestic Pets. Domestic pets would be prohibited on work sites. The prohibition would not apply to the use of domestic animals (e.g., dogs) that may be used to aid in official and approved monitoring procedures/protocols, or service animals under Title II and Title III of the Americans with Disabilities Act.</p> <p>APM BIO-11: Firearms. Use and possession of firearms would be prohibited at all activity sites, with the exception of licensed security officers and police officers.</p> <p>APM BIO-12: O&M Activity Siting and Design. To the maximum extent practicable, the siting and design of new, permanent facilities would avoid impacts to vegetation types, unique plant assemblages, and climate refugia, as well as occupied habitat and suitable habitat for special-status species. To the maximum extent practicable, the following actions would be taken during the siting and design of new roads:</p> <ul style="list-style-type: none">▪ Construction of new roads and/or routes would be avoided within suitable habitat and identified linkages for special-status species, and these areas would have a goal of “no net gain.” The exception would be if the new road and/or route is beneficial through minimization of net impacts to natural or ecological resources of concern.▪ Any new road and/or route considered within suitable habitat or identified linkages for protected species would be paved so as to avoid negatively affecting the function of identified linkages.▪ Non-toxic road sealants and soil-stabilizing agents would be used on any new road and/or route.	

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			<p>APM BIO-13: Restoration. Habitat restoration would occur where 0.10 acres or more sensitive natural communities or special-status species habitats may be affected by ground disturbance and/or vegetation removal during pre-construction, construction, operations, and decommissioning activities. If these areas are not converted by long-term ground disturbance, site-specific habitat restoration actions would be implemented for the areas affected, and would include specifying and using the following:</p> <ul style="list-style-type: none">▪ The type of equipment that would be used for habitat restoration actions▪ The timing of habitat restoration actions (e.g., the appropriate season and sufficient rainfall)▪ The location of habitat restoration actions▪ Appropriate seed (e.g., certified weed-free, native, and locally and genetically appropriate seed)▪ Appropriate soils (e.g., topsoil of the same original type on site or that was previously stored after being salvaged during excavation and construction activities) <p>In addition, restoration actions would include the following:</p> <ul style="list-style-type: none">▪ Cactus, nolina, and yucca would be salvaged and translocated from the site prior to disturbance. To the maximum extent practicable for short-term disturbed areas, cactus and yucca would be replanted at their original sites.▪ Following the completion of construction activities, short-term disturbed areas of 0.10 acres or more would be immediately restored during the most biologically appropriate season as determined in the activity/program-specific environmental analysis and decision. This would reduce the amount of habitat converted at any one time and promote the recovery of natural habitats and vegetation, as well as climate refugia and ecosystem services (e.g., carbon storage). <p>APM BIO-14: Special-Status Plant Avoidance. Occurrences of special-status plant species, including those in designated transmission corridors, would be avoided to the maximum extent practicable.</p> <p>APM BIO-15: Desert Tortoise Fencing. Prior to construction or commencement of any long-term activity that is likely to adversely affect desert tortoises, exclusion fencing for the species would be installed around the perimeter of the activity footprint¹ in accordance with the Desert Tortoise Field Manual (USFWS 2009) or the most up-to-date USFWS protocol. Additionally, short-term desert tortoise exclusion fencing would be installed around short-term construction and/or activity areas (e.g., staging areas, storage yards, excavations, and linear facilities), as appropriate per the Desert Tortoise Field Manual or the most up-to-date USFWS protocol.</p> <p>Any exemption or modification of desert tortoise exclusion fencing requirements will be based on the specifics of the activity and the site-specific population and habitat parameters. Sites with low population density and disturbed, fragmented, or poor habitat will likely be candidates for fencing requirement exemptions or modifications. Substitute measures, such as on-site biological monitors in the place of the fencing requirement, will be required as appropriate.</p> <p>After an area is fenced, and until desert tortoises are removed, the Designated Biologist would be responsible for ensuring that desert tortoises are not exposed to extreme temperatures or predators as a result of placement of the fence. Remedies will include the use of shelter sites placed along the fence, immediate translocation, or removal to a secure holding area.</p> <p>Modification or elimination of the previous requirement would also be approved by CDFW if the activity would retain the desert tortoise habitat within the footprint. If such a modification is approved, modified protective measures would be required to minimize impacts to desert tortoises within the activity area.</p> <p>Immediately prior to the construction of desert tortoise exclusion fencing, a Designated Biologist would conduct a clearance survey of the fence alignment to clear desert tortoises from the proposed path of the fence line.</p> <p>All exclusion fencing would incorporate desert tortoise-proof gates or other approved barriers to prevent desert tortoise access to work sites through access road entry points.</p>	

¹ An activity footprint is the area of long- and short-term ground disturbance associated with the pre-construction, construction, operation, implementation, maintenance, and decommissioning of an activity, including associated linear and non-linear components (e.g., staging areas, access routes and roads, gen-ties, pipelines, other utility lines, borrow pits, disposal areas). The footprint may also be considered synonymous with the program/activity site.

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			<p>Following installation, long-term desert tortoise exclusion fencing would be inspected for damage quarterly and within 48 hours of surface flow due to a rain event that may damage the fencing.</p> <p>All damage to long-term or short-term desert tortoise exclusion fencing would be immediately blocked off to prevent desert tortoise access and would be repaired within 72 hours.</p> <p>APM BIO-16: Desert Tortoise Monitoring and Pipe Inspection. Following clearance surveys within sites that have long-term desert tortoise exclusion fencing, a Designated Biologist would monitor initial clearing and grading activities to ensure that desert tortoises missed during the initial clearance surveys are moved out of harm’s way.</p> <p>Before construction pipes, culverts, or similar structures are moved, buried, or capped, a Designated Biologist would inspect these materials for the following:</p> <ul style="list-style-type: none">▪ A diameter greater than 3 inches▪ Storage for one or more nights▪ Placement less than 8 inches above ground▪ Location within desert tortoise habitat (i.e., outside the long-term fenced area) <p>As an alternative, such materials would be capped before they are stored outside the fenced area or placed on pipe racks. Pipes stored within the long-term fenced area after desert tortoise clearance surveys would not require inspection.</p> <p>APM BIO-17: Geotechnical Boring Monitoring. In suitable desert tortoise habitat, biological monitoring would occur for any geotechnical boring or movement of geotechnical boring vehicles to ensure that no desert tortoises are killed and no burrows are crushed. In these areas, a Designated Biologist would accompany the geotechnical testing equipment.</p> <p>APM BIO-18: Inspections Under Vehicles. The ground under vehicles would be inspected for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat that is outside areas with desert tortoise exclusion fencing. If a desert tortoise is seen, it would be allowed to move away from the site on its own. If it does not move within 15 minutes, a Designated Biologist would translocate the animal to a safe location.</p> <p>APM BIO-19: Speed Limits. Vehicular traffic would not exceed 15 mph on unpaved roads and in the ROW within areas that are not cleared by protocol-level surveys and where desert tortoise would be impacted.</p> <p>APM BIO-20: Predator Management. Subsidized predator standards would be implemented during all appropriate phases of activities to manage predator food subsidies, water subsidies, and breeding sites.</p> <p>Common raven management actions would be implemented for all activities to address food and water subsidies, as well as roosting and nesting sites that are specific to the common raven. These actions would include strategies for refuse management, as well as design strategies and passive repellent methods to avoid providing perches, nesting sites, and roosting sites for common ravens.</p> <p>The application of water and/or other palliatives for dust abatement in construction areas and during O&M would be accomplished with the minimum amount of water necessary to meet safety and air quality standards. This would also occur in a manner that prevents the formation of puddles, which would attract wildlife.</p> <p>APM BIO-21: Mitigation. PG&E would acquire, preserve, and/or enhance suitable habitat for desert tortoise and Mohave ground squirrel to fully mitigate for the potential take of these species. To fully mitigate for the take of desert tortoise and Mohave ground squirrel under this long-term permit, PG&E would make an initial purchase of up to 100 acres through the purchase of mitigation credits (where available), the purchase of a conservation easement from willing landowners, or the purchase of fee-title lands where a conservation easement can be placed from a private land trust (e.g., the Transition Habitat Conservancy) for advance mitigation purposes. Acquired lands would be permanently protected through conservation easements or deed restrictions in perpetuity. Mitigation credits or lands would serve as a means for PG&E to debit and credit its mitigation account as impacts occur or as mitigation lands are acquired over the life of the permit, respectively. The amount of acreage to be debited will be determined annually based on the end-of-year summary, which will describe the actual impacts resulting from completed O&M activities. The amount of habitat compensation proposed will be</p>	

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			<p>dependent on the nature and location of the habitat disturbed. Mitigation for habitat disturbance from temporary and permanent impacts would be at the following ratios:</p> <ul style="list-style-type: none">▪ A 5:1 ratio for permanent impacts to Superior–Cronese Unit Critical Habitat lands, DWMA lands, and BLM ACECs▪ A 3:1 ratio for permanent impacts to higher-quality (natural/undisturbed) habitat outside of Superior–Cronese Unit Critical Habitat lands, DWMA lands, and BLM ACECs▪ A 1:1 ratio for temporary disturbance to higher-quality (natural/undisturbed) habitat areas▪ A 0.5:1 ratio for permanent impacts to lower-quality habitat (previously disturbed [denuded], but mostly recovered)▪ No compensatory mitigation for disturbed areas (i.e., totally denuded, mostly denuded with scattered shrub-like vegetation, active agricultural, residential, and urban) that provide no habitat value to special-status species <p>By January 31 of each year, PG&E would submit an annual report to CDFW summarizing the mitigation ratios and credits that were used for O&M activities during the previous calendar year.</p> <p>APM BIO-22: Nesting Birds. All vegetation clearing and ground-disturbing activities would be conducted outside the nesting season (i.e., February 1 to August 31) to the maximum extent feasible. During the nesting bird season, a qualified biologist² would determine whether pre-construction surveys, nest buffers, and monitoring are needed. Nesting bird surveys would be conducted by a qualified biologist and would be scheduled to occur within a timeframe prior to construction that is suitable for the detection of recently established nests. If active nests containing eggs or young are found, the qualified biologist would establish an appropriate nest buffer. Nest buffers would be species-specific and range from 15 to 100 feet for passerines and 50 to 300 feet for raptors, depending on the planned activity’s level of disturbance (i.e., low, medium, or high), site conditions, and the observed bird behavior. Established buffers would remain until the biologist determines the young have fledged or the nest is no longer active. Active nests would be periodically monitored until the biologist has determined the young have fledged or all construction is finished.</p> <p>APM BIO-23: Golden Eagle. If golden eagles are observed within the vicinity of planned O&M activities that result in new surface disturbance or that require vegetation trimming or vegetation removal, a qualified biologist would conduct a desktop review and/or an on-site evaluation to determine whether golden eagles are nesting within 0.5 miles by observing eagle behavior and movements. If work is conducted within 0.5 miles of historic and currently known nests during the golden eagle breeding season (i.e., late January through August), PG&E would survey the site to determine if they are active. If nests are determined to be active, a 0.5-mile no-work buffer will be established. The biologist would periodically monitor the nest during work activities to document the nest’s status and observe eagle behavior.</p> <p>APM BIO-24: Western Burrowing Owl. Prior to planned O&M activities that result in new surface disturbance or that require vegetation trimming or vegetation removal, a qualified biologist would conduct a desktop review and/or on-site evaluation to determine the potential for active western burrowing owl burrows, as appropriate for the location and nature of planned activities. If an active burrowing owl burrow is identified in the vicinity of the planned O&M activity, a no-work buffer of up to 250 feet would be established depending on the time of year and the potential for nesting (the peak months are March through June) and the level of disturbance (i.e., low, medium, or high) of the planned activity. A qualified biologist would periodically monitor the nest or occupied burrow(s) during work activities to document the nest’s status and observe western burrowing owl behavior.</p> <p>APM BIO-25: Seasonal Restrictions. For activities that may impact special-status species, all required species-specific seasonal restrictions on pre-construction, construction, operations, and decommissioning activities would be implemented to the extent feasible.</p> <p>Species-specific seasonal restriction dates are described in APM BIO-22, APM BIO-23, and APM BIO-24. Seasonal restriction dates may be modified, as appropriate, based on variations in climatic conditions (e.g., early onset of rain) that affect wildlife behavior.</p> <p>Alternatively, to avoid a seasonal restriction associated with visual disturbance, installation of a visual barrier may be evaluated on a case-by-case basis and would result in the breeding, nesting, lambing, fawning, or roosting species not being affected by visual disturbance from construction activities. The proposed installation and use of a visual barrier to avoid a seasonal restriction will be analyzed in the activity-specific environmental analysis.</p>	

² A qualified biologist would have experience conducting nesting bird surveys and would be able to accurately identify nesting behavior and avian species likely to occur in the vicinity of the program area.

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			<p>APM BIO-26: Mohave Ground Squirrel Avoidance. For O&M activities conducted within suitable Mohave ground squirrel habitat, within the geographic range of the species (which excludes the zone of hybridization with round-tailed ground squirrel located between Fort Irwin and the City of Barstow), and during the typical active Mohave ground squirrel season (i.e., February 1 through August 31), a qualified biologist would conduct clearance surveys throughout the site immediately prior to initial ground disturbance (e.g., earthwork and/or trenching) and/or vegetation removal. In areas cleared for O&M activities after surveys, biological monitoring would be performed to determine whether Mohave ground squirrels have entered cleared areas. Detected occurrences of Mohave ground squirrel would be flagged and avoided, with a minimum avoidance area of 50 feet, until the individuals leave on their own accord. As needed, a Designated Biologist will move Mohave ground squirrels out of harm's way.</p> <p>APM BIO-27: Monitoring and Surveys for Road Surface Maintenance. A Designated Biologist would be present during routine road surface maintenance activities. The biologist would survey for special-status species immediately ahead of road maintenance activities and assist the maintenance crew in avoiding impacts to special-status species or their burrows.</p> <p>APM BIO-28: Roosting Bats. When feasible and if required, activities in bat roosting habitat would be conducted outside the bat breeding/pupping season (this season is April through mid-September). Suitable bat habitat (e.g., bridges, mines, caves, trees with hollows, palm trees, snags, buildings, long and dark culverts, rock outcrops, dense tree canopies, and flaking tree bark) within 200 feet of O&M activities would be surveyed by a qualified biologist. The surveys of suitable bat habitat would be conducted using an appropriate combination of visual and acoustic survey techniques to assess the habitat's potential to support sensitive bat species. In addition, if structure removal is conducted during the bat breeding/pupping season, structures would be evaluated for bats.</p> <p>If a roost is identified, subsequent visits may be utilized to determine the status of the roost and any species within the roost. If bats are detected, PG&E will avoid conducting construction activities that may directly impact the active roost site, including the following:</p> <ul style="list-style-type: none">▪ If an active maternal roost is identified, no construction would occur within 200 feet of the maternal roost during the pupping season.▪ As necessary, an exclusionary buffer would be maintained around active roosts. The size of the buffer may be modified at the discretion of the qualified biologist based on the species' sensitivity to disturbance from O&M activities and the status of the roost.▪ As necessary, a qualified biologist will monitor active roost site buffers during O&M activities to determine whether roosting activity is influenced by noise or vibrations until the qualified biologist has determined if the young bats are volant (i.e., able to fly). <p>Biological Resources Mitigation Measures</p> <p>MM BIO-1 Mojave Desert Tortoise, Mohave Ground Squirrel, and Western Joshua Tree Minimization Measures.</p> <p>A. Authorized Biologist(s), Biological Monitor(s), Veterinarian(s), and Wildlife Rehabilitation Facilities. PG&E shall employ an approved Authorized Biologist(s) and Biological Monitor(s) whose qualifications have been reviewed and approved by CDFW (and USFWS where applicable) for desert tortoise, Mohave ground squirrel, and western Joshua tree. PG&E shall obtain CDFW approval of the Authorized Biologist(s) and Biological Monitor(s) in writing before starting O&M activities and shall also obtain approval in advance, in writing, if the Authorized Biologist(s) or Biological Monitor(s) must be changed. The Authorized Biologist(s) and Biological Monitor(s) shall be knowledgeable and experienced in the biology, natural history, and collecting and handling of the species. The Authorized Biologist(s) and Biological Monitor(s) shall be responsible for monitoring O&M activities to help avoid, minimize, and fully mitigate the incidental take of individual desert tortoise, Mohave ground squirrel, and, if applicable, western Joshua tree and to minimize disturbance of habitat. Additionally, prior to start of O&M activities, PG&E shall identify veterinarians and wildlife rehabilitation facilities that can accept incidentally injured desert tortoise and Mohave ground squirrel.</p> <p>- Authorized Biologist(s). Authorized Biologist(s) shall have knowledge of the biology and natural history of desert tortoise, Mohave ground squirrel, and western Joshua tree through education, trainings, field experience, and/or experience as an Authorized Biologist on similar projects, and experience monitoring compliance of the conditions of approval within a state ITP or federal incidental take permit obtained for surface-disturbing projects in desert tortoise, Mohave ground squirrel, and, if applicable, western Joshua tree habitat. Additionally, the Authorized Biologist for desert tortoise shall have</p>	

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			<p>experience with excavating burrows, handling and temporarily holding desert tortoises, translocating desert tortoises, reconstructing desert tortoise burrows, locating, identifying, and recording all forms of desert tortoise sign, conducting health assessments, attaching and removing transmitters, handling and moving eggs, and conducting protocol level presence/absence and clearance surveys. Authorized Biologist(s) for Mohave ground squirrel shall demonstrate experience with trapping Mohave ground squirrel as authorized under the California Fish and Game Code (CFGC), identifying Mohave ground squirrel in the field, handling and processing small mammals, scoping and excavating small mammal burrows, creating artificial burrows, and setting up camera stations and identifying species in photos.</p> <ul style="list-style-type: none">- Biological Monitor(s). Biological Monitor(s) shall have knowledge of the biology and natural history of desert tortoise, Mohave ground squirrel, and western Joshua tree through education, trainings, field experience, and/or experience as a Biological Monitor on similar projects, and experience conducting protocol level presence/absence surveys, locating, identifying, and recording all forms of desert tortoise sign, identifying Mohave ground squirrel in the field, setting up camera stations and identifying species in photos, and monitoring compliance of the conditions of approval within a state ITP or federal incidental take permit obtained for surface-disturbing projects in desert tortoise, Mohave ground squirrel, and, if applicable, western Joshua tree habitat.- Veterinarian(s). Veterinarian(s) that shall treat injured desert tortoise and Mohave ground squirrel associated with O&M activities shall hold a current Memorandum of Understanding (MOU) issued by CDFW pursuant to CFGC Section 2081(a). PG&E shall identify a veterinarian(s) for both desert tortoise and Mohave ground squirrel. PG&E shall obtain written confirmation before starting O&M activities from the veterinarian(s) that they will accept injured desert tortoise and Mohave ground squirrel for treatment. Written confirmation shall also contain the veterinarian's contact information and copy of their MOU. PG&E shall provide a copy to CDFW for review and approval of the veterinarian and their facility in writing before starting O&M activities and shall also obtain CDFW's approval in advance, in writing, if the veterinarian(s) must be changed. The contact information and location of the facilities shall be on site for the Authorized Biologist(s) during O&M activities.- Wildlife Rehabilitation Facilities. PG&E shall identify wildlife rehabilitation facilities that hold a current Memorandum of Understanding (MOU) issued by CDFW pursuant to CFGC Section 2081(a) prior to start of O&M activities and receive written confirmation from the facility that desert tortoise and Mohave ground squirrel individuals can be accepted for rehabilitation before starting O&M activities. Written confirmation from the facility, contact information for the point of contact at the facility, and a copy of the facility's MOU shall be provided to CDFW for review and approval. PG&E shall obtain CDFW approval of the wildlife rehabilitation facilities in writing before starting O&M activities and shall also obtain approval in advance, in writing, if the wildlife rehabilitation facility must be changed. The contact information and location of the facilities shall be on-site for the Authorized Biologist(s) during O&M activities.- Authorized Biologist(s) and Biological Monitor(s) Authority. To ensure compliance with protective measures (biological resource mitigation measures contained within the mitigation and monitoring program, or conditions of approval contained in the ITP), the Biological Monitor(s) and/or Authorized Biologist(s) shall have authority to immediately order work to stop or halt and/or order PG&E or its agent to implement any reasonable measure necessary to avoid the unauthorized take of a desert tortoise, Mohave ground squirrel, or western Joshua tree. If a Biological Monitor or Authorized Biologist orders work to stop or halt, work shall not resume until an Authorized Biologist determines that all activities are in compliance with the ITP, as issued by CDFW. PG&E shall inform all employees, contractors, and agents conducting O&M activities authorized under the CDFW ITP that the Biological Monitor(s) and Authorized Biologist(s) have the authority to stop or halt work. <p>B. Education Program. PG&E shall conduct an education program prior to all O&M activities for all employees, agents, or contractors that will be working on behalf of the PG&E in the project area. The education program shall include a discussion of the biology and general behavior of desert tortoise and Mohave ground squirrel and, if applicable, the biology of western Joshua</p>	

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			<p>tree; information about the distribution and habitat needs of the species; sensitivity of the species to human activity; the legal status of the species under CESA, including their protected status, recovery efforts, penalties for violations; and project-specific protective measures detailed in the ITP. The education program shall consist of an in-person presentation from the Authorized Biologist or Biological Monitor and/or a digital presentation that can be accessed in the field via cellular phones, tablets, laptop computers, and/or similar portable devices. PG&E shall prepare and distribute wallet-sized cards or a fact sheet handout (hard copy or digital) detailing the information presented during the education program for workers to carry in the project area. In addition, a tailgate presentation prior to surface-disturbing O&M activities shall also be presented by the Authorized Biologist or Biological Monitor prior to the start of any project-specific O&M activities to identify specific on-site resources identified for avoidance during pre-activity surveys. For the education program and each tailgate presentation, the PG&E shall provide interpretation for non-English-speaking workers, and the same instruction shall be provided to any new workers before they are authorized to perform work in the project area. Upon completion of the program and after each tailgate presentation, employees shall sign a form (hardcopy or digital) stating they attended the program and presentation and understand all protection measures. The form shall be made available to CDFW upon request.</p> <ul style="list-style-type: none">- Trash Abatement. PG&E shall initiate a trash abatement program to ensure that trash and food items are contained in in self-closing, sealable, wind-proof, and animal-proof containers and are regularly inspected and removed, ideally at daily intervals but at least once a week from the project area, and prior to periods of project inactivity, to avoid attracting opportunistic predators such as ravens, coyotes, and feral dogs.- Firearms and Dogs. PG&E shall prohibit project personnel or those associated with the project from bringing any firearms and domestic dogs on the project area during O&M activities, except those in the possession of authorized security personnel or local, state, or federal law enforcement officials’ dogs that may be used to aid in official and approved monitoring procedures/protocols, or service dogs under Title II and Title III of the American with Disabilities Act.- Dust Control. PG&E shall implement dust control measures to facilitate visibility for monitoring of desert tortoise and Mohave ground squirrel by the on-site employees and the Authorized Biologist and/or Biological Monitor. PG&E shall keep the amount of water used to the minimum amount needed and shall not allow water to form puddles. Any tackifier or soil stabilizers shall be approved by CDFW prior to O&M activities.- Delineation of Project Area Boundaries. Before starting surface-disturbing O&M activities, PG&E shall clearly delineate the boundaries of the O&M activity work area with fencing, stakes, or flags. PG&E shall restrict all O&M activities to within the fenced, staked, or flagged areas. PG&E shall maintain all fencing, stakes, and flags until the completion of O&M activities in that area.- Delineation of Habitat. PG&E shall clearly delineate habitat of desert tortoise, Mohave ground squirrel, and western Joshua tree within the O&M activity work area when surface-disturbing O&M activities occur with posted signs, posting stakes, flags, and/or rope or cord, and placing fencing as necessary to minimize the disturbance of habitat.- Project Access. PG&E shall ensure project-related personnel access the project area using existing legal routes, including pipeline patrol and access roads identified in the Project Description, and shall not cross desert tortoise, Mohave ground squirrel, and western Joshua tree habitat, if applicable, outside of or en route to the O&M activity work areas. PG&E shall restrict project-related vehicle traffic to established roads, staging, and parking areas. PG&E shall ensure that vehicle speeds do not exceed 20 miles per hour to avoid desert tortoise and Mohave ground squirrel traversing the roads. Drivers shall stop the vehicle in areas of low visibility due to terrain and exit the vehicle to review the roadway ahead to confirm desert tortoise and Mohave ground squirrel are not within the roadway before proceeding. If a desert tortoise or Mohave ground squirrel is encountered, drivers shall stop (or remain stopped) and wait for the species to move off the road on its own accord out of harm’s way.	

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			<div><ul style="list-style-type: none">- Project Access Escorts. Along the route to the O&M work area where desert tortoise and Mohave ground squirrel may be traversing the road, the Authorized Biologist or Biological Monitor shall escort project personnel to the O&M work areas in situations where there is an increased potential for incidental take of the species through vehicular collisions due to decreased road visibility and/or lowered brake reaction time and insufficient stopping distances. Situations in which Authorized Biologist or Biological Monitor escorts shall be required include when more than two vehicles or heavy equipment are caravanning to the O&M work area; when heavy equipment with limited visibility is being driven to the O&M work area, and when flatbed trucks with trailers, dump trucks with trailers, and other vehicles with trailers are transporting equipment to the site. The Authorized Biologist or Biological Monitor escorts and/or drivers shall stop the vehicle in areas of low visibility due to terrain and exit the vehicle to review the roadway ahead to confirm desert tortoise and Mohave ground squirrel are not within the roadway before proceeding. If a desert tortoise or Mohave ground squirrel is encountered, drivers shall stop (or remain stopped), wait for the species to move off the road of its own accord out of harm's way, or until the Authorized Biologist(s) has relocated the species.- Staging Areas. PG&E shall confine all project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to the O&M work area using, to the extent possible, previously disturbed areas.- CNDDB Observations. PG&E or Authorized Biologist shall submit all observations of special-status species within the O&M work area to CDFW's California Natural Diversity Database (CNDDB) within 60 calendar days of the observation.- Notification of Take or Injury/Damage. PG&E shall notify CDFW within 24 hours if a desert tortoise, Mohave ground squirrel, or western Joshua tree is taken or injured/damaged by an O&M-related activity, or otherwise found dead or injured/damaged within the vicinity of the O&M activity work area or a PG&E pipeline access road. PG&E shall also send CDFW a written report within two calendar days. The report shall include the date and time of the finding or incident, location of the animal or carcass, or plant, and if possible, provide a photograph, explanation as to cause of take or injury/damage, and any other pertinent information. In addition, the report shall identify proposed corrective measures that shall be implemented, subject to prior review and approval by CDFW, during subsequent O&M activities. The corrective measures at a minimum shall propose methods to prevent or minimize future take or injury/damage of desert tortoise, Mohave ground squirrel, or western Joshua tree in a similar manner in the future and if approved by CDFW be immediately implemented for all O&M activities. For injured desert tortoise and Mohave ground squirrel, the Authorized Biologist shall immediately take the individual(s) to the CDFW-approved wildlife rehabilitation or veterinary facility. PG&E shall bear all costs associated with the care or treatment of the injured individual(s). PG&E shall be responsible for the monetary cost of the animal until the animal is permanently placed with a rehabilitation facility or re-released into the wild. PG&E shall notify USFWS of take or injury of desert tortoise per their Biological Opinion.<p>C. Drilling Materials and Frac-Out Contingency Plan. PG&E shall prepare and implement a frac-out contingency plan prior to beginning of all O&M activities. To minimize impacts to desert tortoise and Mohave ground squirrel, the plan shall require the following conditions: drilling mud shall be contained and removed from/hailed off the O&M work area and disposed of in an appropriate manner at the completion of O&M activities; PG&E shall use benign material in the drilling muds to avoid contamination of any water or habitat; PG&E shall not allow drill cuttings, drilling mud, and/or materials or water contaminated with bentonite, or any other substance deemed deleterious to wildlife be allowed to enter the CFGC Section 1602 resources or desert tortoise and Mohave ground squirrel habitat, or be placed where they may be washed into the CFGC Section 1602 resource or desert tortoise and Mohave ground squirrel habitat; any contaminated water/materials from the drilling and/or project activities shall be pumped or placed into a holding facility and removed for proper disposal; in case of a frac-out, all drilling shall cease, and all personal shall implement the frac-out cleanup contingency plan; O&M activities shall not resume until the frac-out is located, contained, and cleaned up consistent with the frac-out contingency plan; and PG&E shall notify</p></div>	

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			<p>CDFW immediately in the event of a frac-out. The frac-out contingency plan shall be on site at all times during pertinent O&M activities and all project personnel shall have pre-arranged duties in case of a frac-out. Cleanup equipment for any potential frac-out shall be on site prior to the start of pertinent O&M activities.</p> <p>D. Entrapment Inspections. Any pipes, culverts, or similar structures with a diameter greater than 3 inches and less than 8 inches aboveground shall be inspected by the Authorized Biologist(s) or Biological Monitor(s) for desert tortoise and Mohave ground squirrel before the pipe, culvert, or similar structure is moved, buried, or capped. The Authorized Biologist(s) or Biological Monitor(s) shall inspect all open holes and trenches within desert tortoise and Mohave ground squirrel habitat at a minimum of twice a day and just prior to backfilling. At the end of each workday, PG&E shall place an escape ramp at each end of trenches to allow any animals that may have become trapped in the hole or trench to climb out overnight. The ramp may be constructed of either dirt fill or wood planking or other suitable material that is placed at an angle no greater than 30 degrees. If any worker discovers that desert tortoise or Mohave ground squirrel have become trapped, they shall halt O&M activities and notify the Authorized Biologist(s) or Biological Monitor(s) immediately. Project workers, Biological Monitor(s), or Authorized Biologist(s) shall allow the individual to escape unimpeded if possible, or an Authorized Biologist(s) shall move the individual out of harm's way before allowing work to continue.</p> <p>E. Vehicle and Equipment Inspection. PG&E shall require workers to inspect for desert tortoise and Mohave ground squirrel under vehicles and equipment before the vehicles and equipment are moved. If a desert tortoise or Mohave ground squirrel is present, the worker shall contact the Authorized Biologist(s) or Biological Monitor(s) and wait for the individual to move unimpeded to a safe location or the Authorized Biologist(s) shall relocate the individual before moving vehicles and equipment.</p> <p>F. Desert Tortoise Pre-Activity Surveys. No more than 30 calendar days prior to start of any surface-disturbing O&M activities, the Authorized Biologist(s) and/or Biological Monitor(s) approved by CDFW for the task shall conduct pre-activity presence/absence surveys for desert tortoise, using the methods described in the most recent United States Fish and Wildlife Service (USFWS) Desert Tortoise (Mojave Population) Field Manual (hereinafter referred to as USFWS Field Manual). In addition to the guidance provided in the USFWS Field Manual, PG&E shall also comply with the following CDFW requirement(s): Pre-activity presence/absence surveys shall be completed using perpendicular survey routes, pre-activity presence/absence surveys cannot be combined with other surveys conducted for other species while using the same personnel, and these surveys shall cover 100% of the O&M work area and a 300-foot buffer zone. The Biological Monitor(s) or Authorized Biologist(s) shall record all desert tortoise live individuals, burrows, or other sign within the survey area using high-accuracy (<1 meter) global positioning system (GPS) technology. The Biological Monitor(s) or Authorized Biologist shall visually demarcate all potential desert tortoise burrows within each O&M work area and 50-foot buffer to alert biological and work crews to their presence in a manner that does not attract predators. The Biological Monitor(s) or Authorized Biologist(s) shall provide the results of the pre-activity presence/absence survey (using the USFWS Protocol data sheet) to CDFW quarterly.</p> <p>Within 24 hours prior to start of O&M activities, the Authorized Biologist(s) approved under the CDFW ITP for this activity shall conduct pre-activity clearance surveys for desert tortoise, using the methods described in the most recent USFWS Field Manual. In addition to the guidance provided in the USFWS Field Manual, PG&E shall comply with the following CDFW requirement(s): Pre-activity clearance surveys shall be completed using perpendicular survey routes, pre-activity clearance surveys cannot be combined with other surveys conducted for other species while using the same personnel, O&M Activities cannot start until two (2) negative results from consecutive surveys using perpendicular survey routes for desert tortoise are documented, and these surveys shall cover 100% of the O&M work area and a 50-foot buffer zone. The Authorized Biologist(s) shall record any new desert tortoise individuals, burrows, or other sign within the pre-activity clearance survey</p>	

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			<p>area, using high-accuracy (<1 meter) global positioning system (GPS) technology that were not documented in the presence/absence survey. The Authorized Biologist shall visually demarcate any new potential desert tortoise burrows within each O&M work area or 50-foot buffer zone to alert biological and work crews to their presence in a manner that does not attract predators and ensure previous demarcation materials remained intact. The use of specialized equipment (e.g., fiber optics) shall be used to thoroughly inspect all burrows. PG&E shall provide the results of the pre-activity clearance survey (using the USFWS Protocol data sheet) to CDFW quarterly.</p> <ul style="list-style-type: none">- Desert Tortoise Exclusionary Fencing. PG&E shall construct any temporary or permanent desert tortoise fencing used during surface-disturbing O&M activities in the project area according to the USFWS Field Manual. Any request for variance to the fencing specifications within the USFWS Field Manual shall be reviewed and approved by CDFW and USFWS on a case-by-case basis prior to the O&M activity. The Authorized Biologist shall immediately conduct an additional clearance survey following the erection of desert tortoise exclusionary fencing within the fenced area. The Authorized Biologist(s) shall inspect the desert tortoise fence each morning prior to the start of O&M activities, during O&M activities, and at the end of the workday after O&M activities have ceased. The Authorized Biologist shall inspect the fence within 24 hours after major rainfall events prior to recommencing O&M activities to ensure the fence is not compromised. PG&E shall repair the fence immediately if the fence is found down or a hole is discovered. The Authorized Biologist shall perform a clearance survey immediately after the fencing is repaired and prior to recommencing O&M activities.- Unfenced O&M Work Areas. Any surface-disturbing O&M activities conducted in an area that is not fenced to exclude desert tortoises shall be monitored by an Authorized Biologist who shall halt work if a desert tortoise enters the work area or an adjacent area where take or injury to the individual may occur. Work activities shall only proceed at the site after the desert tortoise has either moved away of its own accord or has been relocated off the site per the Desert Tortoise Relocation Plan approved by USFWS and CDFW. Any O&M activities that do not require surface disturbance, including pipeline patrols, valve inspection and lubrication, integrity management activities, and telecommunication site inspections shall have an Authorized Biologist on call that can immediately go into the field to address compliance with these mitigation measures and the ITP.- Desert Tortoise Relocation. No desert tortoise may be handled or relocated without authorization from USFWS and CDFW. Regardless of the number of desert tortoise estimated to be relocated a short distance away out of harm’s way, PG&E shall prepare a Desert Tortoise Relocation Plan for CDFW and USFWS review at least 60 calendar days prior to start of all O&M activities. The relocation plan shall include parameters in which Authorized Biologists may relocate desert tortoise to minimize impact to the individual. The plan shall contain at a minimum the following descriptions: recipient site selection criteria and characteristics that will benefit the relocated desert tortoise (including land ownership, maximum distance from O&M work area based on surrounding land uses, presence of native vegetation species and percentage of cover, no predator sign and concentrations, friable soil types, and lack of anthropogenic features); minimum distance away from paved highway/roads to reduce vehicular strikes; survey requirement to identify unoccupied natural burrows available for immediate use or enhancement and the creation and design of supplemental artificial burrows within the site; procedures for relocation of tortoises and eggs; post-relocation monitoring of individuals by the Authorized Biologist(s) for at least two days after placement in the new burrows to ensure their safety; health assessments; shade structures and shelters to minimize potential heat stress and exposure to lethal temperatures; disinfectant and sanitation to prevent spread of disease; handling and releasing procedures including temperature restrictions to prevent overheating (no desert tortoise shall be captured, moved, transported, released, or purposefully caused to leave its burrow for whatever reason when the ambient air temperature is above 95 degrees Fahrenheit [F]), and requirements to rehydrate the individuals that void its bladder during handling at the location where the individual was captured, or the location where the individual will be	

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			<p>released out of harm's way by the Authorized Biologist; attaching transmitters to assist with monitoring; transporting procedures; temporary penning procedures; construction coordination; and quarterly reporting requirements to CDFW. All CDFW and USFWS comments shall be resolved and incorporated into a final Desert Tortoise Relocation Plan. O&M activities shall not commence until the plan is approved in writing by CDFW and USFWS. The Authorized Biologist(s) shall maintain a record of all desert tortoises handled. The Desert Tortoise Relocation Plan shall be updated and otherwise amended to include the latest science and guidance as directed by CDFW.</p> <ul style="list-style-type: none">- Desert Tortoise Observations. If a desert tortoise is observed during surface-disturbing O&M activities within or near the O&M work area, the observation shall be immediately reported to the on-site Authorized Biologist(s) or Biological Monitor. If the Authorized Biologist or Biological Monitor determines take or injury may occur, all work shall immediately halt and O&M activities shall not resume until the Authorized Biologist(s) has verified the desert tortoise has left the O&M work area, determined there is an appropriate buffer between the O&M activities, and the desert tortoise can be monitored to prevent take, or the individual is relocated as described the Desert Tortoise Relocation Plan. PG&E shall immediately notify CDFW of any desert tortoise observations within the O&M work area within 24 hours. Notification and the written report shall include the date, location (including GPS coordinates), and circumstances of the observation, the name of the Authorized Biologist(s), pictures, map (including GPS coordinates), and if applicable, the shapefiles with the location where the individual was moved as specified in the Desert Tortoise Relocation Plan.- Excavating Desert Tortoise Burrows. Only Authorized Biologist(s) approved by CDFW and USFWS are authorized to conduct desert tortoise burrow excavation. Excavation of burrows shall follow the methods described in the USFWS Field Manual. All potential desert tortoise burrows identified during pre-activity surveys and clearance surveys conducted in the O&M work area which cannot be avoided, shall be fully excavated by hand. Any individuals removed from burrows shall be transmitterd and relocated per the Desert Tortoise Relocation Plan. All burrows that can be avoided shall remain visually demarcated and monitored until completion of O&M activities in that area.- Desert Tortoise Nests. In the event that an active desert tortoise nest is detected during pre-activity surveys, burrow excavation, or during O&M activities, procedures outlined in the USFWS Desert Tortoise Field Manual regarding nests and eggs shall be followed by an Authorized Biologist approved by CDFW and USFWS to perform the task. CDFW shall be notified immediately upon discovery of an active desert tortoise nest, and the site of egg relocation shall be approved by CDFW prior to relocation through implementation of a Desert Tortoise Relocation Plan. <p>G. Raven Management. PG&E shall prepare a Raven Management Plan (RMP) to minimize the potential to attract common ravens to the project area and submit it to CDFW for review and approval at least 60 calendar days prior to start of O&M activities in the project area. All CDFW comments shall be resolved and incorporated, and O&M activities shall not commence until the RMP is approved in writing by CDFW. With implementation, the RMP shall minimize impacts to desert tortoise by reducing the potential to attract common ravens that may prey upon desert tortoise. The PG&E-prepared RMP shall (1) identify conditions associated with O&M activities that might provide raven subsidies or attractants; (2) describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities; and (3) describe monitoring during O&M activities, including methods to identify individual ravens that prey on desert tortoises. The RMP shall be an amendable document that shall be updated to include the latest science and guidance as directed by CDFW. PG&E shall provide funds to the Desert Managers Group account established with the National Fish and Wildlife Foundation to contribute to a regionwide raven control plan to help address raven predation on the desert tortoise. This contribution shall be used to address raven predation on a regional basis and shall be calculated as a one-time payment of \$105 per acre of project disturbance covered under the ITP.</p>	

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			<p>H. Mohave Ground Squirrel Relocation Plan. No Mohave ground squirrel may be handled or relocated without authorization from CDFW. Regardless of the number of Mohave ground squirrel estimated to be relocated a short distance away out of harm’s way, PG&E shall prepare and submit a Mohave Ground Squirrel Relocation Plan for CDFW review at least 60 calendar days prior to start of all O&M activities. The relocation plan shall include parameters in which Authorized Biologists may relocate Mohave ground squirrel to minimize impact to the individual. The plan at a minimum shall contain the following descriptions: recipient site selection criteria and characteristics that will benefit the relocated Mohave ground squirrel (including land ownership, maximum distance from O&M work area based on surround land uses, presence of native vegetation species and percentage of cover, no predator sign and concentrations, friable soil types, and lack of anthropogenic features); minimum distance away from paved highway/roads to reduce vehicular strikes; survey requirement to identify unoccupied natural burrows available for immediate use or enhancement and the design and installation of supplemental artificial burrows within the site; burrow excavation methods; trapping procedures following CDFW protocol; procedures for relocation; post-relocation monitoring; health assessments; handling and releasing procedures including temperature restrictions (no Mohave ground squirrel shall be captured, moved, transported, released, or purposefully caused to leave its burrow for whatever reason when the ambient air temperature is above 90°F); transporting procedures; temporary holding procedures, construction coordination, and reporting. All CDFW comments shall be resolved and/or incorporated prior to approval of the plan. O&M activities shall not commence until the plan is approved in writing by CDFW. The Authorized Biologist(s) shall maintain a record of all Mohave ground squirrels handled. The Mohave Ground Squirrel Relocation Plan shall be an amendable document that shall be updated to include the latest science and guidance as directed by CDFW.</p> <ul style="list-style-type: none">- Mohave Ground Squirrel Survey for Pre-Planned O&M Activities. For known pre-planned surface-disturbing O&M activities taking place in the distribution range of Mohave ground squirrel within the calendar year that are scheduled to commence during or after Mohave ground squirrel active season, PG&E shall survey the O&M work area during Mohave ground squirrel active season. Surveys shall include visual surveys performed by the Biological Monitor or Authorized Biologist. Visual surveys to determine Mohave ground squirrel activity and habitat quality shall be undertaken during the period of March 15 through April 15. All potential habitat within the O&M work area and 300-foot buffer shall be visually surveyed during daylight hours. If visual surveys do not reveal presence of Mohave ground squirrel within the O&M work area or adjacent buffer, the Biological Monitor or Authorized Biologist shall set and maintain a minimum of five baited camera stations (or more for larger work areas to provide adequate coverage) dispersed in the O&M work area and adjacent habitat. Camera stations shall consist of the camera mounted on a T-post or U-post with bait tubes or caged bait boxes staked to the ground. Feed blocks and free bait are prohibited. Cameras shall be deployed at the start of the each of the listed sessions and run for at least the 5-day duration of each session unless presence is confirmed in a previous session: March 15 through April 30; May 1 through May 31; and June 1 through July 15. Upon completion of survey work, all equipment, supplies, and refuse shall be removed, including unused bait. PG&E shall submit a report documenting the results of the surveys to CDFW quarterly, including camera station photos.- Mohave Ground Squirrel Burrow Pre-Activity Surveys. For surface-disturbing O&M activities planned during Mohave ground squirrel dormant season or for project areas with confirmed Mohave ground squirrel presence during visual surveys or camera stations, no more than 30 calendar days prior to the start of ground-disturbing activities the Authorized Biologist(s) and/or Biological Monitor(s) shall perform a pre-activity survey for Mohave ground squirrel burrows covering the O&M work area and an appropriate buffer zone as determined by the Authorized Biologist. All known or suspected Mohave ground squirrel burrows (any burrow of sufficient size to allow an adult or juvenile Mohave ground squirrel to enter) within the O&M work areas shall be visually demarcated in a manner that does not attract predators to alert biological crews to their presence. PG&E shall submit a report documenting the results of the surveys to CDFW quarterly.	

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			<ul style="list-style-type: none"> - Mohave Ground Squirrel Burrow Scoping and Excavation. Within 7 days prior to the start of surface-disturbing O&M activities, the Authorized Biologist shall live trap or scope and fully excavate by hand all potential Mohave ground squirrel burrows within the O&M work area, and as determined by the Authorized Biologist, burrows adjacent to the work area that are suspected or known to be occupied by Mohave ground squirrels that will be directly or indirectly impacted by surface-disturbing O&M activities. Burrows that can be avoided shall remain intact but visually demarcated. During the Mohave ground squirrel active period (generally March 15–July 15), the Authorized Biologist(s) shall relocate Mohave ground squirrel individuals live trapped per the Mohave Ground Squirrel Relocation Plan approved by CDFW. Any individuals encountered by the Authorized Biologist(s) in the excavated burrows during their active period shall be allowed to escape out of harm’s way. During the Mohave ground squirrel dormant period (generally September 1–January 31), the Authorized Biologist shall collect and immediately relocate the individuals per the Mohave Ground Squirrel Relocation Plan. Excavation shall not be performed when the ambient air temperature exceeds 90 degrees Fahrenheit. The Authorized Biologist(s) shall maintain a record of all Mohave ground squirrel handled or encountered. PG&E shall submit a report documenting the results to CDFW quarterly. <p>I. Western Joshua Tree. During candidacy or if western Joshua tree is listed under CESA, PG&E shall implement the mitigation measure below if an ITP is obtained. If an ITP is not obtained, PG&E shall place a disturbance-free 300-foot buffer around all western Joshua trees identified within the O&M work area and adjacent habitat to avoid all impact.</p> <ul style="list-style-type: none"> - Western Joshua Tree Pre-Activity Assessment. Should O&M activities occur within western Joshua tree habitat, PG&E shall have a qualified botanist conduct a pre-activity survey for western Joshua tree within the O&M work area and 300-foot buffer zone. The survey shall take place within 14 days prior to start of surface-disturbing O&M activities. The qualified botanist shall map each individual western Joshua tree using high-accuracy (<1-meter) global positioning system (GPS) technology and determine the health and approximate the height (meters). Habitat and on-site species will be described in three western Joshua tree height classes defined as: <ul style="list-style-type: none"> Class 1: <ul style="list-style-type: none"> ▪ No western Joshua trees occur within the O&M work area but due to species presence adjacent to the impact area there is potential take of seedbank and/or root systems that may be impacted; ▪ Dead western Joshua tree(s); and/or ▪ Western Joshua trees 0–1 meter in height Class 2: Western Joshua tree(s) 1 meter or greater, but less than 4 meters (approximately 13 feet) in height Class 3: Western Joshua tree(s) over 4 meters in height - Reporting. PG&E shall submit a report documenting the results of the surveys to CDFW quarterly should western Joshua tree be impacted in that quarter. The report shall include a map showing the boundary of the O&M work area, the boundary of the 300-foot buffer zone, the number and location of each individual western Joshua tree, and a 186-foot-radius buffer depicted around each mapped western Joshua tree. If an ITP is obtained, the map shall also distinguish which western Joshua tree(s) were avoided (i.e., preserved/left in place) and which western Joshua trees tree(s) were removed due to O&M activity. Each western Joshua tree shall also be displayed in the map with an identification code, and a corresponding table in the report shall list each individual western Joshua tree, approximate height and age class, and whether the tree was preserved or removed (if applicable), and photographs of each western Joshua tree. 	

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			<p>MM BIO-2 Compensatory Mitigation for Mojave Desert Tortoise, Mohave Ground Squirrel, and Western Joshua Tree. For project-related impacts expected to occur within the 30-year term of the ITP, PG&E shall either:</p> <ul style="list-style-type: none">▪ Purchase a portion or all of the required compensatory habitat as acres of species credits from a CDFW-approved mitigation or conservation bank; AND/OR▪ Provide for both the permanent protection and perpetual management of a portion or all of the required compensatory habitat acres of Habitat Management (HM) lands, including: (1) acquisition and/or transfer of fee title of lands approved by CDFW; (2) protection in perpetuity through recordation of a CDFW-approved conservation easement with a CDFW-approved entity acting as grantee; (3) implement CDFW-approved land management in perpetuity by a CDFW-approved entity; and (4) provide CDFW-approved funding for land management activities through the calculation and deposit of an endowment fund. <p>A1. Compensatory Mitigation for Desert Tortoise and Mohave Ground Squirrel. To mitigate project-related impacts to desert tortoise and Mohave ground squirrel, PG&E shall provide compensatory habitat, in advance, for each defined compensatory mitigation period (defined below) prior to start of O&M activities for that term.</p> <p>PG&E shall provide compensatory mitigation as calculated by CDFW using the following ratios for all acres of O&M activity impacts:</p> <ul style="list-style-type: none">▪ For areas not identified below, PG&E shall mitigate impacts at a 2:1 ratio (provide 2 acres of compensatory habitat for 1 acre of impact).▪ For areas that occur within Desert Wildlife Management Areas; Areas of Critical Environmental Concern; Mohave ground squirrel peripheral population areas, population dispersal areas, and linkage areas; and Mohave Ground Squirrel Conservation areas that do not overlap with areas identified below, PG&E shall mitigate impacts at a 3:1 ratio (provide 3 acres of compensatory habitat for 1 acre of impact).▪ For areas in desert tortoise critical habitat or Mohave ground squirrel core population areas, PG&E shall mitigate impacts at a 5:1 ratio (provide 5 acres of compensatory habitat for 1 acre of impact). <p>Every 10 years, CDFW shall review the compensatory mitigation ratios based on the best available scientific information regarding species status and determine whether the mitigation ratios continue to fully mitigate project impacts under CESA. CDFW may revise the mitigation ratios if, based on CDFW’s review, the mitigation does not fully mitigate all the impacts of the taking of the species based on changes to species status, threats, and/or distribution.</p> <p>PG&E shall provide compensatory habitat, in advance, using the mechanisms described above, such that the total combined acreage of purchased species credits and HM lands total the amount of estimated compensatory habitat acreage required for each compensatory mitigation period. Alternatively, compensatory mitigation shall be provided within 18 months of initiating project-related O&M activities for each compensatory mitigation period if PG&E ensures funding approved by CDFW to complete the activities described above. The estimated impacted acreage for the full 30-year ITP term subject to compensatory mitigation is 1,290 acres. The estimated acreage for each compensatory mitigation period assumes O&M activities will impact 43 acres annually, all 43 acres of which are desert tortoise habitat and 16 acres of which are Mohave ground squirrel habitat.</p> <p>A2. Estimated Compensatory Mitigation for Desert Tortoise and Mohave Ground Squirrel. Estimated mitigation acres for those impacts are calculated using the 3:1 ratio. Compensatory mitigation for desert tortoise and Mohave ground squirrel may co-occur on the same acres where dual species credits are available for purchase or HM lands contain habitat for both species.</p> <ul style="list-style-type: none">▪ Compensatory Mitigation Period 1 (Year 1, starting upon project approval)	

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			<div><ul style="list-style-type: none">- PG&E shall mitigate for the first year of impacts by providing 129 acres of compensatory mitigation for desert tortoise and 48 acres of compensatory mitigation for Mohave ground squirrel.▪ Compensatory Mitigation Period 2 (Year 2 through Year 10)<ul style="list-style-type: none">- PG&E shall mitigate for the years 2 through 10 impacts by providing 1,161 acres of compensatory mitigation for desert tortoise and 432 acres of compensatory mitigation for Mohave ground squirrel.- At the beginning of year 10 from the date of project approval, PG&E shall review the difference between the estimated O&M activity impacts with the actual post-O&M activity impact acres associated with each mitigation ratio (defined above) for years 1 through 9 and provide that information to CDFW. CDFW will review and, if in agreement, will provide concurrence. Any excess compensatory mitigation acreage will be applied to the next compensatory mitigation period. PG&E shall provide any deficit required mitigation acreage no later than 90 days prior to the start of Year 11.▪ Compensatory Mitigation Period 3 (Year 11 through Year 20)<ul style="list-style-type: none">- PG&E shall mitigate for the years 11 through 20 impacts by providing 1,290 acres of compensatory mitigation for desert tortoise and 480 acres of compensatory mitigation for Mohave ground squirrel. Any excess compensatory mitigation acres from years 1 through 9 will be applied to reduce the acre requirement accordingly.- At the beginning of year 20, PG&E shall review the difference between the estimated O&M activity impacts with the actual post-O&M activity impact acres associated with each mitigation ratio (defined above) for years 10 through 19 and provide that information to CDFW. CDFW will review and, if in agreement, will provide concurrence. Any excess compensatory mitigation acreage will be applied to the next compensatory mitigation period. PG&E shall provide any deficit required mitigation no later than 90 days prior to the start of Year 21.▪ Compensatory Mitigation Period 4 (Year 21 through Year 25)<ul style="list-style-type: none">- PG&E shall mitigate for the years 21 through 25 impacts by providing 645 acres of compensatory mitigation for desert tortoise and 240 acres of compensatory mitigation for Mohave ground squirrel. Any excess compensatory mitigation acres from years 10 through 19 shall be applied to reduce the acre requirement accordingly.- At the beginning of year 25, PG&E shall review the difference between the estimated O&M activity impacts with the actual post-O&M-activity impact acres associated with each mitigation ratio (defined above) for years 20 through 24 and provide that information to CDFW. CDFW will review and, if in agreement, will provide concurrence. Any excess compensatory mitigation acreage will be applied to the next compensatory mitigation period. PG&E shall provide any deficit required mitigation no later than 90 days prior to the start of Year 26.▪ Compensatory Mitigation Period 5 (Year 26 through Year 30)<ul style="list-style-type: none">- PG&E shall mitigate for the years 26 through 30 impacts by providing 645 acres of compensatory mitigation for desert tortoise and 240 acres of compensatory mitigation for Mohave ground squirrel. Any excess compensatory mitigation acres from years 20 through 24 shall be applied to reduce the acre requirement accordingly. PG&E shall provide any deficit required mitigation no later than 90 days prior to the end of Year 30.<p>B1. Compensatory Mitigation for Western Joshua Tree. Should PG&E obtain an ITP during candidacy or if western Joshua tree is listed under CESA, O&M activity impacts to western Joshua tree or surface-disturbing O&M activities occurring within 300 feet of a western Joshua tree shall be mitigated based on the quality of habitat and species demographics within the O&M work area. To mitigate project-related impacts to western Joshua tree, PG&E shall provide compensatory mitigation, in advance, as</p></div>	

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			<p>calculated by CDFW using the following ratios for each defined compensatory mitigation period (defined below) prior to start of O&M activities for that term. The higher mitigation ratio shall supersede for areas that overlap.</p> <p>PG&E shall provide compensatory mitigation for western Joshua tree as calculated by CDFW using the following ratios for all acres of O&M activity impacts:</p> <ul style="list-style-type: none">2:1 ratio (2 acres of compensatory habitat for 1 acre of impact) for Class 1 acreage within the O&M work area. The area of impact that requires compensatory mitigation shall be the O&M work area that overlaps a 186-foot buffer surrounding adjacent and/or dead western Joshua trees.3:1 ratio (3 acres of compensatory habitat for 1 acre of impact) for impacts to western Joshua tree habitat within the O&M work area where Class 1 individuals do not exceed the number of Class 2 or Class 3 individuals OR for impacts to western Joshua tree in habitat lacking Class 1 individuals. The area of impact that requires compensatory mitigation shall be the O&M work area that overlaps a 186-foot buffer surrounding western Joshua trees within or adjacent to the O&M work area.5:1 ratio (5 acres of compensatory habitat for 1 acre of impact) for impacts to western Joshua tree habitat within the O&M work area where Class 1 individuals exceed the number of Class 2 or Class 3 individuals. The area of impact that requires compensatory mitigation shall be the O&M work area that overlaps a 186-foot buffer surrounding western Joshua trees within or adjacent to the O&M work area. <p>Every 10 years, CDFW shall review the compensatory mitigation ratios based on the best available information regarding species status and determine whether the mitigation ratios continue to fully mitigate project impacts under CESA. CDFW may revise the mitigation ratios if, based on CDFW’s review, the mitigation does not provide full mitigation based on changes to species status, threats, and/or distribution.</p> <p>PG&E shall provide compensatory habitat, in advance, using the mechanisms described above, such that the total combined acreage of purchased species credits and HM lands total the amount of estimated compensatory habitat acreage required for each compensatory mitigation period, as described below. Alternatively, compensatory mitigation shall be provided within 18 months of initiating project-related O&M activities for each compensatory mitigation period if PG&E ensures funding approved by CDFW to complete the activities described above. The estimated impacted acreage for the full 30-year ITP term subject to compensatory mitigation is 784 acres, calculated by intersecting the known species population distribution and a 50-foot ROW within the project area. The estimated acreage for each compensatory mitigation period assumes O&M activities will impact 26 acres of western Joshua tree habitat annually.</p> <p>B2. Estimated Compensatory Mitigation for Joshua Tree. If applicable, estimated mitigation acres for those impacts are calculated using the 3:1 ratio. Compensatory mitigation for western Joshua tree may co-occur on the same acres with desert tortoise and/or Mohave ground squirrel compensatory mitigation where multi-species credits are available for purchase or HM lands contain habitat for both/all species.</p> <ul style="list-style-type: none">Compensatory Mitigation Period 1 (Year 1, starting upon project approval)<ul style="list-style-type: none">PG&E shall mitigate for the first year of impacts by providing 78 acres of compensatory mitigation.Compensatory Mitigation Period 2 (Year 2 through Year 10)<ul style="list-style-type: none">PG&E shall mitigate for the years 2 through 10 impacts by providing 702 acres of compensatory mitigation.At the beginning of year 10 from the date of project approval, PG&E shall review the difference between the estimated O&M activity impacts with the actual post-O&M activity impact acres associated with each mitigation ratio (defined	

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			<p>above) for years 1 through 9 and provide that information to CDFW. CDFW will review and, if in agreement, will provide concurrence. Any excess compensatory mitigation acreage will be applied to the next compensatory mitigation period. PG&E shall provide any deficit required mitigation no later than 90 days prior to the start of Year 11.</p> <ul style="list-style-type: none">▪ Compensatory Mitigation Period 3 (Year 11 through Year 20)<ul style="list-style-type: none">- PG&E shall mitigate for the years 11 through 20 impacts by providing 780 acres of compensatory mitigation. Any excess compensatory mitigation acres from years 1 through 9 shall be applied to reduce the acre requirement accordingly.- At the beginning of year 20, PG&E shall true up or rectify the difference between the estimated O&M activity impacts with the actual post-O&M activity impact acres associated with each mitigation ratio (defined above) for years 10 through 19 and provide that information to CDFW. CDFW will review and, if in agreement, will provide concurrence. Any excess compensatory mitigation acreage will be applied to the next compensatory mitigation period. PG&E shall provide any deficit required mitigation no later than 90 days prior to the start of Year 21.▪ Compensatory Mitigation Period 4 (Year 21 through Year 25)<ul style="list-style-type: none">- PG&E shall mitigate for the years 21 through 25 impacts by providing 390 acres of compensatory mitigation. Any excess compensatory mitigation acres from years 10 through 19 shall be applied to reduce the acre requirement accordingly.- At the beginning of year 25, PG&E shall true up or rectify the difference between the estimated O&M activity impacts with the actual post-O&M activity impact acres associated with each mitigation ratio (defined above) for years 20 through 24 and provide that information to CDFW. CDFW will review and, if in agreement, will provide concurrence. Any excess compensatory mitigation acreage would be applied to the next compensatory mitigation period. PG&E shall provide any deficit required mitigation no later than 90 days prior to the start of Year 26.▪ Compensatory Mitigation Period 5 (Year 26 through Year 30)<ul style="list-style-type: none">- PG&E shall mitigate for the years 26 through 30 impacts by providing 390 acres of compensatory mitigation. Any excess compensatory mitigation acres from years 20 through 24 shall be applied to reduce the acre requirement accordingly. PG&E shall provide any deficit required mitigation no later than 90 days prior to the end of Year 30. <p>C. Reporting. PG&E shall track and report impacts to desert tortoise and Mohave ground squirrel and their habitat, and western Joshua tree, if applicable, and its habitat to CDFW through quarterly and annual reporting (for CDFW’s review and concurrence, or CDFW shall make its own determination of required compensatory mitigation based on CDFW assessment of the impact data). Reporting shall be used to compare PG&E’s project-related impacts and required mitigation to date relative to the compensatory habitat previously provided by PG&E to ensure impacts during each compensatory mitigation period are mitigated in advance.</p> <p>MM BIO-3 Protection of Fish and Wildlife from Alteration of Rivers, Streams, and Lakes. Prior to activities in jurisdictional waters of the state, including streams, or any activity subject to CFGC Section 1600 et seq., PG&E shall notify CDFW as required by law and, as necessary by law, shall enter into a Lake and Streambed Alteration (LSA) Agreement with CDFW. PG&E shall also implement all conditions of approval included in the Final LSA Agreement and any other conditions imposed through the related exercise of regulatory authority by any other state or federal agency.</p> <p>PG&E shall implement practices identified below to minimize adverse impacts to streams and watersheds.</p> <ul style="list-style-type: none">▪ Vehicles and equipment shall not be operated in ponded or flowing water.▪ PG&E shall minimize road building, construction activities, and vegetation clearing within ephemeral streams to the extent feasible.	

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			<ul style="list-style-type: none">PG&E shall prevent water containing mud, silt, or other pollutants from grading, hydrotesting, or other activities from entering ephemeral streams or being placed in locations that may be subjected to high storm flows.Spoil sites shall not be located within 30 feet from the boundaries of streams or in locations that may be subjected to high storm flows, where spoils might be washed back into streams.Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources resulting from project-related activities shall be prevented from contaminating the soil and/or entering ephemeral streams. PG&E shall ensure that safety precautions specified by this measure, as well as all other safety requirements of other measures and permit conditions, are followed during all phases of the project.When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high-water mark of any streams during construction, operation, and future decommissioning the project.No petroleum products or other pollutants from the equipment shall be allowed to enter any state or federal jurisdictional waters under any flow.PG&E shall ensure that O&M activities do not impair water flow (velocity and low flow channel width).No broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into any waters of the state.Stationary equipment such as motors, pumps, generators, and welders located within or adjacent to a drainage shall be positioned over drip pans. Stationary heavy equipment shall have suitable containment to handle a catastrophic spill/leak. Cleanup equipment such as brooms, absorbent pads, and skimmers shall be on site prior to the start of construction.The cleanup of all spills shall begin immediately. CDFW shall be notified immediately by PG&E of any spills.PG&E O&M activities will impact up to two acres each year and shall impact no more than 30 acres over the 30-year term of the proposed incidental take permit (ITP) of rivers, streams, and lakes, including playa, lake/pond, reservoir, and stream washes, subject to Section 1602 of the CFGC. PG&E shall provide compensatory mitigation for impacts to rivers, streams, and lakes. CDFW will calculate and identify the final amount of required compensatory mitigation as provided by this measure prior to issuance of an LSA Agreement using the following criteria:<ul style="list-style-type: none">For any O&M activity that impacts a river, stream, or lake and associated fish and wildlife resources which can be returned as closely as possible to pre-project conditions, restoring the physical and ecological function of the feature, PG&E shall mitigate impacts to rivers, streams, or lakes at a minimum 1:1 ratio (provide 1 acre of compensatory habitat for 1 acre of impact) as determined in a final LSA Agreement.For any O&M activity that impacts a river, stream, or lake and associated fish and wildlife resources which permanently alters the physical and ecological function of the feature or installs permanent structures or materials into the areas subject to CFGC Section 1602, PG&E shall mitigate impacts to rivers, streams, or lakes at a minimum 3:1 ratio (provide 3 acres of compensatory habitat for 1 acre of impact) as determined in a final LSA Agreement.Compensatory mitigation required for MM BIO-3 may be fulfilled by the compensatory mitigation lands acquired to fulfill MM BIO-2 to the extent that the mitigation lands provide adequate acres of rivers, streams, and/or lakes as required by this measure.	

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			<p>MM BIO-4 Pre-Activity Special-Status Resources Assessment.</p> <p>A. Assessments. To augment the O&M Activity Habitat Assessments proposed under APM BIO-9 and as part of the PG&E environmental screening process described in Section 2.4, PG&E shall conduct a pre-activity special-status resources assessment (Assessment) prior to an O&M activity. The Assessment includes presence and absence surveys to document the presence of a special-status resource and, if present, an evaluation of distribution of the special-status resource in the O&M activity area, including acres, number of individuals, and number and occupancy status of dens, burrows, roosts, and other native wildlife nursery sites. The Assessment shall be conducted in the O&M impact areas and in appropriate buffer areas and shall address special-status plant and wildlife species identified in Table 4.4-2 and Table 4.4-3 in the study area. The Assessment shall also address riparian habitat and sensitive natural communities, including rivers, streams, and lakes; state or federally protected wetlands; and any other resource subsequently identified as special status during the term of the proposed incidental take permit (ITP). PG&E shall conduct an Assessment in areas where O&M activities and related staging will result in surface disturbance, including use of equipment and vehicles that may impact vegetation, burrows, dens, or roosts. Assessments for special-status plant species are not required in areas that do not support any vegetation. The Assessments shall include the following:</p> <ul style="list-style-type: none">PG&E shall time Assessments to be appropriate to determine the presence or absence of the special-status resource. If Assessments cannot be properly timed for the resources, PG&E shall assume presence of the special-status resource based on the vegetation community and distribution range and implement the avoidance, minimization, and mitigation measures presented in MM BIO-5 and MM BIO-6, as appropriate for the resource.PG&E shall have a qualified botanist conduct an Assessment for special-status plant species. Botanical surveys shall be floristic in nature and follow CDFW’s Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities. The surveys shall be seasonally appropriate and conducted at the time of year when species are both evident and identifiable (i.e., blooming, flowering, or fruiting). If surveys cannot be performed during the appropriate season due to scheduling of urgent repairs, the qualified botanist shall perform the survey within the 30 days prior of the start of O&M activities.Within 14 days (and within 3 days for nesting birds) prior to O&M activities, PG&E shall have a qualified biologist conduct an Assessment for special-status wildlife species in the O&M work areas and an adequate buffer zone for the indirect impacts of the specific O&M activities.If at any point O&M activities at the site cease for more than 5 days, PG&E shall conduct an additional Assessment prior to the resumption of O&M activities.PG&E shall implement the following resource and species-specific assessment requirements:<ul style="list-style-type: none">Western Burrowing Owl. PG&E shall have a qualified avian biologist conduct surveys for western burrowing owl following the survey guidance in the Staff Report on Burrowing Owl Mitigation (Staff Report) (DFG 2012). Surveys shall be sufficient to identify all active burrows within the recommended setback distances from the O&M activity, depending on the planned level of disturbance and timing of O&M activities.Nesting Birds. PG&E shall have a qualified avian biologist conduct surveys in areas that will be impacted by O&M activities and an adequate buffer using appropriate methodologies, at the appropriate time of day/night, and during appropriate weather conditions. Surveys shall encompass all suitable areas including, but not limited to, trees, shrubs, bare ground, burrows, cavities, cliffs, and structures. Survey duration shall take into consideration the size of the area,	

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			<p>density and complexity of the habitat, number of survey participants, and survey techniques employed. Survey duration shall be sufficient to ensure the data collected is complete and accurate.</p> <ul style="list-style-type: none">- Listed Riparian Birds. If O&M activities conducted within riparian habitat along the Mojave River or Colorado River during the period from April 1 through September 15 will result in ground disturbance, vegetation removal, or noise, PG&E shall have a qualified avian biologist conduct pre-activity protocol surveys for least Bell’s vireo and southwestern willow flycatcher.- Large Mammals. PG&E shall have a qualified biologist conduct surveys to determine if active or potential desert kit fox, American badger, or ringtail dens are present in the project area. Surveys shall encompass both the project area and a buffer distance adequate to determine the potential for direct or indirect impacts. Surveys shall attain 100% visual coverage and be conducted using 10-meter (33-foot) transects (or reduced based on topography and vegetation), to determine the presence or absence of individuals, dens, and sign.- Bats. PG&E shall have a qualified biologist conduct a survey and habitat assessment for special-status bat species and their roosts within the O&M activity area and a buffer distance adequate to complete a visual inspection for the presence of potential day and night roosting features (bats need not be present) including, but not limited to, rocky outcrops, rock crevices, snags, man-made structures, mines, caves, and vegetation as well as bat sign (guano, urine staining, and culled insect parts). The survey shall be sufficient in nature to identify bats occupying the roost to species and, if conducted during the pupping season, to determine if the roost is a maternal roost.- Small Mammals. PG&E shall have a qualified biologist conduct surveys to determine if active or potential special-status small mammal species burrows are present. Surveys shall encompass both the project area and a buffer distance adequate to determine the potential for direct or indirect impacts. Surveys shall attain 100% visual coverage to determine the presence or absence of burrows. <ul style="list-style-type: none">▪ In O&M activity work areas with the potential to impact riparian habitat or other sensitive natural communities, including rivers, streams or lakes, or state or federally protected wetlands, PG&E shall conduct an Assessment that includes mapping of riparian habitat or other sensitive natural communities, including rivers, streams and lakes and a jurisdictional delineation of state or federally protected wetlands.▪ Based on the Assessment, PG&E shall identify the temporary and permanent impacts to each special-status species resource for the site-specific O&M activity. <p>B. Reporting. PG&E shall document the methods and results of the Assessments in a Pre-Activity Special-Status Resources Assessment Report. Methods and results documented by PG&E shall include at a minimum: methods, dates, area assessed, an evaluation of distribution of the special-status resource in the O&M activity area including acres, number of individuals, and number and occupancy status of dens, burrows, roosts, and other native wildlife nursery sites, mapping of riparian habitat or other sensitive natural communities, including rivers, streams and lakes and a jurisdictional delineation of state or federally protected wetlands, and the temporary and permanent impacts to any special-status resource caused by the site-specific O&M activity. The Pre-Activity Special-Status Resources Assessment Reports from all Assessments shall be compiled and maintained by PG&E and shall be provided annually to CDFW by December 31.</p>	

			<div>MM BIO-5</div> <div>Avoidance and Minimization for Special-Status Resources. In areas where the Pre-Activity Special-Status Resources Assessment Report documents the presence of one or more special-status resources in an O&M activity work area, PG&E shall implement the follow measures:</div> <div>A. Education Program. PG&E shall conduct an education program for all persons employed or otherwise working on behalf of PG&E in the O&M activity work area before implementing the O&M activity. The program shall consist of a presentation from a qualified biologist that includes on-site resources, and the distribution, behavior, and habitat needs of the special-status species or resource, legal protections for those species or resource, penalties for violations, and project-specific protective measures. PG&E shall prepare and distribute wallet-sized cards or a fact sheet handout containing this information for workers to carry in the O&M activity work area. PG&E shall provide interpretation for non-English-speaking workers, and the same instruction shall be provided to any new workers before they are authorized to perform work in the O&M activity work area. Upon completion of the program, PG&E shall have employees sign a form stating they attended the program and understand all protection measures. The program shall:</div> <div><ul style="list-style-type: none">Be developed by or in consultation with the Authorized Biologist and consist of an on-site presentation with supporting written material and/or electronic media, including photographs of special-status species, available to all participants.Provide an explanation of the function of flagging that designates authorized work areas or resources marked for avoidance and specify the prohibition of soil disturbance or vehicle travel outside designated areas.Discuss general safety protocols such as vehicle speed limits, hazardous substance spill prevention and containment measures, and fire prevention and protection measures.Review avoidance, minimization, and mitigation requirements.Explain the sensitivity of the vegetation and habitat within and adjacent to work areas and proper identification of these resources.Discuss the federal and state Endangered Species Acts, Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act and the consequences of non-compliance with these acts.Discuss CFGC Sections 3503, 3503.5, 3513, 4700 and the consequences of non-compliance with these sections of code.Discuss the locations and types of special-status resources on the project site and adjacent areas and explain the reasons for protecting these resources.Inform participants that no snakes, other reptiles, mammals, birds, bats, or any other wildlife will be harmed or harassed.Place special emphasis on species that may occur in the project area, including special-status plant and wildlife species.Provide contact information for the biologist and instructions for notification of any vehicle-wildlife collisions or dead or injured wildlife species encountered during O&M activities.</div> <div>B. Entrapment Inspections. When the Pre-Activity Special-Status Resources Assessment Report documents the presence of special-status wildlife species in an O&M activity area, PG&E shall have a qualified biologist inspect any pipes, culverts, or similar structures with a diameter greater than 3 inches and less than 8 inches aboveground for special-status wildlife species before the material is moved, buried, or capped. The biologist shall inspect all open holes and trenches at a minimum of twice a day and just prior to backfilling. At the end of each workday, PG&E shall place an escape ramp at each end of trenches to allow any animals that may have become trapped in the hole or trench to climb out overnight. The ramp may be constructed of either dirt fill or wood planking or other suitable material that is placed at an angle no greater than 30 degrees. If any worker discovers that special-status wildlife have become trapped, they shall notify PG&E immediately and PG&E shall halt the O&M activity and notify the biologist immediately. Project workers and the biologist shall allow the individual to escape unimpeded if possible, or an appropriately permitted biologist may move the individual out of harm's way before allowing work to continue.</div>	
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			<p>If the Pre-Activity Special-Status Resources Assessment Report identifies the presence of a special-status resource within an O&M activity work area, PG&E shall implement the following avoidance and minimization measures:</p> <p>C. Avoidance. PG&E shall, in consultation with the botanist or biologist, flag the area where special-status species occur and an appropriate buffer sufficient for full avoidance (e.g., seedbank) of direct and indirect impacts. If a special-status wildlife species is observed, PG&E shall not begin work until the species departs the construction area or is moved, if necessary permits have been obtained, out of the construction area.</p> <p>D. Minimization. If full avoidance is not feasible during implementation of the O&M activity, PG&E shall minimize the area of direct and indirect impact to the maximum extent feasible through flagging of areas where work will occur and flagging of areas where no work activities shall occur. PG&E shall monitor work areas and following completion of work activities, PG&E shall document the area of impact to special-status plant and wildlife species and their habitat. For special-status wildlife species, PG&E shall, prior to O&M activities, prepare a species-specific relocation plan to minimize impacts and PG&E shall implement the species-specific relocation plan prior to implementation of O&M activities. Any relocations shall take place in the appropriate season.</p> <p>D1. Western Burrowing Owl. If western burrowing owl are located within or adjacent to an area subject to impact from an O&M activity, PG&E shall postpone the O&M activity, if possible, until burrowing owls are no longer present. If postponement of impacts is not feasible due to O&M activity urgency, PG&E shall implement the following actions to minimize impacts.</p> <ul style="list-style-type: none">- PG&E shall implement measures consistent with practices identified in the Staff Report on Burrowing Owl Mitigation (Department of Fish and Game, March 2012) to minimize potential impacts to western burrowing owl. Measures may include, but are not limited to, the use of buffer zones, visual screens (e.g., hay bales monitored during the day and removed at night to prevent raptor perching; screens shall not exceed 4 feet in height and shall be at least 30 feet from active burrows), or other measures while O&M activities are occurring.- PG&E shall conduct site-specific monitoring to inform development of buffers. The buffer zone may be increased or decreased based on the individual owl’s sensitivity to visual or audible disturbances. Based on existing vegetation, human development, and land uses in an area, O&M activities may occur within 50 meters to 500 meters of an active burrow (based on level of disturbance), however, if O&M activities occur closer than 50 meters to 500 meters (based on level of disturbance), a broad-scale, long-term, scientifically rigorous monitoring program shall be implemented by PG&E to ensure that western burrowing owls are not adversely affected by the O&M activity.- PG&E shall make every effort to minimize impacts to occupied owl burrows.- If PG&E proposes to relocate western burrowing owls from an active burrow or an active burrow will be impacted, a burrowing owl exclusion plan shall be prepared for CDFW review and approval that will be performed outside of breeding season and after fledgling independence and any relocation shall be subject to compensatory mitigation as described in MM BIO-6. <p>D2. Nesting Birds. If active nests containing eggs or young are found, PG&E shall have a qualified avian biologist document species, baseline behavior, stage of reproduction, and existing site conditions, including vertical and horizontal distances from proposed work areas, visual or acoustic barriers, and existing level of disturbance to avoid impacts to nesting birds, eggs, and nests. The biologist shall establish an appropriate nest buffer based on the species and the planned activity’s level of disturbance, site conditions, and the observed bird behavior. The on-site biologist shall increase buffer sizes as needed if nesting individuals show signs of disturbance. The buffer zone may be decreased, at the biologist’s discretion, based on the individual’s sensitivity to visual or audible disturbances but shall not be decreased below 300 feet for special-</p>	

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			<p>status avian species or raptor species. Active nests shall be monitored until the biologist has determined the young have fledged or the project is finished. The biologist has the authority to halt or stop work if nesting individuals exhibit signs of disturbance. Established buffers shall remain until the biologist determines the young have fledged or the nest is no longer active, or until O&M activities cease.</p> <p>D3. Listed Riparian Birds. If an Assessment determines that least Bell’s vireo or southwestern willow flycatcher are nesting within the O&M activity work area or within 300 feet of the O&M activity work area, PG&E shall postpone such activities until young have fledged and the nest is no longer is use.</p> <p>D4. Large Mammals. If potential desert kit fox, American badger, or ringtail dens are located, PG&E shall have a qualified wildlife biologist monitor the dens using observation and tracking material and/or trail cameras over a three (3) day period to determine the status of the den. If non-natal active dens can be avoided and buffered from O&M activities, the biologist shall flag a minimum 100-foot disturbance-free buffer zone. A minimum 500-foot disturbance-free buffer shall be placed around the natal den and maintained until juvenile independence is determined by the biologist. The biologist shall block inactive dens within the O&M work area or buffer zone that will not be directly impacted by project activities with rocks and sticks to discourage use. The biologist shall periodically check and ensure the inactive burrows remain blocked and are not occupied. The biologist shall remove the obstruction when O&M activities are complete. The biologist has the authority to halt or stop work if individuals exhibit signs of disturbance. Established buffers shall remain until the biologist determines the young have dispersed or the den is no longer active, or until O&M activities cease. If desert kit fox, American badger, or ringtail are proposed to be relocated from an active den or an active den will be impacted, an exclusion plan shall be prepared for CDFW review and approval that will be performed outside of breeding/pupping season and after juvenile dispersal. Relocation from an active den or impacts to an active den shall be subject to compensatory mitigation as described in MM BIO-6.</p> <p>D5. Bats. Should confirmed or potential day or night bat roosts be identified in the project area and buffer zone, PG&E shall have a qualified bat biologist place a minimum 250-foot disturbance-free buffer surrounding the roost. If active roost sites may be impacted by O&M activities, the biologist shall identify the species of bat and implement species-specific appropriate minimization and mitigation measures. If avoidance is not possible and the roost is composed of vegetation, PG&E shall remove vegetation using a two-step process, implemented over a two (2)-day period, and monitored by a qualified biologist to ensure take is prevented. On Day 1, branches and limbs that do not contain crevices or cavities shall be removed using hand tools. The goal is to create a disturbance sufficient to cause any bats roosting in the vegetation to leave that night and not return, but not at a level of intensity that will cause bats to fly out of the tree during the disturbance itself (i.e., during the daytime, when roost abandonment will likely result in predation). On Day 2, the remainder of the vegetation may be removed if bats are not present. PG&E shall not disturb active maternity day roosting sites. Impacts to a bat roosting site, including removal of vegetation roosting sites or impacts that cause bats to leave a roosting site during the day or abandon a roosting site shall be subject to compensatory mitigation as described in MM BIO-6.</p> <p>D6. Small Mammals (Rodents). PG&E shall flag and avoid any small mammal burrow that may contain a special-status wildlife species. PG&E shall flag and avoid any small mammal burrow that may contain Mojave River vole in suitable habitat such as grassy or riparian habitats within the Mojave River corridor. If burrows cannot be avoided, PG&E shall have a qualified small mammal biologist implement a trapping protocol adequate to identify the presence of any special-status small mammal wildlife species. If special-status small mammal burrows cannot be avoided or impacts minimized through</p>	

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			<p>implementation of relocation actions and documentation of species survival after 1 month, those impacts shall be subject to compensatory mitigation as described in MM BIO-6.</p> <p>E. Reporting. In areas subject to impacts from O&M activities where an Assessment has identified a special-status resource or where PG&E did not conduct an Assessment and assumed presence, PG&E shall track the implementation of special-status resources avoidance and minimization measures. PG&E shall also track the locations and acres with special-status resources that are subject to impacts after the implementation of avoidance and minimization measures. PG&E shall compile and retain tracked information into a Special-Status Resources Avoidance and Minimization Report and shall provide the report annually to CDFW by December 31.</p> <p>MM BIO-6 Compensatory Mitigation for Special-Status Resources.</p> <p>A. Compensatory Mitigation. PG&E shall provide compensatory mitigation for significant impacts to special-status resources as provided by this measure. Compensatory mitigation shall be required where site-specific O&M activity will cause a significant impact to special-status resources, as documented in the Special-Status Resources Avoidance and Minimization Report, that is not reduced to below a level of significance with implementation of the avoidance and minimization measures in MM BIO-5. Compensatory mitigation shall be required for direct impacts to the following special-status resources:</p> <ul style="list-style-type: none">▪ Wildlife: Western burrowing owl, American badger, desert kit fox, bats, Mojave fringe-toed lizard, and special-status small mammal wildlife species, and active burrows, dens, roosts, or other native wildlife nursery sites of those special-status wildlife species▪ Plants: <i>Cymopterus deserticola</i>, <i>Eriophyllum mohavense</i>, <i>Erigeron parishii</i>, <i>Cryptantha clokeyi</i>, <i>Phacelia parishii</i>, <i>Euphorbia jaegeri</i>, <i>Astragalus albens</i>, <i>Astragalus bernardinus</i>, <i>Astragalus preussii</i> var. <i>laxiflorus</i>, <i>Pediomelum castoreum</i>, <i>Calochortus striatus</i>, <i>Mentzelia tricuspis</i>, <i>Abronia villosa</i> var. <i>aurita</i>, <i>Menodora spinescens</i> var. <i>mojavensis</i>, <i>Diplacus mojavensis</i>, <i>Penstemon albomarginatus</i>, <i>Puccinellia parishii</i>, <i>Linanthus killipii</i>, <i>Linanthus maculatus</i> ssp. <i>maculatus</i>, <i>Saltugilia latimeri</i>, <i>Polygala intermontane</i>, <i>Acanthoscyphus parishii</i> var. <i>goodmaniana</i>, <i>Eriogonum kennedyi</i> var. <i>pinicola</i>, and <i>Eriogonum ovalifolium</i> var. <i>vineum</i>▪ Sensitive Natural Communities: <i>Ericameria linearifolia</i>, Great Basin pinyon–juniper woodland, North American warm desert bedrock cliff and outcrop, Arizonan upland Sonoran desert scrub, <i>Krascheninnikovia lanata</i>, lower bajada and fan Mojavean–Sonoran desert scrub, <i>Yucca brevifolia</i>, <i>Panicum urvilleanum</i>, <i>Prosopis glandulosa</i> coppice dunes, California annual and perennial grassland, <i>Chilopsis linearis</i>, <i>Lepidospartum squamatum</i>, Madrean warm semi-desert wash woodland/scrub, <i>Populus fremontii</i>, <i>Prosopis glandulosa</i>, <i>Prunus fasciculata</i>, <i>Salix laevigata</i>, <i>Allenrolfea occidentalis</i>, North American warm desert alkaline scrub and herb playa and wet flat, Southwestern North American salt basin and high marsh, and <i>Suaeda moquinii</i>▪ State or Federally Protected Wetlands <p>PG&E shall provide compensatory mitigation for impacts at a 2:1 ratio (e.g., provide 2 acres of compensatory habitat for 1 acre of impact). PG&E shall acquire, preserve, and enhance habitat occupied by the special-status species through (1) the purchase of CDFW-approved mitigation bank credits; or (2) acquisition and transfer of fee title of lands, protection in perpetuity through recordation of a conservation easement with a legally appropriate entity acting as grantee, land management in perpetuity, and funding of management activities through the calculation and deposit of an endowment fund; or (3) if mitigation for Mojave River vole, a species with restricted range in which compensatory mitigation land may not be available for acquisition, enhancement of</p>	

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Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
			<p>species habitat at a 2:1 ratio (provide 2 acres of enhanced habitat for 1 acre of impact) based on a plan for enhancement of species habitat prepared by a qualified biologist prior to impact to the species.</p> <p>The compensatory mitigation required by this measure may be fulfilled by compensatory mitigation required by MM BIO-2 to the extent the mitigation lands required by MM BIO-2 include the sensitive natural community, state or federally protected wetland, or occupied habitat of the special-status plant and wildlife species that are the subject of the compensatory mitigation required by MM BIO-6.</p> <ul style="list-style-type: none">▪ Western Burrowing Owl. If impacts occur to an occupied burrow or if a burrowing owl relocation plan is implemented, PG&E shall provide compensatory mitigation. Mitigation shall be implemented consistent with the recommendations in the Staff Report on Burrowing Owl Mitigation (Department of Fish and Game, March 2012) such that the habitat acreage, number of burrows, and burrowing owls impacted are replaced or as required above in MM BIO-6, whichever is greater.▪ Large Mammals. If desert kit fox, American badger, or ringtail are proposed to be relocated from an active burrow or an active burrow will be impacted, PG&E shall have a qualified wildlife biologist prepare and implement an exclusion plan to be performed outside of breeding/pupping season and after juvenile dispersal. PG&E shall implement compensatory mitigation such that the habitat acreage, number of dens, and individuals impacted are replaced as required above in MM BIO-6, whichever is greater.▪ Bats. If impacts occur to bat roosting habitat, PG&E shall provide compensatory mitigation sufficient to replace the total area of day/night roosting habitat at a 2:1 ratio, in advance of impacts.▪ Small Mammals (Rodents). If direct impacts occur to special-status small mammal wildlife species or their active burrows occur, PG&E shall provide compensatory habitat as identified above. <p>B. Reporting. PG&E shall track impacts to and compensatory mitigation for special-status species. PG&E shall prepare and retain annual reports identifying impact locations, species impacted, acres impacted, and the location and acres of permanently conserved compensatory mitigation habitat, and the survey results documenting presence of the special-status species on the compensatory mitigation habitat and shall provide a report annually to CDFW by December 31.</p>	
	Impact BIO-2: 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?	Significant	APM BIO-1 through APM BIO-4, APM BIO-9, APM BIO-12, and APM BIO-13 (refer to Impact BIO-1) MM BIO-4 through MM BIO-6 (refer to Impact BIO-1)	Less than significant

Table ES-1 Summary of Proposed Project Impacts

Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
	Impact BIO-3: Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	Significant	APM BIO-1 through APM BIO-4, APM BIO-9, APM BIO-12, APM BIO-13 (refer to Impact BIO-1) Hydrology and Water Quality BMPs (refer to Impact HYD-1) MM BIO-3 through MM BIO-6 (refer to Impact BIO-1)	Less than significant
	Impact BIO-4: 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?	Less than significant	APM BIO-1 through APM BIO-13, APM BIO-20, APM BIO-25, and APM BIO-27 (refer to Impact BIO-1)	Not applicable
	Impact BIO-5: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No impact	APM BIO-1 through APM BIO-28 (refer to Impact BIO-1) Hydrology and Water Quality BMPs (refer to Impact HYD-1)	Not applicable
	Impact BIO-6: 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	—	Not applicable
	Cumulative: Would the project have a cumulative effect on biological resources?	Significant	APM BIO-1 through APM BIO-28 (refer to Impact BIO-1) Hydrology and Water Quality BMPs (refer to Impact HYD-1)	Less than significant
Cultural Resources	Impact CUL-1: Would the project cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5??	Less than significant	APM CUL-1: Inventory and Evaluate Historical Resources. Due to the long-term nature of the O&M activities, PG&E would continue to review historical resources that were previously recorded, as well as structures that meet the 50-year threshold throughout the duration of O&M activities. If any resources have the potential to be eligible for listing on the California Register of Historical Resources or National Register of Historic Places, PG&E would follow standard procedures for their evaluation. Cultural Resources BMPs <ul style="list-style-type: none">▪ All work exclusion zones, as indicated by flagging, environmentally sensitive area signage, or depicted on program maps, would be observed.▪ PG&E would limit ground disturbance to the greatest extent feasible.▪ PG&E requires that O&M personnel who plan, manage, or conduct work involving ground disturbance complete general awareness training on cultural resources.▪ In the event of an unanticipated discovery of prehistoric or historic period materials, PG&E would do the following:	Not applicable

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Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
			<ul style="list-style-type: none">- Stop work immediately within 100 feet.- Contact the designated program inspector and Cultural Resource Specialist immediately.- Protect the site from further impacts, including looting, erosion, or other human or natural damage.- Record the location of the resource, the circumstances that led to its discovery, and the condition of the resource.	
	Impact CUL-2: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	Less than significant	APM CUL-1 and Cultural Resources BMPs (refer to Impact CUL-1)	Not applicable
	Impact CUL-3: Would the project disturb any human remains, including those interred outside of formal cemeteries?	Less than significant	APM CUL-1 and Cultural Resources BMPs (refer to Impact CUL-1)	Not applicable
	Cumulative: Would the project have a cumulative effect on cultural resources?	Less than significant	APM CUL-1 and Cultural Resources BMPs (refer to Impact CUL-1)	Not applicable
Energy	Impact ENE-1: Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Less than significant	Air Quality BMPs (refer to Impact AQ-1)	Not applicable
	Impact ENE-2: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	Less than significant	Air Quality BMPs (refer to Impact AQ-1)	Not applicable
	Cumulative: Would the project have a cumulative effect on energy?	Less than significant	Air Quality BMPs (refer to Impact AQ-1)	Less than significant
Geology and Soils	Impact GEO-1a: Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: <ul style="list-style-type: none">▪ Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo	Less than significant	—	Not applicable

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Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
	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			
	Impact GEO-1b: Strong seismic ground shaking?	Less than significant	—	Not applicable
	Impact GEO-1c: Seismic-related ground failure, including liquefaction?	Less than significant	—	Not applicable
	Impact GEO-1d: Landslides?	Less than significant	—	Not applicable
	Impact GEO-2: Would the project result in substantial soil erosion or the loss of topsoil?	Less than significant	APM BIO-13 (refer to Impact BIO-1) Hydrology and Water Quality BMPs (refer to Impact HYD-1)	Not applicable
	Impact GEO-3: 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?	Less than significant	—	Not applicable
	Impact GEO-4: Would the project 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?	Less than significant	—	Not applicable
	Impact GEO-5: 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	—	Not applicable

	Impact GEO-6: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Less than significant	Paleontological Resources Standard Practices <ul style="list-style-type: none">▪ Prior to conducting O&M activities involving excavation, trenching, or boring activities that would extend beyond 2 feet bgs, PG&E would identify paleontologically sensitive areas in the vicinity of the particular O&M activity. Should paleontologically sensitive areas be identified in the vicinity of a particular O&M activity, PG&E would conduct additional analyses, which may include a geologic map review, literature review (including, as available, other paleontological studies for the study area or for the relevant geological formations), agency/institutional records search, and aerial photo review. Additional landownership analysis and consultation with local paleontological experts may also be conducted as part of the analysis, where applicable. All components of the analysis would be summarized in a paleontological resources impact evaluation report (PRIER). The PRIER would include maps depicting sensitive geologic formations, recorded fossil localities, landownership, and/or natural landscape features. The results of the PRIER would be used to determine the need for additional study or impact avoidance and minimization measures.▪ For units with a moderate PFYC, screening and protection measures designed to avoid and minimize effects would only be considered if significant fossils are highly likely to be encountered within a location with a PFYC rating of 3 or higher. These screening and protection measures include the following:<ul style="list-style-type: none">- Unanticipated Discovery: If potential paleontological resources are discovered during construction activities, the following procedures would be followed:<ul style="list-style-type: none">▪ Stop work immediately within 100 feet.▪ Contact the designated program inspector and Cultural Resources Specialist immediately.▪ Protect the site from further impacts, including looting, erosion, or other human or natural damage.▪ The program Cultural Resources Specialist would arrange for a Paleontological Principal Investigator to evaluate the discovery. If the discovery is determined to be significant, PG&E would implement measures to protect and document the paleontological resource. Such measures may include preservation in place, excavation, documentation, curation, or other appropriate measures. Permission from the landowner must be secured before treating the fossil. Work may not resume within 100 feet of the find until approved by the Paleontological Principal Investigator and Cultural Resources Specialist.- Workers' Environmental Awareness Training: Because moderate- to high-sensitivity formations are present within the study area, PG&E (or the contractor) would provide environmental awareness training on paleontological resources protection for O&M activities requiring excavations that could potentially impact paleontological resources. This training may be administered by the program paleontologist/archaeologist/environmental inspector as a stand-alone training, or it may be included as part of the overall environmental awareness training required by the Workers' Environmental Awareness Training Program. At a minimum, the training would include the following:<ul style="list-style-type: none">▪ The types of fossils that could occur at the program site.▪ The types of lithologies in which the fossils could be preserved.▪ The procedures that should be taken in the event of a fossil discovery.▪ Penalties for disturbing paleontological resources.- Avoidance/Work Exclusion Zones: In areas of high or very high sensitivity with exposed geologic units, or where surface fossils are abundant, avoidance and redesign is recommended when possible. If high-sensitivity formations or significant surface fossils cannot be avoided, paleontological monitoring may be required.- Monitoring: Monitoring should take place only in geological units that regularly and predictably produce significant fossils, or where identifiable factors indicate that fossils are likely to be present in an otherwise less productive unit. This includes locations with a PFYC rating of 3 or higher based on a paleontological records search conducted prior to O&M activities. Monitoring must be conducted by a qualified professional. All monitoring activities would be documented on daily logs, and the frequency of reporting the daily activities would depend on the O&M activity. Monitoring logs and reports should include the activities observed, geology encountered, description of any resources encountered, and measures taken to protect or recover discoveries. Photographs and other supplemental information should be included as necessary and would meet professional standards.- Fossil Recovery: In the event that significant paleontological resources are encountered during the O&M activities, protection and recovery of those resources may be required. On public lands, treatment and curation of fossils would follow procedures outlined by the land managing agency. On private property, treatment and curation of fossils would be conducted in consultation with the landowner, PG&E, and CDFW. A Paleontological Principal Investigator is responsible for developing the recovery strategy and would lead the recovery effort, which would include establishing recovery standards; preparing specimens for identification and preservation, documentation, and reporting; and securing a curation agreement from the approved agency. A Paleontological Field Supervisor or Field Paleontologist may conduct the recovery of fossil discoveries under the direction of the Paleontological Principal Investigator.	Not applicable
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Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
	Cumulative: Would the project have cumulative geological and soils impacts?	Less than significant	APM BIO-13 (refer to Impact BIO-1) Hydrology and Water Quality BMPs (refer to Impact HYD-1) Paleontological Resources Standard Practices (refer to Impact GEO-6)	Not applicable
Greenhouse Gas Emissions	Impact GHG-1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less than significant	Air Quality BMPs (refer to Impact AQ-1)	Not applicable
	Impact GHG-2: Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less than significant	Air Quality BMPs (refer to Impact AQ-1)	Not applicable
	Cumulative: Would the project have a cumulative effect on greenhouse gas emissions resources?	Less than significant	Air Quality BMPs (refer to Impact AQ-1)	Not applicable

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Hazards and Hazardous Materials	Impact HAZ-1: 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	APM HAZ-1: Hazardous Materials Management Plan Preparation. Prior to the following O&M activities, PG&E would prepare a Hazardous Materials Management Plan (HMMP), which would be implemented to prevent the release of hazardous materials and hazardous waste: <ul style="list-style-type: none">▪ Installation of pig launcher/receiver facilities▪ Valve/pipeline excavation and recoating▪ Valve replacement/automation▪ Hydrostatic testing▪ Pipeline segment replacement The plan would include the following requirements and procedures: <ul style="list-style-type: none">▪ Training requirements for workers in appropriate work practices, including spill prevention and response measures and identifying signs of potentially hazardous contamination (e.g., stained or discolored soil and odor)▪ Requirements for containment of all hazardous materials at work sites and proper handling of all such materials▪ Requirements for storing hazardous materials on pallets or in appropriate containers within designated fenced and secured areas protected from exposure to weather and further contamination▪ Requirements for maintaining hazardous material spill kits at all active work sites and staging areas and thorough cleanup of all spills as soon as they occur▪ Procedures for notifying agency personnel in the event of the discovery of contaminated soil and/or groundwater Hazards and Hazardous Materials BMPs <ul style="list-style-type: none">▪ PG&E personnel and/or licensed contractors are trained in the legal requirements for the storage, transportation, handling, and cleanup of hazardous materials prior to conducting O&M activities.▪ PG&E would promote and distribute educational materials to O&M personnel, and may provide these materials on job sites, as necessary.▪ PG&E would implement legal protocols for hazardous materials handling to avoid exposure of workers, the public, and the environment; and removing litter and construction materials from job sites after work is complete.	Not applicable
	Impact HAZ-2: 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	APM HAZ-1 and Hazards and Hazardous Materials BMPs (refer to Impact HAZ-1) APM HYD-1 and Hydrology and Water Quality BMPs (refer to Impact HYD-1)	Not applicable
	Impact HAZ-3: Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Less than significant	APM HAZ-1 and Hazards and Hazardous Materials BMPs (refer to Impact HAZ-1) APM HYD-1 and Hydrology and Water Quality BMPs (refer to Impact HYD-1)	Not applicable

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	Impact HAZ-4: 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?	Less than significant	APM HAZ-1 and Hazards and Hazardous Materials BMPs (refer to Impact HAZ-1)	Not applicable
	Impact HAZ-5: For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	Less than significant	—	Not applicable
	Impact HAZ-6: Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less than significant	—	Not applicable
	Impact HAZ-7: Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	Less than significant	APM BIO-4 (refer to Impact BIO-1)	Not applicable
	Cumulative: Would the project have a cumulative effect on hazards or hazardous materials resources?	Less than significant	APM HAZ-1 and Hazards and Hazardous Materials BMPs (refer to Impact HAZ-1) APM HYD-1 and Hydrology and Water Quality BMPs (refer to Impact HYD-1) APM BIO-4 (refer to Impact BIO-1)	Not applicable
Hydrology and Water Quality	Impact HYD-1: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	Less than significant	APM HYD-1: Frac-Out Response. PG&E would store pertinent materials on site to quickly contain potential frac-outs, and these materials would be determined on a case-by-case basis. At the entry or exit of the drill and for the duration of the drilling activity, PG&E would maintain a supply of sediment barriers (e.g., weed-free straw bales and silt fence), plastic sheeting, shovels and buckets, mud pumps and additional hose, mud storage tanks, and a vacuum truck. In addition, PG&E may store sandbags, floating booms or silt curtains, plywood, a small backhoe to dig sumps, and corrugated pipe. A potential frac-out may occur if there is a loss of drilling lubricant, a loss of circulation, or an unexpected change in pressure. In the event of a frac-out, the release would be assessed immediately and PG&E would take the following steps: <ul style="list-style-type: none">▪ Initiate immediate suspension of the drilling operation.	Less than significant

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			<ul style="list-style-type: none">▪ Contain the frac-out with supplies and materials as appropriate.▪ Verify that the drilling lubricant would not enter a jurisdictional water feature.▪ Assess the containment structure and determine if additional supplies and materials are needed to prevent the spread of surfaced drilling lubricant.▪ Determine if cleanup of the frac-out material is needed. <p>If a frac-out is identified in a jurisdictional water feature or other sensitive resource area, the following additional steps would be taken:</p> <ul style="list-style-type: none">▪ PG&E would notify the appropriate agency authorities with jurisdiction (i.e., the USACE, CDFW, and RWQCB).▪ The drill angle would be increased to move below the frac-out and to reduce the amount of drilling lubricant reaching the surface. The current drill profile would be evaluated, and drill pressures and pump volume rates would be adjusted, as needed.▪ If standing water is present, hand-placed containment, silt curtains, or other containment techniques for water releases would be deployed if necessary. To the extent feasible, surface releases of excess drilling lubricant would be held in a contained area and removed using small collection sumps with portable pumps and hoses, and without undue disturbance to the banks and bed of the water feature.▪ Frac-out cleanup would be conducted in a manner that avoids damage to existing and adjacent vegetation. Soils that come in contact with drilling lubricant would be removed to the extent feasible without causing excessive loss of topsoil or vegetation.▪ Once the frac-out is contained, drilling may resume upon approval from the appropriate agency officials and PG&E representatives. Frac-out material would be collected and stored in containers until it can be reused or disposed of in an approved disposal facility. <p>Hydrology and Water Quality BMPs</p> <ul style="list-style-type: none">▪ Conduct activities near water features during the dry season. If work is necessary during the rainy season, it would be conducted during dry spells between rain events to the extent feasible.▪ Refuel at least 100 feet from water features. Vehicles operating adjacent to water features would be inspected and maintained daily to prevent leaks.▪ Keep spill cleanup kits on site (with fueling and maintenance vehicles) and accessible at all times.▪ Train all personnel with regard to the location, use, and contents of the spill kits. If a spill occurs, clean it up immediately with absorbents, notify the Environmental Field Specialist, and dispose of the materials properly.▪ Minimize hazardous material storage on site and store hazardous liquids, wastes, and all chemicals in watertight containers with appropriate secondary containment. Contain and protect stockpiled waste materials and cover liquid pollutant containment BMPs prior to rain, at the end of each day, and during non-workdays.▪ Monitor BMPs daily during construction activities. Repair, replace, and/or maintain BMPs to correct any deficiencies.▪ Return work areas to their pre-existing contours and conditions upon completion of work. Restoration work, including revegetation and soil stabilization, would be evaluated upon completion of work and performed as needed.	
	Impact HYD-2: Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	Less than significant	Hydrology and Water Quality BMPs (refer to Impact HYD-1)	Not applicable

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Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
	Impact HYD-3a: 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 through the addition of impervious surfaces, in a manner which would: result in substantial erosion or siltation on- or off-site?	Less than significant	Hydrology and Water Quality BMPs (refer to Impact HYD-1) APM BIO-3 (refer to Impact BIO-1) MM BIO-3 (refer to Impact BIO-1)	Less than significant
	Impact HYD-3b: 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 through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	Less than significant	Hydrology and Water Quality BMPs (refer to Impact HYD-1) MM BIO-3 (refer to Impact BIO-1)	Less than significant
	Impact HYD-3c: 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 through the addition of impervious surfaces, in a manner which would 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?	Less than significant	APM HYD-1 and Hydrology and Water Quality BMPs (refer to Impact HYD-1) MM BIO-3 (refer to Impact BIO-1)	Less than significant

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Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
	Impact HYD-3d: Would the project substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?	Less than significant	Hydrology and Water Quality BMPs (refer to Impact HYD-1) MM BIO-3 (refer to Impact BIO-1)	Less than significant
	Impact HYD-4: In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?	Less than significant	Hydrology and Water Quality BMPs (refer to Impact HYD-1) Hazards and Hazardous Materials BMPs (refer to Impact HAZ-1)	Not applicable
	Impact HYD-5: Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Less than significant	—	Not applicable
	Cumulative: Would the project have a cumulative effect on hydrology or water quality resources?	Less than significant	APM HYD-1 and Hydrology and Water Quality BMPs (refer to Impact HYD-1) MM BIO-3 (refer to Impact BIO-1)	Not applicable
Land Use and Planning	Impact LU-1: Would the project physically divide an established community?	Less than significant	—	Not applicable
	Impact LU-2: Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	Less than significant	—	Not applicable
	Cumulative: Would the project have a cumulative land use impact?	Less than significant	—	Not applicable
Noise	Impact NOI-1: Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess	Less than significant	APM NOI-1: Construction Hours Restriction. All planned construction activities within 900 feet of occupied residential parcels that require the use of off-road construction equipment would be limited to between the hours of 7:00 a.m. and 7:00 p.m. to the greatest extent possible. Should work in these locations be required outside of these hours, construction would proceed as expediently as safely possible to reach a safe and convenient stopping point.	Not applicable

Table ES-1 Summary of Proposed Project Impacts

Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
	of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		APM NOI-2: Construction near Occupied Residences. When using off-road construction equipment to conduct O&M activities within 250 feet of occupied residences in the Town of Apple Valley, “quiet” equipment (i.e., equipment designed with noise control elements) and/or standard equipment fitted with noise control devices (e.g., mufflers) that meet manufacturers’ specifications would be used. APM NOI-3: Blowdowns near Occupied Residences. When a blowdown is scheduled to occur within 5 miles of an occupied residence, and where feasible, PG&E would use drafting and/or cross-compression to reduce the total volume of gas released, and/or would use temporary flow restrictors to reduce blowdown noise. For blowdowns required on pipeline segments within 5 miles of an occupied residence, PG&E would select the gas valve that is farthest from occupied residences for the blowdown site whenever feasible. If adequate notice is available, at least 15 days prior to the start of blowdown activities within 5 miles of an occupied residence, PG&E would notify these residents by mail of the planned activities. PG&E would provide a telephone number for the public to report any undesirable noise conditions and document, investigate, evaluate, and attempt to resolve all legitimate, activity-related noise complaints.	
	Impact NOI-2: Would the project cause generation of excessive groundborne vibration or groundborne noise levels?	Less than significant	—	Not applicable
	Impact NOI-3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two 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?	No impact	—	Not applicable
	Cumulative: Would the project have a cumulative noise impact?	Less than significant	—	Not applicable
Recreation	Impact REC-1: 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?	Less than significant	—	Not applicable
	Impact REC-2: 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	—	Not applicable

Table ES-1 Summary of Proposed Project Impacts

Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
	Cumulative: Would the project have a cumulative effect on biological resources?	Less than significant	—	Not applicable
Transportation	Impact TRA-1: Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	Less than significant	Transportation BMPs <ul style="list-style-type: none">▪ Restrict parking to existing ROWs and pre-approved staging areas, providing through access for emergency vehicles, maintaining access for private roads, avoiding key commute routes, and avoiding “rate-limiting” intersections during peak traffic periods.	Not applicable
	Impact TRA-2: Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	Less than significant	Air Quality BMPs (refer to Impact AQ-1)	Not applicable
	Impact TRA-3: Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Less than significant	Transportation BMPs (refer to Impact TRA-1)	Not applicable
	Impact TRA-4: Would the project result in inadequate emergency access?	Less than significant	Transportation BMPs (refer to Impact TRA-1)	Not applicable
	Cumulative: Would the project have a cumulative effect on transportation resources?	Less than significant	Transportation BMPs (refer to Impact TRA-1) Air Quality BMPs (refer to Impact AQ-1)	Not applicable
Tribal Cultural Resources	Impact TCR-1a: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical	Less than significant	APM CUL-1 and Cultural Resources BMPs (refer to Impact CUL-1)	Not applicable

Table ES-1 Summary of Proposed Project Impacts

Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
	Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?			
	Impact TCR-1b: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Less than significant	APM CUL-1 and Cultural Resources BMPs (refer to Impact CUL-1)	Not applicable
	Cumulative: Would the project have a cumulative effect on tribal cultural resources?	Less than significant	APM CUL-1 and Cultural Resources BMPs (refer to Impact CUL-1)	Not applicable
Utilities and Service Systems	Impact UTL-1: Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	Less than significant	—	Not applicable

Table ES-1 Summary of Proposed Project Impacts

Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
	Impact UTL-2: Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	Less than significant	—	Not applicable
	Impact UTL-3: Would the project 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?	Less than significant	Hydrology and Water Quality BMPs (refer to Impact HYD-1)	Not applicable
	Impact UTL-4: Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	Less than significant	Air Quality BMPs (refer to Impact AQ-1)	Not applicable
	Impact UTL-5: Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less than significant	—	Not applicable
	Cumulative: Would the project have a cumulative effect on utilities and/or service systems?	Less than significant	Hydrology and Water Quality BMPs (refer to Impact HYD-1)	Not applicable
Wildfire	Impact WF-1: Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?	Less than significant	—	Not applicable

Table ES-1 Summary of Proposed Project Impacts

Environmental Topic	Impact (Threshold Question)	Impact	Applicable Measures (APMs, BMPs, and or Mitigation Measures)	Level of Significance After Mitigation
	Impact WF-2: Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	Less than significant	APM BIO-4 (refer to Impact BIO-1)	Not applicable
	Impact WF-3: Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	Less than significant	APM BIO-4 (refer to Impact BIO-1)	Not applicable
	Impact WF-4: Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	Less than significant	APM BIO-3 (refer to Impact BIO-1) APM BIO-13 (refer to Impact BIO-1)	Not applicable
	Cumulative: Would the project have a cumulative effect on wildfire?	Less than significant	—	Not applicable

Notes: CEQA = California Environmental Quality Act; APM = applicant proposed measure; BMP = best management practice; MM = mitigation measure; — = no APMs or BMPs apply or no mitigation measures are required.

1 Introduction/Overview

This environmental impact report (EIR) has been prepared pursuant to the California Environmental Quality Act (CEQA) (California Public Resources Code, Section 21000 et seq.). This chapter provides a general overview and background for California Department of Fish and Wildlife (CDFW) CEQA lead agency review of the proposed issuance of an Incidental Take Permit (ITP) and the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements under the California Fish and Game Code (CFGC) (collectively, “the permits”) for the Pacific Gas and Electric Company’s (PG&E’s) Southern California desert pipeline operation and maintenance (O&M) activities (refer to Sections 1.1 and 1.2). The objectives and purpose of PG&E’s ongoing O&M activities are described in Section 1.3. Section 1.4 describes the environmental procedures under CEQA governing CDFW’s lead agency review and Section 1.5 describes the scope of this EIR. In addition, other agencies that may use the EIR for their consideration and issuance of other regulatory permits/approvals are provided in Section 1.6. Finally, the organization and content of the EIR is presented in Section 1.7 and references cited in this chapter are provided in Section 1.8.

1.1 Proposed Project and Environmental Review

PG&E has applied to CDFW under the California Endangered Species Act (CESA) (CFGC Section 2050 et seq.) for an ITP for Mojave desert tortoise (*Gopherus agassizii*), a threatened and candidate endangered species, and Mohave ground squirrel (*Xerospermophilus mohavensis*), a threatened species (refer to Appendix A for a copy of the ITP Application) (CFGC Section 2081[b] and 2081[c]; see also 14 CCR 783.0 et seq.). The ITP, if issued, would authorize “take” as defined by CFGC Section 86, subject to various conditions, of both species (collectively, “the covered species”) incidental to PG&E’s otherwise lawful ongoing O&M activities along approximately 645 miles of natural gas pipelines in the Mojave Desert Region, specifically in San Bernardino and Kern Counties. In this respect the ITP would condition how PG&E implements ongoing O&M activities where those activities may cause impacts to the covered species that are subject to CDFW’s regulatory authority and permitting jurisdiction under CESA. The proposed issuance of the ITP requested by PG&E is the proposed discretionary approval of a project requiring CDFW to comply with CEQA (refer to California Public Resources Code Section 21080[a]). The term “project” for the purposes of the impact analysis in this EIR does not mean each separate approval by CDFW under the CFGC. The term “project” means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

CDFW and PG&E also expect that O&M activities in certain instances will be subject to CDFW’s regulatory authority under CFGC Section 1600 et seq. In such circumstances, pre-activity notification to CDFW is required and, if CDFW determines that the activity may substantially adversely affect fish and wildlife, CDFW will issue an LSA Agreement that includes reasonable measures necessary to protect the resources subject to this aspect of CDFW’s regulatory authority (generally, refer to CFGC Section 1602). PG&E has yet to submit notification to CDFW under the LSA Program for future O&M activities, but it expects to do so when required. PG&E may submit those notifications on an individual activity-specific basis or, as provided by CFGC Section 1605, it may submit notification for O&M activities more broadly and seek a Master LSA Agreement from CDFW. The proposed issuance of an LSA Agreement or Master LSA Agreement, like the requested ITP, is the proposed discretionary approval of a project requiring CDFW to comply with CEQA. Because CDFW and PG&E expect certain O&M activities to be subject to CDFW’s LSA regulatory authority, that prospect and related environmental effects are also addressed in this EIR.

CDFW will consider PG&E's ongoing O&M activities conditioned by the CDFW permits (the proposed project) as provided by the CFGC, informed by, among other things, the broader CEQA lead agency analysis in this EIR of the potentially significant environmental effects of the "whole of the action" under CEQA. In addition to CEQA, CDFW will consider whether the proposed issuance of the permits is consistent with its central mission, its trustee mandate, and its public trust obligations. CDFW's mission under the CFGC is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public (CFGC Section 712.1[a][1]; also refer to CFGC Sections 703.3 and 703.5). CDFW is California's trustee agency for fish and wildlife, and it holds those resources in trust and exercises related jurisdiction by statute for all the people of the state (CFGC Sections 711.7[a] and 1802; also refer to California Public Resources Code Section 21070 and 14 CCR 15386[a]). CDFW will also consider the proposed project and related effects on fish and wildlife in the broader context of the public trust.

The requested permits, as noted, are the proposed discretionary approvals requiring CDFW to comply with CEQA. The permits, if issued, will simply condition how PG&E implements certain O&M activities in the future when those activities are subject to CDFW's related regulatory authority under the CFGC. Accordingly, the proposed approval under the CFGC requiring CDFW to comply with CEQA as a lead agency does not include the approval of PG&E's ongoing O&M activities overall.

Notwithstanding the proposed approval under the CFGC, CEQA requires CDFW as a lead agency to consider the broader environmental consequences of approving the proposed project as the whole of the action (refer, e.g., to California Public Resources Code Sections 21002.1[d] and 21100[b]; 14 CCR 783.3[b]; and 14 CCR 15126). CDFW is the CEQA lead agency in this specific instance because there is no other state or local agency action subject to CEQA that is a necessary precondition to the proposed approvals by CDFW under the CFGC (14 CCR 783.3[b]; also refer to California Public Resources Code Section 21067 and 14 CCR 15367). Because CDFW is the CEQA lead agency for the requested ITP, in particular, this EIR also serves as CDFW's environmental analysis prepared under its CEQA-certified regulatory program for lead agency CESA ITP permitting (14 CCR 783.3[b]; 14 CCR 783.5[d]; and 14 CCR 15251[o]; see also California Public Resources Code Section 21080.5).

The scope of CDFW's lead agency analysis of the potentially significant environmental effects that may result with issuance of the requested permits is guided by the concept of the "project" under CEQA. Pursuant to CEQA Guidelines Section 15378(a), a "project" is defined as the whole of the action that has the potential to result in either a direct physical change in the environment or a reasonably foreseeable indirect change in the environment, and is an activity involving the issuance to a person of a lease, permit, license, certificate, or other entitlement. CEQA Guidelines Section 15378(c) also describes a "project" for purposes of CEQA as the activity that is being approved and that may be subject to several discretionary approvals by governmental agencies, and not each separate governmental approval. These are important principles guiding CDFW's analysis and disclosure in this EIR of the direct and reasonably foreseeable indirect environmental impacts that may result if CDFW issues the requested permits under the CFGC. These important principles also inform CDFW's lead agency consideration of, and its broader proposed approval of, the proposed project as informed by the analysis of the whole of the action for purposes of CEQA.

PG&E's gas pipeline system has been in place for more than 70 years. PG&E has operated and maintained the system since the time of its installation. PG&E's related O&M activities are also underway currently and PG&E's need and obligation to operate and maintain the system will continue in the future regardless of whether CDFW issues the requested permits or, as it has in the past, issues permits under the CFGC as needed by PG&E for individual O&M activities. In general, accordingly, PG&E's ongoing O&M activities are part of the existing environmental setting, or "baseline," for purposes of CDFW's lead agency analysis set forth in this EIR (14 CCR 15125).

Data collected by PG&E since 2017 regarding temporary and permanent disturbance impacts caused by O&M activities provide important detail about the existing environmental baseline for purposes of CEQA. These baseline data are described in detail in Chapter 2, Project Description (the O&M activities, their frequency, and the area disturbed) and related impacts are described in Chapter 4, Environmental Analysis, of this EIR. Importantly, the O&M baseline data relevant to CDFW's lead agency analysis in this EIR are impact data specifically from 2017 to September 2021. Per CDFW's discretion as lead agency, impact data that was specifically associated with PG&E's completion of three large-scale hydrotests and in-line inspections for an unprecedented length of pipeline are excluded from the 5-year period of baseline impact data used in this EIR. These three large-scale hydrotest events (which occurred between 2018 and 2020) were unusual and atypical of the O&M activities undertaken and required by PG&E in the study area.

The "study area," as analyzed in this EIR, consists of a 500-foot-wide buffer along the existing gas pipeline (i.e., 250 feet on either side of the pipeline centerline). However, occasionally certain areas located up to 0.25 miles beyond the 500-foot buffer may be used to facilitate ongoing O&M activities, specifically limited to use and maintenance of existing access roads as well as possible staging areas within existing disturbed areas. This study area encompasses the O&M activity area. PG&E has informed CDFW that it does not anticipate that hydrotesting, within the study area, on a scale similar to the effort from 2018 to 2020 will be necessary or required in the next 30 years. CDFW finds in its lead agency discretion and independent judgment that including the impacts from the recent hydrotesting in the environmental baseline could result in an inaccurate or misleading overview of the environmental effects caused by the proposed project. PG&E's impact data for its ongoing O&M activities from 2017 to September 2021, an approximately 5-year period (with the only exception being the exclusion of the data associated with the three specific large-scale hydrotests conducted), provides a meaningful benchmark for CDFW as lead agency to analyze and consider the significance of any potential physical change to the existing baseline condition, which includes the ongoing O&M activities implemented by PG&E (not inclusive of large-scale hydrotesting, as discussed above), that may be caused specifically by CDFW's issuance of the permits under the CFGC as informed by the analysis of the whole of the action for purposes of CEQA.

1.2 Background and Existing Regulations

Maintenance and repair of the gas pipeline system is mandated by the California Public Utilities Commission (CPUC) General Order 112-F, which incorporates the U.S. Department of Transportation regulations provided by Title 49, Part 192 (Transportation of Natural and Other Gas by Pipeline) of the Code of Federal Regulations. In October 2011, the California legislature signed into law Senate Bill 705, which declared "[i]t is the policy of the state that the commission and each gas corporation place safety of the public and gas corporation employees as the top priority." Senate Bill 705 was codified in California Public Utilities Code Sections 961 and 963(b)(3). Section 961 of the California Public Utilities Code mandates that gas operators must go beyond what is considered "adequate" to develop and implement gas safety plans that are "consistent with best practices in the gas industry." On April 20, 2012, CPUC amended the scope of its Pipeline Safety Rulemaking to include compliance with the requirements of California Public Utilities Code Sections 961 and 963.4. CPUC further directed each California natural gas corporation to develop and implement a plan for the safe and reliable operation of its gas pipeline facilities.

In 2000, PG&E coordinated with the Bureau of Land Management (BLM) on the development of a programmatic approach to comply with the federal Endangered Species Act. Through Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS), PG&E received a federal incidental take authorization for Mojave desert tortoise in the form of a Biological Opinion for maintenance activities on the PG&E gas pipeline system in the California Desert [6840, CA-063.50] [1-8-99-F-71].

As part of Phase I of the Desert Renewable Energy Conservation Plan (DRECP), BLM adopted the Land Use Plan Amendment (LUPA) in September 2016. The BLM LUPA establishes management direction for the permitting of renewable energy and transmission development on approximately 10 million acres of BLM-managed lands in the DRECP area. In 2017, USFWS issued a programmatic Biological Opinion for activities in the California Desert Conservation Area, which also requires implementation of the Conservation and Management Actions described in the LUPA for the California Desert Conservation Area.

PG&E would like to complement its existing federal take coverage with a long-term ITP from CDFW for PG&E's ongoing O&M activities in the Mojave Desert region. An ITP for all of PG&E's ongoing O&M activities will eliminate the time and expense involved in processing individual ITPs, where necessary, for individual O&M activities that may arise in the future. CDFW is serving as the lead agency under its certified regulatory program in compliance with CEQA to consider PGE's application for a long-term ITP for the covered species (refer to 14 CCR 783.3[b]; 14 CCR 783.5[d]; and 14 CCR 15251[o]). In addition, PG&E would like this EIR to provide a CEQA lead agency platform for CDFW to issue individual LSA Agreements or a Master LSA Agreement when and as required under the CFGC. The EIR, in this respect, would also be more efficient for both PG&E and CDFW, compared to environmental review and permitting for individual O&M activities subject to CDFW's regulatory authority under CFGC Section 1600 et seq.

1.3 PG&E O&M Activities – Objectives and Purpose

The purpose of PG&E's O&M activities is to maintain the safety of their gas pipeline facilities in the Mojave Desert region. Conducting ongoing O&M activities in the region requires PG&E to do so consistent with the protective measures CESA provides by law to state-listed species, including for the covered species. Certain O&M activities will also be subject to CDFW's regulatory authority governed by its LSA Program. PG&E has established the following objectives for its ongoing O&M activities:

- Implement a plan for the safe and reliable operation of PG&E's gas pipeline facilities in accordance with CPUC regulations.
- Continue PG&E's ongoing O&M activities and focus on testing, inspecting, replacing, and automating the gas transmission system.
- Obtain a long-term ITP under CESA for the covered species and coverage under CDFW's LSA Program for PG&E's ongoing O&M activities in the Mojave Desert region.

CDFW's project objectives associated with issuing the permits to PG&E include the following:

- Protect and conserve fish and wildlife resources and minimize environmental impacts and land disturbance by, among other things, implementing O&M activities and siting work areas within PG&E's existing pipeline right-of-way (ROW) corridors, or in already disturbed areas adjacent to the ROW and along access roads.
- Promote environmentally responsible project activities that minimize incidental take by implementing species-specific minimization and avoidance measures.
- Protect and conserve the resources of the State of California and mitigate any impacts on these resources, consistent with CDFW's mission, its status as California's trustee agency for fish and wildlife, and the public trust doctrine.

1.4 Environmental Procedures

1.4.1 CEQA Compliance

This EIR has been prepared in conformance with the CEQA statute (California Public Resources Code Section 21000 et seq.) and the CEQA Guidelines (14 CCR 15000 et seq.). CEQA requires the preparation and certification of an EIR where a lead agency determines there is substantial evidence that a project may have a significant effect on the environment. Issuing an ITP and issuing an LSA Agreement are discretionary actions that require CDFW to comply with CEQA in accordance with CEQA Guidelines Sections 15021 and 15040, as well as Title 14, Sections 783.3(b) and 783.5(d), of the California Code of Regulations (CCR). Under CEQA, an EIR must be prepared when there is substantial evidence that supports a fair argument that significant effects may result from project implementation. This document has been prepared as an EIR pursuant to Section 15161 of the CEQA Guidelines and represents the independent judgment of the CDFW as lead agency (14 CCR 15050) for the issuance of the permits.

This EIR focuses on the direct and reasonably foreseeable indirect significant effects on the environment resulting from issuance of the requested ITP and potential issuance of one or more LSA agreements that will condition PG&E's ongoing O&M activities. The significant effects are discussed with emphasis in proportion to their severity and probability of occurrence. CDFW, as lead agency, has conducted an independent review of PG&E's ITP application and the applicant-prepared initial draft environmental documentation for its O&M activities in accordance with California Public Resources Code Section 21082.1(c)(1) and CEQA Guidelines Section 15084(e). This EIR reflects CDFW's independent judgment and best effort to evaluate and disclose all that it reasonably can regarding the potentially significant effects that may result from approval of the proposed project as informed by the analysis of the whole of the action, and at a level of detail and with a degree of specificity to facilitate meaningful review of the proposed project (refer generally to 14 CCR 15143–15146). Furthermore, this EIR documents CDFW's lead agency effort with CEQA's substantive mandate to avoid or substantially lessen significant effects to the extent feasible as provided by law, consistent with applicable constitutional requirements (refer generally to California Public Resources Code Sections 21002, 21002.1, and 21004, and 14 CCR 15040 and 15041). The aim of CEQA, in this respect, is to avoid, minimize, and mitigate project-related significant or potentially significant impacts to the environment to a less-than-significant level to the extent feasible. In contrast, CESA conditions CDFW's issuance of an ITP on, among other things, a determination that impacts of the authorized take be "minimized and fully mitigated" under CFGC Section 2081(b). For the purposes of this requirement, impacts of the taking include all impacts on the species that result from any act that would cause the proposed taking. To similar end, CDFW may issue an ITP for an otherwise lawful activity if, among other things, all the impacts of the take are minimized and fully mitigated, there is adequate funding for the mitigation measures and for monitoring compliance with, and effectiveness of those measures, and the take does not jeopardize the continued existence of the species. Similarly, where CDFW determines that an activity may substantially adversely affect existing fish and wildlife resources subject to the CDFW LSA regulatory authority, CDFW may condition implementation of that activity through an agreement that includes reasonable measures necessary to protect those resources.

Consistent with Section 15121(a) of the CEQA Guidelines, this EIR is a public information document that objectively assesses and discloses potential environmental effects that would result from the approval of the permits and from any related incremental physical change from PG&E's ongoing O&M activities.

This Draft EIR has been distributed to responsible agencies and other interested agencies and individuals for review (refer to Section 1.4.3, Overview of the EIR Process, for details). CDFW will consider the Draft EIR, comments received on the Draft EIR, responses to those comments, and any changes to the Draft EIR before deciding whether to certify the Final EIR as complying with CEQA and take final action on the proposed project.

Comments on this Draft EIR should focus on the adequacy of the document in identifying and analyzing the potential environmental effects, determination of significance, and effectiveness of measures, relating specifically to the proposed issuance of the permits and any incremental physical change that could result to PG&E's continued O&M activities.

1.4.2 Notice of Preparation and Scoping Process

CEQA establishes mechanisms to inform the public and responsible and trustee agencies about the nature of the proposed project and the extent and types of potential impacts that the project and its alternatives may have on the environment should the project or alternatives be implemented. CDFW determined that an EIR was required for the issuance of the requested ITP and the potential issuance of one or more LSA Agreements associated with PG&E's ongoing O&M activities, and pursuant to CEQA Guidelines Sections 15060(d), 15063(a), and 15081, did not prepare an initial study. Pursuant to Section 15082 of the CEQA Guidelines, CDFW circulated a notice of preparation (NOP) dated March 25, 2021, to interested agencies, organizations, and individuals (refer to Appendix B1 for the NOP). The NOP was also sent to the State Clearinghouse at the California Governor's Office of Planning and Research. The State Clearinghouse assigned a state identification number, SCH No. 2021030571, to this EIR. The NOP was also recorded with the Counties of San Bernardino and Kern. The NOP is intended to encourage interagency communication regarding the proposed action so that agencies, organizations, and individuals are afforded an opportunity to respond with specific comments and/or questions regarding the scope and content of the EIR. To gather additional public input, one virtual public scoping meeting was held on Wednesday, April 7, 2021 (refer to Appendix B2 for the Public Scoping Meeting Presentation). Governor's Executive Order N-25-20 allowed state agencies to hold meetings via teleconferencing while still meeting state transparency requirements during this time. The public scoping period began on March 25, 2021, and ended on Monday, April 26, 2021. In addition, a legal notice regarding the availability of the NOP and the public scoping meeting was published in four local newspapers throughout the study area (refer to Appendix B3 for the proof of publication for each newspaper).

The scoping process provided an opportunity for governmental agencies and the public to provide comments on the issues and scope of the Draft EIR. Written comments received during the NOP scoping process became part of the public record and were reviewed and considered by CDFW during Draft EIR preparation (refer to Appendix B4 for the NOP comment letters). Furthermore, as part of the Assembly Bill 52 CEQA tribal consultation process, CDFW is in discussions with Native American tribes. Additional outreach and discussions with agencies and the tribes are anticipated throughout the CEQA process.

1.4.3 Overview of the EIR Process

This Draft EIR is available to members of the public, agencies, and interested parties for a 45-day public review period in accordance with CEQA Guidelines Section 15105. The public review period began on August 29, 2022, and ends on October 13, 2022. Pursuant to CEQA Guidelines Section 15204, public review of the Draft EIR is intended to focus "on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated."

The notice of completion of the Draft EIR has been filed with the State Clearinghouse as required by CEQA Guidelines Section 15085. In addition, the notice of availability of the Draft EIR has been distributed pursuant to CEQA Guidelines Section 15087. Both the notice of availability and the Draft EIR are available for public review online at <https://www.wildlife.ca.gov/Notices>. Due to COVID-19, public libraries and county offices may be closed or have limited office hours available during the public review period.

Once the 45-day public review period for the Draft EIR has concluded, CDFW will review all public comments, prepare written responses to comments received, and propose revisions to the Draft EIR text, if necessary. The written responses to comments and the revisions to the Draft EIR will constitute the Final EIR. The MMRP, inclusive of all applicable measures (in the form of best management practices [BMPs], applicant-proposed measures [APMs], and mitigation measures), will be incorporated into the Final EIR. As applicable, the MMRP will include monitoring team qualifications, specific monitoring activities, a reporting system, and criteria for evaluating the success of the measures. The mitigation measures contained in the EIR were developed in consideration of future monitoring requirements and written in sufficient detail to address impacts of the proposed issuance of the permits (the proposed project) conditioning PG&E's ongoing O&M activities, referencing the appropriate implementing permits and plans. In summary, the Final EIR will include all comment letters received on the Draft EIR and responses to those comments, an MMRP, and, if applicable, edits made to the Draft EIR as a result of public review.

1.5 Scope of the EIR

This EIR evaluates the potentially significant short-term and long-term direct, indirect, cumulative, and residual environmental impacts that may be caused by incremental physical changes in PG&E's O&M activities if CDFW issues the requested permits. Chapter 4, Environmental Analysis, provides an evaluation of the following topics:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils (including paleontological resources)
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

Other resource topics were evaluated and were determined to result in either no impact or a less-than-significant impact; therefore, they are not evaluated in Chapter 4 of this EIR. These topics include mineral resources, population and housing, and public services (refer to Section 6.1, Effects Not Found to Be Significant, for additional information regarding these resources).

1.6 Agency Use of This Document

CDFW will exercise its regulatory authority as provided by the CFGC in evaluating issuance of the permits. Because issuance of the permits may result in environmental impacts associated with PG&E O&M activities, CDFW as CEQA lead agency is analyzing and disclosing all of the potentially significant environmental impacts

that may result from its regulatory action under the CFGC as informed by the analysis of the whole of the action under CEQA generally. According to the CEQA requirements, CDFW will determine the adequacy of the EIR and, if it is judged adequate, will certify the document. After the Final EIR is certified, CDFW will make a decision whether to issue the permits, subject to various conditions of approval consistent with CDFW's regulatory jurisdiction. Other state and local agencies or regulatory entities could exercise authority over specific elements of PG&E's O&M activities.

The majority of the O&M activities would occur primarily within existing pipeline ROW corridors. Work within the existing ROW corridors generally does not require additional land rights or take authorizations due to the existing rights and permits in place. Existing permits and approvals are summarized in Table 1-1. PG&E will continue to follow the conditions of existing permits and approvals for the duration of the ITP and the expected LSA Agreements.

Table 1-1. Existing Permits and Approvals

Agency	Permit/Consultation/Approval	Jurisdiction/Purpose
BLM	ROW for Gas Pipeline and Compressor Station Site and Communications Line	Grants land rights to install and maintain pipelines across federally managed land.
	DRECP	Facilitates the timely and streamlined permitting of renewable energy projects in the Mojave and Colorado/Sonoran Desert regions of Southern California.
	LUPA	Establishes management direction for the permitting of renewable energy and transmission development on approximately 10 million acres of BLM-managed lands in the DRECP area.
SWRCB	Statewide Natural Gas Utility Permit	Authorizes planned, emergency, and unplanned discharges to waters of the United States, non-federal surface waters, and land resulting from hydrostatic testing, site dewatering, and other discharges resulting from O&M of natural gas facilities.
USFWS	Programmatic Biological Opinion for Maintenance Activities on the Pacific Gas and Electric Company Gas Pipeline System in the California Desert	Authorizes activities that may affect the federally listed Mojave desert tortoise and its critical habitat.
	Programmatic Biological Opinion for Activities in the California Desert Conservation Area	Authorizes take of listed species in the DRECP area with the implementation of LUPA measures.

Notes: BLM = Bureau of Land Management; ROW = right-of-way; DRECP = Desert Renewable Energy Conservation Plan; LUPA = Land Use Plan Amendment; SWRCB = State Water Resources Control Board; O&M = operation and maintenance; USFWS = U.S. Fish and Wildlife Service.

In addition to the CDFW ITP and the expected LSA Agreements, it is anticipated that additional permits and approvals from other federal, state, and local public agencies may be necessary to facilitate PG&E's ongoing O&M activities. Table 1-2 identifies the anticipated permits and approvals from public agencies that may exercise regulatory jurisdiction or permitting authority over certain aspects of PG&E's ongoing O&M activities. Future listing decisions by the California Fish and Game Commission could also implicate CDFW's related regulatory jurisdiction and permitting authority. That prospect is highlighted elsewhere in the EIR in relevant

analysis but not detailed in Table 1-2 given the uncertainty regarding the California Fish and Game Commission's exercise of its exclusive listing authority.

Table 1-2. Anticipated Permits and Approvals

Agency	Permit/Consultation/Approval	Jurisdiction/Purpose	Notes/Assumptions
Federal Agencies			
USACE	Clean Water Act Section 404 Nationwide Permit	Authorizes fill of waters of the United States.	Permits are generally issued 45 days from submittal of a complete application; however, Section 401 must be certified first, and Section 7, Section 106, and CEQA must be completed.
Advisory Council on Historic Preservation	National Historic Preservation Act Section 106 Review	Regulates activities on federal land that require a federal authorization and may affect cultural or historic resources.	There is no regulatory timeline for Section 106 compliance; however, a minimum of 1 year is anticipated.
State Agencies			
SWRCB	National Pollutant Discharge Elimination System – Construction Storm Water Permit (Order No. 2009-0009-DWQ [as amended by 2010-0014-DWQ and 2012-0006-DWQ]) (Construction General Permit)	Authorizes stormwater discharges associated with construction activities disturbing 1 or more acre of land outside of existing ROWs.	Permits are generally issued 10 days following the submittal of the complete application.
	NPDES Permit for Limited Threat Discharges to Surface Waters	Authorizes discharges of water to surface waters that are considered to be of limited threat to the water quality of waters of the United States. Examples include construction dewatering, pipeline pressure testing, and pipeline flushing where water quality meets screening levels.	The discharger must obtain coverage prior to commencement of any discharge by first submitting a notice of intent to the RWQCB.

Table 1-2. Anticipated Permits and Approvals

Agency	Permit/Consultation/Approval	Jurisdiction/Purpose	Notes/Assumptions
	General WDRs for Discharges to Land with a Low Threat to Water Quality	Authorizes discharges of water to land with a limited threat to water quality. Examples include small construction dewatering, pipeline pressure testing, and pipeline flushing where water quality meets screening levels.	Dischargers must submit a notice of intent or report of waste discharge to the RWQCB prior to commencement of discharge.
	WDRs for Dredged and Fill Discharges to Waters Deemed by USACE to Be Outside of Federal Jurisdiction	Authorizes discharge of waste including dredged or fill materials that could affect the quality of waters considered non-federal.	Applicable to small surface water bodies or water body segments that have been deemed by USACE to be “isolated” and do not meet federal wetland criteria or are above the “line of ordinary high water” limit of federal jurisdiction.
	NPDES Order for Discharges from Natural Gas Utility Construction, Operations, and Maintenance Activities (General Order)	Authorizes coverage to planned, emergency, and unplanned discharges by natural gas facilities to waters of the United States for activities including hydrostatic testing and site dewatering.	Approval given after completion of application package and prior to conducting planned discharges. The General Order requires the discharger to implement appropriate best practicable treatment and/or control for all its discharges.
RWQCB	Clean Water Act Section 401 Water Quality Certification	Authorizes activities authorized by federal agencies that may affect state water quality.	Permits are generally issued 132 days following the submittal of the complete application.
SHPO	SHPO Consultation	Regulates activities that may affect cultural or historic resources and require a state authorization.	The consultation timeline assumes there would be a potential effect to historic properties and a consultation period of at least 1 year.
California Department of Transportation	Encroachment Permit ^a	Authorizes construction of facilities within, under, or over state highway ROWs.	Permits are generally issued 60 calendar days after the submittal of a complete application and in compliance with all other statutory requirements, including CEQA.
Local Agencies			
San Bernardino County	Encroachment Permit ^a	Authorizes construction of facilities within, under,	—

Table 1-2. Anticipated Permits and Approvals

Agency	Permit/Consultation/Approval	Jurisdiction/Purpose	Notes/Assumptions
Kern County		or over county road ROWs.	
City of California City			
City of Barstow			
City of Victorville			
City of Ridgecrest			
Town of Apple Valley	Wall and Fence Application and Building Permit	Authorizes construction of a wall or fence that would separate a commercial or industrial use from residential uses.	—
Local Flood Control Districts	Encroachment Permit	Authorizes construction or access to facilities within, under, or near flood control facilities.	—

Notes: USACE = U.S. Army Corps of Engineers; CEQA = California Environmental Quality Act; SWRCB = State Water Resources Control Board; ROW = right-of-way; NPDES = National Pollutant Discharge Elimination System; RWQCB = Regional Water Quality Control Board; WDR = Waste Discharge Requirement; SHPO = State Historic Preservation Officer.

^a The issuance of an encroachment permit is anticipated to require a traffic control plan and a traffic management plan.

1.7 Organization and Content of the EIR

To describe the direct, indirect, and cumulative impacts; APMs, BMPs, and biological resources mitigation measures; and project alternatives associated with the proposed project (i.e., CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities), this EIR is organized as follows:

- An **Executive Summary** is provided at the beginning of this document that presents a summary of the proposed project, a description and objectives of PG&E's O&M activities, a summary of alternatives, contents of this EIR, a description of the areas of known controversy and issues to be resolved, and a table summarizing impacts from the proposed project, including a list of applicable APMs, BMPs, and mitigation measures that would be incorporated by PG&E into its O&M activities.
- **Chapter 1, Introduction/Overview**, serves as a foreword to the EIR and provides an overview and background of the proposed project (i.e., issuance of the permits), PG&E's ongoing O&M activities, guiding regulations, and the applicable environmental review procedures; identifies anticipated permits and approvals; and presents the format of the EIR.
- **Chapter 2, Project Description**, provides a thorough description of the proposed project and PG&E's ongoing O&M activities, including the study area and the location and description of O&M activities, and describes standard practices, BMPs, and APMs that are incorporated into PG&E's O&M activities.

- **Chapter 3, Cumulative Impacts Analysis Methodology**, describes the methodology used to evaluate cumulative impacts. The proposed project's cumulative impacts are evaluated in Chapter 4 within each resource section.
- **Chapter 4, Environmental Analysis**, provides an overview of the section format and outlines the environmental topics included in Sections 4.1 through 4.17. The environmental impacts, including cumulative impacts associated with the proposed project (i.e., PG&E's ongoing O&M activities as conditioned by CDFW's issuance of the permits) and PG&E's ongoing O&M activities, are evaluated in Sections 4.1 through 4.17, which analyze whether causally related project-specific impacts due to the issuance of the permits are below or exceed significance thresholds. Biological resources mitigation measures are provided in Section 4.4.4.4.
- **Chapter 5, Alternatives**, discusses the three alternatives considered but rejected, as well as the No Project Alternative.
- **Chapter 6, Other CEQA Considerations**, includes a summary of potential environmental topics that have been found to have no impact on the environment. This chapter also discusses significant irreversible environmental effects. The chapter includes a growth-inducement section that addresses any growth-inducing impacts associated with the proposed project.
- **Chapter 7, List of Preparers**, provides the names of the EIR authors, as well as the agencies or individuals consulted during preparation of the EIR.
- **Figures** are included in several resource sections to support the findings presented in the text of the EIR.
- **References** for documents cited in this EIR are presented at the end of each chapter except for Chapter 4, in which a references section appears at the end of each resource section.
- **Appendices** include various supporting information and technical studies prepared for the analysis in this EIR, as listed in the table of contents.

1.8 References

DRECP (Desert Renewable Energy Conservation Plan). 2016. *Land Use Plan Amendment to the DRECP*. Accessed November 22, 2017. http://www.drecp.org/finaldrecp/lupa/DRECP_BLM_LUPA.pdf.

USFWS (U.S. Fish and Wildlife Service). 2000. *Biological Opinion for Maintenance Activities on the Pacific Gas and Electric Gas Pipeline System in the California Desert (6840, CA-063.50) (1-8-99-F-71)*. Ventura, California: USFWS, Ventura Fish and Wildlife Office. January 7, 2000.

USFWS. 2017. Biological Opinion for Activities in the California Desert Conservation Area. 08ECAR00-2017-F-1029. September 1, 2017.

2 Project Description

Pacific Gas and Electric Company (PG&E) has applied to the California Department of Fish and Wildlife (CDFW) for an Incidental Take Permit (ITP) under California Fish and Game Code (CFGC) Sections 2081(b) and 2081(c). The ITP, if issued, would authorize “take” as defined by CFGC Section 86, subject to various conditions, of the Mojave desert tortoise (*Gopherus agassizii*), a threatened and candidate endangered species, and the Mohave ground squirrel (*Xerospermophilus mohavensis*), a threatened species (collectively, the “covered species”), incidental to PG&E’s ongoing operation and maintenance (O&M) of its approximately 645-mile Southern California desert gas pipeline system in the Mojave Desert region, specifically in San Bernardino and Kern Counties (refer to Appendix A for a copy of the ITP Application). CDFW and PG&E also expect that certain O&M activities will require pre-activity notification under CDFW’s Lake and Streambed Alteration (LSA) Program. If CDFW determines in response to a PG&E notification that the O&M activity may substantially adversely affect fish and wildlife, CDFW will issue an LSA Agreement, consistent with the CFGC, that includes reasonable measures necessary to protect fish and wildlife (generally refer to CFGC Section 1602). PG&E may submit an LSA Agreement notification to CDFW on an individual activity-specific basis or for O&M activities more broadly (which would require a Master LSA Agreement). The proposed issuance of the ITP and expected issuance of individual or Master LSA Agreements (collectively referred to as “the permits”) are proposed discretionary approvals by CDFW subject to required compliance with the California Environmental Quality Act (CEQA).

As a lead agency under CEQA and, importantly, as California’s trustee agency for fish and wildlife (see California Public Resources Code, Sections 21067 and 21070, and 14 CCR 15367 and 15386[a]), CDFW is analyzing and considering the potential environmental effects that may be caused if the permits are issued. CDFW as trustee holds fish and wildlife in trust and exercises related jurisdiction under the CFGC on behalf of all the people of California (CFGC Sections 711.7[a] and 1802). This environmental impact report (EIR) sets forth CDFW’s independent CEQA lead and trustee agency analysis of the potentially significant effects on the environment that may result if the permits are issued under the CFGC.

In terms of the analysis set forth in this EIR, CEQA requires CDFW as a lead agency to consider the potential environmental effects that may result directly or indirectly from ongoing O&M activities conditioned by the CDFW permits (i.e., the proposed project) as the whole of the action (refer to 14 CCR 15378[a] and 15378[c]). This includes, specifically, whether CDFW’s issuance of the permits under the CFGC will cause an incremental change to PG&E’s ongoing O&M activities that in turn causes related significant or potentially significant physical changes to the existing environmental baseline. Importantly, while the lead agency analysis set forth in this EIR evaluates the prospect of significant or potentially significant environmental effects across the resource spectrum, the permits, if issued, do not constitute CDFW approval of PG&E’s ongoing O&M program under the CFGC. Note that PG&E’s O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the project for purposes of CEQA). The permits, if issued by CDFW, would authorize PG&E (subject to various conditions under the CFGC) to implement ongoing O&M activities consistent with the California Endangered Species Act (CESA) and CDFW’s LSA Program.

Section 2.1 provides an overview of PG&E’s ongoing baseline O&M activities that are addressed in this EIR, the location of the PG&E facilities within San Bernardino and Kern Counties, and the requested permits. Section 2.2 provides details regarding the facilities that are within the study area. The study area represents the location where the O&M activities occur, which is the 500-foot study area buffer along the PG&E gas

pipeline (250 feet on either side of the existing gas pipeline centerline). Section 2.3 describes PG&E's ongoing baseline O&M activities, work methods, and techniques. This section also provides a description of the work area limits, equipment used, and activity frequency, with a schedule of O&M activities. Section 2.4 describes the environmental screening process and related measures that PG&E will continue to implement for its O&M activities (as described in this EIR) to avoid or minimize the potential for adverse effects to the environment across the resource spectrum. In addition, Section 2.5 provides PG&E's applicable measures, including best management practices (BMPs), standard practices, and applicant-proposed measures (APMs), as applicable to each resource area, to the same end. PG&E will continue to implement the applicable measures for O&M activities as part of PG&E's standard practice. Finally, Section 2.6 provides references cited in this chapter.

2.1 Overview

2.1.1 Overview and Location

PG&E operates an extensive system of interconnected natural gas pipelines within the Mojave Desert region of San Bernardino and Kern Counties. The existing pipeline system consists of high-pressure transmission pipelines, distribution pipelines, and associated pipelines that transport natural gas throughout California. The boundary of the natural gas transmission system in the Mojave Desert region is generally located from the City of Tehachapi, east to the California border approximately 15 miles southeast of Needles, and from the City of Ridgecrest, south to the City of Victorville. In this area, natural gas delivery serves commercial, military, industrial, electric generation, and residential customers almost exclusively. PG&E's O&M activities involve approximately 645 miles of transmission pipelines and associated facilities. The western extent of the study area is located southwest of the City of Mojave, and the eastern terminus of the study area is located adjacent to the Colorado River, approximately 15 miles southeast of the City of Needles, California, in San Bernardino and Kern Counties, California (refer to Figure 2-1, PG&E Facility Overview Map).

PG&E's existing pipeline system in the Mojave Desert region has been in place for more than 70 years, and O&M activities have been conducted since the pipeline system was installed. Since 2001, following approval of the U.S. Fish and Wildlife Service (USFWS) Biological Opinion, PG&E has gathered data by acreage regarding temporary and permanent disturbance to the covered species resulting from the ongoing O&M activities. In 2011 the California legislature signed into law the Natural Gas Pipeline Safety Act of 2011, Senate Bill (SB) 705, and in 2012 the California Public Utilities Commission amended the scope of its Pipeline Safety Rulemaking, which included compliance with the requirements of California Public Utilities Commission Sections 961 and 963.4. Due to these regulatory changes and PG&E's ongoing emphasis on pipeline safety, the type and number of recorded O&M projects causing ground disturbance in covered species habitats has risen slightly, specifically between 2017 and September 2021.

The type, number, and frequency of PG&E's O&M activities in the study area are described in detail in Section 2.3, Description of O&M Activities and Methods. While the ongoing need and PG&E's obligation to implement O&M activities is constant and not expected to change during the term of the proposed ITP, the precise locations of individual O&M activities in the study area have historically varied and are expected to continue to vary over time, depending on the need for testing, maintenance, repair, and/or emergencies. However, all O&M activities will be carried out within the study area and PG&E has provided CDFW with information detailed below about O&M activities that would be covered under the permits. This includes information about the frequency and duration, as well as the size of the typical footprint, of these ongoing activities as carried out currently by PG&E. The covered species data from 2017 through September 2021 collected by PG&E, along with the information PG&E provided to CDFW regarding past and ongoing O&M

activities in the study area generally, represents the existing environmental setting, or “existing baseline conditions,” for purposes of this EIR. Details regarding PG&E’s ongoing O&M activities as the CEQA environmental baseline are described in Section 2.3.2, O&M Activity Descriptions. Details regarding the environmental baseline for the covered species based on the data collected by PG&E are also described in Section 2.3.2. PG&E is proposing to continue its ongoing O&M activities in a similar way and at a similar frequency as it has from 2017 to September 2021, subject to the permits requested from CDFW. One exception is a large-scale hydrostatic testing and in-line inspection (ILI) project that began in 2018. Because hydrotesting on segments so large is highly unusual, the amount of disturbance resulting between 2018 to 2020 from the hydrostatic testing project is not included in the baseline acreage for existing O&M activities. Note that CDFW and the Bureau of Land Management (BLM) completed environmental review for the PG&E Strength Testing and ILI on Lines 300A/B and Strength Testing on Lines 311/311-1 projects in 2018 (CDFW 2018; BLM 2018).

2.1.2 Incidental Take Permit

Issuance of the requested ITP for Mojave desert tortoise, a threatened and candidate endangered species, and Mohave ground squirrel, a threatened species (14 CCR 670.5[b][4][A]); 14 CCR 670.5[b][6][A]), is the discretionary action that triggered preparation of this EIR. The ITP, if issued, would authorize O&M activity-related incidental take of the covered species subject to certain conditions imposed by CDFW through the exercise of its independent regulatory authority under CESA. PG&E would be obligated under the ITP to implement these conditions to, among other things, minimize and fully mitigate the impacts of the taking authorized by CDFW under the CFGC. The measures imposed by CDFW under CESA would condition how PG&E implements its ongoing O&M activities in the study area where the covered species may be affected. PG&E has requested the CESA ITP from CDFW to complement its federal Biological Opinion issued January 7, 2000. The requested ITP would eliminate the need for PG&E to obtain CESA incidental take authorization from CDFW for individual O&M activities in the future. The measures proposed by PG&E to avoid or substantially lessen the significant or potentially significant impacts to the covered species that may be caused by PG&E’s ongoing O&M activities are discussed in Section 4.4, Biological Resources, of this EIR.

2.1.3 Lake and Streambed Alteration Program

In circumstances where PG&E’s future O&M activities would be subject to CDFW’s regulatory authority under CFGC Section 1600 et seq, PG&E would submit pre-activity notification to CDFW. If CDFW determines that the activity may substantially adversely affect fish and wildlife, CDFW will issue one or more LSA Agreements that include reasonable measures necessary to protect the resources subject to this aspect of CDFW’s regulatory authority (generally refer to CFGC Section 1602). PG&E may submit notification on an individual activity-specific basis or, as provided by CFGC Section 1605, may submit notification for O&M activities more broadly and seek a Master LSA Agreement from CDFW. Executing an LSA Agreement or a Master LSA Agreement is a discretionary approval subject to CEQA and, because CDFW and PG&E expect certain ongoing O&M activities to be subject to CDFW’s LSA regulatory authority, the prospect that CDFW will execute one or more agreements and the related environmental effects are addressed in this EIR. The LSA Agreements, if issued, would condition how PG&E implements certain O&M activities in the future when those activities are subject to CDFW’s regulatory authority under its LSA Program. The issuance of a Master LSA would eliminate the need for PG&E to submit required notifications and obtain an LSA Agreement on an individual O&M-activity basis. The measures proposed by PG&E to avoid or substantially lessen the significant or potentially significant impacts to fish and wildlife resources subject to CDFW’s regulatory jurisdiction under its LSA Program that may be caused by PG&E’s ongoing O&M activities are discussed in Section 4.4 of this EIR.

2.2 Study Area

PG&E's existing pipeline system includes approximately 645 miles of transmission pipeline, distribution pipelines, compressor stations, and associated pipelines that transport natural gas within San Bernardino and Kern Counties (refer to Figure 2-1). The pipelines and related support facilities are located on federal, state, private, and municipal land. Of the approximately 645 miles of transmission pipeline in the study area, approximately 346 miles are located on BLM-managed land; 48 miles are located on military land; less than 1 mile is located on CDFW-managed lands; 3 miles are located on lands managed by the California State Lands Commission; 2 miles are located on USFWS-managed lands; 245 miles are located on private, non-government-owned land; and less than 1 mile is located on land owned by Kern County (refer to Table 2-1 and Figure 2-1). The primary natural gas pipelines in the system are Line 300 A, Line 300 B, Line 311, Line 372, Line 313, and Line 314.

In the Mojave Desert region, natural gas delivery almost exclusively serves commercial, military, industrial, utility electric generation, and residential customers. The pipelines have customer connections, or "taps," that serve these customers and businesses. These customer taps are generally located at valve stations along the pipeline route.

The study area, as analyzed in this EIR, consists of a 500-foot study area buffer along the PG&E gas pipeline (250 feet on either side of the existing gas pipeline centerline) where O&M activities generally occur. This study area represents the location where the O&M activities will continue to occur (refer to Figure 2-2a through Figure 2-2k, Study Area Detail Maps).

The study area for the gas transmission system consists of existing gas pipelines; compressor stations for the pipelines; associated gas transmission and distribution facilities (cathodic protection, valves, related facilities); established access roads and associated telecommunication; and PG&E rights-of-way (ROWs). However, occasionally certain areas located up to 0.25 miles beyond the 500-foot buffer may be used to facilitate ongoing O&M activities, specifically limited to use and maintenance of existing access roads as well as possible staging areas within existing disturbed areas.

In general, routine O&M activities result in short-term temporary disturbance in areas already previously disturbed, such as along existing pipeline ROWs and existing access roads within the 500-foot study area. The O&M activities PG&E has proposed for coverage under the permits do not include large new permanent disturbance areas, as described in Section 2.3.

Table 2-1 provides a summary of the approximate length (broken out by land ownership) and diameter of each transmission pipeline. PG&E's interconnecting natural gas pipeline system in the Mojave Desert region is composed of the pipelines and facilities described in Sections 2.2.1 through 2.2.5. Each gas transmission pipeline, as well as the approximate travel distances required by O&M personnel to conduct O&M activities on each pipeline, is described in the subsections that follow.

2.2.1 Line 300 A and Line 300 B

Line 300 A and Line 300 B are two parallel, high-pressure natural gas pipelines that run from the California-Arizona border to the San Francisco Bay Area. Portions of these pipelines are 34 inches in diameter, and other portions are 36 inches in diameter.

Table 2-1. Study Area - Pipeline Location and Overview

Pipeline	County (Location)	Land Ownership – Occupied Length (Miles)							Pipeline Diameter (Inches)
		BLM	Military	USFWS	CDFW	CSLC	Private/ Other	Total	
Transmission, Distribution Feeder Mains, and Associated Pipelines									
Line 300 A	SBC and KC (eastern portion)	135.6	20.5	0.9	—	1.1	67.3	225.4	34–36
Line 300 B	SBC and KC (eastern portion)	131.1	0.8	1.3	—	—	94.3	227.3	34–36
Line 311	SBC (western portion – begins at Line 300 A at the intersection of SR-58 and U.S. Highway 395 near Kramer Junction)	41.4	1.5	—	0.1	1.1	10.5	54.6	10–12
Line 372	SBC (begins at Line 311 and extends northwest almost to SR-178 near Ridgecrest)	2.9	0.8	—	—	—	—	3.7	10–12
Line 313	SBC (begins at Line 300 A, approximately 2.5 miles east of the community of Daggett [milepost 0] along I-40)	19.6	—	—	—	—	14.9	34.5	8–10
Line 314	SBC (begins at Line 300 A, approximately 2.5 miles west of Barstow [milepost 0]).	5.6	—	—	—	—	38.4	44	8–12
Distribution Feeder Mains and Associated Pipelines	SBC (western portion) and KC (eastern portion) (many branch off Lines 300 A and 300 B located near PG&E’s Topock Compressor Station and the Communities of Ridgecrest, Edwards, Boron, Kramer Junction, and Amboy)	10.09	24.2	0.2	—	1.1	20	55.9	0.75–10
Total		346.3	47.8	2.4	0.1	3.3	245.4	645.4	N/A

Notes: O&M = operation and maintenance; BLM = Bureau of Land Management; USFWS = U.S. Fish and Wildlife Service; CDFW = California Department of Fish and Wildlife; CSLC = California State Lands Commission; SBC = San Bernardino County; KC = Kern County; SR = State Route; I = Interstate; PG&E = Pacific Gas & Electric Company; N/A = not applicable.

The Mojave Desert region includes approximately 226 miles of Lines 300 A and 300 B, located within portions of San Bernardino and Kern Counties. The eastern ends of Lines 300 A and 300 B begin at the Colorado River in San Bernardino County, which is approximately 15 miles southeast of the City of Needles, and pass through Topock Compressor Station. The pipeline routes then proceed west for approximately 170 miles and pass through the communities of Essex and Daggett; the City of Barstow; and PG&E's Hinkley Compressor Station, which receives and moves natural gas west through the pipelines. West of PG&E's Hinkley Compressor Station, the pipelines then continue for approximately 56 miles to the City of Mojave in Kern County, after which they depart the Mojave Desert region and terminate in the San Francisco Bay Area. The portions of Lines 300 A and 300 B in the study area are located on approximately 136 miles and 131 miles, respectively, of BLM-managed lands; 21 miles of military-managed lands; 1 mile of California State Lands Commission-managed lands; and 67 miles of private, non-government-owned lands. Lines 300 A and 300 B receive gas from four interstate pipelines, and the lines interconnect with Southern California Gas Company and Southwest Gas Company facilities.

PG&E expects O&M personnel from the City of Bakersfield or its immediate vicinity to work on the segments of Lines 300 A and 300 B located west of the U.S. Highway 395 and State Route (SR) 58 intersection. Round-trip travel for O&M personnel departing from Bakersfield would range from 120 to 140 miles per day. Depending on the location of individual O&M activities, O&M personnel originating from areas near Ridgecrest and Barstow may also conduct O&M activities on the segments of Lines 300 A and 300 B located west of Barstow. From Barstow, O&M personnel would travel 0 to 160 miles per day to conduct O&M activities on these pipeline segments.

O&M personnel departing from Barstow, Hinkley, Topock, and nearby communities would likely conduct O&M activities on the segments of Lines 300 A and 300 B between Hinkley Compressor Station and Topock Compressor Station. To work on these pipeline segments, O&M personnel would likely travel 0 to 200 miles per day. Travel distances would vary depending on personnel availability, the specific O&M activity, and the closest distance between available O&M personnel and work sites.

2.2.2 Line 311 and Line 372

Lines 311 and 372 are 10- to 12-inch-diameter, high-pressure natural gas pipelines that cross the western portions of San Bernardino County. The pipelines begin at Line 300 A, as Line 311, at the intersection of SR-58 and U.S. Highway 395 near Kramer Junction in San Bernardino County. Line 311 runs north for approximately 24 miles along U.S. Highway 395 and then continues north along Trona Road. Several distribution feeder mains (DFMs) and customer lines originate from Line 311. The pipeline splits at milepost 43, with one section (Line 311) continuing toward the City of Trona and the other section (Line 372) continuing to its endpoint near the City of Ridgecrest in Kern County. Line 311 is located on approximately 41 miles of BLM-managed lands; 2 miles of military-managed lands; less than 0.1 miles of CDFW-managed lands; 1 mile of California State Lands Commission-managed lands; and 11 miles of private, non-government-owned lands. Line 372 is located on approximately 3 miles of BLM-managed lands and less than 1 mile of military-managed lands.

Lines 311 and 372 would likely be serviced by O&M personnel originating from Barstow and Ridgecrest. Depending on the location of the O&M activity, round-trip travel from these cities to work sites would range from 15 to 160 miles per day.

2.2.3 Line 313

Line 313 is an 8- to 10-inch-diameter, high-pressure natural gas pipeline located in San Bernardino County. The pipeline begins at Line 300 A, approximately 2.5 miles east of the community of Daggett (milepost 0) along Interstate 40. Line 313 runs south for approximately 34 miles along Camp Rock Road to its endpoint, which is approximately 8 miles southeast of Lucerne Valley (milepost 34). The pipeline is located on approximately 20 miles of BLM-managed lands and 15 miles of private, non-government-owned lands.

Line 313 would likely be serviced by O&M personnel originating from Barstow. Depending on the location of the O&M activity, round-trip travel from this city to potential work sites along Line 313 would range from 30 to 120 miles per day.

2.2.4 Line 314

Line 314 is a high-pressure natural gas pipeline located in San Bernardino County. Portions of this pipeline are 8 inches, 10 inches, and 12 inches in diameter. The pipeline begins at Line 300 A, approximately 2.5 miles west of Barstow (milepost 0). The pipeline runs south for approximately 27 miles and then runs east for approximately 16 miles to its endpoint, which is approximately 4 miles east of the Town of Apple Valley (milepost 43). The pipeline is located on approximately 6 miles of BLM-managed lands and 38 miles of private lands.

Line 314 would likely be serviced by O&M personnel from Barstow or Hinkley. Depending on the location of the O&M activity, round-trip travel from these cities to work sites along Line 314 would range from 0 to 80 miles per day.

2.2.5 Distribution Feeder Mains and Associated Facilities

PG&E operates several DFMs and associated pipelines that extend the delivery of gas to customers. Many of these lines branch off Lines 300 A and 300 B and are located near PG&E's Topock Compressor Station and the communities of Edwards, Boron, Kramer Junction, and Amboy. An additional DFM is located at the northern end of Line 311 and runs toward Ridgecrest and Trona. These DFMs and associated pipelines deliver gas to a variety of customers, including Edwards Air Force Base, Naval Air Weapons Station China Lake, Trona, and solar facilities. All pipelines in the Mojave Desert have customer taps that serve residents and businesses.

2.3 Description of O&M Activities and Methods

2.3.1 Introduction and Rationale for Baseline

PG&E's annual O&M activities will continue at a similar frequency as they did between 2017 and September 2021 and will result in similar overall levels of disturbance. However, the amount of disturbance will vary each year depending on the type and number of O&M activities scheduled, albeit consistent with ongoing baseline O&M activities. Between 2017 and September 2021, the number of O&M activities conducted per year ranged from a minimum of 34 activities to a maximum of 52 activities. During this time, an average of 14 O&M activities were typically conducted per year. Between 2017 and September 2021, the total temporary and permanent ground disturbance totaled 173 acres, or approximately 43 acres per year. PG&E anticipates that,

on average, approximately 40 acres of temporary disturbance and approximately 3 acres of permanent disturbance will continue to occur annually. This EIR assumes as the baseline condition and worst-case scenario that all of the disturbance (an average of 40 acres of temporary impact and 3 acres of permanent impacts each year) could impact Mojave desert tortoise habitat each year, 16 acres of which could also impact Mohave ground squirrel habitat. Refer to Table 2-2 for estimated potential temporary and permanent impacts on Mojave desert tortoise and Mohave ground squirrel habitat expected with future O&M activities proposed for coverage under the ITP. On occasion, the amount of temporary or permanent disturbance that occurs annually may exceed these estimates (the maximum is up to 150 acres of temporary or permanent impacts in a single year to Mojave desert tortoise habitat, 62 acres of which temporary or permanent impacts could also affect Mohave ground squirrel habitat). The potential for 150 acres of impact in a single year is extremely unlikely, based on 20 years of data during which time the maximum annual impact from O&M activities was 143 acres. However, a maximum of 150 acres of impact in single year from O&M activities was estimated by PG&E as a potential for the hydrotests and ILI inspections that PG&E conducted on 214 miles of the gas transmission system between 2018 and 2020. The estimate turned out to greatly exceed the actual ground disturbance due to hydrotesting activities, which totaled approximately 144 acres of temporary disturbance over that unusual 3-year period. Although large-scale O&M efforts conducted by PG&E are unusual and are not typical of the average annual impacts expected from O&M activities, this EIR assumes that a maximum of 150 acres of impact in a single year may occur one or two times over a 30-year period. Furthermore, PG&E could also have years in which O&M activities and their impacts would be much lower than the stated averages. Overall, PG&E expects that total impacts over the 30-year ITP term would be in line with the baseline ranges described. The disturbance estimates presented in this section and in the following subsection (Section 2.3.2) are based on the typical disturbance areas that are required for existing O&M activities conducted in the study area.

Table 2-2. Estimated Potential Temporary and Permanent Disturbance from Future O&M Activities to Mojave Desert Tortoise and Mohave Ground Squirrel Habitat

	Average Temporary Habitat Loss per Year ^a	Average Permanent Habitat Loss per Year ^a	Average Total Habitat Loss per Year ^a	Temporary Habitat Loss Over 30 Years	Permanent Habitat Loss Over 30 Years	Total Habitat Loss Over 30 Years
Species	Acres					
Mojave desert tortoise	40	3	43	1,200	90	1,290
Mohave ground squirrel	16	3	19	480	90	570
Total Habitat Loss^b	40	3	43^b	1,200	90	1,290

Notes: O&M = operation and maintenance.

^a The per-year acreage is an annual acreage that could vary by year. It could be much lower than 43 acres in a year, but it could be up to 150 acres of impacts to all habitat, which includes Mojave desert tortoise habitat, and up to 62 acres (within the 150 acres) of impacts to Mohave ground squirrel habitat.

^b Total habitat loss numbers are not additive because desert tortoise habitat and Mohave ground squirrel habitat co-occur within the study area. Based on the CDFW's Mohave ground squirrel range map, 41% of the pipeline mileage are co-occur in Mohave ground squirrel and desert tortoise habitat. This proportion was applied to determine the acreage of Mohave ground squirrel habitat that may be disturbed.

The analysis in this EIR relies on three important considerations for determining baseline, which provides context for ongoing O&M activities and how impacts are evaluated under CEQA. These considerations include (1) PG&E's existing environmental screening processes and measures to reduce impacts (refer to Sections 2.4 and 2.5), (2) the dynamic nature of how PG&E's O&M work is conducted, and (3) the urgency of certain utility maintenance obligations. Taken together, these considerations shape baseline conditions in addition to ongoing O&M activities, where PG&E's efforts to avoid and minimize impacts are integral to its work.

First, through its environmental screening process, PG&E is focused on avoiding and minimizing environmental impacts. PG&E's planners and biologists consider environmental resources before conducting work by evaluating federal, state, regional, and local regulations with respect to relevant resource topics. When a sensitive environmental resource is known to be present, PG&E works to avoid and minimize impacts on that resource, whether it be related to aesthetics, air quality, cultural resources, a noise receptor, or any other. PG&E may modify the work activity to use alternative means of access or different equipment, or it may seasonally restrict or delay the work. Similarly, if a sensitive resource is discovered, work may be stopped, modified, or delayed. All of this is a part of PG&E's ongoing O&M activities in the study area.

Second, the schedule for O&M activities varies depending on a number of factors. While different types of equipment or facility components may be inspected regularly (daily, monthly, quarterly, annually, or less frequently), the same equipment, facilities, or components also have variable service lives and require replacement when equipment becomes unserviceable or damaged due to weather, dig-ins, or vandalism. Pipelines tend to have a decades-long service life with infrequent replacement, although subcomponents of those facilities may require more frequent maintenance or replacement on an as-needed basis and not on a set schedule. The timing and frequency of maintenance efforts may also be influenced by efficiency initiatives or new equipment/technology, such as in-line inspection tools. Regulatory developments, such as those that resulted from the Pipeline Safety Act, may also cause changes in PG&E's maintenance focus and the amount of ground disturbance required for O&M activities. PG&E often sets up temporary programs to consolidate and oversee similar types of work, such as system testing, equipment replacements, or upgrades. Furthermore, variation is present across activities and in the approach to conducting work for larger activities, since large activities may employ a mix of construction-related methods to complete an activity safely and efficiently. For example, even a relatively short gas transmission line replacement may involve different approaches to access each work location due to differences in topography or vegetation.

Third, PG&E work activities are driven by regulatory obligations under federal and state law, as well as system safety and reliability requirements. This reality means that work activities are sometimes initiated as a result of environmental factors (i.e., weather, dig-ins) and the resulting effects on the durability and condition of existing equipment. Under these circumstances, it may not be feasible for PG&E to modify its work locations, work equipment, work practices, or construction schedule (including the seasonality of work). The ITP would, in addition to addressing routine O&M activities, provide for such emergency circumstances and enable PG&E to fulfill its regulatory requirements when system reliability and public safety are at risk. Thus, in the context of this CEQA document and the impact analysis in this EIR, the direct and indirect impacts of CDFW's actions in issuing the ITP for PG&E's covered activities would shape the approach to and timing of certain O&M activities, as those activities may impact covered species and their habitats. For the remaining resource topics, PG&E must conduct its activities consistent with the environmental screening process and the avoidance and minimization measures incorporated as part of the ongoing O&M activities (refer to Sections 2.4 and 2.5).

2.3.2 O&M Activity Descriptions

O&M activities proposed for coverage under the requested permits occur along different portions of the existing pipeline system. Specific work and/or activity areas that could occur within the study area include the following:

- Pipelines and all related facilities, including compressor stations and valve lots
- Access roads
- Cathodic protection systems
- Telecommunication facilities

Some O&M activities could result in surface disturbance. The amount of surface disturbance varies for each type of activity. In addition, the creation of temporary staging areas (TSAs) and equipment stockpile and spoil deposition areas may be needed to facilitate the O&M activities proposed for coverage under the permits. The extent of disturbance beyond the 500-foot-wide study area will vary based on the activity and topography, layout, and other factors. Typically, less than 0.5 acres outside of the 500-foot study area is temporarily disturbed. To the extent possible, previously disturbed areas within the activity sites will be designated TSAs, used for temporary staging, equipment stockpile, and spoil deposition areas.

Temporary impacts potentially resulting from O&M activities would be short in duration and are typically associated with surface disturbance or vegetation clearing. Permanent impacts that would be considered longer-term effects to the environment would typically be the result of permanent clearing/loss of habitat from the installation or expansion of structures and facilities. As described in the impact analysis in Chapter 4, Environmental Analysis, PG&E incorporates standard practices, BMPs, and APMs into its O&M activities, and as outlined in Section 4.4, Biological Resources, mitigation measures would be implemented to avoid or substantially lessen potentially significant impacts to the extent feasible. Adequate measures will be incorporated and implemented based on the work methods and techniques used. Furthermore, once issued, the permits will also require additional measures.

Subsections 2.3.2.1 through 2.3.1.25 and Subsection 2.3.3 provide descriptions of PG&E's O&M activities and identify current methods used to repair, maintain, and operate gas pipelines and related facilities. Specifically, descriptions of the methods that PG&E uses for access, staging, clearing, grading, trenching and excavating, crossings, pipeline placement, pipeline marking, and cleanup and restoration during typical O&M activities are provided in Subsections 2.3.3.1 through 2.3.3.10. Note that other methods that do not result in greater impacts than those described in this EIR may be used in the future. The equipment, labor, and extent of surface disturbance provided in these subsections are estimates and vary depending on the nature of the O&M activity, its location, and the available technology. The activities range from those that are performed daily to those that are performed occasionally and for longer durations (i.e., weeks or months). Table 2-3, included at the end of this chapter (following Section 2.6), provides a list of the types and numbers of specific equipment and their expected uses for the O&M activities in the study area; where relevant, indicates the approximate surface disturbance anticipated for the activities; and provides the estimated frequency of the activities.

Dust control for O&M activities and hydrostatic testing in the study area require approximately 2 million to 4.5 million gallons of water per year (an average of 3.3 million gallons per year). Primary water sources for the O&M activities in the study area include well water from PG&E's existing facilities or private landowners in the area.

Detailed descriptions of PG&E's O&M activities proposed for coverage under the permits are provided in the subsections that follow. The activity descriptions also describe the work area limits, equipment used, and the activity frequency and schedule for each activity. Note that for pipeline patrols, pipeline marker maintenance, valve inspections and lubrication, integrity management, and telecommunication site inspections (Subsections 2.3.2.1 through 2.3.2.5), the workers typically use pickup trucks to transport workers and materials and are equipped with tools or instruments appropriate for the given task. These activities are not listed in Table 2-3, because they do not result in surface disturbance.

2.3.2.1 Pipeline Patrols

Activity Description and Work Area Limits

Compliance with federal and state pipeline safety regulations requires periodic aerial and ground patrols of the gas transmission lines. PG&E will conduct patrols of the pipelines and associated facilities on foot and using the vehicles noted below in "Equipment Used" along existing access and pipeline patrol roads.¹ Pipeline patrol crews generally consist of one or two workers. The purpose of the patrols is to observe surface conditions above and adjacent to the pipeline ROW, to conduct leak detection, to ensure that pipeline markers are clearly visible, and to record conditions that might affect safety and operation. Ground patrols are also used to read gas meters. No surface disturbance is associated with pipeline patrol activities.

Equipment Used

Equipment used for pipeline ground patrols usually involves all-terrain vehicles and/or small trucks or SUVs. For aerial patrols, fixed-wing aircraft or helicopters are used.

Activity Frequency and Schedule

Ground pipeline patrols are conducted quarterly to annually. Aerial pipeline patrols are conducted quarterly.

2.3.2.2 Pipeline Marker Maintenance

Activity Description and Work Area Limits

Pipeline marker maintenance consists of the replacement of pipeline markers due to vandalism or weather-related issues. During pipeline marker maintenance, PG&E crews auger a 14-inch-diameter hole 31 inches into the ground, place a pipe post into the hole, and backfill the hole with concrete or other backfill material. A paddle marker is then attached to the pipe. The work area is limited to approximately 50 feet by 20 feet and direct disturbance is approximately 4 square feet.

Equipment Used

Equipment used for pipeline marker maintenance unusually involves a pickup truck, water buffalo tank, and posthole auger.

¹ Existing access roads are for accessing the ROW, and existing patrol roads are located along the pipelines within the ROW.

Activity Frequency and Schedule

Pipeline markers are inspected once per year and are replaced as needed due to weather- or vandalism-related issues.

2.3.2.3 Valve Inspections and Lubrication

Activity Description and Work Area Limits

Valves are located at multiple locations along all pipelines, wherever pressure/flow must be controlled or diverted to another gas line or facility. Valves are often located inside vaults or fenced areas and are accessed by a two- or three-member maintenance crew. Crews lubricate the valves as necessary, using a gun pump to apply either oil or grease. The sites are accessed using existing access roads and pipeline patrol roads.

Equipment Used

Equipment used for valve inspections and lubrication usually includes light trucks to provide access to the valve sites.

Activity Frequency and Schedule

PG&E inspects the valve sites along the pipelines and tests the valves several times per year. No surface disturbance is associated with valve inspections and lubrication activities.

2.3.2.4 Integrity Management

Activity Description and Work Area Limits

PG&E inspects cathodic protection by checking the electric current at various electronic test system (ETS) stations and cathodic test stations (CTSs) along the line and at anode bed sites. Anode beds are part of the cathodic protection system and are usually spaced 0.25 to 10 miles apart along the pipeline. ETS stations and CTS facilities are typically placed between 0.25 miles and 0.5 miles apart along the pipeline. Simple testing instruments are used. Crews conducting integrity management activities typically consist of one or two workers. The sites are accessed using existing access and pipeline patrol roads.

Equipment Used

The sites are accessed with light trucks.

Activity Frequency and Schedule

PG&E inspects cathodic protection every 2 months, or as indicated by the integrity management team. Typical surveys take approximately 10 days to complete and include the length of the pipeline within the region. No surface disturbance is associated with integrity management activities.

2.3.2.5 Telecommunication Site Inspections

Activity Description and Work Area Limits

Telecommunication sites are used to monitor gas pipeline functions remotely. The sites are accessed via pipeline patrol roads. Fixed-wing aircraft and helicopters may also be used for inspecting sites in remote locations. Telecommunication site inspections typically require one to two workers. The sites are accessed using existing access and pipeline patrol roads.

Equipment Used

The sites are typically accessed with light trucks. Fixed-wing aircraft and helicopters may also be used for inspecting sites in remote locations.

Activity Frequency and Schedule

Telecommunication sites are typically inspected monthly, but inspections may be performed more frequently to maintain the system. No surface disturbance is associated with telecommunication site inspection activities.

2.3.2.6 Road Surface Maintenance

Activity Description and Work Area Limits

Road surface maintenance keep roads in a passable and safe condition. Because all vehicles are required to stay on existing roads, this activity does not result in new surface disturbance and/or alter the road profile. The length of the road that is subject to surface maintenance in any given year varies due to weather and the degree of washouts or damage. A large percentage of this damage is caused by erosion and flash flooding. In some areas streams, including ephemeral drainages and dry washes, cross access roads and patrol roads. Therefore, grading to maintain access roads may occur within or near surface water features and riparian areas. Road surface maintenance typically involves two to four workers or contractors. An average year could require maintenance of approximately 50 miles of patrol roads and 30 miles of access roads.

Equipment Used

Typically, road surface maintenance is accomplished using a motor grader, backhoe, or front loader.

Activity Frequency and Schedule

Road surface maintenance occurs regularly (i.e., yearly and as needed) and typically takes 60 days per year to complete.

2.3.2.7 Right-of-Way and Access Road Repair

Activity Description and Work Area Limits

This activity includes repair work extending beyond the existing roadbed and berm, and results in surface disturbance. Depending on the location, repairs may occur within or near jurisdictional waters. The affected

surface area depends on the nature of the needed repairs and could result in temporary and/or permanent disturbance. ROW and access road repairs typically involve two workers or contractors.

In addition, repair or replacement of existing culverts may be needed after heavy storms. This could include clearing and making functional drain inlets to culverts, culvert repair, and/or replacement. If a culvert is replaced or substantial alterations to drainages are required during maintenance activities, PG&E will obtain the necessary regulated waters permits. Based on historical data, ROW and access road repairs may require less than 0.04 acres of temporary disturbance per year. Dust control during ROW and access road repair would require approximately 158,000 gallons of water per year.

Equipment Used

Typically, this activity involves a motor grader, water truck, backhoe, and/or front loader.

Activity Frequency and Schedule

ROW and access road repair is often required after heavy storms due to erosion. At times, repairs are also needed as a result of damage caused by off-road vehicles. The duration of the repair would vary depending on the type and length of repairs needed.

2.3.2.8 Erosion Control

Activity Description and Work Area Limits

PG&E employs many erosion control techniques to preclude pipeline washout, gully development, and sedimentation of local drainages. Standard erosion control measures could include the creation of diversion channels and terraces to reduce erosion and runoff, installation of ditch plugs in ditches to prevent washout, and implementation of other soil stabilization practices (e.g., jute mats, wood mulching, straw mulch, and other BMPs).

The erosion control technique chosen depends on the situation and the condition of the site. PG&E may use permanent articulating cement ground mat systems (i.e., erosion control or “Ercon” mats) and stone erosion control techniques when other biomechanical methods cannot be used or when repairs are made to existing stone or Ercon mat structures. Ercon mats are used within streambeds to stabilize the stream bottom and reduce erosion above the pipeline. PG&E will use the minimum area necessary to accomplish an erosion control activity if biomechanical methods cannot be used or if repairs to existing stones, gravel, or rocks are needed. In addition, existing riprap structures could require repair or replacement in areas subject to high flow that may expose pipelines. PG&E will minimize vegetation removal or grading to the extent practical when performing erosion control work. PG&E will comply with all required permits for work in waterways. Installation typically begins with preparing the site for the erosion solution. This may involve clearing existing vegetation and minor recontouring in the area of existing erosion. Once prepared, the erosion solution is delivered to the site on a truck and placed in the prepared area. The erosion solution is then installed according to the manufacturer’s specifications. Erosion control measures temporarily disturb between 1,100 and 20,000 square feet and permanently disturb between 20 and 200 square feet.

Equipment Used

Erosion control typically involves a pickup truck for transportation of workers and materials, as well as a backhoe for excavation.

Activity Frequency and Schedule

PG&E installs erosion control devices at zero to three locations per year.

2.3.2.9 Water Diversion Channels

Activity Description and Work Area Limits

Pipeline crossings within water features that have flowing water require the implementation of water diversion techniques to minimize the potential for impacts to water quality and create a dry and safe work area. Because the majority of water features in the study area are ephemeral, work will most likely be conducted when the features are dry and diversion is not necessary. If surface flow is absent or minimal, an open cut will likely be the preferred method. However, Line 314 crosses the Mojave River at three locations where water flow is possible. In the rare event that work needs to occur in a channel when there is perceptible flow, the following methods may be employed:

- Flume crossings – water in the work area is conveyed through a flume (pipe).
- Dam and pump crossings – the water upstream of the work area is temporarily dammed, pumped from the work area, and discharged downstream.

Upon completion of work on the pipeline segment, the water diversion structure is removed and the flow of the water feature is restored to its original state. Water diversion techniques temporarily disturb an approximately 10-foot-long and 20-foot-wide work area.

Equipment Used

This activity includes the use of a motor grader, a backhoe, and a front loader.

Activity Frequency and Schedule

Water diversion, including restoring flow of the water feature to its original state, typically takes 3 to 5 days to complete.

2.3.2.10 Telecommunication Site Maintenance

Activity Description and Work Area Limits

A supervisory control and data acquisition (SCADA) system monitors pipeline functions remotely and transmits pipeline operational information to PG&E's operations offices via PG&E's utility telecommunication system. Maintenance includes checking telecommunication facilities, replacing batteries, conducting minor maintenance, or making adjustments to the facilities or components. A TSA could be required for major maintenance or storm damage repairs. The TSA could be located either next to the site within a temporary

work area or at a distant location (for helicopter transport of workers and materials). Temporary work areas are generally located within PG&E's ROWs or other disturbed areas. Major maintenance or storm damage repairs typically take 1 to 2 days to complete and require two to five workers.

Equipment Used

This activity includes the use of vehicles to access the site. Only hand tools are required for telecommunication site maintenance.

Activity Frequency and Schedule

PG&E performs this activity approximately once per month. In the event of major storm damage, reconstruction of a facility or replacement of a component is required as soon as weather permits.

2.3.2.11 Span Painting/Air-to-Soil Corrosion Protection

Activity Description and Work Area Limits

The painting of spans involves excavation around the air-to-soil transition in areas where the pipeline exits the soil and spans a terrain feature. The excavation is used to expose the pipeline and generally extends approximately 4 feet into the soil. The pipeline coating is then removed from this area and replaced. The exposed pipeline span is then sandblasted and painted. The pipeline may be enclosed in scaffolding and tenting material to protect the pipeline after sandblasting and during the painting process. Span painting and corrosion protection activities typically require six workers. Span painting and corrosion protection activities may require less than 0.1 acres of temporary disturbance per year. This operation is conducted on an as-needed basis. The air-to-soil transition is then backfilled and restored to approximately pre-activity contours and erosion protection materials are installed.

Equipment Used

This process requires an excavator, pickup trucks, painting equipment, and scaffolding.

Activity Frequency and Schedule

This activity typically takes 6 weeks to complete.

2.3.2.12 Below-Grade Pipe and Coating Inspection

Activity Description and Work Area Limits

Cathodic protection surveys could reveal an isolated pipeline segment with low pipe-to-soil electrical potentials that require excavation of a portion of the pipe for visual inspection. Pipe inspections typically require two to four workers and temporarily disturb less than 0.57 acres per year. Dust control during pipe inspections require approximately 32,700 gallons of water per year. Excavations required for pipe inspections typically encompass an approximately 20-foot by 40-foot area within an approximately 50-foot by 200-foot work area. PG&E expects that approximately 10 of these inspections would be required annually.

Equipment Used

This activity typically involves pickup trucks, a flatbed truck/trailer or dump truck with a trailer, a backhoe, a trailer-mounted compressor, barricades, and plastic fencing.

Activity Frequency and Schedule

This activity typically takes 2 to 10 days to complete.

2.3.2.13 Internal Pipeline Inspection

Activity Description and Work Area Limits

Pipelines are inspected aboveground by electronically measuring the integrity of the pipeline coating. Using technology such as magnetic flux leakage, PG&E inspects the pipeline with sensors to measure pipe corrosion, cracks, and indentations. During these procedures, the pipeline remains in operation. If problems are indicated, the pipeline is inspected internally using a pipeline inspection device (i.e., a pipeline inspection gauge, which is often referred to as a “pig”) that is inserted into the pipeline at aboveground pig launcher/receiver facilities, which are typically located in fenced yards. The pig travels throughout the length of the pipeline, employing robotically operated cameras and sensors to assess the condition of the pipeline. Inspection of pipelines by this method is known as “pigging” a pipeline or an in-line inspection. Inspection crews typically consist of one to two workers. Excavation, soil stockpiling, staging, and the use of construction vehicles disturb an approximately 50-foot by 50-foot work area for each inspection; however, this activity is typically conducted within the existing, fenced station. Dust control during pigging activities or in-line inspections would require approximately 1,000 gallons of water per year. Access would be via existing access and pipeline patrol roads.

Once this data is analyzed, the inspection crew conducts a calibration test (i.e., excavates a hole over or alongside the pipeline to allow the line to be examined and to provide room for workers to perform maintenance on the pipeline). A calibration test is conducted at two or three locations along the pipeline to confirm that the results are accurate. The length of the exposed pipeline depends on the extent of the indicated anomalies. Excavations required for calibration tests typically encompass an approximately 20-foot by 40-foot area within an approximately 50-foot by 800-foot work area. If corrosion cannot be repaired, pipeline segment replacement is necessary, which is discussed in further detail in the Pipeline Segment Replacement subsection of this section. Calibration tests typically require two to four workers and temporarily disturb less than 0.25 acres of pipeline ROW per excavation. Dust control during calibration testing would require approximately 263,000 gallons of water per year. PG&E expects that 5 to 10 of these excavations would be required annually.

Equipment Used

This activity typically involves small trucks or SUVs on existing access and pipeline patrol roads, as well as excavators.

Activity Frequency and Schedule

PG&E will conduct an annual internal pipeline inspection. In-line inspections are typically conducted once every 7 years and require 4 weeks of preparation, 24 hours for the inspection, and 2 weeks for demobilization. Calibration tests typically take 5 to 10 days to complete per test. PG&E expects that 5 to 10 of these excavations required for calibration tests would be required annually.

2.3.2.14 Installation of Pig Launcher/Receiver Facilities

Activity Description and Work Area Limits

No permanent pig launcher/receiver facilities are currently installed at Lines 311, 313, and 314. These facilities will be installed within or adjacent to existing fenced facilities when possible; however, existing fenced areas may need to be permanently expanded by approximately 0.69 acres to accommodate the new facilities.

For each installation, a work area measuring approximately 300 feet by 300 feet is required for soil excavation, soil stockpiling, and the use of construction vehicles. Excavation depths range from 3 to 10 feet. An approximately 50-foot by 50-foot TSA could also be required to store equipment. Pig launcher/receiver installations typically require 12 to 15 workers. Dust control during pig launcher/receiver installation would require approximately 635,700 gallons of water per year. PG&E expects four to six of these installations. Maintenance and upgrades to these facilities would occur annually and on an as-needed basis. A typical pig launcher/receiver facility is depicted on Figure 2-3, Typical Layout of Pig Launcher/Receiver Facility, and Figure 2-4, Photograph of Typical Pig Launcher/Receiver Facility.

Equipment Used

Equipment required for installing pig launcher/receiver facilities includes a flatbed truck/trailer or dump truck with a trailer, a backhoe, excavator, a trailer-mounted compressor, a truck-mounted crane, a side boom, a water truck, welding trucks, crew trucks, barricades, and safety fencing.

Activity Frequency and Schedule

Pig launcher/receiver installations typically take 6 to 8 weeks to complete. Over the next 10 years, 12 to 15 new pig launcher/receiver facilities would be installed at Lines 311, 313, and 314.

2.3.2.15 Valve/Pipeline Excavation and Recoating

Activity Description and Work Area Limits

Should a below-grade inspection reveal failing pipeline coating, excavation and recoating of the pipeline segment will be necessary. Excavation and recoating usually requires four to five workers. PG&E expects that the temporarily disturbed area will be less than 0.28 acres. Pipeline excavations require approximately 50-foot by 200-foot work areas, and valve excavations require approximately 40-foot by 40-foot work areas. Excavation depths range from 3 to 10 feet. Dust control during valve/pipeline excavation and recoating would require approximately 349,200 gallons of water per year.

Equipment Used

In addition to pickup trucks, this activity typically involves a flatbed truck/trailer or dump truck with a trailer, a backhoe, an excavator, a trailer-mounted compressor, a portable sandblaster, a truck-mounted crane, a water truck, barricades, and safety fencing.

Activity Frequency and Schedule

On average, valve excavation and recoating can be completed in 2 to 4 weeks; however, the time required to complete this activity will depend on the length of the pipeline that needs repair. It is expected that 0 to 25 of these excavations would be required annually.

2.3.2.16 Installation of Magnesium Anodes

Activity Description and Work Area Limits

Cathodic protection surveys could reveal an isolated pipeline segment with low pipe-to-soil electrical potentials that will require excavation and installation of magnesium anodes at the same depth as the pipeline to mitigate the potential for corrosion. Installation of magnesium anodes typically requires three workers. Each installation requires one approximately 20-foot by 100-foot work area and could temporarily disturb less than 0.01 acres. The permanent disturbance associated with each installation includes an approximately 5-foot by 5-foot area (less than 0.001 acres). Dust control during magnesium anode installation would require approximately 4,200 gallons of water per year.

Equipment Used

In addition to pickup trucks with equipment specific to the task, this activity involves a flatbed truck/trailer or dump truck with a trailer, a water truck, and a backhoe.

Activity Frequency and Schedule

Installation of magnesium anodes typically takes 1 to 3 days. PG&E expects that 0 to 10 installations of magnesium anodes would be necessary each year.

2.3.2.17 Installation of Deep-Well Anodes/Thermoelectric Generators

Activity Description and Work Area Limits

Cathodic protection surveys could reveal a pipeline segment with low pipe-to-soil electrical potentials that will require the installation of deep-well anodes to mitigate the potential for corrosion. Deep-well anode beds typically have an approximately 20-year life span and are abandoned in place when no longer in use, pursuant to local environmental health department regulations. Installation of deep-well anode beds involves drilling deep ground wells and installing zinc or magnesium bars, platinum anode rods, or ground mats. PG&E uses this installation method where pipelines are exposed to large amounts of induced alternating current, typically from adjacent high-voltage electric transmission lines or where soil conditions dictate. Deep-well anodes are installed 200 to 600 feet below the surface. If a deep-well anode requires permanent, aboveground equipment to generate electricity, a photovoltaic or natural gas-powered thermoelectric generator (TEG) will be installed,

requiring an area surrounded by a 6- to 7-foot-tall fence, measuring approximately 30 feet by 60 feet, and with a permanent footprint of less than 0.01 acres. Based on historical data, the installation of deep-well anodes may require less than 0.32 acres of temporary disturbance per year. If an existing electrical circuit is available nearby, no fencing is required, because the electrical connection is underground.

In addition to a three-person drilling crew, installation typically requires four to five workers and temporarily disturbs less than 0.11 acres of pipeline ROW for deep-well anode installation and 0.06 acres for TEG installation. Each anode installation requires one approximately 20-foot by 100-foot work area and permanently disturbs, at minimum, an approximately 5-foot by 5-foot work area. Anode installations requiring the implementation of TEGs permanently disturb less than 0.01 acres. Dust control during the installation of deep-well anodes and TEGs would require approximately 28,400 gallons of water per year.

Equipment Used

Installation requires a truck-mounted drilling rig, a water truck, and pickup trucks with equipment specific to the task.

Activity Frequency and Schedule

Installation typically takes 2 to 4 weeks to complete. PG&E expects that zero to six deep-well anodes and zero to five TEGs would be installed annually.

2.3.2.18 Installation of Flex Anodes

Activity Description and Work Area Limits

Flex anodes are cathodic protection devices that are installed by trenching next to the pipeline and installing a cathodic lead anode wire over the length of the pipeline that needs cathodic protection. Flex anodes could be installed parallel to the pipeline from several thousand feet to several miles. They are typically buried to a depth of 4 to 8 feet using a narrow blade. The number of workers vary depending on the length of the pipeline needing cathodic protection. The installation of flex anodes typically requires two to four workers. Flex anode installations would be conducted within an approximately 10-foot-wide work area along the length of the pipeline. The excavations required to install each flex anode would be conducted within an approximately 20-foot by 20-foot work area. The area disturbed by this activity varies, but typically less than 0.02 acres would be temporarily disturbed. Dust control during the installation of flex anodes would require approximately 2,700 gallons of water per year.

Equipment Used

A trencher and trailer, as well as several utility trucks, are required to install flex anodes.

Activity Frequency and Schedule

This type of maintenance is likely to be needed less than once per year. Each flex anode installation can be conducted in approximately 4 weeks; however, the construction schedule will vary depending on the length of the pipeline needing cathodic protection.

2.3.2.19 Installation or Replacement of Horizontal Anode Beds

Activity Description and Work Area Limits

Should existing shallow-depth cathodic protection units prove incapable of maintaining desirable pipe-to-soil electrical potentials over a long pipeline segment, horizontal anodes will be installed. Horizontal anodes parallel the pipeline at 400 to 1,000 feet from the ROW centerline and are installed at approximately the same depth as the pipeline. Typically, horizontal anode installation requires five workers and temporarily disturbs less than 0.32 acres. Horizontal anode bed installations are conducted within an approximately 20-foot by 20-foot work area. Dust control during horizontal anode bed installation would require approximately 800 gallons of water per year.

Equipment Used

In addition to pickup trucks with equipment specific to the task, this activity involves a welding truck, a flatbed truck/trailer or dump truck with a trailer, a backhoe, a lowboy trailer, a tractor cat-loader, and a water truck.

Activity Frequency and Schedule

Installations take 5 to 7 days and would be needed less than once per year.

2.3.2.20 Electronic Test System Station and Cathodic Test Station Installations

Activity Description and Work Area Limits

ETS stations and CTSs are components of the cathodic protection system. Facilities are installed 0.25 to 0.5 miles apart along pipelines to determine protection system effectiveness by measuring conductivity and to help crews locate the pipe prior to excavation.

The ETS stations consist of two wires (i.e., leads) that are welded to the pipe; the leads are exposed at the surface inside an approximately 4-foot-tall, 4-inch-diameter plastic tube or valve box. Installation entails exposing a 3- to 5-foot-long section of pipe, attaching the leads with a small weld, and recovering the pipe. During ETS station installation, the pipeline remains in operation. Most sites would be accessible from existing access roads. Where an ETS cannot be accessed from an existing road, workers will access it on foot or by use of small trucks. PG&E would repair or install 5 to 50 ETS stations per year. Each installation typically requires one worker and temporarily disturbs less than 0.01 acres. At each installation site, soil excavation, soil stockpiling, and the use of construction vehicles will temporarily disturb an additional work area measuring approximately 50 feet by 50 feet.

CTSs are installed along natural gas transmission pipelines to support pipeline maintenance, specifically cathodic protection of the pipes, which is needed to prevent corrosion and is required pursuant to the Pipeline Safety Improvement Act of 2002. CTS excavations generally measure approximately 10 by 10 feet, and the larger work area for temporary staging of excavated soil and equipment can be approximately 30 feet by 30 feet, which includes the approximately 10-foot by 10-foot excavation area. Each CTS is housed within a 3-inch-diameter orange plastic pole housing and is connected to the pipe using hand tools. CTS excavations are generally backfilled using a backhoe. The CTS remains permanently in place at an above-grade height of approximately 4 feet. To monitor corrosion over time, corrosion coupons will potentially be installed during CTS installation activities. CTS installations typically require up to five construction workers. Dust control during CTS installations would require approximately 800 gallons of water per year.

Equipment Used

Each ETS installation typically requires a pickup truck. Equipment and vehicle support for a CTS installation includes one truck with a trailer (to transport a backhoe), one backhoe, and pickup trucks.

Activity Frequency and Schedule

Each ETS installation typically requires 5 days to complete. CTS installations typically take 1 to 2 days to complete and would be conducted approximately 100 times per year.

2.3.2.21 Valve Replacement/Automation

Activity Description and Work Area Limits

Valves regulate the flow of gas through the pipeline and enable crews to isolate portions of the pipeline, but they occasionally malfunction or wear out. PG&E replaces valves to allow for the passage of inspection devices (e.g., pigs for pigging or in-line inspections). PG&E also replaces faulty valves for operational and public safety reasons. As part of PG&E's ongoing efforts to improve and ensure safety of the existing pipeline system, PG&E would automate approximately 14 existing valves in the study area within the next 8 years, and upgrade approximately 40 other valves where automation may not be possible or required. Enhancing or replacing approximately six of the valves per year could include an expansion of existing facilities to accommodate an aboveground valve, several small cabinets for a SCADA system, and an electric service extension. The valves would generally be 7 to 20 miles apart. Prior to replacing or installing valves, a portion of the gas line would need to be "blown down" (the process by which gas is evacuated to the atmosphere from the affected section of pipe through a blowdown stack). To minimize the amount of gas discharged into the atmosphere, a technique called "cross-compression" is used when feasible. Cross-compression moves gas from the line being worked on to an adjacent pipeline, thereby minimizing the amount of discharged gas. Cross-compression activities typically require the use of an area measuring approximately 1 acre. Excavation activities are not typically necessary to conduct cross-compression operations.

Valve replacement will occur within the existing station facility corridor. If PG&E replaces a small segment of the pipeline during valve placement or automation, then that pipeline segment needs to be hydrostatically tested, which is described in more depth in the following section. Soil excavation, soil stockpiling, and the use of construction vehicles require a temporary work area measuring approximately 150 feet by 150 feet. A TSA measuring approximately 50 feet by 50 feet could also be required to store equipment. An expansion of existing fenced facilities could be necessary to accommodate the automation/replacement, which would result in approximately 0.06 acres of permanent disturbance. The number of workers would vary depending on the number of valves to be replaced or installed. Each valve replacement/automation typically requires 6 to 13 workers.

Equipment Used

Trailer-mounted compressors, welding trucks, pickup trucks, and aboveground hoses and pipes are required for cross-compression. Equipment required for replacing or installing valves typically includes a flatbed truck/trailer or dump truck with a trailer, a backhoe, a water truck, an excavator, a vacuum excavator, welding trucks, a trailer-mounted compressor, a truck-mounted crane, a side boom, a front-end loader, crew trucks, barricades, and safety fencing.

Activity Frequency and Schedule

Each valve replacement/automation typically takes 4 to 5 weeks to complete; however, the construction schedule would vary depending on the number of valves to be replaced or installed. PG&E could replace or automate valves at any time, depending on the weather and operational restrictions related to the need to temporarily shut down the pipeline. PG&E expects that 0 to 10 of these replacements/automations would be required annually.

2.3.2.22 Hydrostatic Testing

Activity Description and Work Area Limits

PG&E will hydrostatically test all pipeline segments for which a documented hydrostatic test does not exist. Hydrostatic testing assesses the pipeline for strength and leaks. PG&E typically uses water as the test medium during hydrostatic testing, but compressed air or compressed nitrogen gas can sometimes be used for testing short segments or small-diameter pipes (i.e., less than 6 inches in diameter). Testing pressure and duration are determined by the pipe size, the pipe specifications, the thickness of the pipe wall, and the elevation. Prefabricated test heads are installed on the section of line to be tested. The section is then filled with water from an available source (e.g., a fire hydrant) or transported to the site by trucks or temporary pipes. Once the pipeline is filled, a hydrostatic pump is used to increase the internal pressure to the designed test pressure, which is typically 1.5 times the system's maximum allowable operating pressure. The amount of water that is used in a hydrostatic test depends on the diameter and length of the pipe being tested.

Upon successful completion of the hydrostatic test, pressure is reduced, and the water is expelled from the pipeline using air compressors and cylindrical foam pigs. PG&E only discharges clean water where possible, and the water is not released under pressure. PG&E will obtain any necessary water quality permits, expel and dispose of test water in a manner consistent with local water quality considerations, and incorporate its water quality APMs when disposing of test water, as discussed further in Section 4.10. PG&E expects that it will be able to discharge water to steel liquid storage tanks and/or sewers. Most, if not all, of the wastewater resulting from hydrostatic testing will be used for dust control. If any of the wastewater cannot be used for dust control due to contamination, it will be sent to Kettleman Hills Hazardous Waste Facility for disposal. Hydrostatic testing would require a minimum of approximately 551,450 gallons and a maximum of 1.5 million gallons of water per year. Dust control during hydrostatic testing would require approximately 18,300 gallons of water per year. Soil excavation, soil stockpiling, and the use of construction equipment at each end of the pipeline would require a temporary work area measuring approximately 20 feet by 50 feet to accommodate work activities. An additional TSA will also be required at each end of the pipeline for material and equipment storage and staging. If a liquid storage tank is used, an approximately 100-foot by 100-foot TSA would be required to store each on-site tank.

Hydrostatic tests are limited to approximately 4-mile-long pipeline segments that require 10 to 20 acres of disturbance per mile. However, the disturbance required for hydrostatic testing is generally less than 10 acres. Based on existing O&M activities, a typical hydrostatic test requires 8 to 10 workers and temporarily disturbs 0.23 to 5.07 acres. Although this disturbance estimate is representative of a typical hydrostatic test, the frequency and length of hydrostatic testing would vary annually.

Equipment Used

Equipment required for hydrostatic testing includes air compressors, a crane, a flatbed truck/trailer, a backhoe, water trucks, an excavator, welding trucks, a pickup truck, a side boom, a track hoe, a generator, a grader, a trencher, crew trucks, a water pump, a bulldozer, and aboveground storage tanks.

Activity Frequency and Schedule

PG&E expects that zero to six hydrostatic tests would be conducted annually over the next 5 years. Based on existing O&M activities, each test takes 6 to 8 weeks to complete. The frequency and length of hydrostatic testing would vary annually.

2.3.2.23 Pipeline Segment Replacement

Activity Description and Work Area Limits

Pipeline segments are replaced when inspections and assessments indicate the pipeline is in need of replacement due to age or corrosion. Additionally, public safety requirements necessitate replacing pipeline segments for various reasons, including the following:

- To accommodate development alongside the pipeline that results in a change of Class Location²
- To increase the depth of the pipeline below the ground surface
- To repair pipeline damage due to a third-party construction “dig-in”
- To repair pipeline damage due to acts of nature

In the case of Class Location changes, PG&E could potentially need to increase the cover depth or replace the pipeline or its segments with stronger pipe to comply with U.S. Department of Transportation and California Public Utilities Commission-mandated safety regulations. As the existing pipeline is removed from service for interconnection to the new line, it would be blown down or gas would be transferred into another line using cross-compression. Any gas condensation will be captured and removed from the existing pipeline and disposed of in compliance with current regulatory requirements. The existing pipeline would either be removed or abandoned in place by filling it with slurry before capping the pipeline. Typically, the crew cuts and caps the pipeline every 1,000 feet, depending on the location. Slurry could be placed into the abandoned pipeline segments if the pipeline needs to be stabilized. In the event that a pipeline is abandoned in place, PG&E will typically place the new section of pipe as close to the abandoned pipeline as possible and modify any existing easements by expanding their widths by up to 50 feet or acquiring new easement rights to accommodate the new section of pipeline.

The length of pipe affected will vary and will depend on the reason for replacement. The minimum length of pipe that will be replaced is approximately 40 feet (i.e., one joint or segment of pipe), although up to 2 miles could be replaced during each replacement effort. Trenching and soil excavation, soil stockpiling, staging, and construction vehicles typically disturb an approximately 100-foot-wide work area, which includes the excavation area. The length of the work area depends on the length of the segment being replaced. A hydrostatic test would also need to be performed on the new pipeline segment. A pipeline segment

² The U.S. Department of Transportation uses the term “Class Location” to define levels of population density along a pipeline based on the number of buildings intended for human occupancy within a fixed distance of the pipeline.

replacement could occur at any time of year, depending on operational restrictions related to the need to temporarily shut down the pipeline. The replacement of a pipeline segment usually requires 11 to 24 workers. The total area temporarily disturbed would be dependent on the length of the pipeline needing replacement, but typically 0.46 to 6.89 acres are temporarily disturbed as a result of this activity. Although this disturbance estimate is representative of a typical pipeline segment replacement activity, the frequency and length of pipeline segment replacement activities would vary annually. Depending on the length of the pipeline segment being repaired, dust control would require a minimum of 44,900 gallons of water per year and a maximum of 1.5 million gallons of water per year.

Equipment Used

In addition to pickup trucks, this activity typically involves a flatbed truck/trailer or dump truck with a trailer, a backhoe, an excavator, a water truck, welding trucks, a trailer-mounted compressor, a truck-mounted crane, a side boom, barricades, and plastic fencing.

Activity Frequency and Schedule

The replacement of a pipeline segment typically takes 1 to 6 months to complete; however, the time required to complete this activity would be dependent on the length of the pipeline needing replacement.

2.3.2.24 High-Pressure Regulator Deactivation

Activity Description and Work Area Limits

High-pressure regulators (HPRs) are valves that reduce the gas pressure in pipelines from transmission pressures to distribution and/or customer feed pressures. HPRs are generally located along gas transmission pipelines in locations where gas service is being supplied to customers. HPR deactivation involves the excavation of an existing HPR and the subsequent removal or replacement of the HPR or its components. HPR deactivation, removal, or repair usually requires four to five workers and less than 0.01 acres of temporary disturbance.

Equipment Used

Equipment varies based on the nature of the activity and may involve pickup trucks, a flatbed truck/trailer or dump truck with a trailer, a backhoe, a trailer-mounted compressor, a portable sandblaster, a water truck, barricades, and safety fencing.

Activity Frequency and Schedule

The typical time required to complete HPR deactivation activities is approximately 1 week. PG&E expects that 0 to 10 HPR deactivation, removal, and/or replacement activities would be required annually.

2.3.1.25 Emergency Activities

Emergency work is defined in PG&E's Utility Procedure ENV-8003P-013 as "[a] project or activity which includes but is not limited to emergency repairs to facilities necessary to maintain service essential to the public health, safety, or welfare. Emergency repairs include those that require a reasonable amount of planning where the delay of a project or activity results in significant safety or environmental effects. Furthermore, emergency projects include specific actions necessary to prevent or mitigate an emergency."

The activities conducted for emergency work are the same as the activities described in Sections 2.3.2.1 and 2.3.2.2. The amount and extent are the same, with the difference being the timing and urgency of the need to complete the work. Emergency work typically requires immediate repairs to affected facilities as part of a broader PG&E response to the emergency. PG&E's immediate response to an emergency also includes preliminary site assessments to understand the extent of the potential problem and tailor specific actions to limit additional potential threats and minimize potential adverse effects to sensitive resources that may be caused by the response effort overall.

In the event of an emergency, PG&E will coordinate with CDFW to the extent feasible, as it currently does, to minimize adverse effects to fish and wildlife. PG&E will also conduct post-emergency response activity assessments in an emergency activity report submitted to CDFW. The emergency activity report submitted to CDFW will also identify the impacts caused by PG&E's emergency response that will be mitigated in a manner consistent with the permits and the measures and APMs identified in this EIR.

Emergency Repairs

Activity Description and Work Area Limits

Emergency repairs could be necessary in the following scenarios:

- To address pipeline leaks or breaks
- To prevent leaks from occurring in the near future
- To fix access roads severely damaged by storms or earthquakes
- For any other condition that jeopardizes system reliability, property, human health, or the environment

The crew size varies according to the size, urgency, and complexity of the job. PG&E's emergency response activities are further described in the following subsections.

Equipment Used

Hand tools, crew trucks, water trucks, and heavy equipment are typically required. Additional equipment (e.g., dewatering equipment, vacuum trucks, fire-suppression gear, and large earthmoving equipment) could be required for certain ongoing activities.

³ This definition is consistent with the CEQA Guidelines' definition of emergency projects, as stated in Title 14, Section 15269 of the California Code of Regulations.

Activity Frequency and Schedule

Emergency response activities could occur throughout the year. The time required for these activities varies with each situation.

Fire Response

Activity Description and Work Area Limits

Fires could threaten aboveground structures, including pipelines and facilities. They could also damage the protective coating of the pipeline and cause substantial damage to facilities, resulting in the loss of facility use or possible rupture of the gas pipeline. When these situations arise, crews could be required to create firebreaks or fire roads in an effort to stop the fire or to minimize the resulting damage. Actual fire-related activities and the size of the crew will be dependent on the local fire department allowing the work to be performed when conditions are safe. PG&E's Utility Standard TD-1464S implements fire safety measures and protocols for all worksites to address wildfire risk. This Utility Standard establishes that local fire agencies will conduct the necessary response in the event of a fire.

Equipment Used

Equipment used during this activity will be dependent on the fire; however, the activity typically includes the use of fire trucks.

Activity Frequency and Schedule

These activities would be conducted on an as-needed basis and could be performed at the request of local fire departments.

Soil Stabilization

Activity Description and Work Area Limits

Saturation of soils and/or erosion could result in unstable slopes, landslides, and other conditions that may threaten pipelines and facilities. When these emergency situations arise, crews are required to stabilize the surrounding areas immediately. An immediate response is particularly important when pipeline pressure needs to be reduced or shut off. During these response actions, the slopes are often stabilized temporarily until long-term solutions can be planned and implemented. In these situations, the crew size is dependent on the urgency and complexity of each situation.

Equipment Used

Typically, large earthmoving equipment is necessary for this activity; however, the amount of equipment is dependent on the urgency and complexity of each situation.

Activity Frequency and Schedule

The schedule for this activity is dependent on the complexity of the situation.

2.3.3 O&M Methods

Descriptions of the methods that PG&E uses during typical O&M activities described in Subsections 2.3.2.1 through 2.3.2.25 are provided in the following subsections. PG&E must abide by its established environmental screening process (refer to Section 2.4, PG&E Environmental Screening Process), incorporate all relevant avoidance and minimization measures as outlined in Section 2.5, Applicable Measures, and all other measures outlined in this EIR, and in all permits issued when carrying out its ongoing O&M activities.

2.3.3.1 Access

PG&E accesses the pipeline ROWs and related facilities using existing public and private roads and PG&E-maintained pipeline patrol roads. PG&E-maintained pipeline patrol roads are approximately 12 feet wide. No new permanent roads will be constructed as part of various O&M activities proposed for coverage under the requested permits. However, road surface maintenance and access road repair will continue to occur as part of ongoing O&M activities to keep roads in a passable and safe condition, as described in Section 2.3.2. Temporary access roads may be constructed to connect O&M work areas to existing pipeline patrol roads or provide access for the public around PG&E work areas that may affect public access. These temporary roads will be restored after construction and the impacts associated with the temporary access roads are accounted for in the work activity disturbance.

2.3.3.2 Temporary Staging Areas

A TSA is required for some activities, such as pipeline replacement. PG&E will determine the location of the proposed TSAs during the environmental screening process described in Section 2.4 and will site the TSAs to avoid and minimize impacts on sensitive resources. Through incorporation of APMs (refer to Section 2.5) into PG&E's O&M activities and implementation of mitigation measures, if sensitive resources (e.g., water bodies, wetlands, vegetation communities, or plant or wildlife species) are present, a biologist will demarcate the sensitive resources with flagging or temporary fencing before construction to ensure that workers and equipment avoid the sensitive resource. Specific to traveling to and from TSAs, O&M personnel may be required to travel between 30 and 200 miles per day, depending on the O&M activity and where O&M crews depart from. However, work crews typically travel less than 75 miles to and from TSAs and work areas each day.

PG&E typically uses larger trucks to transport pipes and equipment, such as tracked vehicles (i.e., vehicles that run on continuous tracks instead of wheels). Crews park, store, and stage construction equipment in these designated areas. As part of PG&E's standard practices, TSAs would be restored to approximate pre-activity grade at the completion of the activity. The sizes of the TSAs are discussed in Section 2.3.2.

2.3.3.3 Clearing

PG&E clears only the amount of vegetation that is required to complete the maintenance activity safely at work locations and, where possible, generally uses a "drive and crush" approach within a work area to conduct O&M activities proposed for coverage under the permits. PG&E does not perform clearing activities along the pipeline ROW unless work is being performed on the pipeline. When drive and crush over vegetation is not possible, brush clearing is conducted to remove vegetation, but the root system is left in place. In the more limited instances when clearing is necessary, such clearing conforms to permits issued by regulatory and land management agencies and/or agreements with the landowner (when the activity is on private property). After

staking the work area, maintenance personnel would remove trees and brush (i.e., clear and grub obstacles, such as rocks or tree stumps, by mechanical means) within the construction ROW to the extent necessary to allow safe and efficient use of construction equipment. PG&E also clears vegetation as a form of wildfire vegetation management. Clearing for wildfire vegetation management occurs once per year and includes clearing approximately 5 feet of vegetation around aboveground facilities. To establish adequate distance between cleared vegetation and O&M activities, PG&E would develop windrows or stockpile brush. At the end of construction, the cleared vegetation would be redistributed over the disturbed work area. Depending on the location, vegetation clearing may occur within or near jurisdictional waters.

2.3.3.4 Grading

PG&E limits grading to the area necessary to ensure the safe movement of construction equipment in the ROW and designs its activities that involve grading to minimize impacts on natural drainage and slope stability.

PG&E must sometimes temporarily install prefabricated bridges or culverts in the ROW or in access roads to ensure safe access and to reduce environmental impacts in accordance with federal and state regulations. If a bridge is needed for only a short duration, then a portable bridge is assembled on site and secured with a crane to span the crossing. If a longer-term crossing is required, a culvert may be installed after PG&E obtains all the appropriate permits from the regulatory agencies.

During the grading phase, PG&E segregates topsoil from subsoil and windrows the topsoil within the designated work site. During periods of rain, PG&E will cover soil piles, consistent with applicable stormwater permits. The soil is typically covered with plastic sheeting and secured with gravel bags or other weights no more than 10 feet apart to minimize the potential for erosion. Surface rocks, where present and useful for reclamation, are set aside with the topsoil windrow. If not reclaimed, the rocks are taken to a landfill. PG&E will make every attempt to cover the pipeline by placing the subsoil over the pipe first, and then spreading the preserved topsoil evenly over the graded area.

2.3.3.5 Trenching and Excavating

The process of excavating the pipeline trench varies according to location, soil type, and terrain. PG&E conducts trenching and excavating in accordance with California Occupational Safety and Health Administration requirements for employee and public safety. Self-propelled trenching machines or backhoes are used for trench excavation on moderate terrain. Prior to excavating and trenching, PG&E may conduct exploratory excavations (i.e., potholing) to verify the locations of existing underground facilities. Trenches that cross waterways are excavated using a backhoe, dragline, or clamshell. PG&E schedules trenching when the streams are dry and when no significant rain is forecast for the area 48 hours prior to excavation. If water is present at the time of excavation, a tunneling method, such as jack and bore or horizontal directional drilling (HDD), is used. If workers encounter rock or rocky formations, tractor-mounted mechanical rippers are used to expedite excavation. In areas where mechanical rippers are not practical or sufficient, rock trenching equipment may be employed.

The width and depth of the trench depends on the diameter of the pipe, the soil type, the terrain, and minimum depth requirements. Typically, the trench is 12 inches wider than the diameter of the pipe. Trench depths are generally 3 to 10 feet deep but vary depending on the depth of the pipeline and on substrate conditions. The trench must be deep enough to achieve adequate soil cover over the pipe. The following

measurements are the minimum amounts/depths of soil applied (i.e., soil cover) over the pipeline for O&M activities in the study area:

- Uncultivated areas: 2.5 to 3 feet
- Cultivated areas: 3 to 6 feet
- Rocky areas: 1.5 to 2 feet

In areas where it is necessary to trench through topsoil and subsoil, a two-pass trenching process is used. The first pass removes topsoil, and the second pass removes subsoil. Removed soils (i.e., “spoil”) from each excavation are stored in separate rows. This technique allows proper soil-profile restoration after backfilling. Windrows contain gaps at appropriate locations to prevent stormwater runoff from ponding. Bank stabilization methods depend on site-specific conditions, but work materials and methods are implemented in accordance with regulations and permits acquired pursuant to California Fish and Game Code Section 1600, Clean Water Act Sections 404 and 401, and/or the Porter-Cologne Water Quality Control Act.

PG&E field crews will implement other measures as needed to provide erosion control and to prevent construction runoff from entering the streams. In cultivated and improved areas, and areas with thin layers of topsoil, it is sometimes necessary to remove and stockpile topsoil within the construction ROW until the trench is backfilled. This effort could last up to 3 weeks. The stockpiled topsoil is then distributed evenly across the disturbed portion of the ROW during cleanup. Measures are further described in the applicable resource sections within Chapter 4, and APMs are provided in Section 2.5.

PG&E crews will clear the trench of loose rocks and, when necessary, provide imported material or other suitable bedding material as a cushion for the pipe. Backhoes are used to clean the trench after ripping, or in extremely rare circumstances, blasting is implemented after other alternatives (e.g., rerouting) are exhausted. PG&E will minimize the length of exposed trench to the extent possible and provide access across the trench at convenient intervals for public safety.

2.3.3.6 Crossings of Waterways, Railroads, and Major Roadways

Boring and Open Trenching

Boring and open trenching are typical construction methods for crossings. PG&E typically uses boring when crossing active waterways, railroads, and major roadways. The three most common boring methods are jack and bore, HDD (horizontal boring or slick boring), and microtunneling. The chosen method is based on the crossing type, soil type, terrain, and type of facility being installed. Open trenching is a fourth option, but PG&E will avoid this unless a waterway is very small or seasonal. The four methods are described in the following subsections.

Jack and Bore

PG&E often uses this boring method (also referred to as “dry bore”) to cross all federal and state highways and railroads, as well as areas where open cuts are prohibited. The jack-and-bore technique involves excavating pits on both sides of a water, railroad, or road feature by using a boring machine to drill a horizontal hole under the crossing and inserting steel casing pipe sections under the feature being crossed. The entry pit typically ranges from 10 to 20 feet in width, 30 to 45 feet in length, and 10 to 20 feet in depth. The dimensions of the receiving pit on the opposite side of the crossing are significantly smaller. The actual boring site dimensions could be smaller and will be determined on a case-by-case basis depending on

factors such as pipe diameter, crossing length, and the type of facility being crossed. Crews excavate each side of the crossing to accommodate a boring auger. The displaced fill is either stockpiled or removed, depending on whether the area will be permanently affected or if PG&E will revegetate it following a temporary disturbance. Stockpiling is done within the ROW. The bore could be for a pipe ranging from 2 to 24 inches in diameter. Sacrificial pipe that is the same size as the pipe being installed is typically used as a sleeve for the boring auger. This sleeve is pushed under the crossing as the auger drills through the soil. The permanent gas pipe is then pushed through and attached to the sacrificial pipe. The pipe is cut in short lengths to accommodate the limited excavation area, then it is welded to the inserted piece ahead of it and jacked into place. The average size of the excavation or trenching is approximately 10 feet wide by 40 feet long. PG&E will use the same method if casing pipe is necessary. The casing pipe is sized larger than the carrier pipe, and it is installed as a sleeve for the boring auger. The gas pipe is then installed through the casing. Cased crossings have vent pipes that extend above ground, have cathodic protection, and are appropriately marked.

Unlike HDD, the jack-and-bore technique does not require the use of drilling lubricant. As a result, potential impacts associated with this boring technique are limited to erosion and sedimentation associated with the pits on the sides of the crossing. These impacts are minimized with the incorporation of BMPs and APMs designed to protect water quality, as discussed further in Section 2.5 and Section 4.10, Hydrology and Water Quality.

Horizontal Directional Drilling

Longer distances, typically measuring more than 120 feet, can be drilled using this method rather than the jack-and-bore method. HDD, which PG&E most often uses to cross large waterways, is the preferred method for conduit installation to minimize surface disturbance. The only excavation required is a “mud pit,” which measures approximately 6 feet wide by 6 feet long by 3 feet deep. A hydrostatic pre-test of the pipe section is performed to ensure its integrity prior to pulling. The tunnel is drilled from surface to surface, and a registered engineer determines the pipe’s maximum angle of deflection. Workers set up a drilling machine on one side of the crossing at the appropriate location. The auger drills at a predetermined angle from the surface elevation toward the crossing; the angle is prescribed to attain the correct depth below the feature being crossed. During drilling, a mud solution—typically bentonite—is pumped into the tunnel along with other additives to maintain the tunnel’s shape and integrity. Crews use non-toxic additives when drilling under streams, and typically the U.S. Army Corps of Engineers or CDFW requires a “frac-out” (or drilling fluid fracture) plan as a standard permit condition. The mud solution reduces friction during installation of the pipeline. The drilling machine pulls the pipeline through the tunnel. The mud solution is pumped into a truck as the pipeline displaces it. Once the pipeline is installed, both ends are excavated and cut off at the appropriate depth to match the rest of the pipeline. PG&E will contain the soil removed during drilling within the mud solution and test it for contaminants prior to hauling the solution off site and disposing of it at landfills that accept such material.

Contingency Planning for Frac-Outs

Drilling fluid fractures—commonly called “frac-outs”—occur when the pressure of the drilling lubricant escalates, fractures the soil, and allows the drilling fluids to escape the bore. Drilling lubricant generally consists of a variable mixture of water and bentonite that depends on existing soil conditions. PG&E crews will design and direct the drilling operation to minimize the risk of spills of all types. As described in Section 2.5

and Section 4.10, PG&E will prepare a site-specific frac-out plan that outlines standard precautionary measures to control and clean up the drilling lubricant. The frac-out plan will include the following:

- A point-of-contact list in the event that a frac-out or spill occurs
- Guidance for when drilling should occur (e.g., performing drilling during daylight hours so that the loss of bentonite or machine pressure can be visually identified)
- A list of tools and equipment required on site to clean up and remove the drilling fluid

The point-of-contact list will also outline the notification procedure for informing all agencies with jurisdiction over the waterway about the nature of the incident. In addition to permit conditions and frac-out plan guidance, activities that require contingency planning for frac-outs typically require the preparation and implementation of a stormwater pollution prevention plan that contains detailed methods and measures to avoid spills.

Horizontal Boring or Slick Boring

Horizontal boring or slick boring is a technique that uses the traditional auger method but installs the pipe directly rather than within a casing. A bore pit is excavated on both sides of the water features, railroads, and roads. The entry pit typically ranges from 10 to 20 feet in width, 30 to 45 feet in length, and 10 to 20 feet in depth. The dimensions of the receiving pit on the opposite side of the crossing are significantly smaller. The actual boring site dimensions could be smaller and will be determined on a case-by-case basis depending on factors such as pipe diameter, crossing length, and the type of facility being crossed. Once the pits have been completed, the entry and exit points are surveyed, and the boring machine and pipe are placed into the bore pit. The section of the carrier pipe is used to support the augers and to create the hole for the crossing. Once the hole is created, the augers are removed and the permanent carrier pipe is pushed in while pushing out the sacrificial carrier (i.e., the pipe used with the augers). The pipe is then aligned and leveled according to the survey points, and boring continues until the pipe breaks through into the receiving pit. Because pits are excavated on both sides of the crossing, the horizontal or slick boring technique has the same potential for effects to water quality as the jack-and-bore technique.

Microtunneling

This is PG&E's preferred method for stream crossings. PG&E also often uses microtunneling in extremely wet conditions where it is necessary to control the amount of soil being removed as the boring head progresses. Each side of the crossing is excavated to accommodate the boring equipment (i.e., a jetting head and suction equipment). Microtunnel excavation can be a trench as small as 10 feet by 40 feet or as large as 50 feet by 50 feet, depending on the required depth. A jetting head containing multiple high-pressure water jets is attached to the pipe being installed. Crews use plumbed or tanked water, not water from adjacent streams or rivers. Water forced through the jets dislodges the soil as the head is pushed, and the pipe is installed behind it. Suction equipment controls the amount of soil being removed to accommodate the forward progress of the jetting head and pipeline. Only the soil displaced by the pipeline is removed. PG&E crews will capture water used during this process in Baker Tanks and dispose of it according to federal and state water quality regulations.

Open-Trench Waterway Crossings

Open trenching is a technique used to cross water bodies that involves excavating directly within the bed and bank of a water feature to create a trench for installing new pipe or to expose existing pipelines for inspection, repair, replacement, or relocation. PG&E rarely uses an open-trench waterway crossing and does so only when

a waterway is very small or seasonal. If PG&E uses the open-trench technique for river or stream crossings, a trench is opened in the bed using backhoes, backhoes on barges, clamshells, or draglines, depending on the flow characteristics. Flow is maintained at water crossings during construction using bypass piping and temporary cofferdams. At large rivers, spoil removed from the trench is stockpiled out of the water within designated work sites, but not where it could re-enter surface waters. The pipeline is placed at least 6 feet below scour depth. The typical trench is approximately 6 feet deep and 3 to 4 feet wide (i.e., 4 feet wide where shoring is required). Side walls are installed to keep the trench open during construction. A plug of unexcavated soil is left at each bank of the stream or river crossing to preserve the integrity of the bank. PG&E crews will not remove these plugs until necessary for installation of the pipe. The entire length of pipe for the crossing is assembled as a unit, then it is tested and placed in the trench. After installation, crews will backfill the trench and the bank, stabilize the soil through compaction, and restore the area to approximate pre-construction conditions. PG&E's bank stabilization methods depend on site-specific conditions, but work materials and methods are consistent and in accordance with federal and state water quality regulations.

For safe construction, PG&E will conduct hydrologic evaluations for any major planned crossings during the appropriate time of year, as required by federal and state regulatory agencies.

Geotechnical Investigations

The purpose of a geotechnical investigation is to provide soil and rock information for foundation design and recommendations for civil engineering design. The types of O&M activities that may require geotechnical investigation include, but are not limited to, investigations of pipeline fault crossings, foundations, and footings for pipeline supports and thrust blocks. Geotechnical investigations could occur within a jurisdictional water feature to facilitate the design of a pipeline installation under the water feature. Soil samples collected from borings for geotechnical investigations are removed and analyzed for chemical and physical properties of the soils and rock. After the boring is completed, the bore hole is backfilled per federal, state, and local requirements. Geotechnical investigation disturbance is usually temporary because soil is returned to the boring site and the ground surface is restored to pre-construction conditions. The total area required to complete geotechnical investigations is typically approximately 15 feet wide by 40 feet long.

2.3.3.7 Crossing Types

Conventional construction methods are often modified to accommodate the specific constraints associated with the types of crossings described in the following paragraphs.

River, Stream, and Backwater Crossings

River crossing methods vary according to specific river characteristics, such as width, depth, flow, and riverbed geology. Pipelines crossing major streams and rivers are coated with concrete prior to installation to provide negative buoyancy and protection from erosion. PG&E will install temporary low-water vehicle crossings for construction traffic only if an existing crossing, such as a bridge, is not available in the vicinity. Temporary vehicle crossings consist of culvert bridges, Flexifloats, portable bridges, fords, timber bridges, geotextile fabric, mats, pallets, or gravel. These crossings prevent direct contact between surface waters and vehicles and construction equipment, which protects surface water quality during O&M activities. Crossings are removed at the completion of O&M activities.

Fault Crossings

Where geologic studies suggest a high potential for ground rupture, PG&E will design the fault crossing to avoid overstressing the pipe in the event of differential movement. Designs of fault crossings vary, depending on the type of fault and the likelihood, amount, and potential consequences of expected fault displacement. To address the potential for fault displacement, the pipeline trench is widened and deepened to accommodate the anticipated fault displacements. The pipeline in the fault zone is completely suspended in granular bedding material to minimize the resistance of the trench backfill and avoid displacement of the pipe. This method allows the pipe to remain fixed relative to the movement of the trench as fault displacement takes place.

Road, Railroad, and Utility Crossings

PG&E uses the open-trench method when crossing roads with light traffic and where local authorities or owners of private roads permit this crossing method. As is currently done for existing O&M activities, PG&E provides a temporary road detour to the shoulder of the road or a construction bridge consisting of plating for trenched thoroughfares. Boring is generally the method used to cross under underground utilities. Jack and bore is the typical boring method used at railroad crossings.

Aqueduct and Canal Crossings

Site-specific circumstances determine the construction method PG&E uses for crossing aqueducts and canals. In most cases, boring is appropriate. Where required or necessary, crews construct an aerial suspension system for the pipeline.

Culverts

Culvert installation may become necessary during construction for water crossings when bridge installation is not feasible and to avoid disturbance to water features. Culverts are installed by excavating a trench beneath the road surface and placing the culvert at the level of the natural streambed. Backfill material is then tamped down at regular intervals.

2.3.3.8 Pipe Placement

Large trucks transport lengths of pipe, valves, and fittings to the ROW or work area, and PG&E crews unload the materials. In the field, crews typically assemble sections of pipe requiring angle joints using prefabricated elbow sections so that the pipe conforms to the contours of the terrain. The pipe joints are welded, X-rayed, inspected, and field-coated to prevent corrosion. The material used for field coating depends on the location of the pipe.

Work crews use large trucks or track-mounted equipment brought to the activity site by truck to lower the pipeline into the trench. Typically, the old pipe is filled with slurry and abandoned in place or cut and capped. The trench is backfilled with the excavated material. If the excavated material has too much rock to be placed around the pipe, rock-free material is imported and placed around and over the pipe to a depth of approximately 1 foot. Surplus material is used to form an earthen crown over the trench and allow for settling of the backfill. All excavations and trenches are compacted to be in adherence with the specific requirements at each location. The industry standard for compaction in ROWs is a minimum of 85%.

2.3.3.9 Pipeline Marking

PG&E crews will install identifying markers over the centerline of the pipeline. These markers show the general location and direction of the pipeline, identify the owner of the pipeline, and convey emergency information in accordance with applicable regulations. Additional markers (i.e., fence-post-like structures with attached signs) are placed on streambanks—not in waterways—and on roads, fences, public access crossings, and edges of agricultural fields. The markers are installed in alignment with the active pipeline. PG&E may also install aerial markers to provide information and guidance to aerial patrol pilots. If needed, the aerial markers will be attached to the top of paddle markers. Although there is no lighting associated directly with the markers, BLM does require reflective markers in some areas for safety.

2.3.3.10 Cleanup and Restoration

The final phase of pipeline installation involves cleanup and restoration of the ROW to achieve compatibility with pre-existing vegetation conditions, in accordance with standard procedures approved by federal and state regulatory authorities. PG&E will remove construction material and recontour disturbed areas to their pre-activity grade. Depending on the nature of the site and the type of installation that takes place, several tasks could be involved in the cleanup and restoration. For example, placement of a pipeline or other infrastructure in a trench results in surplus soil that cannot be returned to the trench. The surplus soil is normally distributed evenly over the disturbed section of the ROW. If a property owner objects to this approach, the surplus soil is deposited at an approved local dumping site. Restoration of the ROW surface involves smoothing it with motor graders or disc harrows. Restoration may also require stabilizing slopes by recontouring, creating slope breaks or diversion ditches, or using dirt, sandbags, or other materials to stabilize the soil and direct runoff away from disturbed areas. On cultivated or improved lands, measures are taken to remove rocks and leave the ground surface in a condition that is satisfactory to landowners.

2.4 PG&E Environmental Screening Process

As standard practice, PG&E implements an environmental screening process for all O&M activities. PG&E will continue to incorporate standard practices, BMPs, and APMs into its ongoing O&M activities to avoid or minimize, to the extent feasible, the potential for adverse impacts caused by CDFW's issuance of the permits and its broader approval of the whole of the action under CEQA. These feasible measures have been built into the project description as analyzed in this EIR and are an integral part of each ongoing O&M activity or group of activities that will be implemented by PG&E. Where the EIR impact analysis has determined that the standard practices, BMPs, and APMs incorporated into the O&M activities would not avoid or reduce impacts to less than significant levels (refer to Section 4), the EIR identifies additional potentially feasible mitigation measures that, if implemented, would further reduce significant effects. All standard practices, BMPs, and APMs and feasible mitigation measures outlined in this EIR will be integrated into PG&E's screening process and implemented to avoid and substantially lessen significant effects on the environment caused by CDFW issuance of the permits. In addition, all approved ITP conditions, the LSA Agreement conditions, and applicable environmental laws and regulations, including conditions imposed through the exercise of other federal, state, or local agency regulatory authority will be implemented during PG&E's environmental screening process for its ongoing O&M activities.

PG&E employs a large and diverse staff of environmental and regulatory compliance professionals whose primary roles are to ensure that activities are completed in compliance with applicable environmental

resource laws and regulations. This process is followed for all PG&E projects, including O&M activities, although it may be abbreviated in response to an emergency as described above. PG&E environmental staff screens and reviews projects and activities when, at a minimum, natural resources, cultural resources, or land uses could be affected, as well as when permits might be required; in addition, PG&E environmental staff members routinely identify and prescribe standard BMPs that are implemented during PG&E's ongoing O&M activities. Furthermore, PG&E will continue to comply with relevant APMs, incorporate these APMs into its ongoing O&M activities, and implement mitigation measures pursuant to the CDFW permits. When on federal land, including BLM-managed land, PG&E is also subject to measures imposed by federal agencies or otherwise required by federal law, including as required pursuant to the National Environment Policy Act, as well as Conservation Management Actions pursuant to the Desert Renewable Energy Conservation Plan.

Sections 2.4.1 through 2.4.5 describe PG&E environmental staff practices for internally reviewing O&M activities, with the goal of avoiding and minimizing effects on environmental resources as a result of O&M activities. To achieve these goals, PG&E's overall environmental screening processes can be categorized into four phases: O&M activity assessment, environmental screening and review, O&M activity refinement, and initiation of O&M activity.

2.4.1 Phase 1 – O&M Activity Assessment

O&M activities arise out of an extensive multi-year planning process that factors in the age of the facilities, life of the equipment, equipment conditions, wear, outage history, and other considerations. During the first phase, PG&E land planners, subject matter experts, and engineers evaluate a given project and begin developing the project scope and description. The level of detail in the project description varies based on the activity size (e.g., less detailed for small projects and more detailed for large projects) and an initial assessment of the site conditions and constraints, including environmental, and any applicable land use regulations. Typically, a project description includes an evaluation of site access, temporary construction areas, construction footprint, construction schedule, and clearance schedule, with the ultimate goal of avoiding environmental impacts by incorporation of APMs as part of PG&E's standard practice and as described in this EIR; implementation of other measures as required pursuant to the ITP and possibly one or more LSA Agreements, if applicable; and compliance with all applicable federal, state, and local regulations.

The time required for developing the scope and description for each O&M activity or group of activities varies from 1 day for small activities to more than 1 year, with some activities taking 2 years or more for assessment and design because of required field surveys, permits, and environmental documents.

2.4.2 Phase 2 – Environmental Screening and Review

During the second phase, PG&E's staff of land planners, biologists, cultural resource specialists, vegetation management staff, and environmental field specialists conduct initial environmental screening and review of the O&M activities and associated work components. Multiple environmental screening processes are used by the various staff members supporting the O&M activities depending on the type of work. Land agents, land planners, and technical specialists review land rights, APMs, mitigation measures, any additional measures and conditions required by discretionary permits and ministerial approvals, and applicable federal, state, and local regulations.

During the screening process, at a minimum, O&M activities are evaluated by PG&E's environmental team for potential impacts to wetlands, state and federal waters, and protected biological resources. For example, cultural resource specialists review confidential cultural databases and other available information to determine possible presence of significant cultural sites. Where there is a potential for impacts to paleontological resources in areas of moderate and higher paleontological sensitivity, mass excavation into previously undisturbed geological units in these areas would require evaluation by a qualified paleontologist. Specifically, PG&E's internal geographic information system (GIS)-based environmental screening tool includes the following data: vegetative landcover, California Natural Diversity Database species records, areas covered by habitat conservation plans, habitat conservation plan modeled habitat (where applicable), National Wetland Inventory information, known cultural resource locations, high fire-threat districts, areas of known hazardous materials contamination, and public land ownership. PG&E land agents and land planners also verify that the necessary land rights are obtained for both temporary and permanent easements. The environmental permitting process may also begin in this phase. PG&E maintains a comprehensive GIS coverage to evaluate O&M activities and uses this system to evaluate relevant aspects of an O&M activity's scope or description.

Detailed APMs that PG&E will continue to incorporate into each O&M activity as part of the project description and PG&E's standard practice are included in Section 2.5.2.

2.4.3 Phase 3 – O&M Activity Refinement

During the third phase, based on the results of the environmental screening and review of all measures, conditions, and applicable regulations, PG&E staff (land planners, biologists, cultural resource specialists, environmental field specialists, field crews, and other specialists) may refine or modify the O&M activities to ensure further avoidance and/or minimization of impacts.

2.4.4 Phase 4 – Initiation of O&M Activity

The fourth phase is to initiate the O&M activity or group of activities as determined appropriate by the project manager, construction team, and subject matter experts. PG&E staff implements a process to ensure that O&M activities are reviewed for environmental constraints or restrictions and that all required conditions of approval in the permits, and the standard practices, BMPs, and APMs and feasible mitigation measures identified in this EIR, are included, as applicable. PG&E implements its gas transmission Environmental Compliance Management Plan, which outlines strict communication protocols and includes a compliance matrix with copies of all relevant source documents provided to key project staff. In addition to permit conditions, APMs, and any other relevant measures, all work crews are also given specific directions regarding PG&E BMPs and any other applicable practices and requirements.

This screening process, in conjunction with PG&E's annual environmental awareness training and activity-specific tailboard trainings, will ensure that PG&E avoids and minimizes environmental effects caused by O&M activities.

PG&E frequently uses third-party contractors to perform O&M work and is solely responsible for the performance of the work conducted by these contractors. PG&E requires third-party contractors to perform the following actions when applicable:

- Train employees and contractors performing O&M activities on the permit requirements that are applicable to their job duties and work.
- Enter into a new or revised contract with PG&E that contains enforceable provisions committing the third party to comply with provisions of any applicable permits.

Furthermore, PG&E's ITP/LSA Agreement administrator provides an annual web-based training for all PG&E employees and contractors to review the conditions of the ITP and LSA Agreement(s) and the APMs and mitigation measures identified in this EIR to ensure compliance with all measures, permit conditions, and environmental laws and regulations. A log would be generated for all employees and contractors that complete the web-based training.

2.5 Applicable Measures

As part of its standard practice, PG&E will continue to incorporate the following standard practices, BMPs, and APMs into its ongoing O&M activities to avoid minimize the potential for adverse impacts to the extent feasible. These feasible measures have been built into the project description and are an integral part of each O&M activity or group of activities.

PG&E sites O&M activities requiring the expansion of existing and/or the new installation of aboveground or permanent facilities to avoid sensitive resources (refer to Section 2.4, Environmental Screening Process). PG&E will incorporate all applicable BMPs and APMs and other regulatory measures as described in this EIR for each resource topic, as well as meeting the conditions of the requested permits and other existing permits and approvals. Potential impacts to sensitive resources, as well as the measures that PG&E is required to implement to avoid, reduce, or substantially lessen potential impacts, are described in Chapter 4. The BMPs and APMs that PG&E will continue to incorporate as standard practice are provided below, as well as in the applicable sections of Chapter 4.

The impact analysis in this EIR assumes incorporation of all the BMPs and APMs as part of the ongoing O&M activities. However, where other impacts caused by proposed issuance of the permits are identified that are not addressed by these BMPs and APMs, or where the BMPs and APMs are not adequate to avoid or reduce impacts caused by issuance of the permits to less-than-significant levels, the EIR identifies additional potentially feasible mitigation measures, if any, that if implemented would further reduce significant effects. All feasible mitigation measures, BMPs, and APMs will be incorporated into the EIR Mitigation Monitoring and Reporting Program, and PG&E will implement all monitoring and reporting obligations for the BMPs and APMs as detailed in this EIR.

2.5.1 Best Management Practices and Standard Practices

The following resource topic subsections list BMPs that are implemented by PG&E and will continue to be implemented to avoid or minimize potential impacts to resources listed below.

Air Quality

PG&E's Air Quality Program consists of promotion and dissemination of air quality educational materials via training sessions and on job sites as necessary; along with BMPs to avoid and minimize air quality effects, including the following:

- The crew would not allow visible dust to pass beyond the program boundary. The crew would abate dust through the following methods:
 - Applying dust suppressants (e.g., water) to disturbed areas being disturbed, areas that have the potential to be disturbed, and storage stockpiles
 - Limiting vehicle speeds to 15 miles per hour (mph) for off-road travel and posting speed limits
 - Loading haul trucks with a freeboard (i.e., the space between the top of the truck and the load) of 6 inches or greater
 - Covering or applying water to the top of the haul truckload
 - Cleaning up carryout and trackout at least daily
 - Washing vehicles and equipment as necessary and permitted
- Encourage construction workers to carpool to the job site to the extent feasible. The ability to develop an effective carpool program would depend on the proximity of carpool facilities to the area, the geographical commute departure points of construction workers, and the extent to which carpooling would not adversely affect worker arrival time and the construction schedule for O&M activities.
- Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time would 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 that limit their immediate use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The program would 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 would be shut off. Construction foremen would include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings would 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 that are 50 horsepower or larger and manufactured in 2000 or later would be registered under the 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.

Cultural Resources

- Observe all work exclusion zones as indicated by flagging, environmentally sensitive area signage, or depicted on program maps.
- PG&E would limit ground disturbance to the greatest extent feasible.
- PG&E requires that O&M personnel who plan, manage, or conduct work involving ground disturbance complete general awareness training on cultural resources.
- In the event of an unanticipated discovery of prehistoric or historic period materials, PG&E would do the following:
 - Stop work immediately within 100 feet.
 - Contact the designated program inspector and Cultural Resource Specialist immediately.
 - Protect the site from further impacts, including looting, erosion, or other human or natural damage.
 - Record the location of the resource, the circumstances that led to its discovery, and the condition of the resource.

Geology and Soils – Paleontological Resources

- Prior to conducting O&M activities involving excavation, trenching, or boring activities that would extend beyond 2 feet bgs, PG&E would identify paleontologically sensitive areas in the vicinity of the particular O&M activity. Should paleontologically sensitive areas be identified in the vicinity of a particular O&M activity, PG&E would conduct additional analyses, which may include a geologic map review, literature review (including, as available, other paleontological studies for the study area or for the relevant geological formations), agency/institutional records search, and aerial photo review. Additional landownership analysis and consultation with local paleontological experts may also be conducted as part of the analysis, where applicable. All components of the analysis would be summarized in a paleontological resources impact evaluation report (PRIER). The PRIER would include maps depicting sensitive geologic formations, recorded fossil localities, landownership, and/or natural landscape features. The results of the PRIER would be used to determine the need for additional study or impact avoidance and minimization measures.
- For units with a moderate PFYC, screening and protection measures designed to avoid and minimize effects would only be considered if significant fossils are highly likely to be encountered within a location with a PFYC rating of 3 or higher. These screening and protection measures include the following:
 - **Unanticipated Discovery:** If potential paleontological resources are discovered during construction activities, the following procedures would be followed:
 - Stop work immediately within 100 feet.
 - Contact the designated program inspector and Cultural Resources Specialist immediately.
 - Protect the site from further impacts, including looting, erosion, or other human or natural damage.
 - The program Cultural Resources Specialist would arrange for a Paleontological Principal Investigator to evaluate the discovery. If the discovery is determined to be significant, PG&E would implement measures to protect and document the paleontological resource. Such measures may include preservation in place, excavation, documentation, curation, or other appropriate measures. Permission from the landowner must be secured before treating the fossil. Work may not resume within 100 feet of the find until approved by the Paleontological Principal Investigator and Cultural Resources Specialist.

- **Workers' Environmental Awareness Training:** Because moderate- to high-sensitivity formations are present within the study area, PG&E (or the contractor) would provide environmental awareness training on paleontological resources protection for O&M activities requiring excavations that could potentially impact paleontological resources. This training may be administered by the program paleontologist/archaeologist/environmental inspector as a stand-alone training, or it may be included as part of the overall environmental awareness training required by the Workers' Environmental Awareness Training Program. At a minimum, the training would include the following:
 - The types of fossils that could occur at the program site.
 - The types of lithologies in which the fossils could be preserved.
 - The procedures that should be taken in the event of a fossil discovery.
 - Penalties for disturbing paleontological resources.
- **Avoidance/Work Exclusion Zones:** In areas of high or very high sensitivity with exposed geologic units, or where surface fossils are abundant, avoidance and redesign is recommended when possible. If high-sensitivity formations or significant surface fossils cannot be avoided, paleontological monitoring may be required.
- **Monitoring:** Monitoring should take place only in geological units that regularly and predictably produce significant fossils, or where identifiable factors indicate that fossils are likely to be present in an otherwise less productive unit. This includes locations with a PFYC rating of 3 or higher based on a paleontological records search conducted prior to O&M activities. Monitoring must be conducted by a qualified professional. All monitoring activities would be documented on daily logs, and the frequency of reporting the daily activities would depend on the O&M activity. Monitoring logs and reports should include the activities observed, geology encountered, description of any resources encountered, and measures taken to protect or recover discoveries. Photographs and other supplemental information should be included as necessary and would meet professional standards.
- **Fossil Recovery:** In the event that significant paleontological resources are encountered during the O&M activities, protection and recovery of those resources may be required. On public lands, treatment and curation of fossils would follow procedures outlined by the land managing agency. On private property, treatment and curation of fossils would be conducted in consultation with the landowner, PG&E, and CDFW. A Paleontological Principal Investigator is responsible for developing the recovery strategy and would lead the recovery effort, which would include establishing recovery standards; preparing specimens for identification and preservation, documentation, and reporting; and securing a curation agreement from the approved agency. A Paleontological Field Supervisor or Field Paleontologist may conduct the recovery of fossil discoveries under the direction of the Paleontological Principal Investigator.

Hazards and Hazardous Materials

- PG&E personnel and/or licensed contractors are trained in the legal requirements for the storage, transportation, handling, and cleanup of hazardous materials prior to conducting O&M activities.
- PG&E would promote and distribute educational materials to O&M personnel, and may provide these materials on job sites, as necessary.
- PG&E would implement legal protocols for hazardous materials handling to avoid exposure to workers, the public, and the environment; and removing litter and construction materials from job sites after work is complete.

Hydrology and Water Quality

- Conduct activities near water features during the dry season. If work is necessary during the rainy season, it would be conducted during dry spells between rain events to the extent feasible.
- Refuel at least 100 feet from water features. Vehicles operating adjacent to water features would be inspected and maintained daily to prevent leaks.
- Keep spill cleanup kits on site (with fueling and maintenance vehicles) and accessible at all times.
- Train all personnel with regard to the location, use, and contents of the spill kits. If a spill occurs, clean it up immediately with absorbents, notify the Environmental Field Specialist, and dispose of the materials properly.
- Minimize hazardous material storage on site and store hazardous liquids, wastes, and all chemicals in watertight containers with appropriate secondary containment. Contain and protect stockpiled waste materials and cover liquid pollutant containment BMPs prior to rain, at the end of each day, and during non-workdays.
- Monitor BMPs daily during construction activities. Repair, replace, and/or maintain BMPs to correct any deficiencies.
- Return work areas to their pre-existing contours and conditions upon completion of work. Restoration work, including revegetation and soil stabilization, would be evaluated upon completion of work and performed as needed.

Transportation

- Restrict parking to existing ROWs and pre-approved staging areas, providing through access for emergency vehicles, maintaining access for private roads, avoiding key commute routes, and avoiding “rate-limiting” intersections during peak traffic periods.

2.5.2 Applicant Proposed Measures

In addition to the BMPs and standard practices listed in Section 2.5.1, PG&E will continue to implement the following APMs as applicable to further reduce impacts.

Aesthetics

APM AES-1 **Restoration of Disturbed Areas.** Previously vegetated areas greater than 0.10 acres that are disturbed and also visible from a scenic vista, designated state scenic highway, or public viewpoint would be recontoured to their original conditions and reseeded with an appropriate native seed mix to minimize scarring.

APM AES-2 **Evaluation of Proposed Aboveground Facilities.** PG&E would conduct an assessment for visual impacts at all aboveground facilities larger than 0.10 acres and within a scenic vista; within, adjacent to, or visible from a designated scenic highway; or visible from a public viewpoint. If PG&E determines that there is a potential for visual impacts, one or more of the following measures would be implemented:

- The facility would be assessed to determine whether it can be relocated to an area not visible within the scenic vista, designated state scenic highway, or public viewpoint.

- All disturbed areas would be revegetated by using species that are consistent with the facility's setting.
- Local jurisdictions and parks agencies would be consulted, as appropriate, to ensure that the aesthetic treatment of facilities meets the adopted guidelines.

APM AES-3 **Temporary Construction Lighting.** If temporary construction lighting is required, PG&E would use shielded construction light fixtures, and lighting would be directed away from nearby residences except in the cases of emergency.

APM AES-4 **Permanent Lighting.** If permanent lighting for a facility is required, the lighting would be motion activated or controlled by a manual switch. The lighting would also be directed downward to avoid glare.

Biological Resources

APM BIO-1 **Worker Education.** A worker education program would be implemented for all activities, as determined to be appropriate on an activity-by-activity basis. The worker education program would be carried out during all phases of the program (e.g., site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or abandonment, and restoration/reclamation activities). The worker education program would provide interpretation for non-English-speaking workers and instruction for new workers prior to beginning work on site. As appropriate based on the activity, the worker education program would contain the following information:

- Site-specific biological and nonbiological resources;
- Information on legal protections for protected resources and penalties for violation of federal and state laws and administrative sanctions for failure to comply with requirements intended to protect site-specific biological and nonbiological resources;
- The required measures for avoiding and minimizing effects during all program phases (e.g., resource setbacks, trash, speed limits, fire prevention, etc.);
- Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirements for notification of the Designated Biologist(s); and
- Measures that personnel can take to promote the conservation of biological and nonbiological resources.

APM BIO-2 **Designated Biologist.** A Designated Biologist would be approved as “qualified” by the CDFW, BLM, and/or USFWS, as appropriate for the location of the program activities. The Designated Biologist is responsible for overseeing compliance with applicable APMs.

APM BIO-3 **Disturbance Minimization.** PG&E would use state-of-the-art construction and installation techniques that are appropriate for the specific activity, program, and site. These techniques should minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation. In addition, PG&E would implement the following actions:

- The area of disturbance would be confined to the smallest practical area, considering topography, placement of facilities, locations of burrows, public health and safety, and other limiting factors.
- As needed, work area boundaries would be delineated with flagging or other markings to minimize surface disturbance associated with the work activity.
- Exclusion areas or special habitat features, such as burrows identified by the Designated Biologist, would be avoided to the extent possible.
- To the extent possible, previously disturbed areas within the activity sites would be used for stockpiling excavated materials, storing equipment, digging slurry and borrow pits, staging or parking trailers and vehicles, and any other surface-disturbing activity.
- When possible, natural vegetation removal would be minimized through the implementation of crush and drive, or cut or mow vegetation, rather than removing it entirely.
- The Designated Biologist, in consultation with PG&E, would ensure compliance with these measures.

APM BIO-4 **Invasive Weeds.** The following would be implemented to prevent the spread of invasive weeds during all phases of program activities, as appropriate:

- During O&M activities involving ground disturbance, mud and/or accumulated soils would be removed from equipment and vehicles, to the extent feasible. Vehicles and equipment would be cleaned or washed before entering a new program site.
- O&M vehicles would be stored in paved or cleared areas whenever possible.
- Certified weed-free mulch, straw, hay bales, or equivalent materials would be used for all O&M activities.

APM BIO-5 **Special-Status Wildlife Encounters.** Any special-status wildlife encountered during the course of an activity—including construction, operation, and decommissioning—would be allowed to leave the area unharmed. Encounters with a special-status species would be reported to a Designated Biologist and/or PG&E Environmental staff. Designated Biologists/PG&E Environmental staff members would maintain records of all special-status species encountered during permitted activities. Encounters with special-status species would be documented and provided to CDFW in an annual report. If a Designated Biologist encounters a special-status species, the following information would be reported for each species:

- The locations (i.e., narrative, vegetation type, and maps) and dates of observations
- The general condition and health
- Any apparent injuries and state of healing
- If moved, the location where the species was captured and the location where it was released (for desert tortoises, include whether animals voided their bladders)
- Diagnostic markings (i.e., identification numbers or, on desert tortoises, marked lateral scutes)

- APM BIO-6 **Inspections of Construction Materials.** All construction materials would be inspected for the presence of special-status wildlife prior to their movement or use. Any special-status wildlife encountered during the course of these inspections would be allowed to leave the construction area unharmed.
- APM BIO-7 **Waste and Equipment Removal.** All work areas would be kept free of trash and debris. Particular attention would be paid to “micro-trash” (e.g., screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny) and organic waste that may attract predators. All trash would be covered, kept in closed containers, or otherwise removed from the work site at the end of each day or at regular intervals prior to periods when workers are not present at the site. Upon the completion of each maintenance action in the ROW, all unused material and equipment would be removed from the site. The removal of all unused material and equipment does not apply to fenced stations.
- APM BIO-8 **Open Trenches.** All steep-walled trenches or excavations would be covered, except when they are actively being used to prevent the entrapment of wildlife. If trenches cannot be covered, they would be constructed with escape ramps, following up-to-date design standards to facilitate and allow wildlife to exit, or wildlife exclusion fencing would be installed around the trench(es) or excavation(s). Open trenches or other excavations would be inspected for the presence of wildlife immediately before backfilling, excavation, or other earthwork. After a work area is fenced, escape ramps would not be necessary for program activities.
- APM BIO-9 **O&M Activity Habitat Assessments.** Prior to the commencement of the planned O&M activities that would impact 0.10 acres or more of potential habitat, a PG&E biologist would assess the location and the potential for impacts to special-status species and would recommend additional avoidance and minimization measures (e.g., pre-construction clearance surveys, biological monitoring, buffers, physical barriers) as needed to ensure that that behaviors necessary for the survival of such special-status species (e.g., breeding, lambing, nesting, burrowing, migration, foraging) are not significantly disrupted by the planned activity and associated noise.
- APM BIO-10 **Domestic Pets.** Domestic pets would be prohibited on work sites. The prohibition would not apply to the use of domestic animals (e.g., dogs) that may be used to aid in official and approved monitoring procedures/protocols, or service animals under Title II and Title III of the Americans with Disabilities Act.
- APM BIO-11 **Firearms.** Use and possession of firearms would be prohibited at all activity sites, with the exception of licensed security officers and police officers.

APM BIO-12 O&M Activity Siting and Design. To the maximum extent practicable, the siting and design of new, permanent facilities would avoid impacts to vegetation types, unique plant assemblages, and climate refugia, as well as occupied habitat and suitable habitat for special-status species. To the maximum extent practicable, the following actions would be taken during the siting and design of new roads:

- Construction of new roads and/or routes would be avoided within suitable habitat and identified linkages for special-status species, and these areas would have a goal of “no net gain.” The exception would be if the new road and/or route is beneficial through minimization of net impacts to natural or ecological resources of concern.
- Any new road and/or route considered within suitable habitat or identified linkages for protected species would be paved so as to avoid negatively affecting the function of identified linkages.
- Non-toxic road sealants and soil-stabilizing agents would be used on any new road and/or route.

APM BIO-13 Restoration. Habitat restoration would occur where 0.10 acres or more of sensitive natural communities or special-status species habitats may be affected by ground disturbance and/or vegetation removal during pre-construction, construction, operations, and decommissioning activities. If these areas are not converted by long-term ground disturbance, site-specific habitat restoration actions would be implemented for the areas affected, and would include specifying and using the following:

- The type of equipment that would be used for habitat restoration actions
- The timing of habitat restoration actions (e.g., the appropriate season and sufficient rainfall)
- The location of habitat restoration actions
- Appropriate seed (e.g., certified weed-free, native, and locally and genetically appropriate seed)
- Appropriate soils (e.g., topsoil of the same original type on site or that was previously stored after being salvaged during excavation and construction activities)

In addition, restoration actions would include the following:

- Cactus, nolina, and yucca would be salvaged and translocated from the site prior to disturbance. To the maximum extent practicable for short-term disturbed areas, cactus and yucca would be replanted at their original sites.
- Following the completion of construction activities, short-term disturbed areas of 0.10 acres or more would be immediately restored during the most biologically appropriate season, as determined in the activity/program-specific environmental analysis and decision. This would reduce the amount of habitat converted at any one time and promote the recovery of natural habitats and vegetation, as well as climate refugia and ecosystem services (e.g., carbon storage).

APM BIO-14 Special-Status Plant Avoidance. Occurrences of special-status plant species, including those in designated transmission corridors, would be avoided to the maximum extent practicable.

APM BIO-15 Desert Tortoise Fencing. Prior to construction or commencement of any long-term activity that is likely to adversely affect desert tortoises, exclusion fencing for the species would be installed around the perimeter of the activity footprint⁴ in accordance with the Desert Tortoise Field Manual (USFWS 2009) or the most up-to-date USFWS protocol. Additionally, short-term desert tortoise exclusion fencing would be installed around short-term construction and/or activity areas (e.g., staging areas, storage yards, excavations, and linear facilities), as appropriate, per the Desert Tortoise Field Manual or the most up-to-date USFWS protocol.

Any exemption or modification of desert tortoise exclusion fencing requirements would be based on the specifics of the activity and the site-specific population and habitat parameters. Sites with low population density and disturbed, fragmented, or poor habitat would likely be candidates for fencing requirement exemptions or modifications. Substitute measures, such as on-site biological monitors in the place of the fencing requirement, would be required as appropriate.

After an area is fenced, and until desert tortoises are removed, the Designated Biologist would be responsible for ensuring that desert tortoises are not exposed to extreme temperatures or predators as a result of placement of the fence. Remedies would include the use of shelter sites placed along the fence, immediate translocation, or removal to a secure holding area.

Modification or elimination of the previous requirement would also be approved by CDFW if the activity would retain the desert tortoise habitat within the footprint. If such a modification is approved, modified protective measures would be required to minimize impacts to desert tortoises within the activity area.

Immediately prior to the construction of desert tortoise exclusion fencing, a Designated Biologist would conduct a clearance survey of the fence alignment to clear desert tortoises from the proposed path of the fence line.

All exclusion fencing would incorporate desert tortoise-proof gates or other approved barriers to prevent desert tortoise access to work sites through access road entry points.

Following installation, long-term desert tortoise exclusion fencing would be inspected for damage quarterly and within 48 hours of a surface flow due to a rain event that may damage the fencing.

All damage to long-term or short-term desert tortoise exclusion fencing would be immediately blocked off to prevent desert tortoise access and would be repaired within 72 hours.

APM BIO-16 Desert Tortoise Monitoring and Pipe Inspection. Following clearance surveys within sites that have long-term desert tortoise exclusion fencing, a Designated Biologist would monitor initial clearing and grading activities to ensure that desert tortoises missed during the initial clearance surveys are moved from harm's way.

⁴ An activity footprint is the area of long- and short-term ground disturbance associated with the pre-construction, construction, operation, implementation, maintenance, and decommissioning of an activity, including associated linear and non-linear components (e.g., staging areas, access routes and roads, gen-ties, pipelines, other utility lines, borrow pits, disposal areas). The footprint may also be considered synonymous with the program/activity site.

Before construction pipes, culverts, or similar structures are moved, buried, or capped, a Designated Biologist would inspect these materials for the following:

- A diameter greater than 3 inches
- Storage for one or more nights
- Placement less than 8 inches above ground
- Location within desert tortoise habitat (i.e., outside the long-term fenced area)

As an alternative, such materials would be capped before they are stored outside of the fenced area or placed on pipe racks. Pipes stored within the long-term fenced area after desert tortoise clearance surveys would not require inspection.

APM BIO-17 **Geotechnical Boring Monitoring.** In suitable desert tortoise habitat, biological monitoring would occur for any geotechnical boring or movement of geotechnical boring vehicles to ensure that no desert tortoises are killed and no burrows are crushed. In these areas, a Designated Biologist would accompany the geotechnical testing equipment.

APM BIO-18 **Inspections Under Vehicles.** The ground under vehicles would be inspected for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat that is outside areas with desert tortoise exclusion fencing. If a desert tortoise is seen, it would be allowed to move away from the site on its own. If it does not move within 15 minutes, a Designated Biologist would translocate the animal to a safe location.

APM BIO-19 **Speed Limits.** Vehicular traffic would not exceed 15 mph on unpaved roads and in the ROW within areas that are not cleared by protocol-level surveys and where desert tortoise would be impacted.

APM BIO-20 **Predator Management.** Subsidized predator standards would be implemented during all appropriate phases of activities to manage predator food subsidies, water subsidies, and breeding sites.

Common raven management actions would be implemented for all activities to address food and water subsidies, as well as roosting and nesting sites that are specific to the common raven. These actions would include strategies for refuse management, as well as design strategies and passive repellent methods to avoid providing perches, nesting sites, and roosting sites for common ravens.

The application of water and/or other palliatives for dust abatement in construction areas and during O&M would be accomplished with the minimum amount of water necessary to meet safety and air quality standards. This would also occur in a manner that prevents the formation of puddles, which would attract wildlife.

APM BIO-21 **Mitigation.** PG&E would acquire, preserve, and/or enhance suitable habitat for desert tortoise and Mohave ground squirrel to fully mitigate for the potential take of these species. To fully mitigate for the take of desert tortoise and Mohave ground squirrel under this long-term permit, PG&E would make an initial purchase of up to 100 acres through the purchase of mitigation credits (where available), the purchase of a conservation easement from willing landowners, or the purchase of fee-title lands where a conservation easement can be placed from a private

land trust (e.g., Transition Habitat Conservancy) for advance mitigation purposes. Acquired lands would be permanently protected through conservation easements or deed restrictions in perpetuity. Mitigation credits or lands would serve as a means for PG&E to debit and credit its mitigation account as impacts occur or as mitigation lands are acquired over the life of the permit, respectively. The amount of acreage to be debited would be determined annually based on the end-of-year summary, which would describe the actual impacts resulting from completed O&M activities. The amount of habitat compensation proposed would be dependent on the nature and location of the habitat disturbed. Mitigation for habitat disturbance from temporary and permanent impacts would be proposed at the following ratios:

- A 5-to-1 ratio for permanent impacts to Superior–Cronese Unit Critical Habitat lands, DWMA lands, and BLM ACECs
- A 3-to-1 ratio for permanent impacts to higher-quality (natural/undisturbed) habitat outside of Superior–Cronese Unit Critical Habitat lands, DWMA lands, and BLM ACECs
- A 1-to-1 ratio for temporary disturbance to higher-quality (natural/undisturbed) habitat areas
- A 0.5-to-1 ratio for permanent impacts to lower-quality habitat (previously disturbed [denuded], but mostly recovered)
- No compensatory mitigation for disturbed areas (i.e., totally denuded, mostly denuded with scattered shrub-like vegetation, active agricultural, residential, and urban) that provide no habitat value to special-status species

By January 31 of each year, PG&E would submit an annual report to CDFW summarizing the mitigation ratios and credits that were used for O&M activities during the previous calendar year.

APM BIO-22 Nesting Birds. All vegetation clearing and ground-disturbing activities would be conducted outside the nesting season (i.e., February 1 to August 31) to the maximum extent feasible. During the nesting bird season, a qualified biologist⁵ would determine if pre-construction surveys, nest buffers, and monitoring are needed. Nesting bird surveys would be conducted by a qualified biologist and would be scheduled to occur within a timeframe prior to construction that is suitable for the detection of recently established nests. If active nests containing eggs or young are found, the qualified biologist would establish an appropriate nest buffer. Nest buffers would be species-specific and range from 15 to 100 feet for passerines and 50 to 300 feet for raptors, depending on the planned activity's level of disturbance (i.e., low, medium, or high), site conditions, and the observed bird behavior. Established buffers would remain until a biologist determines the young have fledged or the nest is no longer active. Active nests would be periodically monitored until the biologist has determined the young have fledged or all construction is finished.

APM BIO-23 Golden Eagle. If golden eagles are observed within the vicinity of planned O&M activities that result in new surface disturbance or that require vegetation trimming or vegetation removal, a qualified biologist would conduct a desktop review and/or on-site evaluation to determine if golden eagles are nesting within 0.5 miles by observing eagle behavior and movements. If work is conducted within 0.5 miles of historic and currently known nests during the golden

⁵ A qualified biologist would have experience conducting nesting bird surveys and would be able to accurately identify nesting behavior and avian species likely to occur in the vicinity of the program area.

eagle breeding season (i.e., late January through August), PG&E would survey the site to determine if they are active. If nests are determined to be active, a 0.5-mile no-work buffer would be established. The biologist would periodically monitor the nest during work activities to document the nest's status and observe eagle behavior.

APM BIO-24 Western Burrowing Owl. Prior to planned O&M activities that result in new surface disturbance or that require vegetation trimming or vegetation removal, a qualified biologist would conduct a desktop review and/or on-site evaluation to determine the potential for active western burrowing owl burrows, as appropriate for the location and nature of planned activities. If an active burrowing owl burrow is identified in the vicinity of the planned O&M activity, a no-work buffer of up to 250 feet would be established, depending on the time of year and the potential for nesting (the peak months are March through June) and the level of disturbance (i.e., low, medium, or high) of the planned activity. A qualified biologist would periodically monitor the nest or occupied burrow(s) during work activities to document the nest's status and observe western burrowing owl behavior.

APM BIO-25 Seasonal Restrictions. For activities that may impact special-status species, all required species-specific seasonal restrictions on pre-construction, construction, operations, and decommissioning activities would be implemented to the extent feasible.

Species-specific seasonal restriction dates are described in APM BIO-22, APM BIO-23, and APM BIO-24. Seasonal restriction dates may be modified, as appropriate, based on variations in climatic conditions (e.g., early onset of rain) that affect wildlife behavior.

Alternatively, to avoid a seasonal restriction associated with visual disturbance, installation of a visual barrier may be evaluated on a case-by-case basis and would result in the breeding, nesting, lambing, fawning, or roosting species not being affected by visual disturbance from construction activities. The proposed installation and use of a visual barrier to avoid a seasonal restriction would be analyzed in the activity-specific environmental analysis.

APM BIO-26 Mohave Ground Squirrel Avoidance. For O&M activities conducted within suitable Mohave ground squirrel habitat, within the geographic range of the species,⁶ and during the typical active Mohave ground squirrel season (i.e., February 1 through August 31), a qualified biologist would conduct clearance surveys throughout the site immediately prior to initial ground disturbance (e.g., earthwork and/or trenching) and/or vegetation removal. In areas cleared for O&M activities after surveys, biological monitoring would be performed to determine if Mohave ground squirrels have entered cleared areas. Detected occurrences of Mohave ground squirrel would be flagged and avoided, with a minimum avoidance area of 50 feet, until the individuals leave on their own accord. As needed, a Designated Biologist would also move Mohave ground squirrels out of harm's way.

APM BIO-27 Monitoring and Surveys for Road Surface Maintenance. A Designated Biologist would be present during routine road surface maintenance activities. The biologist would survey for

⁶ This excludes the zone of hybridization with round-tailed ground squirrel located between Fort Irwin and the City of Barstow.

special-status species immediately ahead of road maintenance activities and assist the maintenance crew in avoiding impacts to special-status species or their burrows.

APM BIO-28 Roosting Bats. When feasible and if required, activities in bat roosting habitat would be conducted outside of the bat breeding/pupping season (this season is April through mid-September). Suitable bat habitat (e.g., bridges, mines, caves, trees with hollows, palm trees, snags, buildings, long and dark culverts, rock outcrops, dense tree canopies, and flaking tree bark) within 200 feet of O&M activities would be surveyed by a qualified biologist. The surveys of suitable bat habitat would be conducted using an appropriate combination of visual and acoustic survey techniques to assess the habitat's potential to support sensitive bat species. In addition, if structure removal is conducted during the bat breeding/pupping season, structures would be evaluated for bats.

If a roost is identified, subsequent visits may be utilized to determine the status of the roost and any species within a roost. If bats are detected, PG&E would avoid conducting construction activities that may directly impact the active roost site, including the following:

- If an active maternal roost is identified, no construction would occur within 200 feet of the maternal roost during the pupping season.
- As necessary, an exclusionary buffer would be maintained around active roosts. The size of the buffer may be modified at the discretion of the qualified biologist based on the species' sensitivity to disturbance from O&M activities and the status of the roost.
- As necessary, a qualified biologist would monitor active roost site buffers during O&M activities to determine if roosting activity is influenced by noise or vibrations until the qualified biologist has determined if the young bats are volant (i.e., able to fly).

Cultural Resources

APM CUL-1 Inventory and Evaluate Historical Resources. Due to the long-term nature of the O&M activities, PG&E would continue to review historical resources that were previously recorded, as well as structures that meet the 50-year threshold throughout the duration of O&M activities. If any resources have the potential to be eligible for listing on the California Register of Historical Resources or National Register of Historic Places, PG&E would follow standard procedures for their evaluation.

Hazards and Hazardous Materials

APM HAZ-1 Hazardous Materials Management Plan Preparation. Prior to the following O&M activities, PG&E would prepare a Hazardous Materials Management Plan (HMMP), which would be implemented to prevent the release of hazardous materials and hazardous waste:

- Installation of pig launcher/receiver facilities
- Valve/pipeline excavation and recoating
- Valve replacement/automation
- Hydrostatic testing
- Pipeline segment replacement

The plan would include the following requirements and procedures:

- Training requirements for workers in appropriate work practices, including spill prevention and response measures and identifying signs of potentially hazardous contamination (e.g., stained or discolored soil and odor)
- Requirements for containment of all hazardous materials at work sites and proper handling of all such materials
- Requirements for storing hazardous materials on pallets or in appropriate containers within designated fenced and secured areas protected from exposure to weather and further contamination
- Requirements for maintaining hazardous material spill kits at all active work sites and staging areas and thorough cleanup of all spills as soon as they occur
- Procedures for notifying agency personnel in the event of the discovery of contaminated soil and/or groundwater.

Hydrology and Water Quality

APM HYD-1 **Frac-Out Response.** PG&E would store pertinent materials on site to quickly contain potential frac-outs, and these materials would be determined on a case-by-case basis. At the entry or exit of the drill and for the duration of the drilling activity, PG&E would maintain a supply of sediment barriers (e.g., weed-free straw bales and silt fence), plastic sheeting, shovels and buckets, mud pumps and additional hose, mud storage tanks, and a vacuum truck. In addition, PG&E may store sandbags, floating booms or silt curtains, plywood, a small backhoe to dig sumps, and corrugated pipe.

A potential frac-out may occur if there is a loss of drilling lubricant, a loss of circulation, or an unexpected change in pressure. In the event of a frac-out, the release would be assessed immediately and PG&E would take the following steps:

- Initiate immediate suspension of the drilling operation.
- Contain the frac-out with supplies and materials as appropriate.
- Verify that the drilling lubricant would not enter a jurisdictional water feature.
- Assess the containment structure and determine if additional supplies and materials are needed to prevent the spread of surfaced drilling lubricant.
- Determine if cleanup of the frac-out material is needed.

If a frac-out is identified in a jurisdictional water feature or other sensitive resource area, the following additional steps would be taken:

- PG&E would notify the appropriate agency authorities with jurisdiction (i.e., the USACE, CDFW, and RWQCB).
- The drill angle would be increased to move below the frac-out and to reduce the amount of drilling lubricant reaching the surface. The current drill profile would be evaluated, and drill pressures and pump volume rates would be adjusted, as needed.

- If standing water is present, hand-placed containment, silt curtains, or other containment techniques for water releases would be deployed if necessary. To the extent feasible, surface releases of excess drilling lubricant would be held in a contained area and removed using small collection sumps with portable pumps and hoses, and without undue disturbance to the banks and bed of the water feature.
- Frac-out cleanup would be conducted in a manner that avoids damage to existing and adjacent vegetation. Soils that come in contact with drilling lubricant would be removed to the extent feasible without causing excessive loss of topsoil or vegetation.
- Once the frac-out is contained, drilling may resume upon approval from the appropriate agency officials and PG&E representatives. Frac-out material would be collected and stored in containers until it can be reused or disposed of in an approved disposal facility.

Noise

- APM NOI-1 **Construction Hours Restriction.** All planned construction activities within 900 feet of occupied residential parcels that require the use of off-road construction equipment would be limited to between the hours of 7:00 a.m. and 7:00 p.m. to the greatest extent possible. Should work in these locations be required outside of these hours, construction would proceed as expeditiously as safely possible to reach a safe and convenient stopping point.
- APM NOI-2 **Construction near Occupied Residences.** When using off-road construction equipment to conduct O&M activities within 250 feet of occupied residences in the Town of Apple Valley, “quiet” equipment (i.e., equipment designed with noise control elements) and/or standard equipment fitted with noise control devices (e.g., mufflers) that meet manufacturers’ specifications would be used.
- APM NOI-3 **Blowdowns near Occupied Residences.** When a blowdown is scheduled to occur within 5 miles of an occupied residence, and where feasible, PG&E would use drafting and/or cross-compression to reduce the total volume of gas released, and/or would use temporary flow restrictors to reduce blowdown noise. For blowdowns required on pipeline segments within 5 miles of an occupied residence, PG&E would select the gas valve that is farthest from occupied residences for the blowdown site whenever feasible. If adequate notice is available, at least 15 days prior to the start of blowdown activities within 5 miles of an occupied residence, PG&E would notify these residents by mail of the planned activities. PG&E would provide a telephone number for the public to report any undesirable noise conditions and document, investigate, evaluate, and attempt to resolve all legitimate, activity-related noise complaints.

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Table 2-3. Construction Equipment and Surface Disturbance Details

O&M Activity	Construction Equipment Details			Surface Disturbance Details (If Applicable)				Total Permanent Disturbance for 30-Year Permit Term (Acres)	Estimated Frequency ^b (Times per Year)
	Equipment Type	Number ^a	General Use	Approximate Surface Disturbance ^b (Square Feet)		Approximate Surface Disturbance (Acres)			
				Temporary	Permanent	Temporary	Permanent		
Road Surface Maintenance ^c	Motor grader	1	Site grading and cleanup	0	0	0	0	0	6
	Backhoe	1	Road excavation						
ROW and Access Road Repair	Motor grader	1	Site grading and cleanup	<1,742	<435	<0.04	<0.01	<0.3	0–5
	Water truck	1	Dust control						
	Backhoe	1	Road excavation						
	Front loader	1	Moving materials						
Erosion Control ^d	Pickup truck	1–2	Transporting workers and materials	1,100–20,000	20–200	0.03–0.46	<0.01	<0.3	0–2
	Backhoe	1	Excavation						
Water Diversion Channels	Motor grader	1	Site grading and cleanup	200–25,000	15,000	<0.01–0.57	0.27	10	0–2
	Backhoe	1	Road excavation						
	Front loader	1	Move materials						
Telecommunication Site Maintenance	Pickup truck	1–2	Transporting workers and materials	0	0	0	0	0	12
	Helicopter	1	Surveying telecommunication facilities						
Span Painting/Air-to-Soil Corrosion Protection	Pickup truck	1–2	Transporting workers and materials	200–3,500	0	<0.01–0.08	0	0	0–50
	Excavator	1	Excavating air-to-soil transition area						
	Compressor	1	Compressing air for tools						
	Sandblaster	1	Sanding the pipe to remove the pipeline coating						
Below-Grade Pipe and Coating Inspection	Pickup truck	1–2	Transporting workers and materials	200–25,000	0	<0.01–0.57	0	0	10
	Flatbed truck/trailer	1	Transporting construction materials						
	Dump truck with trailer	1	Hauling spoil						
	Backhoe	1	Excavating the trench and backfill						
	Water truck	1	Dust control						
	Trailer-mounted compressor	1	Powering pneumatic tools						

Table 2-3. Construction Equipment and Surface Disturbance Details

O&M Activity	Construction Equipment Details			Surface Disturbance Details (If Applicable)				Total Permanent Disturbance for 30-Year Permit Term (Acres)	Estimated Frequency ^b (Times per Year)
	Equipment Type	Number ^a	General Use	Approximate Surface Disturbance ^b (Square Feet)		Approximate Surface Disturbance (Acres)			
				Temporary	Permanent	Temporary	Permanent		
Internal Pipeline Inspection	Pickup truck	1	Transporting workers and materials	5,000–10,000	0	0.11–0.23	0	0	5–10
	Excavator	1	Excavating the trench and backfill						
	Water truck	1	Dust control						
	Crane	1	Lifting materials						
	Light stand	1	Illuminating work area						
Installation of Pig Launcher/Receiver Facilities	Pickup truck	3–4	Transporting workers and materials	92,500	30,000	2.12	0.69	20.7	4–6
	Flatbed truck	1	Transporting construction materials						
	Dump truck with trailer	1	Hauling spoil						
	Backhoe	1	Excavating the trench and backfill						
	Excavator	1	Excavating the trench and backfill						
	Truck- or trailer-mounted compressor	2	Powering pneumatic tools						
	Truck-mounted crane	1	Lifting materials and equipment						
	Water truck	1	Dust control						
	Side boom	1	Lifting pipe/materials						
	Welding trucks	2	Transporting workers and welding materials and equipment						
	Valve/Pipeline Excavation and Recoating	Pickup truck	1						
Flatbed truck		1	Transporting construction materials						
Dump truck with trailer		1	Hauling spoil						
Backhoe		1	Excavating the trench and backfill						
Excavator		1	Excavating the trench and backfill						
Water truck		1	Dust control						
Vacuum excavator		1	Excavating trench						
Truck- or trailer-mounted compressor		1	Powering pneumatic tools						
Portable sandblaster		1	Debris removal						
Truck-mounted crane		1	Lifting materials and equipment						

Table 2-3. Construction Equipment and Surface Disturbance Details

O&M Activity	Construction Equipment Details			Surface Disturbance Details (If Applicable)				Total Permanent Disturbance for 30-Year Permit Term (Acres)	Estimated Frequency ^b (Times per Year)
	Equipment Type	Number ^a	General Use	Approximate Surface Disturbance ^b (Square Feet)		Approximate Surface Disturbance (Acres)			
				Temporary	Permanent	Temporary	Permanent		
Installation of Magnesium Anodes	Pickup truck	1	Transporting workers and materials	40–60	0	<0.01	0	0	0–10
	Flatbed truck	1	Transporting construction materials						
	Dump truck with trailer	1	Hauling spoil						
	Backhoe	1	Excavating the trench and backfill						
	Water truck	1	Dust control						
Installation of Deep-Well Anodes	Drilling rig	1	Boring/anode installation	1,000–14,000	0	0.02–0.32	0	0	0–6
	Pickup truck	2–3	Transporting workers and materials						
	Water truck	1	Dust control						
	Backhoe	1	Excavation and backfill						
Thermoelectric Generators	Drilling rig	1	Boring/anode installation	2,500–6,000	40–100	0.06–0.14	<0.01	<0.3	0–5
	Pickup truck	2–3	Transporting workers and materials						
	Water truck	1	Dust control						
	Backhoe	1	Excavation and backfill						
Installation of Flex Anodes	Pickup truck	1	Transporting workers and materials	20–1,000	0	<0.01–0.02	0	0	<1
	Trailer	1	Transporting construction materials						
	Water truck	1	Dust control						
	Trencher	1	Excavating trench						
Installation or Replacement of Horizontal Anode Beds	Pickup truck	1–2	Transporting workers and materials	1,000–14,000	0	0.02–0.32	0	0	<1
	Flatbed truck/trailer	1	Transporting construction materials						
	Dump truck with trailer	1	Hauling spoil						
	Backhoe	1	Excavating the trench and backfill						
	Water truck	1	Dust control						
Electronic Test System Station	Pickup truck	1	Transporting workers and materials	2,540–2,560	0	0.06	0	0	5–10
	Truck with trailer	1	Transporting backhoe						
	Backhoe	1	Excavation and backfill						

Table 2-3. Construction Equipment and Surface Disturbance Details

O&M Activity	Construction Equipment Details			Surface Disturbance Details (If Applicable)				Total Permanent Disturbance for 30-Year Permit Term (Acres)	Estimated Frequency ^b (Times per Year)
	Equipment Type	Number ^a	General Use	Approximate Surface Disturbance ^b (Square Feet)		Approximate Surface Disturbance (Acres)			
				Temporary	Permanent	Temporary	Permanent		
Cathodic Test Station Installations	Pickup truck	1–2	Transporting workers and materials						
	Truck with trailer	1	Transporting backhoe						
	Backhoe	1	Excavation and backfill						
Valve Replacement/ Automation	Pickup truck	2–4	Transporting workers and materials	22,500–25,000	2,500	0.52–0.57	0.06	1.8	0–10
	Flatbed truck	1	Transporting construction materials						
	Dump truck with trailer	1	Hauling spoil						
	Backhoe	1	Excavating the trench and backfill						
	Excavator	1	Excavating the trench and backfill						
	Crane	1	Lifting materials						
	Boom truck	1	Lifting materials						
	Water truck	1	Dust control						
	Vacuum excavator	1	Excavating trench						
	Welding trucks	2–3	Transporting workers and welding materials/ equipment						
	Truck- or trailer-mounted compressor	2–3	Powering pneumatic tools						
	Truck-mounted crane	1	Lifting materials and equipment						
	Front loader	1	Loading materials into dump truck						
Hydrostatic Testing	Air compressor	2	Powering pneumatic tools	10,000–221,000	0	0.23–5.07	0	0	0–6
	Crane	1	Lifting pig launchers and receivers						
	Flatbed truck/trailer	2	Transporting materials to hydrotest sites						
	Backhoe	1	Excavating the trench and backfill						
	Track hoe	1	Excavating the trench						
	Excavator	1	Excavating the trench and backfill						
	Pickup truck	2–3	Transporting workers and materials						
	Side boom	2	Lifting pipe and facilitating welding operations during set-up and dismantling of hydrotest equipment						

Table 2-3. Construction Equipment and Surface Disturbance Details

O&M Activity	Construction Equipment Details			Surface Disturbance Details (If Applicable)				Total Permanent Disturbance for 30-Year Permit Term (Acres)	Estimated Frequency ^b (Times per Year)
	Equipment Type	Number ^a	General Use	Approximate Surface Disturbance ^b (Square Feet)		Approximate Surface Disturbance (Acres)			
				Temporary	Permanent	Temporary	Permanent		
	Water pump	1	Filling pipe						
	Welding truck	3–4	Welding pig launchers and receivers and hydrotest equipment						
	Bulldozer	1	Site grading and cleanup						
	Generator	3–4	Providing power to equipment						
	Grader	1	Site grading and cleanup						
	Trencher	1	Excavating trench						
	Aboveground storage tanks	Variable	Water and waste storage						
	Water truck	1	Dust control						
Pipeline Segment Replacement	Pickup truck	5–6	Transporting workers and materials	20,000–300,000	0	0.46–6.89	0	0	0–5
	Flatbed truck	1	Transporting construction materials						
	Dump truck with trailer	1	Hauling spoil						
	Backhoe	1	Excavating the trench and backfill						
	Excavator	2	Excavating the trench and backfill						
	Trailer-mounted compressor	4	Powering pneumatic tools						
	Truck-mounted crane	2	Lifting materials and equipment						
	Side boom	2–3	Lifting pipe/materials						
	Welding trucks	3–4	Transporting workers and welding materials and equipment						
	Water truck	2	Dust control						
	Horizontal directional drill (HDD)	1	Turning drill stems during the HDD process						
High-Pressure Regulator Deactivation	Pickup truck	2–3	Transporting workers and materials	100–200	0	<0.01	0	0	0–10
	Flatbed truck/trailer	1	Transporting construction materials						
	Dump truck with a trailer	1	Transporting construction materials						
	Backhoe	1	Excavating the trench and backfill						
	Trailer-mounted compressor	1	Powering pneumatic tools						

Table 2-3. Construction Equipment and Surface Disturbance Details

O&M Activity	Construction Equipment Details			Surface Disturbance Details (If Applicable)				Total Permanent Disturbance for 30-Year Permit Term (Acres)	Estimated Frequency ^b (Times per Year)
	Equipment Type	Number ^a	General Use	Approximate Surface Disturbance ^b (Square Feet)		Approximate Surface Disturbance (Acres)			
				Temporary	Permanent	Temporary	Permanent		
	Portable sandblaster	1	Debris removal						
	Water truck	1	Dust control						
Emergency Activities									
Emergency Repair	Pickup truck	Dependent on emergency repair	Varies	As described above for individual O&M activities					0–5
	Water truck								
	Vacuum truck								
Fire Response	Fire truck	Dependent on fire threat	Varies	As described above for individual O&M activities					0–1
Soil Stabilization	Varies (large earthmoving equipment)	Dependent on situation	Varies	As described above for individual O&M activities					0–1

Notes: O&M = operation and maintenance.

^a Estimated numbers of equipment required to conduct a single O&M activity.

^b The frequency and amount of disturbed surface areas are estimates based on ongoing O&M activities between 2017 and September 2021. The amount of ground disturbance with O&M activities proposed for coverage under the permits, consistent with PG&E’s past and ongoing efforts, would vary each year depending on the type and number of ongoing O&M activities. Based on PG&E’s O&M activities during the 5-year baseline period (2017–2021), PG&E expects that on average approximately 40 acres of temporary disturbance and approximately 3 acres of permanent disturbance will occur each year. PG&E expects that most years will require a minimal number of O&M activities proposed for coverage under the permits and that disturbance resulting from O&M activities will typically be lower than these anticipated disturbance estimates. The actual frequency and amount of disturbance will vary depending on the location of the activity and the nature of the repair needed. Not all of the O&M activities listed are anticipated to occur every year. To account for the variable number and type of O&M activities used in this EIR analysis for the proposed coverage under the permits, disturbance estimates assume an annual average of 43 acres of temporary and/or permanent disturbance in a year (40 acres of temporary disturbance to Mojave desert tortoise habitat and up to 16 acres of temporary disturbance impacts to Mohave ground squirrel habitat, and up to 3 acres of permanent disturbance to either to Mojave desert tortoise or to Mohave ground squirrel habitat). Although, up to 150 acres of disturbance to Mojave desert tortoise habitat and up to 62 acres (within the 150 acres) of disturbance to Mohave ground squirrel habitat could occur in a year, the overall take over the 30-year life of the ITP would not exceed 1,290 acres.

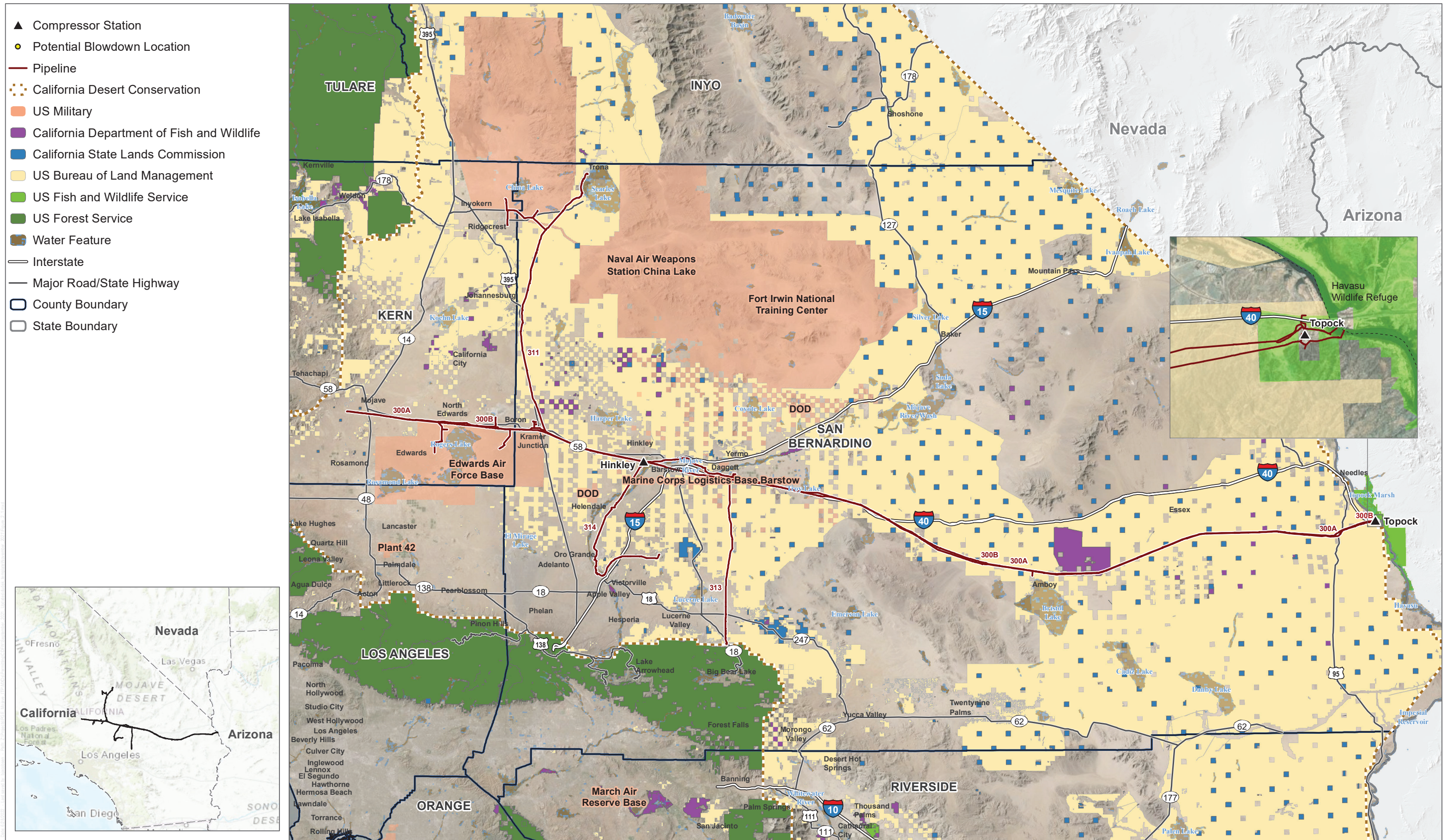
^c All road surface maintenance will be conducted within the existing road footprint; thus, no habitat disturbance will result from it.

^d These ongoing O&M activities are dependent on weather. During years with greater storm activity, more erosion control and ROW repair work are expected.

2.6 References

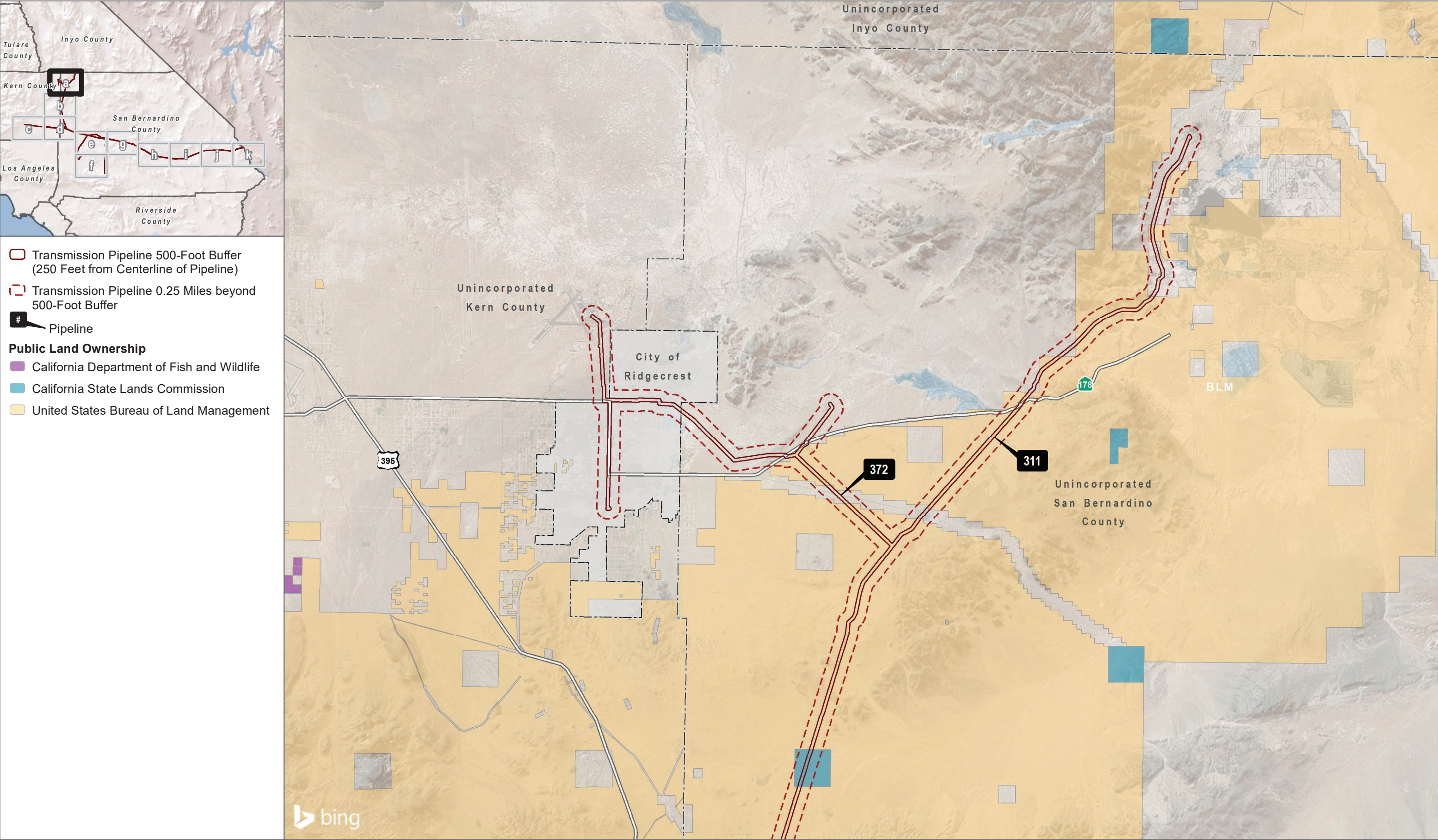
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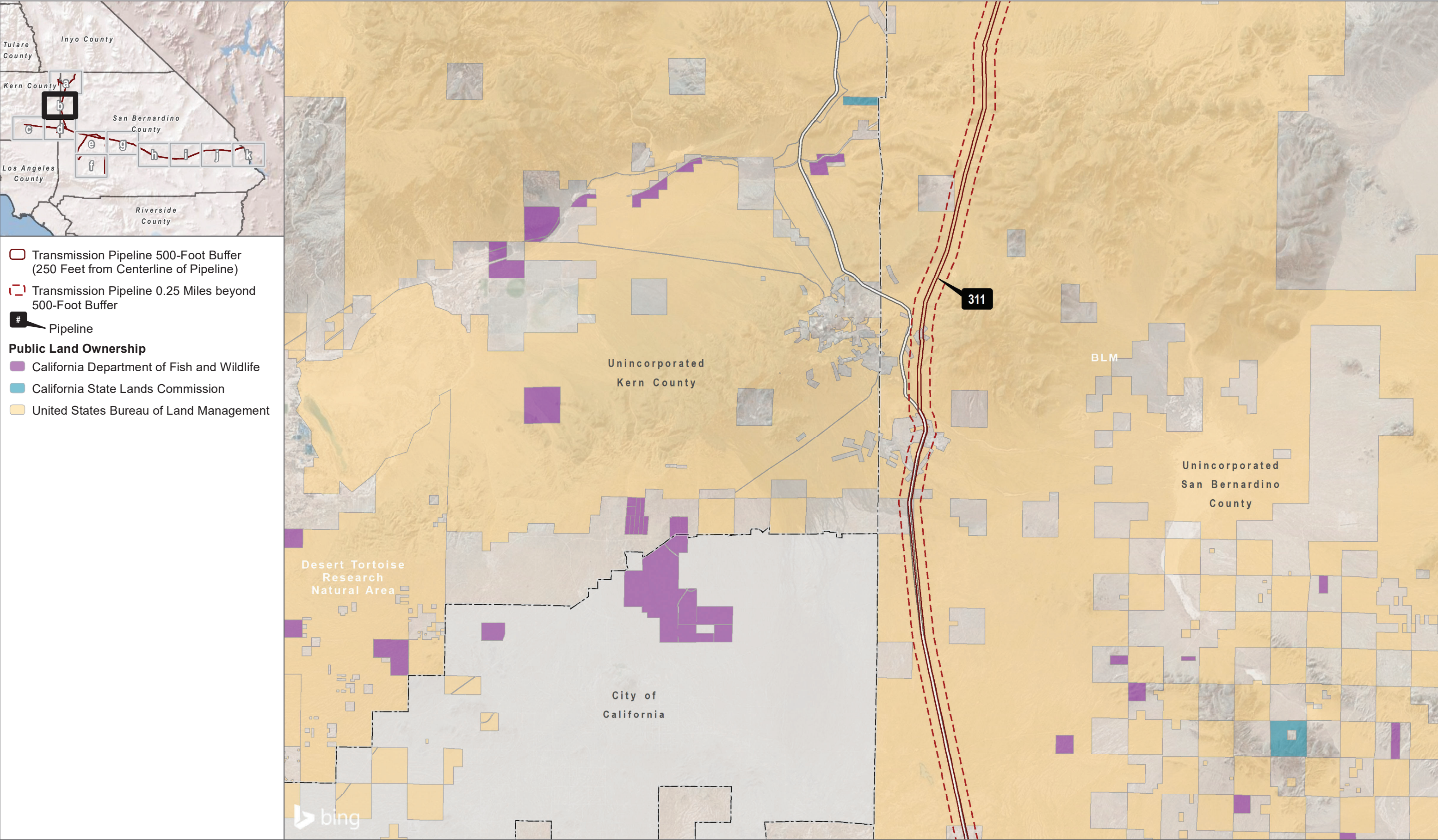
SOURCES: BLM 2015; CPAD 2013; CPAD 2020; Insignia 2020; PG&E 2020; U.S. Geological Survey 2013

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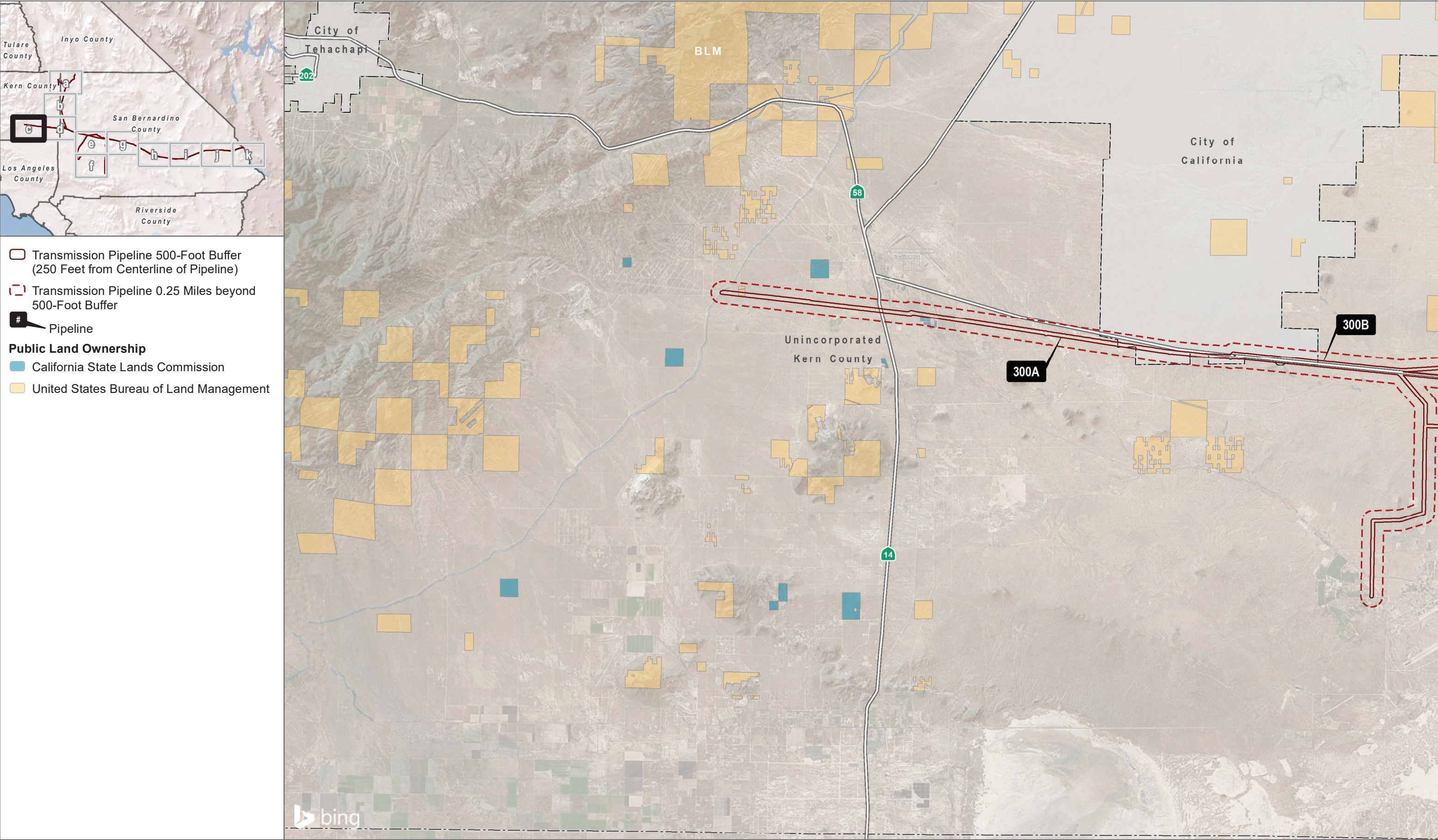
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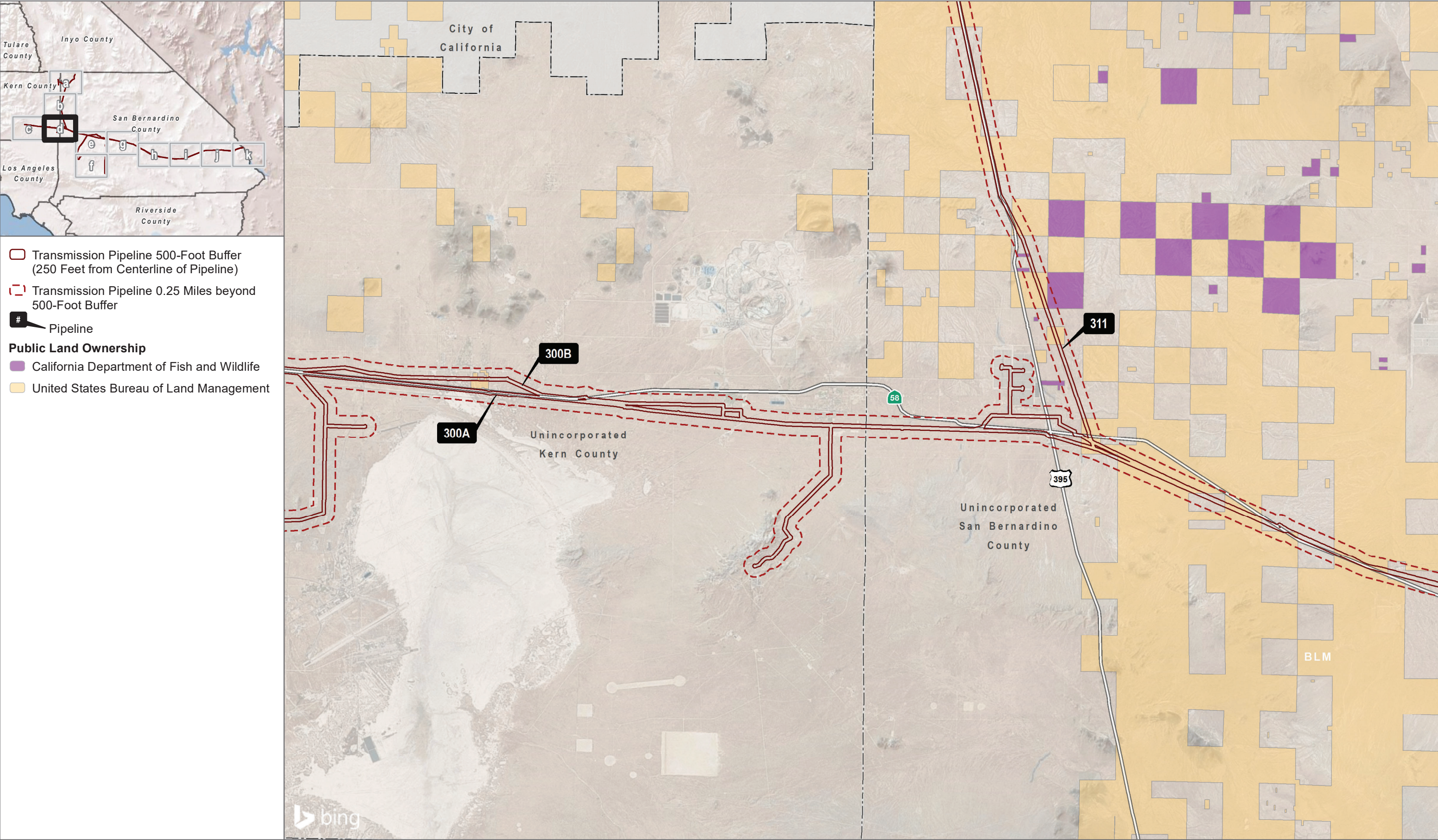
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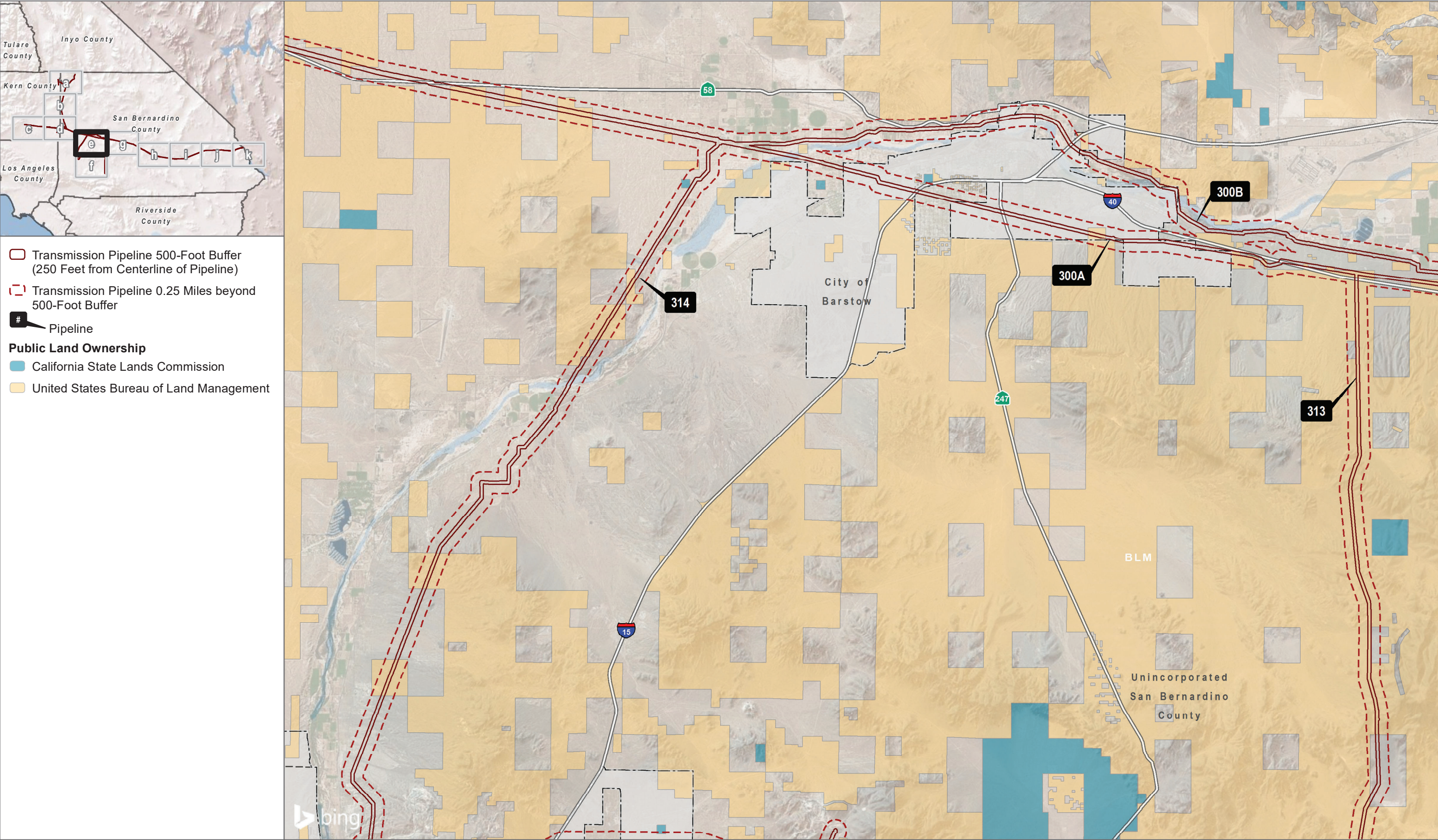
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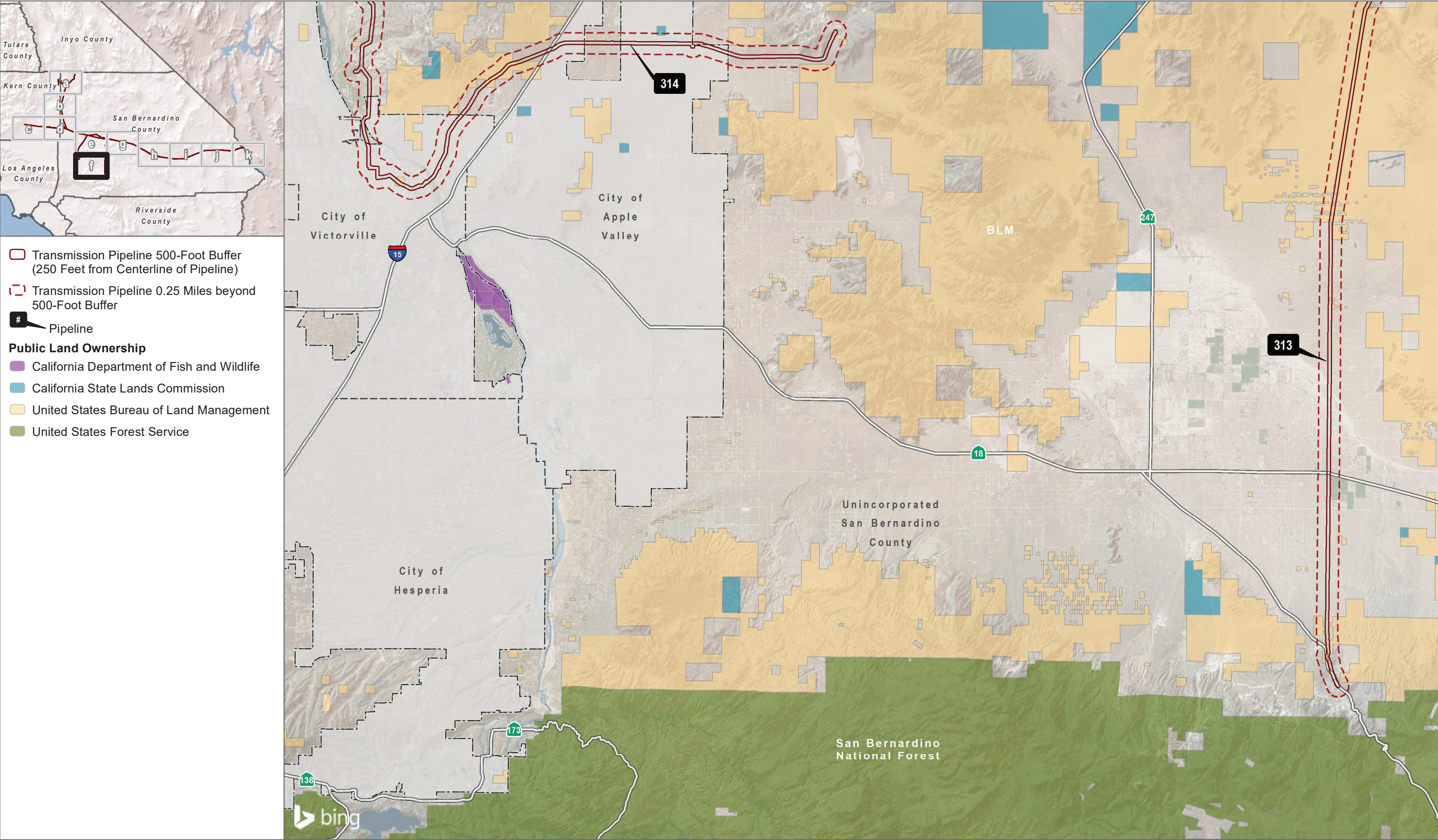
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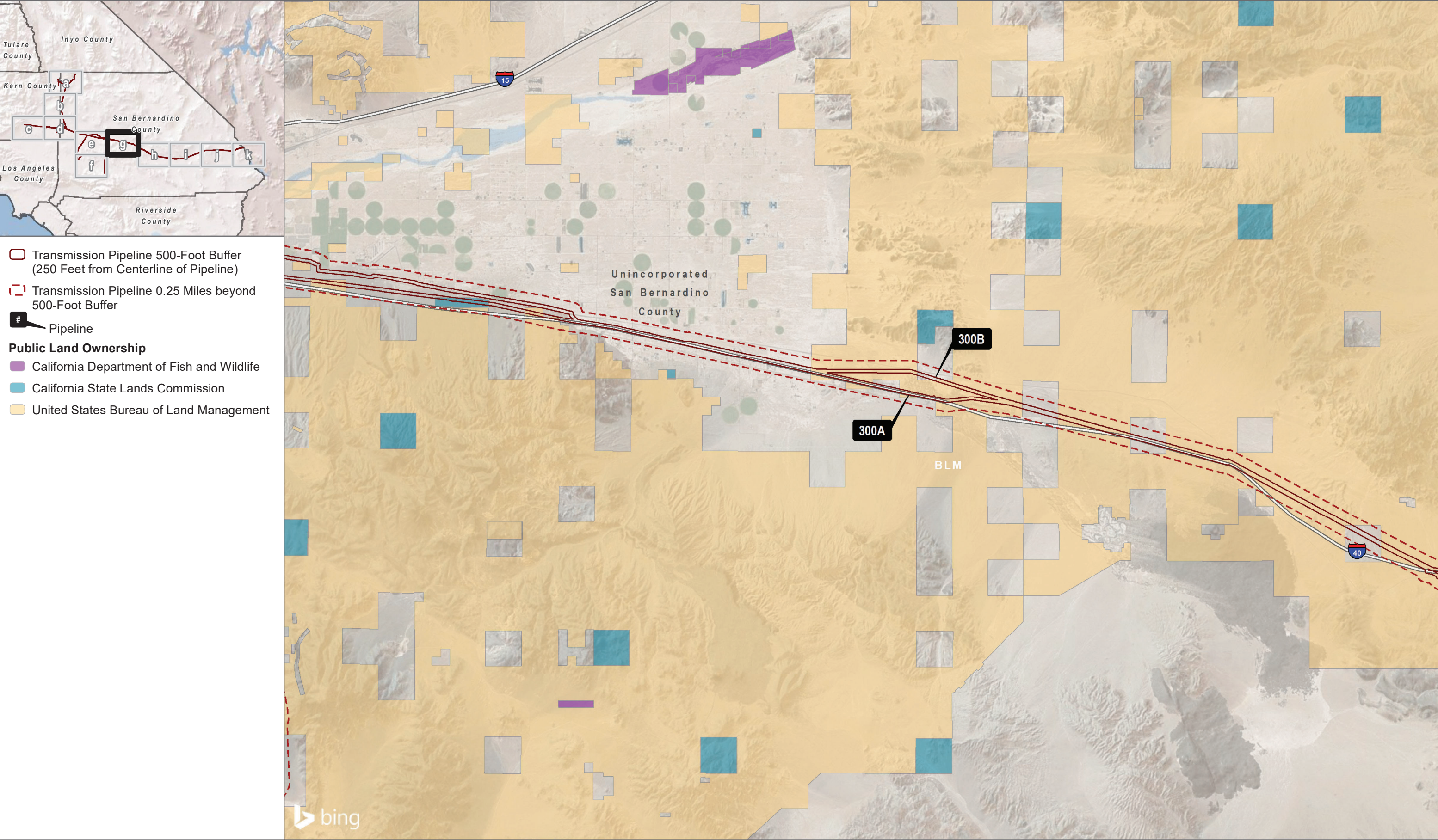
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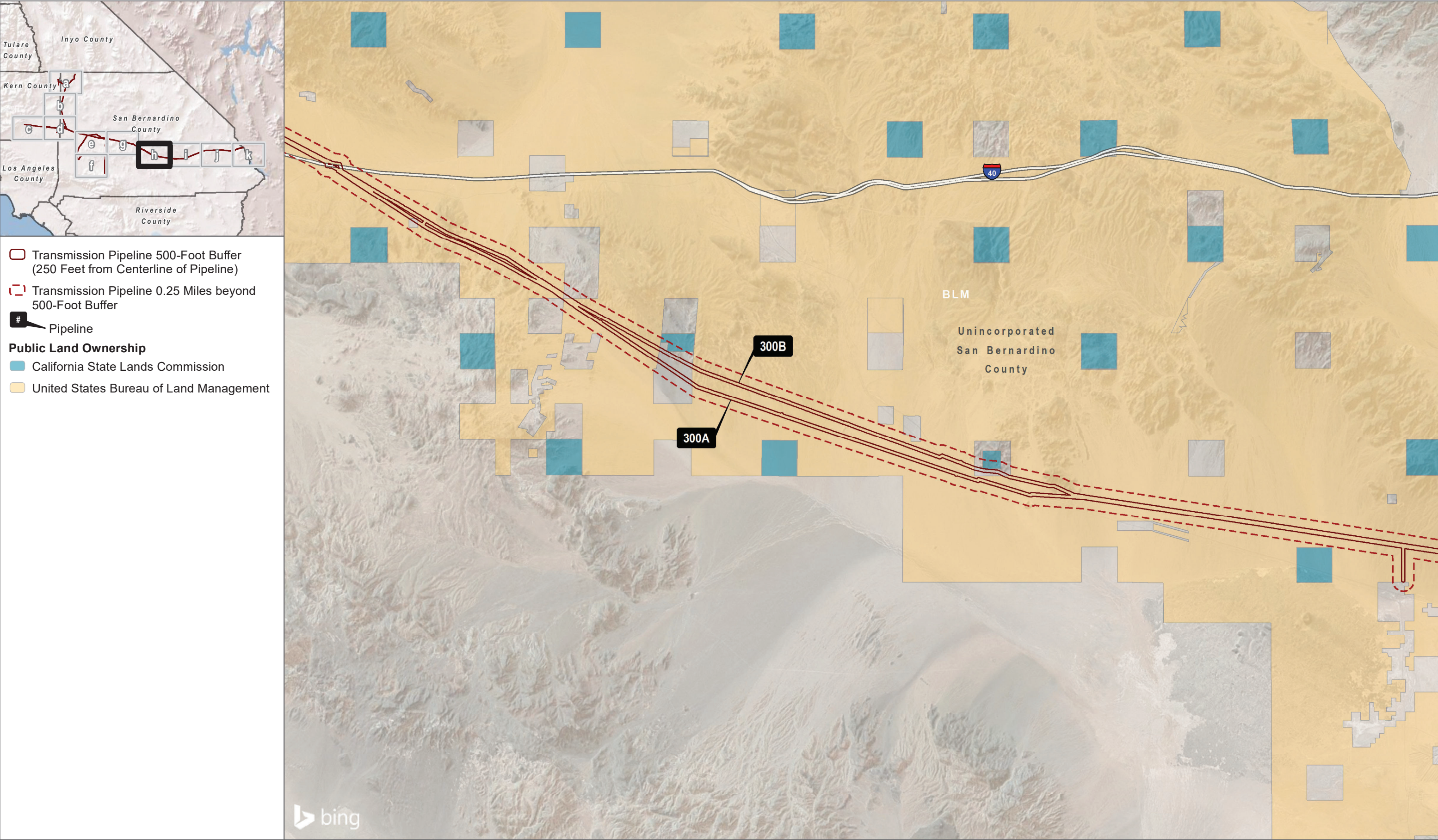
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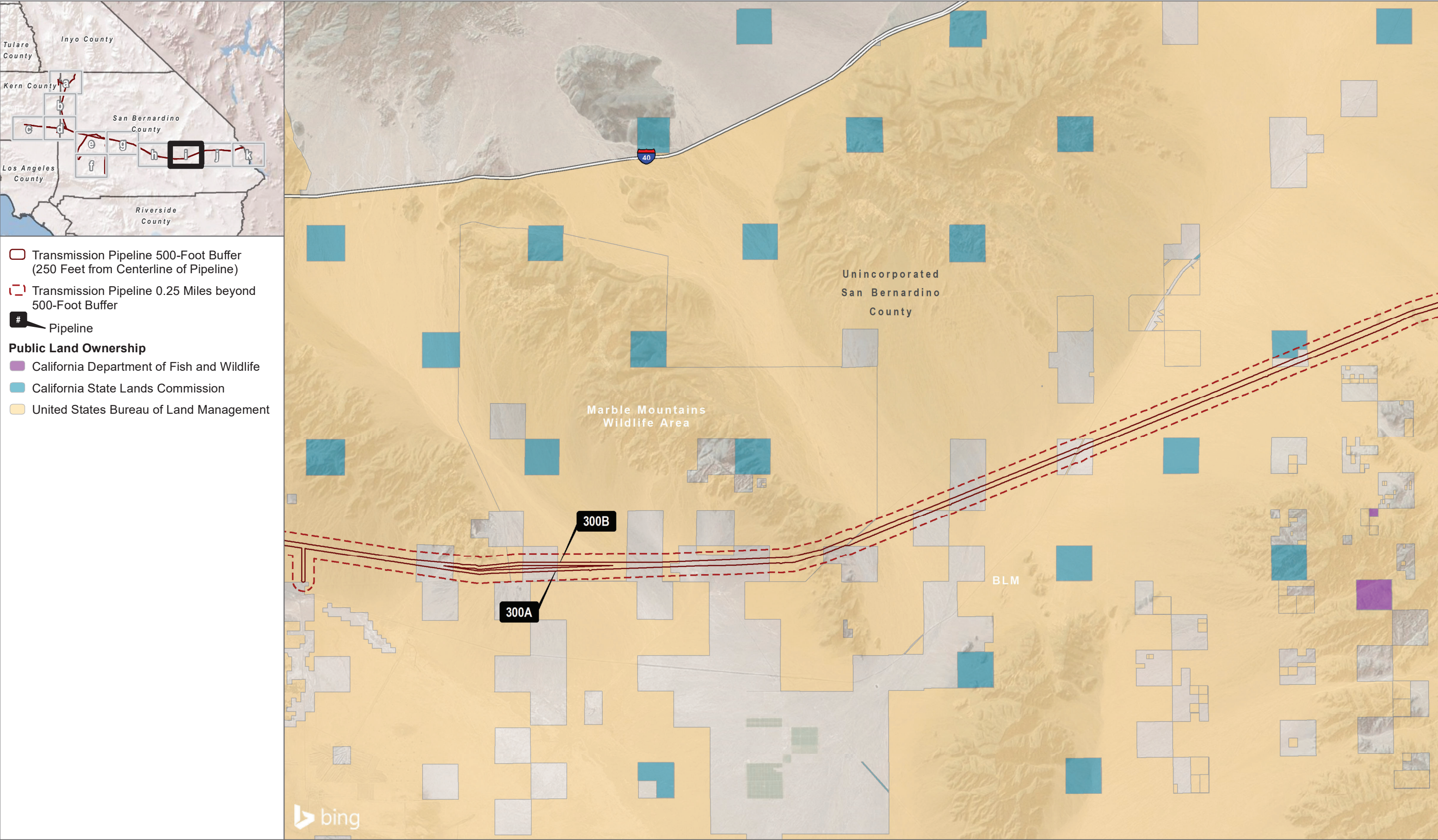
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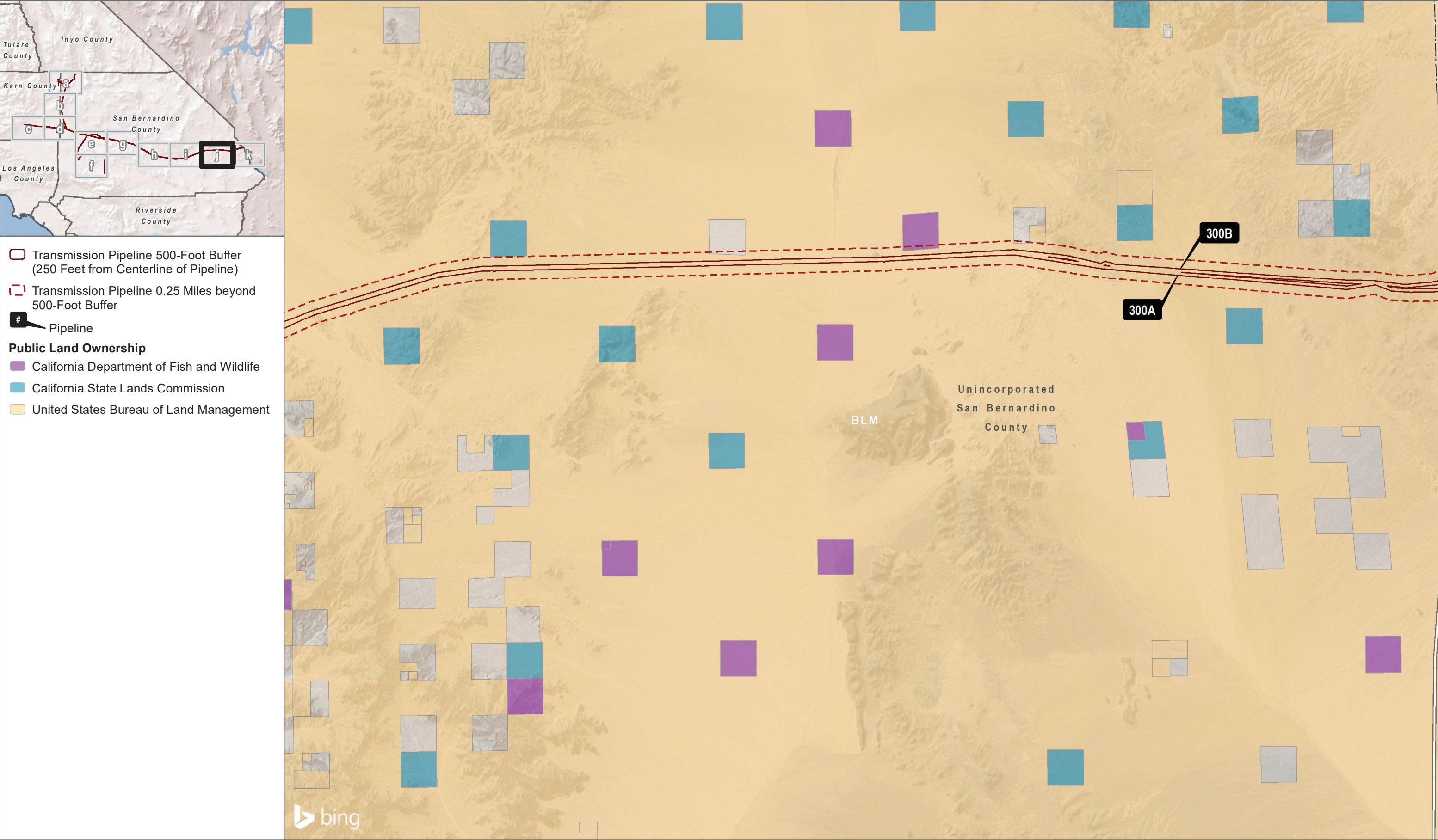
SOURCES: PG&E 2021; CNRA 2020; USFWS 2021

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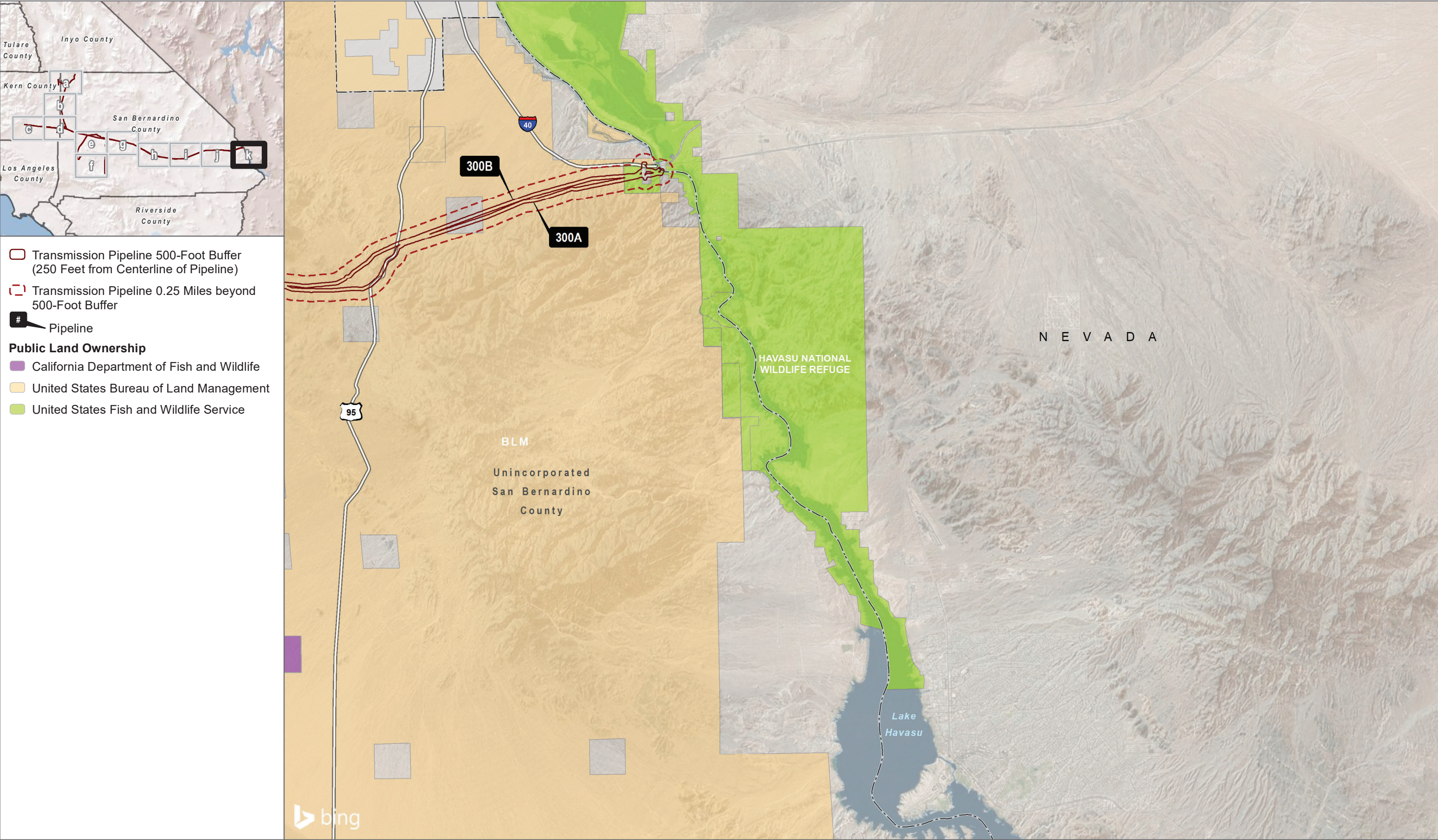
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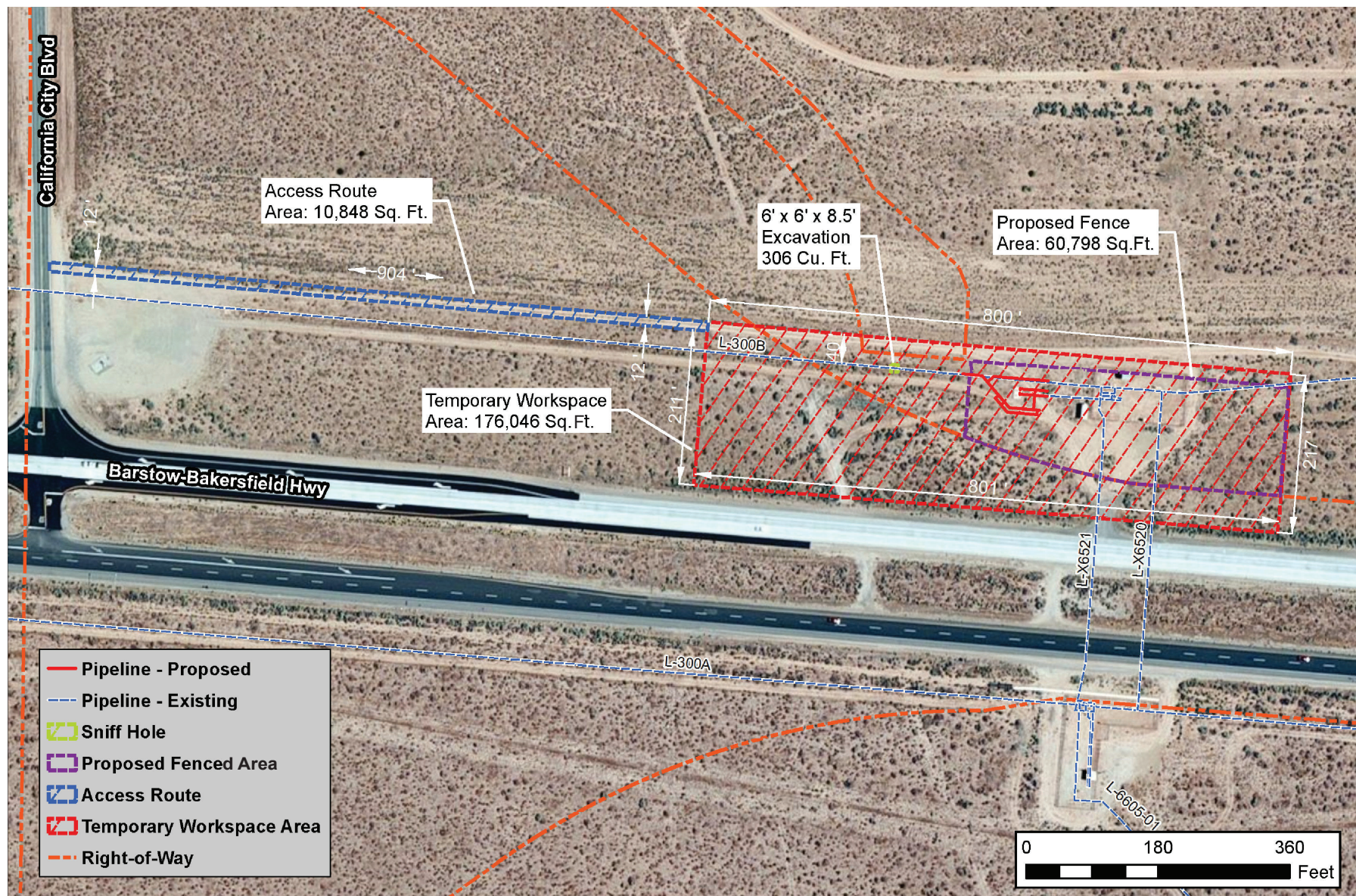
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SOURCES: PG&E 2021; CNRA 2020; USFWS 2021

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SOURCES: PG&E 2020; Insignia 2020

DUDEK

FIGURE 2-3

Typical Layout of Pig Launcher/Receiver Facility

PG&E Southern California Desert Gas Pipeline O&M EIR for ITP and LSA Agreements

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Date & Time: Tue Nov 22 13:33:03 PST 2016

Position: +036.54030° / -120.49289°

Altitude: 569ft

Datum: WGS-84

Azimuth/Bearing: 267° S87W 4747mils (True)

Elevation Angle: -01.6°

Horizon Angle: +00.4°

Zoom: 1X



SOURCES: PG&E 2020; Insignia 2020

DUDEK

FIGURE 2-4

Photograph of Typical Pig Launcher/Receiver Facility
PG&E Southern California Desert Gas Pipeline O&M EIR for ITP and LSA Agreements

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3 Cumulative Impacts Analysis Methodology

3.1 Introduction

The California Environmental Quality Act (CEQA) requires an environmental impact report (EIR) to analyze cumulative impacts. The purpose of this section of the EIR is to explain the methodology for the cumulative analyses and identify the related projects in the operation and maintenance (O&M) activities area (“study area”). Impacts associated with other projects may combine with those of the Pacific Gas and Electric Company’s (PG&E’s) ongoing O&M activities for its Southern California desert gas pipelines conditioned by permits (an Incidental Take Permit [ITP] and one or more Lake and Streambed Alteration [LSA] Agreements) requested from the California Department of Fish and Wildlife (CDFW). The potential cumulative effects of PG&E’s ongoing O&M activities conditioned by the CDFW permits (i.e., the proposed project) in combination with projects in the vicinity of PG&E facilities in the Mojave Desert Region are described in Chapter 4 for each resource topic.

Section 15355 of the CEQA Guidelines defines cumulative impacts as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (14 CCR 15355). Section 15130 of the CEQA Guidelines provides guidance for analyzing significant cumulative impacts in an EIR. The discussion of cumulative impacts “need not provide as great detail as is provided for the effects attributable to the project alone,” but instead is to be “be guided by standards of practicality and reasonableness” (14 CCR 15130[b]). The discussion should also focus only on significant effects resulting from the project’s incremental effects and the effects of other projects. According to Section 15130(a)(1) of the CEQA Guidelines, “an EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.”

Cumulative impacts can result from the combined effect of past, present, and future projects located in proximity to the O&M activities under review. Therefore, it is important for a cumulative impacts analysis to be viewed over time and in conjunction with other related past, present, and reasonably foreseeable future developments whose impacts might compound or interrelate with those of the project under review.

3.2 Methodology

According to Section 15130(b)(1) of the CEQA Guidelines, a cumulative impact analysis may be conducted and presented by either of two methods:

- (A) A list of past, present, and probable activities producing related or cumulative impacts
- (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document that has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact

Due to the differing nature of cumulative effects and the associated cumulative study area for each environmental topic, this analysis uses approach method (A) noted above.

3.2.1 Selection of Related Projects and Plans

Information for the cumulative analysis was gathered from internet searches of local planning department websites and correspondence with agency staff. In this section, the term “planned and proposed projects” collectively refers to projects that appear in the cumulative project list and those captured in the planning projections from approved plans. The temporal scope of the cumulative impacts, unless specifically stated otherwise in the resource analysis, is the term of the ITP issued by CDFW (along with one or more potential LSA Agreements), which is anticipated to be up to 30 years. The websites of the following entities were reviewed, and where appropriate, these agencies were contacted regarding development projects:

- County of Kern
- City of Adelanto
- City of Barstow
- City of Boron
- City of California City
- City of Needles
- City of Ridgecrest
- City of Victorville
- Town of Apple Valley
- Bureau of Indian Affairs
- Bureau of Land Management
- California Department of Fish and Wildlife
- California Department of Transportation (Districts 8 and 9)
- California Energy Commission
- California High Speed Rail Authority
- California Public Utilities Commission
- California State Lands Commission
- Department of Defense
- Federal Energy Regulatory Commission
- Kern Council of Governments
- National Park Service
- Regional Transportation Commission
- Riverside Land Conservancy
- San Bernardino Council of Governments
- San Bernardino County
- San Bernardino County Transportation Authority
- Southern California Edison

The geographic area that could be affected by PG&E’s ongoing O&M activities in combination with other projects varies depending on the type of environmental resource being considered. Table 3-1 presents the geographic scope associated with each resource topic analyzed as well as the method of evaluation used to analyze cumulative impacts for each environmental resource.

Table 3-1. Geographic Scope of Cumulative Impacts and Method of Evaluation

Resource	Geographic Scope	Method of Evaluation
Aesthetics	0.50 miles	List
Agriculture and forestry resources	1 mile	List and projections
Air quality	1 mile	List and projections
Biological resources	5 miles	List
Cultural resources	Crossed	List
Energy	—	Projections
Geology and soils	1 mile	List
Greenhouse gas emissions	—	Projections
Hazards and hazardous materials	1 mile	List
Hydrology and water quality	1 mile	List

Table 3-1. Geographic Scope of Cumulative Impacts and Method of Evaluation

Resource	Geographic Scope	Method of Evaluation
Land use and planning	1 mile	List and projections
Noise	1 mile	List
Recreation	1 mile	List
Transportation	Regional and 1 mile	List and projections
Tribal cultural resources	Crossed	List
Utilities and service systems	1 mile	List and projections
Wildfire	1 mile	List

3.2.2 Related Projects

Anticipated future projects within 5 miles of the study area with potential for cumulative impacts are depicted on Figure 3-1, Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area. These projects, along with the approximate locations of the anticipated future projects, their proximity to the study area, a brief description, and the project status, are also listed in Table 3-2.

For the purposes of this document, “reasonably foreseeable” refers to projects that federal, state, or local agency representatives have knowledge of, resulting from the formal application process as of May 2022. For the purposes of this EIR, past projects are defined by looking at existing land uses and known projects that have recently been completed or are ongoing. PG&E has conducted ongoing O&M activities in the study area for 70 years; these activities consist of O&M of the existing natural gas pipeline system and associated facilities in the Mojave Desert region. Land uses surrounding the study area are primarily vacant and agricultural. However, existing land uses in more urbanized areas include residential and industrial uses. The study area crosses land under the jurisdiction of the Bureau of Land Management, Department of Defense, U.S. Fish and Wildlife Service, CDFW, and California State Lands Commission.

Table 3-2. Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area

Figure 3-1 Project No.	Project Name	Location	Description	Proximity to Nearest PG&E Facility (Miles)	Nearest PG&E Facility	Status	Anticipated Construction Schedule
01	Eldorado–Lugo–Mohave Upgrade Project	From San Bernardino, California to Clark County, Nevada (near Laughlin), up north to Boulder City, Nevada	Modifications to SCE’s existing Eldorado, Lugo, and Mohave electrical substations to accommodate the increased current flow from Nevada to Southern California; construction of capacitors along SCE’s existing transmission lines to increase power flow; raising some transmission tower heights to meet ground clearance requirements; installation of telecommunications wire on transmission lines to allow for communication between SCE substations	Crossed	Line 300 A	Under construction	2021–2022
02	XpressWest	Apple Valley, California to Las Vegas, Nevada along I-15	Construction of a new, privately funded, high-speed passenger rail line connecting the Town of Apple Valley, California and the City of Las Vegas, Nevada along I-15	Adjacent and potential cross	Lines 300 A, 300 B, and 314	Planning	2022-2024
03	Mojave Pavement	Located along SR-14 and portions of SR-58 on the western edge of the unincorporated community of Mojave in Kern County	Construction of and upgrades to existing pavement to achieve compliance with ADA standards along SR-14.	Adjacent and potential cross	Lines 300 A and 300 B	Planning	2027–2028

Table 3-2. Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area

Figure 3-1 Project No.	Project Name	Location	Description	Proximity to Nearest PG&E Facility (Miles)	Nearest PG&E Facility	Status	Anticipated Construction Schedule
04	I-40 Regrade Existing Median	I-40 from approximately 4.5 miles east of Homer Wash bridge near the Town of Ludlow (PM R125.0) to the California/Arizona state line (PM R154.6) in rural San Bernardino County	Regrading the existing, non-standard I-40 median cross slopes within the approximately 30-foot clear recovery zone from the existing roadway	Adjacent and potential cross	Lines 300 A and 300 B	Environmental review	—
05	Camp Rock Solar Project	7508 Camp Rock Road, San Bernardino County (Third Supervisorial District)	Construction of a 3.9 MW PV solar energy facility on 20 acres in the community of Lucerne Valley	Adjacent	Line 313	Under review	—
06	Ivanpah-Control Project	Ridgecrest south to Kramer Junction and east through Barstow, following I-15 to the established Ivanpah Substation	Modifications to SCE's existing subtransmission system, including structure replacements, conductor replacements, vegetation removal, and access road improvements	Adjacent	Lines 300 A, 300 B, and 311	Planning	2021–2025
07	Ridgecrest/Inyokern Pavement	SR-178 from the eastern Kern–San Bernardino County line extending east to the SR-14 intersection	Pavement restoration, drainage repairs, and ADA compliance along an approximately 16-mile-long segment of SR-178	Adjacent	Various distribution feeder mains within and north of the City of Ridgecrest	Planning	2028–2032

Table 3-2. Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area

Figure 3-1 Project No.	Project Name	Location	Description	Proximity to Nearest PG&E Facility (Miles)	Nearest PG&E Facility	Status	Anticipated Construction Schedule
08	NTH – Nine Bridges Bridge Replacement Project	Located in eastern San Bernardino County in and around the unincorporated community of Amboy	Replacement of nine 1930s-era timber bridges with new, engineered-timber bridges along the NTH; will include implementation of rock slope protection, guardrails, and additional roadway reconstruction approximately 200 feet east and west of each bridge	Adjacent	Lines 300 A, 300 B, and DREG5343	Design	—
09	Daggett Solar 33	On NTH and approximately 1 mile west of Hidden Springs Road in Daggett	Construction of a 5 MW solar facility on approximately 40 acres in the community of Daggett	0.09	Line 300 A	Conditionally approved, no permits issued in public review	—
10	Daggett Solar 66	I-40 at Nebo Street, northeast of Barstow and directly east of 33640 NTH in Barstow	Construction of a 7 MW solar energy facility on approximately 134 acres in the community of Daggett	0.18	Line 300 B	Conditionally approved, no permits issued	—
11	Mojave to Boron Freeway	Approximately 14 miles west of Boron to the SR-58/SR-58U intersection	Roadway upgrades from a four-lane expressway to a four-lane freeway along an approximately 11-mile-long section of SR-58	Adjacent	Lines 300 A and 300 B	Planning	—
12	SR-58 Thin Blanket	Approximately 17 miles west of Boron to approximately 0.33 miles west of the Neuralia Road/SR-58 intersection	Installation of a thin blanket overlay with digouts along an approximately 2.5-mile-long section of SR-58	Adjacent	Lines 300 A and 300 B	Construction	2022

Table 3-2. Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area

Figure 3-1 Project No.	Project Name	Location	Description	Proximity to Nearest PG&E Facility (Miles)	Nearest PG&E Facility	Status	Anticipated Construction Schedule
13	District SRRA Repairs – Boron Eastbound	Approximately 0.9 miles west of the community of Desert Lake and 0.06 miles of SR-58 in Kern County	Various SRRA repairs	0.32	Line 300 B	Construction	2022
14	Coso Junction SRRA Wastewater	Along SR-58 and approximately 0.9 miles west of the community of Desert Lake in Kern County	Repair of an existing wastewater system	0.41	Line 300 B	Planning	—
15	District SRRA Repairs – Boron Westbound	Approximately 0.9 miles west of the community of Desert Lake and 0.06 miles north of SR-58 in Kern County	Various SRRA repairs	0.48	Line 300 B	Construction	2022
16	Mojave Special Crews Building Remodel	Approximately 0.12 miles north of SR-58 within the community of Mojave in Kern County	Remodel of an existing maintenance station	0.89	Line 300 B	Construction	2022–2023
17	Kern County Digouts	Along SR-14 and SR-58 from the southern SR-14/SR-58 intersection to the northern SR-14/SR-58 intersection within the community of Mojave in Kern County	Digouts at various locations along approximately 1.3 miles of SR-14 and SR-58	0.97	Line 300 B	Construction	2022

Table 3-2. Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area

Figure 3-1 Project No.	Project Name	Location	Description	Proximity to Nearest PG&E Facility (Miles)	Nearest PG&E Facility	Status	Anticipated Construction Schedule
18	Edwards Air Force Base Solar Project	Approximately 6 miles south of SR-58 and 1 mile west of SR-14 in Kern County	Construction of solar energy facilities on up to 4,000 acres of underutilized property	1.0	Line 300 A	Under construction	2021–2022
19	District Census Station Replacements	Along SR-58 in Kern County	Replacement of existing census stations	1.12	Line 300 B	Construction	2022
20	Mojave Maintenance Station Phase III	Along Nadeau Street and approximately 0.15 miles east of SR-58 in the community of Mojave in Kern County	Construction of Phase 3 of the California Department of Transportation (Caltrans) District 9 maintenance station	1.61	Line 300 B	Construction	2022
21	Rosamond–Mojave Rehab	Located along approximately 8 miles of SR-14 in Kern County	Pavement rehabilitation of on ramps, off ramps, and adjacent shoulders along approximately 8 miles of SR-14; may include upgrades to metal beam guardrails, traffic loop detectors, and other facilities within project limits	3.0	Lines 300 A and 300 B	Construction	2021–2022
22	Caltrans 08-1H2714	Approximately 0.4 miles of I-15 in the City of Victorville	Permanent restoration of existing irrigation systems.	3.44	Line 314	Construction	2022
23	Caltrans 08-1F9904	Approximately 0.3 miles of Palmdale Road at its intersection with I 15	Lengthening of the existing acceleration lane along Palmdale Road	3.57	Line 314	Construction	2022

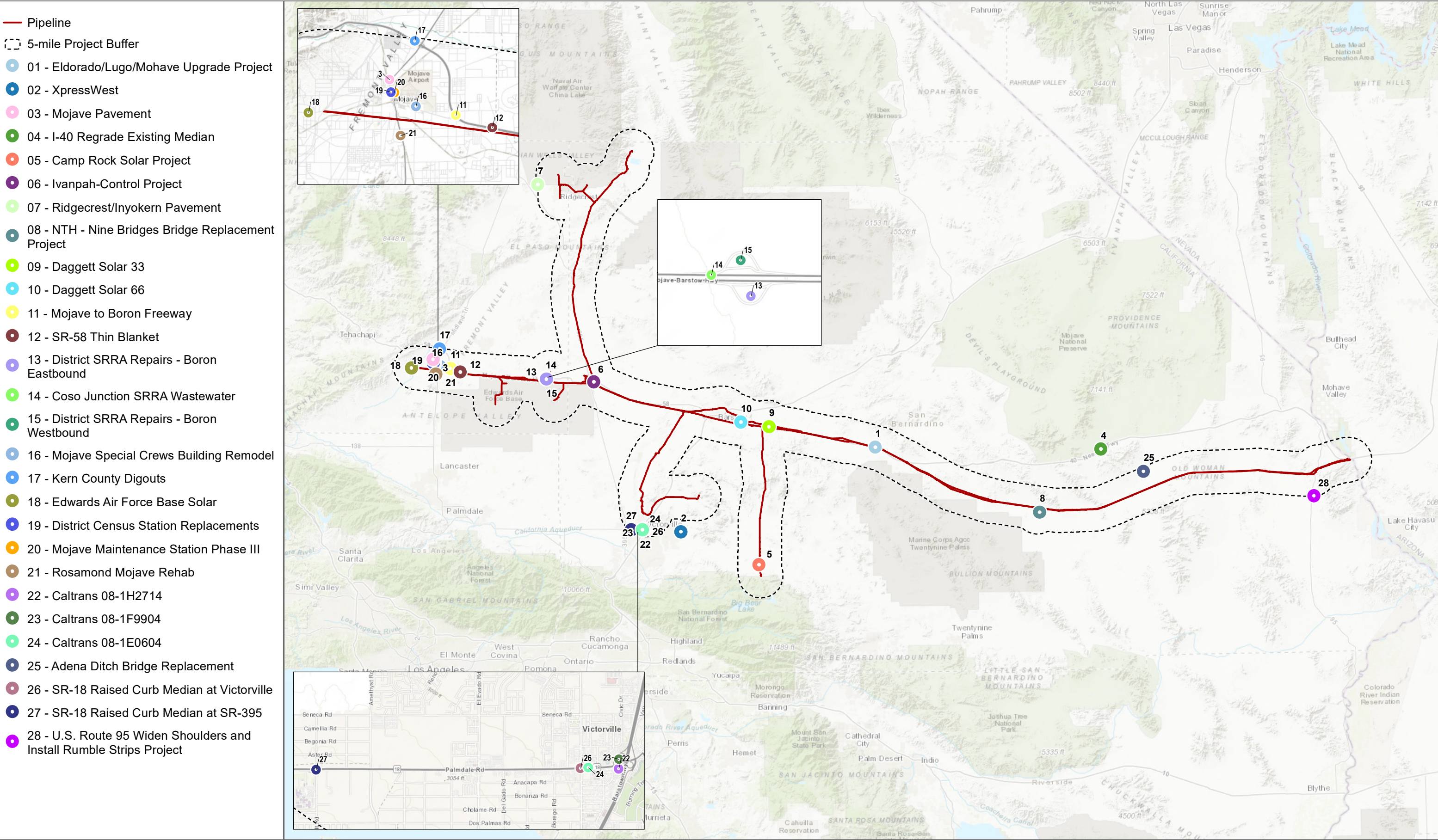
Table 3-2. Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area

Figure 3-1 Project No.	Project Name	Location	Description	Proximity to Nearest PG&E Facility (Miles)	Nearest PG&E Facility	Status	Anticipated Construction Schedule
24	Caltrans 08-1E0604	Approximately 2.5 miles of Palmdale Road between Amargosa Road and Cobalt Road in the City of Victorville	Widening of approximately 2.5 miles of Palmdale Road and construction of a raised median	3.59	Line 314	Construction	2022
25	NTH – Adena Ditch Bridge Replacement Project	Located in eastern San Bernardino County, approximately 4.3 miles east of Danby Road, near the unincorporated community of Essex	Replacement of a 1930s-era timber bridge with a new, engineered-timber bridge along the California NTH; will include implementation of rock slope protection, guardrails, and additional roadway reconstruction approximately 200 feet east and west of each bridge	3.5	Lines 300 A and 300 B	Design	—
26	SR-18 Raised Curb Median at Victorville	SR-18 from Amargosa Road east to Cobalt Road in the City of Victorville in San Bernardino County	Widening shoulders on SR-18 and construction of a raised curb median	3.6	Line 314	Under construction	2022
27	SR-18 Raised Curb Median at SR-395	SR-18 from Cobalt Road to U.S. Route 395 in Victorville in San Bernardino County	Widening shoulders on SR-18 and construction of a raised curb median	4.6	Line 314	Under construction	2022

Table 3-2. Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area

Figure 3-1 Project No.	Project Name	Location	Description	Proximity to Nearest PG&E Facility (Miles)	Nearest PG&E Facility	Status	Anticipated Construction Schedule
28	U.S. Route 95 Widen Shoulders and Install Rumble Strips Project	On U.S. Route 95 from post mile 40.0 to 40.4 in the unincorporated area of San Bernardino County	Widening shoulders and installation of rumble strips on U.S. Route 95	4.9	Line 300 A	Under review	—

Notes: SCE = Southern California Electric Company; I = Interstate; SR = State Route; ADA = Americans with Disabilities Act; MW = megawatt; PV = photovoltaic; NTH = National Trails Highway; SRRA = Safety Roadside Rest Area; — = information is not available.



SOURCE: Insignia 2022

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4 Environmental Analysis

The purpose of this introduction is to describe the structure and format of the environmental analysis provided in this chapter of the environmental impact report (EIR). As described in Chapter 2, Project Description, the proposed project for purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) that would authorize take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The ITP and LSA Agreements (collectively, "the permits" or "the proposed project") would condition ongoing PG&E O&M activities where those activities would impact fish and wildlife resources subject to the California Department of Fish and Wildlife's (CDFW's) related regulatory jurisdiction under the California Fish and Game Code (CFGC). PG&E applied for the ITP for its ongoing O&M activities generally as a matter of efficiency compared to CDFW permitting O&M activities where necessary on an individualized, site-specific basis. The term "project" for the purposes of the impact analysis presented in this chapter does not mean each separate approval by CDFW under the CFGC. The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This introduction describes the methodology and defines the terminology used in this chapter to analyze and disclose the potential environmental effects caused by CDFW issuing the permits that will condition the ongoing PG&E O&M activities.

The following environmental analyses provide information relative to 17 environmental resource categories as they pertain to the proposed project (i.e., issuance of the permits). Each section of this chapter describes the existing baseline conditions in the O&M activities area ("study area") for each resource category, relative to ongoing O&M activities described in Chapter 2; provides the regulatory framework for each resource category; addresses whether issuance of the permits would cause an incremental physical change to the existing environmental baseline; presents the criteria used to determine whether any related physical change would be significant; provides applicant proposed measures (APMs) and best management practices (BMPs) incorporated into PG&E's ongoing O&M activities to avoid or substantially lessen potentially significant impacts; describes, where relevant, potentially feasible mitigation measures that could substantially lessen or avoid significant impacts on the environment to the extent feasible; and discusses cumulative impacts that may occur as a result of the proposed project. This includes an analysis of related effects caused by the proposed issuance of the permits across the resource spectrum as the whole of the action under CEQA, which includes PG&E's ongoing baseline O&M activities (14 CCR 15378 and 15143). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this chapter.

This chapter includes a separate section for each of the following resource areas:

- Section 4.1, Aesthetics
- Section 4.2, Agriculture and Forestry Resources
- Section 4.3, Air Quality
- Section 4.4, Biological Resources
- Section 4.5, Cultural Resources

- Section 4.6, Energy
- Section 4.7, Geology and Soils
- Section 4.8, Greenhouse Gas Emissions
- Section 4.9, Hazards and Hazardous Materials
- Section 4.10, Hydrology and Water Quality
- Section 4.11, Land Use and Planning
- Section 4.12, Noise
- Section 4.13, Recreation
- Section 4.14, Transportation
- Section 4.15, Tribal Cultural Resources
- Section 4.16, Utilities and Service Systems
- Section 4.17, Wildfire

Analysis Format

This EIR evaluates whether, how, and to what extent CDFW's issuance of the permits under the California Fish and Game Code and its approval of the proposed project as the whole of the action generally under CEQA would impact the 17 resource areas. Each environmental resource category addressed in the EIR is analyzed in a separate section of this chapter, each of which is organized as follows:

- **Introduction.** The introductory portion of each section of Chapter 4 provides relevant context for the proposed project and an outline of the contents of the section. In addition, if applicable, comments received during the scoping period are noted.
- **Applicable Regulations, Plans, and Policies.** This section provides the regulatory framework, including relevant regulations, for each resource category.
- **Existing Baseline Conditions.** This discussion in each resource area section provides information describing the existing physical environmental conditions within or surrounding the study area relevant to the subsequent analysis of whether issuance of the permits would cause a related physical change to those conditions. The existing baseline conditions described in the EIR are those that existed at the time the notice of preparation was released for public review, including PG&E's ongoing O&M activities.
- **Impact Analysis**
 - **Significance Criteria.** This section provides criteria for determining the significance of impacts for each environmental resource caused by the proposed issuance of the permits. These thresholds are identified by number, and in the Impact Discussion are also identified by the impact topic (e.g., "AES" for aesthetics) and the corresponding number (e.g., "Impact AES-1").
 - **Applicable Measures.** APMs include BMPs that are standard practice for PG&E to reduce impacts and that will continue to be incorporated into the ongoing O&M activities. Where APMs specific to the resource topic are identified, they are provided in full in this section of the resource area section with a unique code (e.g., APM AES-1 for the first APM for aesthetics), as well as in the Executive Summary (Table ES-1, Summary of Project Impacts) and in Section 2.5, Applicable Measures, of the EIR. Standard PG&E BMPs are also included in this section, as applicable, as are references to APMs from other resource topics and other PG&E standard practices.

- **Impact Discussion.** This section discusses whether and to what extent CDFW issuing the permits that will condition PG&E's ongoing O&M activities is expected to cause an incremental change to the existing environment (from the baseline condition) and indicates whether the causally related project-specific impacts are below or exceed the significance thresholds. The study area includes the existing pipeline rights-of-way—Line 300 A, Line 300 B, Line 311, Line 313, Line 314, and Line 372—where O&M activities generally occur, as well as the established access roads. Several transmission pipelines, distribution pipelines, compressor stations, and associated facilities that transport natural gas to commercial, private, military, industrial, and utility electric generating customers are also in the study area. The study area also includes, as needed, certain areas located up to 0.25 miles beyond the rights-of-way (e.g., staging areas) and the associated telecommunication facilities, cathodic protection systems, valves, and related facilities. In addition, PG&E would site O&M activities requiring the expansion of existing and/or the new installation of aboveground or permanent facilities to avoid sensitive resources.
- **Mitigation Measures.** For the Biological Resources section only, this section containing all required mitigation measures is included.
- **Cumulative Impacts.** This subsection provides a discussion of the past, present, and reasonably foreseeable projects relevant to each resource area and documents cumulatively considerable environmental impacts that cannot be avoided or substantially lessened, cumulatively considerable environmental impacts that can be avoided or substantially lessened, and environmental impacts that are not cumulatively considerable.

The cumulative impacts analysis is based on a listing of key large, reasonably foreseeable projects that could contribute to a cumulatively considerable impact for particular resource areas. The list of cumulative projects considered in the analysis is provided in Table 3-2, Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area.

Collectively, these projects represent known and anticipated activities that may occur in the study area that have the potential to contribute to a cumulative impact on the environment. Information for the cumulative analysis was gathered from Internet searches of local planning department websites and correspondence with agency staff. The temporal scope of the cumulative impacts, unless specifically stated otherwise in the resource analysis, is the life of the project from adoption through 30 years.

The area within which a cumulative effect can occur varies by resource. For example, air quality impacts tend to disperse over a large area, whereas traffic impacts are typically more localized. Therefore, details regarding the cumulative analysis area are provided in each resource area section, as well as in Table 3-1, Geographic Scope of Cumulative Impacts and Method of Evaluation.

Mitigation measures to reduce cumulative impacts are included where necessary.
- **Residual Impacts.** This subsection provides a discussion of residual impacts following PG&E's commitment to implementing standard practices, BMPs, APMs, regulatory requirements, and biological resources mitigation measures where applicable, as relevant to each resource topic, into their ongoing O&M activity practices, as well as the causal connection of the proposed project (i.e., CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC).
- **References.** This subsection includes citations for the documents referred to in the Chapter 4 section.

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4.1 Aesthetics

4.1.1 Introduction

The proposed project for purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) that would authorize take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGC). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section of the environmental impact report (EIR) evaluates the environmental impacts on aesthetics that may result directly or indirectly from CDFW's issuance of the ITP and the expected LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on aesthetics that could result with continuing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the project for purposes of CEQA). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this section.

Section 4.1.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have been occurring and will continue to occur, specific to aesthetics.

Section 4.1.3 provides a description of the existing conditions for aesthetics in the O&M activities area ("study area"). Specifically, this section provides a description of the resources relative to aesthetics in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. This existing baseline condition, which includes the ongoing activities already being implemented by PG&E relative to their past, present, and continued potential effect on these resources, is the benchmark used in the Section 4.1.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these environmental baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.1.4 provides an analysis of whether issuance of the requested permits (pursuant to the CFGC) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline and a substantial or potentially substantial adverse effect related to aesthetics. The section also identifies the significance criteria used for the impact analysis and applicant proposed measures (APMs). Furthermore, this section discusses applicable regulatory authority or governing law that has applied and will continue to apply, specific to aesthetics.

Section 4.1.5 provides an analysis of whether the project-related incremental change to the environmental baseline would be cumulatively considerable and therefore significant.

Section 4.1.6 identifies the residual environmental impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.1.7 lists the references cited in this section.

During the scoping effort, no party identified any public concerns related to potential aesthetics impacts.

The analysis included in this section is based on information that PG&E provided to CDFW, as well as relevant information gathered and considered by CDFW, with assistance from its environmental consultant.

4.1.2 Applicable Regulations, Plans, and Policies

The following subsections describe the regulations and regulatory agencies related to aesthetics (i.e., visual resources) that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and CDFW's analysis of whether the proposed issuance of the permits would cause an incremental physical change to the existing environment and cause significant impacts to aesthetics.

Federal

Federal Land Policy and Management Act

Under the Federal Land Policy and Management Act (FLPMA) of 1976 (43 USC 1701), land management agencies are required to manage federally owned public lands in a manner that protects the quality of resources, including scenic resources. The FLPMA designated the approximately 26-million-acre California Desert Conservation Area (CDCA) in Southern California, of which approximately 10.4 million acres are managed by the U.S. Bureau of Land Management (BLM). The FLPMA provides a framework for BLM to manage resources in perpetuity and led to the development of the CDCA Plan, which acts as BLM's land use guide for the management of public lands and resources.

California Desert Conservation Area Plan

The CDCA Plan establishes goals for the protection and use of the CDCA and a framework for managing its various resources. The CDCA Plan contains an Energy Production and Utility Corridors Element, in which the BLM encourages utility right-of-way applicants to use designated corridors. The CDCA Plan recognizes the BLM's Visual Resource Management (VRM) program as the tool that the BLM uses to assess visual resources and inform land use decisions. As part of Phase I of the Desert Renewable Energy Conservation Plan (DRECP), the BLM adopted the Land Use Plan Amendment (LUPA), which amended the CDCA Plan and the Bishop and Bakersfield Resource Management Plans in September 2016.

Desert Renewable Energy Conservation Plan

The DRECP is a collaborative effort between the California Energy Commission, CDFW, BLM, and the U.S. Fish and Wildlife Service (USFWS) to achieve the following:

- Advance federal and state natural resource conservation goals and other federal land management goals.

- Meet the requirements of the federal Endangered Species Act, California Endangered Species Act, Natural Community Conservation Planning Act, and FLPMA.
- Facilitate the timely and streamlined permitting of renewable energy projects in the Mojave and Colorado/Sonoran Desert regions of Southern California.

The DRECP covers approximately 22.5 million acres in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties. The DRECP is being prepared in two phases. Phase I consists of the BLM LUPA to the CDCA Plan and Bishop and Bakersfield Resource Management Plans. The DRECP designates National Scenic and Historic Trail management corridors. Phase II was planned to include a General Conservation Plan for approximately 5.5 million acres of non-federal land and a Conceptual Plan-Wide Natural Community Conservation Plan for the entire DRECP area. DRECP Phase II has not been completed and is not currently being planned.

The DRECP identifies existing electric utility corridors and recognizes conservation and management actions, which restrict siting and construction activities to those existing utility corridors to minimize resource impacts by reducing the need for new, unplanned transmission infrastructure. The issuance of the permits and the O&M activities described in this EIR were not contemplated under the DRECP.

BLM Land Use Plan Amendment

The BLM LUPA establishes management direction for the permitting of renewable energy and electric transmission development on approximately 10 million acres of BLM-managed lands in the DRECP area. The BLM LUPA amends the CDCA Plan and the Bishop and Bakersfield Resource Management Plans. The purpose of the LUPA is to conserve biological, environmental, cultural, recreation, scenic, and visual resources; respond to federal renewable energy goals and policies, including state-level renewable energy targets; and comply with the FLPMA. The BLM LUPA designates land use allocations, prescribes conservation management actions, and establishes VRM classes.

BLM Visual Resource Management System

BLM uses the VRM System to inventory and manage scenic values on lands under its jurisdiction. Guidelines for applying the system are described in the BLM Manual Section 8400 et seq. (BLM 1986). VRM classes are assigned through Resource Management Plans. The assignment of VRM classes is based on the management decisions made in the Resource Management Plans and are assigned based on a combination of factors that include scenic quality, sensitivity level, and distance zones. The BLM requires the preparation of a visual resource inventory on land it manages and assigns a rating to lands based on management objectives and resource sensitivity. Class I is the most restrictive and allows for natural ecological changes and very limited management activities resulting in very low levels of visual change. Classes II, III, and IV allow for increasing levels of visual change, with Class IV being the least restrictive. It should be noted that contrast ratings merely assess consistency with the applicable VRM objective and do not determine impact significance as required under CEQA.

The VRM classes for BLM-managed land within the study area include all four classes, but the majority (almost two-thirds) of the lands in the study area are designated as Class III. The approximate length of pipeline in each VRM class is as follows:

- | | |
|--------------------------|----------------------------|
| ▪ Class I – 0.34 miles | ▪ Class III – 200.59 miles |
| ▪ Class II – 44.27 miles | ▪ Class IV – 74.59 miles |

State

Caltrans State Scenic Highway Program

The State Scenic Highway Program is a provision of Sections 260 through 263 of the Streets and Highways Code and was established by the Legislature in 1963 to preserve and enhance the natural beauty of California. The State Scenic Highway System includes highways that are either eligible for designation as scenic highways or have been designated as such. The status of a state scenic highway changes from “eligible” to “officially designated” when the local jurisdiction adopts a scenic corridor protection program, submits an application to the California Department of Transportation (Caltrans) for scenic highway approval, and receives the designation from Caltrans. A city or county may propose adding routes with outstanding scenic elements to the list of eligible highways; however, state legislation is required.

Figure 4.1-1, Scenic Roadways and Historic Sites, presents the local, state and federally designated scenic highways in the study area. State scenic highways near the study area include the following eligible state scenic highways: Interstate (I) 15, State Route (SR) 18, I-40, SR-58, SR-247. The nearest officially designated state scenic highway is SR-38, which is located more than 7 miles to the south of pipeline within the San Bernardino Mountains and is not visible from the study area (Caltrans 2018). U.S. Historic Route 66, which is an officially designated Federal Scenic Byway, also passes through the study area (BLM 2021).

Local

The following subsections describe local regulations regarding aesthetics that are relevant to the proposed project and ongoing O&M activities. Pursuant to Article XII, Section 8 of the California Constitution, the California Public Utilities Commission (CPUC) has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, operation, maintenance, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with CPUC. Although local governments do not have the power to regulate such activities, CPUC encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has considered relevant regional and local policies and issues in this EIR.

The following plans from local jurisdictions were reviewed, and no specific goals or policies were identified that are relevant to ongoing O&M in the study area:

- City of Barstow 2015–2020 General Plan
- City of Victorville General Plan 2030
- Town of Apple Valley 2009 General Plan

The City of Barstow General Plan Land Use Element (City of Barstow 2015) identifies land designated as Open Space/Conservation (OS/C) as having high environmental resource value, including scenic vistas. The City of Victorville General Plan (City of Victorville 2008) discusses the national scenic byways designation of U.S. Historic Route 66, a portion of which traverses the project area, as depicted on Figure 4.1-1. The Town of Apple Valley General Plan (Town of Apple Valley 2009) discusses the importance of protecting scenic resources and identifies the Mojave River and the surrounding knolls, hillsides, mountains, and the natural desert environment as important natural resources that should be preserved as Open Space.

Plans with relevant goals or policies are described in the subsections that follow.

San Bernardino County

San Bernardino County 2020 Countywide Policy Plan. The San Bernardino County 2020 Countywide Policy Plan contains goals and policies related to aesthetics and scenic resources within the Land Use Element, Housing Element, Transportation and Mobility Element, and Natural Resources Element. The Land Use Element identifies scenic, natural, and recreational resources as key elements of the community character and requires that new development employ design techniques and building materials that reflect the natural environment to preserve scenic resources. The Housing Element uses the planned development review process to regulate the density and configuration of residential development to protect scenic resources. The Transportation and Mobility Element contains policies related to establishing vistas along scenic routes when making road improvements. Because the proposed project does not include residential, road, or new development that would include varying building materials or be subject to design standards, these policies are not applicable to the project. The Natural Resources Element (San Bernardino County 2020) contains the following goals and policies for the protection of visual resources in the desert region that may be relevant to O&M activities in the study area:

Goal NR-4: Scenic Resource: Scenic resources that highlight the natural environment and reinforce the identity of local communities and the county.

Policy NR-4.1: Preservation of scenic resources. We consider the location and scale of development to preserve regionally significant scenic vistas and natural features, including prominent hillsides, ridgelines, dominant landforms, and reservoirs.

Policy NR-4.2: Coordination with agencies. We coordinate with adjacent federal, state, local, and tribal agencies to protect scenic resources that extend beyond the County's land use authority and are important to countywide residents, businesses, and tourists.

Policy NR-4.3: Off-site signage. We prohibit new off-site signage and encourage the removal of existing off-site signage along or within view of County Scenic Routes and State Scenic Highways.

Policy NR-5.3: Multiple-resource benefits. We prioritize conservation actions that demonstrate multiple resource preservation benefits, such as biology, climate change adaptation and resiliency, hydrology, cultural, scenic, and community character

Kern County

Kern County General Plan. The Land Use, Open Space, and Conservation Element of the Kern County General Plan provides guidance and implementation measures related to the orderly development of county lands and the protection of natural resources within unincorporated areas. The Land Use, Open Space, and Conservation Element of the Kern County General Plan (County of Kern 2009) contains the following policy related to aesthetics that is relevant to O&M activities in the study area:

Policy 48: Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.

The Circulation Element of the Kern County General Plan establishes the importance of protecting scenic highways and directs the City's Planning Department to prepare the necessary specific plans required by

Caltrans. However, no scenic corridors are identified in the General Plan. The General Plan also identifies oak trees and oak woodlands as valued scenic resources.

Kern County Zoning Ordinance. Chapter 19.81, Outdoor Lighting, of the Kern County Zoning Ordinance is known as the county’s “Dark Skies Ordinance” and regulates both permanent and temporary sources of lighting. Permanent lighting must be directed and shielded to reduce spillover onto neighboring properties. Section 19.81.050(6) exempts temporary lighting associated with the construction of utility facilities.

City of California City

City of California City Final General Plan 2009–2028. The Land Use Element of the City of California City Final General Plan 2009–2028 (City of California City 2009) addresses scenic beauty in the city and contains the following Open Space and Recreation policy that is relevant to O&M activities in the study area:

- Promote both scenic beauty of the area and the numerous recreational vehicle activity opportunities in the area.

The Circulation Element of the City of California City Final General Plan 2009–2028 acknowledges SR-58 as a scenic route corridor.

City of Ridgecrest

City of Ridgecrest General Plan. The Community Design Element of the City of Ridgecrest General Plan emphasizes natural features as a framework for new development in the city. The Community Design Element of the City of Ridgecrest General Plan (City of Ridgecrest 2009) contains the following goal and associated policies that are relevant to O&M activities in the study area:

Goal C-8: Provide for and enhance the aesthetic visual experience of travelers using the city’s highway and roadway systems.

Policies C-8.1 through C-8.6 identify standards for landscaping, signage, and scenic corridor designation for the City’s local scenic corridors: North and South China Lake Boulevard, East Ridgecrest Boulevard, West Bowman Road, College Heights Boulevard, West Drummond Avenue, Jacks Ranch Road, and Inyokern Road.

4.1.3 Existing Baseline Conditions

This section provides a description of the existing baseline conditions relative to aesthetics in the study area that have been and could continue to be affected by PG&E’s ongoing O&M activities regardless of whether CDFW issues the requested permits. PG&E’s gas pipeline system has been in place for more than 70 years. Impact data collected by PG&E from 2017 to September 2021 regarding temporary and permanent disturbance impacts caused by O&M activities provides important detail about the environmental baseline for purposes of CEQA (refer to Section 1.1, Proposed Project and Environmental Review). The ongoing baseline condition from 2017 to 2021, which includes PG&E’s past and ongoing O&M activities, is the benchmark used in the Section 4.1.4 impact analysis to evaluate whether CDFW’s issuance of the permits would cause a related incremental physical change to baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Regional and Local Landscape Setting

The study area consists of several existing transmission pipelines, associated pipelines, and distribution feeder mains (and associated 500-foot buffer) located in southeastern Kern County and, generally, central San Bernardino County. The existing transmission line network consists of generally east–west pipelines (Lines 300 A and 300 B) that stretch from the City of Tehachapi on the west, through Hinkley, Barstow, and Amboy, and toward the convergence of I-40 and Arizona SR-95 at the California–Nevada border on the east. Several north–south pipelines branch off Lines 300 A and 300 B and extend the study area north toward Searles Valley and the City of Ridgecrest and south toward the City of Victorville and the Los Angeles County line at the foot of the San Bernardino Mountains (refer to Figure 2-1, PG&E Facility Location Map). The study area also passes through the cities/communities of California City, North Edwards, Boron, and Oro Grande, as well as unincorporated and undeveloped desert lands. Lastly, the existing pipeline network generally follows or parallels existing interstate and highway facilities in Kern and San Bernardino Counties, including SR-58, U.S. Route 395, National Trails Highway, U.S. Historic Route 66, and I-40. Individual pipelines also cross I-15, SR-247, and SR-18.

Visually prominent natural features surrounding the study area include the Sierra Nevada foothills and the Tehachapi Mountains to the west, dark and rugged mountainous terrain within and adjacent to the boundaries of the Havasu National Wildlife Refuge (NWR) to the east, the isolated Searles Valley (including the dry lakebed of Searles Lake) and dry Argus Mountains to the north, and the San Bernardino Mountains to the south. Additional mountain ranges near the study area include the brown-to-reddish-hued (and volcanic) Lava Mountains near Johannesburg; the Newberry and Ord Mountains south of Daggett and I-40; and, south of I-40 in the eastern extent of the study area, the rugged Marble Mountains, Old Woman Mountains, Ord Mountains, Little Piute Mountains, and Chemehuevi Mountains. An extinct cinder-cone type of volcano, Amboy Crater, and surrounding lava fields are also in the eastern extent of the study area near the unincorporated community of Amboy. Generally, the mountains in the study area are interspersed with flatlands consisting of broad and narrow valleys (narrow canyons also occur). Major highways (e.g., I-15, I-40, U.S. Route 395, and SR-58) traverse the study area.

PG&E's study area includes land within the CDCA and land located east of the CDCA but west of the Colorado River. The study area also includes the following areas:

- Havasu NWR, which is managed by USFWS
- Marble Mountains Wildlife Area, which is co-managed by BLM and CDFW
- West Mojave Desert Ecological Reserve, which is cooperatively managed by CDFW and BLM
- Mojave Trails National Monument, which is managed by BLM
- Edwards Air Force Base, which is owned by the U.S. Air Force
- Naval Air Weapons Station China Lake, which is owned by the U.S. Navy
- Open space lands (including several wilderness and special recreational management areas) that are managed by BLM

With the exception of Edwards Air Force Base and Naval Air Weapons Station China Lake, these areas provide opportunities to the public for undisturbed views of rural, remote, and protected open spaces with limited development. The areas listed above are shown on Figure 4.13-1, Regional Recreational Facilities Crossed by the Pipelines in the Study Area (refer to Section 4.13, Recreation).

Located north of Kramer Junction in San Bernardino County, the West Mojave Desert Ecological Reserve consists of a partial checkerboard collection of lands featuring low shrubs (white bursage [*Ambrosia dumosa*] and creosote bush [*Larrea tridentata*]) and offering dispersed wildlife viewing and hiking opportunities. A small segment of the study area traverses the ecological reserve but due to the remote location and lack of consolidated lands, public use is assumed to be limited.

As shown on Figure 4.13-1, the eastern extent of the study area is primarily encompassed by the Mojave Trails National Monument, which is composed of 1.6 million acres of federal lands that include rugged mountain ranges, evidence of ancient lava flows, and sand dunes. Recreational opportunities in the national monument include developed and dispersed camping, hiking, rockhounding, and off-highway vehicle exploration. Public use of the area of the national monument traversed by the study area is assumed to be low due to the general lack of formal recreational facilities.

Approximately 30.34 miles of pipeline are located within the Marble Mountains Wildlife Area, which is located north of U.S. Historic Route 66, south of I-40, and east of Kelbaker Road, within southeastern San Bernardino County. The area, which consists of approximately 55,000 acres of typical Mojave Desert vegetation with sectors of volcanic rocks, offers limited recreational opportunities (wildlife viewing and hunting). Limited public use of the area is anticipated due to the remote location of the area and limited recreational opportunities offered.

The Havasu NWR is located within San Bernardino County. Approximately 2.47 miles of pipelines in the study area are located on this USFWS-managed land. Recreational opportunities offered at Havasu NWR include boating, fishing, hunting, wildlife observation, and canoeing/kayaking. Due to the variety of recreational opportunities offered and the accessibility of the area from I-40 and the Arizona community of Topock, low to moderate public use is assumed. Views to the study area from the Havasu NWR are primarily available from the Colorado River at the I-40/Arizona SR-95 span.

Located within San Bernardino and Kern Counties in the western extent of the study area, Edwards Air Force Base comprises over 300,00 acres of land, including the Rogers and Rosamond dry lakebeds, within the Antelope Valley area. An existing distribution feeder main off Line 300 A provides natural gas to Edwards Air Force Base. Naval Air Weapons Station China Lake is located within Inyo, Kern, and San Bernardino Counties. Naval Air Weapons Station China Lake is vast, occupying more than 1.1 million acres of land, with its main facilities near the City of Ridgecrest. Although neither facility is open to the public or provides public viewing opportunities, the associated development and activity (or lack thereof) contribute to the study area landscape; therefore, the development and activity associated with both facilities are identified and described in this section for context.

Visual Character

The study area's pipeline system is located on federal, state, private, and municipal lands, and the majority of the system is in an undeveloped and open desert landscape. As previously described, the existing visual character of the study area is heavily influenced by the various mountain ranges and valleys in the landscape and centers and outposts of development. To aid in the description of the visual character of the expansive study area, a photographic inventory of the study area was conducted by Insignia Environmental in 2021 (refer to Figures 4.1-2a through 4.1-2i, Public Vantage Points Mapbook, and Figures 4.1.3a through 4.1.3f, Existing Photographs of the Study Area). Representative locations within the study area were identified near existing pipelines and facilities and selected for photographic documentation purposes.

Locations were selected based on proximity to viewer groups, recreational areas, and valued scenic resources, including state and locally designated scenic routes. Figures 4.1-2a through 4.1-2h present the selected photograph locations within the study area, and Figures 4.1-3a through 4.1-3f consist of selected photographs from each location (labeled as Photographs 1 through 11).

As depicted in the photographs, the study area consists of a generally open desert landscape. Available views provided to motorists, recreationists, and residents include typical desert scenery of broad valleys, scattered and low vegetation, and rugged mountain terrain. The common visual pattern of the valley and mountain landscape in the study area is captured in Photographs 2 and 3 (Figure 4.1-3a and Figure 4.1-3b), 5 through 8 (Figures 4.1-3c and 4.1-3d), and 10 and 11 (Figures 4.1-3e and 4.1-3f). As previously stated, the study area also includes small communities with limited development, suburban and retail development within established cities, isolated industrial facilities, and utilities, including electricity, natural gas, and others. Specifically, the pipeline system crosses four small cities and one town—the Cities of Barstow, Victorville, California City, and Ridgecrest and the Town of Apple Valley. These urbanized areas feature low-density commercial and light-industrial development and predominantly single-family residential neighborhoods. Typical dispersed and concentrated city development within the study area's valley and mountain landscape is depicted in Photographs 6, 9, 10, and 11 (Figures 4.1-3c, 4.1-3e, and 4.1-3f). Representative photographs of isolated industrial facilities and common utilities in the study area are presented on Figures 4.1-3a (Photograph 1), 4.1-3b (Photograph 4, which includes a cement facility), 4.1-3d (Photograph 7, which includes a recycling center, and Photograph 8, which includes natural gas and electrical infrastructure), and 4.1-8f (Photograph 11, which includes electrical and natural gas infrastructure). Although not depicted in Figures 4.1-3a through 4.1-3f, wind turbine development and electrical infrastructure is prevalent in the westernmost extent of the study area (west of SR-14 and Mojave), which extends into the Tehachapi Wind Resource Area. Lastly, large interstate freeways cross the study area landscape and freeway interchanges are concentrated near the incorporated municipalities.

Scenic Vistas

According to publicly available mapping and local general plans, there are no marked or designated scenic vistas (e.g., official vista points and scenic overlooks) located within the study area. While not specific to any location or area, the County of San Bernardino General Plan indicates that the County contains vast expanses of undeveloped land that offer scenic vistas (San Bernardino County 2007). Additionally, the Town of Apple Valley General Plan identifies the Mojave River, the surrounding knolls and hillsides, and the natural desert environment as valued scenic resources that should be protected (Town of Apple Valley 2009). As such, open views of the undeveloped desert landscape in Kern and San Bernardino Counties are considered scenic vistas for purposes of this analysis. For example, unimpeded views of undeveloped open space in the study area, including broad valleys, surrounding mountains, and the Mojave and Colorado Rivers, are considered scenic vistas.

Scenic Highways

There are no officially designated state scenic highways in the study area; however, there are six eligible state scenic highways, as listed in Table 4.1-1 and shown on Figure 4.1-1. Locally designated scenic routes and corridors also occur in the study area. For example, San Bernardino County designates three of the eligible scenic highways (I-40, SR-247, and SR-18), as well as U.S. Historic Route 66, as local scenic routes (San Bernardino County 2007) and the City of Ridgecrest designates several roads within the city limits as scenic corridors.

Table 4.1-1. State and Local Scenic Highways in the Study Area

Scenic Highway, Interstate, State Route, or Road	Jurisdiction	Designation	Location
I-15	San Bernardino County	Eligible state scenic highway	From SR-58 northeast to SR-127
I-40	San Bernardino County	Eligible state scenic highway	From the City of Barstow east to the City of Needles
SR-58	San Bernardino County	Eligible state scenic highway	From the Kern County line west to I-15
	Kern County		From SR-14 east to the San Bernardino County line
SR-247	San Bernardino County	Eligible state scenic highway	From SR-62 north to I-15
SR-18	San Bernardino County	Eligible state scenic highway	From SR-138 east and north to SR-247
I-40	San Bernardino County	San Bernardino County scenic route	From the community of Ludlow northeast to the City of Needles
U.S. Historic Route 66	San Bernardino County	San Bernardino County scenic route	From the community of Oro Grande northeast and east to the Arizona state line, except areas within incorporated cities
SR-18	San Bernardino County	San Bernardino County scenic route	From the City of Big Bear Lake northeast to the Town of Apple Valley; within the City of Victorville's sphere of influence; and from the City of Victorville to the Los Angeles County line
SR-247	San Bernardino County	San Bernardino County scenic route	From the Town of Yucca Valley north to the City of Barstow
SR-14	Kern County	Eligible state scenic highway	From SR-58 (near Mojave) to U.S. Route 395 (near Little Lake)
North and South China Lake Boulevard	City of Ridgecrest	City of Ridgecrest scenic corridor	Within the Ridgecrest city limits
Inyokern Road	City of Ridgecrest	City of Ridgecrest scenic corridor	Within the Ridgecrest city limits
East and West Ridgecrest Boulevard	City of Ridgecrest	City of Ridgecrest scenic corridor	Within the Ridgecrest city limits
West Bowman Road	City of Ridgecrest	City of Ridgecrest scenic corridor	Within the Ridgecrest city limits
College Heights Boulevard	City of Ridgecrest	City of Ridgecrest scenic corridor	Within the Ridgecrest city limits
West Drummond Avenue	City of Ridgecrest	City of Ridgecrest scenic corridor	Within the Ridgecrest city limits
Jacks Ranch Road	City of Ridgecrest	City of Ridgecrest scenic corridor	Within the Ridgecrest city limits

Sources: Caltrans 2011; San Bernardino County 2007; City of Ridgecrest 2009.

Notes: I = Interstate; SR = State Route.

Photographs showing representative views available to motorists from select eligible state scenic highways and U.S. Historic Route 66 are provided in Figures 4.1-3a through 4.1-3d. Photograph 1 on Figure 4.1-3a includes a south-facing view from westbound I-40 in the eastern extent of the study area near the Colorado River. As depicted in the photograph, the elevated vantage point offered from westbound I-40 provides viewing opportunities to the Chemehuevi Mountains as well as existing natural gas facilities. Photographs 3 and 4 on Figure 4.1-3b capture available views from U.S. Historic Route 66/National Trails Highway of the open desert landscape and SR-18 near the base of the San Bernardino Mountains. Figure 4.1-3c (Photograph 5) depicts a typical scene of the SR-274 landscape east of the Community of Lucerne Valley and Figure 4.1-3d (Photograph 8) captures an existing westward view from SR-58 near the Community of North Edwards. As depicted in the photos, views from these scenic roadways primarily consist of an open desert landscape dotted with low brush vegetation against the backdrop of rugged, dark mountains.

Representative views from select locally designated scenic routes are included on Figures 4.1-3e (Photograph 9, China Lake Boulevard) and Figure 4.1-3f (Photograph 11, Inyokern Boulevard). Photograph 9 includes the view from China Lake Boulevard to existing commercial development in the City of Ridgecrest and Photograph 11 includes views from Inyokern Boulevard to existing development and more distant natural features (e.g., mountains).

In addition to state and local designation, U.S. Historic Route 66 (National Trails Highway) was designated by the State of California as a Historic Route in 1991 and as a National Scenic Byway by the Federal Highway Administration National Scenic Byways Program (BLM 2021). Photograph 3 on Figure 4.1-3b presents a representative view from U.S. Historic Route 66/National Trails Highway within the study area.

Historic Sites

Three historic places along U.S. Historic Route 66 are outside the study area but in close proximity to it: the Harvey House Railroad Depot and Newberry Cave in San Bernardino County and Rogers Dry Lake in Kern County, as shown on Figure 4.1-1. Given the historic designation of the railroad depot and prominent visual features associated with the Newberry Cave and Rogers Dry Lake, these places are considered scenic resources. While the Harvey House Railroad Depot is visible from roadways that traverse the study area, the Newberry Cave system is not. Rogers Dry Lake is the nearest historic site to an eligible state scenic highway, and it is located immediately south of SR-58 and Lines 300 A and 300 B. Rogers Dry Lake is also a designated National Historic Landmark (NRHP 2016).

Light and Glare

The study area primarily encompasses a non-urbanized desert landscape with relatively few existing sources of light and glare. Existing sources of stationary light and glare are generally concentrated in and around incorporated cities and consist of interior and exterior building lights, signs, and streetlights. Additional sources of light and glare include rural development scattered throughout the study area. Lastly, some existing energy facilities and utilities within the study area are equipped with safety lighting.

Viewer Groups

The primary viewer groups in the study area consist of motorists, residents, and recreational facility users.

Motorists constitute the largest viewer group and include both local and regional travelers who are familiar with the visual setting, as well as those using area roads on a less regular basis. Most numerous are the motorists traveling on large state and interstate facilities (e.g., I-15 and I-40) who experience brief, elevated to normal angle views of the study area and existing facilities, as depicted in Figures 4.1-3a (Photograph 1), 4.1-3b (Photograph 4), and 4.1-3c (Photograph 5). The sensitivity of this viewer group is considered low to moderate due to the short exposure of views experienced at highway speeds. Other viewers include motorists on the National Trails Highway (U.S. Historic Route 66) (refer to Photograph 3 on Figure 4.1-3b), as well as motorists on local roads, including locally designated scenic routes (refer to Photographs 9 and 11 on Figures 4.1-3e and 4.1-3f). Motorists on these roads would also experience brief views of the study area, but due to the availability of views to the typical valley and mountain landscape in the study area (National Trails Highway) and the scenic route designations, the sensitivity of viewers on these roads is considered moderate.

The second viewer group consists of nearby residents in the cities and towns, or in the sparse rural residential properties dispersed throughout the study area. Residential views tend to be long in duration and frequent; therefore, the sensitivity of this viewer group is considered moderate to high.

The third viewer group is composed of recreationists using recreational areas, parks, and trails in the study area. This group includes visitors to the various wilderness areas crossed by the study area and visitors to local parks and recreational facilities (refer to Photographs 2, 7, and 10 on Figures 4.1-3a, 4.1-3d, and 4.1-3e, respectively). Recreationists' views range from relatively brief to longer in duration. The sensitivity of this viewer group is considered moderate to high due to the potential for unimpeded views of the valley and mountain landscape for extended durations.

4.1.4 Impact Analysis

4.1.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of aesthetics impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For purposes of this EIR, aesthetic impacts would be significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would:

1. Have a substantial adverse effect on a scenic vista.
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
3. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from [a] publicly accessible vantage point.) If the project is in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

4.1.4.2 Applicable Measures

Applicant Proposed Measures

As part of its standard practice, PG&E will continue to incorporate the following APMs into its ongoing O&M activities to avoid or minimize the potential for adverse aesthetics impacts. The APMs, where applicable, are discussed in the impact discussion in Section 4.1.4.3.

- APM AES-1 **Restoration of Disturbed Areas.** Previously vegetated areas greater than 0.10 acres that are disturbed and also visible from a scenic vista, designated state scenic highway, or public viewpoint would be recontoured to their original conditions and reseeded with an appropriate native seed mix to minimize scarring.
- APM AES-2 **Evaluation of Proposed Aboveground Facilities.** PG&E would conduct an assessment for visual impacts at all aboveground facilities larger than 0.10 acres and within a scenic vista; within, adjacent to, or visible from a designated scenic highway; or visible from a public viewpoint. If PG&E determines that there is a potential for visual impacts, one or more of the following measures would be implemented:
- The facility would be assessed to determine whether it can be relocated to an area not visible within the scenic vista, designated state scenic highway, or public viewpoint.
 - All disturbed areas would be revegetated by using species that are consistent with the facility's setting.
 - Local jurisdictions and parks agencies would be consulted, as appropriate, to ensure that the aesthetic treatment of facilities meets the adopted guidelines.
- APM AES-3 **Temporary Construction Lighting.** If temporary construction lighting is required, PG&E would use shielded construction light fixtures, and lighting would be directed away from nearby residences except in the case of emergency.
- APM AES-4 **Permanent Lighting.** If permanent lighting for a facility is required, the lighting would be motion activated or controlled by a manual switch. The lighting would also be directed downward to avoid glare.

The following additional APM from Section 4.4, Biological Resources, would also help to avoid or further reduce the prospect that ongoing PG&E O&M activities would cause adverse aesthetic impacts when incorporated by PG&E as standard practice:

- APM BIO-13: Restoration

Refer to Section 4.4.4.2 and Section 2.5, Applicable Measures, for the full text of APM BIO-13.

4.1.4.3 Impact Discussion

Impact AES-1 Would the project have a substantial adverse effect on a scenic vista?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of ground disturbance, as described in Chapter 2, Project Description. As discussed in Section 4.1.3, Existing Baseline Conditions, roads, residences, and recreational lands in and near the study area offer opportunities for obscured to unimpeded long views to a primarily undeveloped desert landscape heavily influenced by various mountain ranges and valleys, as well as concentrated centers and dispersed outposts of development. PG&E has been conducting O&M activities in this landscape in the study area, these activities are ongoing, and they will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause a substantial adverse effect on a scenic vista.

The visual and aesthetic impacts of PG&E's ongoing O&M activities as part of the existing conditions will continue with or without CDFW's issuance of the permits. PG&E's ongoing O&M activities in the study area have caused, can cause, and will continue to cause temporary visual impacts in the aesthetic landscape associated with the presence of equipment, materials, and crews at work sites. Because a portion of the pipeline network in the study area is located within existing roadways, equipment for O&M activities can be visible to motorists traveling through scenic areas. These activities can and do affect small geographic areas and can result in limited, typically brief, and sometimes partial blockage of scenic vistas from roadways and public vantage points. The visibility of scenic features in the landscape is restored for motorists and from public vantage points when PG&E completes the O&M activity that has been causing the temporary visual or aesthetic interruption.

Similarly, PG&E's ongoing O&M activities have caused, can cause, and will continue to cause the potential for perceptible visual contrast and visible evidence of ground disturbance and vegetation removal. These types of visible scarring of the landscape and resulting visual contrast between disturbed and undisturbed areas will continue to occur with PG&E's ongoing O&M activities. Most of the time these ongoing aesthetic effects are temporary because PG&E returns the ground-disturbed areas to pre-activity or near pre-activity contours, ensures that the affected sites are revegetated, and restores the affected aesthetic to baseline conditions. In the rare instances where O&M-activity-related ground disturbance converts the affected visual landscape permanently, typically less than an acre is affected and PG&E takes steps to minimize visual contrast and temper any adverse aesthetic effect. These ongoing O&M activities do not generally have a substantial adverse effect on areas visible from a scenic vista, state scenic highway, or public viewpoint offering unimpeded, long and broad views of valued scenic resources.

Finally, PG&E's ongoing O&M activities have caused, can cause, and will continue to cause aesthetic effects with the installation of permanent aboveground structures. The structures PG&E may install as minor new construction would continue to have small footprints (ranging from 40 to 25,000 square feet per facility) and would be low profile. For example, all facilities constructed as minor new construction covered under the permits would continue to have a maximum height that is generally less than the 8-foot-tall fencing that would surround the facilities. While some facilities, including pig launcher/receiver facilities, would have a permanent disturbance footprint of up to 30,000 square feet (0.69 acres), all features would generally be

shorter than the surrounding 8-foot-tall fence. An existing pig launcher and receiver facility is included in Photograph 8 (refer to Figure 4.1-3d). View exposure to these facilities and thermoelectric generators (where installed near an existing road, a residence, or recreational lands that provide views of the scenic valley and mountain landscape) would be brief and the scale of facility features would not result in substantial or continuous view obstruction; therefore, scenic view blockage and the visual prominence of the structures would not be substantial or adverse due to the low height of facilities, the distance between the pipeline alignment and the surrounding scenic resources, and the short length of exposure to views of temporary (and recurring) activities and permanent facilities.

All of PG&E's ongoing O&M activities with the potential to affect a scenic vista will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to aesthetics. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts to aesthetics. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR (Biological Resources, Impact Analysis), issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline aesthetic conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing aesthetic baseline in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not cause a substantial adverse impact on a scenic vista.

PG&E's commitment to implementing relevant APMs provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing aesthetic baseline or a substantial adverse effect on a scenic vista. For example, the potential for long-term changes to the landscape (and views) would be minimized through incorporation of APM AES-1 (refer to Section 4.1.4.2 for the text of all aesthetics APMs), which requires the restoration of areas subject to ground disturbance or vegetation removal to pre-activity contours and conditions; in addition, incorporation of APM BIO-13, which is similar to APM AES-1 regarding the restoration of disturbed areas, would further minimize this potential. Also, potential view interruption or degradation associated with the introduction of new aboveground facilities would be addressed through incorporation of APM AES-2, which requires an evaluation of such aboveground facilities and potential remediation if they are found to substantially affect an existing unimpeded view of a valued scenic resource. Lastly, APM AES-3 and APM AES-4 address view disruption and degradation during evening and nighttime hours through the use of shields and other controls that minimize opportunities for glare and unnecessary illumination of the night sky.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing aesthetic baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects on a scenic vista is so attenuated that, although the prospect of a

related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect on a scenic vista; any related effect would be **less than significant**.

Impact AES-2 Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of ground disturbance, as described in Chapter 2. As discussed in Section 4.1.3, roads, residences, and recreational lands in and near the study area offer opportunities for obscured to unimpeded long views to a primarily undeveloped desert landscape heavily influenced by various mountain ranges and valleys, as well as concentrated centers and dispersed outposts of development. PG&E has been conducting O&M activities in this landscape in the study area, these activities are ongoing, and they will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause a substantial adverse effect on scenic resources within a state scenic highway.

No officially designated state scenic highways are currently located within the study area, and the nearest officially designated state scenic highway (SR-38) is located more than 7 miles away within the San Bernardino Mountains (Caltrans 2018). Due to distance and intervening terrain and vegetation, views to the study area are not available from SR-38.

Approximately 509 miles of pipelines within the study area are partially parallel to six eligible state scenic highways, as depicted on Figure 4.1-1 (I-15, SR-18, I-40, SR-58, SR-14, and SR-247). For purposes of this analysis, it is assumed that eligible state scenic highways could become officially designated state scenic highways over the 30-year duration of the ITP and the O&M activities and therefore must be analyzed as such. Additionally, locally designated scenic corridors and U.S. Historic Route 66 (a federally designated scenic byway) are located in the study area viewshed and are discussed below.

Views from nearby eligible state scenic highways include a generally flat desert landscape with low, scattered vegetation, rugged mountain and hills, utilities, and occasional industrial facilities. Refer to Figures 4.1-3a (Photograph 1), 4.1-3b (Photographs 3 and 4), 4.1-3c (Photograph 5), and 4.1-3d (Photograph 8) for representative views from eligible state scenic highways and U.S. Historic Route 66. As depicted in Photograph 9 (China Lake Boulevard; Figure 4.1-3e) and Photograph 11 (Inyokern Boulevard; Figure 4.1-3f), views from locally designated scenic routes consist of similar views, but with noticeably higher concentrations of development. Regarding pipeline infrastructure, pipeline markers approximately 4 feet tall are detectable in the photographs and are visible from multiple locations throughout the study area; however, these features are minor and generally do not intrude on existing views. Furthermore, pipeline markers are existing aboveground features and would not constitute new elements in scenic highway and scenic corridor views.

Although O&M activities have occurred, can occur, and will continue to occur anywhere along the approximately 645 miles of existing gas pipelines, these O&M activities are temporary and of short duration (i.e., lasting no more than 24 days on average). Motorists traveling along scenic routes within the study area

may experience brief views of these activities; however, when experienced at highway speeds, O&M activities and the presence of equipment, vehicles, and personnel would not result in substantial damage to existing scenic resources. The areas that would be subject to O&M activities are routinely exposed to similar activities and effects and therefore are considered previously disturbed. In addition, O&M activities would not typically result in damage to trees or rock outcroppings, because these features do not generally overlie pipeline alignments and could likely be avoided if present within the study area. O&M activities would not damage historic buildings or the three historic sites identified on Figure 4.1-1.

All of PG&E's ongoing O&M activities with potential visibility from eligible state scenic highways will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their aesthetic impacts. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts to aesthetics. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline aesthetic conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing aesthetic baseline in the study area; as such, existing views from eligible state scenic highways would not be appreciably altered. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not cause a substantial adverse impact on scenic resources within a state scenic highway.

PG&E's commitment to implementing relevant APMs provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing aesthetic baseline or a substantial adverse effect on scenic resources within a state scenic highway. As explained within the Impact AES-1 analysis, incorporation of APM AES-1 through APM AES-4 (as well as incorporation of APM BIO-13, which is similar to APM AES-1 regarding the restoration of disturbed areas) would further minimize the prospect that PG&E's ongoing O&M activities would cause a substantial adverse effect on scenic resources within a state scenic highway.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing aesthetic baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects on scenic resources within a state scenic highway is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect on a scenic resource within a state scenic highway; any related effect would be **less than significant**.

Impact AES-3 In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from [a] publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

PG&E’s ongoing O&M activities have caused, can cause, and will continue to cause various levels of ground disturbance, as described in Chapter 2. As discussed in Section 4.1.3, roads, residences, and recreational lands in and near the study area offer opportunities for obscured to unimpeded long views to a primarily undeveloped desert landscape heavily influenced by various mountain ranges and valleys, as well as concentrated centers and dispersed outposts of development. PG&E has been conducting O&M activities in this landscape in the study area, these activities are ongoing, and they will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E’s ongoing O&M activities in the study area would cause a substantial adverse effect related to degrading the existing visual character or quality of public views of the site and its surroundings in non-urbanized areas and/or conflicting with applicable zoning and other regulations governing scenic quality in urbanized areas.

California Public Resources Code Section 21071 defines an “urbanized area” as an incorporated city with a population of at least 100,000 persons (or a population of at least 100,000 persons when combined with not more than two contiguous incorporated cities) or an unincorporated area completely surrounded by incorporated cities and with a total population of more than 100,000 persons. The study area primarily passes through rural, unincorporated areas with low population densities. The incorporated cities and the town that are crossed by the existing pipeline, and their populations as determined by the 2019 census, are listed in Table 4.1-2.

Table 4.1-2. Incorporated Cities Crossed by the Pipelines in the Study Area

City	Population
Town of Apple Valley	73,453
City of Barstow	23,915
City of California City	14,198
City of Ridgecrest	28,973
City of Victorville	122,385

Source: U.S. Census 2019.

With the exception of Victorville, each of the incorporated cities crossed by the pipelines has a population of less than 100,000. The City of Victorville General Plan and Municipal Code were reviewed and no relevant policies or regulations governing scenic quality were identified. Therefore, because the study area primarily encompasses an open, non-urbanized desert landscape and incorporated areas crossed by existing pipelines, this analysis focuses on the potential impacts related to the existing visual character and quality of views in the study area, which were described previously in Section 4.1.3.

O&M activities would result in construction equipment and activity in the study area and may result in new permanent facilities. As previously stated, PG&E’s ongoing O&M activities have caused, can cause, and will

continue to cause aesthetic effects with the installation of permanent aboveground structures. However, as discussed in Impact AES-1, O&M activities may be visible to the public in the study area but they would not result in substantial degradation of visual resources. O&M activities involve existing and ongoing temporary/short-term activities that would be experienced by viewers over a relatively brief duration. In addition, these activities would generally be located at or near existing pipeline infrastructure and aboveground facilities that currently contribute to the existing visual character and quality. It should be noted that the majority of facilities are underground pipelines and are not visible to any viewer groups. Existing aboveground markers (electronic test system stations and cathodic test stations) are used to mark the pipeline and consist of approximately 4-foot-tall, 4-inch-diameter, aboveground orange or yellow plastic tubes placed 0.25 to 0.5 miles apart. Where pipeline alignments are adjacent to roads, these markers are visible but relatively unobtrusive to views and do not generate strong visual contrast. Refer to Figure 4.1-3b (Photograph 3) and Figure 4.1-3c (Photograph 5).

Views from each of the listed cities generally consist of existing development, the surrounding open desert landscape desert, and distant hills and mountains (refer to Photographs 6, 7, 9, 10, and 11 on Figures 4.1-3c, 4.1-3d, 4.1-3e, and 4.1-3f). From the City of Victorville and Town of Apple Valley, available views from public viewpoints may also include segments of the Mojave River. Recreation areas within the study area include wildlife viewing and hiking opportunities that also offer scenic vantage points of the surrounding desert landscape. For example, in the eastern extent of the study area the Mojave National Trails Monument includes several craters (e.g., Amboy Crater) that are open for hiking and are surrounded by an undeveloped, open desert with distant and prominent mountains (refer to Figure 4.1-3a, Photograph 2). Other hiking and recreation areas that provide views of the study area include the Marble Mountains Wildlife Area; BLM-managed lands, including wilderness, in San Bernardino County; and local parks. Views from these recreation areas consist of a broad desert landscape, rugged terrain, low and scattered vegetation, and the surrounding mountains as well as occasional industrial development and existing PG&E facilities. Views of the aforementioned electronic test system station and cathodic test station markers (which are no more than 4 feet tall) and other aboveground facilities and features associated with the PG&E pipeline network are also available from recreational sites.

All of PG&E's ongoing O&M activities with potential to impact the existing visual character and/or the quality of views will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their aesthetic impacts. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts to aesthetics. Indirect effects are also not expected, because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline aesthetic conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing aesthetic baseline in the study area; as such, the existing visual character and/or view quality would not be appreciably altered. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not cause a substantial adverse impact on visual

character and/or view quality nor would it conflict with applicable zoning and other regulations governing scenic quality.

PG&E's commitment to implementing relevant APMs provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing aesthetic baseline or a substantial adverse effect on visual character and/or view quality. As explained in the Impact AES-1 analysis, incorporation of APM AES-1 through APM AES-4 (as well as incorporation of APM BIO-13, which is similar to APM AES-1 regarding the restoration of disturbed areas) would further minimize the prospect that PG&E's ongoing O&M activities would cause a substantial adverse effect on the existing visual character and view quality.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing aesthetic baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects on the existing visual character and view quality is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect on the non-urbanized existing visual character and view quality, nor would it conflict with applicable zoning and other regulations governing scenic quality in urbanized areas; any related effect would be **less than significant**.

Impact AES-4 Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of ground disturbance, as described in Chapter 2. As discussed in Section 4.1.3, roads, residences, and recreational lands in and near the study area offer opportunities for obscured to unimpeded long views to a primarily undeveloped desert landscape heavily influenced by various mountain ranges and valleys, as well as concentrated centers and dispersed outposts of development. PG&E has been conducting O&M activities in this landscape in the study area, these activities are ongoing, and they will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause a substantial adverse effect on day or nighttime views in the area associated with a new source of light or glare.

The existing light and glare conditions in the study area are typical of rural areas, consisting of limited sources of light and glare concentrated in the incorporated cities and occasional sources of light from dispersed development and structures throughout the desert landscape. Typically, PG&E's O&M activities do not require the illumination of work areas. O&M activities have been, can be, and will continue to be conducted during daylight hours and would be limited to between 7:00 a.m. and 7:00 p.m. to the greatest extent feasible. Where nighttime activities and lighting have been, can be, or would continue to be needed (such as due to safety and engineering requirements that could require continuous work over a span of 12 to 48 hours) and occur near residences, PG&E would incorporate APM AES-3 (which requires that temporary construction night lighting be directed at the maintenance activity and away from residences) into non-emergency O&M work. Ongoing

activities that may require nighttime lighting include line clearances (e.g., turning valves and, potentially, venting gas), cross compression, hydrotesting, and spillover work that must be performed continuously (e.g., pipe welds and horizontal directional drilling). In the event that O&M activities must occur during nighttime hours, this would be of short duration. During activities requiring nighttime maintenance, diesel-powered, portable light stands would be used between sunset and sunrise (if nighttime lighting is required). The minimum number of lights needed to safely complete the work would be used. Existing station lighting would be used for night work at existing compressor stations. Also, night work lighting would comply with Occupational Safety and Health Administration (OSHA) standards and local requirements.

Approximately 4% of the pipelines in the study area (approximately 26 miles of the total 645) are located within 0.25 miles of sensitive receptors, and the nearest sensitive receptor is approximately 15 feet from a PG&E facility. It is unknown at this time whether night lighting would be required for O&M activities on project components in the closest proximity to sensitive receptors. In general, PG&E does not install permanent lighting for new, permanent, aboveground facilities unless safety concerns mandate lighting. For new facilities requiring the installation of permanent lighting, with incorporation of APM AES-4, all permanent lights would be shielded, motion-activated or controlled by a manual switch, and directed downward to limit the potential for light trespass onto nearby occupied properties and limit exposure of surrounding viewers to glare. As with existing aboveground facilities in the study area, new aboveground facilities would be sited; colorized or dulled, if feasible; and screened to reduce their prominence in the landscape and the potential for glare exposure.

All of PG&E's ongoing O&M activities with the potential to affect a scenic vista will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to aesthetics. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts to aesthetics specifically related to a new source of light or glare. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Therefore, the prospect that issuance of the permits may cause an indirect physical change to existing baseline aesthetic conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing aesthetic baseline in the study area. Accordingly, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not cause a substantial adverse impact associated with light or glare.

PG&E's commitment to implementing relevant APMs provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing aesthetic baseline or a substantial adverse effect associated with light or glare. O&M activities requiring temporary or permanent lighting have been, can be, and will continue to be infrequent, and would occur over a small portion of the total study area. For example, incorporation of APM AES-3 and APM AES-4 as part of PG&E's standard practice would ensure that new temporary or permanent lighting (with the exception of temporary lighting for emergency work) would be shielded, downcast, and directed at maintenance activities to limit light trespass and glare exposure. Furthermore,

OSHA and local standards for lighting would be followed during the use of temporary, non-emergency maintenance lighting and installation of new, permanent lighting at facilities during ongoing O&M activities.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing aesthetic baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with a new source of light or glare is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect relative to light or glare; any related effect would be **less than significant**.

4.1.5 Cumulative Impacts

The geographic scope for cumulative impacts related to aesthetics and visual resources considers related projects within 0.5 miles of the pipeline alignment (refer to Table 3-1, Geographic Scope of Cumulative Impacts and Method of Evaluation). Because the majority of PG&E's gas pipeline facilities in the study area are underground or low profile, this distance would encompass the study area viewshed. O&M activities have had and continue to have the potential to result in cumulative aesthetics impacts in combination with other projects in the study area if ongoing activities were to occur simultaneously and combine to cause substantial view blockages or changes to the visual character or quality of views, including the addition of nighttime lighting. Simultaneous O&M activities and related projects along the pipeline may occur; however, these activities would be similar to existing baseline conditions.

PG&E's O&M activities are routine and ongoing under existing baseline conditions, and the majority of O&M activities would be temporary and would be experienced by viewers only over a short duration. Visual effects associated with activities that could result in new surface disturbance, such as the installation of new aboveground facilities, would be addressed via the PG&E environmental screening process (refer to Section 2.4 of this EIR) and through incorporation of APM AES-1 through APM AES-4 (refer to Section 4.1.4.2). In addition, as with the proposed project and O&M activities, related projects would be required to comply with regulations governing light and glare. Accordingly, the incremental contribution from the ongoing O&M activities to cumulative aesthetic impacts caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to aesthetics.

4.1.6 Residual Impacts

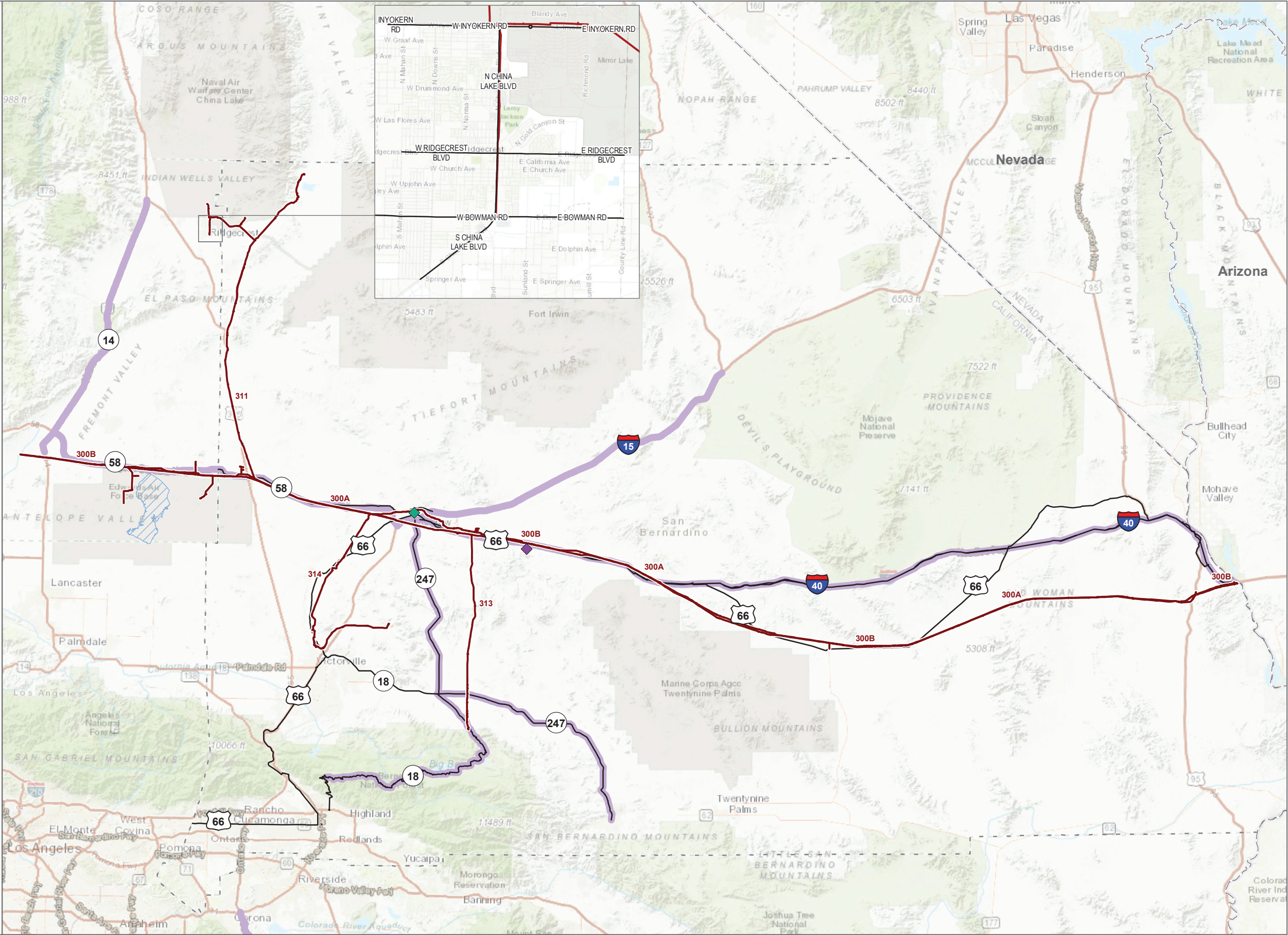
PG&E's O&M activities have been ongoing and are a component of the existing aesthetics baseline in the study area. O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's commitment to implementing relevant APMs provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect on aesthetic resources.

4.1.7 References

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- Pipeline
- ◆ Newberry Cave Historic Site
- ◆ Harvey House Railroad Depot Historic Site
- ▨ Rogers Dry Lake National Historic Landmark and Historic Site
- Eligible State Scenic Highways**
 - Interstate (I-) 15, State Route (SR-) 18, I-40, SR-58, SR-247, SR-14
- Locally Designated Scenic Routes-**
 - SR-18, I-40, SR-58, SR-247, U.S. Historic Route 66
- County Boundary
- State Boundary



SOURCES: Caltrans 2021; Insignia 2021; PG&E 2021

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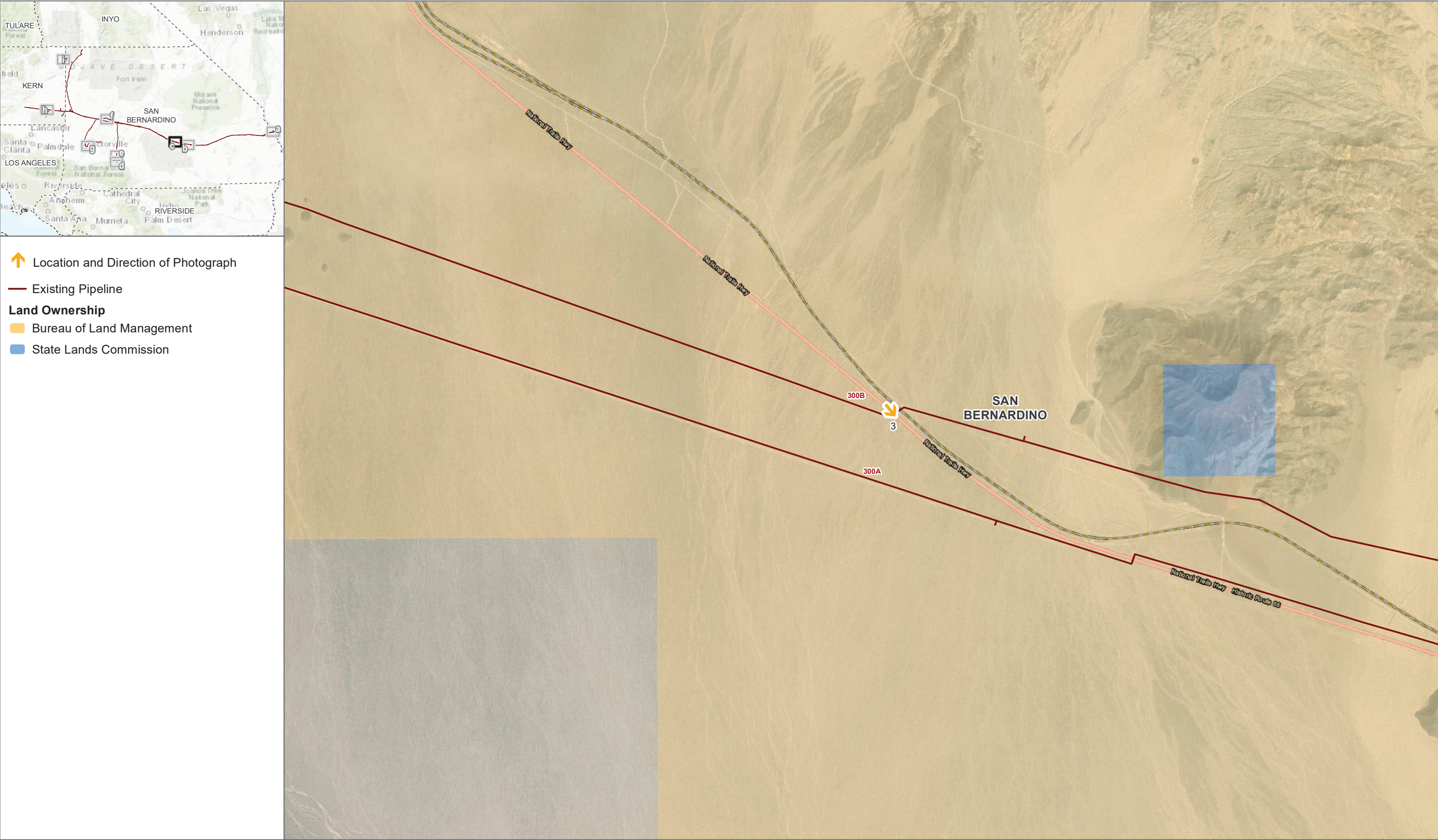


- ↑ Location and Direction of Photograph
- Existing Pipeline
- Land Ownership**
- Bureau of Land Management



SOURCES: BLM 2020; CPAD 2021; Insignia 2021; PG&E 2021

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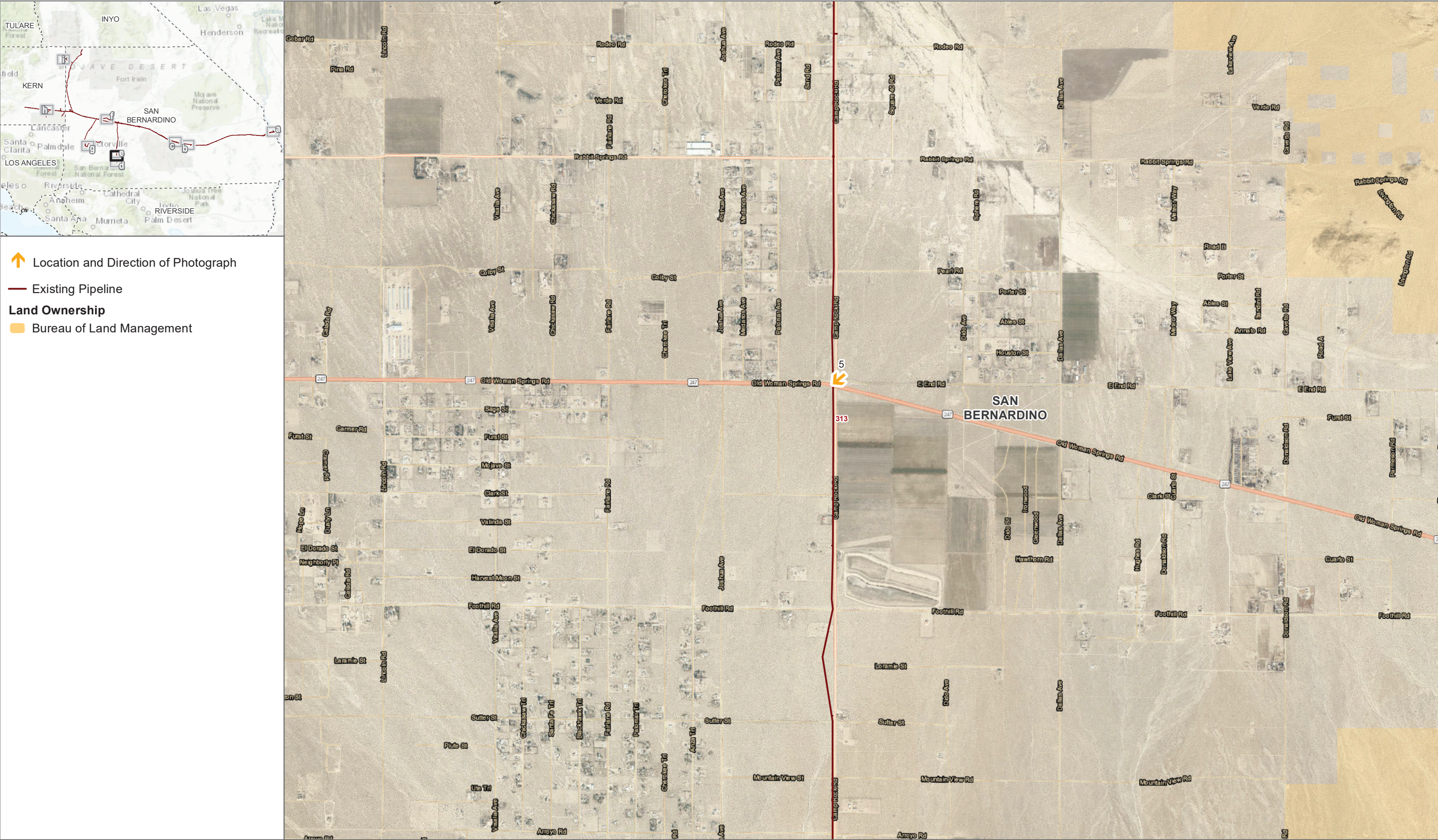
SOURCES: BLM 2020; CPAD 2021; Insignia 2021; PG&E 2021

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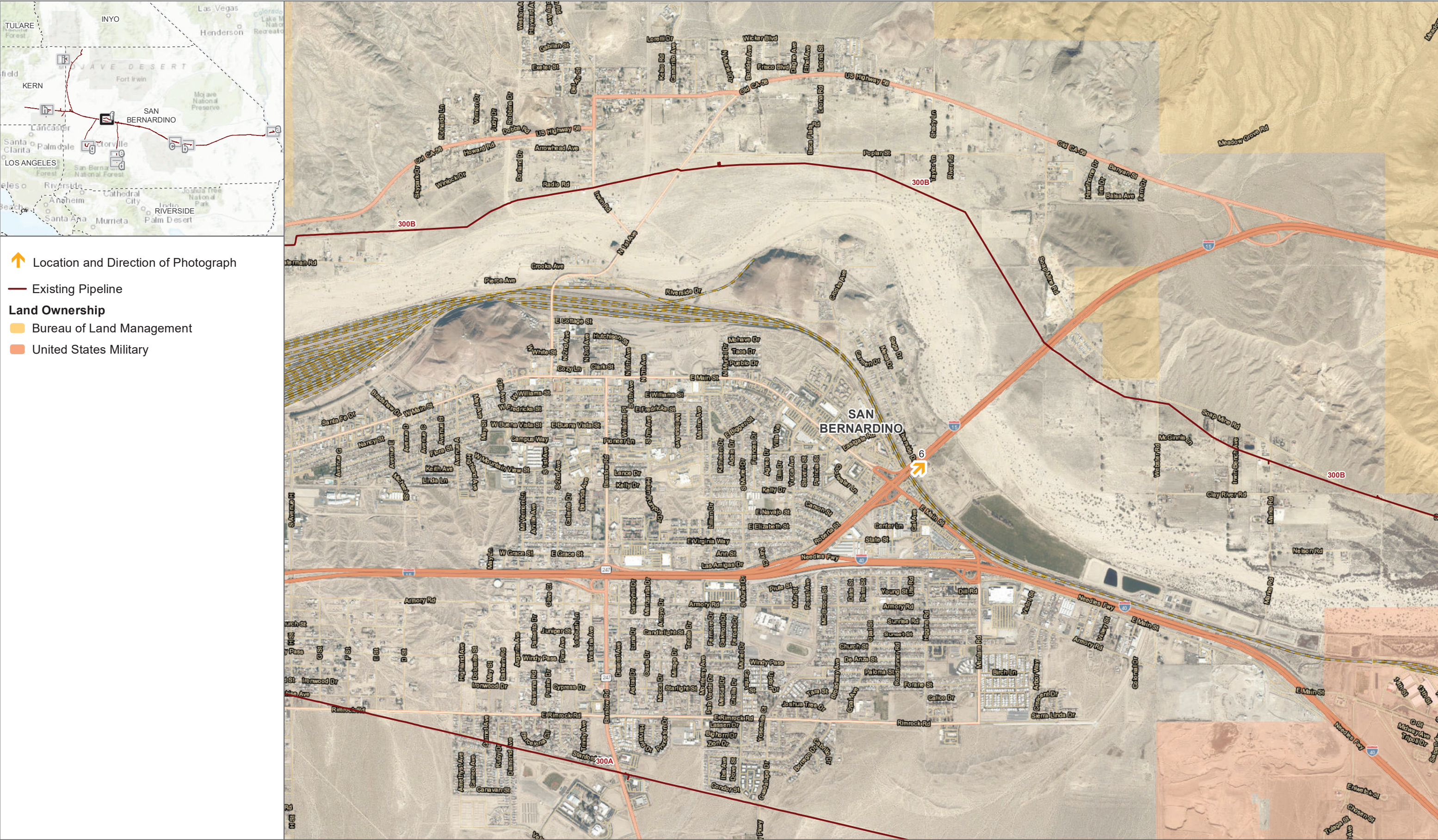
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SOURCES: BLM 2020; CPAD 2021; Insignia 2021; PG&E 2021

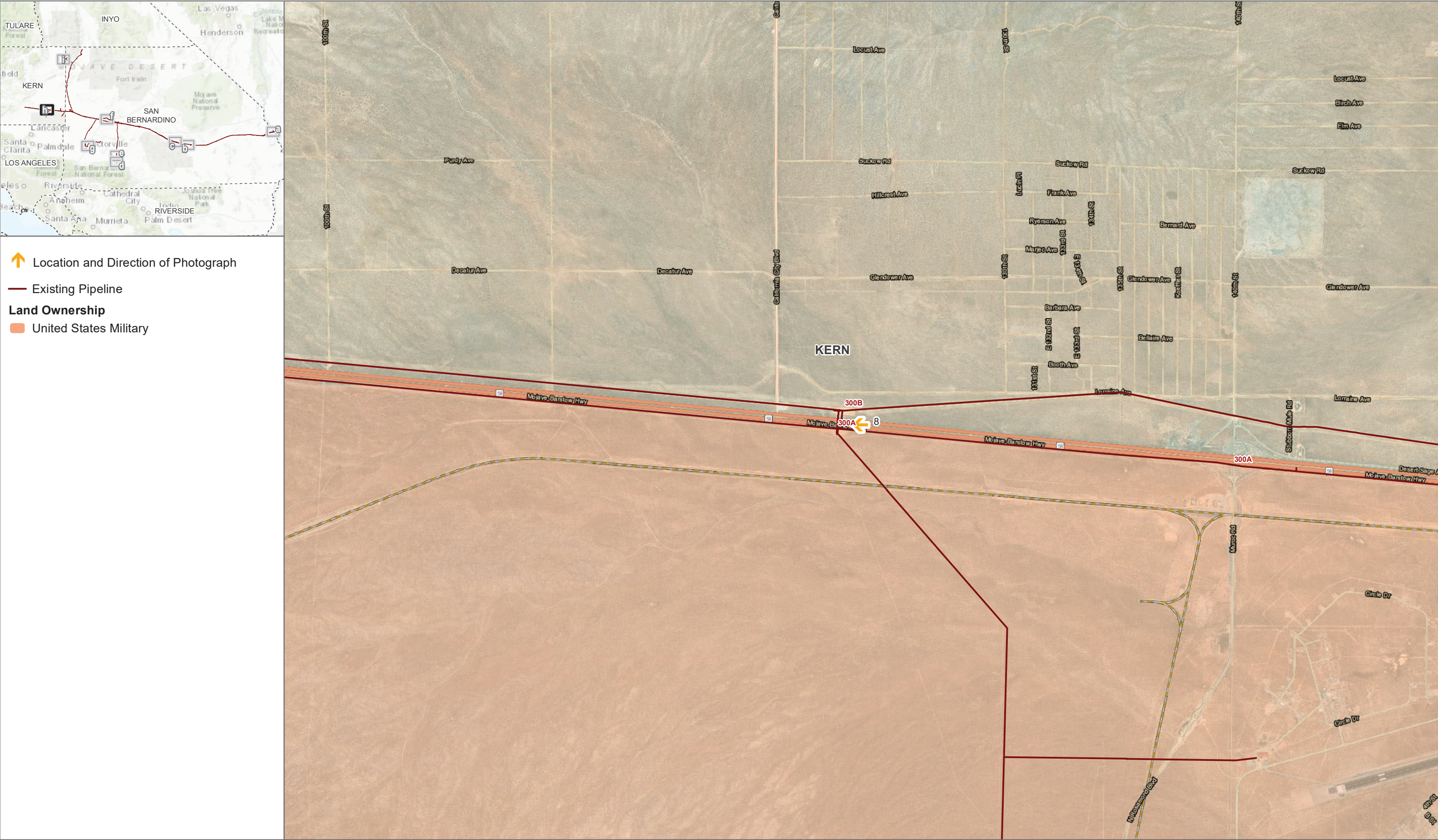
FIGURE 4.1-2f

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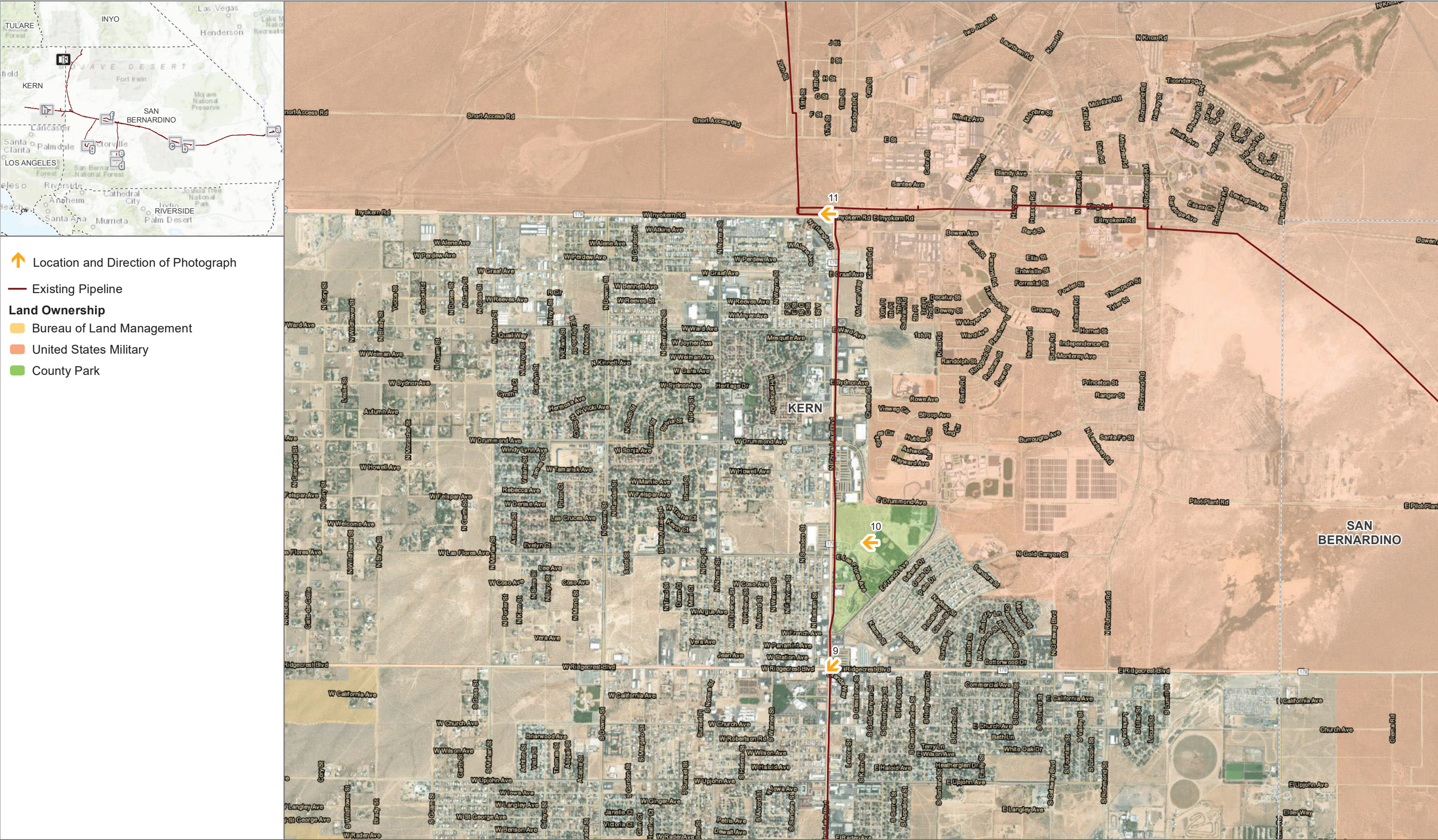
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SOURCES: BLM 2020; CPAD 2021; Insignia 2021; PG&E 2021

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Photo 1: South-facing view from Interstate (I-) 40 toward the existing Topock Compressor Station and Lines 300 A and B.



Photo 2: North-facing views from the Amboy Crater hiking area trailhead within Mojave Trails National Monument. Distant views of existing Lines 300 A and B and National Trails Highway.

SOURCES: PG&E 2021; Insignia 2021

FIGURE 4.1-3a
Existing Photographs of the Study Area

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Photo 3: Southeast-facing view showing existing facility markers for Line 300 B as seen from the National Trails Highway with views of the surrounding desert and mountains.



Photo 4: Southeast-facing views of existing facility marker for Line 313, as well as a cement facility and the San Bernardino Mountains from State Route (SR) 18.

SOURCES: PG&E 2021; Insignia 2021

FIGURE 4.1-3b

Existing Photographs of the Study Area

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Photo 5: Southwest-facing view showing existing facility markers for Line 313 and the San Bernardino Mountains in the distance from SR 247.



Photo 6: Northeast-facing view from an elevated overpass within the City of Barstow toward existing Line 300 B, I-15, and a typically dry section of the Mojave River.

SOURCES: PG&E 2021; Insignia 2021

FIGURE 4.1-3c Existing Photographs of the Study Area

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Photo 9: Southwest-facing view in the direction of an existing distribution feeder main (DFM), as well as East Ridgecrest Boulevard and China Lake Boulevard (City of Ridgecrest-designated scenic routes) from a public green space located at Ridgecrest Plaza Shopping Center.



Photo 10: West-facing view of an existing DFM that crosses Leroy Jackson Park in the City of Ridgecrest.

SOURCES: PG&E 2021; Insignia 2021

FIGURE 4.1-3e
Existing Photographs of the Study Area

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Photo 11: West-facing view from Inyokern Boulevard (a City of Ridgecrest-designated scenic route) of an existing DFM and regulator station, and the surrounding mountains.

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4.2 Agriculture and Forestry Resources

4.2.1 Introduction

The proposed project for the purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) that would authorize take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGC). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section of the environmental impact report (EIR) evaluates the environmental impacts on agriculture and forestry resources that may result directly or indirectly from CDFW's issuance of the ITP and the expected LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on agriculture and forestry resources that could result with continuing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the project for purposes of CEQA). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this section.

Section 4.2.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have been occurring and will continue to occur, specific to agriculture and forestry resources.

Section 4.2.3 provides a description of the existing baseline conditions for agriculture and forestry resources in the O&M activities area ("study area"). Specifically, this section provides a description relative to agriculture and forestry resources in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities, regardless of whether CDFW issues the requested permits. This existing baseline condition, which includes the ongoing activities already being implemented by PG&E relative to their past, present, and continued potential effects, is the benchmark used in the Section 4.2.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these environmental baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.2.4 provides an analysis of whether issuance of the requested permits (pursuant to the CFGC) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline and a substantial or potentially substantial adverse effect related to agriculture and forestry resources. The section also identifies the significance criteria used for the impact analysis and applicant proposed measures (APMs). Furthermore, this section discusses applicable regulatory authority or governing law that has applied and will continue to apply, specific to agriculture and forestry resources,

Section 4.2.5 provides an analysis of whether the project-related incremental change to the environmental baseline would be cumulatively considerable and therefore significant.

Section 4.2.6 identifies the residual environmental impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.2.7 lists the references cited in this section.

During the scoping effort, no party identified any public concerns related to potential impacts on agriculture and forestry resources.

The analysis included in this section is based on information that PG&E provided to CDFW, as well as relevant information gathered and considered by CDFW, with assistance from its environmental consultant, including data from the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP).

4.2.2 Applicable Regulations, Plans, and Policies

The following subsections describe the regulations and regulatory agencies that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and CDFW analysis of whether the proposed issuance of the permits would cause an incremental physical change to the existing environment and cause significant impacts to agriculture and forestry resources.

Federal

There are no federal goals, objectives, or policies related to agriculture and forestry that are relevant to the study area.

State

California Department of Conservation's Farmland Mapping and Monitoring Program

The FMMP produces maps and statistical data used to analyze impacts on California's agricultural resources. Every 2 years the maps are updated using data obtained from aerial photographs, a computer mapping system, public review, and field reconnaissance. Agricultural land is rated by the FMMP according to soil quality, irrigation status, and importance. The highest quality land is called Prime Farmland. Other FMMP categories include Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. A description of the FMMP farmland categories is provided in the following subsections (DOC 2018a).

Prime Farmland

Prime Farmland has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. For land to be designated as Prime Farmland, it must have been used for irrigated agriculture production at some time during the 4 years prior to the mapping date.

Farmland of Statewide Importance

Farmland of Statewide Importance is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. For land to be designated as Farmland of Statewide Importance, it must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

Unique Farmland

Unique Farmland consists of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but it may include non-irrigated orchards or vineyards, as found in some climatic zones in California. For land to be designated as Unique Farmland, it must have been cropped at some time during the 4 years prior to the mapping date.

Farmland of Local Importance

Farmland of Local Importance is land of importance to the local economy, as defined by each county's local advisory committee and adopted by its Board of Supervisors. Farmland of Local Importance is either currently producing or has the capability of production but does not meet the criteria of Prime, Statewide, or Unique Farmland. Authority to adopt or to recommend changes to the category of Farmland of Local Importance rests with the Board of Supervisors in each county (DOC 2018b). The Kern County Board of Supervisors determined that there is no Farmland of Local Importance for Kern County. The following lands in the study area within San Bernardino County are to be included in the Farmland of Local Importance category:

- Farmlands which include areas of soils that meet all characteristics of Prime, Farmland, Farmland of Statewide Importance, or Unique Farmland and which are not irrigated.
- Farmlands not covered by above categories but are of high economic importance to the community. These farmlands include dryland grains of wheat, barley, oats, and dryland pasture.

Grazing Land

Grazing land consists of land that has existing vegetation, whether grown naturally or through management, that is suited for grazing or browsing of livestock.

Williamson Act

The state allows local governments to enter into Williamson Act contracts or Farmland Security Zone contracts to preserve agricultural land and provide tax benefits to the landowner.

The Williamson Act, formerly known as the California Land Conservation Act of 1965 (California Government Code Sections 51200–51297.4, as amended), preserves agricultural and open space lands from conversion to urban land uses by establishing a contract between local governments and private landowners to voluntarily restrict their landholdings to agricultural or open space use. In return, these landowners receive property tax assessments that are based on farming or open space use, rather than assessments that are based on the full market property value, which is typically 20% to 75% higher. Williamson Act contracts are valid for a minimum of 10 years, and in the absence of a notice of non-renewal, they are automatically renewed each year for an additional 1-year term.

The Williamson Act also allows local governments to establish agricultural preserves, which are parcels of land set aside for agricultural uses. They typically avoid areas where public utility improvements and associated land acquisitions may be necessary (California Government Code Section 51230). An agricultural preserve can consist of no less than the following minimum acreages:

- An area of 10 to 40 acres for Prime agricultural land if surrounded by or substantially surrounded by or contiguous to other agricultural preserve lands
- An area of 40 acres or more for Prime agricultural land

- An area of 40 to 160 acres for non-Prime agricultural land if surrounded by or substantially surrounded by or contiguous to other agricultural preserve lands
- An area of 160 acres or more for non-Prime agricultural land, with the provision that to meet this requirement, two or more parcels may be combined if they are contiguous and if they are in common ownership or use

The Williamson Act states that a board or council, by resolution, shall adopt rules governing the administration of agricultural preserves. The rules of each agricultural preserve specify the uses allowed. Any commercial agricultural use would generally be permitted within any agricultural preserve. Local governments may identify compatible uses permitted with a use permit. Notwithstanding any determination of compatible uses by a city or county, unless the city or county, after notice and hearing, makes a finding to the contrary, the erection, construction, alteration, and maintenance of gas facilities are specifically determined under the Williamson Act to be compatible uses within any agricultural preserve (California Government Code Section 51238).

The Farmland Security Zones are more stringent agricultural preservation contracts than standard Williamson Act contracts and are made between a private landowner and a public agency. There are no parcels designated as Farmland Security Zones in the study area or along the PG&E gas pipeline alignment.

California Government Code Section 51238

California Government Code Section 51238 includes provisions related to the Williamson Act that state the following:

Notwithstanding any determination of compatible uses by the county or city pursuant to this article, unless the board or council after notice and hearing makes a finding to the contrary, 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.

California Government Code Sections 51100 to 51155

Chapter 6.7 of the California Government Code (Sections 51100–51155) regulates timberlands in the state of California. According to the code, examples of compatible uses are watershed management; grazing; and the erection, construction, alteration, or maintenance of electric and gas transmission facilities.

California Public Resources Code Section 12220(g)

The California Public Resources Code governs forestry, forests, and forest resources, as well as rangelands and forage lands within the State of California.

Forest Taxation Reform Act

Commercial timberlands are afforded protection through the state's Forest Taxation Reform Act of 1976, which mandates the creation of timberland production zones (TPZs) to restrict and protect commercial timber resources.

Local

The following subsections describe local regulations regarding agriculture and forestry resources that are relevant to the proposed project. Pursuant to Article XII, Section 8, of the California Constitution, the California Public Utilities Commission (CPUC) has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, O&M, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with CPUC. Although local governments do not have the power to regulate such activities, CPUC encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has considered relevant regional and county policies and issues in this EIR.

The following plans from local jurisdictions were reviewed and no specific goals or policies that are relevant to O&M activities in the study area were identified:

- City of Barstow 2015–2020 General Plan (2015)
- City of Victorville General Plan 2030 (2008)
- Town of Apple Valley 2009 General Plan (2009)
- City of California City Final General Plan 2009–2028 (2009)
- City of Ridgecrest General Plan (2009)

Plans with relevant goals or policies are discussed under the subheadings that follow.

San Bernardino County

County of San Bernardino 2007 General Plan

The Conservation Element of the County of San Bernardino 2007 General Plan (San Bernardino County 2007) contains the following policies that are relevant to the project:

CO 6.1: Protect prime agricultural lands from the adverse effects of urban encroachment, particularly increased erosion and sedimentation, trespass, and non-agricultural land development

CO 6.4: Provide and maintain a viable and diverse agricultural industry in San Bernardino County

San Bernardino County Development Code

Section 82.03.040 of the San Bernardino County Development Code regulates development within the agricultural zoning districts. Transmission lines are permitted with an alternative review procedure (as defined in Section 85.02.050), which includes review and approval by CPUC.

Kern County

Kern County General Plan

The Land Use Element in the Kern County General Plan (County of Kern 2004) contains the following goals and policies that are relevant to ongoing O&M activities in the study area:

Goals: Resource

2. Protect areas of important mineral, petroleum, and agricultural resource potential for future use.
5. Conserve prime agriculture lands from premature conversion.

Policies: Resource

3. The County will support programs and policies that provide tax and economic incentives to ensure the long-term retention of agriculture, timber, and other resource lands.
5. Areas of low intensity agriculture use (Map Code 8.2 (Resource Reserve), Map Code 8.3 (Extensive Agriculture), Map Code 8.5 (Resource Management)) should be of an economically viable size in order to participate in the State Williamson Act Program/Farmland Security Zone Contract.
8. Provide for the orderly expansion of new urban-scale infrastructure and development and the creation of new urban-scale centers in a manner that minimizes adverse effects on agriculture and natural resource uses.
13. Any property in an Agriculture Preserve proposing to be subject to a Williamson Act Contract or Farmland Security Zone Contract must have a Resource designation.
15. Agriculture and other resource uses will be considered a consistent use in areas designated for Mineral and Petroleum Resource uses on the General Plan.

4.2.3 Existing Baseline Conditions

This section provides a description of the existing baseline conditions relative agriculture and forestry resources in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. PG&E's gas pipeline system has been in place for more than 70 years. Impact data collected by PG&E from 2017 to September 2021 regarding temporary and permanent disturbance impacts caused by O&M activities provides important detail about the environmental baseline for purposes of CEQA (refer to Section 1.1, Proposed Project and Environmental Review). The existing baseline condition from 2017 to 2021, which includes PG&E's past and ongoing O&M activities, is the benchmark used in the Section 4.2.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

The study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands. A detailed description of the locations of each pipeline in the study area is provided in Chapter 2, Project Description (refer to Figure 2-1, PG&E Facility Location Map).

Agriculture Land Setting

According to Important Farmland data in the FMMP, the study area includes the following: approximately 96 acres of Prime Farmland, 16 acres of Farmland of Statewide Importance, 0.4 acres of Farmland of Local Importance, and 12 acres of Unique Farmland. Additionally, the study area crosses 17 acres of land under

Williamson Act contract. Table 4.2-1 provides a summary of Important Farmland within the study area, as well as Important Farmland beyond the study area within 0.25 miles. In general, most O&M activities would occur within the study area; however, there is the potential for some O&M activities to occur in certain areas located up to 0.25 miles beyond the rights-of-way (e.g., staging areas). Figures 4.2-1a through 4.2-1k, Agricultural Lands in the Study Area, depict the location of agricultural lands and Williamson Act land relative to the study area, as well as beyond the study area within 0.25 miles.

Table 4.2-1. Summary of Important Farmland in the Study Area

Important Farmland	Acres within the Study Area	Acres within 0.25 Miles but beyond the Study Area
Prime Farmland	96	376
Farmland of Statewide Importance	16	123
Farmland of Local Importance	0.04	0.46
Unique Farmland	12	63
Grazing Land	5,067	24,165
Williamson Act Land	17	164

Source: DOC 2018.

Forestry Land Setting

Forest land is defined by Section 12220(g) of the California Public Resources Code as “land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.” California Public Resources Code Section 4526 defines *timberland* as “land, other than land owned by the federal government and land designated by the State Board of Forestry as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees.”

A *timberland production zone* (TPZ) is defined in California Public Resources Code Section 51104(g) as an area that has been zoned pursuant to California Government Code Section 51112 or 51113 and that is devoted to and used for growing and harvesting timber and compatible uses. In this context, “compatible uses” include any use that “does not significantly detract from the use of the property for, or inhibit, growing and harvesting timber” (California Government Code Section 51104[h]).

The pipelines included in the study area do not cross any national or state forests, forest land, timberland, or timberland zoned as TPZ.

4.2.4 Impact Analysis

4.2.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of impacts to agriculture and forestry resources based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For the purposes of this EIR, agriculture and forestry impacts would be significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would:

1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
2. Conflict with existing zoning for agricultural use, or a Williamson Act contract.
3. 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)).
4. Result in the loss of forest land or conversion of forest land to non-forest use.
5. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

4.2.4.2 Applicable Measures

PG&E will continue to incorporate standard practices into its ongoing O&M activities to avoid or minimize the potential for adverse agriculture and forestry resources impacts. In addition to standard practices relating to agriculture and forestry, PG&E will also incorporate the following APM from Section 4.4, Biological Resources, into its O&M activities as part of standard practice. This APM, where applicable, is analyzed in the impact discussion in Section 4.2.4.3.

- APM BIO-3: Disturbance Minimization

Refer to Section 4.4.4.2, Applicable Measures (Biological Resources), and Section 2.5, Applicable Measures, of the EIR for the full text of APM BIO-3.

4.2.4.3 Impact Discussion

Impact AG-1 Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.2.3, Existing Baseline Conditions, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and includes lands classified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland (Farmland). PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions

and will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would convert farmland to non-agricultural use.

All of PG&E's ongoing O&M activities with the potential to convert farmland, such as installation of aboveground structures (e.g., pig launcher/receiver facilities, electronic test system stations, cathodic test stations, and thermoelectric generators), will continue to occur regardless of whether CDFW issues the permits. PG&E's ongoing O&M activities in the study area have caused, can cause, and will continue to cause temporary impacts to farmland associated with the presence of equipment, materials, and crews at work sites. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to farmland. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts on farmland. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for the purposes of CEQA, would not result in the conversion of farmland.

PG&E's commitment to implementing standard practices and relevant APMs provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to the conversion of farmland to non-agricultural uses. For example, as part of standard practice, and in accordance with APM BIO-3 (Disturbance Minimization; refer to Section 4.4.4.2, Applicable Measures), PG&E will confine the area of disturbance for O&M activities to the smallest practical area and will use existing disturbed areas within the O&M activity sites for stockpiling excavated materials, storing equipment, digging slurry and borrow pits, staging or parking trailers and vehicles, and implementing any other surface-disturbing O&M activity. In addition, as described in Section 2.4, Environmental Screening Process, PG&E land agents and land planners verify that the necessary land rights are obtained for both temporary and permanent easements, thereby considering whether the locations of O&M activities are within lands designated for agricultural use. Furthermore, to ensure further avoidance and/or minimization of impacts to agricultural lands PG&E staff can refine or modify the location of O&M activities, if feasible. It should be noted that the erection, construction, alteration, and maintenance of gas facilities are considered to be compatible uses within any agricultural preserves, specifically determined under the Williamson Act (California Government Code Section 51238).

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the

CFGC and related effects associated with the conversion of farmland is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not convert farmland to non-agricultural uses; any related effect would be **less than significant**.

Impact AG-2 Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.2.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and includes lands classified as farmland. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions and will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would conflict with existing zoning for agricultural use, or under a Williamson Act contract.

As noted in Section 4.2.2, Applicable Regulations, Plans, and Policies, the study area includes land zoned for agricultural use and land under Williamson Act contract. As shown in Table 4.2-1, the study area includes approximately 96 acres of Prime Farmland, 16 acres of Farmland of Statewide Importance, 0.04 acres of Farmland of Local Importance, 12 acres of Unique Farmland, and 5,067 acres of grazing lands. In addition, approximately 172 acres of land under Williamson Act contract is within the study area. O&M activities would largely be the same as those performed by PG&E during the existing baseline between 2017 and September 2021, including ground-disturbing O&M activities that have and will continue to have the potential to impact land zoned for agricultural use or a Williamson Act contract.

All of PG&E's ongoing O&M activities with the potential to conflict with existing zoning for agricultural use, or under a Williamson Act contract, will continue to occur regardless of whether CDFW issues the permits. CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to land currently zoned for agricultural use or under a Williamson Act contract. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts on zoning for agricultural use or a Williamson Act contract. Indirect effects are also not expected because the causal connection between CDFW's issuance the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in conflicts with land currently zoned for agricultural use or a Williamson Act contract.

PG&E's commitment to implementing standard practices and relevant APMs provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to land currently zoned for agricultural use or a Williamson Act contract. For example, and as discussed in Impact AG 1, as part of standard practice and in accordance with APM BIO-3 (Disturbance Minimization; refer to Section 4.4.4.2), PG&E will confine the area of disturbance for O&M activities to the smallest practical area and will use disturbed areas within the O&M activity sites for stockpiling excavated materials, storing equipment, digging slurry and borrow pits, staging or parking trailers and vehicles, and implementing any other surface-disturbing O&M activity. In addition, as described in Section 2.4.2, as part of PG&E's environmental screening process, PG&E land agents and land planners verify that the necessary land rights are obtained for both temporary and permanent easements, thereby considering whether the locations of O&M activities are within lands zoned for agricultural use or under Williamson Act contracts. Furthermore, to ensure further avoidance and/or minimization of impacts to agricultural lands or Williamson Act lands, PG&E staff can refine or modify the location of O&M activities, if feasible. It should be noted that the Williamson Act allows installation of gas pipelines and related facilities on lands subject to land conservation contracts, with conditions to ensure compatibility with existing agricultural operations (California Government Code Section 51238).

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with conflict with zoning for existing agricultural use or a Williamson Act contract is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to land currently zoned for agricultural use or under a Williamson Act contract; any related effects would be **less than significant**.

Impact AG-3 **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))?**

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.2.3, the study area does not cross any areas zoned for forest land, timberland, or Timberland Production. In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions for forest land, timberland, or TPZs in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not conflict with existing zoning for, or cause rezoning of, forest land; **no impact** would occur.

Impact AG-4 **Would the project result in the loss of forest land or conversion of forest land to non-forest use?**

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.2.3, the study area does not cross any forest land. In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or

reasonably foreseeable indirect physical change to existing forest land baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not result in the loss of forest land or conversion of forest land to non-forest use; **no impact** would occur.

Impact AG-5 Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.2.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and includes lands classified as farmland. As stated in Impact AG-4, the study area does not cross any forest land, and for the purposes of this impact discussion, forest land will not be discussed further. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions and will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC.

In summary, and as described in the discussion under Impact AG-1, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with the conversion of farmland to non-agricultural use is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to the conversion of farmland or forest land, to non-agricultural use or non-forest land use, respectively; any related effect would be **less than significant**.

4.2.5 Cumulative Impacts

The geographic scope for cumulative impacts related to agriculture and forestry resources considers related projects within 0.5 miles of the pipeline alignment (refer to Table 3-1, Geographic Scope of Cumulative Impacts and Method of Evaluation). As previously noted, the study area does not cross any areas zoned for forest land, timberland, or TPZ. Therefore, no cumulative impacts to forest land would occur.

O&M activities have had, are having, and will continue to have the potential to result in cumulative impacts to agriculture resources in combination with other projects in the study area if ongoing activities were to occur simultaneously and combine to cause a substantial increase in the conversion of farmland to non-agricultural use and/or a substantial increase in the cancellation of Williamson Act contracts (refer to Table 3-2, Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area, of this EIR for a list of cumulative projects and the distance from the pipeline alignments). As discussed in Section 4.2.3, the study area does not cross any forest land.

O&M activities are routine and ongoing under existing baseline conditions and the majority of O&M activities would be temporary and would occur over a short duration. As shown in Table 3-2, many related projects within

1 mile of the PG&E gas pipeline would also occur along the pipeline alignment. In the scenario in which O&M activities would result in the conversion of farmland to non-agricultural use, the conversion of farmland would be minimal when its size is considered against the total acreage of farmland within San Bernardino and Kern Counties. However, PG&E would incorporate APM BIO-3 (Disturbance Minimization) into the O&M activities to avoid or minimize impacts to agricultural resources to the maximum extent feasible. In addition, as part of PG&E's environmental screening process, PG&E land agents and land planners verify that the necessary land rights are obtained for both temporary and permanent easements, thereby considering whether the locations of O&M activities are within lands designated as farmland prior to implementing activities. Furthermore, to ensure further avoidance and/or minimization of impacts, PG&E staff can refine or modify the ongoing O&M activities, if feasible. Accordingly, the incremental contribution from ongoing O&M activities to cumulative agriculture and forestry impacts caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in cumulatively considerable impacts relative to agriculture and forestry resources.

4.2.6 Residual Impacts

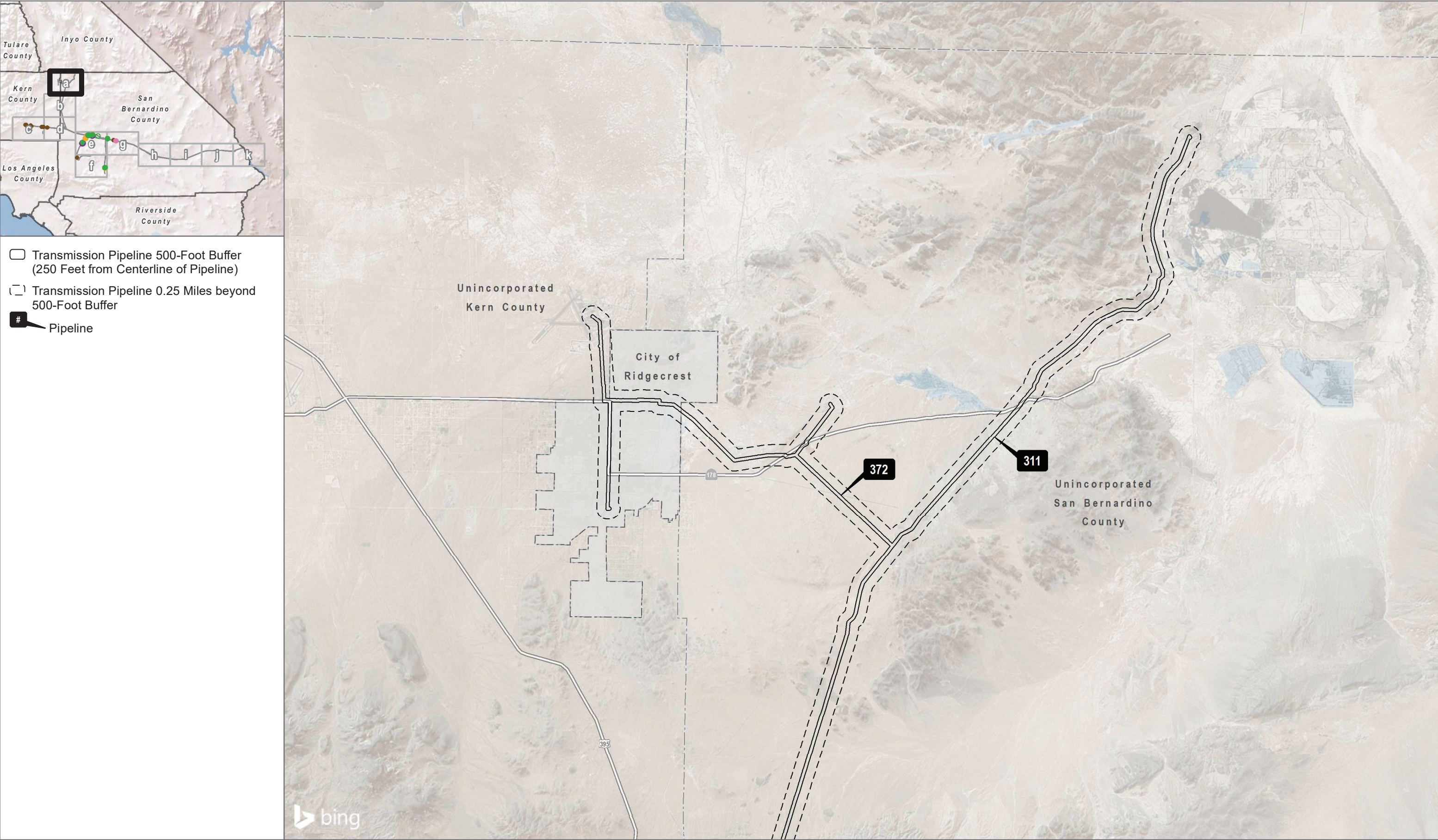
PG&E's O&M activities have been ongoing and are a component of the existing baseline conditions in the study area. O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's commitment to implementing standard practices and relevant APMs provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect on agriculture and forestry resources.

4.2.7 References

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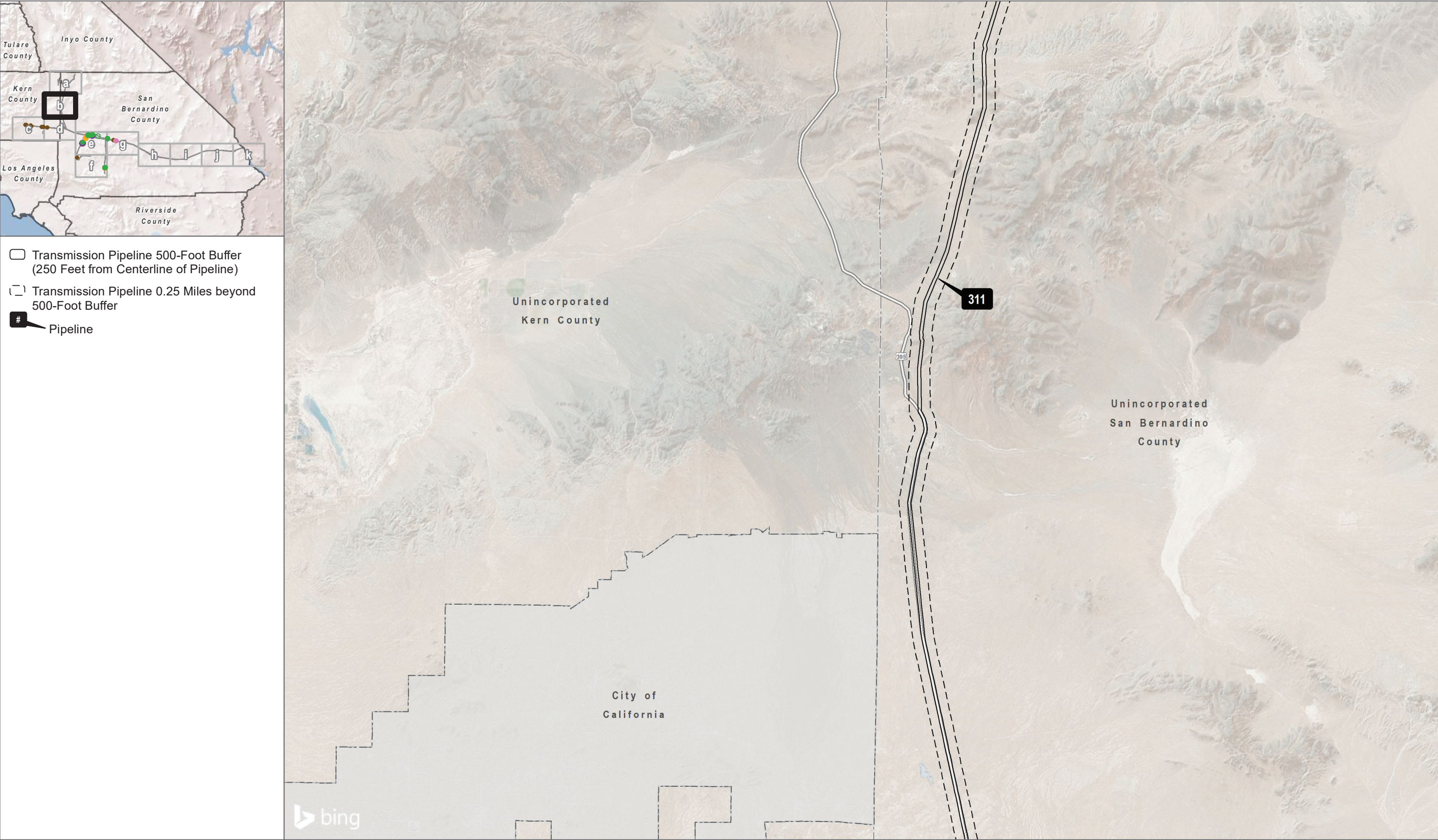
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<http://www.applevalley.org/home/showdocument?id=4893>.



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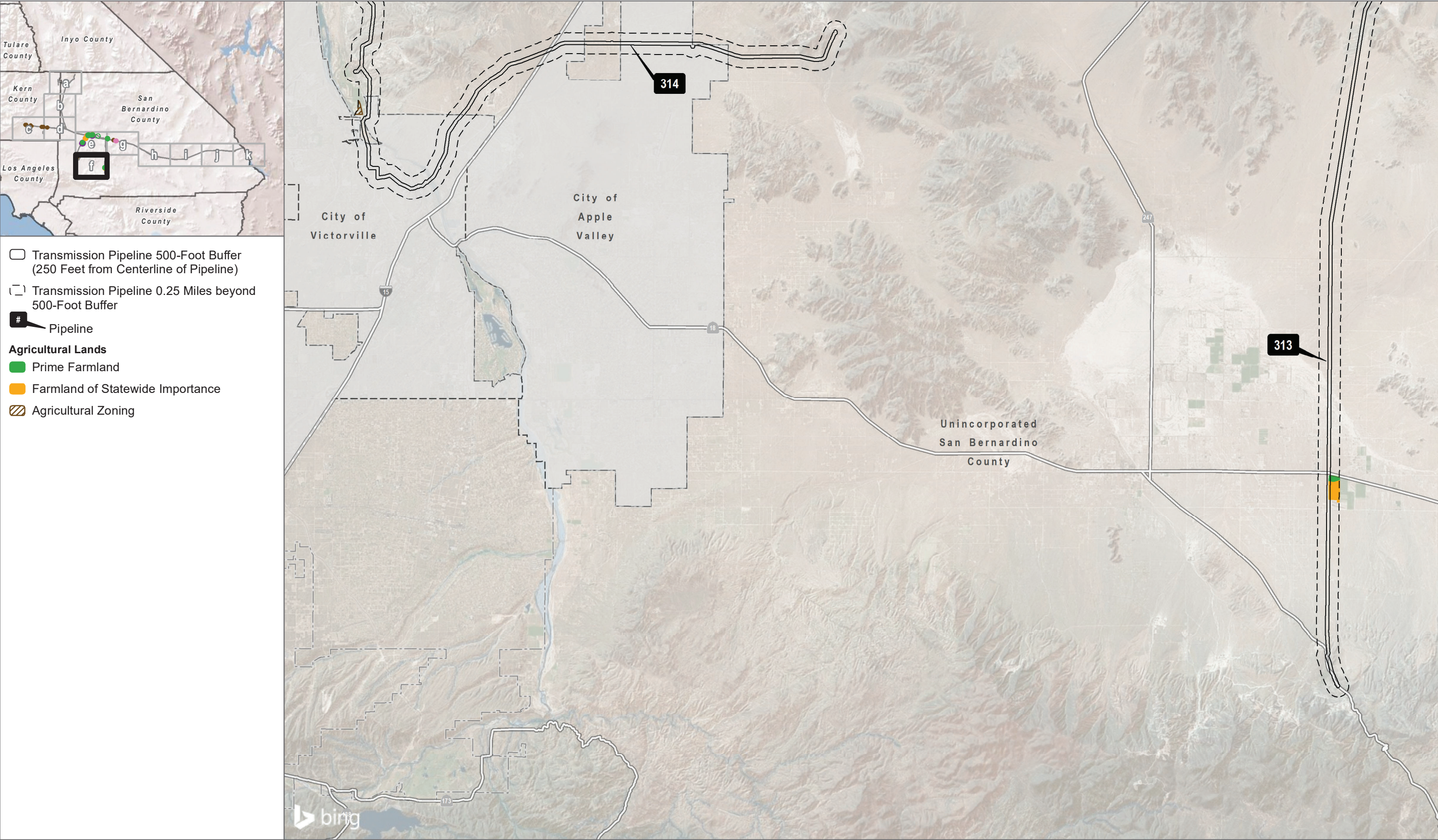
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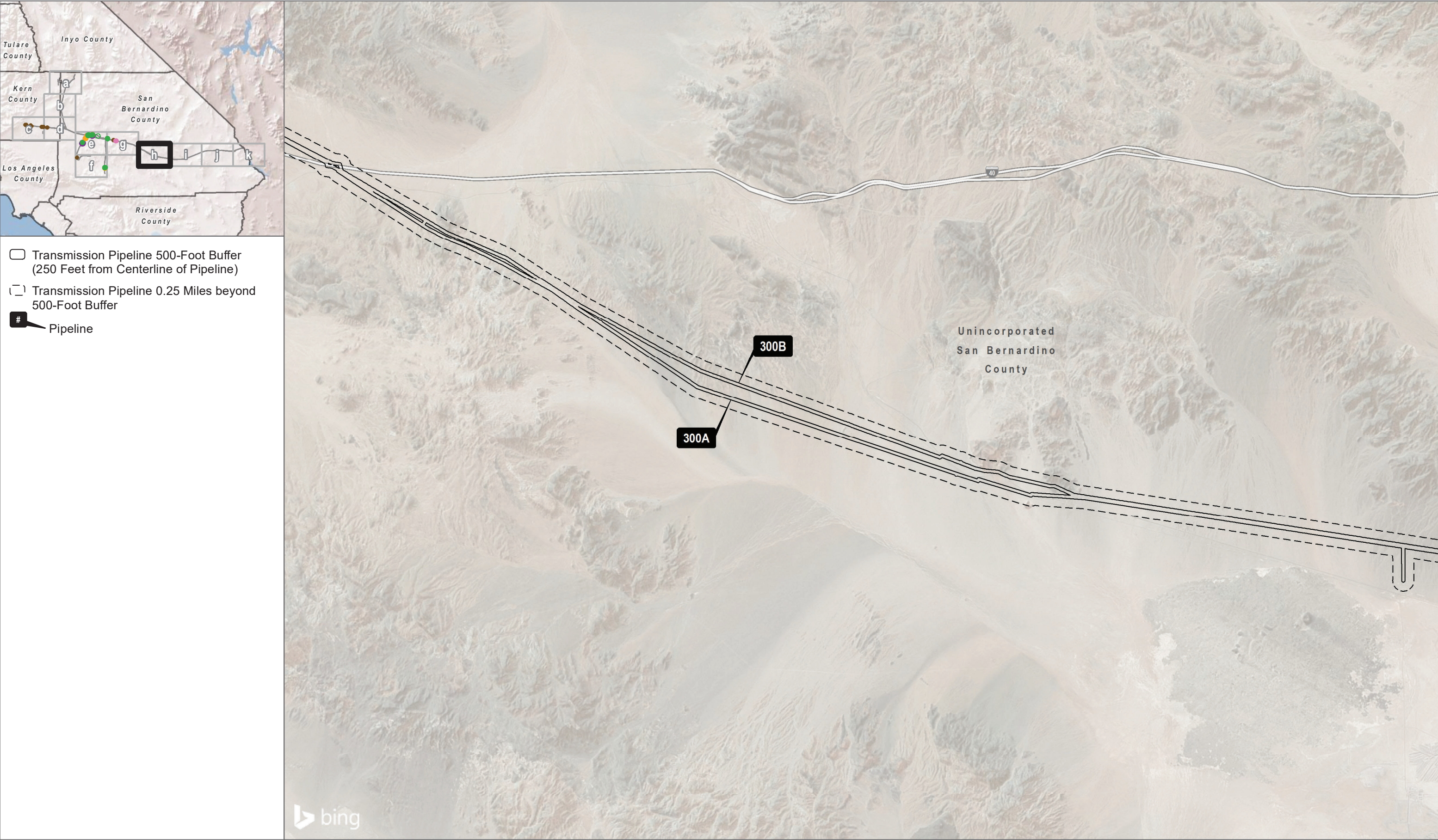
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FIGURE 4.2-1g

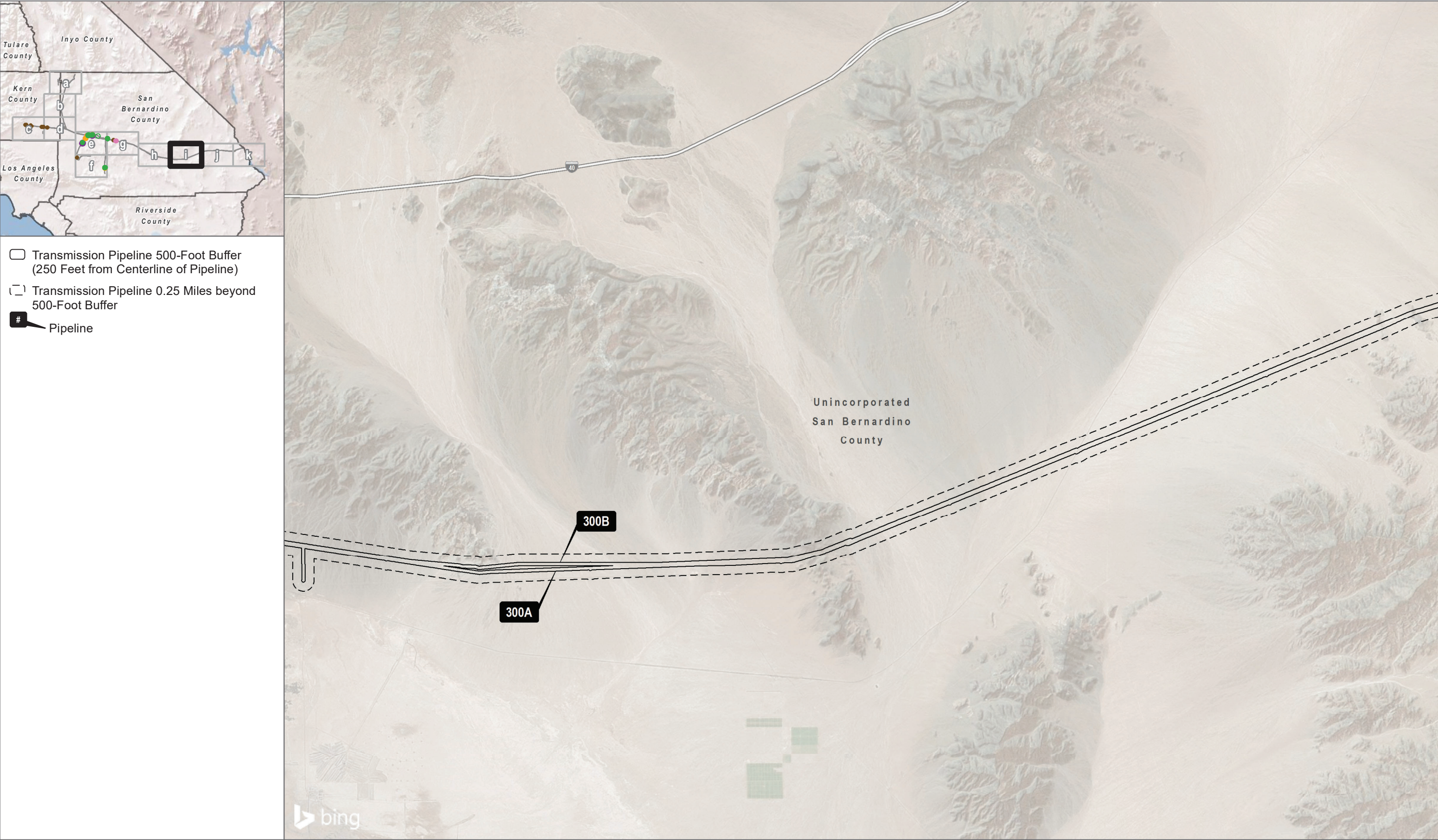
Agricultural Lands in the Study Area

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4.3 Air Quality

4.3.1 Introduction

The proposed project for the purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) that would authorize take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGC). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section evaluates the environmental impacts on air quality that may result directly or indirectly from CDFW's issuance of the ITP and the expected LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on air quality that could result with continuing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the project for purposes of CEQA). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this section.

Section 4.3.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have been occurring and will continue to occur, specific to air quality.

Section 4.3.3 provides a description of the existing baseline conditions for air quality in the O&M activities area ("study area"). Specifically, this section provides a description relative to air quality in the study area that has been and could continue to be affected by PG&E's ongoing O&M activities, regardless of whether CDFW issues the requested permits. This existing baseline condition, which includes the ongoing O&M activities already being implemented by PG&E, relative to their past, present, and continued potential effects, is the benchmark used in the Section 4.3.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these existing baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.3.4 provides an analysis of whether issuance of the requested permits (pursuant to the CFGC) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline and a substantial or potentially substantial adverse effect related to air quality. The section also identifies the significance criteria used for the impact analysis and specifies best management practices (BMPs). Furthermore, this section discusses applicable regulatory authority or governing law that has applied and will continue to apply, specific to air quality.

Section 4.3.5 provides an analysis of whether the project-related incremental change to the environmental baseline is cumulatively considerable and therefore significant.

Section 4.3.6 identifies the residual environmental impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.3.7 lists the references cited in this section.

During the scoping effort, no party identified any public concerns related to potential air quality impacts.

The analysis included in this section is based on information that PG&E provided to CDFW, as well as relevant information gathered and considered, including from the Eastern Kern Air Pollution Control District (EKAPCD) and the Mojave Desert Air Quality Management District (MDAQMD).

4.3.2 Applicable Regulations, Plans, and Policies

The following subsections describe the regulations and regulatory agencies that pertain to air quality that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and CDFW analysis of whether the proposed issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would cause an incremental physical change to the existing environment and cause significant impacts to air quality.

Federal

Clean Air Act

The 1970 federal Clean Air Act (CAA) established National Ambient Air Quality Standards (NAAQS) for six pollutants—carbon monoxide (CO), ozone (O₃), particulate matter 10 microns or less in aerodynamic diameter (coarse particulate matter; PM₁₀), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead. These six criteria air pollutants (CAPs) are known to have adverse impacts on human health and the environment. To protect human health and the environment, the U.S. Environmental Protection Agency (EPA) set primary and secondary maximum ambient thresholds for CAPs. The primary thresholds were set to protect human health, particularly for children and older people, as well as for individuals who suffer from chronic lung conditions (e.g., asthma and emphysema). The secondary standards were set to protect the natural environment and prevent further adverse effects on animals, crops, vegetation, and buildings. The combined primary and secondary standards are termed the NAAQS.

The 1977 CAA required each state to develop and maintain a State Implementation Plan for each CAP that exceeds the NAAQS for that pollutant. The State Implementation Plan serves as a tool to reduce pollutants that are known to cause impacts if they exceed ambient thresholds and to achieve compliance with the NAAQS. In 1990, the CAA was amended to strengthen regulation of both stationary and mobile emission sources for the CAPs.

In July 1997, EPA developed new, health-based NAAQS for O₃ and PM₁₀; however, these standards were not fully implemented until 2001, after the resolution of several lawsuits. The O₃ standard of 0.08 parts per million (ppm) is now based on a longer averaging period (8 hours versus 1 hour), recognizing that prolonged exposure to O₃ is more damaging. In March 2008, EPA further lowered the 8-hour O₃ standard from 0.08 ppm to 0.075 ppm. The particulate matter (PM) standard is based on finer particles (2.5 microns and smaller [PM_{2.5}, or fine particulate matter] versus 10 microns and smaller [PM₁₀]), recognizing that finer particles may remain in the lungs longer and contribute to greater respiratory illness. Table 4.3-1 contains a list of the California Ambient Air Quality Standards (CAAQS) and the NAAQS.

Table 4.3-1. State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS ^{a,b}	NAAQS ^c	
			Primary ^{b,d}	Secondary ^{b,e}
O ₃	1 hour	0.09 ppm (180 µg/m ³)	N/A	N/A
	8 hours ⁱ	0.070 ppm (137 µg/m ³)	0.070 ppm (137 µg/m ³) ^f	0.070 ppm (137 µg/m ³) ^f
PM ₁₀ ^g	24 hours	50 µg/m ³	150 µg/m ³	150 µg/m ³
	Annual arithmetic mean	20 µg/m ³	N/A	N/A
PM _{2.5} ^g	24 hours	N/A	35 µg/m ³	35 µg/m ³
	Annual arithmetic mean	12 µg/m ³	12 µg/m ³	12 µg/m ³
CO	1 hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	N/A
	8 hours	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	N/A
	8 hours (Lake Tahoe)	6 ppm (7 mg/m ³)	N/A	N/A
NO ₂ ^h	1 hour	0.18 ppm (339 µg/m ³)	100 ppb	N/A
	Annual arithmetic mean	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	0.053 ppm (100 µg/m ³)
SO ₂ ⁱ	1 hour	0.25 ppm (655 µg/m ³)	75 ppb	N/A
	3 hours	N/A	N/A	0.5 ppm (1,300 µg/m ³)
	24 hours	0.04 ppm (105 µg/m ³)	0.14 ppm (365 µg/m ³) ^h	N/A
	Annual arithmetic mean	N/A	0.030 ppm (80 µg/m ³) ^h	N/A
Lead ^{j,k,l,m}	30 days	1.5 µg/m ³	N/A	N/A
	Rolling 3 months	N/A	0.15 µg/m ³	0.15 µg/m ³
	Quarterly	N/A	1.5 µg/m ³ (for certain areas) ^k	1.5 µg/m ³
Sulfates	24 hours	25 µg/m ³	N/A	N/A

Sources: CARB 2015; EPA 2016.

Notes: CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; O₃ = ozone; ppm = parts per million; µg/m³ = micrograms per cubic meter; N/A = not applicable; PM₁₀ = coarse particulate matter; PM_{2.5} = fine particulate matter; CO = carbon monoxide; mg/m³ = milligrams per cubic meter; NO₂ = nitrogen dioxide; ppb = parts per billion; SO₂ = sulfur dioxide.

^a California standards for O₃, PM₁₀, PM_{2.5}, CO (except Lake Tahoe), NO₂, SO₂ (1-hour and 24-hour), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Title 17, Section 70200 of the California Code of Regulations (CCR).

^b The concentration is expressed first in the units used to promulgate the standard. The equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

^c NAAQS (other than O₃, PM, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O₃ standard is attained when the fourth-highest 8-hour concentration in a year—averaged over 3 years—is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year

- with a 24-hour average concentration above 150 $\mu\text{g}/\text{m}^3$ is equal to or less than 1. For $\text{PM}_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, is equal to or less than the standard.
- d Any equivalent procedure that can be shown to the satisfaction of the California Air Resources Board (CARB) to give equivalent results at or near the level of the air quality standard may be used.
 - e National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the health of the public.
 - f National Secondary Standards: The levels of air quality necessary to protect public welfare from any known or anticipated adverse effects of a pollutant.
 - g On December 14, 2012, the national annual $\text{PM}_{2.5}$ primary standard was lowered from 15 $\mu\text{g}/\text{m}^3$ to 12.0 $\mu\text{g}/\text{m}^3$. The existing national 24-hour $\text{PM}_{2.5}$ standards (primary and secondary) were retained at 35 $\mu\text{g}/\text{m}^3$, as was the annual secondary standard of 15 $\mu\text{g}/\text{m}^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu\text{g}/\text{m}^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
 - h Reference method as described by EPA. An “equivalent method” of measurement may be used, but it must have a “consistent relationship to the reference method” and must be approved by EPA.
 - i On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.
 - j To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of *ppb*. California standards are in units of *ppm*. To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
 - k On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard; however, in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of *ppb*. California standards are in units of *ppm*. To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
 - l CARB has identified lead and vinyl chloride as toxic air contaminants (TACs) with no threshold level of exposure for adverse health effects. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
 - m The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu\text{g}/\text{m}^3$ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

Hazardous Air Pollutants

The 1977 federal CAA amendments required the EPA to identify National Emission Standards for Hazardous Air Pollutants (HAPs) to protect public health and welfare. HAPs include certain volatile organic compounds (VOCs), pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 federal CAA amendments, which expanded the control program for HAPs, 189 substances and chemical families were identified as HAPs.

State

California Clean Air Act

The California CAA of 1988 requires air districts to develop and implement strategies to attain CAAQS. Table 4.3-2 contains a list of the CAAQS. For some pollutants, the CAAQS are more stringent than the NAAQS. Regional air quality management districts were required to prepare an air quality plan specifying how federal and state standards would be met.

The California Air Resources Board (CARB) enforces the CAAQS and works with the state’s Office of Environmental Health Hazard Assessment to identify toxic air contaminants (TACs) and enforce rules related to TACs, including the Air Toxic Hot Spots Information and Assessment Act of 1987. Enacted to identify TAC hotspots where emissions from specific sources may expose individuals to an elevated risk of adverse health

effects, the act requires that businesses or other establishments identified as significant sources of toxic emissions provide the affected population with information about health risks posed by the emissions.

CARB also regulates mobile emission sources in California (e.g., construction equipment, trucks, and automobiles) and oversees the air districts. Relevant programs related to oversight of mobile source emissions include the Off-Road and On-Road Mobile Sources Emission Reduction programs, the Portable Equipment Registration Program, and the Airborne Toxic Control Measure for Diesel PM (DPM) from Portable Engines. The Mobile Sources Emission Reduction programs are aimed at reductions of oxides of nitrogen (NO_x), VOCs, CO, and PM₁₀. CARB has also adopted specific control measures for the reduction of DPM from off-road, in-use diesel vehicles (rated 25 horsepower [hp] and higher), such as backhoes, dozers, and earthmovers, used in construction projects. Additional DPM control measures are also in place for heavy-duty on-road diesel trucks operated by public utilities and municipalities. The Portable Equipment Registration Program and the Airborne Toxic Control Measure for DPM from Portable Engines provide for statewide registration and control of DPM from portable engines rated 50 hp and higher.

Both the NAAQS and the CAAQS are presented in Table 4.3-2.

Table 4.3-2. Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS ^a	NAAQS ^b	
		Concentration ^c	Primary ^{c, d}	Secondary ^{c, e}
Ozone (O ₃)	1 hour	0.09 ppm (180 µg/m ³)	—	Same as primary standard ^f
	8 hours	0.070 ppm (137 µg/m ³)	0.070 ppm (137 µg/m ³) ^f	
Nitrogen dioxide (NO ₂) ^g	1 hour	0.18 ppm 339 µg/m ³	0.100 ppm (188 µg/m ³)	Same as primary standard
	Annual arithmetic mean	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	
Carbon monoxide (CO)	1 hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	None
	8 hours	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	
Sulfur dioxide (SO ₂) ^h	1 hour	0.25 ppm (655 µg/m ³)	0.075 ppm (196 µg/m ³)	—
	3 hours	—	—	0.5 ppm (1,300 µg/m ³)
	24 hours	0.04 ppm (105 µg/m ³)	0.14 ppm (for certain areas) ^g	—
	Annual	—	0.030 ppm (for certain areas) ^g	—
Coarse particulate matter (PM ₁₀) ⁱ	24 hours	50 µg/m ³	150 µg/m ³	Same as primary standard
	Annual arithmetic mean	20 µg/m ³	—	

Table 4.3-2. Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS ^a	NAAQS ^b	
		Concentration ^c	Primary ^{c, d}	Secondary ^{c, e}
Fine particulate matter (PM _{2.5}) ⁱ	24 hours	—	35 µg/m ³	Same as primary standard
	Annual arithmetic mean	12 µg/m ³	12.0 µg/m ³	15.0 µg/m ³
Lead ^{j, k}	30-day average	1.5 µg/m ³	—	—
	Calendar quarter	—	1.5 µg/m ³ (for certain areas) ^k	Same as primary standard
	Rolling 3-month average	—	0.15 µg/m ³	
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m ³)	—	—
Vinyl chloride ^l	24 hours	0.01 ppm (26 µg/m ³)	—	—
Sulfates	24 hours	25 µg/m ³	—	—
Visibility-reducing particles	8 hour (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%	—	—

Source: CARB 2016.

Notes: CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; ppm = parts per million by volume; µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter; PST = Pacific Standard Time.

- ^a California standards for O₃, CO, SO₂ (1-hour and 24-hour), NO₂, suspended particulate matter—PM₁₀, PM_{2.5}, and visibility-reducing particles—are values that are not to be exceeded. All others are not to be equaled or exceeded. The CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- ^b National standards (other than O₃, NO₂, SO₂, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O₃ standard is attained when the fourth-highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than 1. For PM_{2.5}, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.
- ^c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; *ppm* in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- ^d National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- ^e National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- ^f On October 1, 2015, the primary and secondary National Ambient Air Quality Standards for O₃ were lowered from 0.075 ppm to 0.070 ppm.
- ^g To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb). Note that the national 1-hour standard is in units of *ppb*. California standards are in units of *ppm*. To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
- ^h On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment of the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

- i On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
- j CARB has identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
- k The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

Assembly Bill 617

Assembly Bill (AB) 617 was approved by the Governor of California on July 26, 2017, and requires CARB to develop a uniform statewide system of annual reporting of emissions of CAPs and TACs for use by certain categories of stationary sources. The bill requires those stationary sources to report their annual emissions of CAPs and TACs, as specified.

This bill required CARB to prepare a monitoring plan by October 1, 2018, regarding technologies for monitoring CAPs and TACs and the need for and benefits of additional community air monitoring systems, as defined. The bill required CARB to select, based on the monitoring plan, the highest-priority locations in the state for the deployment of community air monitoring systems. The bill required an air district containing a selected location to deploy a system in the selected location by July 1, 2019. The bill authorizes the air district to require a stationary source that emits air pollutants in, or that materially affect, the selected location to deploy a fence-line monitoring system, as defined, or other specified real-time, on-site monitoring. The bill authorized CARB to select additional locations for the deployment of the systems by January 1, 2020, and annually thereafter. The bill requires air districts that have deployed a community air monitoring system to provide air quality data produced by the system to CARB. By increasing the duties of air districts, this bill imposed a state-mandated local program. The bill requires CARB to publish the data on its website.

This bill required CARB to prepare by October 1, 2018, and to update at least once every 5 years a statewide strategy to reduce emissions of TACs and CAPs in communities affected by a high cumulative exposure burden. The bill requires CARB to select locations around the state for the preparation of community emissions reduction programs, to provide grants to community-based organizations for technical assistance, and to support community participation in the programs. The bill requires an air district containing a selected location, within 1 year of CARB's selection, to adopt a community emissions reduction program.

In response to AB 617, CARB established the Community Air Protection Program. The Community Air Protection Program's focus is to reduce exposure in communities most impacted by air pollution. Communities around the state are working together to develop and implement new strategies to measure air pollution and reduce health impacts.

This first-of-its-kind statewide effort includes community air monitoring and community emissions reduction programs. In addition, the State Legislature appropriated funding to support early actions to address localized air pollution through targeted incentive funding to deploy cleaner technologies in these communities, as well as grants to support community participation in the AB 617 process. AB 617 also includes new requirements for accelerated retrofitting of pollution controls on industrial sources, increased penalty fees, and greater transparency and availability of air quality and emissions data, which will help advance air pollution control efforts throughout the state. This new effort provides an opportunity to continue

to enhance our air quality planning efforts and better integrate state-, regional-, and community-level programs to provide clean air for all Californians.

Toxic Air Contaminant Identification and Control Act

The state Air Toxics Program was established in 1983 under AB 1807. The California TAC list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) HAPs. In 1987, the State Legislature enacted the Air Toxics “Hot Spots” Information and Assessment Act of 1987 (AB 2588) to address public concern over the release of TACs into the atmosphere. AB 2588 law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years. TAC emissions from individual facilities are quantified and prioritized. “High-priority” facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, the facility operator is required to communicate the results to the public in the form of notices and public meetings.

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines (CARB 2000). The regulation was anticipated to result in an 80% decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression-Ignition (Diesel) Engines and Equipment Program. These regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. There are several Airborne Toxic Control Measures that reduce diesel emissions, including In-Use Off-Road Diesel-Fueled Fleets (13 CCR 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

California Health and Safety Code Section 41700

Section 41700 of the California Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any of those persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

Clean Energy and Pollution Reduction Act of 2015 (Senate Bill 350)

The Clean Energy and Pollution Reduction Act of 2015 was enacted on September 11, 2015, and establishes a new set of objectives in clean energy, clean air, and pollution reduction for 2030 and beyond. The act requires the amount of electricity generated and sold from renewable energy resources to be increased to 50% by December 31, 2030, which is an increase in the state’s Renewables Portfolio Standard goal of 33% by 2020, established by Senate Bill (SB) 2 in 2011. In addition, statewide energy efficiency savings in electricity and natural gas must be doubled through energy efficiency and conservation efforts. As with SB 2, the act requires the California Public Utilities Commission (CPUC) to establish efficiency targets for electric and gas companies that are consistent with the statewide targets. To track Renewables Portfolio Standard

compliance, CPUC's Energy Division has developed a Renewables Portfolio Standard Compliance Report spreadsheet for retail sellers to report their progress in reaching the established targets on an annual basis. Further, the law defines pollution reduction objectives for the State of California.

Local

Pursuant to Article XII, Section 8 of the California Constitution, CPUC has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, O&M, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with CPUC. Although local governments do not have the power to regulate such activities, CPUC encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has considered relevant regional and county policies and issues in this environmental impact report (EIR).

The local air pollution control district or air quality management district regulates air quality at the local level. Each of these agencies is responsible for regulating stationary emission sources at industrial and commercial facilities within their respective geographic areas, and for preparing the air quality management plans required under the federal and state CAAs.

Eastern Kern Air Pollution Control District

Rule 402 – Fugitive Dust

EKAPCD adopted Rule 402 to reduce ambient fugitive dust concentrations in the district and to maintain the NAAQS and CAAQS. Rule 402 sets forth Reasonably Available Control Measures for minimizing fugitive dust from unpaved roads; construction, demolition, and earthmoving activities; open storage piles; and disturbed surface areas. Some of the measures include the application of dust suppressants, covering bulk materials during hauling and in storage piles, and limiting vehicle speeds on unpaved roads.

2017 Ozone Attainment Plan

EKAPCD has prepared a draft Ozone Attainment Plan (2017a) to satisfy the requirements of the federal CAA. The plan presents the district's strategy to attain the 2008 8-hour ozone standard by 2020. The plan was adopted on July 27, 2017.

Reasonably Available Control Technology State Implementation Plan for the 2008 Ozone National Ambient Air Quality Standards

EKAPCD has prepared a Reasonably Available Control Technology State Implementation Plan for the 2008 O₃ NAAQS (2017b) to satisfy the requirements of the federal CAA. A section of the EKAPCD is designated moderate for the 2008 O₃ NAAQS.

Mojave Desert Air Quality Management District

Rule 403.2 – Fugitive Dust Control for the Mojave Desert Planning Area

MDAQMD adopted Rule 403.2 to prevent anthropogenic (human-caused) fugitive dust from causing NAAQS violations for PM₁₀ in the Mojave Desert Planning Area and to implement measures from the Mojave Desert

Planning Area Federal PM₁₀ Attainment Plan. The rule sets forth separate sets of measures to minimize fugitive dust for the following:

- Projects that disturb less than 100 acres
- Projects that disturb 100 acres or more
- Local jurisdictions
- Weed-abatement activities
- Limestone-processing facilities

Some of the measures include the application of dust suppressants, covering bulk materials during hauling and in storage piles, and limiting vehicle speeds on unpaved roads.

2004 Ozone Attainment Plan

MDAQMD is required to prepare an air quality attainment plan that outlines measures to achieve attainment levels for CAPs and avoid future levels that exceed applicable standards. MDAQMD has developed the 2004 Ozone Attainment Plan, which aims to achieve and maintain the CAAQS by the earliest possible date considering concentrations, violations, transport, emission projections, emission inventories, control measures, emission reductions, military base closures, and cost effectiveness. This plan provides an update of previously submitted plans and summaries of progress.

Reasonable Further Progress/Rate-of-Progress Plan

MDAQMD adopted the Rate-of-Progress Plan (1994) to present milestone dates beginning in 1996 and continuing every 3 years thereafter by demonstrating reasonable further progress and attainment of the O₃ NAAQS by milestone dates. These emissions are verified at each milestone date to determine reasonable further progress until the O₃ NAAQS is attained. Portions of the MDAQMD are still in nonattainment for O₃.

Pacific Gas and Electric Company Programs

PG&E's Air Quality Program consists of promotion and dissemination of air quality educational materials via training sessions and on job sites as necessary, along with BMPs to avoid and minimize air quality effects. PG&E's Air Quality Program BMPs to avoid and minimize air quality effects are included in Section 4.3.4.2, Applicable Measures. In addition, to reduce emissions of air pollutants from its vehicle fleet PG&E deploys alternative-fuel vehicles, including hybrid-electric bucket trucks and compressed natural gas (CNG) vehicles. In addition, PG&E continues to invest in new vehicles and technologies that further reduce emissions from its vehicle fleet. Some of these efforts include the deployment of bucket trucks equipped with electric power take-off, which allows crews to operate the trucks without idling the engines, and installing electric vehicle chargers at PG&E facilities to promote the adoption of electric vehicles by employees.

4.3.3 Existing Baseline Conditions

This section provides a description of the existing baseline conditions relative to air quality in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. PG&E's gas pipeline system has been in place for more than 70 years. Impact data collected by PG&E from 2017 to September 2021 regarding temporary and permanent

disturbance impacts caused by O&M activities provides important detail about the environmental baseline for purposes of CEQA (refer to Section 1.1, Proposed Project and Environmental Review, of this EIR). The existing baseline condition from 2017 to 2021, which includes PG&E's past and ongoing O&M activities, is the benchmark used in the Section 4.3.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Regional Climate and Meteorology

General climatic conditions in the study area are typical of the Mojave Desert Air Basin (MDAB), which includes the EKAPCD and the MDAQMD. The basic climate conditions are characterized by an arid climate with cool winters, hot summers, and little rainfall. Temperatures generally increase, while precipitation generally decreases from south to north and from west to east in this region. Summer temperatures top 100°F, and annual average rainfall is less than 8 inches. January and December are typically the coldest months in the MDAB. In contrast to the desert portions of the area, temperature and precipitation can be significant in the mountain areas, where snowcapped peaks are commonplace during winter. Overall, the Mojave Desert tends to be windy, with winds blowing mainly from the south and west. These winds are due to the proximity of the MDAB to coastal and central regions and the Sierra Nevada to the north; air masses pushed onshore in Southern California by differential heating are channeled through the MDAB. The MDAB is separated from the influence of the Southern California Coastal and Central Valley regions by mountains that form channels for the dispersion and transport of air pollutants.

Air Quality

Criteria Air Pollutants

O₃, PM₁₀, PM_{2.5}, CO, NO₂, SO₂, and lead are all CAPs that are regulated in California. Non-methane ethane VOCs (also referred to as reactive organic gases, or ROGs) are also regulated as precursors to the formation of O₃. These CAPs and their effects on humans are discussed in the following subsections.

Ozone

O₃ is a colorless gas that is not directly emitted as a pollutant but is formed when hydrocarbons and NO_x react in the presence of sunlight. Low wind speeds or stagnant air mixed with warm temperatures typically provide optimum conditions for the formation of O₃. Because O₃ formation does not occur quickly, O₃ concentrations often peak downwind of the emission source. As a result, O₃ is of regional concern because it impacts a larger area. When inhaled, O₃ irritates and damages the respiratory system.

Particulate Matter

PM, which is defined as particles suspended in a gas, is often a mixture of substances, including metals, nitrates, organic compounds, and complex mixtures (e.g., diesel exhaust and soil). PM can be traced back to both natural and human-made sources. The most common sources of natural PM are dust and fires, while the most common human-made source is the combustion of fossil fuels.

PM causes irritation to the human respiratory system when inhaled. The extent of the health risks due to PM exposure can be determined by the size of the particles. The smaller the particles, the deeper they can be deposited in the lungs. PM is often grouped into two categories: PM₁₀ and PM_{2.5}.

Carbon Monoxide

CO is a colorless, odorless, and tasteless gas that is directly emitted as a byproduct of combustion. CO concentrations tend to be localized to the source, and the highest concentrations are associated with cold, stagnant weather conditions. CO is readily absorbed through the lungs into the blood, where it reduces the ability of the blood to carry oxygen.

Oxides of Nitrogen

NO_x is a generic name for the group of highly reactive gases that contain nitrogen and oxygen in varying amounts. Many types of NO_x are colorless and odorless. However, when combined with particles in the air, NO₂—a common pollutant—can often be seen as a reddish-brown layer over many urban areas.

NO_x forms when fuel is burned at high temperatures. Typical human-made sources of NO_x include motor vehicles; fossil-fueled electricity generation utilities; and other industrial, commercial, and residential sources that burn fuels. NO_x can harm humans by affecting the respiratory system. Small particles can penetrate the sensitive parts of the lungs, cause or worsen respiratory disease, and aggravate existing heart conditions. As discussed previously, O₃ is formed when NO_x and hydrocarbons react with sunlight.

Sulfur Oxides

SO_x are formed when sulfur-containing materials are processed or burned. SO_x sources include industrial facilities (e.g., petroleum refineries, cement manufacturing facilities, and metal-processing facilities), locomotives, large ships, and some non-road diesel equipment.

A wide variety of health and environmental impacts are associated with SO_x because of the way it reacts with other substances in the air. A number of people are particularly sensitive to SO_x emissions, including children, older people, people with asthma, and people with heart or lung disease. When inhaled, these particles gather in the lungs and contribute to increased respiratory symptoms and disease, difficulty breathing, and premature death.

Volatile Organic Compounds

VOCs (or ROGs) are a group of chemicals that react with NO_x and hydrocarbons in the presence of heat and sunlight to form O₃. Examples of VOCs include gasoline fumes and oil-based paints. This group of chemicals does not include methane (CH₄) or other compounds determined by EPA to have negligible photochemical reactivity.

Toxic Air Contaminants

TACs are the listed toxic pollutants as established by the California Office of Environmental Health Hazard Assessment. Under AB 1807, CARB is required to use certain criteria in prioritizing, identifying, and controlling air toxins. In selecting substances for review, CARB must consider pollutants that may pose a threat to human health, or cause or contribute to serious illnesses or death. For many TACs, no threshold level exists below which adverse health impacts may not be expected to occur. This contrasts with the CAPs,

for which acceptable levels of exposure can be determined and for which the federal and state governments have set NAAQS and CAAQS.

Sensitive Receptors

Some exposed population groups—including children, older people, and ill people—can be especially vulnerable to airborne chemicals and irritants and are termed “sensitive receptors.” In addition, due to sustained exposure durations, all persons located in residential areas are considered to be sensitive receptors. The nearest sensitive receptors to the gas pipelines in the study area are residential properties, some of which are adjacent to the existing gas pipelines, particularly within the census designated place of Lenwood and the City of Barstow, where the closest residential structures are approximately 15 feet and 25 feet, respectively, from Line 300 A. Several motels, residences, a hospital, medical clinics, and churches are located within 500 feet of an existing gas pipeline along China Lake Boulevard (State Route 178) in the City of Ridgecrest. Barstow Community College in the City of Barstow is the only school within 500 feet of an existing gas pipeline.

Air Quality Designations

CARB is the state agency responsible for California air quality management, including establishment of CAAQS, mobile source emission standards, and greenhouse gas regulations, as well as oversight of regional air quality districts and preparation of implementation plans, including regulations for stationary sources of air pollution. The CAAQS are generally more stringent than the NAAQS, except for the 1-hour NO₂ and SO₂ standards, and include more pollutants than the NAAQS. Similar to EPA, CARB designates counties in California as being in attainment or nonattainment for the CAAQS.

Three air quality designations are typically given to an area for a particular pollutant:

- Nonattainment. This designation applies when the NAAQS or CAAQS have not been consistently achieved.¹
- Attainment. This designation applies when the NAAQS or CAAQS have been achieved.
- Unclassified. This designation applies when insufficient monitoring data exists to determine a nonattainment or attainment designation.

Table 4.3-3 provides the current NAAQS and CAAQS attainment status for the two air districts in the study area. Portions of the study area are currently designated as nonattainment areas for O₃, PM₁₀, and PM_{2.5}.

Table 4.3-3. Attainment Status

Criteria Air Pollutant	EKAPCD		MDAQMD	
	CAAQS	NAAQS	CAAQS	NAAQS
O ₃ (8-hour)	N	N/M	N	N
PM ₁₀	N	U/A	N	N
PM _{2.5}	U	U/A	N	U/A
CO	U	U/A	A	A

¹ Nonattainment areas can be classified as marginal, moderate, serious, severe, or extreme. The EKAPCD classifies O₃ nonattainment as marginal, moderate, serious, severe, or extreme. “Marginal” areas are not required to submit attainment demonstration plans but are given only 3 years from the effective date of the designation to attain the standard.

Table 4.3-3. Attainment Status

Criteria Air Pollutant	EKAPCD		MDAQMD	
	CAAQS	NAAQS	CAAQS	NAAQS
NO ₂	A	U	U/A	U/A
SO ₂	A	U	U/A	U/A
Sulfates	A	N/A	A	N/A
Lead	A	U/A	A	A
Hydrogen sulfide	U	N/A	U	N/A
Visibility-reducing particles	U	N/A	U	N/A

Sources: MDAQMD 2016a; EKAPCD 2014; CARB 2017.

Notes: EKAPCD = Eastern Kern Air Pollution Control District; MDAQMD = Mojave Desert Air Quality Management District; CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; O₃ = ozone; N = nonattainment; M = marginal²; PM₁₀ = coarse particulate matter; U = unclassified; A = attainment, PM_{2.5} = fine particulate matter; CO = carbon monoxide; NO₂ = nitrogen dioxide; SO₂ = sulfur dioxide; N/A = not applicable (i.e., there is no federal standard).

Ambient Air Quality

Violations of NAAQS and CAAQS for O₃, PM₁₀, and PM_{2.5} have occurred historically in the study area. The frequency of violations and current air quality conditions at the two monitoring sites nearest to the study area are summarized for O₃, PM₁₀, and PM_{2.5} in Table 4.3-4 and Table 4.3-5. As shown in these tables, the air quality in the surrounding areas has been relatively stable over the past 3 years; however, in some cases, PM concentrations have increased over time.

Table 4.3-4. Recent Air Quality Concentrations

Monitoring Station	Year	O ₃ – Maximum 1-hour (ppm)	PM ₁₀ – Maximum 24-hour (µg/m ³)	PM _{2.5} – Maximum 24-hour (µg/m ³)
Barstow	2019	0.090	209.5	—
	2018	0.126	101.3	—
	2017	0.084	206.9	—
Mojave	2019	0.088	248.7	19.8
	2018	0.103	93.1	39.0
	2017	0.082	93.4	26.9

Source: CARB 2016.

Notes: O₃ = ozone; ppm = parts per million; PM₁₀ = coarse particulate matter; µg/m³ = micrograms per cubic meter; PM_{2.5} = fine particulate matter.

² The EKAPCD classifies O₃ nonattainment as marginal, moderate, serious, severe, or extreme. “Marginal” areas are not required to submit attainment demonstration plans but are given only 3 years from the effective date of the designation to attain the standard. With respect to the 1997 O₃ NAAQS, EPA determined, based on ambient O₃ concentration data for 2009 to 2011, that the EKAPCD attained the standard by the applicable attainment date. Therefore, the EKAPCD is not required to submit an attainment plan.

Table 4.3-5. Frequency of Air Quality Standard Violations

Monitoring Station	Year	Number of Days in Exceedance of Standard			
		CAAQS 1-hour O ₃	CAAQS 24-hour PM ₁₀	NAAQS 24-hour PM ₁₀	NAAQS 24-hour PM _{2.5}
Barstow	2019	0	—	1.2	—
	2018	5	—	0.0	—
	2017	0	—	1.1	—
Mojave	2019	0	15.0	2.0	0.0
	2018	8	—	0.0	2.1
	2017	1	—	—	0.0

Source: CARB 2016.

Notes: CAAQS = California Ambient Air Quality Standards; O₃ = ozone; PM₁₀ = coarse particulate matter; NAAQS = National Ambient Air Quality Standards; PM_{2.5} = fine particulate matter; — = insufficient or unavailable data.

Days over PM₁₀ CAAQS are based on monitoring every sixth day.

4.3.4 Impact Analysis

4.3.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of air quality impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For the purposes of this EIR, air quality impacts would be significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Local air districts are primarily responsible for regulating stationary emission sources at industrial and commercial facilities within their respective geographic areas and for preparing the air quality plans that are required under the federal and state CAAs.

The study area is located within the MDAB. The portion of the study area that is located within the MDAB is under the jurisdictional control of the EKAPCD and the MDAQMD. The EKAPCD and the MDAQMD provide rules and regulations to which all projects must conform. In addition, both air districts provide methodologies for analyzing a project's impacts under CEQA.

Details regarding air quality thresholds are further described in the following subsections.

Air Quality Thresholds of Significance

The significance thresholds for CAPs in the EKAPCD and the MDAQMD are summarized in Table 4.3-6.

Table 4.3-6. Thresholds of Significance for Criteria Air Pollutants

Pollutant	EKAPCD		MDAQMD	
	Daily Threshold (Pounds)	Annual Threshold (Tons)	Daily Threshold (Pounds)	Annual Threshold (Tons)
PM ₁₀	N/A	15	82	15
PM _{2.5}	N/A	N/A	82	N/A
CO	N/A	N/A	548	N/A
NO _x	137	25	137	25
SO ₂	N/A	27	137	27
ROGs (VOCs)	137	25	137	25

Sources: MDAQMD 2016b; EKAPCD 1994, 1999, 2012.

Notes: EKAPCD = Eastern Kern Air Pollution Control District; MDAQMD = Mojave Desert Air Quality Management District; PM₁₀ = coarse particulate matter; N/A = not applicable; PM_{2.5} = fine particulate matter; CO = carbon monoxide; NO_x = oxides of nitrogen; SO₂ = sulfur dioxide; ROG = reactive organic gas; VOC = volatile organic compound.

4.3.4.2 Applicable Measures

Best Management Practices

As part of its standard practice and as part of its Air Quality Program, PG&E will continue to incorporate the following BMPs into its ongoing O&M activities to avoid or minimize the potential for adverse air quality impacts. In addition to the BMPs listed below, the Air Quality Program consists of promotion and dissemination of air quality educational materials via training sessions and on job sites as necessary. The BMPs, where applicable, are discussed in the impact discussion in Section 4.3.4.3.

- The crew would not allow visible dust to pass beyond the Air Quality Program boundary. The crew would abate dust through the following methods:
 - Applying dust suppressants (e.g., water) to disturbed areas being disturbed, areas that have the potential to be disturbed, and storage stockpiles
 - Limiting vehicle speeds to 15 mph for off-road travel and posting speed limits
 - Loading haul trucks with a freeboard (i.e., the space between the top of the truck and the load) of 6 inches or greater
 - Covering or applying water to the top of the haul truckload
 - Cleaning up carryout and trackout at least daily
 - Washing vehicles and equipment as necessary and permitted
- Encourage construction workers to carpool to the job site to the extent feasible. The ability to develop an effective carpool program would depend on the proximity of carpool facilities to the area, the geographical commute departure points of construction workers, and the extent to which carpooling would not adversely affect worker arrival time and the construction schedule for O&M activities.
- Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time would 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 that limit their immediate use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The program

would 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 would be shut off. Construction foremen would include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings would 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 that are 50 horsepower or larger and manufactured in 2000 or later would be registered under the 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.

4.3.4.3 Impact Discussion

Impact AIR-1 Would the project conflict with or obstruct implementation of the applicable air quality plan?

PG&E’s ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2, Project Description. As discussed in Section 4.3.3, Existing Baseline Conditions, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and is located within the MDAB, which includes the EKAPCD and the MDAQMD. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E’s ongoing O&M activities in the study area would conflict with or obstruct implementation of the applicable air quality plan.

When determining whether a project would conflict with an air quality plan, the primary focus is to evaluate if the project’s emissions are properly anticipated in the regional air planning process and if these emissions are reduced where feasible. To determine whether the emissions were captured during the air quality planning process, it is necessary to assess the ongoing O&M activities’ consistency with the EKAPCD and MDAQMD’s air quality standards. Consistency with these standards is determined by evaluating whether the project’s emissions exceed the CAP thresholds established by the air districts and whether the proposed project (issuance of the permits conditioning the ongoing O&M activities) would result in growth that has been anticipated.

The emissions associated with PG&E’s ongoing O&M activities as conditioned by the permits would be the same as emissions during the baseline period, between 2017 and September 2021. The EKAPCD and MDAQMD operate a number of air quality monitoring stations that collect real-time measurements of ambient-level pollutants. The frequency of violations and current air quality conditions at the two monitoring sites within the study area are summarized for O₃, PM₁₀, and PM_{2.5} in Table 4.3-4, Recent Air Quality Concentrations, and Table 4.3-5, Frequency of Air Quality Standard Violations.

All of PG&E's ongoing O&M activities with the potential to conflict with or obstruct implementation of the applicable air quality plan will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to air quality. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if any exists at all. That said, as discussed in Section 4.4.4 of this EIR (Biological Resources, Impact Analysis), issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not conflict with or obstruct implementation of the applicable air quality plan.

Emissions associated with PG&E's baseline O&M activities have been modeled to demonstrate the associated air quality impacts, and these emissions are below the applicable significance thresholds. Furthermore, it is expected that O&M activities have been and will continue to remain consistent with the existing zoning in the study area, and no changes to zoning are anticipated. PG&E's O&M activities have been ongoing for more than 70 years, and are part of baseline conditions; therefore, these activities are not anticipated to be growth inducing and will not result in additional housing, employment, or population.

PG&E's commitment to implementing standard practices and BMPs and to complying with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline or a substantial adverse effect related to a conflict with or obstruct implementation of the applicable air quality plan. For example, as part of standard practice, PG&E will implement its Air Quality Program, which includes implementation of BMPs including promotion and dissemination of air quality educational materials via training sessions, fugitive dust control, restrictions to vehicle idling time, minimizing air pollutant emissions through carpooling, ensuring all vehicles are maintained and tuned according to the manufacturer's specifications, using low-emission or electric construction equipment, and minimizing welding and cutting by using compression of mechanical application. Per PG&E's ongoing standard practice, it is expected that PG&E's O&M activities will continue to meet the requirements of MDAQMD and EKAPCD rules.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with conflicting with or obstructing implementation of the applicable air quality plan is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to a conflict with or obstruction of implementation of the applicable air quality plan; any related effects would be **less than significant**.

Impact AIR-2 **Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?**

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.3.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and is located within the MDAB, which includes the EKAPCD and the MDAQMD. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

The California Emissions Estimator Model (CalEEMod) was used to simulate the anticipated emissions resulting from continued O&M activities in the study area based on the activity's anticipated size, duration, land use, and construction methods described in Chapter 2. Using these data, the model calculated the maximum daily emissions for a range of pollutants. The maximum daily emissions were then used to project the annual emissions for ongoing O&M activities based on baseline durations and frequencies (refer to Table 2-3, Construction Equipment and Surface Disturbance Details). Emissions from off-road equipment were estimated using the O&M activity data in Chapter 2 and the emission factors in the CARB OFFROAD 2011 model. The emissions from on-road vehicles were estimated using the O&M activity data in Chapter 2 and the emission factors from the CARB EMFAC 2014 model. Helicopters have been used and are anticipated to be used for aerial leak surveys, which are typically conducted in April and October of each year. To account for the use of helicopters, sample fuel flow rates and emission factors were obtained from the Federal Office of Civil Aviation's Guidance on Determination of Helicopter Emissions, Edition 2 (FOCA 2015). CalEEMod version 2016.3.2 was used to estimate emissions of fugitive dust during grading and site preparation activities. The emission calculations are provided in Appendix C, CalEEMod Reports.

The estimated annual emissions are summarized in Table 4.3-7.

Table 4.3-7. Estimated Annual O&M Emissions

Metric	Emissions (Tons per Year)					
	VOCs	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
MDAQMD emissions	2	15	16	< 0.1	7	2
MDAQMD threshold	25	25	N/A	27	15	N/A
Exceeded?	No	No	N/A	No	No	N/A
EKAPCD emissions	0.4	3	3	< 0.1	1	0.3
EKAPCD threshold	25	25	N/A	27	15	N/A
Exceeded?	No	No	N/A	No	No	N/A

Notes: O&M = operation and maintenance; VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM₁₀ = coarse particulate matter; PM_{2.5} = fine particulate matter; MDAQMD = Mojave Desert Air Quality Management District; N/A = not applicable; EKAPCD = Eastern Kern Air Pollution Control District.

The estimated daily emissions from the O&M activities compared to the MDAQMD and EKAPD daily thresholds are provided in Table 4.3-8.

Table 4.3-8. Estimated Daily O&M Emissions

Metric	Emissions (Pounds per Day)					
	VOCs	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
MDAQMD Emissions	14.16	100.40	131.73	0.44	40.98	9.37
MDAQMD Threshold	137	137	548	137	82	65
Exceeded?	No	No	No	No	No	No
EKAPCD Emissions	2.50	17.72	23.25	0.08	7.23	1.65
EKAPCD Threshold	137	137	N/A	N/A	N/A	N/A
Exceeded?	No	No	N/A	N/A	N/A	N/A

Notes: O&M = operation and maintenance; VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM₁₀ = coarse particulate matter; PM_{2.5} = fine particulate matter; MDAQMD = Mojave Desert Air Quality Management District; N/A = not applicable; EKAPCD = Eastern Kern Air Pollution Control District.

As shown in Table 4.3-3, Attainment Status, portions of the study area are currently listed as non-attainment for O₃, PM₁₀, and PM_{2.5}. As described in Section 4.3.3, PG&E has been conducting O&M activities in the study area for 70 years; therefore, emissions associated with PG&E's O&M activities are included in each local air district's planning data and are not expected to contribute significantly to emissions not previously considered. O&M activities that involve construction of aboveground facilities (e.g., pig launcher/receiver facilities, electronic test system stations and cathodic test stations, and thermoelectric generators, if required) have resulted in and will continue to result in emissions of NO_x—a precursor to O₃—and PM. As shown in Tables 4.3-7 and 4.3-8, emissions from the O&M activities do not exceed the daily or annual significance thresholds of the MDAQMD or the EKAPCD.

All of PG&E's ongoing O&M activities with the potential to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to air quality. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if any exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

PG&E's commitment to implementing standard practices, its Air Quality Program (which includes BMPs), and compliance with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline or a substantial adverse effect related to a conflict with or obstruction of implementation of the applicable air quality plan. For example, as part of standard practice, PG&E will implement its Air Quality Program, which includes implementation of BMPs including promotion and dissemination of air quality educational materials via training sessions, fugitive dust control, restrictions to vehicle idling time, minimizing air pollutant emissions through carpooling, ensuring all vehicles are maintained and tuned according to the manufacturer's specifications, using low-emission or electric construction equipment, and minimizing welding and cutting by using compression of mechanical applications. Per PG&E's ongoing standard practice, it is expected that PG&E's ongoing O&M activities have been meeting and would continue to meet the requirements of MDAQMD and EKAPCD rules.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with air quality is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard; any related effects would be **less than significant**.

Impact AIR-3 Would the project expose sensitive receptors to substantial pollutant concentrations?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.3.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California, and some portions of the gas pipelines are located adjacent to sensitive receptors, including near residential and school uses. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would expose sensitive receptors to substantial pollutant concentrations.

PG&E's Hinkley and Topock Compressor Stations currently undergo health risk assessments and comply with the MDAQMD Air Toxics Hot Spots Program's reporting requirements. The MDAQMD's emission inventory guidelines require the inclusion of appropriate mobile sources and fugitive emissions in this inventory.

The EKAPCD requires CO hotspot modeling to be completed if a project involves an intersection or roadway with a level of service (the quality of motor vehicle traffic service) of E or worse (unstable flow, operating at capacity), adding signalization or channelization to an intersection, and sensitive receptors are located in the vicinity of the affected intersection or signalization. PG&E's O&M activities have been conducted in the study area for more than 70 years and these activities are incorporated into level of service assessments. PG&E's O&M activities do not include signalization or channelization of existing intersections; therefore, no CO hotspots would occur.

Valley fever, also called coccidioidomycosis, is an infection caused by the fungus *Coccidioides*. When soil containing this fungus is stirred up by ground-disturbing activities (e.g., by digging or grading, or by vehicles raising dust) or by the wind, the fungal spores get into the air. When people breathe the spores into their lungs, they may get valley fever. Because the exact location of the fungus that causes valley fever is unknown, modeling the potential exposure to it from O&M activities is difficult. The ongoing O&M activities require limited ground-disturbing activities, and fugitive dust has been and will continue to be controlled through PG&E's incorporation of air quality BMPs. Also, as shown in Tables 4.3-7 and 4.3-8, PM emissions do not exceed the MDAQMD or EKAPCD significance thresholds.

Visibility-reducing particles, such as PM, affect visibility by absorbing or scattering light before it reaches the observer. Some haze-causing particles are directly emitted to the air while others are formed in the air from the chemical transformation of gaseous pollutants (e.g., sulfates, nitrates, and organic carbon particles), which are the major constituents of fine PM (PM_{2.5}). These fine particles are caused largely by the combustion of fuel. The ongoing O&M activities already generate and will continue to generate fugitive dust and emit CAPs. As shown in Tables 4.3-7 and 4.3-8, emissions associated with the O&M activities are below all applicable thresholds and are not expected to alter visibility in the vicinity of Edwards Air Force Base, China Lake Naval Weapons Station, or the entire R-2508 Airspace Complex. PG&E's incorporation of air quality BMPs has controlled and will continue to control fugitive dust emissions and other CAP emissions during O&M activities.

All of PG&E's ongoing O&M activities with the potential to expose sensitive receptors to substantial pollutant concentrations will continue to occur regardless of whether CDFW issues the permits. As described previously, all emissions related to the ongoing O&M activities are expected to continue to be below the applicable MDAQMD and EKAPCD thresholds of significance and these emissions would be short term, generally lasting less than a month at any location. Because emissions of all pollutants are expected to be below the significance thresholds set forth by each air district, there are no anticipated health impacts to sensitive receptors. CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to air quality. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing air quality baseline conditions is extremely attenuated, if any exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing air quality baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not expose sensitive receptors to substantial pollutant concentrations.

PG&E's commitment to implementing standard practices and BMPs and complying with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline or a substantial adverse effect related to exposing sensitive receptors to substantial pollutant concentrations. PG&E will continue to implement its Air Quality Program, including air quality BMPs, to continue to reduce emissions.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with the emission of pollutants is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to exposing sensitive receptors to substantial pollutant concentrations; any related effects would be **less than significant**.

Impact AIR-4 Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.3.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses through areas where people work and reside, including residences, business, schools, hospitals, and parks. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Natural gas is a mixture of multiple gases, with CH₄ (methane) as its main ingredient. By itself, CH₄ is odorless, colorless, and tasteless. As a safety measure, natural gas companies add a chemical odorant to their product so escaping gas can be detected. PG&E's O&M activities require occasional releases of natural gas during pigging and other operations. The duration and distance of the odor depends on the direction and speed of wind during and after the release.

Typical odor nuisances from equipment that has been and will continue to be used during O&M activities include hydrogen sulfide, ammonia, and other sulfide-related emissions. An additional potential source of O&M-activity-related odor is diesel engine emissions. The diesel engines that power both on-road vehicles and heavy construction equipment may result in O&M-activity-related odors; however, such emissions have been and will continue to be localized to the immediate area during O&M activities and are short in duration. These emissions are generally temporary in nature, disperse quickly, and are limited by the relatively small number of vehicles on site. As described in Impact AIR-3, work associated with ongoing O&M activities may be located adjacent to sensitive receptors, particularly where pipelines deliver natural gas to customers. These receptors are typically located in developed areas, where the use of equipment and on-road vehicles such as those used for O&M activities is common. In addition, as described in Chapter 2, the operation of equipment for O&M activities is expected to be short term, typically lasting only a few days at a time at any location.

All of PG&E's ongoing O&M activities with the potential to result in other emissions (such as those leading to odors) adversely affecting a substantial number of people will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to air quality. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not

expected because the causal connection between CDFW’s issuance of the permits and the prospect of a related indirect physical change to existing air quality baseline conditions is extremely attenuated, if any exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing air quality baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline in the study area. Therefore, CDFW’s issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

PG&E’s commitment to implementing standard practices and BMPs and complying with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E’s ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline or a substantial adverse effect related to air quality in the study area. As previously described, PG&E will continue to implement its Air Quality Program, including air quality BMPs, which would continue to reduce odors. For example, PG&E’s Air Quality Program includes restrictions on vehicle idling time, so that idling is reduced as far as possible below the maximum of 5 consecutive minutes allowed by California law.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW’s issuance of the permits conditioning PG&E’s ongoing O&M activities under the CFGC and related effects associated with other emissions (such as those leading to odors) affecting a substantial number of people is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW’s issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people; any related effects would be **less than significant**.

4.3.5 Cumulative Impacts

For air quality, the geographic scope of cumulative effects includes the immediate study area and the MDAB (refer to Table 3-2, Planned and Proposed Projects within 5 miles of the Pipelines in the Study Area, in Section 3.2.2, Related Projects). The cumulative impacts of CDFW’s issuance of the permits and PG&E’s continuing O&M activities are discussed in Impact AIR-2. As described in Impact AIR-2, ongoing O&M activities conditioned by the permits are not expected to exceed significance thresholds in either the MDAQMD or the EKAPCD with PG&E’s incorporation of its Air Quality Program and air quality BMPs.

While O&M activities could overlap with construction activities of planned and proposed projects within 1 mile of the study area, all projects, including O&M activities, would be expected remain in compliance with local ordinances and regulations concerning air quality during construction activities. The O&M activities could overlap with the construction schedules of cumulative projects listed in Table 3-2. It is not expected that these projects would have significant air quality impacts, nor would they exceed applicable air quality thresholds or conflict with applicable air quality plans. One additional project—the Camp Rock Solar Project—has impacts

that are unknown and that could overlap with the O&M activities. However, because O&M activities have been and continue to be dispersed across the entire study area at various times, it is unlikely that ground-disturbing O&M activities would occur during construction of the planned and proposed projects. The projects listed in Table 3-2 are expected to comply with local ordinances and regulations concerning air quality, including dust control, during construction activities.

Furthermore, O&M activities are routine and ongoing under existing baseline conditions; therefore, emissions associated with O&M activities have been included in each local air district's planning activities and would not contribute significantly to emissions not previously considered. Accordingly, the incremental contribution from ongoing O&M activities to cumulative air quality impacts caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to air quality.

4.3.6 Residual Impacts

PG&E's O&M activities have been ongoing and are a component of the existing baseline conditions in the study area. O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's commitment to implementing relevant air quality BMPs and complying with local ordinances and regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline or a substantial adverse effect on air quality.

4.3.7 References

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4.4 Biological Resources

4.4.1 Introduction

The proposed project for purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) that would authorize the take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGC). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section of the environmental impact report (EIR) evaluates the environmental impacts on biological resources that may result directly or indirectly from CDFW's issuance of the ITP and the expected LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on biological resources that could result with continuing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the project for purposes of CEQA). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this section.

Section 4.4.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have been occurring and will continue to occur, specific to biological resources.

Section 4.4.3 provides a description of the existing conditions for biological resources in the O&M activities area ("study area"). Specifically, this section provides a description of the resources relative to biological resources in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. This existing baseline condition, which includes the ongoing activities already being implemented by PG&E relative to their past, present, and continued potential effect on these resources, is the benchmark used in the Section 4.4.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these environmental baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.4.4 provides an analysis of whether issuance of the requested permits (pursuant to the CFGC) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline and a substantial or potentially substantial adverse effect related to biological resources. The section also identifies the significance criteria used for the impact analysis and applicant proposed measures (APMs). Furthermore, where appropriate, potentially feasible biological resources mitigation measures to avoid or substantially lessen project-related effects are discussed in this section, as well as any regulatory authority or governing law that applies and will continue to apply, specific to biological resources.

Section 4.4.5 provides an analysis of whether the project-related incremental change to the environmental baseline would be cumulatively considerable and therefore significant.

Section 4.4.6 identifies the residual impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.4.7 lists the references cited in this section.

Comments received during the scoping process related to biological resources included comments from the Lahontan Regional Water Quality Control Board (RWQCB) on the potential for water quality and hydrology impacts from PG&E's O&M activities that alter hydrological and ecological function of aquatic water resources. Comments referenced permits from the State Water Resources Control Board (SWRCB) or the Lahontan RWQCB that would be required for impacts to waters of the state and necessary environmental analysis to evaluate and address potential impacts to surface waters. These impacts have been assessed in this EIR section as well as in Section 4.10, Hydrology and Water Quality.

The analysis included in this section is based on information that PG&E provided to CDFW, as well as relevant information gathered and considered by CDFW, with assistance from its environmental consultant.

4.4.2 Applicable Regulations, Plans, and Policies

The following subsections describe the regulations and regulatory agencies related to biological resources that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and CDFW's analysis of whether the proposed issuance of the permits would cause an incremental physical change to the existing environment and cause significant impacts to biological resources.

Federal

Federal Endangered Species Act

The federal Endangered Species Act (ESA) protects plants and wildlife that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries). The ESA prohibits take of endangered wildlife, where "take" is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (16 USC Sections 1532[19] and 1538). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging up, damaging, or destroying any listed plant on non-federal land in knowing violation of state law (16 USC Section 1538[c]).

Under Section 7 of the ESA, federal agencies are required to consult with the USFWS and/or NOAA Fisheries if their actions, including permit approvals or funding, could adversely affect a listed species (including plants) or its critical habitat. Through consultation and the issuance of a Biological Opinion, the USFWS and/or NOAA Fisheries may issue an incidental take statement, allowing take of the species that is incidental to another authorized activity, provided that the action would not jeopardize the continued existence of the species. Section 10 of the ESA provides for issuance of federal incidental take permits to private parties with the development of a habitat conservation plan (HCP).

Federal Land Policy and Management Act

The Federal Land Policy and Management Act (FLPMA) provides a regulatory framework for the management and use of Bureau of Land Management (BLM) resources. An important aspect of the FLPMA is that it supports multiple uses on public lands. In addition, under the FLPMA, BLM regulates rights-of-way (ROWs) for electrical power generation, transmission and distribution systems, systems for the transmission and reception of electronic signals and other means of communication, pipelines (other than oil and gas), railroads, highways, and other facilities or systems developed in the interest of the public.

The FLPMA also gives authority to BLM to manage sensitive plants on BLM land. BLM Handbook 6840-1 describes management practices for sensitive plants. This includes providing site-specific habitat and population management objectives for each listed plant species and ensuring that any project funded, sponsored, or approved by BLM would avoid adverse impacts to sensitive plant species to the maximum extent possible. If adverse impacts are unavoidable, BLM would develop measures to mitigate adverse impacts to sensitive plant species.

California Desert Conservation Area Plan

The California Desert Conservation Area (CDCA) is an approximately 25-million-acre expanse of land in Southern California that was designated by Congress in 1976 through the FLPMA. Approximately 10 million acres are administered by BLM. The CDCA Plan is a comprehensive, long-range plan for the management, use, development, and protection of lands within the CDCA, and it is required as part of the FLPMA and implemented by BLM. The CDCA Plan defines rare, threatened, and endangered plants as those listed as endangered by the ESA; endangered or threatened by the California Endangered Species Act (CESA); rare and endangered by the Native Plant Protection Act; or candidates for endangered or threatened listing by USFWS. Rare, threatened, and endangered species are managed in accordance with applicable laws and regulations. These plants are also protected through consideration in all BLM site-specific environmental impact analyses to ensure that any action authorized by BLM does not jeopardize listed plants or habitats supporting listed plants. The CDCA Plan stabilizes and improves populations of listed plants through management and recovery plans developed and implemented cooperatively with USFWS and CDFW. The CDCA Plan also prohibits the harvesting of plants that are listed as rare, threatened, or endangered. As part of Phase I of the Desert Renewable Energy Conservation Plan (DRECP), BLM adopted the Land Use Plan Amendment (LUPA), which amended the CDCA Plan and the Bishop and Bakersfield resource management plans in September 2016. The LUPA and the DRECP are discussed below.

BLM DRECP LUPA

The BLM DRECP LUPA establishes management direction for the permitting of renewable energy and transmission development on nearly 11 million acres of BLM-managed lands in the DRECP area. BLM adopted the LUPA, which amended the CDCA Plan and the Bishop and Bakersfield resource management plans. The purpose of the LUPA is to conserve biological, environmental, cultural, recreation, scenic, and visual resources; respond to federal renewable energy goals and policies, including state-level renewable energy targets; and comply with the FLPMA. The BLM LUPA prescribes Conservation and Management Actions, which are a specific set of avoidance, minimization, and compensation measures that protect important biological and natural resources in the DRECP area. The Conservation and Management Actions also include allowable and non-allowable actions for siting, design, pre-construction, construction, maintenance, implementation, operation, and decommissioning activities of renewable energy projects on BLM-managed land.

Desert Renewable Energy Conservation Plan

The DRECP is a planning document developed by the California Energy Commission (CEC) and BLM to advance federal and state natural energy and resource conservation goals and other federal land management goals; meet the requirements of the ESA and FLPMA; and facilitate the timely and streamlined permitting of renewable energy projects in the Mojave and Colorado/Sonoran Desert regions of Southern California. While CDFW participated in development of the DRECP and the DRECP was initially envisioned as an effort that would fulfill state permitting requirements under CESA or the Natural Community Conservation Planning Act, CDFW is not a party to the final DRECP and no associated state fish and wildlife authorizations were provided under DRECP. The DRECP covers approximately 22.5 million acres in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties. The entire study area is located within the proposed DRECP area.

The DRECP was planned to be prepared in two phases—Phase I and Phase II. During Phase I, the BLM completed the LUPA, which designates development focus areas and conservation areas on BLM lands. DRECP Phase II was intended to focus on better aligning renewable energy development and conservation at the federal, state, and local levels, and it was planned to include a General Conservation Plan for approximately 5.5 million acres of non-federal land and a Conceptual Plan-Wide Natural Community Conservation Plan (NCCP) for the entire DRECP plan area. DRECP Phase II has not been completed and is not currently being planned.

West Mojave Plan

The West Mojave Plan was envisioned to develop management strategies for the Mojave desert tortoise (“desert tortoise”), Mohave ground squirrel, and more than 100 other sensitive plants and animals. The planning area encompassed approximately 9.3 million acres in Inyo, Kern, Los Angeles, and San Bernardino Counties, including approximately 3.3 million acres of public lands administered by BLM, approximately 3 million acres of private lands, and approximately 102,000 acres administered by the State of California. The remaining land is military land administered by the Department of Defense. The West Mojave Plan was proposed to conserve those species throughout the western Mojave Desert, while streamlining the West Mojave Plan for compliance with the regulatory requirements of the ESA and CESA. Only the BLM elements of the West Mojave Plan were adopted, resulting in a number of amendments to BLM’s CDCA Plan. In 2019, the BLM amended the CDCA plan for the West Mojave Route Network Project to address motor vehicle access, recreation, and livestock grazing elements in the West Mojave Planning Area (BLM 2019)

Bald and Golden Eagle Protection Act

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

Migratory Bird Treaty Act

The Migratory Bird Treaty Act protects migratory birds and any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the Migratory Bird Treaty Act, USFWS issues permits to qualified applicants for the following types of activities:

- Falconry
- Raptor propagation
- Scientific collecting
- Special purposes (e.g., rehabilitation, education, migratory game bird propagation, and salvage)
- Take of depredating birds, taxidermy, and waterfowl sale and disposal

The regulations governing migratory bird permits can be found in Title 50, Part 13 (General Permit Procedures) and Part 21 (Migratory Bird Permits) of the Code of Federal Regulations, which authorizes the issuance of permits for utility-related activities related to migratory birds, which are otherwise outside the scope of other migratory bird permits.

Desert Tortoise Recovery Plan and Critical Habitat Designation

The Desert Tortoise Recovery Plan is administered by USFWS and establishes a strategy for the recovery and eventual delisting of the desert tortoise within the Mojave Desert. This plan establishes five recovery units that cover the entire range of the desert tortoise. It also delineates 12 Critical Habitat Units established by the USFWS. The study area crosses the Colorado Desert, Western Mojave, and Eastern Mojave Recovery Units and falls within desert tortoise critical habitat.

The Desert Tortoise Recovery Plan establishes a policy of “no net loss” of habitat within desert tortoise conservation areas. This can be accomplished through the avoidance of land disturbance to the maximum extent possible. If unavoidable, disturbance would be minimized or mitigated. In addition to general protection measures, the Desert Tortoise Recovery Plan outlines specific restoration and revegetation standards.

Clean Water Act

Section 404

The purpose of the Clean Water Act (CWA) is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Section 404 of the CWA prohibits the discharge of dredge or fill material into waters of the United States without a permit from the U.S. Army Corps of Engineers (USACE). Under the recently revised USACE-administered Nationwide Permit (NWP) program, “activities required for the construction, maintenance, repair, and removal of oil and gas pipelines and associated facilities” may be authorized under NWP 12 (Oil or Natural Gas Activities) if the activity does not result in the loss of more than 0.5 acres of waters of the United States “for each single and complete project.” Permanent impacts to waters of the United States that exceed 0.5 acres may require an Individual Permit. The study area is under the jurisdiction of the Los Angeles District of USACE.

Section 401

Section 401 of the CWA requires that any discharge allowed under a federal permit or license must be certified by the state, confirming that the discharge would not violate water quality standards. Any Section 404 permit issued by USACE must also receive a Section 401 water quality certification or waiver from the relevant RWQCB. The study area is under the jurisdiction of the Colorado River Basin and Lahontan RWQCBs.

Mojave National Preserve General Management Plan

In relation to the overall mission of the National Park Service, the Mojave National Preserve General Management Plan (MNP GMP) seeks to perpetuate native plant life as critical components of the Mojave Desert ecosystem within the Mojave National Preserve. Specifically, it allows the manipulation of plants and plant communities only when necessary and requires that all disturbed vegetation be restored to pre-disturbance conditions. This plan also seeks to identify, inventory, and promote conservation for any plant, as well as USFWS-designated critical habitat for any ESA-listed species or state- and locally listed threatened, endangered, rare, or candidate species.

The National Park Service may restrict access to USFWS-designated critical habitat, and active management programs are established as necessary and only after consultation with USFWS and CDFW. The MNP GMP also outlines specific management policies and goals for desert tortoise and desert bighorn sheep (*Ovis canadensis nelsoni*), as described in the following subsections.

Desert Tortoise

The MNP GMP recommends expanding current USFWS-designated critical habitat and outlines specific management policies for desert tortoise that are already in effect. The requirements relevant to PG&E's ongoing O&M activities in the study area, as conditioned by the permits issued by CDFW, include the following:

- The National Park Service aggressively manages trash and litter to avoid subsidizing ravens.
- No surface disturbance is permitted on park lands, unless it is balanced with appropriate restoration or acquisition of replacement lands for mitigation.

The MNP GMP also recommends the following relevant management policies:

- No new roads will be built in the desert tortoise critical habitat. Duplicate roads and those that provide access to range developments, active mines or other development sites will be closed and restored when no longer needed for that function.
- The park will strive to eliminate unnecessary ROWs and easements and will require minimum maintenance in order to prevent increased vehicle traffic.
- Holders of ROWs and easements may be required to install desert tortoise barrier fencing through the desert tortoise critical habitat if traffic levels suggest a problem and fencing is identified as enhancing protection of the tortoise. Maintenance activities on ROWs will be allowed only after the holder conducts an adequate survey of tortoise burrows along the route and complies with all stipulations from the USFWS biological opinion on this plan.
- The park will establish an active restoration program for disturbed areas after conducting appropriate site-specific historical review and compliance.

Desert Bighorn Sheep

The MNPMP's management goal is to research and understand the effects of development, including increased traffic and noise pollution, on populations of desert bighorn sheep.

State

California Fish and Game Code

Sections 1600 through 1616

Sections 1600 through 1616 of the CFGC require that a notification must be submitted to CDFW for “any activity that may substantially divert or obstruct the natural flow of, or substantially change or use materials from the bed, channel, or bank of any river, stream, or lake or deposit or dispose of debris, waste, or other materials containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.” CDFW reviews the notification package and, if it determines the activity may substantially adversely affect an existing fish and wildlife resource, issues the applicant a Draft LSA Agreement that includes reasonable measures necessary to protect the affected resources. The CFGC provides the applicant the opportunity to review and agree or disagree with measures. A final LSA Agreement is issued by CDFW following opportunity provided to the applicant by the CFGC to review and agree or disagree with the draft agreement. The final proposal that is mutually agreed upon by CDFW and the applicant is an LSA Agreement.

Sections 3503, 3503.5, and 3513

CFGC Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the CFGC or any regulation made pursuant thereto. CFGC Section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey), to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by the CFGC or any regulation adopted pursuant thereto. CFGC Section 3513 makes it unlawful to take or possess any migratory nongame bird except as provided by the rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act of 1918, as amended (16 USC Section 703 et seq.).

Sections 3511, 4700, 5050, and 5515

Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the CFGC designate certain species as “fully protected.” Fully protected species may not be taken or possessed, and incidental take of these species cannot be authorized, except under an NCCP. The State of California first began to designate species as fully protected prior to the creation of CESA and the ESA. Lists of fully protected species were initially developed to provide protection to animals that were rare or faced possible extinction, including fish, amphibians, reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under CESA and/or the ESA. Fully protected species may not be taken or possessed at any time, except under certain circumstances, such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock (CFGC Section 3511).

California Endangered Species Act

CESA (CFGF Section 2050) addresses state endangered, threatened, and candidate species conservation and protection. Section 2080 of the CFGF prohibits the take, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in Section 86 of the CFGF as to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” CESA provides that CDFW may authorize, by permit, the take of endangered species, threatened species, and candidate species under certain conditions when take is incidental to otherwise lawful projects.

Native Plant Protection Act

The Native Plant Protection Act of 1977 (CFGF Sections 1900–1913) directed CDFW to carry out the California Legislature’s intent to “preserve, protect, and enhance rare and endangered plants in this State.” The Native Plant Protection Act is administered by CDFW. The California Fish and Game Commission has the authority to designate native plants as “endangered” or “rare,” and protect endangered and rare plants from take. When CESA was passed in 1984, it expanded on the original Native Plant Protection Act, enhanced legal protection for plants, and created the categories of “threatened” and “endangered” species to parallel the ESA. The Native Plant Protection Act remains part of the CFGF, and mitigation measures for impacts to rare plants are specified in a formal agreement between CDFW and a project proponent.

CDFW generally considers plant species to be rare if they are included on California Rare Plant Rank (CRPR) Lists 1A, 1B, 2A, and 2B of the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (Inventory). In addition, CRPR List 3 and 4 plants are sometimes considered if the population has local significance in the area and is impacted by the project. For the purposes of this document, CRPR List 3 and 4 plants are omitted from further discussion. Section 1913(b) includes a specific provision to allow for the incidental removal of endangered or rare plant species, if not otherwise salvaged by CDFW, within a ROW to allow a public utility to fulfill its obligation to provide service to the public.

Natural Community Conservation Planning Act

The Natural Community Conservation Planning Act of 1991 is designed to voluntarily protect and conserve California’s natural diversity, promote conservation of unfragmented habitat areas, promote multispecies and multihabitat management and conservation, and reduce conflicts for reasonable use of natural resources for economic development. Section 2800 of the CFGF implements a cooperative process that often involves local, state, and federal agencies and the public, including landowners within the plan area.

California Desert Native Plants Act

The provisions in the California Desert Native Plants Act (California Food and Agriculture Code, Division 23) protect specific California desert native plants (i.e., species in the families Agavaceae, Cacti, and Fouquieriaceae; species in the genera *Prosopis* and *Parkinsonia* (*Cercidium*); and the species *Senegalia greggii*, *Atriplex hymenelytra*, *Dalea spinosa*, and *Olneya tesota*) from unlawful harvest on private and public lands in the California desert in Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego Counties. Within these counties, the California Desert Native Plants Act prohibits the harvest, transport, sale, or possession of specific native desert plants unless a person has a valid permit or wood receipt and the required tags and seals.

Porter-Cologne Water Quality Control Act

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

California Code of Regulations, Title 14 Section 460

California Code of Regulations (14 CCR Section 460) stipulates that desert kit fox (*Vulpes macrotis arsipus*) may not be taken at any time.

Local

The following subsections describe local regulations regarding biological resources that are relevant to the proposed project. Pursuant to Article XII, Section 8 of the California Constitution, the California Public Utilities Commission (CPUC) has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, operation, maintenance, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with CPUC. Although local governments do not have the power to regulate such activities, CPUC encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has considered relevant regional and county policies and issues in this EIR.

Plans with relevant goals or policies are described in the subsections that follow.

San Bernardino County

San Bernardino County 2020 Countywide Policy Plan

The Natural Resources Element of the San Bernardino County 2020 Countywide Policy Plan includes policies to ensure that San Bernardino County would protect and preserve its biological resources. The biological resources goal and policies relevant to the proposed project include the following:

Goal NR-5: Biological Resources. An interconnected landscape of open spaces and habitat areas that promotes biodiversity and healthy ecosystems, both for their intrinsic value and for the value placed on them by residents and visitors.

Policy NR-5.1: Coordinated habitat planning. We participate in landscape-scale habitat conservation planning and coordinate with existing or proposed habitat conservation and natural resource management plans for private and public lands to increase certainty for both the conservation of species, habitats, wildlife corridors, and other important biological resources and functions; and for land development and infrastructure permitting.

Policy NR-5.2: Capacity for resource protection and management. We coordinate with public and nongovernmental agencies to seek funding and other resources to protect, restore, and maintain open space, habitat, and wildlife corridors for threatened, endangered, and other sensitive species.

Policy NR-5.3: Multiple-resource benefits. We prioritize conservation actions that demonstrate multiple resource preservation benefits, such as biology, climate change adaptation and resiliency, hydrology, cultural, scenic, and community character.

Policy NR-5.4: Off-base recovery efforts. We coordinate with military installations to facilitate off-base recovery of threatened and endangered species and landscape-scale conservation.

Policy NR-5.5: Mitigation and future responsibilities. We require that new development satisfy habitat conservation responsibilities without shifting conservation responsibilities onto military property.

Policy NR-5.6: Mitigation banking. We support the proactive assemblage of lands to protect biological resources and facilitate development through private or public mitigation banking. We require public and private conservation lands or mitigation banks to ensure that easement and fee title agreements provide funding methods sufficient to manage the land in perpetuity.

Policy NR-5.7: Development review, entitlement, and mitigation. We comply with state and federal regulations regarding protected species of animals and vegetation through the development review, entitlement, and environmental clearance processes.

Policy NR-5.8: Invasive species. We require the use of non-invasive plant species with new development and encourage the management of existing invasive plant species that degrade ecological function.

San Bernardino County Development Code

Chapter 88.01.060

Section 88.01.060 (Native Desert Plant Protection) of the San Bernardino County Development Code provides regulations for the removal of specified native desert plants to preserve and protect the plants and to provide for the conservation and wise use of desert resources. This section requires a Tree or Plant Removal Permit to remove the following plants:

- Smoke trees (*Psoralea argophylla*) and mesquites (*Prosopis* spp.) with a stem measuring 2 inches or more in diameter, or 6 feet or more in height
- All species of the family Agavaceae
- Creosote rings (*Larrea tridentata*) with diameters of 10 feet or more
- All Joshua trees (*Yucca brevifolia*)¹
- Any part, living or dead, of desert ironwood (*Olneya* spp.), mesquites, or palo verdes (*Parkinsonia* spp.)

¹ The California Fish and Game Commission designated the western Joshua tree as a candidate species under CESA in September 2020 (Cal. Reg. Notice Reg. 2020, No. 41-Z, p. 1349 [October 9, 2020]). With that status and except as otherwise provided by law, San Bernardino County is currently prohibited from issuing a permit to remove or otherwise take the tree (see CFGC Sections 2080 and 2085.)

Chapter 88.01.080

Section 88.01.080 (Regulated Riparian Plants) provides for the protection of riparian plants. San Bernardino County defines riparian vegetation as vegetation within 200 feet of the bank of a stream. Any removal of riparian vegetation requires a Tree or Plant Removal Permit and is subject to environmental review.

City of Barstow

City of Barstow 2015–2020 General Plan

The Resource Conservation and Open Space Element within the City of Barstow 2015–2020 General Plan contains goals and policies to seek to preserve biological resources within the city. The following policy is relevant (City of Barstow 2015):

Policy 3 A: Conserve suitable habitat for threatened and endangered species found in the region and facilitate mitigation of impacts where unavoidable.

City of Victorville

City of Victorville General Plan 2030

The Resource Element of the City of Victorville General Plan 2030 contains goals and policies to preserve land containing native habitat that sustains rare, threatened, or endangered plants and wildlife species. The following policy is relevant (City of Victorville 2008):

Policy 4.1.1: Encourage development natural habitat that supports rare, threatened or endangered plants and wildlife (i.e., “sensitive” species), or require restoration of the same type of impacted habitat within an existing, planned or potential conservation area.

Town of Apple Valley

Town of Apple Valley 2009 General Plan

The Biological Resource Element of the Town of Apple Valley 2009 General Plan contains goals and policies to work with local, state, and regional agencies to protect, preserve, and manage biological resources, especially threatened, endangered, and sensitive plants and wildlife species and their habitats. The following policy is relevant (Town of Apple Valley 2009):

Policy 2.A: The Town shall coordinate with CDFG² and USFWS when working on projects that are proposed to be located within or adjacent to linkage areas or special survey areas.

² The California Department of Fish and Game (CDFG) officially changed its name to the California Department of Fish and Wildlife (CDFW) at the end of 2012; references to guidance from the agency published before 2013, or references to CDFG within quoted material, may use the previous name, but all other references in this EIR use CDFW.

Kern County

Kern County General Plan

Section 1.10 of the Land Use, Open Space, and Conservation Element within the Kern County General Plan contains the following policies that are relevant to threatened and endangered species:

Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.

Policy 28: County should work closely with State and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.

Policy 29: The County will seek cooperative efforts with local, State, and federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.

Policy 30: The County will promote public awareness of endangered species laws to help educate property owners and the development community of local, State, and federal programs concerning endangered species conservation issues.

Policy 32: Riparian areas will be managed in accordance with USACE, and the CDFG rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses, while acknowledging existing land use patterns.

The Energy Element of the Kern County General Plan includes the following policies as they relate to biological resources:

Policy 8: The County should work closely with local, State, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.

Policy 9: The County should develop and implement measures which result in long-term compensation for wildlife habitat, which is unavoidably damaged by energy exploration and development activities.

City of California City

City of California City Final General Plan 2009–2028

The Open Space and Conservation Element of the City of California City Final General Plan 2009–2028 provides goals and policies to promote conservation of sensitive vegetation and wildlife. The following policies are relevant (City of California City 2009):

- Protect sensitive vegetation and wildlife species, in accordance with State and federal laws and regulations, and to provide for maintenance of supportive habitat for such species in balance with the needs of humans.
- Maintain and promote the retention of natural setting and use of native or adaptable vegetation.

City of Ridgecrest

City of Ridgecrest General Plan

The Open Space and Conservation Element of the City of Ridgecrest General Plan provides the following goals to maintain a high level of environmental quality in the Indian Wells Valley (City of Ridgecrest 2009):

Goal OSC-5.3: Maintain Biological Resource Database. The City shall maintain a current database of biological resources, including maps that identify the locations of specific environmentally-sensitive habitats and lists of special-status species.

Goal OSC-5.5: Requirements for Biological Studies. On sites that have the potential to contain special-species, critical/sensitive habitats or are within 100 feet of such areas, the City shall require the project applicant to have the site surveyed by a qualified biologist in order to determine the biological impact of the development. A report on the findings of the survey shall be submitted to the City as part of the application process.

4.4.3 Existing Baseline Conditions

Physical Setting

PG&E's O&M activities occur in an area that encompasses PG&E's gas transmission pipeline system in the Mojave Desert region of Southern California, as depicted in Figure 2-1, PG&E Facility Location Map. The study area covers six high-pressure transmission pipelines and several distribution feeder mains, customer lines, and associated facilities that transport natural gas. Two of the high-pressure transmission pipelines (i.e., Lines 300 A and 300 B) extend west beyond the town of Mojave and transport natural gas to PG&E's service territory outside the study area. The pipelines, distribution feeder mains, customer lines, and associated facilities in the study area collectively measure approximately 645 miles across the Mojave Desert region. The study area crosses portions of San Bernardino and Kern Counties and encompasses 60 U.S. Geological Survey (USGS) topographic quadrangles. This area includes land within the CDCA, as well as land located east of the CDCA but west of the Colorado River. The pipelines and related support facilities are located on federal, state, private, and municipal land.

General climate conditions in the study area are typical of high desert, which is characterized by large fluctuations in daily temperature, high seasonal winds, and low humidity. Summers in the Mojave Desert reach maximum temperatures of 119°F, whereas winter temperatures can reach lows of 8°F. The Pacific Coast Ranges serve as a broad rain shadow, resulting in very little rain reaching the Mojave Desert, and the average annual precipitation is 5 inches. The elevation in the study area ranges from 450 to 4,550 feet above mean sea level.

Natural Communities

Natural communities are defined in the DRECP as assemblages of vegetation types and the plant and animal species that use those vegetation types as habitat. A natural community is generally characterized by similarities in the vegetation types and the natural ecological processes that dominate the community and

give it its unique characteristics.³ The study area and buffer includes 55 natural communities, as characterized in the DRECP (DRECP 2014) and presented in Appendix D-1, Natural Communities in the Study Area. Of these 55 communities, 21 support sensitive alliances,⁴ which are based on state rarity rankings; however, the sensitive alliances do not necessarily occur in the study area. Due to the lack of alliance-level mapping data in the study area and for the purposes of this EIR, a natural community was considered to be sensitive if one or more of the alliances that occur within the community had a state rarity ranking of S1 (critically imperiled), S2 (imperiled), or S3 (vulnerable). The natural communities present in the study area and 0.25-mile-wide study area buffer are listed in Table 4.4-1. The table shows which natural communities support sensitive alliances.

Table 4.4-1. Natural Communities in the Study Area

Natural Community	Approximate Acreage within a 500-Foot-Wide Study Area	Approximate Acreage within a 0.25-Mile-Wide Buffer of Study Area	Supports a Sensitive Alliance (Yes/No)
Chaparral and Coastal Scrub Communities			
<i>Ericameria linearifolia</i>	1.0	93.0	Yes
Desert Conifer Woodlands			
Great Basin Pinyon–Juniper Woodland	—	9.7	Yes
Desert Outcrop and Badlands			
<i>Atriplex hymenelytra</i>	141.9	555.7	No
North American warm desert bedrock cliff and outcrop	1,622.0	6,652.3	Yes
Desert Scrub Communities			
<i>Ambrosia dumosa</i>	456.0	1,941.9	No
Arizonan upland Sonoran desert scrub	32.1	66.2	Yes
<i>Atriplex canescens</i>	36.2	206.8	No
<i>Atriplex confertifolia</i>	5.6	79.5	No
<i>Atriplex polycarpa</i>	3,158.1	10,591.4	No
<i>Coleogyne ramosissima</i>	41.3	456.7	No
<i>Ephedra viridis</i>	—	65.3	No
<i>Ericameria cooperi</i>	29.2	42.5	No
<i>Ericameria nauseosa</i>	46.3	193.8	No
<i>Grayia spinosa</i>	24.5	143.4	No
Inter-mountain dry shrubland and grassland	101.1	271.4	No
<i>Krascheninnikovia lanata</i>	25.1	208.6	Yes
<i>Larrea tridentata</i>	694.2	2,918.1	No
<i>Larrea tridentata</i> – <i>Ambrosia dumosa</i>	9,389.6	45,395.9	No

³ The vegetation communities described in the DRECP are consistent with the National Vegetation Classification System and Sawyer et al. 2009. The CDFW's most recent list of sensitive natural communities is also based on A Manual of California Vegetation (MCV) Online (Sawyer et al. 2009), which is the California expression of the National Vegetation Classification System standards. Therefore, the DRECP and CDFW are consistent with each other. DRECP natural communities most closely align with the Group and Alliance levels in the MCV.

⁴ An alliance is a category of vegetation classification that describes repeating patterns of plants across a landscape. Each alliance is defined by plant species composition, and reflects the effects of local climate, soil, water, disturbance, and other environmental factors (CNPS 2018).

Table 4.4-1. Natural Communities in the Study Area

Natural Community	Approximate Acreage within a 500-Foot-Wide Study Area	Approximate Acreage within a 0.25-Mile-Wide Buffer of Study Area	Supports a Sensitive Alliance (Yes/No)
<i>Larrea tridentata</i> – <i>Encelia farinosa</i>	—	13.7	No
Lower bajada and fan Mojavean–Sonoran desert scrub	10,165.6	35,989.2	Yes
<i>Salazaria mexicana</i>	—	16.7	No
Shadscale–saltbush cool semi-desert scrub	169.1	633.3	No
<i>Yucca brevifolia</i>	54.9	271.2	Yes
<i>Yucca schidigera</i>	171.8	1,190.1	No
Dune and Sand Based Communities			
<i>Panicum urvilleanum</i>	—	29.3	Yes
<i>Prosopis glandulosa</i> coppice dunes	9.3	99.0	Yes
Grassland Communities			
California annual and perennial grassland	63.2	188.5	Yes
California annual forb/grass vegetation	31.9	79.7	No
Mediterranean California naturalized annual and perennial grassland	381.9	1,909.4	No
Riparian Communities			
<i>Acacia [Senegalia] greggii</i>	7.4	49.1	No
<i>Ambrosia salsola</i>	77.8	545.6	No
<i>Baccharis salicifolia</i>	—	20.8	No
<i>Chilopsis linearis</i>	0.6	11.8	Yes
<i>Ephedra californica</i>	22.9	170.7	Yes
<i>Lepidospartum squamatum</i>	3.6	16.4	Yes
Madrean warm semi-desert wash woodland/scrub	560.6	1,995.8	Yes
<i>Populus fremontii</i>	14.2	172.1	Yes
<i>Prosopis glandulosa</i>	—	1.4	Yes
<i>Prunus fasciculata</i>	—	1.4	Yes
Riverine	6.3	48.0	No
<i>Salix laevigata</i>	—	9.1	Yes
Southwestern North American introduced riparian scrub	—	2.2	No
<i>Tamarix</i> spp.	14.2	—	No
Wetland Communities			
<i>Allenrolfea occidentalis</i>	—	4.8	Yes
<i>Atriplex lentiformis</i>	25.5	27.1	No
<i>Atriplex spinifera</i>	2,063.0	9,185.1	No
Lacustrine	36.9	209.0	No
North American warm desert alkaline scrub and herb playa and wet flat	599.1	2,312.8	No

Table 4.4-1. Natural Communities in the Study Area

Natural Community	Approximate Acreage within a 500-Foot-Wide Study Area	Approximate Acreage within a 0.25-Mile-Wide Buffer of Study Area	Supports a Sensitive Alliance (Yes/No)
Open water	11.6	15.8	No
Southwestern North American salt basin and high marsh	7.7	46.7	Yes
<i>Suaeda moquinii</i>	131.1	596.4	Yes
Other Land Covers			
Deciduous orchard, vineyard	33.6	116.4	No
Developed and disturbed areas	105.6	126.4	No
Irrigated row and field crops	202.3	817.5	No
Urban	2,073.7	10,251.3	No

Source: DRECP 2014.

Special-Status Species

The proposed project consists of the issuance of an ITP for take of the covered species, Mojave desert tortoise and Mohave ground squirrel, and potential issuance of one or more LSA Agreements for impacts that could occur incidental to continued PG&E O&M activities. Covered species habitat occurs throughout the study area. The potential for the covered species and other special-status plant and wildlife species to occur in the study area was determined based on the results of prior surveys and observation data and a desktop-level review of biological literature and databases. Two queries were run in the California Natural Diversity Database (CNDDDB), which is maintained by CDFW (2016). The first query identified special-status species occurrences documented within 0.25 miles, 1 mile, and 5 miles of the study area. The second query identified occurrences documented within the USGS quadrangles that surround the study area. Species were considered special status if they met one or more of the following criteria:

- Plant and wildlife species listed as endangered, threatened, or candidates for listing under the ESA
- Plant and wildlife species listed as endangered, threatened, or candidates for listing under CESA
- Wildlife species designated as fully protected species, as defined in CFGC Sections 3511, 4700, 5050, and 5515
- Wildlife species designated as species of special concern by CDFW
- CRPR List 1, 2, and 3 plant species designated by CNPS
- Bald eagles and golden eagles, which are protected by BGEPA
- Plant and wildlife species covered by the DRECP
- Plant and wildlife species designated as sensitive by BLM

Species were categorized by the likelihood of occurrence within the study area using information from the literature and database searches and PG&E observation data from past O&M activities. The special-status species categories are as follows:

- **Present:** The occurrence or observation of a species was documented in the study area during pre-activity surveys for past O&M activities or during monitoring of past O&M activities, or presence of the species within the study area is assumed.
- **Likely to Occur:** The species has a strong likelihood to occur in the study area during O&M activities. A species is categorized as “likely to occur” if the following conditions are met:
 - The study area falls within the range of the species.
 - Suitable habitat that meets the life history requirements of the species is present on or near the study area.
 - Records of sightings (i.e., CNDDDB occurrences or other records not made by PG&E staff or contractors during O&M activities) are documented within 1 mile of the study area.
 - Migration routes or corridors are near or within the study area.
- **Potential to Occur:** There is a possibility that the species could occur in the study area during O&M activities, but it has not been directly observed during pre-activity surveys or monitoring of past O&M activities. A species is categorized as having the “potential to occur” if the following conditions are met:
 - The study area falls within the range of the species.
 - Suitable habitat that meets the life history requirements of the species is present on or near the study area.
 - Records of sightings (i.e., CNDDDB occurrences or other records not made by PG&E staff or contractors during O&M activities) are documented between 1 mile and 5 miles from the pipelines in the study area.
 - Migration routes or corridors are near or within the study area.
- **Unlikely to Occur:** The species is unlikely to occur in the study area based on consideration of the following factors:
 - Suitable habitat and features that are required to satisfy the life history requirements of the species are absent from the study area.
 - Predators or invasive species that inhibit survival or occupation are present.
 - Nearby occurrence records are not documented or are more than 25 years old.
 - Barriers to migration/dispersal are present.
- **Potentially Absent:** Suitable habitat does not exist in the study area, or the species is restricted to or known to be present only within a specific area outside the study area.

For species that qualified for more than one category, professional judgment and information from the literature and database searches informed the likelihood of observance. The age of the record of sighting (e.g., less than 25 years old) is not specified for “likely to occur” and “potential to occur”; therefore, determinations were made based on the potential lack of relatively recent survey data using species-specific requirements for suitable habitat, the location and accuracy of the records, and species’ ranges.

Special-Status Plants

All special-status plant species identified in the literature review are described in Table 4.4-2, which includes descriptions of the listing status, habitat requirements, flowering phenology/life forms, known locations, and the potential for each species to occur within the study area. Special-status plant occurrences documented in 2017 during a special-status plant species assessment (CH2M Hill 2017a) and a general resource

assessment were also identified in the study area. The results of the plant species and general resource assessment surveys are discussed further under Impact BIO-1 in Section 4.4.4.3, Impact Discussion, and in Table 4.4-2. The 102 special-status plant species considered are grouped into five categories: 4 are known to be present, 13 are likely to occur, 11 have a potential to occur, 20 are unlikely to occur, and 54 are potentially absent due to range restrictions or lack of suitable habitat in the study area. Impacts to special-status plants are also discussed in Section 4.4.4.3.

Special-Status Wildlife

All special-status wildlife species identified in the literature review are described in Table 4.4-3, which includes descriptions of the listing status and life history, the proximity of the nearest sightings, and the likelihood of each species to occur within the study area. Special-status wildlife species that were documented during biological resources surveys performed by PG&E before O&M activities in portions of the study area from 2014 through 2017 were also included. The results of the biological resources surveys are discussed further under Impact BIO-1 in Section 4.4.4.3. The 62 special-status wildlife species considered are grouped into five categories: 7 are known to be present, 9 are likely to occur, 9 have a potential to occur, 25 are unlikely to occur, and 12 are potentially absent due to range restrictions or lack of suitable habitat in the study area. Impacts to special-status wildlife species that are present, likely to occur, or have a potential to occur within the study area are discussed in Section 4.4.4.3.

Critical Habitat

Under ESA, to the extent prudent and determinable, USFWS is required to designate critical habitat for endangered and threatened species (16 USC 1533[a][3]). Critical habitat is defined as specific geographic areas that contain the physical and biological features essential for the survival and recovery of endangered and threatened species. Designated critical habitat includes sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter. Designated critical habitats require special management and protection of existing resources, including water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types.

The study area includes USFWS-designated critical habitat for the following five plant and wildlife species:

- Bonytail chub (*Gila elegans*)
- Cushenbury milk-vetch (*Astragalus albens*)
- Desert tortoise
- Parish's daisy (*Erigeron parishii*)
- Southwestern willow flycatcher (*Empidonax traillii extimus*)

In addition, USFWS has designated critical habitat for the following nine plant and wildlife species within 5 miles of the study area:

- Ash-grey paintbrush (*Castilleja cinerea*)
- Bear Valley sandwort (*Eremogone ursina*)
- California dandelion (*Taraxacum californicum*)
- Cushenbury buckwheat (*Eriogonum ovalifolium* var. *vineum*)

- Inyo California towhee (*Pipilo crissalis eremophilus*)
- San Bernardino blue-grass (*Poa atropurpurea*)
- San Bernardino Mountains bladderpod (*Physaria kingii* ssp. *bernardina*)
- Southern mountain wild-buckwheat (*Eriogonum kennedyi* var. *austromontanum*)
- Yellow-billed cuckoo (*Coccyzus americanus occidentalis*)

Figures 4.4-1a through 4.4-1k, Critical Habitat in the Study Area, depict critical habitat in the study area. Critical habitat designated within the study area for the previously mentioned species is discussed in the following subsections.

Bonytail Chub

USFWS designated seven reaches of the Colorado River system (a total of approximately 312 miles) as critical habitat for the bonytail chub in a final rule published on March 21, 1994. Critical habitat for bonytail chub is located within the Colorado, Green, and Yampa rivers in the Upper Basin and the Colorado River in the Lower Basin. Approximately 13.8 acres of the study area along Line 300 A within the Colorado River is in critical habitat designated for bonytail chub, and an additional 39.6 acres in the study area buffer is in bonytail chub critical habitat.

Cushenbury Milk-Vetch

USFWS designated approximately 4,365 acres in San Bernardino County as critical habitat for Cushenbury milk-vetch in a final rule published on December 24, 2002. Approximately 29.4 acres of the study area along Line 313 in the community of Lucerne Valley is in critical habitat designated for Cushenbury milk-vetch, and an additional 90.9 acres in the study area buffer is in Cushenbury milk-vetch critical habitat.

Desert Tortoise

USFWS designated 12 areas (totaling approximately 6.4 million acres) of critical habitat for the desert tortoise in portions of California, Nevada, Utah, and Arizona in a final rule that was published on February 8, 1994. Approximately 4.8 million of these acres are in California. Approximately 8,341.3 acres of the study area—specifically Lines 300 A, 300 B, 311, and 313—are located within desert tortoise critical habitat in the Mojave Desert, and an additional 33,346.5 acres in the study area buffer is in desert tortoise critical habitat.

Parish's Daisy

USFWS designated approximately 4,420 acres in San Bernardino County as critical habitat for Parish's daisy in a final rule published on December 24, 2002. Approximately 28.6 acres of the study area along Line 313 in the community of Lucerne Valley is in critical habitat designated for Parish's daisy, and an additional 95.7 acres in the study area buffer is in Parish's daisy critical habitat.

Southwestern Willow Flycatcher

USFWS designated approximately 599 river miles of critical habitat for the southwestern willow flycatcher in Arizona, California, and New Mexico in a final rule published on July 22, 1997. After a correction and a first revised critical habitat rule, the USFWS published a second revised critical habitat rule on February 3, 2013, for portions of Arizona, California, New Mexico, Nevada, Utah, and Colorado, totaling approximately 208,973 acres, or 1,227 river miles. Approximately 54.4 acres of the study area along Line 314 within the Mojave River is in critical habitat designated for southwestern willow flycatcher, and an additional 284.2 acres in the study area buffer is in southwestern willow flycatcher critical habitat.

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Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
Agavaceae – Century Plant Family					
<i>Yucca brevifolia</i> western Joshua tree	SC	This species occurs in desert grasslands and shrublands in hot, dry sites on flats, mesas, bajadas, and gentle slopes in the Mojave Desert at elevations between 1,969 and 7,218 feet amsl. Joshua trees grow on silty, loamy, and/or sandy soils and can tolerate alkaline and saline conditions. The highest density of this species occurs on the well-drained, sandy to gravelly alluvial fans adjacent to desert mountain ranges.	March to June/ tree	Western Joshua trees occur almost exclusively in the Mojave Desert in unevenly distributed populations. A small portion of its northern extent occurs within the Great Basin Desert. Sections of the pipelines in the western half of the study area intersect the southern population distribution of western Joshua tree. This species has been documented in Calflora (2016) near Line 311 in Searles Valley, near Lines 300A and 300B in the communities of Kramer Junction and Hinkley and the City of Barstow, near Line 314 in the City of Victorville, and near Line 313 in Lucerne Valley.	The study area is located within the range of the southern population of the species, and suitable soil types are present. Recent occurrences exist near the pipelines in the western portion of the study area. Likely to occur
Apiaceae – Carrot Family					
<i>Cymopterus deserticola</i> desert cymopterus	BLM 1B.2 DRECP	This species occurs in Mojavean desert scrub, creosote bush scrub, and Joshua tree woodland from 2,060 to 4,930 feet amsl. It occurs on sandy substrates.	March to May/ perennial herb	There are numerous recent and extant CNDDDB occurrence records of desert cymopterus within 0.25 miles, 1 mile, and 5 miles of the pipelines in the study area. ^a These records are concentrated in and around Edwards Air Force Base and Boron, near Lines 300 A and 300 B. Suitable habitat for this species was identified in 2017 during focused surveys conducted east of the community of Kramer Junction along Line 300 B.	The study area is located within the range of this species and contains suitable sandy substrates and desert scrub habitat. Several recent occurrence records exist within 0.25 miles, 1 mile, and 5 miles of Lines 300 A and 300 B. Likely to occur
<i>Cymopterus multinervatus</i> purple-nerve cymopterus	2B.2	This species occurs in Joshua tree woodland, pinyon–juniper woodland, and Mojavean desert scrub, from 2,590 to 5,910 feet amsl. It occurs on sandy and rocky slopes, often on vernal moist clay gravels (among volcanic pavements).	March to April/ perennial herb	Purple-nerve cymopterus has only two recent CNDDDB occurrence records within 5 miles of the pipelines in the study area. The closest occurrence is located approximately 1.5 miles southwest of the southern terminus of Line 313 near the San Bernardino Mountains.	The study area is located within the range of this species. Suitable habitat exists in areas with rocky hills or low mountains in the study area. This species has been documented within 1 mile and 5 miles of Line 313. Potential to occur
<i>Perideridia parishii</i> ssp. <i>parishii</i> Parish’s yampah	2B.2	This species occurs in lower montane coniferous forest, meadows and seeps, and upper montane coniferous forest at elevations from 4,800 to 9,850 feet amsl.	June to August/ perennial herb	Parish’s yampah has few recent CNDDDB occurrences within 5 miles of the pipelines in the study area. The occurrences are located over 4 miles south of the southern terminus of Line 313 near the San Bernardino Mountains.	The study area is located within the range of this species. However, suitable montane and seep habitat is absent from the study area. This species has been documented within 1 mile and 5 miles of Line 313. Potentially absent
Asteraceae (Compositae) – Sunflower Family					
<i>Deinandra mojavensis</i> Mojave tarplant	BLM 1B.3 DRECP	This species occurs within moist sites and openings in chaparral, desert scrub, and woodlands at elevations from 2,099 to 5,249 feet amsl.	June to October/ annual herb	Mojave tarplant has not been documented in the CNDDDB within 5 miles of the pipelines in the study area. This species occurs in the Sierra Nevada Mountains to the northwest and south of the study area near Lancaster. It was included for analysis due to its inclusion in the DRECP.	The study area is located outside this species’ range. Several recent occurrences of this species have been documented in mountainous areas northwest and south of the pipelines in the study area; however, they are more than 5 miles away and there is very limited suitable habitat within the study area. Potentially absent

Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
<i>Eriophyllum mohavense</i> Barstow woolly sunflower	BLM 1B.2 DRECP	This species occurs in Mojavean desert scrub, creosote bush scrub, shadscale scrub, and chenopod scrub from 1,640 to 3,150 feet amsl. This species is endemic to the west-central portion of California’s Mojave Desert, and it often occurs on desert playas and in alkali sinks. It occurs in wetlands in other regions, but almost always in natural conditions, and in non-wetlands in California.	March to May/ annual herb	There are numerous recent and extant CNDDDB occurrence records of Barstow woolly sunflower within 0.25 miles, 1 mile, and 5 miles of the pipelines in the study area. This species is restricted to an approximately 30-mile radius of the City of Barstow in San Bernardino and Kern counties. The majority of the recent occurrences are located in the general vicinity of the communities of Kramer Junction and Boron, near the intersection of Lines 300 A and 300 B with Line 311. Suitable habitat for this species was identified in 2017 during surveys conducted between the community of Boron and the City of Ridgecrest along Line 311.	The study area is located within the range of this species and suitable desert scrub habitat is present throughout the study area. Multiple recent CNDDDB records occur in within 0.25 miles, 1 mile, and 5 miles of Lines 300 A, 300 B, and Line 311. Likely to occur
<i>Erigeron parishii</i> Parish’s daisy	FT 1B.1 DRECP	This species is usually found in Mojavean desert scrub, creosote bush scrub, blackbush scrub, and pinyon–juniper woodland from 2,620 to 6,570 feet amsl. It occurs on rocky limestone and carbonate, and sometimes granitic substrates; and it is endemic to the San Bernardino Mountains in San Bernardino County.	May to August/ perennial herb	Parish’s daisy has multiple documented occurrences in the CNDDDB within 0.25 miles, 1 mile, and 5 miles of the pipelines in the study area. All of these are located in the San Bernardino Mountains. The southern terminus of Line 313 is located within designated critical habitat for this species and is located immediately adjacent to several populations.	The study area is located at the northern edge of Parish’s daisy’s current range. Suitable habitat and soil types within the species’ range are limited to the southern terminus of Line 313 located along the northern edge of the San Bernardino Mountains. This species has multiple recently documented occurrences within 0.25 miles, 1 mile, and 5 miles of Line 313. Likely to occur
<i>Layia heterotricha</i> pale-yellow layia	BLM 1B.1	This species occurs in pinyon–juniper woodland, foothill woodland, and cismontane woodland; valley and foothill grasslands; and coastal scrub from 980 to 5,590 feet amsl. It occurs in alkaline or clay soils.	March to June/ annual herb	Pale-yellow layia has few documented occurrences in the CNDDDB within 5 miles of the pipelines in the study area. These occurrences are located approximately 4.5 miles north of the western terminus of Lines 300 A and 300 B in the foothills of the Tehachapi Mountains.	The study area is located at the eastern edge of this species’ range. Although small patches of pinyon–juniper woodland may occur within the hills or low mountains in the study area, suitable habitat for this species is absent in the study area within the current range of the species. Pale-yellow layia has been documented within 5 miles of Lines 300 A and 300 B. Potentially absent
<i>Packera bernardina</i> San Bernardino ragwort	1B.2	This species occurs in red fir forest communities in meadows and pebble-plain habitats at elevations from 6,695 to 8,170 feet amsl.	May to July/ perennial herb	San Bernardino ragwort has several CNDDDB occurrences within 5 miles of the pipelines in the study area, all of which are located within the San Bernardino County Mountains in the Big Bear Lake/Fawnskin area. The nearest record is located approximately 2.2 miles south of the southern terminus of Line 313.	The study area is located outside of this species’ current range. Red fir forest habitat is absent from the study area and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
<i>Pyrrocoma uniflora</i> var. <i>gossypina</i> Bear Valley pyrrocoma	1B.2	This species occurs in sagebrush scrub and northern juniper woodland from 5,250 to 7,550 feet amsl. It usually occurs in wetlands but can occasionally be found in non-wetlands. This species is found in meadow, seep, and pebble plains habitats.	July to September/ perennial herb	Bear Valley pyrrocoma is very rare and has few documented CNDDDB occurrences within 5 miles of the pipelines in the study area. All of these occurrences are located south of Line 313 in the San Bernardino Mountains. The nearest of these are approximately 4.5 miles south of the southern terminus of Line 313.	The study area is located at the northern edge of this species’ current range. Suitable habitat is absent from the study area and the elevation requirements of this species are higher than at the locations of pipelines in the study area. This species has been documented within 5 miles of Line 313. Potentially absent
<i>Symphotrichum defoliatum</i> San Bernardino aster	BLM 1B.2	This species occurs in freshwater marsh within coastal sage scrub and southern oak woodlands from sea level to 6,700 feet amsl.	July to November/ perennial rhizomatous herb	San Bernardino aster has no recent CNDDDB occurrences documented within 5 miles of the pipelines in the study area, and few historic occurrences. ^b These historic records are from the foothills of the San Bernardino Mountains, near the southern terminus of Line 313, and in a Mojave River slough near Victorville.	The study area is located within the range of this species. However, suitable marsh habitat is absent from the study area and San Bernardino aster has not recently been documented within 5 miles of the pipelines in the study area. Potentially absent

Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
<i>Taraxacum californicum</i> California dandelion	FE 1B.1	This species occurs in in moist meadow habitats in the San Bernardino Mountains at elevations from 5,310 to 9,190 feet amsl. It is often in meadows and seeps, usually occurs in wetlands, and is occasionally found in non-wetlands.	May to August/ perennial herb	California dandelion is known only from the San Bernardino Mountains and has few documented occurrences in the CNDDDB within 5 miles of the pipelines in the study area. These occurrence records are located more than 2.5 miles south of the southern terminus of Line 313 in the San Bernardino Mountains.	The study area is located outside of the range of this species. Suitable meadow habitat is absent from the study area and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
Berberidaceae – Barberry Family					
<i>Berberis fremontii</i> Fremont barberry	2B.3	This species occurs in pinyon-juniper and Joshua tree woodlands and chaparral in rocky, sometimes granitic soils at elevations from 2,790 to 5,575 feet amsl.	April to June	Fremont barberry has no documented CNDDDB occurrences within 5 miles of the pipelines in the study area in over 90 years. The historic records are from a non-specific location in the Cushenbury Springs area, approximately 500 feet west of the southern portion of Line 313.	The study area is located within the range of this species. Although small patches of pinyon-juniper woodland may occur within the hills or low mountains in the study area, suitable habitat for this species is absent in the study area within the current range of the species. There have been no recent occurrences of Fremont barberry within 5 miles of the pipelines in the study area. Potentially absent
Boraginaceae – Borage Family					
<i>Cryptantha clokeyi</i> Clokey’s cryptantha	BLM 1B.2	This species occurs in Mojavean desert scrub and creosote bush scrub from 2,370 to 4,480 feet amsl. This species can be found on rocky to gravelly slopes, ridge crests, and in desert woodland.	April to May/ annual herb	Clokey’s cryptantha has no recent documented CNDDDB occurrences within 5 miles of the pipelines in the study area. The closest historic CNDDDB record was documented within 1 mile near the City of Ridgecrest.	The study area is located within the range of this species and suitable gravelly scrub habitat exists in multiple locations. However, there have been no recently documented occurrences of this species within 5 miles of the pipelines in the study area. Unlikely to occur
<i>Phacelia parishii</i> Parish’s phacelia	BLM 1B.1	This species occurs in clay or alkaline soils in Mojavean desert scrub, creosote bush scrub, alkali sinks, and playas. It usually occurs in non-wetlands but is occasionally found in wetlands and on dry lake margins from 1,770 to 3,940 feet amsl.	April to May, sometimes as late as June or July/ annual herb	Parish’s phacelia was thought to be extinct in California until rediscovered in 1989. This species has only one recent and extant occurrence record in the CNDDDB within 5 miles of the pipelines in the study area. This record is from a clay lakebed near Yermo, approximately 4.8 miles north of Line 300 B.	The study area is located within the range of this species and contains suitable playa habitat. However, due to the extreme rarity of this species and the distance of the nearest extant record, it is highly unlikely to occur within the study area. Unlikely to occur
Brassicaceae (Cruciferae) – Mustard Family					
<i>Boechera dispar</i> pinyon rockcress	2B.3	This species occurs in Joshua tree woodland, Mojavean desert scrub, creosote bush scrub, and pinyon-juniper woodland; and often on granitic or gravelly soils and rocky slopes from 3,930 to 8,340 feet amsl. It is found in dry, open scree, talus, and other rocky soils, usually from volcanic rocks and often in upper mixed-shrub zones.	March to June/ perennial herb	Pinyon rockcress is rare in San Bernardino County and has few recent CNDDDB documented within 5 miles of the pipelines in the study area. These recent records and several historic records are located in the San Bernardino Mountains and foothills. The nearest recent record is located 4 miles south of the southern terminus of Line 313.	The study area is located within the range of pinyon rockcress. Suitable habitat may be present nearby, but this species occurs primarily in the mountains and at higher elevations than the pipelines in the study area. Unlikely to occur
<i>Boechera lincolnensis</i> Lincoln rockcress	BLM 2B.3	This species occurs on carbonate soils in chenopod scrub, Mojavean desert scrub, creosote bush scrub, and shadscale shrub from 3,610 to 8,870 feet amsl. It can occur on rocky slopes and gravelly soil, usually in sagebrush and shrubland habitats.	March to May/ perennial herb	Lincoln rockcress has no recently documented CNDDDB records and one historic record within 5 miles of the pipelines in the study area. The historic record is from a non-specific location along the southern mile of Line 313.	The study area is located within the range of Lincoln rockcress. Suitable scrub habitat may still exist near the southern and of Line 313. However, this area is disturbed by mining and the species has not been documented within 5 miles of the pipelines in the study area in nearly 100 years. Unlikely to occur

Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
<i>Boechnera parishii</i> Parish’s rockcress	1B.2	This species occurs in red fir and yellow pine forests, and pinyon–juniper woodlands at elevations of 5,350 to 9,975 feet amsl.	April to May/ perennial herb	Parish’s rockcress is only known from the San Bernardino Mountains. This species has no recent CNDDDB occurrences documented within 1 mile of the pipelines in the study area. Multiple recent occurrences are documented in the San Bernardino Mountains, the nearest being over 2 miles south of the southern terminus of Line 313.	The study area is located outside of the narrow range of this species. Red fir and yellow pine forests are absent from the study area and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
<i>Boechnera shockleyi</i> Shockley’s rockcress	2B.2	This species occurs in pinyon–juniper woodland, on rocky or gravelly carbonate, dolomite, and quartzite substrates from 2,870 to 7,580 feet amsl. It can also occur on rock outcrops.	May to June/ perennial herb	Shockley’s rockcress has multiple recently documented occurrences in the CNDDDB within 1 mile and 5 miles of the pipelines in the study area. The nearest recent occurrence is located approximately 0.5 miles south of the southern terminus of Line 313 in the San Bernardino Mountains. Historic occurrence records are located within 0.25 miles of Line 313 at Cushenbury Springs.	The study area is located within the general range of this species. Suitable carbonate substrates occur near the southern terminus of Line 313. However, the habitat near Line 313 is disturbed and lacks suitable pinyon–juniper woodland. All recent occurrences were documented from the mountains south of the study area. Unlikely to occur
<i>Physaria kingii</i> ssp. <i>bernardina</i> San Bernardino Mountains bladderpod	FE 1B.1	This species occurs in yellow pine forests and pinyon–juniper woodlands in dry/sandy to rocky/carbonate soils at elevations of 6,725 to 8,795 feet amsl.	May to June/ perennial herb	San Bernardino Mountains bladderpod is known only from five remaining populations, all of which are in the Big Bear Valley area of the San Bernardino Mountains. The closest record is located nearly 5 miles south of the southern terminus of Line 313.	The study area is located outside of the narrow range of this species. Yellow pine forests are absent from the study area and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
<i>Thelypodium stenopetalum</i> slender-petaled thelypodium	FE SE 1B.1	This species occurs in meadows and seeps in seasonally moist alkaline clay soils associated with pebble-plain springs and yellow pine forest at elevations from 6,695 to 6,890 feet amsl.	May to September/ perennial herb	Slender-petaled thelypodium is known from only nine extant occurrences. Only two recent CNDDDB occurrences are located 5 miles of the pipelines in the study area. The closest of these is located over 4 miles south of the southern terminus of Line 313 in the San Bernardino Mountains.	The study area is located outside of the narrow range of this species. Suitable habitat is absent from the study area and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
Cactaceae – Cactus Family					
<i>Opuntia basilaris</i> var. <i>treleasei</i> Bakersfield cactus	FE SE 1B.1 DRECP	This species occurs in chenopod scrub, valley and foothill grassland, and cismontane woodland, within coarse or cobbly well-drained granitic sand on bluffs, low hills, and flats within grassland at elevations from 278 to 1,804 feet amsl.	April to May	Bakersfield cactus has not been documented in the CNDDDB within 5 miles of the pipelines in the study area. The closest occurrences are two recent records in the Tehachapi Mountains west of the study area and two records that are more than 50 years old. This species was included for analysis due to its inclusion in the DRECP.	The study area is not located within the current known range of Bakersfield cactus. Scattered suitable habitat is present within the study area; however, there are no recent or extant occurrences within 5 miles of the pipelines of the study area. Potentially absent
Caryophyllaceae – Pink Family					
<i>Eremogone ursina</i> Big Bear Valley sandwort	FT 1B.2	This species occurs in pebble-plains, meadows, and seeps within pinyon–juniper woodlands on mesic, rocky substrates from 5,889 to 9,498 feet amsl.	May to August/ perennial herb	Big Bear Valley sandwort is known only from the vicinity of Big Bear and Baldwin lakes in the San Bernardino Mountains. The nearest recent occurrence is located over 2.5 miles south of the southern terminus of Line 313.	The study area is located outside of the narrow range of this species. Suitable habitat is absent from the study area and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i> sagebrush loeflingia	BLM 2B.2	This species occurs in Great Basin scrub, Mojave desert scrub, creosote bush scrub, sagebrush scrub, and Sonoran desert scrub. It occurs in sandy soils on desert dunes and flats, usually in full sun, from 2,290 to 5,300 feet amsl. In addition to sandy substrates, it can be found on stiffer and more alkaline soils.	April to May/ annual herb	Sagebrush loeflingia has few documented occurrences in the CNDDDB within 5 miles of the pipelines in the study area, mostly in or near Edwards Air Force Base. The nearest recent occurrence is located approximately 2.5 miles south of Lines 300 A and 300 B on the Kern–San Bernardino County line.	The study area is located within the range of sagebrush loeflingia and suitable sandy scrub habitat occurs in various locations. This species has been documented within 5 miles of Lines 300 A and 300 B. Potential to occur

Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
Chenopodiaceae – Goosefoot Family					
<i>Atriplex parishii</i> Parish’s brittle scale	1B.1	This species occurs in playas and vernal pools within shadscale scrub, alkali sinks, freshwater wetlands, and riparian habitats at elevations from 100 to 1,640 feet amsl.	June to October/ annual herb	Parish’s brittle scale has no recent CNDDDB occurrences within 5 miles of the pipelines in the study area. Two historic occurrences were recorded from the Cushenbury Springs area, near the southern terminus of Line 313, but these are presumed to be extirpated.	The study area is not located within the current known range of Parish’s brittle scale. Suitable alkali sink habitat is also absent from the study area and there are no recent or extant occurrences within 5 miles of the study area. Potentially absent
Cleomaceae – Spiderflower Family					
<i>Wislizenia refracta</i> ssp. <i>refracta</i> jackass-clover	2B.2	This species occurs in desert dunes and playas within Mojavean desert scrub, Sonoran desert scrub, and creosote bush scrub. It can also be found in sandy washes and roadsides from 1,970 to 2,629 feet amsl. This species usually occurs in non-wetlands, but occasionally can be found in wetlands.	April to November/ annual herb	Jackass-clover has no CNDDDB occurrences within 5 miles of the pipelines in the study area. There is one documented occurrence in the CNPS Inventory near the study area, in the Harvard Hill quadrangle, approximately 10 miles from the pipelines in the study area.	The study area is located within the range of jackass-clover and suitable sandy scrub habitat is present. However, the nearest recorded occurrence record is more than 5 miles from the study area. Unlikely to occur
Crassulaceae – Stonecrop Family					
<i>Dudleya abramsii</i> ssp. <i>affinis</i> San Bernardino Mountains dudleya	1B.2	This species occurs in pinyon–juniper woodland and upper montane coniferous forest, including lodgepole and red fir forests from 4,100 to 8,530 feet amsl. It occurs in pebble plains and pavement habitats, and often on outcrops. This species is usually in granitic, quartzite, or carbonate substrates, and rarely in limestone substrates.	April to July/ perennial herb	San Bernardino Mountains dudleya is known only from the San Bernardino Mountains. The species has multiple documented occurrences in the CNDDDB within 5 miles of the pipelines in the study area. Two records are located within 1 mile south of the southern terminus of Line 313.	Suitable montane habitat for this species is absent from the study area. The elevation requirements of this species are higher than the majority of the locations of pipelines in the study area within the species’ range. Potentially absent
Dryopteridaceae – Fern Family					
<i>Dryopteris filix-mas</i> male fern	2B.3	This species occurs in pinyon–juniper woodlands and upper montane coniferous forests with granitic, rocky soils at elevations of 2,560 to 9,910 feet amsl.	July to September/ rhizomatous fern	Male fern is only known from five occurrences in California, in the White Mountains. Only one CNDDDB record exists for this species within 5 miles of the pipelines in the study area. This historic record is over 100 years old and is located over 4 miles southwest of Line 313 in the San Bernardino Mountains at an elevation outside the range of the pipelines.	The study area is located outside the current narrow range of this species. Suitable upper montane habitat is absent from the study area and there are no recent occurrences within 5 miles of the pipelines in the study area. Potentially absent
Euphorbiaceae – Spurge Family					
<i>Ditaxis claryana</i> glandular ditaxis	2B.2	This species occurs in Mojavean desert scrub, Sonoran desert scrub, and creosote bush scrub from 0 to 1,530 feet amsl. It is often found in sandy soils.	October to March/ perennial herb	Glandular ditaxis has only one recently documented CNDDDB occurrence within 0.25 miles of the pipelines in the study area and two historic occurrences within 5 miles. These occurrence records are located in Amboy. The recent record is located approximately 0.2 miles north of Lines 300 A and 300 B.	The study area is located within the range of this species and suitable sandy desert scrub habitat is present. This species has one recent record of occurrence within 0.25 miles of Lines 300 A and 300 B. Likely to occur
<i>Euphorbia jaegeri</i> Orocopia Mountains spurge	BLM 1B.1	This species occurs in Mojavean desert scrub from 1,960 to 2,790 feet amsl. It occurs on rocky hillsides, in arroyos, and in desert washes. It is often in gravelly or rocky crevices composed of granitic, carbonate, or metamorphic substrates.	October to May/ perennial shrub	Orocopia Mountains spurge is only known from a few mountain ranges, including the Marble Mountains, which overlap with the study area. This species has two documented occurrences in the CNDDDB within 5 miles of the pipelines in the study area. The closest occurrence is in the Marble Mountains, over 1.5 miles north of Lines 300 A and 300 B.	Portions of the study area—Lines 300 A and 300 B in the Marble Mountains—are located within the narrow range of this species. Within this study area, suitable habitat and soil types are present. However, this species has few documented occurrences within 5 miles of the pipelines in study area. Potential to occur

Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
Fabaceae (Leguminosae) – Legume Family					
<i>Astragalus albens</i> Cushenbury milk-vetch	FE 1B.1	This species is typically found on carbonate substrates along rocky washes and gentle slopes within pinyon woodland, pinyon–juniper woodland, Joshua tree woodland, and blackbush scrub communities from 3,590 to 6,570 feet amsl. It is also found in stony areas among desert shrubs and junipers, and it is endemic to the San Bernardino Mountains in San Bernardino County.	March to June/ perennial herb	Cushenbury milk-vetch has multiple recently documented CNDDB occurrences within 1 mile and 5 miles of the pipelines in the study area, several of which are within 1 mile. All of the occurrences are along the northern edge of the San Bernardino Mountains, in the general vicinity of the southern terminus of Line 313. Line 313 crosses designated critical habitat for this species and includes one historic occurrence along Line 313. This area is approximately 0.5 miles north of Cushenbury Springs.	Suitable habitat for this species is limited to a small portion of the study area with carbonate soils near the southern end of Line 313 in the foothills of the San Bernardino Mountains. A portion of Line 313 is located within critical habitat for Cushenbury milk-vetch. The nearest recent occurrence is located within 1 mile of Line 313. Likely to occur
<i>Astragalus bernardinus</i> San Bernardino milk-vetch	BLM 1B.2	This species occurs in Joshua tree woodland and pinyon–juniper woodland, often in granitic or carbonate soils from 2,950 to 6,560 feet amsl.	April to June/ perennial herb	San Bernardino milk-vetch has several recent CNDDB occurrences within 5 miles of the southern terminus of Line 313 in the San Bernardino Mountains. The most recent occurrence is located 4 miles south of Line 313. Several historic occurrences are located in Cushenbury Springs within 0.25 miles of Line 313.	The study area is located within the range of this species. Suitable habitat is limited to a small portion of the study area near the southern end of Line 313 along the northern edge of the San Bernardino Mountains. This species has been recently documented within 5 miles of Line 313. Potential to occur
<i>Astragalus jaegerianus</i> Lane Mountain milk-vetch	FE 1B.1	This species occurs in Joshua tree woodland, Mojavean desert scrub, and creosote bush scrub from 2,950 to 3,940 feet amsl. It occurs among desert shrubs in granitic, gravelly, or sandy soils.	April to June/ perennial herb	Lane Mountain milk-vetch is known only from small, fragmented populations within and adjacent to Fort Irwin, which is located approximately 30 miles north of Lines 300 A and 300 B. This species was included for analysis due to its inclusion in the CNPS quadrangle search.	The study area is located outside the narrow range of Lane Mountain milk-vetch. There are no documented occurrences within 5 miles of the pipelines in the study area. Potentially absent
<i>Astragalus lentiginosus</i> var. <i>sierrae</i> Big Bear Valley milk-vetch	1B.2	This species occurs in upper montane coniferous forests within creosote bush scrub and pinyon–juniper woodland habitats from 5,905 to 8,530 feet amsl. It occurs in gravelly or rocky substrates within meadows or seeps.	April to August/ perennial herb	Big Bear Valley milk-vetch is known only from Big Bear Valley and the Baldwin Lake region in the San Bernardino Mountains. Several recent records are located within 5 miles the pipelines in the study area. All of these are located south of the southern terminus of Line 313 in areas that are outside of the study area elevation range.	The study area is located outside the narrow range of Big Bear Valley milk-vetch. The study area does not contain seeps in upper montane coniferous forests and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
<i>Astragalus leucolobus</i> Big Bear Valley woollypod	1B.2	This species occurs in lower and upper montane coniferous forests, including yellow-pine forest and pinyon–juniper woodland from 3,600 to 9,500 feet amsl. It occurs on rocky substrates in pebble plains and desert pavement habitats. It is often found in dry and rocky areas, among sagebrush and pines.	May to July/ perennial herb	Big Bear Valley woollypod has multiple documented occurrences in the CNDDB within 5 miles of the pipelines in the study area. All of these occurrences are located south or east of Line 313 in the San Bernardino Mountains. The nearest recent occurrence is located over 1.5 miles east of the southern terminus of Line 313.	The study area is located within the range of this species. However, pebble plain habitat and montane coniferous forest is absent from the study area. Also, the elevation requirements of this species are higher than the majority of the locations of pipelines in the study area. Potentially absent
<i>Astragalus preussii</i> var. <i>laxiflorus</i> Lancaster milk-vetch	1B.1	This species occurs in chenopod scrub and shadscale scrub communities, often in alkaline flats habitat and typically at approximately 2,290 feet amsl. Though this species occurs in wetlands in another region, it almost always occurs in non-wetlands in California.	May to July/ perennial herb	Lancaster milk-vetch is extremely rare and [in California] is only known from near Lancaster and Edwards Air Force Base, where it has only been reported once in recent years. This species has no documented occurrences within 5 miles of the pipelines in the study area, but appeared in the CNPS quadrangle search.	The study area is located outside the narrow range for this species. Though there is suitable desert playa and mixed salt desert scrub habitat within the study area, Lancaster milk-vetch has no recorded occurrences within 5 miles of the pipelines in the study area. Potentially absent

Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
<i>Astragalus tidestromii</i> Tidestrom’s milk-vetch	2B.2	This species occurs in Mojavean desert scrub and creosote bush scrub on carbonate, sandy, or gravelly substrates from 1,970 to 5,200 feet amsl. It is often in foothills and on open, calcareous gravel.	January to July/ perennial herb	Tidestrom’s milk-vetch has one recently documented CNDDDB occurrences within 1 mile and one recent occurrence within 5 miles of the pipelines in the study area, and two historic occurrences. Both observations are located southeast of the southern terminus of Line 313 in the San Bernardino Mountains. Two historic occurrences were observed in Cushenbury Springs, within 0.25 miles west of Line 313.	The study area is located within the range of this species. Suitable habitat is limited to a small portion of the study area near the southern end of Line 313 in the foothills of the San Bernardino Mountains. This species has recent occurrence records within 1 mile and 5 miles of Line 313. Likely to occur
<i>Astragalus tricarinatus</i> triple-ribbed milk-vetch	FE 1B.2 DRECP	This species occurs in sandy or gravelly substrates, including exposed rocky slopes and canyon walls along desert washes, in Joshua tree woodland and Sonoran desert scrub at elevations from 1,475 to 3,900 feet amsl.	Feb to May/ perennial herb	Triple-ribbed milk-vetch is known from fewer than 20 occurrences, all of which are located near the San Bernardino–Riverside County line and southward, over 25 miles south of the southern terminus of Line 313. This species has no documented occurrences within 5 miles of the pipelines in the study area but was included in the analysis due to its inclusion in the DRECP.	Suitable habitat for triple-ribbed milk-vetch occurs in some portions of the study area. However, the study area is located well outside the range for this species and there have been no recorded occurrences of this species within 5 miles of the pipelines in the study area. Potentially absent
<i>Pediomelum castoreum</i> Beaver Dam breadroot	BLM 1B.2	This species occurs in Joshua tree woodland, Mojavean desert scrub, and creosote bush scrub. It is often found on sandy substrates in open areas, such as washes and road cuts, from 2,000 to 5,010 feet amsl.	April to May/ perennial herb	Beaver Dam breadroot has multiple documented occurrences in the CNDDDB within 0.25 miles, 1 mile, and 5 miles of the pipelines in the study area. However, many of these are historic records. Most occurrence records are located in the general vicinity between Newberry Springs and Victorville, along Lines 300 A, 300 B, and 314. The nearest recent occurrence was documented near George Air Force Base, approximately 0.4 miles west of Line 314.	The study area is located within the range of Beaver Dam breadroot. Suitable Mojavean desert scrub and creosote bush scrub habitat is present, as are desert washes and road cuts. This species has a recent occurrence record within 0.25 miles of Line 314. Likely to occur
<i>Psorothamnus fremontii</i> var. <i>attenuatus</i> narrow-leaved psorothamnus	2B.3	This species occurs in Sonoran desert scrub on granitic or volcanic soils. It is often in washes, slopes, flats, or canyons from 1,100 to 3,000 feet amsl.	April/ perennial herb	Narrow-leaved psorothamnus is known in California only from the Whipple and Chemehuevi Mountains near the Nevada state line. This species has one documented CNDDDB occurrence within 0.25 miles of the pipelines in the study area, south of Line 300 A, near where State Route 95 crosses the study area.	The study area is located near the edge of this species’ northern range. Suitable granitic substrates in desert scrub habitat within the range of this species occur near the eastern terminus of Lines 300 A and 300 B. This species has a recent occurrence record within 0.25 miles of Line 300 A. Likely to occur
<i>Senna covesii</i> Cove’s cassia	2B.2	This species occurs in Sonoran desert scrub from 930 to 3,520 feet amsl. It is found in dry, sandy desert washes and slope habitat.	March to June/ perennial herb	Cove’s cassia has one recent occurrence in the CNDDDB within 0.25 miles of Line DREG 5497. The occurrence is located on Edwards Air Force Base and is thought to be a transplant that is outside of the species’ range.	Portions of the study area are located within the range of this species and suitable sandy scrub habitat is present. However, the CNDDDB record for this species is presumed not to be a native occurrence. All other recorded occurrences for Cove’s cassia are over 5 miles from the pipelines in the study area. Potential to occur
Juncaceae – Rush Family					
<i>Juncus nodosus</i> knotted rush	2B.3	This species occurs in freshwater and riparian wetlands, such as streambanks, meadows, and seeps. It occurs in marshes and swamps, and less commonly in mesic areas and on lake margins from 90 to 6,500 feet amsl.	July to September/ perennial rhizomatous herb	Knotted rush has no documented occurrences within 5 miles of the pipelines in the study area. One historic CNPS record was documented in the Old Woman Statue quadrangle, approximately 10 miles from Lines 300 A and 300 B in the Old Woman Mountains in the eastern Mojave Desert.	Portions of the study area are located within the range of this species. Suitable wetland habitat (e.g., streambanks, meadows, and seeps) within this species’ range is absent from the study area. There are no recorded occurrences of this species within 5 miles of the pipelines in the study area. Potentially absent

Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
Lamiaceae (Labiatae) – Mint Family					
<i>Monardella boydii</i> Boyd’s monardella	BLM 1B.2	This species occurs in Mojavean desert scrub and in pinyon–juniper woodland from 4,590 to 5,420 feet amsl. It is often in alluvial soils in riparian habitats and alluvial soils or cracks of bedrock in washes, canyon bottoms, and rocky slopes.	August to October/ perennial shrub	Boyd’s monardella is known only from the Ord and Rodman Mountains. There is one recently documented CNDDB occurrence within 1 mile of Line 313 and one occurrence within 5 miles of Line 313; both are located east of Line 313 in the Ord Mountains.	The study area is located just outside the narrow range for Boyd’s monardella and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
<i>Monardella linoides</i> ssp. <i>oblonga</i> Tehachapi monardella	BLM 1B.3	This species occurs in upper and lower montane coniferous forest including coniferous woodland to forested habitats. It can occur in chaparral and pinyon–juniper woodland from 2,950 to 8,100 feet amsl. It is found in gravelly substrates, habitats with dry slopes, and flats.	June to August/ perennial rhizomatous herb	Tehachapi monardella is known from the Tehachapi Mountains, west of the study area, and has no documented occurrences within 5 miles of the pipelines in the study area. The species has two documented occurrences within the Monolith and Cache Peak quadrangles in the CNPS Inventory. The closest occurrence is approximately 7 miles west of the western terminus of Lines 300 A and 300 B.	The study area is located outside the range for Tehachapi monardella. Suitable habitat is not present in the study area near the documented occurrences and the elevation requirements of this species are higher than the locations of pipelines in the study area. There are no recorded occurrences of this species within 5 miles of the pipelines in the study area. Potentially absent
<i>Poliomintha incana</i> frosted mint	2A	This species typically occurs in yellow pine and lower montane coniferous forests on eroded slopes within sandy or boggy soils from 5,249 to 5,577 feet amsl.	June to July	Frosted mint is known in California from only a single historical collection (1938) the San Bernardino Mountains and is currently presumed extirpated from California. This historic occurrence was recorded south of the southern terminus of Line 313 at an elevation higher than elevations in the study area.	Frosted mint is thought to be extirpated from California. Suitable boggy habitat for this species is absent from the study area and the elevation requirements are higher than the locations of pipelines in the study area. Potentially absent
<i>Scutellaria bolanderi</i> ssp. <i>austromontana</i> southern mountains skullcap	1B.2	This species occurs in chaparral, cismontane woodland, and lower montane coniferous forest, including foothill woodland and yellow pine forest. It is often in mesic or wetland–riparian habitats from 1,390 to 6,570 feet amsl. It can occur in oak or pine woodland communities, and often on gravelly soils and streambanks.	June to August/ perennial rhizomatous herb	Southern mountains skullcap has no recently documented occurrences within 5 miles of the pipelines in the study area. One historic record is documented in the CNDDB within 1 mile south of Line 314 in the City of Victorville. However, this record is over 100 years old and is presumed extirpated due to urban development.	Portions of the study area are located within the range of this species. However, suitable montane wetland habitat is absent from the study area within the range of the species. This species has no documented occurrence records within 5 miles of the pipelines in the study area. Potentially absent
Liliaceae – Lily Family					
<i>Calochortus palmeri</i> var. <i>palmeri</i> Palmer’s mariposa-lily	BLM 1B.2	This species is found in vernal moist sites in chaparral, meadows, and lower montane coniferous forest between 2,320 and 7,850 feet amsl.	April to July/ perennial herb	Palmer’s mariposa-lily has no recently documented occurrences in the CNDDB within 5 miles of the pipelines in the study area. One historic record is located approximately 5 miles south of Line 313, near Big Bear Lake in the San Bernardino Mountains.	The study area is located on the outer edge of Palmer’s mariposa-lily’s range. Suitable wetland habitat for this species is absent from the portion of the study area that occurs within range. This species has no recently documented occurrence records within 5 miles of the pipelines in the study area. Potentially absent
<i>Calochortus striatus</i> alkali mariposa-lily	BLM 1B.2 DRECP	This species occurs in Mojavean desert scrub, chaparral, shadscale, and chenopod scrub from 220 to 5,240 feet amsl. It is found in alkaline meadows and seeps, and in mesic areas of creosote bush scrub. It usually occurs in wetland and riparian areas but is occasionally found in non-wetlands.	April to June/ perennial bulbiferous herb	Alkali mariposa-lily has multiple documented occurrences within 0.25 miles, 1 mile, and 5 miles of the pipelines in the study area. These records are clustered around the southern terminus of Line 313 in the San Bernardino Mountains/foothills, and in the Sanborn quadrangle near Lines 300 A and 300 B. Several historic records are also documented at Edwards Air Force Base, south of Lines 300 A and 300 B.	The study area is located within the range of alkali mariposa-lily. Suitable habitat (alkaline meadows and seeps) is absent from the study area. However, chenopod scrub habitat may be present in locations dispersed throughout the western half of the study area. This species has been documented recently within 0.25 miles, 1 mile, and 5 miles of Lines 300 A and 300 B. Likely to occur

Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
<i>Lilium parryi</i> lemon lily	1B.2	This species occurs in lower montane coniferous forest, riparian forest, and upper montane coniferous forest from 4,000 to 9,000 feet amsl. It occurs in mesic soils and seeps, and usually in meadows and streams of montane coniferous forest.	July to August/ perennial bulbiferous herb	Lemon lily has one recently documented CNDDDB occurrence within 5 miles of the pipelines in the study area. The observation is located over 4.5 miles southwest of the southern terminus of Line 313, at Gordon Springs in the San Bernardino Mountains.	The study area is located on the outer edge of lemon lily's range. Montane coniferous forest habitat and wetlands/seeps are absent from the portion of the study area that is within the species' range. Additionally, the elevation requirements of this species only slightly overlap with a small portion of the study area (where pinyon-juniper woodland and mid-elevation mixed desert scrub are more prevalent). Potentially absent
Loasaceae – Loasa Family					
<i>Mentzelia puberula</i> Darlington's blazing star	2B.2	This species occurs in Mojave and Sonoran desert scrub, within sandy crevices in cliffs or on rocky slopes from 525 to 4,100 feet amsl.	March to May/ perennial herb	Darlington's blazing star has no recently documented occurrences in the CNDDDB within 5 miles of the pipelines in the study area. One historic occurrence is located approximately 4.5 miles south of Lines 300 A and 300 B in the Newberry Mountains.	The study area is located within the range of this species and suitable habitat occurs in multiple locations throughout the study area. However, Darlington's blazing star has not recently been documented within 5 miles of the pipelines throughout the study area. Unlikely to occur
<i>Mentzelia tricuspis</i> spiny-hair blazing star	2B.1	This species occurs in Mojavean desert scrub, usually on slopes and in washes. It is often in creosote bush scrub on sandy or gravelly substrates from 490 to 4,200 feet amsl.	March to May/ annual herb	Spiny-hair blazing star has two recent CNDDDB occurrences within 5 miles of the pipelines in the study area. These are located near the eastern terminus of Lines 300 A and 300 B in the Chemehuevi Mountains. Three additional occurrences within 5 miles of the study area, but they are more than 50 years old. Two of these occurrences are located near Barstow just east of the intersection of Lines 300 A and 300 B. Another occurrence is located just north of the eastern terminus of Line 300 B near the California/Arizona border. One individual of this species was observed in a wash along the north side of a Line 300 A access road during the 2017 focused plant survey.	Two recent occurrences of this species are located within 1 mile of the eastern terminus of Lines 300 A and 300 B in the study area. Suitable Mojave creosote bush scrub habitat is found throughout the study area. Present
<i>Mentzelia tridentata</i> creamy blazing star	BLM 1B.3	This species occurs in Mojavean desert scrub and creosote bush scrub, often on rocky, gravelly, and sandy substrates from 2,290 to 3,860 feet amsl.	March to May/ annual herb	Creamy blazing star has one historic occurrence in the CNDDDB, less than 5 miles west of Line 313, east of Highway 247 in the study area.	One historical record for this species has been documented in the study area approximately 4 miles west of Line 313. Suitable bedrock, cliff outcrop, dune, and creosote bush scrub habitats occur throughout the study area. Potential to occur
Malvaceae – Mallow Family					
<i>Sidalcea covillei</i> Owens Valley checkerbloom	BLM DRECP	This species occurs in moist areas within sagebrush and chenopod scrub, in meadows and seeps.	April to June/ perennial herb	There are no occurrences of this species in the CNDDDB within 5 miles of the pipelines in the study area. The nearest occurrence is greater than 50 years old and located near U.S. Route 395 east of the Inyo National Forest.	No suitable meadow/seep habitat is present within the study area and the nearest occurrence is greater than 5 miles away and more than 50 years old. Potentially absent
<i>Sidalcea malviflora</i> ssp. <i>dolosa</i> Bear Valley checkerbloom	1B.2	This species occurs in lower montane coniferous forest, riparian woodland, and upper montane coniferous forest, such as open pine forest. It occurs in meadows and seeps from 4,900 to 8,810 feet amsl.	May to August/ perennial herb	No CNDDDB records for this species occur within 5 miles of the pipelines in the study area. The nearest locations are clustered in the San Bernardino Mountains area surrounding Big Bear, which are at an elevation outside the range of the study area.	No suitable habitat for this species located within 5 miles of the study area and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent

Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
<i>Sidalcea neomexicana</i> salt spring checkerbloom	2B.2	This species occurs in chaparral, coastal sage scrub, lower montane coniferous forest (including yellow pine forest), Mojavean desert scrub, and creosote bush scrub. It is often in alkaline or mesic locations and on desert playas. It can occur in alkali sinks, springs, and marshes. It usually occurs in wetlands, but it is occasionally found in non-wetlands from 50 to 5,020 feet amsl.	March to June/ perennial herb	There are no recent or historic documented occurrences of this species within 5 miles of the pipelines in the study area. The nearest location was documented approximately 6 miles away in the Lucerne Valley quadrangle. There are two occurrences of this species within 5 miles of Line 314, but they are more than 50 years old.	Although there is suitable desert scrub and creosote bush scrub habitat within the study area, this species has not been documented within 5 miles of the study area within 50 years. Unlikely to occur
<i>Sidalcea pedata</i> bird-foot checkerbloom	FE SE 1B.1	This species occurs in meadows, seeps, and pebble plains in wetland/riparian and yellow pine forest habitats within vernal mesic sites, from 6,036 to 7,562 feet amsl.	May to August/ perennial herb	Two recent occurrences of bird-foot checkerbloom are located approximately 5 miles south of the terminus of Line 313. All occurrences with the CNDDDB are within coniferous forests of the San Bernardino Mountains.	No suitable habitat for this species occurs within the study area, and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
Montiaceae – Miner’s Lettuce Family					
<i>Calyptidium pygmaeum</i> pygmy pussypaws	1B.2	This species occurs in subalpine coniferous forest and upper montane coniferous forest in sandy or gravelly soils at elevations ranging from 7,450 to 11,550 feet amsl.	June to August/ annual herb	Pygmy pussypaws is known from fewer than 10 occurrences and there are no recent CNDDDB occurrences within 5 miles of the pipelines in the study area. One historic occurrence is located in the San Bernardino Mountains, south of the study area.	The study area is located outside the current known range of this species. Suitable montane habitat for this species is absent from the study area and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
<i>Claytonia lanceolata</i> var. <i>peirsonii</i> Peirson’s spring beauty	3.1	This species occurs in subalpine coniferous forest and lower montane coniferous forest (scree) at elevations ranging from 4,955 to 8,630 feet amsl.	May to June/ perennial herb	Peirson’s spring beauty is known only from the San Gabriel Mountains. This species has one recent CNDDDB occurrence record within 5 miles of the pipelines in the study area. This record is located above 4,500 feet amsl in the San Bernardino Mountains south of the terminus of Line 313.	The study area is located outside the current known range of this species. Suitable montane habitat for this species is absent from the study area and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
<i>Lewisia brachycalyx</i> short-sepaled lewisia	2B.2	This species occurs in lower montane coniferous forest, meadows and seeps, and often in mesic areas at elevations from 4,490 to 7,550 feet amsl.	February to June/perennial herb	Short-sepaled lewisia has no recent CNDDDB occurrences within 5 miles of the pipelines in the study area. Two historic occurrences are located in the San Bernardino Mountains south of the southern terminus of Line 313.	The study area is located outside the current known range of this species. There is no suitable habitat for this species within 5 miles of the study area and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
Nyctaginaceae – Four O’Clock Family					
<i>Abronia villosa</i> var. <i>aurita</i> chaparral sand-verbena	BLM 1B.1	This species occurs in sandy areas within chaparral, coastal scrub, and desert dune systems.	January to September/ annual herb	Chaparral sand-verbena has no recent CNDDDB occurrences within 5 miles of the pipelines in the study area. One historic occurrence is located approximately 4 miles from Barstow. However, this occurrence is located far north of all other occurrences and could be considered an anomaly.	Limited suitable habitat for this species occurs throughout the study area. One historic occurrence exists in the CNDDDB approximately 2 miles north of Line 300 B. Unlikely to occur

Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
Oleaceae – Olive Family					
<i>Menodora spinescens</i> var. <i>mojavensis</i> Mojave menodora	BLM 1B.2	This species occurs in andesite gravel and rocky hillsides and canyons in Mojavean desert scrub from 2,260 to 6,560 feet amsl.	April to May/ perennial deciduous shrub	Mojave menodora has several recent occurrences in the CNDDDB within 5 miles of the pipelines in the study area, two of which are located within 1 mile of Line 313 in the western Newberry Mountains.	This species has been observed recently within 1 mile of Line 313 overlapping the Ord Mountains, White Horse, and Grand View Mines quadrangles. Suitable bedrock cliff and outcrop habitat occurs throughout the study area. Likely to occur
Onagraceae – Evening-Primrose Family					
<i>Chylismia arenaria</i> sand evening-primrose	2B.2	This species occurs in sandy or rocky substrates in Sonoran desert scrub from 230 to 3,000 feet amsl. It can be found in washes and on rocky slopes.	November to May/perennial herb	Sand evening-primrose has multiple recent occurrences in the CNDDDB within 1 mile of Lines 300 A and 300 B in the Topock quadrangle just west of the California/Nevada border near the Havasu National Wildlife Refuge.	Sand evening-primrose has been recently documented within 1 mile of Lines 300 A and 300 B. The majority of the study area is located outside the range of this species. Suitable Sonoran desert scrub habitat within this species’ range exists near the eastern terminus of Lines 300 A and 300 B. Likely to occur
<i>Eremothera boothii</i> ssp. <i>boothii</i> Booth’s evening-primrose	2B.3	This species occurs in Joshua tree woodland and pinyon–juniper woodland on sandy flats and steep, loose slopes from 2,670 to 7,880 feet amsl.	April to September/ annual herb	Booth’s evening-primrose has no recent CNDDDB occurrences within 5 miles of the pipelines in the study area. Several historic occurrences are located within 0.25, 1, and 5 miles of the pipelines in the study area. These occurrences are located just north of Line 314 near Victorville and overlapping Line 311 in the Saddleback Mountain quadrangle.	This species has historical records within 1 mile of Lines 314 and 311 in the study area. There is limited suitable Joshua tree and pinyon–juniper woodland habitat within the study area west of the western terminus of Line 300 B and at the southern terminus of Line 313. Potential to occur
Orobanchaceae – Broomrape Family					
<i>Castilleja cinereal</i> ash-gray paintbrush	1B.2 FT	This species occurs in pinyon–juniper woodland, and upper montane coniferous forest (including red fir forest), and usually at clay openings. Also occurs in Mojavean desert scrub, creosote bush scrub, and dry sagebrush scrub from 5,905 to 9,711 feet amsl. It is often in meadows and seeps at openings, and in pebble plains or clay substrates. It occurs in wetlands in another region but occurs under natural conditions in non-wetlands in California.	June to August/ perennial herb (hemiparasitic)	Ash-gray paintbrush has several recent occurrences in the CNDDDB within 5 miles of the pipelines in the study area. All of these are located south of the southern terminus of Line 313 in the San Bernardino Mountains.	Suitable montane habitat is absent from the study area and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
<i>Castilleja lasiorhyncha</i> San Bernardino Mountains owl’s-clover	1B.2	This species occurs in mesic soils in chaparral, riparian woodland, and upper montane coniferous forest (including yellow pine forest) from 4,260 to 7,900 feet amsl. It is often in open forest, flats, and meadows and seeps, and can also be found on pebble plains substrate. It occurs in wetlands in other regions but occurs almost always under natural conditions in non-wetlands in California.	May to August/ annual herb (hemiparasitic)	San Bernardino Mountains owl’s-clover has several recent occurrences in the CNDDDB within 5 miles of the pipelines in the study area. All of these are located south of the southern terminus of Line 313 within the San Bernardino Mountains at elevations above 4,500 feet amsl.	Suitable habitat is absent from the study area and the elevation requirements of this species are higher than the majority of pipeline locations in the study area. Potentially absent

Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
Papaveraceae – Poppy Family					
<i>Canbya candida</i> white pygmy-poppy	4.2	This species occurs in Joshua tree woodland and Mojavean desert scrub at elevations ranging from 2,295 to 5,250 feet amsl.	March to June/ annual herb	No recent occurrences of white pygmy-poppy were found within 5 miles of the study area in the CNDDDB. Several historic occurrences of this species were documented in the CNPS Inventory in the Lucerne Valley quadrangle less than 5 miles from the southern terminus of Line 313.	No recent occurrences of this species are found within the study area, as the subcommunity of Joshua tree habitat in Lucerne Valley has likely been replaced by development within the study area. Potentially absent
<i>Eschscholzia minutiflora</i> ssp. <i>twisselmannii</i> Red Rock poppy	BLM 1B.2	This species occurs in Mojavean desert scrub—especially creosote bush scrub—on volcanic tuff substrates from 2,230 to 4,040 feet amsl.	March to May/ annual herb	Red Rock poppy is known only from the Rand and El Paso Mountains. There are no CNDDDB records of this species within 5 miles of the pipelines in the study area.	The study area is located outside the narrow range of this species and suitable volcanic habitat is absent. Potentially absent
Phrymaceae – Lopseed Family					
<i>Diplacus mojaviensis</i> Mojave monkeyflower	BLM 1B.2 DRECP	This species occurs on sandy or gravelly substrates in Joshua tree woodland, Mojavean desert scrub, and washes at elevations from 1,960 to 3,940 feet amsl.	April to June/ annual herb	Mojave monkeyflower has many recent occurrences in the CNDDDB within 0.25 miles, 1 mile, and 5 miles of the pipelines in the study area. Most of the occurrences are in the Victorville and Barstow areas.	Suitable Mojavean desert scrub wash habitat occurs throughout the study area and there are multiple recent documented occurrences of this species within 0.25 miles of Lines 300 A, 300 B, 313, and 314. Likely to occur
<i>Erythranthe exigua</i> San Bernardino Mountains monkeyflower	1B.2	This species occurs in meadows and seeps, pebble plains, and upper montane coniferous forests at elevations ranging from 5,905 to 7,595 feet amsl.	May to July/ annual herb	San Bernardino Mountains monkeyflower has multiple recent occurrences in the CNDDDB located within 5 miles of the study area, all located in the San Bernardino Mountains Big Bear area at elevations above 4,500 feet amsl.	No suitable meadow/seep or montane forest habitat occurs within the study area, and the elevation range of this species is higher than the locations of pipelines in the study area. Potentially absent
<i>Erythranthe purpurea</i> little purple monkeyflower	1B.2	This species occurs in meadows and seeps, pebble plains, and upper montane coniferous forests in dry clay or gravelly soils under Jeffrey pines, along annual streams or vernal springs at elevations from 6,233 to 7,545 feet amsl.	May to June/ annual herb	Little purple monkeyflower has multiple recent occurrences in the CNDDDB, all of which are located south of Line 313 within the San Bernardino Mountains near Big Bear at elevations above 4,500 feet amsl.	No suitable meadow/seep or montane forest habitat occurs within the study area, and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
<i>Erythranthe rhodopetra</i> Red Rock Canyon monkeyflower	BLM 1B.1	This species occurs in sandy canyon washes and Mojavean desert scrub at elevations from 2,198 to 2,755 feet amsl.	March to April/ annual herb	Red Rock Canyon monkeyflower has no CNDDDB records within 5 miles of the pipelines in the study area and is known only historically from the El Paso Mountains.	Although suitable habitat occurs within the study area, no occurrences are on record for Red Rock canyon monkeyflower, as the pipelines within the study area are outside the range of this species. Potentially absent
Plantaginaceae – Plantain Family					
<i>Penstemon albomarginatus</i> white-margined beardtongue	BLM 1B.1	This species occurs in Mojavean desert scrub and creosote bush scrub from 2,100 to 3,490 feet amsl on stabilized desert dunes and on loose, sandy substrates.	March to June/ perennial herb	White-margined beardtongue has multiple recent occurrences in the CNDDDB less than 1 mile from the pipelines in the study area near Lines 300 A and 300 B. These occurrences are concentrated in the vicinity of Pisgah. Two individual plants were observed approximately 0.25 miles northeast of I-40 along Line 300 B during the 2017 focused plant surveys.	This species has recent occurrences documented within 1 mile of the pipelines in the study area. Suitable desert scrub habitat within the range of the species occurs on Lines 300 A and 300 B in the vicinity of Pisgah. Present

Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
<i>Penstemon stephensii</i> Stephens' beardtongue	BLM 1B.3	This species occurs in pinyon-juniper woodland, Mojavean desert scrub, and creosote bush scrub from 3,800 to 6,070 feet amsl. It is often on carbonate, rocky substrates, including slopes, washes, and rock crevices.	April to June/ perennial herb	Stephens' beardtongue has one recent occurrence in the CNPS Inventory located approximately 7 miles from the pipelines in the study area within the Old Woman Springs quadrangle.	Scattered pinyon-juniper woodland habitat occurs within the Old Woman Springs quadrangle and creosote bush scrub habitat occurs throughout the study area. However, carbonate substrates are uncommon in the study area and this species has only one documented occurrence more than 5 miles from the pipelines in the study area. Unlikely to occur
Poaceae (Gramineae) – Grass Family					
<i>Muhlenbergia appressa</i> appressed muhly	2B.2	This species occurs in coastal sage scrub, Mojavean desert scrub, creosote bush scrub, and valley and foothill grassland from 60 to 5,250 feet amsl. It is often on rocky substrates, and in open canyon bottoms or on rocky slopes.	April to May/ annual herb	Appressed muhly has one recent occurrence in the CNDDDB less than 1 mile from Line 313 in the Ord Mountain quadrangle.	A single recent occurrence of this species has been documented less than 1 mile east of Line 313 in the study area. Suitable habitat, including creosote bush scrub, bedrock cliffs and outcrops, occur throughout the study area. Potential to occur
<i>Poa atropurpurea</i> San Bernardino blue grass	1B.2	This species occurs in meadows and seeps, and sometimes in mesic conditions at elevations from 4,460 to 8,060 feet amsl.	May to July/ perennial grass	San Bernardino blue grass has several recent occurrences in the CNPS Inventory approximately 5 miles south of Line 313 in the San Bernardino Mountains, at elevations above 4,500 feet amsl.	No suitable habitat is located within the study area. The recent occurrences of this species are outside the elevation range of the majority of pipelines in the study area. Potentially absent
<i>Puccinellia parishii</i> Parish's alkali grass	BLM 1B.1	This species occurs in Joshua tree woodland, wetland, and riparian habitats from 2,290 to 3,290 feet amsl. It occurs almost always under natural conditions in wetlands. It is often in meadows, springs, and seeps, including alkaline or mineral springs and seeps.	April to May/ annual herb	Parish's alkali grass has several recent occurrences in the CNPS Inventory approximately 6 miles from the pipelines in the study area in the Lucerne Valley quadrangle.	Little to no suitable meadow/seep microhabitat for this species exists within 5 miles of the pipelines in the study area. The most recent occurrences are more than 5 miles from the study area in Lucerne Valley. Unlikely to occur
<i>Sphenopholis obtusata</i> prairie wedge grass	2B.2	This species occurs in mesic areas in cismontane and foothill woodlands from 980 to 6,560 feet amsl. It occurs in seeps and ponds, and wetland-riparian habitats, including wet meadows and streambanks.	April to July/ perennial herb	Prairie wedge grass has one recent occurrence in the CNPS Inventory located approximately 11 miles from pipelines in the study area in the Rattlesnake Canyon quadrangle.	There is little to no suitable wetland habitat in the study area and the recent occurrence is more than 10 miles from the pipelines in the study area. Unlikely to occur
Polemoniaceae – Phlox Family					
<i>Aliciella ripleyi</i> Ripley's aliciella	2B.3	This species occurs in Mojavean desert scrub and creosote bush scrub on carbonate substrates and limestone cliffs from 1,000 to 6,400 feet amsl.	May to July/ perennial herb	Ripley's aliciella has no recent CNDDDB occurrences within 5 miles of the pipelines in the study area. One historic occurrence is located within 0.25 miles, east of Line 311 in the Westend quadrangle.	Suitable carbonate/limestone substrates are uncommon in the study area and there are no recent occurrences of this species within 5 miles. Further, developed land is associated with the historic observation location. Unlikely to occur
<i>Eriastrum harwoodii</i> Harwood's eriastrum	BLM 1B.2	This species occurs in Mojave creosote bush scrub on sand dunes from 410 to 3,010 feet amsl. It is usually in desert dune habitats.	March to June/ annual herb	Harwood's eriastrum has one recent occurrence in the CNPS Inventory approximately 10 miles from the pipelines in the study area east of the Broadwell Lake quadrangle.	This species has one recent occurrence more than 5 miles north of Line 300 A in the study area. Mojave creosote bush scrub habitat occurs throughout the study area; however, desert dune microhabitat to support this species is not prevalent. Unlikely to occur

Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
<i>Linanthus killipii</i> Baldwin Lake linanthus	1B.2	This species occurs in Joshua tree woodland and pinyon–juniper woodland from 5,577 to 7,874 feet amsl. It is found in dry openings, alkaline meadows, alkaline seeps, and pebble plains habitats.	May to July/ annual herb	Baldwin Lake linanthus has one recently documented occurrence in the CNDDDB within 1 mile of the pipelines in the study area, and two documented occurrences within 5 miles, located south of Line 313 in the San Bernardino Mountains at elevations greater than 4,500 feet.	Little to no suitable woodland habitat is located within the study area. Although there is one recent occurrence within 1 mile of the pipelines in the study area, this could be considered an anomaly as the general elevation requirements of this species are higher than the locations of pipelines in the study area. Unlikely to occur
<i>Linanthus maculatus</i> ssp. <i>maculatus</i> little San Bernardino Mountains linanthus	BLM 1B.2 DRECP	This species occurs in Joshua tree woodland, Mojavean desert scrub, and Sonoran desert scrub from 460 to 4,000 feet amsl. It is found in sandy soils in desert dunes, and sandy washes and flats.	March to May/ annual herb	No occurrences for Little San Bernardino Mountains linanthus exist in the CNDDDB within 5 miles of the study area. This species is included in this analysis due to its inclusion in the DRECP.	Limited desert dune habitat to support this species occurs within the central study area near Barstow. However, there are no documented occurrences of this species within 5 miles of the pipelines in the study area. Unlikely to occur
<i>Linanthus orcuttii</i> Orcutt’s linanthus	BLM 1B.3	This species occurs in chaparral, lower montane coniferous forest, pinyon-juniper woodland, and desert scrub from 3,000 to 7,040 feet amsl. It is usually found in openings.	May to June/ annual herb	No CNDDDB occurrences for Orcutt’s linanthus exist within 5 miles of the pipelines in the study area. There is one recently documented occurrence in the CNPS Inventory that is approximately 12 miles south of the study area, within the San Bernardino Mountains.	Suitable habitat that could support this species can be found within the Rattlesnake Canyon quadrangle in the study area. However, the single occurrence is more than 10 miles from the pipelines in the study area. Unlikely to occur
<i>Navarretia peninsularis</i> Baja navarretia	1B.2	This species occurs in chaparral, lower montane coniferous forest, yellow pine forest, and pinyon-juniper woodland from 4,920 to 7,550 feet amsl. It is often in mesic areas or wet areas in open forest. It is also found in meadows, seeps, and riparian areas but is equally likely to occur in wetlands and non-wetlands.	June to August, sometimes as early as May/ annual herb	Baja navarretia has several recent occurrences in the CNDDDB within 5 miles of the pipelines in the study area, located south of the southern terminus of Line 313 in the San Bernardino Mountains.	Suitable habitat for this species is absent from the study area and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
<i>Phlox dolichantha</i> Big Bear Valley phlox	1B.2	This species occurs in pebble-plains and openings within red fir and yellow pine forests on sloping hillsides, in shaded pine and oak understories with heavy pine litter, from approximately 6,496 to 9,202 feet amsl.	May to July/ perennial herb	Big Bear Valley phlox has several recent occurrences in the CNDDDB less than 5 miles from the study area, located within the San Bernardino Mountains at an elevation over 4,500 feet.	Suitable montane habitat for this is absent from the study area. The elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
<i>Saltugilia latimeri</i> Latimer’s woodland-gilia	BLM 1B.2	This species occurs in chaparral, Mojavean desert scrub, and pinyon-juniper woodland from 1,310 to 6,240 feet amsl. It occurs on dry desert slopes, sometimes in washes, and in coarse sand to rocky substrates that are often granitic.	March to June/ annual herb	Latimer’s woodland-gilia is known from fewer than 20 occurrences and has few recent collections. This species has no recent occurrences in the CNDDDB within 5 miles of the pipelines in the study area. The closest historic occurrence is approximately 1.5 miles southeast of Line 313 in the San Bernardino Mountains.	There are no recent occurrences of this species documented within 5 miles of the pipelines in the study area. However, suitable desert scrub habitat occurs throughout the study area and pinyon-juniper woodland habitat occurs at the southern terminus of Line 313 and the western terminus of Lines 300 A and 300 B. Unlikely to occur
Polygalaceae – Milkwort Family					
<i>Polygala acanthoclada</i> thorny milkwort	2B.3	This species occurs in desert scrub, shadscale scrub, chenopod scrub, Joshua tree woodland, and pinyon–juniper woodland from 2,490 to 7,500 feet amsl. It is often found on slopes in loose, sandy, or gravelly soil.	May to August/ perennial shrub	Thorny milkwort has two recent occurrences in the CNPS Inventory more than 5 miles from the study area, located in Johnson Valley near Melville Lake. There are two additional historic occurrences closer to the study area near Old Woman Springs, but they are also more than 5 miles from the pipelines in the study area.	Scattered suitable shadscale scrub habitat occurs throughout the study area and pinyon-juniper woodland habitat occurs at the southern terminus of Line 313 and west of Lines 300 A and 300 B. However, no recent or historic occurrences have been documented within 5 miles of the pipelines in the study area. Unlikely to occur

Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
<i>Polygala intermontane</i> intermountain milkwort	2B.1	This species occurs within pinyon and juniper woodlands at elevations ranging from 3,050 to 10,140 feet amsl.	June to July/ perennial herb	Intermountain milkwort has two recent occurrences documented in the CNDDDB, located less than 5 miles from Line 313 in the study area.	Suitable pinyon-juniper woodland habitat occurs at the southern terminus of Line 313 and the western terminus of Lines 300 A and 300 B. Many occurrences of this species were recently documented approximately 3 miles east of Line 313. Potential to occur
Polygonaceae – Buckwheat Family					
<i>Acanthoscyphus parishii</i> var. <i>goodmaniana</i> Cushenbury oxytheca	FE 1B.1	This species occurs in pinyon-juniper woodland from 3,990 to 7,800 feet amsl. It is usually found on sandy substrates, and sometimes in carbonate or talus soils.	May to October/ annual herb	Cushenbury oxytheca has multiple recently documented occurrences in the CNDDDB within 5 miles of the pipelines in the study area; several of which are within 1 mile. The closest occurrence is less than 1 mile southeast of Line 313.	There is some suitable habitat for this species near the southern terminus of Line 313 and the western terminus of Lines 300 A and 300 B. The majority of the study area is located outside the elevation range of the species. Several recent CNDDDB occurrences have been documented within one and 5 miles of Line 313. Potential to occur
<i>Chorizanthe xanti</i> var. <i>leucotheca</i> white-bracted spineflower	BLM 1B.2	This species occurs in coastal scrub, Mojavean desert scrub, creosote bush scrub, and pinyon-juniper woodland from 980 to 3,940 feet amsl. It is often in alluvial fans, and in sandy or gravelly substrates.	April to June/ annual herb	The closest occurrence of white-bracted spineflower to the study area is a historic record in the CNPS, located in the Old Woman Springs area approximately 9 miles east of Line 313.	Although there is suitable habitat throughout the study area, the closest occurrence of this species was documented over 75 years ago more than 5 miles away. Potentially absent
<i>Eriogonum evanidum</i> vanishing wild buckwheat	1B.1	This species occurs on sandy or gravelly soils in chaparral, cismontane woodland, lower montane coniferous forest, and pinyon and juniper woodland from 3,600 to 7,300 feet amsl.	July to October/ annual herb	Vanishing wild buckwheat has several recent occurrences in the CNDDDB within 5 miles of the southern terminus of Line 313, in the San Bernardino Mountains at elevations greater than 4,500 feet.	The study area is located outside the range for this species. Little to no suitable habitat for this species occurs in the study area, and the elevation requirements of this species are higher than the majority of pipeline locations in the study area. Potentially absent
<i>Eriogonum kennedyi</i> var. <i>austromontanum</i> southern mountain buckwheat	FE 1B.2	This species occurs in pebble-plains among yellow pine coniferous forests at elevations ranging from 5,250 to 9,975 feet amsl.	June to September/ perennial herb	Southern mountain buckwheat has several recent occurrences in the CNDDDB. All records are located within the Big Bear area within the San Bernardino Mountains at elevations above the study area range.	No suitable habitat for this species occurs within 5 miles of the study area, and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent
<i>Eriogonum kennedyi</i> var. <i>pinicola</i> Kern buckwheat	BLM 1B.1	This species occurs in chaparral and pinyon-juniper woodland in clay soils and from 4,400 to 6,400 feet amsl.	May to July/ perennial herb	Kern buckwheat has several recently documented occurrences in the CNPS Inventory more than 5 miles from the pipelines in the study area. The observations are located in the Tehachapi and Sierra Nevada Mountains.	Although scattered pinyon-juniper habitat exists at the southern terminus of Line 313 and the western terminus of Line 300 B, all documented occurrences are more than 5 miles from the pipelines in the study area. In addition, the elevation requirements of this species are higher than the majority of pipeline locations in the study area. Potentially absent
<i>Eriogonum microthecum</i> var. <i>johnstonii</i> Johnston’s buckwheat	1B.3	This species occurs in lodgepole, subalpine, and red fir forest at elevations ranging from 7,185 to 9,710 feet amsl.	July to September	Johnston’s buckwheat has two recent occurrences within 5 miles of the southern terminus of Line 313 in the San Bernardino Mountains near Big Bear, at elevations above 4,500 feet.	There is no suitable montane habitat for this species within the study area, and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent

Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
<i>Eriogonum ovalifolium</i> var. <i>vineum</i> Cushenbury buckwheat	BLM FE 1B.1	This species occurs in Joshua tree woodland, Mojavean desert scrub, and pinyon–juniper woodland from 4,590 to 8,010 feet amsl. It is often on carbonate substrates, gravel, or rocks.	May to August/ perennial herb	Cushenbury buckwheat has many recent occurrences within 5 miles of the pipelines in the study area. Four of these occurrences were documented less than 1 mile east of the southern terminus of Line 313. The remaining occurrences are located in the San Bernardino Mountains.	Suitable pinyon-juniper woodland habitat for this species occurs at the southern terminus of Line 313 and the western terminus of Lines 300 A and 300 B. Several recently documented occurrences have been documented less than 1 mile from Line 313. However, the elevations of the pipelines in the study area are lower than the elevations in which this species occurs. Unlikely to occur
Ranunculaceae – Buttercup Family					
<i>Delphinium recurvatum</i> recurved larkspur	BLM 1B.2	This species occurs in chenopod scrub, cismontane woodland, and valley and foothill grassland from 10 to 2,590 feet amsl. It is often in poorly drained, fine, and alkaline soils.	March to June/ perennial herb	Recurved larkspur has several historic occurrences in the CNDDB within 1 mile of Lines 300 A and 300 B, northwest of Edwards Air Force Base.	Suitable habitat for this species is absent from the study area, and there are no recent occurrences of this species documented within 5 miles of the pipelines in the study area. Potentially absent
Rosacea – Rose Family					
<i>Ivesia argyrocoma</i> var. <i>argyrocoma</i> silver-haired ivesia	1B.2	This species occurs in alkaline meadows, seeps, and pebble-plains in upper montane coniferous forests at elevations from 6,725 to 8,300 feet amsl.	June to August/ perennial herb	Silver-haired ivesia has several recent occurrences in the CNDDB within 5 miles of the pipelines in the study area. All of these are located in the San Bernardino Mountains. The nearest record is 2.4 miles south of the southern terminus of Line 313 at elevations above 4,500 feet.	The study area is located outside of the narrow range of this species. Suitable habitat is absent from the study area, and the elevation requirements of this species are much higher than the locations of pipelines in the study area. Potentially absent
<i>Rosa woodsii</i> var. <i>glabrata</i> Cushenbury rose	1B.1	This species occurs in springs in desert scrub habitat from 2,986 to 4,708 feet amsl.	May to June/ perennial shrub	Cushenbury rose has only two known extant occurrences in the CNPS, and both are historic. The closest occurrence is located approximately 1 mile west of the southern portion of Line 313.	Suitable habitat (spring) for Cushenbury rose is absent from the study area and no recent occurrences have been recorded within 5 miles of the pipelines in the study area. Potentially absent
Saxifragaceae – Saxifrage Family					
<i>Heuchera parishii</i> Parish’s alumroot	1B.3	This species occurs in alpine boulder and rock field, lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest often on rocky, and sometimes carbonate substrates at elevations from 4,920 to 12,470 feet amsl.	June to August/ perennial herb	Parish’s alumroot has several historic documented occurrences in the CNDDB within 5 miles of the study area, however they are located in the San Bernardino Mountains at elevations over 4,500 feet.	No suitable montane habitat for this species occurs within the study area. The range of this species is outside the elevation range of the pipelines in the study area. Potentially absent
Simaroubaceae – Quassia or Simarouba Family					
<i>Castela emoryi</i> Emory’s crucifixion-thorn	2B.2	This species is found in Mojave creosote bush scrub in harsh and dry desert regions from 290 to 2,380 feet amsl. It occurs in gravelly washes, and on slopes and desert plains.	April to October/ perennial deciduous shrub	Emory’s crucifixion-thorn has multiple recently documented occurrences in the CNDDB within 5 miles of the pipelines in the study area near Lines 300 A and 300 B. Many of these occurrences are within 1 mile. In 2017, one Emory’s crucifixion-thorn was documented approximately 30 feet west of a project component (e.g., T-1228 M Test head) just west of the community of Ludlow where I-40 crosses Lines 300 A and 300 B.	There are recent occurrences of this species within 1 mile of Lines 300 A and 300 B and one observed occurrence from field surveys in 2017. Suitable creosote bush scrub habitat occurs throughout the study area. Present

Table 4.4-2. Special-Status Plant Species Possibility of Occurrence in the Study Area

Species Name	Federal, State, and CNPS Status	Habitat Requirements	Flowering Phenology/ Life Form	Known Locations	Possibility of Occurrence
Solanaceae – Nightshade Family					
<i>Physalis lobata</i> lobed ground-cherry	2B.3	This species occurs in Mojavean desert scrub, creosote bush scrub, and alkali sinks from 1,640 to 2,630 feet amsl. It occurs on desert playas and dry lake margins and sometimes occurs in decomposed granite or granitic soils.	September to January, sometimes as early as May/ perennial herb	Lobed ground-cherry has one recently documented occurrence in the CNDDDB, located less than 2 miles north of Lines 300 A and 300 B in Homer Wash in Ward Valley.	Suitable desert scrub habitat occurs throughout the study area. This species has been recently documented less than 2 miles north of Lines 300 A and 300 B. Potential to occur
Themidaceae – Brodiaea Family					
<i>Androstephium breviflorum</i> small-flowered androstephium	2B.2	Small-flowered androstephium occurs in Mojavean desert scrub and creosote bush scrub of bajadas from 720 to 2,630 feet amsl. It is often in open areas of desert scrub on loose sandy to rocky soil, and on desert dunes.	March to April/ perennial bulbiferous herb	Small-flowered androstephium has many recent CNDDDB occurrences documented within 5 miles of the pipelines in the study area, and multiple occurrences are within 0.25 miles of Lines 300 A and 300 B. All of the records are located within an approximately 10-mile radius of Pisgah Crater. Six plants were observed at three locations along the Line 300 A and 300 B alignments during the 2017 focused plant surveys.	The study area is located within the range of small-flowered androstephium and there are recent observations within 0.25 miles of Lines 300 A and 300 B in the study area. Portions of the study area in the vicinity of Pisgah Crater that have loose sand (including access roads) have a high potential to support this species. Present
Violaceae Family – Violet Family					
<i>Viola pinetorum</i> ssp. <i>grisea</i> grey-leaved violet	1B.3	This species occurs in lodgepole, subalpine, and red fir forests within meadows and seeps at elevations from 5,315 to 10,270 feet amsl.	April to July/ perennial herb	Grey-leaved violet has only one occurrence documented in the CNDDDB within 5 miles of pipelines in the study area. This record is over 100 years old and is from a non-specific location in the San Bernardino Mountains, over 2 miles south of the southern terminus of Line 313.	The study area is located at the outer edge of this species’ range. Suitable mesic montane habitat is absent from the study area and the elevation requirements of this species are higher than the locations of pipelines in the study area. Potentially absent

Source: CNPS 2016.

Notes: CNPS = California Native Plant Society; amsl = above mean sea level; CNDDDB = California Natural Diversity Database; I = Interstate.

^a For the purposes of this table, “recent” means within the past 25 years.

^b For the purposes of this table, “historic” means older than the past 25 years.

Status Definitions:

Federal

FE: federally listed as endangered

FT: federally listed as threatened

BLM: species considered to be special status or sensitive by BLM

State

SE: state listed as endangered

SC: state candidate for listing

CNPS California Rare Plant Ranks:

1B: Plants rare, threatened, or endangered in California and elsewhere

2A: Plants presumed extirpated in California, but common elsewhere

2B: Plants rare, threatened, or endangered in California, but more common elsewhere

4: Watch List: Plants of limited distribution

CRPR Threat Ranks:

.1: Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)

.2: Moderately threatened in California (20% to 80% of occurrences threatened/moderate degree and immediacy of threat)

.3: Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

Other:

DRECP: Desert Renewable Energy Conservation Plan covered species

Table 4.4-3. Special-Status Wildlife Species Possibility of Occurrence in the Study Area

Species Name	Listing Status	Habitat/Life History	Known Locations	Possibility of Occurrence
Amphibians				
<i>Anaxyrus californicus</i> arroyo toad	FE SSC	Arroyo toad ranges between Monterey County and Baja California, Mexico; coastally in some areas, and inland into Los Angeles, San Bernardino, Riverside, and San Diego counties. This species inhabits sandy riverbanks, washes, and arroyos, especially in riparian areas. Habitat for this species may include mulefat (<i>Baccharis salicifolia</i>), willow (<i>Salix</i> spp.), cottonwood (<i>Populus</i> sp.), sycamores (<i>Platanus racemosa</i>), and/or coast live oak (<i>Quercus agrifolia</i>). Arroyo toad has very specialized habitat needs, which include exposed sandy, stable streamsides for burrowing; scattered vegetation for shelter; and quiet water or pools free of predatory fishes with sandy or gravel bottoms without silt for breeding.	Arroyo toad has no recent CNDDDB occurrences documented within 5 miles of the pipelines in the study area. This species has historic CNDDDB occurrences within 0.25 miles and 1 mile of the pipelines in the study area. These occurrences are located along the Mojave River near Line 314.	While this species has been documented within 0.25 miles of the pipelines in the study area along the Mojave River, these occurrences are more than 35 years old. In addition, only limited suitable habitat for this species is present near the southern portion of the study area near Line 314. Unlikely to occur
<i>Batrachoseps stebbinsi</i> Tehachapi slender salamander	BLM ST DRECP	Tehachapi slender salamander is endemic to California and reported to occur only in Kern County typically at an elevation range of 2,500 to 8,300 feet amsl. This species inhabits moist canyons and ravines in oak and mixed woodlands. Reproduction occurs terrestrially, typically under moist surface objects.	Tehachapi slender salamander has no recent or historic documented CNDDDB occurrences within 5 miles of the pipelines in the study area. The closest known record for this species is located approximately 25 miles northwest of Lines 300 A and 300 B.	The study area is not located within the range of this species. No suitable habitat for this species occurs within the study area. Unlikely to occur
<i>Rana draytonii</i> California red-legged frog	FT SSC	California red-legged frog is endemic to California and northern Baja California. The species is typically found in lowlands and foothills in or near permanent sources of deep-water pools and streams, or in freshwater marsh, usually with dense, shrubby, or emergent wetland/riparian vegetation.	No recent CNDDDB occurrences of California red-legged frog have been documented within 5 miles of the pipelines in the study area. Historic CNDDDB occurrences have been documented within 0.25 miles, 1 mile, and 5 miles of the pipelines in the study area. These occurrences are located along the Mojave River near Line 314.	The study area occurs at the eastern edge of the species' range. No recent CNDDDB occurrences have been documented within 5 miles of the pipelines in the study area. Limited aquatic habitat with permanent or nearly permanent water for this species is present within the study area near Line 314. Unlikely to occur
<i>Rana muscosa</i> southern mountain yellow-legged frog	FE SE	Southern mountain yellow-legged frog is found in aquatic habitats, rocky streams in narrow canyons, and in chaparral habitats typically no more than a few feet from water.	Southern mountain yellow-legged frog has one recent documented CNDDDB occurrence within 5 miles of the study area, located in the San Bernardino Mountains near Big Bear Lake. The occurrence is more than 4 miles south of the southern terminus of Line 313.	The study area is located within the range of this species. However, there is no suitable aquatic habitat near the pipelines in the study area. One documented occurrence of this species exists within 5 miles of the study area, but this population is considered extirpated. Unlikely to occur
Reptiles				
<i>Charina umbratica</i> southern rubber boa	ST	The southern rubber boa is found in streams, meadows, and seeps within riparian forest/woodlands, upper montane coniferous forest, and wetlands of the San Bernardino and San Joaquin Mountains.	Southern rubber boa has several recent documented CNDDDB occurrences within 0.25 miles, 1 mile, and 5 miles of the pipelines in the study area. These occurrences are located near the southern terminus of Line 313.	The study area is located within the range of this species. However, there is limited stream, meadow, or seep habitat within the study area near Line 313. Unlikely to occur
<i>Emys marmorata</i> western pond turtle	BLM SSC	This species is found throughout California, west of the Sierra–Cascade crest. It is absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries. It occurs in aquatic habitat with permanent or nearly permanent water in a wide variety of habitat types. Western pond turtle requires basking sites within aquatic habitat, such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks. This species is typically found at elevations below 4,700 feet amsl.	Western pond turtle has several recent documented occurrences in the CNDDDB within 5 miles of the pipelines in the study area. Two of these occurrences are possibly extirpated.	Two occurrences of this species (presumed to be extant) were documented within 5 miles of Line 314, along the Mojave River. However, limited aquatic habitat with permanent or nearly permanent water for this species is present within the study area near Line 314. Unlikely to occur

Table 4.4-3. Special-Status Wildlife Species Possibility of Occurrence in the Study Area

Species Name	Listing Status	Habitat/Life History	Known Locations	Possibility of Occurrence
<i>Lampropeltis zonata parvirubra</i> California mountain kingsnake (San Bernardino population)	BLM	California mountain kingsnake is found in diverse habitats, including coniferous forest, oak-pine woodlands, riparian woodland, chaparral, manzanita, and coastal sage scrub in well-lit canyons or rocky outcrops. This species has also been identified within shaded canyon bottoms, typically vegetated by singleleaf pinyons (<i>Pinus monophylla</i>) or canyon oaks (<i>Quercus chrysolepis</i>). This species prefers wooded areas near a stream with rock outcrops, and talus or rotting logs that are exposed to the sun.	California mountain kingsnake has one recent CNDDDB occurrence within 5 miles of the pipelines in the study area. This occurrence is located over 4 miles southwest of the southern terminus of Line 313 near the San Bernardino Mountains.	The study area is located within the range of this species. However, there is limited woodland habitat with rocky outcrops within the study area near Line 313. Unlikely to occur
<i>Gopherus agassizii</i> desert tortoise (Mojave population)	FT ST SC(E) DRECP	Desert tortoise inhabits a variety of habitats, including sandy flats, rocky foothills, alluvial fans, washes, and canyons with sandy or gravelly soils. Soils must be loose for den construction, but firm enough that the dens do not collapse. Desert tortoises occur at elevations ranging from below sea level to 7,300 feet amsl, but optimal habitat exists between 1,000 and 3,000 feet amsl. This species ranges from southwestern Utah and southern Nevada through southeastern California and southwestern Arizona and into northern Mexico.	Desert tortoise has numerous documented CNDDDB occurrences within 5 miles of the pipelines in the study area. A majority of these occurrences are documented within 0.25 miles of the pipelines in the study area. In addition, desert tortoise has been documented in the study area during monitoring for O&M activities. Sixteen signs of desert tortoise (e.g., burrows, scat, and remnants) were identified in 2017 during focused surveys from the community of Newberry Springs to the community of Essex (Circle Mountain 2017a). Three signs of desert tortoise (e.g., scat, bones, and carapace fragments) were identified in 2017 during surveys conducted from the community of Boron to the City of Ridgecrest along Line 311. Three signs of desert tortoise (e.g., scat and carapace fragments) were identified in 2017 during surveys conducted east of the community of Kramer Junction along Line 300 B (Circle Mountain 2017b). The study area also crosses critical habitat designated for desert tortoise.	Numerous occurrences of this species have been documented within 0.25 miles of the study area. Suitable habitat with soils suitable for den construction occurs within the study area. In addition, the study area is located within vegetation communities that support desert tortoise, including Mojave creosote bush scrub, desert saltbush scrub, desert sink scrub, desert greasewood scrub, shadscale scrub, and Joshua tree woodland. In addition, desert tortoise or signs of desert tortoise have been documented in the study area during monitoring for O&M activities and focused species surveys. Present
<i>Phrynosoma blainvillii</i> Blainville's (coast) horned lizard	BLM SSC	Blainville's (coast) horned lizard is found in the Sierra Nevada foothills from Butte County to Kern County and throughout the central and southern California coast. It occurs in valley-foothill hardwood, coniferous woodland, riparian woodland, pine-cypress woodland, juniper woodland, and annual grassland habitats. This species inhabits open country, especially sandy areas, washes, floodplains, and windblown deposits. It typically forages on the ground in open areas, usually between shrubs, and is typically found at elevations up to 6,000 feet amsl.	Blainville's (coast) horned lizard has one recent CNDDDB occurrence documented within 5 miles of the pipelines in the study area. This occurrence is located over 4 miles south of the southern terminus of Line 313. Additionally, there are historic records documented within 1 and 5 miles.	The study area is not located within the range of this species. No suitable habitat for this species occurs within the study area. Potentially absent
<i>Phrynosoma mcallii</i> flat-tailed horned lizard	BLM SSC DRECP	Flat-tailed horned lizard is found throughout central Riverside, eastern San Diego, and Imperial Counties. This species is most likely to occur in areas of creosote bush and scrub habitats, and is found throughout desert scrub, wash, succulent shrub, and alkali scrub habitats. Fine sand is a critical habitat element for this species, as it burrows into the sand to avoid predators and extreme temperatures. Ants are the most commonly foraged food item by this species.	Flat-tailed horned lizard has no recent or historic CNDDDB occurrence records within 5 miles of the pipelines in the study area. The closest known occurrence of this species is located in the western region of the Salton Sea and approximately 100 miles south of the central portion of Line 300 B.	The study area is not located within the range of this species. No suitable habitat for this species occurs within the study area. Potentially absent
<i>Uma scoparia</i> Mojave fringe-toed lizard	BLM SSC DRECP	Mojave fringe-toed lizard is a habitat specialist that occupies only areas with windblown (aeolian) sand, including both large and small dunes, margins of dry lakebeds and washes, and isolated pockets against hillsides. This species is endemic to the deserts of Los Angeles, Riverside, and San Bernardino Counties in California and La Paz County in Arizona.	Mojave fringe-toed lizard has numerous historic and recent documented CNDDDB occurrences within 1 and 5 miles of the pipelines in the study area. The majority of these occurrences are located in the general vicinity around Pisgah Crater near Lines 300 A and 300 B.	Suitable habitat for Mojave fringe-toed lizard occurs in the study area and recent occurrences have been documented within 1 mile. This species is most likely to occur near Lines 300 A and 300 B between Newberry Springs and Amboy. Likely to occur

Table 4.4-3. Special-Status Wildlife Species Possibility of Occurrence in the Study Area

Species Name	Listing Status	Habitat/Life History	Known Locations	Possibility of Occurrence
Fish				
<i>Cyprinodon macularius</i> desert pupfish	FE SE DRECP	Desert pupfish is currently found in small, isolated populations in the Salton Sea Watershed of California. This species is highly adaptable to fluctuating water temperatures and favors warm, calm waters. Spawning occurs only when water temperature exceeds 20°C (68°F).	Desert pupfish has no recent or historic CNDDDB occurrences within 5 miles of the pipelines in the study area. This species is restricted to small, isolated populations in the Salton Sea Watershed of California.	The study area is not located within the range of this species. No suitable habitat for this species occurs within the study area. Potentially absent
<i>Cyprinodon radiosus</i> Owens pupfish	FE SE DRECP	Owens pupfish historically occurred in the Owen’s River spring pools, sloughs, irrigation ditches, swamps, and flooded pastures of the Owens Valley from Fish Slough in Mono County to Lone Pine in Inyo County, but is currently restricted to five populations in the Owens Valley. This species inhabits warm, clear, shallow water with softer substrates for spawning.	Owens pupfish has no recent or historic documented occurrences in the CNDDDB within 5 miles of the pipelines in the study area. This species is currently restricted to five populations in the Owens Valley.	The study area is not located within the range of this species. No suitable habitat for this species occurs within the study area. Potentially absent
<i>Gila elegans</i> bonytail chub	FE SE	Bonytail chub is a fish endemic to the Colorado River Basin, but it was extirpated from most of its historic range prior to extensive fishery surveys. As a result, limited information regarding suitable habitat for bonytail chub is available. Within the lower Colorado River system, this species occupies the reach from Davis Dam to Lake Havasu and artificial impoundments.	Bonytail chub has one recent documented occurrence in the CNDDDB within 1 mile east of Lines 300 A and 300 B in Lake Havasu. In addition, eight individual bonytail chub were captured and released in the Lower Colorado River in Park Moabi, which is immediately adjacent to the eastern portion of the study area. Line 300 A within the Colorado River crosses critical habitat designated for this species.	Although the eastern terminus of the study area abuts the Colorado River and Line 300 A crosses Colorado River, no suitable aquatic habitat for this species occurs within the study area. Potentially absent
<i>Ptychocheilus lucius</i> Colorado pikeminnow	FE SE FP	Colorado pikeminnow, formerly referred to as the Colorado squawfish, occurs in the warm, swift waters of the big rivers that constitute the Colorado Basin. Adults inhabit pools and eddies just outside the main current. There are few known locations of wild populations of the Colorado pikeminnow, none of which are in California.	Colorado pikeminnow has no recent CNDDDB occurrences within 5 miles of the pipelines in the study area. Colorado pikeminnow has one historic documented occurrence in the CNDDDB within 5 miles of the pipelines in the study area. There are few known locations of wild populations of the Colorado pikeminnow, none of which are in California.	The study area is not located within the range of this species. No suitable habitat for this species occurs in the study area. Potentially absent
<i>Siphateles bicolor mohavensis</i> Mohave tui chub	FE SE FP DRECP	The Mohave tui chub occurs in alkaline, mineralized waters; and it is the only fish endemic to the Mojave River basin. This species historically occurred in deep pools, ponds, or slough-like areas of the Mojave River, but is currently found only in highly modified refuge sites within San Bernardino County.	Mohave tui chub has many historic and recent documented occurrences in the CNDDDB within 5 miles of the pipelines in the study area, many of which occur within 0.25 miles. However, most occurrences are considered extirpated.	The study area is not located within the range of this species. No suitable habitat for this species occurs in the study area. Potentially absent
<i>Siphateles bicolor snyderi</i> Owens tui chub	FE SE DRECP	Owens tui chub is endemic to the Owens Basin of Inyo and Mono counties and inhabits low-velocity waters where well-developed beds of aquatic plants, and rocks occur. This species is historically found in Owens Lake, several sites along the Owens River from Long Valley to Lone Pine, tributary streams near the Owens River in Long Valley and Owens Valley, Fish Slough, and irrigation ditches and ponds near Bishop, Big Pine, and Lone Pine.	Owens tui chub has no recent or historic occurrences in the CNDDDB within 5 miles of the pipelines in the study area. The southernmost range for this species is located approximately 30 miles northwest of Line 311 in the City of Ridgecrest.	The study area is not located within the range of this species. No suitable habitat for this species occurs in the study area. Potentially absent
<i>Xyrauchen texanus</i> razorback sucker	FE SE FP	Razorback sucker is a fish endemic to the Colorado River Basin and inhabits a wide variety of habitats, including mainstream channels to backwaters of medium and large streams or rivers, and prefers to live over sand, mud, or gravel bottoms. This species is currently found in small numbers in the Green River, upper Colorado River, and San Juan River Subbasins; lower Colorado River between Havasu Lake and Davis Dam; reservoirs of Lake Mead and Lake Mohave; small tributaries of the Gila River Subbasin (i.e., Verde River, Salt River, and Fossil Creek); and in local areas under intensive management.	Razorback sucker has two recent documented occurrences in the CNDDDB within 1 mile east of Lines 300 A and 300 B.	Although the eastern ends of Lines 300 A and 300 B abut the Colorado River, no suitable aquatic habitat for this species occurs within the study area. Potentially absent

Table 4.4-3. Special-Status Wildlife Species Possibility of Occurrence in the Study Area

Species Name	Listing Status	Habitat/Life History	Known Locations	Possibility of Occurrence
Birds				
<i>Agelaius tricolor</i> tricolored blackbird (nesting colony)	BLM ST DRECP	Tricolored blackbird is a highly colonial species, largely endemic to California and most numerous in the Central Valley region. This species prefers freshwater marsh, swamps, and wetlands with open water.	Tricolored blackbird has several recent documented CNDDDB occurrences within 0.25 miles, 1 mile, and 5 miles of the pipelines in the study area. These occurrences are in the vicinity of the community of Newberry Springs and the City of Victorville near Lines 300 A and 300 B.	Suitable foraging habitat is scattered throughout the study area. However, colonial breeding habitat is absent from the study area due to the lack of aquatic habitat suitable for nesting. Unlikely to occur
<i>Aquila chrysaetos</i> golden eagle	BGEPA BLM FP DRECP	Golden eagle generally inhabits open country, barren areas, rolling foothills, mountain areas, sage–juniper flats, and desert. This species typically nests on secluded cliffs with overhanging ledges and in large trees in open areas. The breeding range extends across the western United States into Canada and Mexico.	Golden eagle has numerous recent documented occurrences in the CNDDDB within 5 miles of the pipelines in the study area. The most recent occurrence of an active nest was within 1 mile of the study area.	There is suitable foraging habitat for golden eagle within the study area. However, nesting habitat consisting of secluded cliffs and large trees are limited within 1 mile of the pipelines in the study area. The most recent occurrence of an active golden eagle nest within 1 mile was documented in 2008. Likely to occur
<i>Asio otus</i> long-eared owl	SSC	Long-eared owl occurs throughout California outside of the Central Valley. This species nests in coniferous, oak, riparian, pinyon–juniper, and desert woodlands. Its habitat requirements include open land for prey, dense areas for cover, and old nests or nesting platforms for breeding.	Long-eared owl has one recent documented occurrence in the CNDDDB within 5 miles of the pipelines in the study area. This occurrence is located north of Line 311.	The study area is located within the breeding range for long-eared owl. Suitable habitat for this species is located within the study area, and this species was documented within 5 miles of the pipelines in the study area. Potential to occur
<i>Athene cunicularia</i> western burrowing owl	BLM SSC DRECP	Western burrowing owl lives in dry, open areas with short grass and no trees. Burrow sites occur in open, dry annual or perennial grasslands, deserts, and scrublands with low-growing vegetation. The species is found across the Mojave and Colorado Deserts of Inyo, eastern Kern, northern Los Angeles, San Bernardino, eastern Riverside, eastern San Diego, and Imperial Counties. It nests in burrows that are often dug by a small mammal, especially the California ground squirrel (<i>Otospermophilus beecheyi</i>). Western burrowing owl is generally found at elevations from 200 to 5,000 feet amsl.	Western burrowing owl has numerous recent and historic documented occurrences in the CNDDDB within 5 miles of the pipelines in the study area. Many of these occurrences were documented within 0.25 miles. One western burrowing owl was documented along the pipelines during surveys conducted from the community of Essex to the community of Newberry Springs in 2017. Scat from western burrowing owl was also documented outside a burrow along the pipelines near the community of Essex. One western burrowing owl was documented in the study area during surveys conducted from the community of Boron to the City of Ridgecrest on Line 311 in 2017. Signs of western burrowing owl included pellets, feathers, whitewash, and use of an old kit fox den.	The study area is located within the breeding range for western burrowing owl. Suitable habitat is present within the study area in the form of dry open areas with mammal burrows. This species has been documented within 0.25 miles of the pipelines in the study area and within the study area. Present
<i>Buteo swainsoni</i> Swainson’s hawk	BLM ST DRECP	Swainson’s hawk breeds in the western United States and Canada and winters in South America. This species breeds in trees within mature riparian forests and oak groves, and in mature roadside trees in close proximity to large, open expanses of suitable foraging habitat. Over 85% of documented Swainson’s hawk nest trees are found in riparian systems; therefore, this habitat type is likely very important. Suitable foraging habitat includes native grassland or lightly grazed dryland pasture, alfalfa and other hay crops, and row crops. Swainson’s hawk does not forage in vineyards, orchards, or cotton fields, because prey is not available in these areas during most of the breeding season.	Swainson’s hawk has no recent CNDDDB occurrences documented within 5 miles of the pipelines in the study area. Two occurrences were documented within 5 miles, but these occurrences are possibly extirpated.	Marginal habitat for nesting Swainson’s hawk occurs in the study area. No extant occurrences of this species were documented within 5 miles of the pipelines in the study area. Unlikely to occur
<i>Charadrius alexandrinus nivosus</i> western snowy plover	FT SSC	Western snowy plover is found along sandy beaches, salt pond levees, and alkali lake shores. It requires sandy, gravelly, or friable substrates for nesting.	Western snowy plover has no recent CNDDDB occurrences documented within 5 miles of the pipelines in the study area. One historic occurrence was documented near the northern terminus of Line 311, at Searles Dry Lake.	Suitable habitat for this species is absent from the study area. The historic occurrence record within 5 miles of the study area was anomalous, as habitat no longer exists at the location of the occurrence. Potentially absent

Table 4.4-3. Special-Status Wildlife Species Possibility of Occurrence in the Study Area

Species Name	Listing Status	Habitat/Life History	Known Locations	Possibility of Occurrence
<i>Charadrius montanus</i> mountain plover	BLM SSC DRECP	Mountain plover occurs in shortgrass prairie habitats or other habitat that is flat and nearly devoid of vegetation. This species is strongly associated with sites of heavy grazing pressure and is attracted to man-made landscapes (e.g., sod farms and cultivated fields) that mimic the natural habitat associations or sites with grassland characteristics (e.g., alkali flats). In the winter and during migration, mountain plovers typically congregate in flocks of up to 1,200 birds. This species does not breed in California, but it is found in California from September to mid-March, with peak numbers occurring from December through February.	Mountain plover has recent and historic CNDDDB occurrences documented within 5 miles of the pipelines in the study area. The recent occurrence was located south of Lines 300 A and 300 B on Edwards Air Force Base.	The study area is located within the wintering range of the mountain plover. There is one recent documented occurrence within 5 miles of the pipelines in the study area, but limited suitable habitat is present. Unlikely to occur
<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	BLM FT SE DRECP	The western subspecies of the yellow-billed cuckoo has disappeared over much of the western United States and now occurs as a rare breeder in California, Arizona, New Mexico, and west Texas. It prefers riparian forests in flood bottoms of larger river systems for nesting. Nests are often placed in willows along streams and rivers, with nearby cottonwoods serving as foraging sites. Requires multistory habitat for foraging.	Western yellow-billed cuckoo has one historic documented occurrence in the CNDDDB within 1 mile of the pipelines in the study area and recent occurrences documented within 5 miles. This species has been documented approximately 3 miles north of Lines 300 A and 300 B in riparian areas near Topock Marsh during focused surveys in 2014 and 2015 and during previous surveys for southwestern willow flycatcher in the same area. However, no nests or nesting behaviors were observed.	Suitable nesting and foraging habitat is absent from the study area, but is located within 1 mile of the eastern ends of Lines 300 A and 300 B. This species has historically been documented within 1 mile and recently documented within 5 miles of this portion of the study area. Unlikely to occur
<i>Empidonax traillii eximius</i> southwestern willow flycatcher	FE SE DRECP	Southwestern willow flycatcher winters in Mexico, Central America, and northern South America. It usually breeds in patchy to dense riparian habitats along streams or other wetlands, near or adjacent to surface water or underlain by saturated soil. Common tree and shrub species comprising nesting habitat include willows, mulefat, box elder (<i>Acer negundo</i>), stinging nettle (<i>Urtica</i> spp.), blackberry (<i>Rubus</i> spp.), cottonwood, arrowweed (<i>Pluchea sericea</i>), tamarisk (<i>Tamarix ramosissima</i>), and Russian olive (<i>Elaeagnus angustifolia</i>). Breeding sites for this species usually consist of dense vegetation with small openings, open water, or shorter/sparser vegetation, creating a mosaic that is not uniformly dense. In almost all cases, slow-moving or still surface water and/or saturated soil is present at or near the breeding sites during wet years. This species has been found at elevations from sea level to over 8,500 feet amsl but is primarily found in lower-elevation riparian habitats. This species breeds from mid-May to late August.	One historic CNDDDB occurrence for southwestern willow flycatcher has been documented within 5 miles of the pipelines in the study area. During annual protocol surveys, this species has been documented in riparian areas near Topock Marsh and Park Moabi Lagoon and within 1 mile north of the eastern ends of Lines 314, 300 A and 300 B. However, no nests or nesting behaviors have been observed, and all observed individuals have been transient. The study area crosses a small portion of critical habitat for this species along the Mojave River near Line 314 and close to the City of Victorville.	Suitable nesting and foraging habitat is absent from the study area, but is located within 1 mile north of the eastern ends of Lines 300 A and 300 B. This species has the potential to occur where the study area crosses the Mojave River and has recently been documented within 1 mile of this portion of the study area. Potential to occur
<i>Grus canadensis tabida</i> greater sandhill crane	BLM ST DRECP	Sandhill crane is primarily found in open grasslands, wet meadows, and freshwater marshes and bogs in the Central Valley, northeastern regions of California, and the southern portion of the Salton Sea. This species is common to agricultural fields during migration. Historically, greater sandhill crane wintered throughout Southern California.	Greater sandhill crane has no recent or historic occurrences in the CNDDDB within 5 miles of the pipelines in the study area. The closest known occurrence of this species is located approximately 20 miles north of the central portion of Line 300 B.	No suitable habitat for this species occurs in the study area, and no recent records were documented within 5 miles of the pipelines in the study area. Although occasional winter transients may occur, the species is known to be present only within a specific area outside of the study area. Potentially absent
<i>Haliaeetus leucocephalus</i> bald eagle	BGEPA BLM FP SE	Bald eagle occurs throughout North America and occurs near lakes, reservoirs, offshore islands, and some rangelands and coastal wetlands in California. This species usually requires large bodies of water or free-flowing rivers with abundant fish and adjacent snags or other perches. Nests are most frequently found in tall tree stands with less than 40% canopy and within 1 mile of a permanent water source. Adult eagles typically return to the same nesting sites, and often to the same nest, year after year.	Bald eagle has no recent CNDDDB occurrences documented within 5 miles of the pipelines in the study area.	Limited suitable habitat for this species occurs in the study area, and no recent records were documented within 5 miles of the pipelines in the study area. Although occasional winter transients may occur within the vicinity of the study area, this species is unlikely to occur in the study area. Unlikely to occur

Table 4.4-3. Special-Status Wildlife Species Possibility of Occurrence in the Study Area

Species Name	Listing Status	Habitat/Life History	Known Locations	Possibility of Occurrence
<i>Icteria virens</i> yellow-breasted chat	SSC	Yellow-breasted chat inhabits streams, creeks, and rivers with dense thickets. This species ranges along the coast of California, excluding the San Francisco Bay Area, and along the Colorado River. Few breeding chats are widely scattered in the Mojave Desert, near the Mojave River in the City of Victorville, in the community of Morongo Valley, and in Cushenbury Springs. In addition, this species may nest in Afton Canyon and Camp Cady.	Yellow-breasted chat has no recent CNDDDB occurrences documented within 5 miles of the pipelines in the study area. Historic CNDDDB occurrences have been documented within 0.25 miles and 5 miles of the pipelines in the study area.	Limited suitable habitat for this species occurs in the study area, and no records have been documented within 5 miles of the pipelines in the study area in the past 25 years. Unlikely to occur
<i>Lanius ludovicianus</i> loggerhead shrike	SSC	Loggerhead shrike is present year-round throughout California. This species typically breeds in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground. Suitable habitats may include oak savannas, open chaparral, desert washes, juniper woodlands, Joshua tree woodlands, and other semi-open areas. Loggerhead shrike requires tall shrubs, trees, fences, or powerlines for hunting perches, nest placement, territorial advertisement, and pair maintenance. This species also requires open areas of short grasses, forbs, or bare ground for hunting. Impaling sites (e.g., sharp, thorny plants, or barbed wire fences) are important for this species to manipulate or store prey.	Loggerhead shrike has numerous recent documented occurrences in the CNDDDB within 5 miles of the pipelines in the study area, one of which was documented within 1 mile north of Lines 300 A and 300 B. Two individual loggerhead shrikes were observed during surveys from the community of Essex to the community of Newberry Springs in 2017. One individual loggerhead shrike was observed during surveys from the community of Boron to the City of Ridgecrest in 2017.	Suitable habitat for this species occurs within the study area for both nesting and foraging, and this species was documented within 1 mile of the pipelines in the study area south of California City. Two occurrences of loggerhead shrike were documented in the study area in 2017. Present
<i>Laterallus jamaicensis coturniculus</i> California black rail	BLM FP DRECP	This species is found in saline, brackish, and freshwater emergent wetlands in the San Francisco Bay area, Sacramento–San Joaquin Delta, coastal Southern California at Morro Bay, the Salton Sea, and the lower Colorado River area. This species prefers tidal emergent wetlands characterized by pickleweed (<i>Salicornia virginica</i>) vegetation and is typically found in the high tidal zones. Its nesting season occurs from March to June.	California black rail has no recent or historic documented occurrences in the CNDDDB within 5 miles of the pipelines in the study area. The closest known occurrence of this species is located approximately 95 miles south of Line 300 B.	The study area is not located within the range of this species. No suitable habitat for this species occurs in the study area. Potentially absent
<i>Pipilo crissalis eremophilus</i> Inyo California towhee	FT SE	Inyo California towhee is a desert species, which inhabits the western and eastern slopes of the southern Argus Mountains in the Mojave Desert. Recently, this species was thought to have expanded its range to the nearby Panamint Range. Suitable nesting and foraging habitat for this species consists of dense riparian vegetation, usually containing willows (<i>Salix</i> spp.), desert olive (<i>Forestiera pubescens</i>), Fremont cottonwood (<i>Populus fremontii</i>), desert baccharis (<i>Baccharis sergiloides</i>), and rubber rabbitbrush (<i>Ericameria nauseosa</i>), and adjacent uplands (usually containing Mojave creosote bush scrub or Mojave mixed woody scrub).	Inyo California towhee has recent documented occurrences in the CNDDDB within 5 miles of the pipelines in the study area.	Although there are documented occurrences of this species within 5 miles of the pipelines in the study area, the known range is restricted to locations that the study area does not cross. Unlikely to occur
<i>Melanerpes uropygialis</i> Gila woodpecker	BLM SE DRECP	Gila woodpecker is a desert species, occurring mainly in desert riparian and desert wash habitats, but also in some orchard–vineyard and urban areas. This species requires suitable sites for nesting cavities, including mature cottonwood trees (<i>Populus</i> sp.), large mesquites or willows, California fan palms (<i>Washingtonia filifera</i>), giant cacti (<i>Carnegiea gigantea</i>), and large snags.	Gila woodpecker has no recent CNDDDB occurrences documented within 5 miles of the pipelines in the study area. This species has historic CNDDDB occurrences within 0.25 miles and 5 miles of the pipelines in the study area.	There are no recent occurrences of this species documented within 5 miles of the pipelines in the study area. In addition, there is very limited suitable nesting habitat and low-quality foraging habitat in the small portion of the study area that crosses the Colorado River. Unlikely to occur

Table 4.4-3. Special-Status Wildlife Species Possibility of Occurrence in the Study Area

Species Name	Listing Status	Habitat/Life History	Known Locations	Possibility of Occurrence
<i>Rallus longirostris yumanensis</i> Yuma Ridgway's rail	FE ST FP DRECP	Yuma Ridgway's rail inhabits heavily vegetated freshwater and brackish marshes. This species breeds from mid-March to July and requires mature stands of cattails (<i>Typha</i> spp.) and bulrush for foraging and nesting. Yuma Ridgway's rail occupies portions of Arizona, California, and Nevada. This species has been documented in the Lower Colorado River from the southern Mexico boundary to the upper end of Lake Mead; in the Virgin River in Nevada; in the lower Gila River from its confluence with the lower Colorado River to the vicinity of the City of Phoenix, Arizona; and in the Imperial Valley/Salton Sea area in California.	Yuma Ridgway's rail has recent documented occurrences in the CNDDDB within 0.25 miles and 5 miles of the pipelines in the study area. These locations are near the eastern end of Lines 300 A and 300 B along the Colorado River.	Suitable foraging and nesting habitat is located adjacent to the study area on the California side of the Colorado River. However, suitable foraging and nesting habitat for this species is not present within the study area. While there is an occurrence of this species documented within 0.25 miles of the pipelines in the study area, this occurrence was documented within a USFWS National Wildlife Refuge. This species is limited to a few areas in California that the pipelines in the study area do not cross. Unlikely to occur
<i>Toxostoma bendirei</i> Bendire's thrasher	BLM SSC DRECP	Bendire's thrasher inhabits relatively open grassland, desert scrub, shrubland, or woodland with scattered shrubs or trees. This species is generally closely associated with plants in the <i>Yucca</i> and <i>Opuntia</i> genera. This species ranges from a small portion of southeastern California and the most southern tip of Nevada into Arizona and Mexico.	Bendire's thrasher has a recent documented occurrence in the CNDDDB within 5 miles of the pipelines in the study area. This occurrence is north of Lines 300 A and 300 B near the Cady Mountains.	Suitable habitat for Bendire's thrasher occurs within the study area, and there is a recent record of this species within 5 miles of the pipelines in the study area. Potential to occur
<i>Toxostoma lecontei</i> Le Conte's thrasher	SSC	Le Conte's thrasher is a desert resident, primarily found in open desert wash, Mojavean or Sonoran Desert scrub, alkali desert scrub, and desert succulent habitats. This species typically nests in dense, spiny shrub or densely branched cactus in desert wash habitat.	Le Conte's thrasher has a recent documented occurrence in the CNDDDB within 0.25 miles of the study area, and numerous occurrences within 5 miles of the study area. One unoccupied nest was observed during surveys conducted from the community of Boron to the City of Ridgecrest in 2017.	Suitable habitat for Le Conte's thrasher exists within the study area and this species was recently documented within 0.25 miles of Line 300 A and east of Lavic Lake. Present
<i>Vireo bellii arizonae</i> Arizona Bell's vireo	BLM SE	Arizona Bell's vireo is subspecies of Bell's vireo, which occurs in California along the Arizona border and is associated with willow thickets with baccharis. Once abundant along the lower reaches of the Colorado River, this species is now a rare summer resident from the area between the Cities of Needles and Blythe.	Arizona Bell's vireo has several recent documented occurrences within 5 miles of the pipelines in the study area. These occurrences are located along the Colorado River near the eastern portion of the study area near Lines 300 A and 300 B. This species was also documented twice in 2005 during surveys for southwestern willow flycatcher within 5 miles of the study area, near Topock Bay.	There is limited suitable nesting habitat for Arizona Bell's vireo located in a small portion of the study area near the eastern end of Lines 300 A and 300 B. This portion of the study area is located within the known summer range of this species. Unlikely to occur
<i>Vireo bellii pusillus</i> least Bell's vireo	FE SE DRECP	Least Bell's vireo is a rare local summer visitor from mid-March to the end of August, and ranges from sea level in coastal areas to 1,500 feet amsl in the interior areas. Least Bell's vireo breeds locally in willow riparian thickets with good overstory and understory vegetation, preferably where flowing water is present. This species typically inhabits structurally diverse woodlands along watercourses, including oak woodlands, mulefat scrub, and cottonwood-willow forests. During the breeding season, this species may forage in adjacent upland habitats. Little is known about this species' winter habitat, but it is not exclusively dependent on riparian woodland during winter. In winter, least Bell's vireos primarily occur in mesquite scrub vegetation in arroyos, but some also use palm groves and hedgerows associated with agricultural fields and rural residential areas. Breeding typically occurs from late March to late September.	Least Bell's vireo has numerous recent documented occurrences in the CNDDDB within 5 miles of the pipelines in the study area. One of these occurrences was documented within 0.25 miles of the study area; however, based on the description of this occurrence, it is actually located approximately 3 miles from the study area in a vegetated regional park.	There are several occurrences of this species within 5 miles of the study area. Limited suitable habitat is present in a small portion in the study area where it crosses the Mojave River. Potential to occur
<i>Toxostoma crissale</i> crissal thrasher	SSC	Crissal thrasher inhabits desert washes, riparian thickets, brushy plains, foothill scrub, and occasionally pinyon-oak-juniper woodlands where there is a shrubby understory. This species ranges from a small portion of southeastern California and the most southern tip of Nevada into Arizona and Mexico.	Crissal thrasher has no recent CNDDDB occurrences documented within 5 miles of the pipelines in the study area. There is one historic documented occurrence in the CNDDDB within 5 miles of the pipelines in the study area.	Limited suitable habitat may be present in the study area. However, no recent records of this species were documented within 5 miles of the pipelines in the study area. Unlikely to occur

Table 4.4-3. Special-Status Wildlife Species Possibility of Occurrence in the Study Area

Species Name	Listing Status	Habitat/Life History	Known Locations	Possibility of Occurrence
Mammals				
<i>Antrozous pallidus</i> pallid bat	BLM SSC DRECP	Pallid bat inhabits deserts, grasslands, shrublands, woodlands, and forests. It is generally found in the Sonoran life zone, at elevations from 100 to 7,000 feet amsl. It is most commonly found in open, dry habitats with rocky areas for roosting. The species roosts in rocky outcrops; snags; and abandoned, man-made structures. Pallid bat mating may occur as early as October and continues through February.	There are recent CNDDDB occurrences documented within 5 miles of the pipelines in the study area. Six pallid bats were mist-netted and one roost site was identified at Bat Cave Wash approximately 0.2 miles south of Line 300 A during spring focused bat surveys for the Topock Compressor Station Groundwater Remediation Project in 2015 (PG&E 2015).	Suitable habitat for foraging and roosting pallid bats is present within the study area. Two CNDDDB records were documented within 5 miles of the pipelines in the study area. In addition, pallid bats were documented within 1 mile of the eastern portion of the study area near Lines 300 A and 300 B. Likely to occur
<i>Bassariscus astutus</i> Ringtail	FP	Ringtail are widely distributed, uncommon residents of riparian habitats within forests and shrublands of low to middle elevations. The species' range includes the portions of the study area in the central and eastern Mojave Desert and San Bernardino Mountains.	Ringtail are a secretive, nocturnal species not typically recorded and there are no CNDDDB occurrences in the vicinity of the study area.	Suitable habitat occurs in the study area. There are no known occurrences in or around the study area; however, presence of the species is likely underreported. Potential to occur
<i>Chaetodipus fallax pallidus</i> pallid San Diego pocket mouse	SSC	Pallid San Diego pocket mouse is found in arid desert border areas of San Diego County, in Riverside County southwest of the City of Palm Springs, in San Bernardino County from the Cactus Flats to the community of Oro Grande, and east to the City of Twentynine Palms. This species occurs at elevations ranging from sea level to 6,000 feet amsl. It occupies shrublands that vary from sparse desert shrublands to dense coastal scrub and seeks shelter in burrows.	Pallid San Diego pocket mouse has historic CNDDDB occurrences documented within 0.25 miles, 1 mile, and 5 miles of the pipelines in the study area. There is one recent documented occurrence of this species within 5 miles of the study area.	Suitable habitat for pallid San Diego pocket mouse occurs within the study area, which is within the species' range. There is a recent documented occurrence of this species within 5 miles of the pipelines in the study area. Potential to occur
<i>Corynorhinus townsendii</i> Townsend's big eared bat	BLM SSC DRECP	Townsend's big eared bat is found in montane riparian, desert succulent scrub, and pinyon-juniper habitats. This species is rare in California, and is known to roost in mines, caves, and buildings.	Townsend's big eared bat has recent CNDDDB occurrences documented within 1 mile and 5 miles of the pipelines in the study area. There is also one historic occurrence within 0.25 miles of the pipelines in the study area. In addition, a single male Townsend's big eared bat was mist-netted within 1 mile of the study area during spring focused bat surveys for the Topock Compressor Station Groundwater Remediation Project in 2015 (PG&E 2015).	Potential suitable foraging and roosting habitat is present on the steep slopes and cliffs within close proximity to Topock Compressor Station. This species was documented within 1 mile of the eastern portion of the study area near Lines 300 A and 300 B. Likely to occur
<i>Euderma maculatum</i> spotted bat	BLM SSC	Habitat for spotted bat includes arid deserts, grasslands, and mixed coniferous forests. This species prefers to roost in rock crevices, but also uses caves and buildings.	Spotted bat has one historic documented occurrence in the CNDDDB within 0.25 miles of the pipelines in the study area.	The study area is within the known range for this species; however, suitable roosting habitat is limited. There are no recent records of this species documented within 5 miles. Unlikely to occur
<i>Eumops perotis californicus</i> western mastiff bat	BLM SSC	Western mastiff bat inhabits arid and semi-arid lowlands in the Lower Sonoran life zone of California at elevations from 100 to 4,000 feet amsl. This species occurs in many open, semi-arid to arid habitats, including coniferous and deciduous woodland, coastal scrub, annual and perennial grassland, palm oases, chaparral, desert scrub, and urban habitats. The species primarily roosts in crevices in vertical cliffs—usually granite or consolidated sandstone—and in broken terrain with exposed rock faces. It is also found occasionally in high buildings, trees, and tunnels. Western mastiff bat roost sites may change from season to season. Due to its large size, it needs vertical faces to drop from in order to take flight. Western mastiff bat nursery roosts can be found in tight rock crevices. Breeding likely occurs from April through September.	Western mastiff bat has one historic documented occurrence in the CNDDDB within 5 miles of the pipelines in the study area. Echolocation signals of this species were recorded along the Lower Colorado River during spring focused bat surveys for the Topock Compressor Station Groundwater Remediation Project in 2015 (PG&E 2015).	Potential suitable foraging and roosting habitat is present on the steep slopes and cliffs within close proximity to Topock Compressor Station. There are no recent records of this species documented within 5 miles. However, this species was documented within 1 mile of the study area during focused bat surveys near Topock Compressor Station. Likely to occur

Table 4.4-3. Special-Status Wildlife Species Possibility of Occurrence in the Study Area

Species Name	Listing Status	Habitat/Life History	Known Locations	Possibility of Occurrence
<i>Macrotus californicus</i> California leaf-nosed bat	BLM SSC DRECP	California leaf-nosed bat inhabits desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, and palm oasis habitats. Roost sites for this species include tunnels, rock shelters, mines, caves, buildings, and bridges.	California leaf-nosed bat has one historic documented occurrence in the CNDDDB within 5 miles of the pipelines in the study area.	The study area is within the range for this species; however, suitable roosting habitat is limited or nonexistent. There is one record of this species documented within 5 miles of the pipelines in the study area. Unlikely to occur
<i>Microtus californicus mohavensis</i> Mojave River vole	SSC	The Mojave River vole occurs exclusively in moist habitats along the Mojave River and is endemic to this area. This species may be found in some irrigated pastures.	Mojave River vole has recent documented occurrences in the CNDDDB within 1 mile of the pipelines in the study area near Line 314. This species also has historic occurrences documented within 1 mile and 5 miles of the pipelines in the study area.	Records of Mojave River vole are exclusively documented near the City of Victorville along the Mojave River, within 1 mile of the study area near Line 314. As a result, this species is likely to occur where the study area crosses the Mojave River. Likely to occur
<i>Myotis ciliolabrum</i> western small-footed myotis	BLM	This species utilizes a wide range of habitats, mostly open, arid, wooded, and brushy uplands near water and in caves, buildings, mines, and rock crevices.	Western small-footed myotis has one documented occurrence in the CNDDDB within 5 miles of the pipelines in the study area. This occurrence is north of Line 311 near Trona.	The study area is within the range for this species. However, suitable roosting habitat near water is limited and does not occur within close proximity of the pipelines. Unlikely to occur
<i>Myotis evotis</i> long-eared myotis	BLM	The long-eared myotis is found in all brush, woodland, and forest habitats from sea level to approximately 9,000 feet amsl. This species typically prefers coniferous forests and woodlands and colonizes nurseries within buildings, crevices, and spaces under bark and in snags. Caves are primarily used for roosting at night.	Long-eared myotis has one CNDDDB occurrence within 5 miles of the pipelines in the study area. This occurrence is located more than 4 miles southwest of the southern terminus of Line 313 near the San Bernardino Mountains.	The study area is located within the range of this species. However, there is limited roosting habitat within the study area near Line 313. Unlikely to occur
<i>Myotis thysanodes</i> fringed myotis	BLM	The fringed myotis is found in a wide variety of habitats, typically pinyon–juniper, valley–foothill hardwood, and hardwood–conifer in caves, mines, buildings, or crevices for maternity colonies and roosts.	Fringed myotis has one documented occurrence in the CNDDDB within 5 miles of the pipelines in the study area, southwest of the southern terminus of Line 313 in the San Bernardino Mountains near the community of Fawnskin.	The study area is within the range for this species; however, suitable roosting habitat is limited or nonexistent. Unlikely to occur
<i>Myotis velifer</i> cave myotis	BLM SSC	Cave myotis is usually found in evergreen or pine–oak forest and pine forest at mid- and high elevations. It is also found at lower elevations in riparian habitats near desert scrub. This species occurs from Honduras to Kansas and southeastern California. Caves are the main roosts for this southwestern species, although it also uses mines and occasionally buildings and bridges. Cave myotis forages over dense riparian vegetation and in drier desert washes.	Cave myotis has no CNDDDB occurrence records within 5 miles of the study area. Echolocation signals of this species were recorded near the Colorado River during spring focused bat surveys for the Topock Compressor Station Groundwater Remediation Project in 2015 (PG&E 2015).	This species was documented within 1 mile of the study area during focused bat surveys near Topock Compressor Station. There are limited caves within the study area, but potential suitable foraging and roosting habitat is present in Bat Cave Wash and on cliff crevices near Topock Compressor Station. Likely to occur
<i>Myotis yumanensis</i> Yuma myotis	BLM	This species prefers open lower and upper montane coniferous forests and riparian forests and woodlands with water sources near caves, mines, buildings, or crevices for maternity colonization.	Yuma myotis has documented occurrences in the CNDDDB within 5 miles of the study area near Lines 311 and 313. One Yuma myotis roost was identified approximately 0.06 miles north of Line 300 B along I-40 during spring focused bat surveys for the Topock Compressor Station Groundwater Remediation Project in 2015 (PG&E 2015).	The study area is within the range for this species. However, there is only marginal suitable riparian forest/woodland habitat and some developed areas within the study area where this species could occur. Likely to occur
<i>Nyctinomops femorosaccus</i> pocketed free-tailed bat	SSC	Pocketed free-tailed bat’s range occurs from Guerrero (Mexico) to New Mexico, Arizona, California, and Baja California at elevations from lowlands to 7,000 feet amsl. This species is found in a variety of plant associations, including desert shrub and pine–oak forests. It roosts primarily in crevices of rugged cliffs, high rocky outcrops, and slopes. The species may also roost in buildings, caves, and under roof tiles. This species is known historically from very few locations in California, including Riverside and San Diego Counties.	Pocketed free-tailed bat has no recent or historic occurrences in the CNDDDB within 5 miles of the pipelines in the study area. Echolocation signals of this species were recorded along the Lower Colorado River during spring focused bat surveys for the Topock Compressor Station Groundwater Remediation Project in 2015 (PG&E 2015).	This species was documented within 1 mile of the study area during focused bat surveys near Topock Compressor Station. Potential suitable foraging and roosting habitat is present on the steep slopes and cliffs near Topock Compressor Station. Likely to occur

Table 4.4-3. Special-Status Wildlife Species Possibility of Occurrence in the Study Area

Species Name	Listing Status	Habitat/Life History	Known Locations	Possibility of Occurrence
<i>Ovis canadensis nelsoni</i> desert bighorn sheep	BLM FP DRECP	Desert bighorn sheep inhabits rocky, steep, and open terrain encompassing plateaus and springs. This species occurs in a large number of desert mountain ranges in eastern California, much of Nevada, northwestern Arizona, New Mexico, southern Utah, southern Colorado, and Mexico.	Desert bighorn sheep has numerous historic CNDDDB occurrences documented within 0.25 miles and 5 miles of the pipelines in the study area.	Although no recent CNDDDB occurrences of this species are recorded within 5 miles of the pipelines in the study area, desert bighorn sheep are known to inhabit many mountain ranges adjacent to or crossed by the study area. Suitable foraging and movement habitat is located in the foothill portions of the study area near Topock Compressor Station, but no lambing habitat occurs within the study area. Potential to occur
<i>Onychomys torridus tularensis</i> Tulare grasshopper mouse	BLM SSC	Tulare grasshopper mouse is found in hot, arid valleys and scrub deserts in the southern San Joaquin Valley, within chenopod scrub.	Tulare grasshopper mouse has one historic documented occurrence in the CNDDDB within 5 miles of the pipelines in the study area.	The study area is located at the southern edge of this species' current range. Although suitable habitat for this species is present within the study area, there have been no recent occurrences of Tulare grasshopper mouse within 5 miles of the pipelines in the study area. Unlikely to occur
<i>Perognathus alticola inexpectatus</i> Tehachapi pocket mouse	SSC	Tehachapi pocket mouse inhabits arid annual grassland and desert shrub communities, fallow grain fields, and Russian thistle within chaparral, Joshua tree woodlands, and valley and foothill grasslands.	Tehachapi pocket mouse has four recent documented occurrences in the CNDDDB within 5 miles of the westernmost pipelines near Line 300 B.	There is suitable habitat for this species surrounding and within the study area, and documented occurrences within the last 10 years. Potential to occur
<i>Perognathus inornatus</i> San Joaquin pocket mouse	BLM	San Joaquin pocket mouse can be found in valley and foothill grasslands, oak savannas, open blue oak and cismontane woodlands, and Mojave Desert scrublands associated with fine-textured, sandy, friable soils.	San Joaquin pocket mouse has one historic documented occurrence in the CNDDDB within 5 miles of the pipelines in the study area.	The study area is located within the species' current range. Although suitable habitat for this species is present within the study area, there have been no recent occurrences of San Joaquin pocket mouse within 5 miles of the pipelines in the study area. Unlikely to occur
<i>Taxidea taxus</i> American badger	SSC	American badger occurs primarily in grasslands, parklands, farms, and other treeless areas with friable soil and a supply of rodent prey. The species is also found in forest glades and meadows, marshes, brushy areas, hot deserts, and mountain meadows. It is sometimes found at elevations up to 12,000 feet amsl but is usually found in the Sonoran and Transition life zones (i.e., elevations lower and warmer than those characterized by coniferous forests). American badgers are occasionally found in open chaparral (with less than 50% plant cover) and riparian zones. American badgers create burrows for sleeping and concealment, protection from weather, and natal dens. Burrows typically range from 4 to 10 feet in depth and 4 to 6 feet in width. Breeding generally occurs between December and February, and cubs are born between March and April.	American badger has recent CNDDDB occurrences documented within 0.25 miles, 1 mile, and 5 miles of the pipelines in the study area. During surveys conducted in 2017 on Lines 300 A and 300 B from the community of Newberry Springs to the community of Essex, diagnostic badger digs or burrows were documented in the study area near the community of Ludlow.	Suitable habitat for American badger occurs within the study area, and this species has been documented within 0.25 miles of the pipelines in the study area. Present
<i>Vulpes macrotis arsipus</i> desert kit fox	DRECP Title 14 CCR Section 460 protected	Desert kit fox is known throughout the California desert region and is closely associated with creosote scrub vegetation. The species is semifossorial and resides in subterranean dens dug in friable soils.	During surveys conducted in 2017, dens were located on Lines 300 A/300 B, and Line 311, and the species was documented to occur in the Hinkley area.	Suitable habitat for desert kit fox occurs throughout the study area and the species has been documented within the study area. Present

Table 4.4-3. Special-Status Wildlife Species Possibility of Occurrence in the Study Area

Species Name	Listing Status	Habitat/Life History	Known Locations	Possibility of Occurrence
<i>Xerospermophilus mohavensis</i> Mohave ground squirrel	BLM ST DRECP	The Mohave ground squirrel occupies all major desert scrub habitats in the western Mojave Desert. This species is generally found in flat to moderately sloped terrain, most frequently in sandy and alluvial soils, but occasionally in gravelly and rocky soils. The Mohave ground squirrel is endemic to the western Mojave Desert, and has been found at elevations as high as 5,600 feet amsl.	Mohave ground squirrel has numerous recent and historic CNDDDB occurrences documented within 0.25 miles, 1 mile, and 5 miles of the pipelines in the study area. Suitable habitat for this species was identified in 2017 during surveys conducted east of the community of Kramer Junction along Line 300 B.	The western portion of the study area crosses the range of the Mohave ground squirrel. Numerous occurrences of this species have been documented within 0.25 miles of the study area. Suitable habitat for this species occurs within the study area in the form of flat to moderate terrains with burrows and soils that are conducive to burrowing occurs. In addition, the study area is located within vegetation communities that support Mohave ground squirrel, including Mojave creosote bush scrub, desert saltbush scrub, desert sink scrub, desert greasewood scrub, shadscale scrub, and Joshua tree woodland. Protocol trapping surveys have not been conducted for O&M activities as PG&E is assuming presence of this species. Present
Invertebrates				
<i>Bombus crotchii</i> Crotch bumble bee	CESA listing petition pending	Crotch bumble bee is known from open grassland and scrub communities supporting suitable floral resources in the central and southern portions of California including in coastal, valley, foothill, and desert habitats.	Crotch bumble bee has three historic CNDDDB occurrences documented within 0.25 miles and two historic CNDDDB occurrences within 5 miles of the pipelines in the study area.	Potentially suitable habitat for Crotch bumble bee occurs within the study area, which is within the species’ range. There are historic occurrences in the vicinity of the study area and the species may be underrepresented due lack of reporting. ^a Potential to occur

Notes: CNDDDB = California Natural Diversity Database; amsl = above mean sea level; I = Interstate; CCR = California Code of Regulations; CESA = California Endangered Species Act.

^a A petition to list the Crotch bumble bee (*Bombus crotchii*) as an endangered species under CESA is currently pending before the California Fish and Game Commission (Commission) (Cal. Reg. Notice Register 2018, No. 45-Z, pp. 1986–1987 [November 9, 2018]). The Commission designated the Crotch bumble bee as a candidate species under CESA in Jun 2019 (Cal. Reg. Notice Register 2019, No. 26-Z, pp. 954–955 [June 28, 2019]). The Commission’s decision to designate the Crotch bumble bee as a candidate species is the subject of a pending legal challenge (*Almond Alliance of California v. Fish and Game Commission* [2022] 79 Cal. App. 5th 337, pet. for review pending, S275412).

Status Definitions:

Federal
FE: federally endangered species
FT: federally threatened species
BGEPA: Bald and Golden Eagle Protection Act
BLM: BLM sensitive species

State
SE: state listed as endangered
ST: state listed as threatened
SC(E): state candidate for listing as endangered
FP: fully protected species
SSC: species of special concern

Other
DRECP: Desert Renewable Energy Conservation Plan covered species

Wildlife Corridors

Wildlife corridors are defined as areas that connect suitable habitat for species movement or dispersal between multiple habitats in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. These corridors provide (but are not required to contain) sufficient habitat for all life history requirements of a species, especially habitat for reproduction (Rosenberg et al. 1995, 1997). Wildlife corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from areas with high population density; and facilitate the gene flow between populations. Wildlife corridors are considered to be sensitive areas by resource and conservation agencies. Terrestrial wildlife species tend to travel along natural water features or stretches of land that simultaneously provide a foraging source and protective cover from predators. Due to the length of the study area, many minor water features and dry washes are crossed, but the majority of the study area covers remote desert terrain that would allow for relatively uninhibited local wildlife migrations.

Wildlife movement and population connectivity are examined at three spatial scales within the DRECP: landscape habitat linkages, wildlife corridors, and wildlife crossings; in this EIR, these are grouped under the term “wildlife linkage network” and generally termed “linkages.” Landscape habitat linkages are large open space areas that contain natural habitat and provide a connection between at least two larger adjacent open spaces or habitat areas. Wildlife corridors are linear landscape elements that provide for species movement and dispersal between two or more habitats but that do not necessarily contain sufficient habitat for all life history requirements of a species, particularly reproduction (Rosenberg et al. 1995, 1997). Wildlife crossings are locations within corridors or linkages where wildlife must pass through physically constrained environments (e.g., roads) during movement.

Linkages have been identified for the following 10 special-status species that are present, likely to occur, or have a potential to occur in the study area:

- Desert tortoise
- Mojave fringe-toed lizard (*Uma scoparia*)
- Western burrowing owl (*Athene cunicularia*)
- Loggerhead shrike (*Lanius ludovicianus*)
- Bendire’s thrasher (*Toxostoma bendirei*)
- Le Conte’s thrasher (*Toxostoma lecontei*)
- Pallid bat (*Antrozous pallidus*)
- Desert bighorn sheep
- American badger (*Taxidea taxus*)
- Mohave ground squirrel

Focal species,⁵ including the previously mentioned 10 special-status species, were analyzed to identify a linkage network between landscape blocks.⁶ The pipelines in the study area cross linkages between eight landscape blocks, including the Stepladder–Turtle Mountains Wilderness, Twentynine Palms and Newberry–

⁵ Focal species capture a diversity of movement needs and ecological requirements. Forty-four focal species were included in the California Desert Connectivity Project (Penrod et al. 2012).

⁶ Landscape blocks are areas protected from industrial energy projects and new highways, such as designated wilderness areas, parks, and military reservations.

Roden Wilderness, and Naval Air Weapons Station China Lake; therefore, the pipelines in the study area cross multiple linkage planning areas identified in the California Desert Connectivity Project (Penrod et al. 2012).⁷ The large linkage network is crossed by the pipelines in relatively small areas compared to the size of the linkages, and the linkage network is depicted on Figure 4.4-2, Wildlife Linkage Network in the Study Area.

The study area is also located within the Pacific Flyway, which is one of the six major north-to-south migration routes for waterfowl in the United States, Mexico, and Canada. The Pacific Flyway links breeding grounds in the north to more southerly wintering areas and is therefore used by bird species during migration. The water bodies within the area, including the Colorado River, provide rest and forage areas for many birds during their migratory seasons. Terrestrial wildlife species tend to travel along natural water features that provide a foraging resource and protective cover from predators.

Management Areas

On lands managed by BLM within the CDCA, many special management areas and other designations have been established through statute, regulation, and management plan amendments. BLM has established Desert Wildlife Management Areas (DWMAs) to protect high-quality habitat for the threatened desert tortoise. The study area crosses several BLM-designated DWMAs, including the following:

- Chemehuevi DWMA
- Ord–Rodman DWMA
- Fremont–Kramer DWMA
- Superior–Cronese DWMA

These DWMAs are also identified as Areas of Critical Environmental Concern (ACECs) by BLM. ACECs are defined in the BLM FLPMA of 1976 as areas “within the public lands where special management attention is required to protect and prevent irreparable damage to important historical, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards.” Desert tortoise ACECs/DWMAs overlap with portions of USFWS-designated critical habitat for desert tortoise, because ACEC/DWMA boundaries were established to match the boundaries of desert tortoise critical habitat where the habitat was largely intact and where tortoise populations were highest.

In addition, the following additional management areas are in the study area:

- Mojave Trails National Monument
- California Desert Conservation Area (CDCA)
- CDFW’s West Mojave Desert Ecological Reserve
- BLM’s Mohave Ground Squirrel Conservation Area
- BLM’s Marble Mountains Wildlife Area
- Stepladder Mountains Wilderness (located approximately 60 feet from the study area)

All these DWMAs and other management areas are depicted on Figure 4.4-3, Management Areas in the Study Area.

⁷ Linkage planning areas are potential linkages or corridors between landscape blocks.

Wetlands and Jurisdictional Waters

As described in Section 4.10 of this EIR, the study area crosses the South Lahontan and Colorado River Hydrologic Regions (HRs). These hydrologic regions are located within the Mojave Desert, and as a result, they are generally arid areas with a low potential for wetlands. Most of the water features within the study area consist of ephemeral streams. Many erosion gullies and swales are also located throughout the study area. Within the South Lahontan HR, the major water feature in the study area is the Mojave River, which is intermittent. Rogers Lake, one of three playa lakes located in a closed intrastate basin with no outlets to the ocean, is also located within the South Lahontan HR and is immediately south of the study area. Within the Colorado River HR, the major water feature is the Colorado River, which is located at the eastern end of the study area. The water features within these hydrologic regions may be subject to regulation under USACE, CDFW, and RWQCB.

Under Section 1602 (LSA Program) of the CFGC, CDFW regulates activities that would substantially divert or obstruct the natural flow; change or use any material from the bed, channel, or bank; or deposit debris, waste, or other materials that could pass into a river, stream, or lake. “Rivers, streams, and lakes” regulated under the LSA Program include ephemeral water features that only convey water episodically in response to storms and are dry for periods of time. This includes ephemeral streams and desert washes such as those found in the study area. All waters of the state, regardless of their designations, are subject to RWQCB jurisdiction. USACE’s jurisdiction is based on a hydrologic connection with definable navigable waters, which constitute waters of the United States, and the jurisdiction typically extends to the ordinary high water mark for non-tidal waters. PG&E would be required to consult with USACE and the RWQCBs to determine the jurisdiction and any required permitting for project impacts.

No formal delineation of potential jurisdictional waters was conducted in the study area. An analysis of the USGS National Hydrography Dataset shows that numerous ephemeral streams and other features occur in the study area and the study area buffer. These drainages generally flow to the Mojave River, Bristol Lake, or the Colorado River. Numerous dry washes are also present within the study area and study area buffer. The number of water features in the study area and study area buffer is summarized in Table 4.4-4. These potentially jurisdictional waters within the study area are depicted in Appendix D-2, Potential Waters of the State in the Study Area. Due to the desktop nature of the review, a number of additional rivers, streams, washes, and related features may also occur in the study area and buffer area that are not represented in the USGS National Hydrography Dataset. Additionally, the riparian and wetland natural communities, summarized above in Table 4.4-1, may also be jurisdictional features in the study area and study area buffer. Nevertheless, the information provided in Table 4.4-4 and in Appendix D-2, as well as in Table 4.4-1, is considered representative of the potentially jurisdictional features in the study area and study area buffer.

Table 4.4-4. Number of Water Features in the Study Area

Feature Type	Number of Features within a 500-Foot-Wide Study Area	Number of Features within a 0.25-Mile-Wide Buffer of Study Area
Ephemeral Streams/Dry Washes	551	1,112
Canal/Ditch	17	30
Playa	11	33
Lake/Pond	7	44

Table 4.4-4. Number of Water Features in the Study Area

Feature Type	Number of Features within a 500-Foot-Wide Study Area	Number of Features within a 0.25-Mile-Wide Buffer of Study Area
Reservoir	12	60
Marsh	—	1

Notes: Based on the USGS National Hydrography Dataset. See Table 4.4-1 for summary of the riparian and wetland vegetation communities in the study area and study area buffer.

The majority of the features in the study area and study area buffer area are ephemeral streams, including dry washes. The largest of these features are the Argos Wash, Teagle Wash, and Daggett Wash. Other features occur throughout the study area in broad alluvial fans and terraces that contain numerous small and braided dry wash channels. Riparian vegetation is located near Watson Wash, Daggett Wash, and the Mojave River. Riparian vegetation in desert washes is typically sparse, with occasional desert riparian species such as honey mesquite (*Prosopis glandulosa*), smoke tree, catclaw acacia (*Senegalia greggii*), and tamarisk (*Tamarix ramosissima*). Portions of the Mojave River support other riparian species, such as Goodding's willow (*Salix gooddingii*), arroyo willow (*S. lasiolepis*), Fremont cottonwood (*Populus fremontii*), and tamarisk. Other streams in the study area support a variety of vegetation that may occur in the bed, bank, or channel and would be considered riparian vegetation. Wetland vegetation is located near Bristol Lake, Lavic Lake, Rogers Lake, and Eriksen Lake. Other potentially jurisdictional features in the study area and study area buffer are classified as canal/ditch, playa, lake/pond, reservoir, and marsh. Specific to Section 1602 (LSA Program) of the CFGC, PG&E has calculated the acreage of potentially impacted rivers, lakes, and streams by overlaying a 500-foot-wide corridor (to account for access and work areas outside the ROW) using the USGS National Hydrography Dataset. A 500-foot-wide corridor was used to be very conservative; in most cases, impacts to waters would be limited to the ROW width or an even narrower width. The resulting acreages are presented by pipeline and water feature type in Table 4.4-5.

Table 4.4-5. Potentially Impacted Section 1602 LSA Program Features

Feature Type	Line 300 A (Acres)	Line 300 B (Acres)	Line 314 (Acres)	DFMs and Associated Lines (Acres)	Total (Acres)
Ephemeral Streams/Dry Washes	45.4	23.1	37.2	0.7	106.4
Playa	37.7	68.6	—	21.4	127.7
Lake/Pond	7.3	7.2	0.2	1.5	16.2
Reservoir	8.6	1.8	0.4	2.7	13.5
Total	99.0	100.7	37.8	26.3	263.8

Notes: LSA = Lake and Streambed Alteration; DFM = distribution feeder main.

4.4.4 Impact Analysis

This section evaluates the potential impacts to biological resources that may result directly or indirectly from CDFW's issuance of the permits, including the effects on biological resources for the proposed project and continuing O&M activities as the whole of the action in the study area.

Temporary impacts include impacts from O&M activities that do not result in the installation of permanent facilities, such as soil stockpiling and repair of access roads, or otherwise permanently remove fish and wildlife habitat. The majority of impacts resulting from ongoing O&M activities are related to pipeline integrity management. These activities include coating inspections, installation of anodes, and valve/pipeline recoating. Integrity management activities may result in minor amounts of temporary and permanent disturbance. Hydrostatic testing and pipeline segment replacement result in a greater amount of temporary disturbance. However, these activities are conducted less frequently.

Permanent impacts are characterized by O&M activities that result in the removal of vegetation or conversion of habitat to a facility footprint. Activities that may result in permanent impacts include the expansion of existing facilities, installation of deep-well anodes, installation of pig launcher/receiver facilities, and installation of erosion control structures. O&M activities would result in a minimal amount of permanent disturbance.

As part of its standard practice, PG&E would implement the APMs described in Section 4.4.4.2, Applicable Measures, to partially avoid and minimize impacts to state-listed and other special-status species, sensitive natural communities, and jurisdictional stream and water features, as described in the following subsections. In the case of potentially significant impacts, PG&E would implement the mitigation measures specified in Section 4.4.4.4 to reduce potential impacts to below a level of significance.

4.4.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of biological resources impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For purposes of this EIR, biological resources impacts would be significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would:

Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

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.

Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

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

Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.4.4.2 Applicable Measures

As part of its standard practice, PG&E will continue to incorporate the following APMs into its ongoing O&M activities to avoid or minimize the potential for adverse biological resources impacts. The APMs, where applicable, are discussed in the impact discussion in Section 4.4.4.3.

APM BIO-1 Worker Education. A worker education program would be implemented for all activities, as determined to be appropriate on an activity-by-activity basis. The worker education program would be carried out during all phases of the program (e.g., site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or abandonment, and restoration/reclamation activities). The worker education program would provide interpretation for non-English-speaking workers and instruction for new workers prior to beginning work on site. As appropriate based on the activity, the worker education program would contain the following information:

- Site-specific biological and nonbiological resources;
- Information on legal protections for protected resources and penalties for violation of federal and state laws and administrative sanctions for failure to comply with requirements intended to protect site-specific biological and nonbiological resources;
- The required measures for avoiding and minimizing effects during all program phases (e.g., resource setbacks, trash, speed limits, fire prevention, etc.);
- Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirements for notification of the Designated Biologist(s); and
- Measures that personnel can take to promote the conservation of biological and nonbiological resources.

APM BIO-2 Designated Biologist. A Designated Biologist would be approved as “qualified” by the CDFW, BLM, and/or USFWS, as appropriate for the location of the program activities. The Designated Biologist is responsible for overseeing compliance with applicable APMs.

APM BIO-3 Disturbance Minimization. PG&E would use state-of-the-art construction and installation techniques that are appropriate for the specific activity, program, and site. These techniques should minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation. In addition, PG&E would implement the following actions:

- The area of disturbance would be confined to the smallest practical area, considering topography, placement of facilities, locations of burrows, public health and safety, and other limiting factors.
- As needed, work area boundaries would be delineated with flagging or other markings to minimize surface disturbance associated with the work activity.
- Exclusion areas or special habitat features, such as burrows identified by the Designated Biologist, would be avoided to the extent possible.

- To the extent possible, previously disturbed areas within the activity sites would be used for stockpiling excavated materials, storing equipment, digging slurry and borrow pits, staging or parking trailers and vehicles, and any other surface-disturbing activity.
- When possible, natural vegetation removal would be minimized through the implementation of crush and drive, or cut or mow vegetation, rather than removing it entirely.
- The Designated Biologist, in consultation with PG&E, would ensure compliance with these measures.

APM BIO-4 **Invasive Weeds.** The following would be implemented to prevent the spread of invasive weeds during all phases of program activities, as appropriate:

- During O&M activities involving ground disturbance, mud and/or accumulated soils would be removed from equipment and vehicles, to the extent feasible. Vehicles and equipment would be cleaned or washed before entering a new program site.
- O&M vehicles would be stored in paved or cleared areas whenever possible.
- Certified weed-free mulch, straw, hay bales, or equivalent materials would be used for all O&M activities.

APM BIO-5 **Special-Status Wildlife Encounters.** Any special-status wildlife encountered during the course of an activity—including construction, operation, and decommissioning—would be allowed to leave the area unharmed. Encounters with a special-status species would be reported to a Designated Biologist and/or PG&E Environmental staff. Designated Biologists/PG&E Environmental staff members would maintain records of all special-status species encountered during permitted activities. Encounters with special-status species would be documented and provided to CDFW in an annual report. If a Designated Biologist encounters a special-status species, the following information would be reported for each species:

- The locations (i.e., narrative, vegetation type, and maps) and dates of observations
- The general condition and health
- Any apparent injuries and state of healing
- If moved, the location where the species was captured and the location where it was released (for desert tortoises, include whether animals voided their bladders)
- Diagnostic markings (i.e., identification numbers or, on desert tortoises, marked lateral scutes)

APM BIO-6 **Inspections of Construction Materials.** All construction materials would be inspected for the presence of special-status wildlife prior to their movement or use. Any special-status wildlife encountered during the course of these inspections would be allowed to leave the construction area unharmed.

APM BIO-7 **Waste and Equipment Removal.** All work areas would be kept free of trash and debris. Particular attention would be paid to “micro-trash” (e.g., screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny) and organic waste that may attract predators. All trash would be covered, kept in closed containers, or otherwise removed from the work site at the end of each

day or at regular intervals prior to periods when workers are not present at the site. Upon the completion of each maintenance action in the ROW, all unused material and equipment would be removed from the site. The removal of all unused material and equipment does not apply to fenced stations.

- APM BIO-8 **Open Trenches.** All steep-walled trenches or excavations would be covered, except when they are actively being used to prevent the entrapment of wildlife. If trenches cannot be covered, they would be constructed with escape ramps, following up-to-date design standards to facilitate and allow wildlife to exit, or wildlife exclusion fencing would be installed around the trench(es) or excavation(s). Open trenches or other excavations would be inspected for the presence of wildlife immediately before backfilling, excavation, or other earthwork. After a work area is fenced, escape ramps would not be necessary for program activities.
- APM BIO-9 **O&M Activity Habitat Assessments.** Prior to the commencement of the planned O&M activities that would impact 0.10 acres or more of potential habitat, a PG&E biologist would assess the location and the potential for impacts to special-status species and would recommend additional avoidance and minimization measures (e.g., pre-construction clearance surveys, biological monitoring, buffers, physical barriers) as needed to ensure that that behaviors necessary for the survival of such special-status species (e.g., breeding, lambing, nesting, burrowing, migration, foraging) are not significantly disrupted by the planned activity and associated noise.
- APM BIO-10 **Domestic Pets.** Domestic pets would be prohibited on work sites. The prohibition would not apply to the use of domestic animals (e.g., dogs) that may be used to aid in official and approved monitoring procedures/protocols, or service animals under Title II and Title III of the Americans with Disabilities Act.
- APM BIO-11 **Firearms.** Use and possession of firearms would be prohibited at all activity sites, with the exception of licensed security officers and police officers.
- APM BIO-12 **O&M Activity Siting and Design.** To the maximum extent practicable, the siting and design of new, permanent facilities would avoid impacts to vegetation types, unique plant assemblages, and climate refugia, as well as occupied habitat and suitable habitat for special-status species. To the maximum extent practicable, the following actions would be taken during the siting and design of new roads:
- Construction of new roads and/or routes would be avoided within suitable habitat and identified linkages for special-status species, and these areas would have a goal of “no net gain.” The exception would be if the new road and/or route is beneficial through minimization of net impacts to natural or ecological resources of concern.
 - Any new road and/or route considered within suitable habitat or identified linkages for protected species would be paved so as to avoid negatively affecting the function of identified linkages.
 - Non-toxic road sealants and soil-stabilizing agents would be used on any new road and/or route.

APM BIO-13 Restoration. Habitat restoration would occur where 0.10 acres or more of sensitive natural communities or special-status species habitats may be affected by ground disturbance and/or vegetation removal during pre-construction, construction, operations, and decommissioning activities. If these areas are not converted by long-term ground disturbance, site-specific habitat restoration actions would be implemented for the areas affected, and would include specifying and using the following:

- The type of equipment that would be used for habitat restoration actions
- The timing of habitat restoration actions (e.g., the appropriate season and sufficient rainfall)
- The location of habitat restoration actions
- Appropriate seed (e.g., certified weed-free, native, and locally and genetically appropriate seed)
- Appropriate soils (e.g., topsoil of the same original type on site or that was previously stored after being salvaged during excavation and construction activities)

In addition, restoration actions would include the following:

- Cactus, nolina, and yucca would be salvaged and translocated from the site prior to disturbance. To the maximum extent practicable for short-term disturbed areas, cactus and yucca would be replanted at their original sites.
- Following the completion of construction activities, short-term disturbed areas of 0.10 acres or more would be immediately restored during the most biologically appropriate season, as determined in the activity/program-specific environmental analysis and decision. This would reduce the amount of habitat converted at any one time and promote the recovery of natural habitats and vegetation, as well as climate refugia and ecosystem services (e.g., carbon storage).

APM BIO-14 Special-Status Plant Avoidance. Occurrences of special-status plant species, including those in designated transmission corridors, would be avoided to the maximum extent practicable.

APM BIO-15 Desert Tortoise Fencing. Prior to construction or commencement of any long-term activity that is likely to adversely affect desert tortoises, exclusion fencing for the species would be installed around the perimeter of the activity footprint⁸ in accordance with the Desert Tortoise Field Manual (USFWS 2009) or the most up-to-date USFWS protocol. Additionally, short-term desert tortoise exclusion fencing would be installed around short-term construction and/or activity areas (e.g., staging areas, storage yards, excavations, and linear facilities), as appropriate, per the Desert Tortoise Field Manual or the most up-to-date USFWS protocol.

Any exemption or modification of desert tortoise exclusion fencing requirements would be based on the specifics of the activity and the site-specific population and habitat parameters. Sites with low population density and disturbed, fragmented, or poor habitat would likely be candidates for

⁸ An activity footprint is the area of long- and short-term ground disturbance associated with the pre-construction, construction, operation, implementation, maintenance, and decommissioning of an activity, including associated linear and non-linear components (e.g., staging areas, access routes and roads, gen-ties, pipelines, other utility lines, borrow pits, disposal areas). The footprint may also be considered synonymous with the program/activity site.

fencing requirement exemptions or modifications. Substitute measures, such as on-site biological monitors in the place of the fencing requirement, would be required as appropriate.

After an area is fenced, and until desert tortoises are removed, the Designated Biologist would be responsible for ensuring that desert tortoises are not exposed to extreme temperatures or predators as a result of placement of the fence. Remedies would include the use of shelter sites placed along the fence, immediate translocation, or removal to a secure holding area.

Modification or elimination of the previous requirement would also be approved by CDFW if the activity would retain the desert tortoise habitat within the footprint. If such a modification is approved, modified protective measures would be required to minimize impacts to desert tortoises within the activity area.

Immediately prior to the construction of desert tortoise exclusion fencing, a Designated Biologist would conduct a clearance survey of the fence alignment to clear desert tortoises from the proposed path of the fence line.

All exclusion fencing would incorporate desert tortoise-proof gates or other approved barriers to prevent desert tortoise access to work sites through access road entry points.

Following installation, long-term desert tortoise exclusion fencing would be inspected for damage quarterly and within 48 hours of a surface flow due to a rain event that may damage the fencing.

All damage to long-term or short-term desert tortoise exclusion fencing would be immediately blocked off to prevent desert tortoise access and would be repaired within 72 hours.

APM BIO-16 Desert Tortoise Monitoring and Pipe Inspection. Following clearance surveys within sites that have long-term desert tortoise exclusion fencing, a Designated Biologist would monitor initial clearing and grading activities to ensure that desert tortoises missed during the initial clearance surveys are moved from harm's way.

Before construction pipes, culverts, or similar structures are moved, buried, or capped, a Designated Biologist would inspect these materials for the following:

- A diameter greater than 3 inches
- Storage for one or more nights
- Placement less than 8 inches above ground
- Location within desert tortoise habitat (i.e., outside the long-term fenced area)

As an alternative, such materials would be capped before they are stored outside of the fenced area or placed on pipe racks. Pipes stored within the long-term fenced area after desert tortoise clearance surveys would not require inspection.

- APM BIO-17 **Geotechnical Boring Monitoring.** In suitable desert tortoise habitat, biological monitoring would occur for any geotechnical boring or movement of geotechnical boring vehicles to ensure that no desert tortoises are killed and no burrows are crushed. In these areas, a Designated Biologist would accompany the geotechnical testing equipment.
- APM BIO-18 **Inspections Under Vehicles.** The ground under vehicles would be inspected for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat that is outside areas with desert tortoise exclusion fencing. If a desert tortoise is seen, it would be allowed to move away from the site on its own. If it does not move within 15 minutes, a Designated Biologist would translocate the animal to a safe location.
- APM BIO-19 **Speed Limits.** Vehicular traffic would not exceed 15 mph on unpaved roads and in the ROW within areas that are not cleared by protocol-level surveys and where desert tortoise would be impacted.
- APM BIO-20 **Predator Management.** Subsidized predator standards would be implemented during all appropriate phases of activities to manage predator food subsidies, water subsidies, and breeding sites.

Common raven management actions would be implemented for all activities to address food and water subsidies, as well as roosting and nesting sites that are specific to the common raven. These actions would include strategies for refuse management, as well as design strategies and passive repellent methods to avoid providing perches, nesting sites, and roosting sites for common ravens.

The application of water and/or other palliatives for dust abatement in construction areas and during O&M would be accomplished with the minimum amount of water necessary to meet safety and air quality standards. This would also occur in a manner that prevents the formation of puddles, which would attract wildlife.

- APM BIO-21 **Mitigation.** PG&E would acquire, preserve, and/or enhance suitable habitat for desert tortoise and Mohave ground squirrel to fully mitigate for the potential take of these species. To fully mitigate for the take of desert tortoise and Mohave ground squirrel under this long-term permit, PG&E would make an initial purchase of up to 100 acres through the purchase of mitigation credits (where available), the purchase of a conservation easement from willing landowners, or the purchase of fee-title lands where a conservation easement can be placed from a private land trust (e.g., Transition Habitat Conservancy) for advance mitigation purposes. Acquired lands would be permanently protected through conservation easements or deed restrictions in perpetuity. Mitigation credits or lands would serve as a means for PG&E to debit and credit its mitigation account as impacts occur or as mitigation lands are acquired over the life of the permit, respectively. The amount of acreage to be debited would be determined annually based on the end-of-year summary, which would describe the actual impacts resulting from completed O&M activities. The amount of habitat compensation proposed would be dependent on the nature and location of the habitat disturbed. Mitigation for habitat disturbance from temporary and permanent impacts would be proposed at the following ratios:

- A 5-to-1 ratio for permanent impacts to Superior-Cronese Unit Critical Habitat lands, DWMA lands, and BLM ACECs

- A 3-to-1 ratio for permanent impacts to higher-quality (natural/undisturbed) habitat outside of Superior–Cronese Unit Critical Habitat lands, DWMA lands, and BLM ACECs
- A 1-to-1 ratio for temporary disturbance to higher-quality (natural/undisturbed) habitat areas
- A 0.5-to-1 ratio for permanent impacts to lower-quality habitat (previously disturbed [denuded], but mostly recovered)
- No compensatory mitigation for disturbed areas (i.e., totally denuded, mostly denuded with scattered shrub-like vegetation, active agricultural, residential, and urban) that provide no habitat value to special-status species

By January 31 of each year, PG&E would submit an annual report to CDFW summarizing the mitigation ratios and credits that were used for O&M activities during the previous calendar year.

APM BIO-22 **Nesting Birds.** All vegetation clearing and ground-disturbing activities would be conducted outside the nesting season (i.e., February 1 to August 31) to the maximum extent feasible. During the nesting bird season, a qualified biologist⁹ would determine if pre-construction surveys, nest buffers, and monitoring are needed. Nesting bird surveys would be conducted by a qualified biologist and would be scheduled to occur within a timeframe prior to construction that is suitable for the detection of recently established nests. If active nests containing eggs or young are found, the qualified biologist would establish an appropriate nest buffer. Nest buffers would be species-specific and range from 15 to 100 feet for passerines and 50 to 300 feet for raptors, depending on the planned activity's level of disturbance (i.e., low, medium, or high), site conditions, and the observed bird behavior. Established buffers would remain until a biologist determines the young have fledged or the nest is no longer active. Active nests would be periodically monitored until the biologist has determined the young have fledged or all construction is finished.

APM BIO-23 **Golden Eagle.** If golden eagles are observed within the vicinity of planned O&M activities that result in new surface disturbance or that require vegetation trimming or vegetation removal, a qualified biologist would conduct a desktop review and/or on-site evaluation to determine if golden eagles are nesting within 0.5 miles by observing eagle behavior and movements. If work is conducted within 0.5 miles of historic and currently known nests during the golden eagle breeding season (i.e., late January through August), PG&E would survey the site to determine if they are active. If nests are determined to be active, a 0.5-mile no-work buffer would be established. The biologist would periodically monitor the nest during work activities to document the nest's status and observe eagle behavior.

APM BIO-24 **Western Burrowing Owl.** Prior to planned O&M activities that result in new surface disturbance or that require vegetation trimming or vegetation removal, a qualified biologist would conduct a desktop review and/or on-site evaluation to determine the potential for active western burrowing owl burrows, as appropriate for the location and nature of planned activities. If an active burrowing owl burrow is identified in the vicinity of the planned O&M activity, a no-work buffer of up to 250 feet would be established, depending on the time of year and the potential for nesting (the peak months are March through June) and the level of disturbance (i.e., low, medium, or high) of the planned activity. A qualified biologist would

⁹ A qualified biologist would have experience conducting nesting bird surveys and would be able to accurately identify nesting behavior and avian species likely to occur in the vicinity of the program area.

periodically monitor the nest or occupied burrow(s) during work activities to document the nest's status and observe western burrowing owl behavior.

- APM BIO-25 **Seasonal Restrictions.** For activities that may impact special-status species, all required species-specific seasonal restrictions on pre-construction, construction, operations, and decommissioning activities would be implemented to the extent feasible.

Species-specific seasonal restriction dates are described in APM BIO-22, APM BIO-23, and APM BIO-24. Seasonal restriction dates may be modified, as appropriate, based on variations in climatic conditions (e.g., early onset of rain) that affect wildlife behavior.

Alternatively, to avoid a seasonal restriction associated with visual disturbance, installation of a visual barrier may be evaluated on a case-by-case basis and would result in the breeding, nesting, lambing, fawning, or roosting species not being affected by visual disturbance from construction activities. The proposed installation and use of a visual barrier to avoid a seasonal restriction would be analyzed in the activity-specific environmental analysis.

- APM BIO-26 **Mohave Ground Squirrel Avoidance.** For O&M activities conducted within suitable Mohave ground squirrel habitat, within the geographic range of the species,¹⁰ and during the typical active Mohave ground squirrel season (i.e., February 1 through August 31), a qualified biologist would conduct clearance surveys throughout the site immediately prior to initial ground disturbance (e.g., earthwork and/or trenching) and/or vegetation removal. In areas cleared for O&M activities after surveys, biological monitoring would be performed to determine if Mohave ground squirrels have entered cleared areas. Detected occurrences of Mohave ground squirrel would be flagged and avoided, with a minimum avoidance area of 50 feet, until the individuals leave on their own accord. As needed, a Designated Biologist would also move Mohave ground squirrels out of harm's way.

- APM BIO-27 **Monitoring and Surveys for Road Surface Maintenance.** A Designated Biologist would be present during routine road surface maintenance activities. The biologist would survey for special-status species immediately ahead of road maintenance activities and assist the maintenance crew in avoiding impacts to special-status species or their burrows.

- APM BIO-28 **Roosting Bats.** When feasible and if required, activities in bat roosting habitat would be conducted outside of the bat breeding/pupping season (this season is April through mid-September). Suitable bat habitat (e.g., bridges, mines, caves, trees with hollows, palm trees, snags, buildings, long and dark culverts, rock outcrops, dense tree canopies, and flaking tree bark) within 200 feet of O&M activities would be surveyed by a qualified biologist. The surveys of suitable bat habitat would be conducted using an appropriate combination of visual and acoustic survey techniques to assess the habitat's potential to support sensitive bat species. In addition, if structure removal is conducted during the bat breeding/pupping season, structures would be evaluated for bats.

¹⁰ This excludes the zone of hybridization with round-tailed ground squirrel located between Fort Irwin and the City of Barstow.

If a roost is identified, subsequent visits may be utilized to determine the status of the roost and any species within a roost. If bats are detected, PG&E would avoid conducting construction activities that may directly impact the active roost site, including the following:

- If an active maternal roost is identified, no construction would occur within 200 feet of the maternal roost during the pupping season.
- As necessary, an exclusionary buffer would be maintained around active roosts. The size of the buffer may be modified at the discretion of the qualified biologist based on the species' sensitivity to disturbance from O&M activities and the status of the roost.
- As necessary, a qualified biologist would monitor active roost site buffers during O&M activities to determine if roosting activity is influenced by noise or vibrations until the qualified biologist has determined if the young bats are volant (i.e., able to fly).

In addition, PG&E would incorporate hydrology and water quality best management practices (BMPs) and the following APM from Section 4.10, Hydrology and Water Quality, into its ongoing O&M activities to avoid or minimize the potential for adverse biological resources impacts:

- APM HYD-1: Frac-Out Response

Refer to Section 4.10.4.2 and Section 2.5, Applicable Measures, of this EIR for the full text of APM HYD-1 and the hydrology and water quality BMPs.

4.4.4.3 Impact Discussion

Impact BIO-1 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?

PG&E's past and ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2, Project Description. As discussed in Section 4.4.3, Existing Baseline Conditions, these activities may occur within areas that could be occupied by candidate, sensitive, or special-status plant and wildlife species; within critical habitat areas; or on managed lands, as they have in the past under baseline conditions, and this will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

Since USFWS's issuance of the programmatic Biological Opinion for Maintenance Activities on the Pacific Gas and Electric Company Gas Pipeline System in the California Desert in 2000 (2000 Biological Opinion; USFWS 2000a), PG&E has implemented measures to partially avoid and minimize impacts to desert tortoise and its habitat related to ongoing O&M activities in the study area. In 2017, USFWS issued the programmatic Biological Opinion for Activities in the California Desert Conservation Area, which requires implementation of the

Conservation and Management Actions described in the LUPA for the CDCA (refer to Section 4.4.2, Applicable Regulations, Plans, and Policies). The APMs included in Section 4.4.4.2 of this EIR were derived from the LUPA and the 2000 Biological Opinion, and they were adapted for applicability to PG&E's O&M activities.

In general, routine O&M activities required for the existing gas transmission lines and associated facilities result in temporary impacts in areas that have been previously disturbed, such as existing pipeline ROWs and access roads.

Candidate and Listed Species

Plants

Of the 14 plant species federally listed as threatened or endangered and 4 plant species state listed as threatened, endangered, or candidates for listing, 4 species are likely to occur or have the potential to occur in the study area or study area buffer: western Joshua tree, Parish's daisy, Cushenbury milk-vetch, and Cushenbury Oxytheca (*Acanthoscyphus parishii* var. *goodmaniana*).

Western Joshua Tree

Western Joshua tree is likely to occur in the western portion of the study area, near Line 311 in Searles Valley; near Lines 300 A and 300 B around Kramer Junction, Hinkley, and Barstow; near Line 314 around Victorville; and near Line 313 in Lucerne Valley. Western Joshua tree became a candidate species under CESA effective October 9, 2020. As a candidate species, western Joshua tree is protected under CESA and any take of the species (including removal of western Joshua tree or similar actions) currently requires authorization under CESA. The exceptions and permitting process under the California Desert Native Plants Act and the separate exceptions under the Native Plant Protection Act do not apply to western Joshua tree as a candidate species under CESA and they will not apply if the species is listed under CESA. PG&E has not submitted an ITP application for western Joshua tree at this time.

Some areas where western Joshua tree may occur in O&M activity areas may have reduced habitat quality because of being in an existing pipeline ROW where O&M activities have been occurring for more than 70 years. However, ongoing O&M activities have the potential to result in 40 acres of temporary impacts and 3 acres of permanent impacts per year on average, with an annual maximum impact of 150 acres, and up to 1,200 acres of temporary impacts and 90 acres of permanent impacts over a 30-year permit term, which may result in the direct loss of individuals, seedbank, or direct loss of suitable habitat within the species range. Surface-disturbing activities may also result in indirect effects through increasing the opportunities for introduction of invasive non-native plant species and the potential for wildfire that may degrade habitat for special-status or protected plant species or loss of individuals. Erosion and sedimentation from O&M activity areas may also degrade adjacent special-status plant species habitat.

Listed Carbonate Plants

Parish's daisy, Cushenbury milk-vetch, and Cushenbury oxytheca are several federally listed plant species endemic to carbonate substrates localized on the northern slopes and foothills of the San Bernardino Mountains. These species have a very limited distribution and only have the potential to occur in the vicinity of the southern end of Line 313.

Some areas where special-status plant species may occur in O&M activity areas may have reduced habitat quality because of being in an existing pipeline ROW where O&M activities have been occurring in the past. However, ongoing O&M activities have the potential to result in 40 acres of temporary impacts and 3 acres of permanent impacts per year on average, with an annual maximum impact of 150 acres, and up to 1,200 acres of temporary impacts and 90 acres of permanent impacts over a 30-year permit term, which may result in the direct loss of individuals or direct loss of suitable habitat. Surface-disturbing activities may also result in indirect effects through increasing the opportunities for introduction of invasive non-native plant species that may degrade habitat for special-status or protected native plant species. Erosion and sedimentation from O&M activity areas may also degrade adjacent special-status plant species habitat.

Wildlife

Of the 17 wildlife species federally listed as threatened or endangered and 22 wildlife species state listed as threatened, endangered, or candidates for listing, 5 species occur, are likely to occur, or have the potential to occur in the study area or study area buffer: Mojave desert tortoise, Mohave ground squirrel, least Bell's vireo, southwestern willow flycatcher, and Crotch bumble bee (*Bombus crotchii*). A petition to list the Crotch bumble bee as an endangered species under CESA is currently pending before the California Fish and Game Commission. The Commission designated the Crotch bumble bee as a candidate species in June 2019.

Mojave Desert Tortoise

One federally and state-listed reptile species, Mojave desert tortoise ("desert tortoise"), is present within the study area and its habitat occurs throughout the region. Desert tortoise burrows and fresh scat were identified in 2017 during focused surveys for desert tortoise between the communities of Newberry Springs and Essex on Lines 300 A and 300 B. The occurrences of desert tortoise burrows were concentrated within 17 miles surrounding the Community of Ludlow. Three signs of desert tortoise (i.e., scat, bones, and carapace fragments) were identified in 2017 during surveys conducted from the community of Boron to the City of Ridgecrest along Line 311.

Direct impacts on desert tortoise from O&M activities would most likely result from vehicle or equipment strikes. Desert tortoise individuals could also fall into or become trapped within excavations or open pipe segments, which could injure them or make them more vulnerable to predation. Desert tortoises may also be crushed or buried in subterranean habitat during O&M activities. In addition, O&M activities could alter behavior, cause desert tortoise individuals to be displaced from established territories containing burrows and food, and stress or endanger the desert tortoise.

Pipeline patrols and telecommunication site inspections and maintenance would continue to require the occasional use of helicopters and possibly drones. Drones would be used for inspections in congested areas with poor access or thick vegetation, and they would comply with all applicable rules and regulations. The use of drones within desert tortoise habitat has the potential to disturb or alter the behavior of desert tortoises. However, helicopter and/or drone inspections are infrequent and do not typically require hovering in one location or close to the ground.

Additionally, suitable habitat for desert tortoise may be impacted by surface-disturbing activities within the study area. Potential impacts to suitable habitat include temporary disturbances during soil excavation, soil stockpiling, repair work to the ROW and access roads, and work at staging/laydown areas. However, O&M activities typically occur in areas that have been previously disturbed, such as existing pipeline ROWs and

access roads. Permanent impacts to desert tortoise habitat would result from ongoing O&M activities, including the minor expansion of existing facilities, installation of deep-well anodes, development of pig launcher/receiver facilities, and installation of erosion control structures. As described in Chapter 2, ongoing O&M activities have the potential to result in 40 acres of temporary impacts and 3 acres of permanent impacts per year on average, with an annual maximum impact of 150 acres, and up to 1,200 acres of temporary impacts and 90 acres of permanent impacts over the 30-year permit term.

Surface-disturbing activities have resulted in, can result in, and will continue to result in indirect effects on desert tortoise through increasing the opportunities for introduction of invasive non-native plant species that may compete with or replace forage species for the desert tortoise (i.e., grasses and the flowers of annual plants). An increase in invasive plants may also facilitate fires in the area, especially when cars and construction vehicles are present. However, no fires have resulted from O&M activities to date. Human presence in isolated areas of the desert may attract opportunistic predators (e.g., coyotes [*Canis latrans*], feral dogs [*Canis lupus familiaris*], and ravens [*Corvus corax*]), which are threats to the species. Erosion and sedimentation from O&M activity work areas may also degrade adjacent habitat for desert tortoise.

Mohave Ground Squirrel

Mohave ground squirrel, which occurs in desert habitats throughout the western Mojave Desert, has the potential to be impacted by ongoing O&M activities. Individuals of this species could fall into or become trapped within excavation areas or open pipe segments, be struck by vehicles or equipment, or be crushed or buried in occupied burrows during O&M activities. In addition, surface-disturbing activities may impact Mohave ground squirrel by permanently or temporarily disturbing suitable habitat within the study area. The ongoing O&M activities have the potential to result in 16 acres of temporary impacts and 3 acres of permanent impacts per year on average, with an annual maximum impact of 62 acres, and up to 480 acres of temporary impacts and 90 acres of permanent impacts over a 30-year permit term. Surface-disturbing activities may also increase opportunities for the introduction of invasive, non-native plant species that may compete with or replace forage species for special-status mammals (i.e., seeds, fruit, and leafy vegetation of desert forbs, grasses, and shrubs). Human presence in isolated areas of the desert may attract opportunistic predators, such as ravens, coyotes, and feral dogs, which are threats to this species.

O&M activities have occurred, can occur, and will continue to occur in areas that have been previously disturbed, such as existing pipeline ROWs and access roads, where the potential for this species to occur is unlikely. PG&E's O&M activities have involved, can involve, and will continue to involve activities on existing pipelines and associated facilities, and the potential for the aforementioned impacts to Mohave ground squirrel is limited to the portions of the study area located within its range and where suitable habitat exists.

Least Bell's Vireo and Southwestern Willow Flycatcher

The ongoing O&M activities have the potential to impact riparian habitat along the Mojave River and Colorado River that may be suitable for the federally and state-listed least Bell's vireo and southwestern willow flycatcher. If these species are nesting during O&M activities, O&M activities would have the potential to directly take individuals or impact occupied habitat. Additionally, indirect noise effects from O&M activities during the nesting season have the potential to disturb nesting activities if O&M activities are conducted adjacent to occupied riparian habitat. O&M activities typically occur in areas that have been previously disturbed, such as existing pipeline ROWs and access roads, where the potential for these species to occur is unlikely.

Crotch Bumble Bee

The ongoing O&M activities have the potential to impact open grassland and scrub communities supporting suitable floral resources for Crotch bumble bee. If this species were present on the project site during O&M activities, O&M activities would have the potential to directly take individuals or impact occupied habitat. O&M activities typically occur in areas that have been previously disturbed, such as existing pipeline ROWs and access roads, where the potential for this species to occur is low.

Critical Habitat

Small portions of the pipelines in the study area cross critical habitat designated for southwestern willow flycatcher, bonytail chub, Parish's daisy, and Cushenbury milk-vetch, as shown in Table 4.4-6.

Table 4.4-6. Critical Habitat Crossed by Pipelines in the Study Area

Species with Critical Habitat	Approximate Acreage within a 500-Foot-Wide Study Area	Approximate Acreage within a 0.25-Mile Buffer of the Study Area
Plant		
Cushenbury milk-vetch	29.4	90.9
Parish's daisy	28.6	95.7
Wildlife		
Bonytail chub	13.8	39.6
Desert tortoise	8,341.3	33,346.5
Southwestern willow flycatcher	54.4	284.2

Source: USFWS 2016.

Temporary impacts to designated critical habitat resulting from ongoing O&M activities may occur during soil excavation, soil stockpiling, ROW and access road repair, vegetation removal, and work at staging/laydown areas. Impacts have been and would continue to be primarily temporary disturbances and would be short in duration. Minimal amounts of permanent habitat disturbance (i.e., conversion of habitat to a facility footprint) would result from O&M activities. Activities that may result in permanent impacts to critical habitat include the expansion of existing facilities, installation of deep-well anodes, the development of pig launcher/receiver facilities, and the installation of erosion control structures. In general, routine O&M activities are located on existing facilities in areas that have been previously disturbed, such as existing pipeline ROWs and access roads, where suitable habitat for these species is limited. Therefore, the ongoing O&M activities would not adversely modify designated critical habitat.

Impact BIO-1 Impacts Summary – Candidate Species, Listed Species, and Critical Habitat

PG&E's past and ongoing O&M activities have and will continue to have the potential to impact desert tortoise and Mohave ground squirrel. Potential impacts to western Joshua tree, listed carbonate plants, least Bell's vireo, southwestern willow flycatcher, and Crotch bumble bee may also continue to occur. While ongoing O&M activities would primarily result in temporary disturbances and be short in duration, many of PG&E's ongoing O&M activities have involved, can involve, and will continue to involve ground disturbance, use of vehicles and equipment, and modification of O&M infrastructure, including minor new construction. These activities have

the potential to reduce habitat quality, eliminate habitat, injure or kill desert tortoise or Mohave ground squirrel, or crush or collapse occupied burrows. Similar impacts to the other four candidate and listed species are also possible. The potential impacts from PG&E's ongoing O&M activities to desert tortoise and Mohave ground squirrel and the other candidate and listed species, as described earlier, are part of the existing baseline conditions for purposes of CEQA. However, issuing the requested permits conditioning PG&E O&M activity during the 30-year term of the permits has the potential to cause an indirect incremental physical change to these ongoing baseline effects, and potentially cause significant impacts to desert tortoise and Mohave ground squirrel and the other candidate and listed species in the study area.

If issued, the permits PG&E seeks from CDFW would condition how PG&E conducts ongoing O&M activities throughout the study area during the 30-year term of the permits. In particular, the permits would condition ongoing PG&E O&M activities to avoid, minimize, and mitigate otherwise prohibited impacts to the covered species and to trust resources subject to CDFW's regulatory under its LSA Program. The permits, in this respect, would authorize PG&E to conduct O&M activities in the study area during the 30-year permit term, subject to various conditions, with related authority to cause previously prohibited adverse effects to the covered species and trust resources subject to CDFW's LSA Program jurisdiction. In the past, absent activity-specific authorization under the CFGC, PG&E would have to implement ongoing O&M activity in a way that avoided any such jurisdictional impacts, albeit where other non-jurisdictional impacts to the species and their habitat occurred. These non-jurisdictional effects, as noted earlier, as well as jurisdictional impacts authorized in the past with activity-specific permitting under the CFGC, are part of the past and ongoing environmental baseline. That said, the permits, if issued, would authorize certain jurisdictional effects caused by ongoing O&M activity that in the past, absent activity-specific authorization under the CFGC, would have been prohibited. The incremental change in potential environmental effects caused by PG&E's O&M activities conditioned by the proposed permits compared to the effects caused by past and ongoing O&M activities represents a change to baseline conditions. This incremental change to baseline conditions could cause substantial or potentially substantial adverse effects to desert tortoise, Mojave ground squirrel, western Joshua tree, listed carbonate plants, least Bell's vireo, southwestern willow flycatcher, and the Crotch bumble bee.

As described in the Special-Status Species section of Section 4.4.3, the entire study area is covered species habitat. Study area assessment of desert tortoise and Mohave ground squirrel to date includes focused field surveys by PG&E over a portion of the study area and incorporation of information including vegetation community and species occurrence records from the DRECP, CNDDDB, PG&E records, and other science-based resources. Information regarding desert tortoise and Mohave ground squirrel presence in the study area, distribution, status, threats to species, and how specific PG&E O&M activities conditioned by the permits may cause a change to baseline conditions for these species is discussed below.

Desert tortoise and Mohave ground squirrel have distribution in the study area and are already imperiled or particularly vulnerable to adverse effects. The studies and surveys available indicate desert tortoise is declining in numbers from a variety of factors, including human-caused disturbance, road impacts, predators, invasive plant proliferation, climate change, and others. Adverse effects include habitat modification, ground disturbance, and other PG&E O&M activities that may injure or kill individuals and portions of desert tortoise and Mohave ground squirrel populations and occupied burrows.

APMs identified by PG&E would avoid and minimize some of these effects. PG&E has incorporated and will continue to incorporate the APMs provided in Section 4.4.4.2 into its ongoing O&M activities. Several of these APMs avoid and partially minimize the potential for impacts to desert tortoise and Mohave ground squirrel. PG&E's APM BIO-1 is a standard practice that implements a worker education program that includes resource

setbacks and other measures when determined appropriate by PG&E. APM BIO-3 requires PG&E to use techniques that minimize site disturbance and APM BIO-12 requires, to the maximum extent practicable, that new, permanent facilities are sited to avoid impacts to vegetation and habitat. APM BIO-9 requires PG&E to assess special-status wildlife species where O&M activities would impact potential habitat for the purpose of recommending additional measures to avoid and minimize significant disruption to necessary behaviors. APM BIO-5 requires that any special-status wildlife encountered during the course of an activity be allowed to leave the area unharmed. APM BIO-6 through APM BIO-8 require the inspection of construction materials, containment and removal of trash, and covering open trenches, respectively, to minimize potential impacts to species-status wildlife species. APM BIO-17 requires that biological monitoring be conducted for any geotechnical boring activities in desert tortoise habitat to ensure that no desert tortoises are killed and no burrows are crushed. APM BIO-15 (Desert Tortoise Fencing), APM BIO-16 (Desert Tortoise Monitoring and Pipe Inspection), APM BIO-18 (Inspections Under Vehicles), and APM BIO-19 (Speed Limits) would be superseded by specific provisions of Mitigation Measure (MM) BIO-1, including Delineation of Project Area Boundaries, Delineation of Habitat, Entrapment Inspections, Vehicle and Equipment Inspections, Desert Tortoise Pre-Activity Surveys and Desert Tortoise Exclusionary Fencing. APM BIO-20 (Predator Management) would be superseded by MM BIO-1, which addresses raven management. APM BIO-21 (Mitigation) would be superseded by MM BIO-2. APM BIO-26 (Mohave Ground Squirrel Avoidance) would be superseded by specific provisions of MM BIO-1, including Mohave Ground Squirrel Relocation Plan, Mohave Ground Squirrel Survey for Pre-Planned O&M Activities, Mohave Ground Squirrel Burrow Pre-Activity Surveys, and Mohave Ground Squirrel Burrow Scoping and Excavation. PG&E's commitment to continue implementing these APMs would minimize and reduce substantial or potentially substantial effects to desert tortoise and Mohave ground squirrel, but not to below a level of significance.

Implementation of MM BIO-1 (Mojave Desert Tortoise, Mohave Ground Squirrel, and Western Joshua Tree Minimization Measures) and MM BIO-2 (Compensatory Mitigation for Mojave Desert Tortoise, Mohave Ground Squirrel, and Western Joshua Tree) would reduce these effects to below a level of significance. Implementation of MM BIO-1 would minimize the effects of PG&E O&M activities on desert tortoise and Mohave ground squirrel, and implementation of MM BIO-2 would compensate for the unavoidable impacts to desert tortoise and Mohave ground squirrel from PG&E's ongoing O&M activities. With implementation of MM BIO-1 and MM BIO-2 (refer to Section 4.4.4.4 for full text of these measures), in addition to incorporation of the APMs described above (refer to Section 4.4.4.2 for full text of all measures), CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not result in a substantial adverse effect to desert tortoise and Mohave ground squirrel. Therefore, impacts would be **less than significant with mitigation incorporated**.

Issuance of the proposed permits requested by PG&E for O&M activity in the study area over the next 30 years also has the potential to cause substantial or potentially substantial adverse effects to other candidate and listed species compared to the existing environmental baseline. APMs identified by PG&E would avoid and minimize some of these indirect effects, but not to below a level of significance under CEQA. PG&E's APM BIO-1 is a standard practice that implements a worker education program that includes resource setbacks and other measures when determined appropriate by PG&E. APM BIO-2 requires that a Designated Biologist oversee compliance with applicable APMs. APM BIO-3 requires PG&E to use techniques that minimize site disturbance and APM BIO-4 requires measures to prevent the spread of invasive weeds with the potential to degrade habitat. APM BIO-5 requires avoidance and documentation special-status species when encountered during an activity, and APM BIO-6 through APM BIO-8 require inspections of construction materials, waste and equipment removals, and wildlife entrapment prevention measures. APM BIO-9 requires PG&E to assess special-status wildlife species where O&M activities would impact potential habitat for the purpose of

recommending additional measures to avoid and minimize significant disruption to necessary behaviors. APM BIO-10 and APM BIO-11 prohibit pets and firearms in the study area. APM BIO-12 requires, to the maximum extent practicable, that new, permanent facilities be sited to avoid impacts to vegetation and habitat, and APM BIO-13 requires habitat restoration for special-status species habitat affected by ground disturbance or vegetation removal that are not converted by long-term ground disturbance. APM BIO-14 requires that special-status plant species occurrences are avoided to the maximum extent practicable. PG&E's commitment to continue implementing these APMs would minimize and reduce substantial or potentially substantial effects to other candidate and listed species but not to below a level of significance.

For western Joshua tree (during Candidacy or if listed under CESA), implementation of MM BIO-1 (Mojave Desert Tortoise, Mohave Ground Squirrel, and Western Joshua Tree Minimization Measures) would provide for avoidance and minimization of impacts and MM BIO-2 (Compensatory Mitigation for Mojave Desert Tortoise, Mohave Ground Squirrel, and Western Joshua Tree) would provide compensatory mitigation for unavoidable impacts to western Joshua tree individuals and habitat that would reduce these effects to below a level of significance. With implementation of MM BIO-1 and MM BIO-2 (refer to Section 4.4.4.4 for full text of these measures), in addition to incorporation of the APMs described above (refer to Section 4.4.4.2 for full text of all measures), CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not result in a substantial adverse effect to western Joshua tree. Therefore, impacts would be **less than significant with mitigation incorporated**.

For least Bell's vireo, southwestern willow flycatcher, listed carbonate plants, and the Crotch bumble bee, implementation of MM BIO-4 (Pre-Activity Special-Status Resources Assessment) and MM BIO-5 (Avoidance and Minimization for Special-Status Resources) would provide avoidance and minimization of impacts to reduce these effects to below a level of significance. For example, MM BIO-4 requires PG&E conduct a pre-activity special-status resources assessment in areas where O&M activities and related staging will result in ground disturbance, including seasonally appropriate botanical surveys and protocol surveys for listed riparian birds if activity occurs during the nesting season in suitable habitat areas. MM BIO-5 requires that in areas where the Pre-Activity Special-Status Resources Assessment Report documents the presence of one or more special-status resources in an O&M activity work area, PG&E would implement several general, and in certain instances, species-specific avoidance and minimization measures to reduce or eliminate the potential for significant impacts to special-status resources, including flagging of special-status species habitats and avoidance of impacts during nesting bird seasons. Additionally, if impacts to jurisdictional waters of the state, including streams, result from activities outside the nesting bird season, MM BIO-3 would require that PG&E notify and as necessary enter into an LSA Agreement with CDFW and compensate for those resources accordingly, which would provide an indirect conservation benefit for least Bell's vireo and southwestern willow flycatcher if such impacts occurred in suitable habitat for these species. Further, implementation of the compensatory mitigation requirements of MM BIO-2 (Compensatory Mitigation for Mojave Desert Tortoise, Mohave Ground Squirrel, and Western Joshua Tree) and MM BIO-6 (Compensatory Mitigation for Special-Status Resources) would also provide indirect conservation benefit for least Bell's vireo, southwestern willow flycatcher, listed carbonate plants, and the Crotch bumble bee. Although the incremental change to baseline conditions for Crotch bumble bee would be considered small due to the nature of the O&M activities that would occur mostly in areas that have been previously disturbed, like existing pipeline ROWs and access roads, CDFW's issuance of the permits conditioning how PG&E conducts ongoing O&M activities could cause an incremental physical change to the Crotch bumble bee baseline, which could be adverse and potentially substantial. However, with implementation of MM BIO-4 and MM BIO-5 (refer to Section 4.4.4.4 for full text of these measures), in addition to incorporation of the APMs described above (refer to Section 4.4.4.2 for full

text of all measures), CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not result in a substantial adverse effect to least Bell's vireo, southwestern willow flycatcher, listed carbonate plants, and the Crotch bumble bee. Therefore, impacts would be **less than significant with mitigation incorporated**.

Incorporation of the APMs described above into the ongoing O&M activities would avoid and minimize impacts to candidate and listed species; however, the potential for significant impacts would remain, absent implementation of additional mitigation measures. With implementation of MM BIO-1, MM BIO-2, MM BIO-4, and MM BIO-5 (refer to Section 4.4.4.4) in addition to incorporation of the APMs (refer to Section 4.4.4.2 for full text of all measures), CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not result in a substantial adverse effect to candidate species, listed species, or critical habitat. Furthermore, MM BIO-3 and MM BIO-6 provide an indirect conservation benefit. Therefore, impacts would be **less than significant with mitigation incorporated**.

Other Special-Status Species

The majority of PG&E's O&M activities have involved, can involve, and will continue to involve the maintenance of an existing underground pipeline system, with only relatively few new aboveground structures (e.g., pig launcher/receiver facilities, electronic test system stations and cathodic test stations, and thermoelectric generators) to be installed as part of the continuing activities. This section describes the potential impacts to special-status plant and wildlife species (non-listed and non-candidate) that may occur because of PG&E's ongoing O&M activities. Following the discussion of potential impacts, this section concludes with an analysis of the potential for significant impact to special-status species and the general and specific measures that PG&E will continue to implement to avoid or substantially lessen impacts to other special-status plant and wildlife species.

Plants

Of the non-listed, non-candidate special-status plant species, a total of 4 special-status plant species are present and 20 special-status plant species are likely to occur or have a potential to occur within portions of the study area, depending on the species' ranges and specific habitat requirements.¹¹

Special-status plant species surveys were conducted on April 17 through 22, 2017, along Line 311, as well as along Line 300 A and Line 300 B from the community of Newberry Springs to the community of Fenner Valley. *Larrea tridentata* Shrubland Alliance (creosote brush scrub) was identified as the most widespread plant community along the pipeline segments, accounting for approximately 85% of the vegetation types identified in the survey areas. Other vegetation types included the saltbush communities, *Ambrosia salsola*–*Bebbia juncea* shrubland alliance (cheesebush–sweetbush scrub) and *Suaeda moquinii* shrubland alliance (bush seepweed scrub). Three special-status species were identified during the surveys: white-margined beardtongue (*Penstemon albomarginatus*), small-flowered androstephium (*Androstephium breviflorum*), and spiny-haired blazing star (*Mentzelia tricuspsis*). Two white-margined beardtongue plants were identified in sandy soils with creosote bush (*Larrea tridentata*) approximately 0.25 miles northeast of I-40 along Line 300 B. A total of six small-flowered androstephium were identified at three separate locations along the eastern portion of Lines 300 A and 300 B. The small-flowered androstephium plants were growing on sandy soil with creosote bush. One individual spiny-haired blazing star was identified during the surveys in a wash

¹¹ Additional information on each species' occurrence record locations and respective ranges is provided in Table 4.4-2, Special-Status Plant Species Possibility of Occurrence in the Study Area.

along the north side of the Line 300 A access road, and associated plant species included cheesebush (*Ambrosia salsola*) and creosote bush.

A fourth special-status plant species, Emory's crucifixion-thorn (*Castela emoryi*), was documented during a general resource assessment conducted on approximately 77 miles between the communities of Newberry Springs and Essex along Lines 300 A and 300 B in October 2017. A single Emory's crucifixion-thorn shrub was found approximately 30 feet west of a project component (T-1228 M Test head) located just west of the Community of Ludlow, where I-40 crosses Lines 300 A and 300 B. Vegetation in the western portion of the survey area was described as various salt scrub communities, and the eastern portion was described as being dominated by the creosote bush scrub community.

Additional special-status plant surveys were conducted from April 24 through 26, 2018, at 14 new or expanded work locations along Lines 300 A and 300 B and at 10 new or expanded work locations along Line 311. Vegetation communities were mostly the same as those described in the 2017 special-status plant surveys. Creosote bush scrub was identified as the dominant plant community, with white bursage (*Ambrosia dumosa*), cheesebush, spinescale saltbush (*Atriplex spinifera*), brittlebush (*Encelia farinosa*), allscale (*Atriplex polycarpa*), and Mormon tea (*Ephedra* spp.) interspersed throughout. *Coleogyne ramosissima* shrubland alliance (black brush scrub) was the only new vegetation type observed along Line 311. No additional locations of special-status species were identified during the 2018 surveys.

The proposed project (PG&E's ongoing O&M activities as conditioned by CDFW's issuance of the permits) has the potential to impact 4 special-status species known to occur in the study area and an additional 20 special-status species likely to occur in the study area. PG&E's ongoing O&M activities result in various levels of surface disturbance, as described in Chapter 2. Grading, excavation, and vehicle and foot traffic associated with ongoing O&M activities in the study area have the potential to result in the direct loss of special-status plant species. However, O&M activities typically occur within existing pipeline ROWs and access roads. Equipment and vehicles may introduce noxious weeds that compete with special-status species or may result in petroleum product or other chemical spills that negatively affect special-status plant species and habitat. In addition, impacts such as increased fugitive dust could reduce the growth and vigor of special-status plant species.

Other protected plant species include species of California desert native plants (i.e., species in the genera *Prosopis* and *Parkinsonia* (*Cercidium*) and the species *Senegalia greggii*, *Atriplex hymenelytra*, *Dalea spinosa*, and *Oneya tesota*) that could be impacted by the project and for which harvest is prohibited under the California Desert Native Plants Act absent appropriate permits.

Some areas where special-status plant species may occur in O&M activity areas may have reduced habitat quality because this is an existing pipeline ROW where O&M activities have been occurring in the past. However, ongoing O&M activities have the potential to result in 40 acres of temporary impacts and 3 acres of permanent impacts per year on average with an annual maximum impact of 150 acres, and up to 1,200 acres of temporary impacts and 90 acres of permanent impacts over a 30-year permit term, which may result in the direct loss of individuals or direct loss of suitable habitat. Surface-disturbing activities may also result in indirect effects through increasing the opportunities for introduction of invasive non-native plant species that may degrade habitat for special-status or protected plant species. Erosion and sedimentation from O&M activity areas may also degrade adjacent special-status plant species habitat.

Wildlife

Of the non-listed, non-candidate special-status wildlife species, a total of 5 special-status wildlife species are present and 15 special-status wildlife species are likely to occur or have a potential to occur within portions of the study area, depending on the species' ranges and specific habitat requirements.¹²

Reptiles

The only non-listed special-status reptile species with the potential to occur in the study area is the Mojave fringe-toed lizard, which occupies areas of windblown sand. Suitable habitat for Mojave fringe-toed lizard occurs in the study area and recent occurrences have been recorded near Lines 300 A and 300 B between Newberry Springs and Amboy.

Direct impacts from ongoing O&M activities to Mojave fringe-toed lizard would most likely result from vehicle or equipment strikes but could also result from individuals of the species falling into or becoming trapped within excavations or open pipe segments, which could injure them or make them more vulnerable to predation. The species may also be crushed or buried in subterranean habitat during O&M activities. In addition, O&M activities could alter behavior or cause individuals to be displaced.

Additionally, suitable habitat for Mojave fringe-toed lizard may be impacted by surface-disturbing activities within the study area. Potential impacts to suitable habitat include temporary disturbances during soil excavation, soil stockpiling, repair work to the ROW and access roads, and work at staging/laydown areas. However, O&M activities typically occur in areas that have been previously disturbed, such as existing pipeline ROWs and access roads. Permanent impacts to habitat would result from O&M activities, including the minor expansion of existing facilities, installation of deep-well anodes, development of pig launcher/receiver facilities, and installation of erosion control structures.

Surface-disturbing activities may also result in indirect effects through increasing the opportunities for introduction of invasive non-native plant species. An increase in invasive plants may also facilitate fires in the area, especially when cars and construction vehicles are present. However, no fires have resulted from O&M activities to date. Erosion and sedimentation from O&M activity work areas may also degrade adjacent habitat.

Fish

Most of the water features within the study area are ephemeral water features that do not have the potential to support fish. In addition, O&M activities within water features are typically conducted during the dry season when no fish are present, and impacts to fish and fish habitat are not anticipated. The Colorado River is located at the eastern terminus of the study area and approximately 0.2 miles of Line 300 A crosses over the river. Two special-status fish species—bonytail chub and razorback sucker (*Xyrauchen texanus*)—have been documented within the Lower Colorado River within 1 mile of Topock Compressor Station.

Although suitable aquatic habitat for these special-status fish species occurs adjacent to and beneath the study area, no O&M activities would occur within the Colorado River. O&M activities such as pipeline replacement or bridge maintenance that may occur close to the Colorado River are infrequent. Impacts to the Colorado River and the special-status fish species that it supports would be avoided by implementing water

¹² Additional information on each species' occurrence record locations and respective ranges is provided in Table 4.4-3, Special-Status Wildlife Species Possibility of Occurrence in the Study Area.

quality BMPs. The following BMPs are currently being implemented in the study area (also refer to Section 4.10.4.2, Applicable Measures, in the Hydrology and Water Quality section of this EIR):

- Conduct activities near water features during the dry season. If work is necessary during the rainy season, it would be conducted during dry spells between rain events to the extent feasible.
- Refuel at least 100 feet from water features. Vehicles operating adjacent to water features would be inspected and maintained daily to prevent leaks.
- Keep spill cleanup kits on site (with fueling and maintenance vehicles) and accessible at all times.
- Train all personnel with regard to the location, use, and contents of the spill kits. If a spill occurs, clean it up immediately with absorbents, notify the Environmental Field Specialist, and dispose of the materials properly.
- Minimize hazardous material storage on site and store hazardous liquids, wastes, and all chemicals in watertight containers with appropriate secondary containment. Contain and protect stockpiled waste materials and cover liquid pollutant containment BMPs prior to rain, at the end of each day, and during non-workdays.
- Monitor BMPs daily during construction activities. Repair, replace, and/or maintain BMPs to correct any deficiencies.
- Return work areas to their pre-existing contours and conditions upon completion of work. The necessity for restoration work, including revegetation and soil stabilization, would be evaluated upon completion of work and restoration would be performed as needed.

PG&E's commitment to implementing these BMPs has minimized and will continue to minimize impacts on water quality by controlling potential pollutants, including sediment, and runoff discharges from the site. PG&E would also continue to comply with the requirements of SWRCB Order No. 2009-0009-DWQ (as amended by 2010-0014-DWQ and 2012-0006-DWQ) (Construction General Permit), which requires the implementation of a stormwater pollution prevention plan (SWPPP) for activities disturbing 1 acre or more of land and/or partially outside of the existing ROW. Stormwater discharge for activities that disturb areas less than 1 acre and/or are wholly within the existing ROW would continue to be addressed through the application of previously identified BMPs for water quality.

To specifically address erosion and siltation for activities that disturb less than 1 acre of land, PG&E would return water features to their pre-construction grade and cover disturbed areas with a combination of temporary and permanent vegetative stabilization measures, including reseeding where appropriate in accordance with PG&E's BMPs for water quality. PG&E also would continue to install and maintain a stabilized entrance and exit to work areas, as well as restoring disturbed entrance and exit areas to their pre-construction contours following the completion of construction.

Birds

The following six special-status (non listed; non-candidate) avian species are present, are likely to occur, or have the potential to occur within in portions of the study area, depending on the species' ranges and specific habitat requirements¹³:

- Bendire's thrasher
- Golden eagle

¹³ Additional information on each species' occurrence record locations and respective ranges is provided in Table 4.4-3, Special-Status Wildlife Species Possibility of Occurrence in the Study Area.

- Le Conte's thrasher
- Loggerhead shrike
- Long-eared owl (*Asio otus*)
- Western burrowing owl

The study area is located within the breeding range for western burrowing owl. Suitable foraging and nesting habitat is present within the study area in the form of dry, open areas with burrows. One western burrowing owl was documented in the study area during surveys conducted on Lines 300 A and 300 B from the community of Newberry Springs to the community of Essex in 2017. Signs of western burrowing owl (i.e., fresh scat and use of a desert tortoise burrow) were also documented during the 2017 surveys near the Community of Essex. Additionally, one western burrowing owl was documented in the study area during surveys conducted on Line 311 from the community of Boron to the City of Ridgecrest in 2017. Signs of western burrowing owl included pellets, feathers, whitewash, and use of an old kit fox den. Suitable foraging habitat for golden eagle is present within the study area. However, nesting habitat, consisting of secluded cliffs and large trees, is limited within 1 mile of the pipelines in the study area. The most recent occurrence of an active nest within 1 mile of the study area was documented in 2008. Additionally, Le Conte's thrasher (*Toxostoma lecontei*) and loggerhead shrike (*Lanius ludovicianus*) are known to be present in the study area.

This section describes the potential impacts to special-status bird species and other protected nesting bird species that have occurred, can occur, and will continue to occur as a result of the ongoing O&M activities for existing pipelines and associated facilities in the study area.¹⁴ Following the discussion of potential impacts, this section also discusses the general and specific measures that PG&E will continue to implement to avoid and minimize impacts to special-status birds.

PG&E's ongoing O&M activities that do not result in new surface disturbance (e.g., road surface maintenance, pipeline patrols, valve inspections, cathodic protection inspections, and telecommunication site inspections) are generally not expected to impact special-status birds. During road surface maintenance, all vehicles have been required to and will continue to be required to stay on existing roads; therefore, potential impacts to nesting habitat would not occur.

PG&E's ongoing O&M activities have resulted in and will continue to result in various levels of surface disturbance (e.g., access road repair, erosion control, pipeline excavation, installation of pig launcher/receiver facilities, and hydrostatic testing) and therefore may result in temporary habitat loss and temporary impacts to bird behavior due to increased noise, increased visual disturbances, and ground vibrations. Additionally, vegetation trimming or removal within and immediately adjacent to nesting habitat could result in the disruption of nesting behavior or loss of nests. PG&E's ongoing O&M activities have the potential to result in 40 acres of temporary impacts and 3 acres of permanent impacts per year on average, with an annual maximum impact of 150 acres, and up to 1,200 acres of temporary impacts and 90 acres of permanent impacts over the 30-year permit term. However, most O&M activities are located in previously disturbed areas, such as existing pipeline ROWs and access roads and compressor stations. Therefore, impacts to suitable nesting and foraging habitat are anticipated to be minimal. Furthermore, planned O&M activities would involve continuing O&M on existing pipelines and associated facilities and would not result in an increase in disturbance to nesting and foraging habitat.

¹⁴ Many common bird species are also protected under the Migratory Bird Treaty Act and Sections 3503, 3503.5, 3513, and 3800 of the CFGC.

Pipeline patrols and telecommunication site maintenance may require the occasional use of fixed-wing aircraft, helicopters, and possibly drones. Drones would be used for inspections in areas with poor access or thick vegetation, and their use would comply with all applicable rules and regulations. The use of drones within nesting bird habitat has the potential to disturb or alter the behavior of nesting birds. Any disturbance to incubating birds could cause nest abandonment and failure. However, the use of fixed-wing aircraft, helicopters, and drones for inspecting telecommunication sites is infrequent and does not typically require hovering in one location. Further, they are generally operated at high elevations and well above nesting habitat.

Mammals

American badger is assumed to be present within portions of the study area. American badger digs and burrows were documented on Lines 300 A and 300 B during surveys from the community of Newberry Springs to the Community of Essex in 2017. The highest concentration of American badger sign was documented near the Community of Ludlow during the surveys; however, American badger habitat is located throughout the study area. Additionally, desert kit fox is known to occur in the study area on Lines 300 A, 300 B, and 311, and habitat for desert kit fox occurs in most of the study area.

The following special-status (non-listed and non-candidate) mammal species are likely to occur or have the potential to occur in portions of the study area, depending on the species' ranges and specific habitat requirements¹⁵:

- | | |
|---|---|
| ▪ Cave myotis (<i>Myotis velifer</i>) | ▪ Ringtail (<i>Bassariscus astutus</i>) |
| ▪ Desert bighorn sheep | ▪ Tehachapi pocket mouse
(<i>Perognathus alticolus inexpectatus</i>) |
| ▪ Mojave River vole
(<i>Microtus californicus mohavensis</i>) | ▪ Townsend's big eared bat
(<i>Corynorhinus townsendii</i>) |
| ▪ Pallid bat | ▪ Western mastiff bat
(<i>Eumops perotis californicus</i>) |
| ▪ Pallid San Diego pocket mouse
(<i>Chaetodipus fallax pallidus</i>) | ▪ Yuma myotis (<i>Myotis yumanensis</i>) |
| ▪ Pocketed free-tailed bat
(<i>Nyctinomops femorosaccus</i>) | |

Bats

Surveys for special-status bat species were conducted in the summer and winter of 2015 at the Topock Compressor Station and adjacent habitats, including Moabi National Park and Topock Bay. A preliminary habitat analysis to assess the potential for bat roosting and foraging habitat was conducted on January 29 and 30, 2015 (CH2M Hill 2015). Summer surveys were conducted from July 20 through 21, 23, 26, and 28, and September 25, 2015. Acoustic surveys for bats were conducted using Anabat detectors. During these surveys, species including Yuma myotis, California myotis (*Myotis californicus*), canyon bat (*Pipistrellus hesperus*), pallid bat, and Mexican free-tailed bat (*Tadarida brasiliensis*) were detected. No roosts or roosting habitat were identified during the surveys. The summer surveys included mist netting, radio telemetry to identify roosting locations, and visual and acoustic surveys of bat roost habitats. Ten active bat roosts that included three species (cave myotis, Yuma myotis, and pallid bat) were identified during the surveys. One Yuma myotis roost was identified approximately 0.06 miles north of Line 300 B along Interstate (I) 40. Two

¹⁵ Additional information on each species' occurrence record locations and respective ranges is provided in Table 4.4-3, Special-Status Wildlife Species' Possibility of Occurrence in the Study Area.

female pallid bats were radio-tagged during mist-netting surveys and tracked to a roosting site that is located approximately 0.2 miles south of Line 300 A. Ongoing O&M activities may impact special-status bat species, including cave myotis, pallid bat, pocketed free-tailed bat, Townsend's big eared bat, and western mastiff bat.

Desert Bighorn Sheep

Desert bighorn sheep are highly mobile ungulates known to inhabit mountain ranges adjacent to or crossed by the pipelines in the study area.¹⁶ The Recovery Plan for Bighorn Sheep in the Peninsular Ranges includes nine recovery regions (USFWS 2000b); however, the study area is located north of and outside the nine recovery regions. There are also nine bighorn sheep hunt zones, and the study area may overlap or come close to the Marble/Clipper Mountains–Zone 1, the south Bristol Mountains–Zone 8, and the Cady Mountains–Zone 9.¹⁷ Suitable foraging and movement habitat is located in the foothill portions of the study area near Topock Compressor Station, but no lambing habitat occurs within the study area. ROW speed restrictions would be in place, and if a bighorn sheep is observed during O&M activities, work would be halted and activities would recommence after the animal moves away on its own per APM BIO-5.

Potential direct impacts to desert bighorn sheep include injury due to collisions with construction or inspection vehicles or equipment; injury by falling into excavations or open pipe segments; or being disturbed in habitat that is used for shelter or protection during O&M activities. Suitable habitat for this species may be impacted by surface-disturbing activities within the study area. Potential impacts to suitable habitat include short-term disturbances during soil excavation, soil stockpiling, repair work to the ROW and access roads, and work at staging/laydown areas. In addition, behavior could be altered by O&M activities with excessive noise or ground disturbance. PG&E's ongoing O&M activities have the potential to result in 40 acres of temporary impacts and 3 acres of permanent impacts per year on average, with an annual maximum impact of 150 acres, and up to 1,200 acres of temporary impacts and 90 acres of permanent impacts over the 30-year permit term.

Pipeline patrols and telecommunication site inspections and maintenance would continue to require the occasional use of helicopters and possibly drones. Drones would be used for inspections in congested areas with poor access or thick vegetation, and their use would comply with all applicable rules and regulations. The use of drones and helicopters within this special-status mammal species' habitat has the potential to disturb or negatively alter the behavior of the species. However, the use of fixed-wing aircraft, helicopters, and drones for inspecting telecommunication sites is infrequent and does not typically require hovering in one location. Further, they are generally operated at high elevations, where they would not be expected to affect mammal behavior.

O&M activities typically occur in areas that have been previously disturbed (e.g., existing pipeline ROWs and access roads) and where suitable habitat for the species is limited. Minimal amounts of permanent habitat disturbance (i.e., conversion of habitat to a facility footprint) would result from O&M activities. Activities that may result in permanent impacts include the minimal expansion of existing facilities, installation of deep-well anodes, the development of pig launcher/receiver facilities, and the installation of erosion control structures. O&M activities would occur within existing pipeline ROWs, where habitat for bighorn sheep is limited, and potential habitat impacts would be primarily temporary in nature.

¹⁶ *Ungulates* are hoofed mammals.

¹⁷ The CDFW Map of Bighorn Sheep Hunt Zones (CDFW 2018) indicates the species' zones in relation to highways and major cities. The pipelines are located up to 12 miles south of I-40 between the Cities of Barstow and Needles, and Hunt Zones 1, 8, and 9 border and extend north and south of I-40. Without spatial data, the study area's proximity to these hunt zones is an estimate.

Impact BIO-1**Impacts Summary – Other Special-Status Species**

PG&E's past and ongoing O&M activities have and will continue to have the potential to impact special-status species. While ongoing O&M activities would primarily result in temporary disturbances and be short in duration, many of PG&E's ongoing O&M activities involve ground disturbance, use of vehicles and equipment, and modification of O&M infrastructure, including minor new construction. These activities have the potential to damage or remove special-status plant species through crushing or other ground disturbance and may crush or collapse occupied burrows of special-status wildlife species. Ongoing PG&E O&M activities also have the potential to injure, kill, or disrupt nesting, roosting, sheltering, or foraging behaviors of special-status wildlife species. The potential impacts to special-status species from PG&E's ongoing O&M activities, as described earlier, are part of the environmental baseline. However, issuing the requested permits conditioning PG&E O&M activity during the 30-year term of the permits has the potential to cause an indirect physical change to these ongoing baseline effects and potentially significant impacts to special-status species generally.

The permits PG&E seeks from CDFW, if issued, would condition how PG&E conducts ongoing O&M activity throughout the study area during the 30-year term of the permits. The permits, in particular, would condition ongoing PG&E O&M activities to avoid, minimize, and mitigate otherwise prohibited impacts to the covered species and to trust resources subject to CDFW's regulatory under its LSA Program. The permits, in this respect, would authorize PG&E to conduct O&M activities in the study area during the 30-year permit term, subject to various conditions, and cause previously prohibited adverse effects to the covered species and trust resources subject to CDFW's LSA Program jurisdiction. The effects authorized by the permits and related PG&E O&M activities subject to the related permit conditions represent a change to baseline conditions that is further addressed specifically in the candidate and listed species and critical habitat impact analysis provided above.

That the permits, if issued, would authorize PG&E to conduct O&M activities in the study area for the next 30 years, causing otherwise unauthorized impacts subject to CDFW's regulatory jurisdiction, also raises the potential that the same O&M activities may cause an incremental physical change to ongoing baseline effects to special-status species. For example, the permits would authorize PG&E to conduct O&M activities causing related and, if the permits are issued, authorized jurisdictional effects where in the past, without CDFW authorization, PG&E would have had to implement or conduct O&M activities in such a way as to avoid these effects. Issuing the proposed permits conditioning how PG&E implements ongoing O&M activities in the study area has the potential, accordingly, to cause an incremental change to baseline special-status species conditions and result in related substantial or potentially substantial adverse effects to these trust resources.

As described in the Special-Status Species section of Section 4.4.3, the entire study area is covered species habitat, and portions of the study area include habitat that supports special-status species. Study area assessment of special-status plant and wildlife species to date includes focused field surveys by PG&E over a portion of the study area and incorporation of information including vegetation community and species occurrence records from DRECP, CNDDDB, PG&E records, and other science-based resources. Information regarding special-status plant and wildlife species' potential presence in the study area, distribution, status, threats to species, and how specific PG&E O&M activities conditioned by the permits may cause a change to baseline conditions for these species is discussed below.

PG&E's ongoing O&M activities in the study area conditioned by the CDFW permits, if issued, will authorize otherwise prohibited impacts to the covered species and trust resources subject to CDFW's regulatory jurisdiction under its LSA Program. PG&E will have authority, accordingly, to conduct O&M activities in ways and in places where in the past, absent activity-specific permitting by CDFW, avoidance of any jurisdictional impacts was

PG&E's only lawful option under the CFGC. To the extent special-status species habitat or individual members of any such species are present in any area, PG&E's O&M activities authorized under the permits could cause an incremental change to baseline special-status species conditions. In such circumstances, substantial or potentially substantial adverse effects to special-status species could occur, particularly to special-status species identified in Table 4.4-2 and Table 4.4-3 that are documented present, likely to occur, and potential to occur in the study area. For wildlife, this includes western burrowing owl, Le Conte's thrasher, loggerhead shrike, American badger, desert kit fox, bats, Mojave fringe-toed lizard, and special-status small mammal species, and active burrows, dens, roosts, or other native wildlife nursery sites of those special-status wildlife species. Also included are the following special-status plant species: *Cymopterus deserticola*, *Cymopterus multinervatus*, *Eriophyllum mohavense*, *Erigeron parishii*, *Loeflingia squarrosa* var. *artemisiarum*, *Ditaxis claryana*, *Euphorbia jaegeri*, *Astragalus albens*, *Astragalus bernardinus*, *Astragalus tidesstromii*, *Pediomelum castoreum*, *Psoralea fremontii* var. *attenuatus*, *Senna covesii*, *Calochortus striatus*, *Mentzelia tricuspidis*, *Mentzelia tridentata*, *Menodora spinescens* var. *mohavensis*, *Chylisma arenaria*, *Eremothera boothii* ssp. *boothii*, *Diplacus mohavensis*, *Penstemon albomarginatus*, *Muhlenbergia appressa*, *Polygala intermontana*, *Castela emoryi*, *Physalis lobata*, and *Androstaphium breviflorum*.

All of these special-status species have limited distribution in the study area and are already imperiled or particularly vulnerable to adverse effects. For some special-status plant and wildlife species, the studies and surveys available may indicate stable or declining numbers from a variety of factors, including human-caused disturbance, invasive plant proliferation, climate change, and others. Adverse effects include habitat modification, ground disturbance, and other PG&E O&M activities that may injure or kill individuals and portions of special-status species populations and disturb or destroy occupied burrows and roosts of special-status wildlife species.

In short, issuance of the proposed permits requested by PG&E for O&M activity in the study area over the next 30 years has the potential to cause substantial or potentially substantial adverse effects to special-status species compared to the existing baseline conditions. APMs identified by PG&E would avoid and minimize some of these indirect effects, but not to below a level of significance of under CEQA. However, implementation of MM BIO-4 through MM BIO-6 would reduce these effects to below a level of significance. For example, MM BIO-4 requires PG&E conduct a pre-activity special-status resources assessment in areas where O&M activities and related staging will result in ground disturbance, including use of equipment and vehicles that may impact vegetation, burrows, dens, or roosts. MM BIO-5 requires that in areas where the Pre-Activity Special-Status Resources Assessment Report documents the presence of one or more special-status resources in an O&M activity work area, PG&E would implement several general and in certain instances species-specific avoidance and minimization measures to reduce or eliminate the potential for significant impacts to special-status resources. Finally, in instances where impacts cannot be avoided to the species identified above, PG&E would provide compensatory mitigation under MM BIO-6 for the impacted species, which may co-occur with compensatory mitigation for desert tortoise and Mohave ground squirrel.

PG&E commits to incorporating the APMs provided in Section 4.4.4.2 into its ongoing O&M activities. Several of these APMs would avoid and partially minimize the potential for impacts to special-status plant and wildlife species. PG&E's APM BIO-1 is a standard practice that implements a worker education program that includes resource setbacks and other measures when determined appropriate by PG&E. APM BIO-3 requires PG&E to use techniques that minimize site disturbance, and APM BIO-12 requires, to the maximum extent practicable, that new, permanent facilities be sited to avoid impacts to vegetation and habitat. APM BIO-9 requires PG&E to assess special-status wildlife species where O&M activities would impact potential habitat for the purpose

of recommending additional measures to avoid and minimize significant disruption to necessary behaviors, and APM BIO-14 indicates PG&E will, to the maximum extent practicable, avoid occurrences of special-status plants. APM BIO-5 requires that any special-status wildlife encountered during the course of an activity be allowed to leave the area unharmed. APM BIO-6 through APM BIO-8 require the inspection of construction materials, containment and removal of trash, and covering open trenches, respectively, to minimize potential impacts to species-status wildlife species. APM BIO-22, APM BIO-23, APM BIO-24, APM BIO-25, APM BIO-27, and APM BIO-28 require under certain circumstances that actions to minimize impacts to nesting birds, golden eagle, western burrowing owl, special-status species and their burrows, and roosting bats be implemented when feasible, required, and as appropriate for the location and nature of planned activities.

Incorporation of the APMs described above into the planned O&M activities would avoid and minimize impacts to special-status plant and wildlife species; however, the potential for significant impacts would remain, absent implementation of additional mitigation measures. With implementation of MM BIO-4, MM BIO-5, and MM BIO-6 (refer to Section 4.4.4.4 for full text of these measures), in addition to incorporation of the APMs described above (refer to Section 4.4.4.2 for full text of all measures), CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not result in a substantial effect to special-status plant and wildlife species. Therefore, any effects would be **less than significant with mitigation incorporated**.

Impact BIO-2 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?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.4.3, these activities may occur within areas that have been identified as riparian habitat or within sensitive natural communities. PG&E has been conducting ongoing O&M activities in the study area as it has in the past under baseline conditions, and these activities will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would 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 CDFW or USFWS.

The study area and buffer includes 55 natural communities, as characterized in the DRECP. Of these 55 communities, 21 support sensitive alliances. However, the sensitive alliances do not necessarily occur in the study area. Due to the lack of alliance-level mapping data for the entire study area and for the purposes of this EIR, a natural community was considered to be sensitive if one or more of the alliances that occur within the community had a state rarity ranking of S1 (critically imperiled), S2 (imperiled), or S3 (vulnerable). The following 21 sensitive natural communities are known from the study area:

- | | |
|--|--|
| ▪ <i>Ericameria linearifolia</i> | ▪ Lower bajada and fan Mojavean–Sonoran desert scrub |
| ▪ Great Basin Pinyon – Juniper Woodland | ▪ <i>Yucca brevifolia</i> |
| ▪ North American warm desert bedrock cliff and outcrop | ▪ <i>Panicum urvilleanum</i> |
| ▪ Arizonan upland Sonoran desert scrub | ▪ <i>Prosopis glandulosa</i> coppice dunes |
| ▪ <i>Krascheninnikovia lanata</i> | ▪ California annual and perennial grassland |

- *Chilopsis linearis*
- *Ephedra californica*
- *Lepidospartum squamatum*
- Madrean warm semi-desert wash woodland/scrub
- *Populus fremontii*
- *Prosopis glandulosa*
- *Prunus fasciculata*
- *Salix laevigata*
- *Allenrolfea occidentalis*
- Southwestern North American salt basin and high marsh
- *Suaeda moquinii*

Impacts to sensitive natural communities may result from temporary disturbance in areas that have been previously disturbed, such as existing pipeline ROWs and access roads. Temporary disturbances to sensitive natural communities include impacts during vegetation clearing, soil excavation, soil stockpiling, repair work to the ROW and access roads, and work at staging/laydown areas. Permanent impacts are those impacts that result in the conversion of sensitive natural communities to a facility footprint. Activities that may result in permanent impacts include expansion of existing facilities, installation of deep-well anodes, development of pig launcher/receiver facilities, and installation of erosion control structures. O&M activities would result in a minimal amount of permanent habitat disturbance, and most impacts resulting from O&M activities to sensitive natural communities would be related to pipeline corrosion protection. These activities include coating inspections, installation of anodes, and valve/pipeline recoating. Corrosion protection activities may result in minor amounts of temporary and permanent disturbance. Hydrostatic testing and pipeline segment replacement result in a greater amount of temporary disturbance. However, these activities are conducted on a less frequent basis.

Impacts from ongoing O&M activities to sensitive natural communities are expected to be small, localized, and primarily temporary in nature. Impacts could include the alteration of soil, topography, or vegetation, which could change the plant and wildlife species present in sensitive natural communities. All habitats containing water features are identified as sensitive natural communities, and impacts to water features could change the ecological functions of these communities.

It is not currently known whether sensitive natural communities occur in the O&M activity areas. It is unlikely that sensitive natural communities would occur in all O&M activity areas, particularly because this is an existing pipeline ROW where O&M activities have been occurring over the past 70 years; however, the ongoing O&M activities have the potential to result in 40 acres of temporary impacts and 3 acres of permanent impacts per year on average, with an annual maximum impact of 150 acres, and up to 1,200 acres of temporary impacts and 90 acres of permanent impacts over the 30-year permit term. Temporary and permanent impacts to sensitive natural communities resulting from ongoing O&M activities would be significant without implementation of avoidance, minimization, and mitigation measures.

Surface-disturbing activities have resulted in, can result in, and will continue to result in indirect effects through increasing the opportunities for introduction of invasive non-native plant species that may degrade sensitive natural communities. Erosion and sedimentation from ongoing O&M activity areas may also degrade adjacent sensitive natural communities.

PG&E has incorporated, can incorporate, and will continue to incorporate the APMs described in Section 4.4.4.2 into its ongoing O&M activities as part of its standard practice to avoid or substantially lessen impacts to sensitive natural communities. The following APMs would reduce impacts to sensitive natural communities:

- APM BIO-1: Worker Education
- APM BIO-2: Designated Biologist
- APM BIO-3: Disturbance Minimization
- APM BIO-4: Invasive Weeds
- APM BIO-9: O&M Activity Habitat Assessments
- APM BIO-12: O&M Activity Siting and Design
- APM BIO-13: Restoration

APM BIO-1 would reduce impacts to sensitive natural communities through worker education programs tailored to specific activities and site-specific biological resources, while APM BIO-4 would reduce the potential for the introduction of non-native plant species through weed management actions. PG&E would confine work areas, soil disturbance, and vegetation removal to the smallest area possible, and special habitat features would be avoided to the extent possible in accordance with APM BIO-3. To further avoid and minimize the potential to adversely impact sensitive natural communities, PG&E would conduct stabilization in areas that may be affected by ground disturbance and/or vegetation removal during pre-construction, construction, operations, and decommissioning activities in accordance with APM BIO-13. O&M activity siting and design would, to the maximum extent practicable, avoid impacts to vegetation types, unique plant assemblages, and climate refugia, as well as suitable habitat for special-status species, as described in APM BIO-12. In addition, PG&E would prevent sedimentation and toxic material runoff into water features, as well as the alteration of water features, by continuing to comply with the Construction General Permit and through the continued implementation of previously identified BMPs for water quality.

Incorporation of the APMs and BMPs described above into PG&E's planned O&M activities would avoid or substantially lessen impacts to sensitive natural communities; however, the potential for significant impacts would remain, absent implementation of additional mitigation measures. With implementation of MM BIO-4 (Pre-Activity Special-Status Resources Assessment), MM BIO-5 (Avoidance and Minimization for Special-Status Resources), and MM BIO-6 (Compensatory Mitigation for Special-Status Resources) (refer to Section 4.4.4.4 for full text of these measures), in addition to incorporation of the APMs described above (refer to Section 4.4.4.2 for full text of all measures), CDFW's issuance of the permits and its lead agency approval of the of the proposed project for purposes of CEQA would not result in a substantial adverse effect to sensitive natural communities. Therefore, any effects would be **less than significant with mitigation incorporated**.

Impact BIO-3 Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.4.3, these activities may occur within areas that have been identified as state or federally protected streams and wetlands. PG&E has been conducting ongoing O&M activities in the study area as it has in the past under baseline conditions, and these activities will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how

PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would have a substantial adverse effect on state or federally protected streams and wetlands through direct removal, filling, hydrological interruption, or other means.

Depending on the O&M activity, agency-required permits may include water quality certifications from the RWQCB under Section 401 of the CWA, authorization from USACE under Section 404 of the CWA, and/or an LSA Agreement from CDFW under Section 1600 of the CFGC. When these agencies issue their permits, the permits have conditioned and will continue to condition PG&E to avoid and minimize potential water quality impacts. Impacts that may affect jurisdictional water features include road maintenance, erosion control, culvert installation, and road crossings. These activities and their associated impacts are described in Section 4.10.

Degradation of jurisdictional water features could also result from erosion and sedimentation from various ground-disturbing activities, as well as the introduction of noxious weed species that could compromise the integrity of the habitat. Likewise, vehicles and equipment working close to waters could cause the discharge of hazardous materials into waters.

PG&E has implemented and will continue to implement BMPs for impacts that are less than 1 acre and/or are wholly within the existing ROW or comply with the Construction General Permit, which requires the implementation of a SWPPP for construction activities disturbing 1 or more acres of land. In addition, stormwater discharge for activities that disturb smaller areas have been and will continue to be addressed through the application of previously identified BMPs, which would continue to be implemented in accordance with PG&E's BMPs for water quality. In addition, PG&E would comply with the requirements from its Statewide Natural Gas Utility Discharge Permit (Statewide Permit) issued by SWRCB in January 2018. The Statewide Permit covers planned, unplanned, and emergency discharges that would result from the hydrostatic testing of new or existing gas pipelines, dewatering from trenches, and other discharges resulting from construction and O&M of natural gas transmission facilities.

PG&E's BMPs for water quality also require the monitoring and reporting of environmental impacts associated with construction or operational activities to ensure regulatory compliance and protection of resources. If required by the type and nature of the activity affecting the jurisdictional water feature, PG&E would provide notification or apply for coverage under appropriate permits prior to beginning an activity within a jurisdictional water feature. PG&E's implementation and compliance with the conditions and measures of the issued permits—as detailed in Section 4.10—would reduce impacts by limiting construction work areas within streams, protecting channels and banks from potential erosion, providing for restoration of streams, and requiring that installation of spans would not impact water flow.

To specifically address erosion and siltation for activities that disturb less than 1 acre, PG&E has returned, can return, and will continue to return water features to their pre-construction grade and cover disturbed soil areas with a combination of temporary and permanent vegetative stabilization measures, including reseeding where appropriate. PG&E will continue to install and maintain a stabilized entrance and exit to work areas and restore disturbed entrance and exit areas to their pre-construction contours following the completion of construction. Furthermore, implementation of the SWPPP for activities disturbing 1 acre or more would also reduce potential impacts on water quality by minimizing erosion and limiting sediment transport from the study area.

Table 4.4-1 provides a list of wetland communities in the study area with the potential to be affected by O&M activities, and Table 4.4-4 provides a list of the number of stream and related water features in the study area with the potential to be affected by O&M activities. The study area crosses numerous potential jurisdictional features (refer to Appendix D-2, Potential Waters of the State in the Study Area) and ongoing O&M activities have the potential to result in up to 2 acres of impacts to jurisdictional features each year and up to 30 acres of impact to jurisdictional features over the 30-year permit term. Temporary and permanent impacts to jurisdictional features resulting from ongoing O&M activities would be significant without implementation of avoidance, minimization, and mitigation measures.

PG&E has incorporated, can incorporate, and will continue to incorporate the APMs described in Section 4.4.4.2 into its ongoing O&M activities to avoid or substantially lessen impacts to jurisdictional wetlands and water features. The following APMs would avoid or substantially lessen impacts to jurisdictional features:

- APM BIO-1: Worker Education
- APM BIO-2: Designated Biologist
- APM BIO-3: Disturbance Minimization
- APM BIO-4: Invasive Weeds
- APM BIO-9: O&M Activity Habitat Assessments
- APM BIO-12: O&M Activity Siting and Design
- APM BIO-13: Restoration

Under APM BIO-1, a worker education program would provide identification of and information on legal protections for resources in the study area, including water features. Under APM BIO-3, PG&E would limit the study area, resulting soil, and vegetation disturbance to the smallest practicable area, and would address potential soil erosion and compaction, as well as disturbance to topography. In accordance with APM BIO-4, PG&E would implement weed management actions during all phases of activities and avoid the potential impacts of invasive weeds on water features. PG&E would also conduct O&M activity siting and design for new permanent facilities to avoid unique plant assemblages and suitable habitat for special-status species that are often characteristics of water features, in accordance with APM BIO-12. In addition, APM BIO-13 further details stabilization for areas that may be affected by ground disturbance during O&M activities.

Additionally, PG&E commits to incorporating APM HYD-1 and water quality BMPs into its ongoing O&M activities, as described in Section 4.10 (refer also to Section 4.10.4.2 for the full text of this APM and the BMPs). This APM and water quality BMPs will continue to avoid or substantially lessen potential effects of ongoing O&M activities on hydrology and water quality in the study area.

With PG&E's continued incorporation of the previously identified BMPs for water quality, coordination with agencies, and the incorporation of the APMs described above (refer to Section 4.4.4.2) into its ongoing O&M activities, substantial adverse effects to jurisdictional wetlands and water features would be avoided or substantially lessened; however, the potential for significant impacts would remain, absent implementation of additional mitigation measures. With implementation of MM BIO-3 and MM BIO-4 through MM BIO-6 listed below (refer to Section 4.4.4.4 for full text of these measures), in addition to incorporation of the APMs described above (refer to Section 4.4.4.2 for full text of the APMs), CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not result in a substantial adverse effect to jurisdictional wetlands and water features. Therefore, any related effects would be **less than significant with mitigation**

incorporated. As required in MM BIO-3 through MM BIO-6, if it is determined that an O&M activity would result in impacts to wetlands or water features that are regulated by USACE, RWQCB, or CDFW that cannot be avoided, PG&E will obtain authorization from the appropriate agencies prior to implementing the activity and will abide by all associated conditions, including provision for compensatory mitigation.

Impact BIO-4 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?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.4.3, the O&M activities would cross through wildlife corridors. PG&E has been conducting ongoing O&M activities in the study area as it has in the past under baseline conditions, and these activities will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would 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.

The pipelines in the study area cross linkages between eight landscape blocks, including the Stepladder–Turtle Mountains Wilderness, Twentynine Palms and Newberry–Roden Wilderness, and Naval Air Weapons Station China Lake. Therefore, the pipelines cross multiple linkage planning areas identified in the Desert Connectivity Project. The linkage planning areas crossed by the pipelines are shown on Figure 4.4-2.

Impacts to native wildlife movement may result from temporary disturbance in areas that have been previously disturbed, such as existing pipeline ROWs and access roads. The repair of facilities, presence of construction equipment and personnel, and associated noise could divert wildlife using linkages. Road maintenance and pipeline corrosion protection may temporarily change terrain conditions. Vegetation clearing may reduce cover from predators for moving wildlife, introduce invasive plant species, and change linkage habitat conditions. Hydrostatic testing and pipeline segment replacement may increase the amount of temporary disturbance and divert wildlife using linkages for longer periods. However, most O&M activities are small, localized, and primarily temporary in nature. While the conversion of linkage habitat to a facility footprint could permanently change native wildlife movement, aboveground structures that may be installed would have small footprints (ranging from 100 to 30,000 square feet per facility). The only structures that would have a permanent disturbance greater than 0.10 acres are pig launcher/receiver facilities. These facilities are also installed very infrequently and are unlikely to affect linkages. Furthermore, the linkage area is large compared to the study area; thus, impacts would be minor.

To avoid or substantially lessen potential impacts to wildlife movement, PG&E commits to incorporating the APMs described in Section 4.4.4.2 and listed below into its O&M activities:

- APM BIO-1: Worker Education
- APM BIO-2: Designated Biologist
- APM BIO-3: Disturbance Minimization
- APM BIO-4: Invasive Weeds

- APM BIO-5: Special-Status Wildlife Encounters
- APM BIO-6: Inspections of Construction Materials
- APM BIO-7: Waste and Equipment Removal
- APM BIO-8: Open Trenches
- APM BIO-9: O&M Activity Habitat Assessments
- APM BIO-10: Domestic Pets
- APM BIO-11: Firearms
- APM BIO-12: O&M Activity Siting and Design
- APM BIO-13: Restoration
- APM BIO-20: Predator Management
- APM BIO-25: Seasonal Restrictions
- APM BIO-27: Monitoring and Surveys for Road Surface Maintenance

Incorporation of these APMs would reduce the amount of disturbance to linkage habitat, while also protecting species actively moving through the study area. In addition, habitat evaluations would ensure that behaviors necessary for the survival of special-status species (e.g., breeding, lambing, nesting, burrowing, migration, foraging) are not significantly disrupted by the planned activity and associated noise. A Designated Biologist would also protect species actively using a wildlife linkage by conducting surveys during road surface maintenance activities in accordance with APM BIO-27. PG&E would implement predator management under APM BIO-20, which would reduce the potential vulnerability of moving wildlife exposed to predators. Compliance with seasonal restrictions under APM BIO-25 would include the installation of a visual barrier if needed to protect breeding, nesting, fawning, or roosting species.

To minimize the potential to adversely impact sensitive wildlife movement areas, including water features and identified linkages, PG&E has implemented and will continue to implement stabilization for areas affected by ground disturbance, in accordance with APM BIO-13. To address permanent impacts during siting and design for new facilities, PG&E would avoid impacts to the extent feasible in occupied and suitable habitat and identified linkages for special-status species in accordance with APM BIO-12. PG&E would have a goal of “no net gain” of study area roads, and any new road considered within suitable habitat or identified linkages for special-status species would be paved so as to avoid negatively affecting the function of identified linkages.

As discussed under Impact BIO-1, O&M activities within water features are typically conducted during the dry season when no fish are present and impacts to fish and fish habitat are not anticipated. The ongoing O&M activities that could occur near the Colorado River and over the Colorado River are not expected to impede fish or aquatic species movement because no new infrastructure would be created in this area and habitat disturbance in or near the water would be temporary and would be restored to pre-construction conditions. The portion of the Lower Colorado River between the Parker Dam and the Davis Dam is used by fish but does not support a linkage for migratory fish.

Therefore, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA, including incorporation of the specified APMs, would not interfere substantially with the movement of fish and wildlife species through the study area; any effects would be **less than significant**.

Impact BIO-5 Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. PG&E has been conducting ongoing O&M activities in the study area as it has in the past under baseline conditions, and these activities will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would conflict with any local policies or ordinances protecting biological resources.

Although not subject to local regulation, the ongoing O&M activities conducted in the study area generally do not conflict with any local policies or ordinances protecting biological resources. Through implementation of its environmental screening process prior to conducting O&M activities (refer to Section 2.4 of this EIR), PG&E strives to be consistent with local requirements for the protection of biological resources, where feasible, while remaining consistent with overall pipeline safety considerations.

Incorporation of the APMs listed in Section 4.4.4.2 and BMPs for water quality into PG&E's ongoing O&M activities would ensure consistency with policies and regulations adopted for the purpose of avoiding or minimizing environmental impacts. Therefore, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA, including incorporation of the water quality APMs and BMPs, would not result in a conflict with local policies and ordinances. Accordingly, **no impacts** would occur.

Impact BIO-6 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?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As outlined in Section 4.4.2, the study area is within several federal and regional conservation planning areas. PG&E has been conducting ongoing O&M activities in the study area as it has in the past under baseline conditions, and these activities will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would project conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP.

PG&E's ongoing O&M activities would not conflict with the provisions of any adopted HCP, NCCP, or other approved local, regional, or state HCP. Based on a review of data maintained by USFWS and CDFW, the study area occurs within the planning areas for two adopted HCPs: the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) and the Hinkley Groundwater Remediation Project Habitat Conservation Plan (Hinkley Remediation HCP) (USFWS 2021; CDFW 2021).

The LCR MSCP is an adopted HCP that covers plant and wildlife species along the Lower Colorado River from Lake Mead to the U.S.–Mexico Border (LCR MSCP 2004). The intent of the LCR MSCP is to conserve and provide the basis for incidental take coverage for the covered species and accommodate water diversions and

power production within its plan area. PG&E is not a permittee of the LCR MSCP. The Colorado River is located at the eastern terminus of the study area and approximately 0.2 miles of Line 300 A crosses over the river, which is located within the plan area of the LCR MSCP. Although aquatic habitat occurs adjacent to and beneath the study area, no O&M activities would occur within the Colorado River. O&M activities, such as pipeline replacement or bridge maintenance, that may occur close to the Colorado River are infrequent. The LCR MSCP is applicable to actions undertaken by the Bureau of Reclamation and other water and power agencies related to the management of the Lower Colorado River, and the O&M activities associated with the proposed project would not conflict with the provisions of the LCR MSCP.

The Hinkley Remediation HCP was prepared by PG&E for the incidental take of desert tortoise while conducting groundwater remediation activities associated with PG&E's Hinkley Compressor Station (CH2M Hill 2017b). The USFWS incidental take authorization associated with the Hinkley Remediation HCP was issued in 2019 and covered the following remediation activities: groundwater monitoring, freshwater injection system, agricultural treatment unit operation, in situ (within-aquifer) treatment, ex situ (aboveground) treatment, access roads, structure demolitions, and emergency repair. The geographic extent of the HCP area is the community of Hinkley in San Bernardino County, California, which is approximately 6 miles west of the City of Barstow. The defined HCP area where remediation activities may occur measures approximately 29,927 acres, is located approximately 3 miles west and northwest of the City of Barstow and includes the Community of Hinkley. Three pipelines (Line 300 A, Line 300 B, and Line 314) in the study area overlap with an approximately 6-mile-wide section of the Hinkley Remediation HCP area. PG&E is the permittee under the Hinkley Remediation HCP, and the O&M activities associated with the proposed project would not conflict with this HCP.

There are no other adopted HCPs, NCCPs, or other approved local, regional, or state HCPs relevant to the project. As described in Section 4.4.2, Applicable Regulations, Plans, and Policies, CDFW recognizes the DRECP under federal law as a land use plan for BLM, and it is also a relevant regional plan for purposes of CDFW's lead agency review of the proposed project under CEQA, including the DRECP's landscape-level focus on the conservation of, among other things, unique desert ecosystems in the study area. From a CEQA perspective, CDFW as a lead agency has not identified any inconsistency in its independent judgment between the proposed project and the DRECP. Similarly, CDFW has not identified and is not aware of any conflict between the DRECP and the proposed project that may cause a physical change to the environment not already considered in this EIR.

Therefore, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP. Therefore, **no impacts** would occur.

4.4.4.4 Mitigation Measures

APM BIO-1 through APM BIO-28, APM HYD-1, and hydrology and water quality BMPs are considered part of PG&E's commitment to complying with and implementing these measures to reduce potential impacts during planned O&M activities.

The impact analysis in this EIR assumes PG&E has agreed and committed to implement all the APMs as part of ongoing O&M activity. Where impacts are identified in the analysis below that are not addressed by these APMs, or where the APMs do not reduce impacts to a less-than-significant level, the mitigation measures set forth below will further avoid and substantially lessen significant effects to the extent feasible. APMs relevant

to biological resource impacts will be incorporated into the Mitigation Monitoring and Reporting Program and reported and monitored by PG&E and CDFW in the same fashion as the mitigation measures that CDFW imposes as a condition of its approval of the proposed project under CEQA. Where there is any conflict between an APM and a mitigation measure for impacts to biological resources, the CDFW mitigation measure shall control. The mitigation measures, where applicable, are discussed in the impact discussion in Section 4.4.4.3.

MM BIO-1 Mojave Desert Tortoise, Mohave Ground Squirrel, and Western Joshua Tree Minimization Measures.

- A. **Authorized Biologist(s), Biological Monitor(s), Veterinarian(s), and Wildlife Rehabilitation Facilities.** PG&E shall employ an approved Authorized Biologist(s) and Biological Monitor(s) whose qualifications have been reviewed and approved by CDFW (and USFWS where applicable) for desert tortoise, Mohave ground squirrel, and western Joshua tree. PG&E shall obtain CDFW approval of the Authorized Biologist(s) and Biological Monitor(s) in writing before starting O&M activities and shall also obtain approval in advance, in writing, if the Authorized Biologist(s) or Biological Monitor(s) must be changed. The Authorized Biologist(s) and Biological Monitor(s) shall be knowledgeable and experienced in the biology, natural history, and collecting and handling of the species. The Authorized Biologist(s) and Biological Monitor(s) shall be responsible for monitoring O&M activities to help avoid, minimize, and fully mitigate the incidental take of individual desert tortoise, Mohave ground squirrel, and, if applicable, western Joshua tree and to minimize disturbance of habitat. Additionally, prior to start of O&M activities, PG&E shall identify veterinarians and wildlife rehabilitation facilities that can accept incidentally injured desert tortoise and Mohave ground squirrel.
- **Authorized Biologist(s).** Authorized Biologist(s) shall have knowledge of the biology and natural history of desert tortoise, Mohave ground squirrel, and western Joshua tree through education, trainings, field experience, and/or experience as an Authorized Biologist on similar projects, and experience monitoring compliance of the conditions of approval within a state ITP or federal incidental take permit obtained for surface-disturbing projects in desert tortoise, Mohave ground squirrel, and, if applicable, western Joshua tree habitat. Additionally, the Authorized Biologist for desert tortoise shall have experience with excavating burrows, handling and temporarily holding desert tortoises, translocating desert tortoises, reconstructing desert tortoise burrows, locating, identifying, and recording all forms of desert tortoise sign, conducting health assessments, attaching and removing transmitters, handling and moving eggs, and conducting protocol level presence/absence and clearance surveys. Authorized Biologist(s) for Mohave ground squirrel shall demonstrate experience with trapping Mohave ground squirrel as authorized under the California Fish and Game Code (CFG), identifying Mohave ground squirrel in the field, handling and processing small mammals, scoping and excavating small mammal burrows, creating artificial burrows, and setting up camera stations and identifying species in photos.
- **Biological Monitor(s).** Biological Monitor(s) shall have knowledge of the biology and natural history of desert tortoise, Mohave ground squirrel, and western Joshua tree through education, trainings, field experience, and/or experience as a Biological Monitor on similar projects, and experience conducting protocol level

presence/absence surveys, locating, identifying, and recording all forms of desert tortoise sign, identifying Mohave ground squirrel in the field, setting up camera stations and identifying species in photos, and monitoring compliance of the conditions of approval within a state ITP or federal incidental take permit obtained for surface-disturbing projects in desert tortoise, Mohave ground squirrel, and, if applicable, western Joshua tree habitat.

- **Veterinarian(s).** Veterinarian(s) that shall treat injured desert tortoise and Mohave ground squirrel associated with O&M activities shall hold a current Memorandum of Understanding (MOU) issued by CDFW pursuant to CFGC Section 2081(a). PG&E shall identify a veterinarian(s) for both desert tortoise and Mohave ground squirrel. PG&E shall obtain written confirmation before starting O&M activities from the veterinarian(s) that they will accept injured desert tortoise and Mohave ground squirrel for treatment. Written confirmation shall also contain the veterinarian's contact information and copy of their MOU. PG&E shall provide a copy to CDFW for review and approval of the veterinarian and their facility in writing before starting O&M activities and shall also obtain CDFW's approval in advance, in writing, if the veterinarian(s) must be changed. The contact information and location of the facilities shall be on site for the Authorized Biologist(s) during O&M activities.
- **Wildlife Rehabilitation Facilities.** PG&E shall identify wildlife rehabilitation facilities that hold a current Memorandum of Understanding (MOU) issued by CDFW pursuant to CFGC Section 2081(a) prior to start of O&M activities and receive written confirmation from the facility that desert tortoise and Mohave ground squirrel individuals can be accepted for rehabilitation before starting O&M activities. Written confirmation from the facility, contact information for the point of contact at the facility, and a copy of the facility's MOU shall be provided to CDFW for review and approval. PG&E shall obtain CDFW approval of the wildlife rehabilitation facilities in writing before starting O&M activities and shall also obtain approval in advance, in writing, if the wildlife rehabilitation facility must be changed. The contact information and location of the facilities shall be on-site for the Authorized Biologist(s) during O&M activities.
- **Authorized Biologist(s) and Biological Monitor(s) Authority.** To ensure compliance with protective measures (biological resource mitigation measures contained within the mitigation and monitoring program, or conditions of approval contained in the ITP), the Biological Monitor(s) and/or Authorized Biologist(s) shall have authority to immediately order work to stop or halt and/or order PG&E or its agent to implement any reasonable measure necessary to avoid the unauthorized take of a desert tortoise, Mohave ground squirrel, or western Joshua tree. If a Biological Monitor or Authorized Biologist orders work to stop or halt, work shall not resume until an Authorized Biologist determines that all activities are in compliance with the ITP, as issued by CDFW. PG&E shall inform all employees, contractors, and agents conducting O&M activities authorized under the CDFW ITP that the Biological Monitor(s) and Authorized Biologist(s) have the authority to stop or halt work.

- B. **Education Program.** PG&E shall conduct an education program prior to all O&M activities for all employees, agents, or contractors that will be working on behalf of the PG&E in the project area. The education program shall include a discussion of the biology and general behavior

of desert tortoise and Mohave ground squirrel and, if applicable, the biology of western Joshua tree; information about the distribution and habitat needs of the species; sensitivity of the species to human activity; the legal status of the species under CESA, including their protected status, recovery efforts, penalties for violations; and project-specific protective measures detailed in the ITP. The education program shall consist of an in-person presentation from the Authorized Biologist or Biological Monitor and/or a digital presentation that can be accessed in the field via cellular phones, tablets, laptop computers, and/or similar portable devices. PG&E shall prepare and distribute wallet-sized cards or a fact sheet handout (hard copy or digital) detailing the information presented during the education program for workers to carry in the project area. In addition, a tailgate presentation prior to surface-disturbing O&M activities shall also be presented by the Authorized Biologist or Biological Monitor prior to the start of any project-specific O&M activities to identify specific on-site resources identified for avoidance during pre-activity surveys. For the education program and each tailgate presentation, the PG&E shall provide interpretation for non-English-speaking workers, and the same instruction shall be provided to any new workers before they are authorized to perform work in the project area. Upon completion of the program and after each tailgate presentation, employees shall sign a form (hardcopy or digital) stating they attended the program and presentation and understand all protection measures. The form shall be made available to CDFW upon request.

- **Trash Abatement.** PG&E shall initiate a trash abatement program to ensure that trash and food items are contained in in self-closing, sealable, wind-proof, and animal-proof containers and are regularly inspected and removed, ideally at daily intervals but at least once a week from the project area, and prior to periods of project inactivity, to avoid attracting opportunistic predators such as ravens, coyotes, and feral dogs.
- **Firearms and Dogs.** PG&E shall prohibit project personnel or those associated with the project from bringing any firearms and domestic dogs on the project area during O&M activities, except those in the possession of authorized security personnel or local, state, or federal law enforcement officials' dogs that may be used to aid in official and approved monitoring procedures/protocols, or service dogs under Title II and Title III of the American with Disabilities Act.
- **Dust Control.** PG&E shall implement dust control measures to facilitate visibility for monitoring of desert tortoise and Mohave ground squirrel by the on-site employees and the Authorized Biologist and/or Biological Monitor. PG&E shall keep the amount of water used to the minimum amount needed and shall not allow water to form puddles. Any tackifier or soil stabilizers shall be approved by CDFW prior to O&M activities.
- **Delineation of Project Area Boundaries.** Before starting surface-disturbing O&M activities, PG&E shall clearly delineate the boundaries of the O&M activity work area with fencing, stakes, or flags. PG&E shall restrict all O&M activities to within the fenced, staked, or flagged areas. PG&E shall maintain all fencing, stakes, and flags until the completion of O&M activities in that area.
- **Delineation of Habitat.** PG&E shall clearly delineate habitat of desert tortoise, Mohave ground squirrel, and western Joshua tree within the O&M activity work area when surface-disturbing O&M activities occur with posted signs, posting stakes, flags, and/or rope or cord, and placing fencing as necessary to minimize the disturbance of habitat.

- **Project Access.** PG&E shall ensure project-related personnel access the project area using existing legal routes, including pipeline patrol and access roads identified in the Project Description, and shall not cross desert tortoise, Mohave ground squirrel, and western Joshua tree habitat, if applicable, outside of or en route to the O&M activity work areas. PG&E shall restrict project-related vehicle traffic to established roads, staging, and parking areas. PG&E shall ensure that vehicle speeds do not exceed 20 miles per hour to avoid desert tortoise and Mohave ground squirrel traversing the roads. Drivers shall stop the vehicle in areas of low visibility due to terrain and exit the vehicle to review the roadway ahead to confirm desert tortoise and Mohave ground squirrel are not within the roadway before proceeding. If a desert tortoise or Mohave ground squirrel is encountered, drivers shall stop (or remain stopped) and wait for the species to move off the road on its own accord out of harm's way.
- **Project Access Escorts.** Along the route to the O&M work area where desert tortoise and Mohave ground squirrel may be traversing the road, the Authorized Biologist or Biological Monitor shall escort project personnel to the O&M work areas in situations where there is an increased potential for incidental take of the species through vehicular collisions due to decreased road visibility and/or lowered brake reaction time and insufficient stopping distances. Situations in which Authorized Biologist or Biological Monitor escorts shall be required include when more than two vehicles or heavy equipment are caravanning to the O&M work area; when heavy equipment with limited visibility is being driven to the O&M work area, and when flatbed trucks with trailers, dump trucks with trailers, and other vehicles with trailers are transporting equipment to the site. The Authorized Biologist or Biological Monitor escorts and/or drivers shall stop the vehicle in areas of low visibility due to terrain and exit the vehicle to review the roadway ahead to confirm desert tortoise and Mohave ground squirrel are not within the roadway before proceeding. If a desert tortoise or Mohave ground squirrel is encountered, drivers shall stop (or remain stopped), wait for the species to move off the road of its own accord out of harm's way, or until the Authorized Biologist(s) has relocated the species.
- **Staging Areas.** PG&E shall confine all project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to the O&M work area using, to the extent possible, previously disturbed areas.
- **CNDDDB Observations.** PG&E or Authorized Biologist shall submit all observations of special-status species within the O&M work area to CDFW's California Natural Diversity Database (CNDDDB) within 60 calendar days of the observation.
- **Notification of Take or Injury/Damage.** PG&E shall notify CDFW within 24 hours if a desert tortoise, Mohave ground squirrel, or western Joshua tree is taken or injured/damaged by an O&M-related activity, or otherwise found dead or injured/damaged within the vicinity of the O&M activity work area or a PG&E pipeline access road. PG&E shall also send CDFW a written report within two calendar days. The report shall include the date and time of the finding or incident, location of the animal or carcass, or plant, and if possible, provide a photograph, explanation as to cause of take or injury/damage, and any other pertinent information. In addition, the report shall identify proposed corrective measures that shall be implemented, subject to prior review and approval by CDFW, during subsequent O&M activities. The

corrective measures at a minimum shall propose methods to prevent or minimize future take or injury/damage of desert tortoise, Mohave ground squirrel, or western Joshua tree in a similar manner in the future and if approved by CDFW be immediately implemented for all O&M activities. For injured desert tortoise and Mohave ground squirrel, the Authorized Biologist shall immediately take the individual(s) to the CDFW-approved wildlife rehabilitation or veterinary facility. PG&E shall bear all costs associated with the care or treatment of the injured individual(s). PG&E shall be responsible for the monetary cost of the animal until the animal is permanently placed with a rehabilitation facility or re-released into the wild. PG&E shall notify USFWS of take or injury of desert tortoise per their Biological Opinion.

- C. **Drilling Materials and Frac-Out Contingency Plan.** PG&E shall prepare and implement a frac-out contingency plan prior to beginning of all O&M activities. To minimize impacts to desert tortoise and Mohave ground squirrel, the plan shall require the following conditions: drilling mud shall be contained and removed from/hailed off the O&M work area and disposed of in an appropriate manner at the completion of O&M activities; PG&E shall use benign material in the drilling muds to avoid contamination of any water or habitat; PG&E shall not allow drill cuttings, drilling mud, and/or materials or water contaminated with bentonite, or any other substance deemed deleterious to wildlife be allowed to enter the CFGC Section 1602 resources or desert tortoise and Mohave ground squirrel habitat, or be placed where they may be washed into the CFGC Section 1602 resource or desert tortoise and Mohave ground squirrel habitat; any contaminated water/materials from the drilling and/or project activities shall be pumped or placed into a holding facility and removed for proper disposal; in case of a frac-out, all drilling shall cease, and all personnel shall implement the frac-out cleanup contingency plan; O&M activities shall not resume until the frac-out is located, contained, and cleaned up consistent with the frac-out contingency plan; and PG&E shall notify CDFW immediately in the event of a frac-out. The frac-out contingency plan shall be on site at all times during pertinent O&M activities and all project personnel shall have pre-arranged duties in case of a frac-out. Cleanup equipment for any potential frac-out shall be on site prior to the start of pertinent O&M activities.
- D. **Entrapment Inspections.** Any pipes, culverts, or similar structures with a diameter greater than 3 inches and less than 8 inches aboveground shall be inspected by the Authorized Biologist(s) or Biological Monitor(s) for desert tortoise and Mohave ground squirrel before the pipe, culvert, or similar structure is moved, buried, or capped. The Authorized Biologist(s) or Biological Monitor(s) shall inspect all open holes and trenches within desert tortoise and Mohave ground squirrel habitat at a minimum of twice a day and just prior to backfilling. At the end of each workday, PG&E shall place an escape ramp at each end of trenches to allow any animals that may have become trapped in the hole or trench to climb out overnight. The ramp may be constructed of either dirt fill or wood planking or other suitable material that is placed at an angle no greater than 30 degrees. If any worker discovers that desert tortoise or Mohave ground squirrel have become trapped, they shall halt O&M activities and notify the Authorized Biologist(s) or Biological Monitor(s) immediately. Project workers, Biological Monitor(s), or Authorized Biologist(s) shall allow

the individual to escape unimpeded if possible, or an Authorized Biologist(s) shall move the individual out of harm's way before allowing work to continue.

- E. **Vehicle and Equipment Inspection.** PG&E shall require workers to inspect for desert tortoise and Mohave ground squirrel under vehicles and equipment before the vehicles and equipment are moved. If a desert tortoise or Mohave ground squirrel is present, the worker shall contact the Authorized Biologist(s) or Biological Monitor(s) and wait for the individual to move unimpeded to a safe location or the Authorized Biologist(s) shall relocate the individual before moving vehicles and equipment.
- F. **Desert Tortoise Pre-Activity Surveys.** No more than 30 calendar days prior to start of any surface-disturbing O&M activities, the Authorized Biologist(s) and/or Biological Monitor(s) approved by CDFW for the task shall conduct pre-activity presence/absence surveys for desert tortoise, using the methods described in the most recent United States Fish and Wildlife Service (USFWS) Desert Tortoise (Mojave Population) Field Manual (hereinafter referred to as USFWS Field Manual). In addition to the guidance provided in the USFWS Field Manual, PG&E shall also comply with the following CDFW requirement(s): Pre-activity presence/absence surveys shall be completed using perpendicular survey routes, pre-activity presence/absence surveys cannot be combined with other surveys conducted for other species while using the same personnel, and these surveys shall cover 100% of the O&M work area and a 300-foot buffer zone. The Biological Monitor(s) or Authorized Biologist(s) shall record all desert tortoise live individuals, burrows, or other sign within the survey area using high-accuracy (<1 meter) global positioning system (GPS) technology. The Biological Monitor(s) or Authorized Biologist shall visually demarcate all potential desert tortoise burrows within each O&M work area and 50-foot buffer to alert biological and work crews to their presence in a manner that does not attract predators. The Biological Monitor(s) or Authorized Biologist(s) shall provide the results of the pre-activity presence/absence survey (using the USFWS Protocol data sheet) to CDFW quarterly.

Within 24 hours prior to start of O&M activities, the Authorized Biologist(s) approved under the CDFW ITP for this activity shall conduct pre-activity clearance surveys for desert tortoise, using the methods described in the most recent USFWS Field Manual. In addition to the guidance provided in the USFWS Field Manual, PG&E shall comply with the following CDFW requirement(s): Pre-activity clearance surveys shall be completed using perpendicular survey routes, pre-activity clearance surveys cannot be combined with other surveys conducted for other species while using the same personnel, O&M Activities cannot start until two (2) negative results from consecutive surveys using perpendicular survey routes for desert tortoise are documented, and these surveys shall cover 100% of the O&M work area and a 50-foot buffer zone. The Authorized Biologist(s) shall record any new desert tortoise individuals, burrows, or other sign within the pre-activity clearance survey area, using high-accuracy (<1 meter) global positioning system (GPS) technology that were not documented in the presence/absence survey. The Authorized Biologist shall visually demarcate any new potential desert tortoise burrows within each O&M work area or 50-foot buffer zone to alert biological and work crews to their presence in a manner that does not attract predators and ensure previous demarcation materials remained intact. The use of specialized equipment (e.g., fiber optics) shall be used to thoroughly inspect all

burrows. PG&E shall provide the results of the pre-activity clearance survey (using the USFWS Protocol data sheet) to CDFW quarterly.

- **Desert Tortoise Exclusionary Fencing.** PG&E shall construct any temporary or permanent desert tortoise fencing used during surface-disturbing O&M activities in the project area according to the USFWS Field Manual. Any request for variance to the fencing specifications within the USFWS Field Manual shall be reviewed and approved by CDFW and USFWS on a case-by-case basis prior to the O&M activity. The Authorized Biologist shall immediately conduct an additional clearance survey following the erection of desert tortoise exclusionary fencing within the fenced area. The Authorized Biologist(s) shall inspect the desert tortoise fence each morning prior to the start of O&M activities, during O&M activities, and at the end of the workday after O&M activities have ceased. The Authorized Biologist shall inspect the fence within 24 hours after major rainfall events prior to recommencing O&M activities to ensure the fence is not compromised. PG&E shall repair the fence immediately if the fence is found down or a hole is discovered. The Authorized Biologist shall perform a clearance survey immediately after the fencing is repaired and prior to recommencing O&M activities.
- **Unfenced O&M Work Areas.** Any surface-disturbing O&M activities conducted in an area that is not fenced to exclude desert tortoises shall be monitored by an Authorized Biologist who shall halt work if a desert tortoise enters the work area or an adjacent area where take or injury to the individual may occur. Work activities shall only proceed at the site after the desert tortoise has either moved away of its own accord or has been relocated off the site per the Desert Tortoise Relocation Plan approved by USFWS and CDFW. Any O&M activities that do not require surface disturbance, including pipeline patrols, valve inspection and lubrication, integrity management activities, and telecommunication site inspections shall have an Authorized Biologist on call that can immediately go into the field to address compliance with these mitigation measures and the ITP.
- **Desert Tortoise Relocation.** No desert tortoise may be handled or relocated without authorization from USFWS and CDFW. Regardless of the number of desert tortoise estimated to be relocated a short distance away out of harm's way, PG&E shall prepare a Desert Tortoise Relocation Plan for CDFW and USFWS review at least 60 calendar days prior to start of all O&M activities. The relocation plan shall include parameters in which Authorized Biologists may relocate desert tortoise to minimize impact to the individual. The plan shall contain at a minimum the following descriptions: recipient site selection criteria and characteristics that will benefit the relocated desert tortoise (including land ownership, maximum distance from O&M work area based on surrounding land uses, presence of native vegetation species and percentage of cover, no predator sign and concentrations, friable soil types, and lack of anthropogenic features); minimum distance away from paved highway/roads to reduce vehicular strikes; survey requirement to identify unoccupied natural burrows available for immediate use or enhancement and the creation and design of supplemental artificial burrows within the site; procedures for relocation of tortoises and eggs; post-relocation monitoring of individuals by the Authorized Biologist(s) for at least two days after placement in the new burrows to ensure their safety; health assessments; shade structures and shelters to minimize potential heat stress and exposure to lethal

temperatures; disinfectant and sanitation to prevent spread of disease; handling and releasing procedures including temperature restrictions to prevent overheating (no desert tortoise shall be captured, moved, transported, released, or purposefully caused to leave its burrow for whatever reason when the ambient air temperature is above 95 degrees Fahrenheit [F]), and requirements to rehydrate the individuals that void its bladder during handling at the location where the individual was captured, or the location where the individual will be released out of harm's way by the Authorized Biologist; attaching transmitters to assist with monitoring; transporting procedures; temporary penning procedures; construction coordination; and quarterly reporting requirements to CDFW. All CDFW and USFWS comments shall be resolved and incorporated into a final Desert Tortoise Relocation Plan. O&M activities shall not commence until the plan is approved in writing by CDFW and USFWS. The Authorized Biologist(s) shall maintain a record of all desert tortoises handled. The Desert Tortoise Relocation Plan shall be updated and otherwise amended to include the latest science and guidance as directed by CDFW.

- **Desert Tortoise Observations.** If a desert tortoise is observed during surface-disturbing O&M activities within or near the O&M work area, the observation shall be immediately reported to the on-site Authorized Biologist(s) or Biological Monitor. If the Authorized Biologist or Biological Monitor determines take or injury may occur, all work shall immediately halt and O&M activities shall not resume until the Authorized Biologist(s) has verified the desert tortoise has left the O&M work area, determined there is an appropriate buffer between the O&M activities, and the desert tortoise can be monitored to prevent take, or the individual is relocated as described the Desert Tortoise Relocation Plan. PG&E shall immediately notify CDFW of any desert tortoise observations within the O&M work area within 24 hours. Notification and the written report shall include the date, location (including GPS coordinates), and circumstances of the observation, the name of the Authorized Biologist(s), pictures, map (including GPS coordinates), and if applicable, the shapefiles with the location where the individual was moved as specified in the Desert Tortoise Relocation Plan.
- **Excavating Desert Tortoise Burrows.** Only Authorized Biologist(s) approved by CDFW and USFWS are authorized to conduct desert tortoise burrow excavation. Excavation of burrows shall follow the methods described in the USFWS Field Manual. All potential desert tortoise burrows identified during pre-activity surveys and clearance surveys conducted in the O&M work area which cannot be avoided, shall be fully excavated by hand. Any individuals removed from burrows shall be transmitterd and relocated per the Desert Tortoise Relocation Plan. All burrows that can be avoided shall remain visually demarcated and monitored until completion of O&M activities in that area.
- **Desert Tortoise Nests.** In the event that an active desert tortoise nest is detected during pre-activity surveys, burrow excavation, or during O&M activities, procedures outlined in the USFWS Desert Tortoise Field Manual regarding nests and eggs shall be followed by an Authorized Biologist approved by CDFW and USFWS to perform the task. CDFW shall be notified immediately upon discovery of an active desert tortoise nest, and the site of egg relocation shall be approved by CDFW prior to relocation through implementation of a Desert Tortoise Relocation Plan.

- G. **Raven Management.** PG&E shall prepare a Raven Management Plan (RMP) to minimize the potential to attract common ravens to the project area and submit it to CDFW for review and approval at least 60 calendar days prior to start of O&M activities in the project area. All CDFW comments shall be resolved and incorporated, and O&M activities shall not commence until the RMP is approved in writing by CDFW. With implementation, the RMP shall minimize impacts to desert tortoise by reducing the potential to attract common ravens that may prey upon desert tortoise. The PG&E-prepared RMP shall (1) identify conditions associated with O&M activities that might provide raven subsidies or attractants; (2) describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities; and (3) describe monitoring during O&M activities, including methods to identify individual ravens that prey on desert tortoises. The RMP shall be an amendable document that shall be updated to include the latest science and guidance as directed by CDFW. PG&E shall provide funds to the Desert Managers Group account established with the National Fish and Wildlife Foundation to contribute to a regionwide raven control plan to help address raven predation on the desert tortoise. This contribution shall be used to address raven predation on a regional basis and shall be calculated as a one-time payment of \$105 per acre of project disturbance covered under the ITP.
- H. **Mohave Ground Squirrel Relocation Plan.** No Mohave ground squirrel may be handled or relocated without authorization from CDFW. Regardless of the number of Mohave ground squirrel estimated to be relocated a short distance away out of harm's way, PG&E shall prepare and submit a Mohave Ground Squirrel Relocation Plan for CDFW review at least 60 calendar days prior to start of all O&M activities. The relocation plan shall include parameters in which Authorized Biologists may relocate Mohave ground squirrel to minimize impact to the individual. The plan at a minimum shall contain the following descriptions: recipient site selection criteria and characteristics that will benefit the relocated Mohave ground squirrel (including land ownership, maximum distance from O&M work area based on surround land uses, presence of native vegetation species and percentage of cover, no predator sign and concentrations, friable soil types, and lack of anthropogenic features); minimum distance away from paved highway/roads to reduce vehicular strikes; survey requirement to identify unoccupied natural burrows available for immediate use or enhancement and the design and installation of supplemental artificial burrows within the site; burrow excavation methods; trapping procedures following CDFW protocol; procedures for relocation; post-relocation monitoring; health assessments; handling and releasing procedures including temperature restrictions (no Mohave ground squirrel shall be captured, moved, transported, released, or purposefully caused to leave its burrow for whatever reason when the ambient air temperature is above 90°F); transporting procedures; temporary holding procedures, construction coordination, and reporting. All CDFW comments shall be resolved and/or incorporated prior to approval of the plan. O&M activities shall not commence until the plan is approved in writing by CDFW. The Authorized Biologist(s) shall maintain a record of all Mohave ground squirrels handled. The Mohave Ground Squirrel Relocation Plan shall be an amendable document that shall be updated to include the latest science and guidance as directed by CDFW.

- **Mohave Ground Squirrel Survey for Pre-Planned O&M Activities.** For known pre-planned surface-disturbing O&M activities taking place in the distribution range of Mohave ground squirrel within the calendar year that are scheduled to commence during or after Mohave ground squirrel active season, PG&E shall survey the O&M work area during Mohave ground squirrel active season. Surveys shall include visual surveys performed by the Biological Monitor or Authorized Biologist. Visual surveys to determine Mohave ground squirrel activity and habitat quality shall be undertaken during the period of March 15 through April 15. All potential habitat within the O&M work area and 300-foot buffer shall be visually surveyed during daylight hours. If visual surveys do not reveal presence of Mohave ground squirrel within the O&M work area or adjacent buffer, the Biological Monitor or Authorized Biologist shall set and maintain a minimum of five baited camera stations (or more for larger work areas to provide adequate coverage) dispersed in the O&M work area and adjacent habitat. Camera stations shall consist of the camera mounted on a T-post or U-post with bait tubes or caged bait boxes staked to the ground. Feed blocks and free bait are prohibited. Cameras shall be deployed at the start of the each of the listed sessions and run for at least the 5-day duration of each session unless presence is confirmed in a previous session: March 15 through April 30; May 1 through May 31; and June 1 through July 15. Upon completion of survey work, all equipment, supplies, and refuse shall be removed, including unused bait. PG&E shall submit a report documenting the results of the surveys to CDFW quarterly, including camera station photos.
- **Mohave Ground Squirrel Burrow Pre-Activity Surveys.** For surface-disturbing O&M activities planned during Mohave ground squirrel dormant season or for project areas with confirmed Mohave ground squirrel presence during visual surveys or camera stations, no more than 30 calendar days prior to the start of ground-disturbing activities the Authorized Biologist(s) and/or Biological Monitor(s) shall perform a pre-activity survey for Mohave ground squirrel burrows covering the O&M work area and an appropriate buffer zone as determined by the Authorized Biologist. All known or suspected Mohave ground squirrel burrows (any burrow of sufficient size to allow an adult or juvenile Mohave ground squirrel to enter) within the O&M work areas shall be visually demarcated in a manner that does not attract predators to alert biological crews to their presence. PG&E shall submit a report documenting the results of the surveys to CDFW quarterly.
- **Mohave Ground Squirrel Burrow Scoping and Excavation.** Within 7 days prior to the start of surface-disturbing O&M activities, the Authorized Biologist shall live trap or scope and fully excavate by hand all potential Mohave ground squirrel burrows within the O&M work area, and as determined by the Authorized Biologist, burrows adjacent to the work area that are suspected or known to be occupied by Mohave ground squirrels that will be directly or indirectly impacted by surface-disturbing O&M activities. Burrows that can be avoided shall remain intact but visually demarcated. During the Mohave ground squirrel active period (generally March 15–July 15), the Authorized Biologist(s) shall relocate Mohave ground squirrel individuals live trapped per the Mohave Ground Squirrel Relocation Plan approved by CDFW. Any individuals encountered by the Authorized Biologist(s) in the excavated burrows during their active period shall be allowed to escape out of harm's way. During the Mohave ground squirrel dormant period (generally September 1–January 31), the Authorized Biologist shall collect and

immediately relocate the individuals per the Mohave Ground Squirrel Relocation Plan. Excavation shall not be performed when the ambient air temperature exceeds 90 degrees Fahrenheit. The Authorized Biologist(s) shall maintain a record of all Mohave ground squirrel handled or encountered. PG&E shall submit a report documenting the results to CDFW quarterly.

- I. **Western Joshua Tree.** During candidacy or if western Joshua tree is listed under CESA, PG&E shall implement the mitigation measure below if an ITP is obtained. If an ITP is not obtained, PG&E shall place a disturbance-free 300-foot buffer around all western Joshua trees identified within the O&M work area and adjacent habitat to avoid all impact.

- **Western Joshua Tree Pre-Activity Assessment.** Should O&M activities occur within western Joshua tree habitat, PG&E shall have a qualified botanist conduct a pre-activity survey for western Joshua tree within the O&M work area and 300-foot buffer zone. The survey shall take place within 14 days prior to start of surface-disturbing O&M activities. The qualified botanist shall map each individual western Joshua tree using high-accuracy (<1-meter) global positioning system (GPS) technology and determine the health and approximate the height (meters). Habitat and on-site species will be described in three western Joshua tree height classes defined as:

Class 1:

- No western Joshua trees occur within the O&M work area but due to species presence adjacent to the impact area there is potential take of seedbank and/or root systems that may be impacted;
- Dead western Joshua tree(s); and/or
- Western Joshua trees 0–1 meter in height

Class 2: Western Joshua tree(s) 1 meter or greater, but less than 4 meters (approximately 13 feet) in height

Class 3: Western Joshua tree(s) over 4 meters in height

- **Reporting.** PG&E shall submit a report documenting the results of the surveys to CDFW quarterly should western Joshua tree be impacted in that quarter. The report shall include a map showing the boundary of the O&M work area, the boundary of the 300-foot buffer zone, the number and location of each individual western Joshua tree, and a 186-foot-radius buffer depicted around each mapped western Joshua tree. If an ITP is obtained, the map shall also distinguish which western Joshua tree(s) were avoided (i.e., preserved/left in place) and which western Joshua trees tree(s) were removed due to O&M activity. Each western Joshua tree shall also be displayed in the map with an identification code, and a corresponding table in the report shall list each individual western Joshua tree, approximate height and age class, and whether the tree was preserved or removed (if applicable), and photographs of each western Joshua tree.

MM BIO-2 Compensatory Mitigation for Mojave Desert Tortoise, Mohave Ground Squirrel, and Western Joshua Tree. For project-related impacts expected to occur within the 30-year term of the ITP, PG&E shall either:

- Purchase a portion or all of the required compensatory habitat as acres of species credits from a CDFW-approved mitigation or conservation bank; AND/OR
- Provide for both the permanent protection and perpetual management of a portion or all of the required compensatory habitat acres of Habitat Management (HM) lands, including: (1) acquisition and/or transfer of fee title of lands approved by CDFW; (2) protection in perpetuity through recordation of a CDFW-approved conservation easement with a CDFW-approved entity acting as grantee; (3) implement CDFW-approved land management in perpetuity by a CDFW-approved entity; and (4) provide CDFW-approved funding for land management activities through the calculation and deposit of an endowment fund.

A1. Compensatory Mitigation for Desert Tortoise and Mohave Ground Squirrel. To mitigate project-related impacts to desert tortoise and Mohave ground squirrel, PG&E shall provide compensatory habitat, in advance, for each defined compensatory mitigation period (defined below) prior to start of O&M activities for that term.

PG&E shall provide compensatory mitigation as calculated by CDFW using the following ratios for all acres of O&M activity impacts:

- For areas not identified below, PG&E shall mitigate impacts at a 2:1 ratio (provide 2 acres of compensatory habitat for 1 acre of impact).
- For areas that occur within Desert Wildlife Management Areas; Areas of Critical Environmental Concern; Mohave ground squirrel peripheral population areas, population dispersal areas, and linkage areas; and Mohave Ground Squirrel Conservation areas that do not overlap with areas identified below, PG&E shall mitigate impacts at a 3:1 ratio (provide 3 acres of compensatory habitat for 1 acre of impact).
- For areas in desert tortoise critical habitat or Mohave ground squirrel core population areas, PG&E shall mitigate impacts at a 5:1 ratio (provide 5 acres of compensatory habitat for 1 acre of impact).

Every 10 years, CDFW shall review the compensatory mitigation ratios based on the best available scientific information regarding species status and determine whether the mitigation ratios continue to fully mitigate project impacts under CESA. CDFW may revise the mitigation ratios if, based on CDFW's review, the mitigation does not fully mitigate all the impacts of the taking of the species based on changes to species status, threats, and/or distribution.

PG&E shall provide compensatory habitat, in advance, using the mechanisms described above, such that the total combined acreage of purchased species credits and HM lands total the amount of estimated compensatory habitat acreage required for each compensatory mitigation period. Alternatively, compensatory mitigation shall be provided within 18 months of initiating project-related O&M activities for each compensatory mitigation period if PG&E ensures funding approved by CDFW to complete the activities described above. The estimated impacted acreage for the full 30-year ITP term subject to compensatory mitigation is 1,290 acres. The estimated acreage for each compensatory mitigation period assumes O&M activities will impact 43 acres annually, all 43 acres of which are desert tortoise habitat and 16 acres of which are Mohave ground squirrel habitat.

A2. Estimated Compensatory Mitigation for Desert Tortoise and Mohave Ground Squirrel.

Estimated mitigation acres for those impacts are calculated using the 3:1 ratio. Compensatory mitigation for desert tortoise and Mohave ground squirrel may co-occur on the same acres where dual species credits are available for purchase or HM lands contain habitat for both species.

- Compensatory Mitigation Period 1 (Year 1, starting upon project approval)
 - PG&E shall mitigate for the first year of impacts by providing 129 acres of compensatory mitigation for desert tortoise and 48 acres of compensatory mitigation for Mohave ground squirrel.
- Compensatory Mitigation Period 2 (Year 2 through Year 10)
 - PG&E shall mitigate for the years 2 through 10 impacts by providing 1,161 acres of compensatory mitigation for desert tortoise and 432 acres of compensatory mitigation for Mohave ground squirrel.
 - At the beginning of year 10 from the date of project approval, PG&E shall review the difference between the estimated O&M activity impacts with the actual post-O&M activity impact acres associated with each mitigation ratio (defined above) for years 1 through 9 and provide that information to CDFW. CDFW will review and, if in agreement, will provide concurrence. Any excess compensatory mitigation acreage will be applied to the next compensatory mitigation period. PG&E shall provide any deficit required mitigation acreage no later than 90 days prior to the start of Year 11.
- Compensatory Mitigation Period 3 (Year 11 through Year 20)
 - PG&E shall mitigate for the years 11 through 20 impacts by providing 1,290 acres of compensatory mitigation for desert tortoise and 480 acres of compensatory mitigation for Mohave ground squirrel. Any excess compensatory mitigation acres from years 1 through 9 will be applied to reduce the acre requirement accordingly.
 - At the beginning of year 20, PG&E shall review the difference between the estimated O&M activity impacts with the actual post-O&M activity impact acres associated with each mitigation ratio (defined above) for years 10 through 19 and provide that information to CDFW. CDFW will review and, if in agreement, will provide concurrence. Any excess compensatory mitigation acreage will be applied to the next compensatory mitigation period. PG&E shall provide any deficit required mitigation no later than 90 days prior to the start of Year 21.
- Compensatory Mitigation Period 4 (Year 21 through Year 25)
 - PG&E shall mitigate for the years 21 through 25 impacts by providing 645 acres of compensatory mitigation for desert tortoise and 240 acres of compensatory mitigation for Mohave ground squirrel. Any excess compensatory mitigation acres from years 10 through 19 shall be applied to reduce the acre requirement accordingly.
 - At the beginning of year 25, PG&E shall review the difference between the estimated O&M activity impacts with the actual post-O&M-activity impact acres associated with each mitigation ratio (defined above) for years 20 through 24 and provide that information to CDFW. CDFW will review and, if in agreement, will provide concurrence. Any excess compensatory mitigation acreage will be applied

to the next compensatory mitigation period. PG&E shall provide any deficit required mitigation no later than 90 days prior to the start of Year 26.

- Compensatory Mitigation Period 5 (Year 26 through Year 30)
 - PG&E shall mitigate for the years 26 through 30 impacts by providing 645 acres of compensatory mitigation for desert tortoise and 240 acres of compensatory mitigation for Mohave ground squirrel. Any excess compensatory mitigation acres from years 20 through 24 shall be applied to reduce the acre requirement accordingly. PG&E shall provide any deficit required mitigation no later than 90 days prior to the end of Year 30.

B1. Compensatory Mitigation for Western Joshua Tree. Should PG&E obtain an ITP during candidacy or if western Joshua tree is listed under CESA, O&M activity impacts to western Joshua tree or surface-disturbing O&M activities occurring within 300 feet of a western Joshua tree shall be mitigated based on the quality of habitat and species demographics within the O&M work area. To mitigate project-related impacts to western Joshua tree, PG&E shall provide compensatory mitigation, in advance, as calculated by CDFW using the following ratios for each defined compensatory mitigation period (defined below) prior to start of O&M activities for that term. The higher mitigation ratio shall supersede for areas that overlap.

PG&E shall provide compensatory mitigation for western Joshua tree as calculated by CDFW using the following ratios for all acres of O&M activity impacts:

- 2:1 ratio (2 acres of compensatory habitat for 1 acre of impact) for Class 1 acreage within the O&M work area. The area of impact that requires compensatory mitigation shall be the O&M work area that overlaps a 186-foot buffer surrounding adjacent and/or dead western Joshua trees.
- 3:1 ratio (3 acres of compensatory habitat for 1 acre of impact) for impacts to western Joshua tree habitat within the O&M work area where Class 1 individuals do not exceed the number of Class 2 or Class 3 individuals OR for impacts to western Joshua tree in habitat lacking Class 1 individuals. The area of impact that requires compensatory mitigation shall be the O&M work area that overlaps a 186-foot buffer surrounding western Joshua trees within or adjacent to the O&M work area.
- 5:1 ratio (5 acres of compensatory habitat for 1 acre of impact) for impacts to western Joshua tree habitat within the O&M work area where Class 1 individuals exceed the number of Class 2 or Class 3 individuals. The area of impact that requires compensatory mitigation shall be the O&M work area that overlaps a 186-foot buffer surrounding western Joshua trees within or adjacent to the O&M work area.

Every 10 years, CDFW shall review the compensatory mitigation ratios based on the best available information regarding species status and determine whether the mitigation ratios continue to fully mitigate project impacts under CESA. CDFW may revise the mitigation ratios if, based on CDFW's review, the mitigation does not provide full mitigation based on changes to species status, threats, and/or distribution.

PG&E shall provide compensatory habitat, in advance, using the mechanisms described above, such that the total combined acreage of purchased species credits and HM lands total the amount of estimated compensatory habitat acreage required for each compensatory mitigation period, as described below. Alternatively, compensatory mitigation shall be provided within 18 months of initiating project-related O&M activities for each compensatory mitigation period if PG&E ensures funding approved by CDFW to complete the activities described above. The estimated impacted acreage for the full 30-year ITP term subject to compensatory mitigation is 784 acres, calculated by intersecting the known species population distribution and a 50-foot ROW within the project area. The estimated acreage for each compensatory mitigation period assumes O&M activities will impact 26 acres of western Joshua tree habitat annually.

B2. Estimated Compensatory Mitigation for Joshua Tree. If applicable, estimated mitigation acres for those impacts are calculated using the 3:1 ratio. Compensatory mitigation for western Joshua tree may co-occur on the same acres with desert tortoise and/or Mohave ground squirrel compensatory mitigation where multi-species credits are available for purchase or HM lands contain habitat for both/all species.

- Compensatory Mitigation Period 1 (Year 1, starting upon project approval)
 - PG&E shall mitigate for the first year of impacts by providing 78 acres of compensatory mitigation.
- Compensatory Mitigation Period 2 (Year 2 through Year 10)
 - PG&E shall mitigate for the years 2 through 10 impacts by providing 702 acres of compensatory mitigation.
 - At the beginning of year 10 from the date of project approval, PG&E shall review the difference between the estimated O&M activity impacts with the actual post-O&M activity impact acres associated with each mitigation ratio (defined above) for years 1 through 9 and provide that information to CDFW. CDFW will review and, if in agreement, will provide concurrence. Any excess compensatory mitigation acreage will be applied to the next compensatory mitigation period. PG&E shall provide any deficit required mitigation no later than 90 days prior to the start of Year 11.
- Compensatory Mitigation Period 3 (Year 11 through Year 20)
 - PG&E shall mitigate for the years 11 through 20 impacts by providing 780 acres of compensatory mitigation. Any excess compensatory mitigation acres from years 1 through 9 shall be applied to reduce the acre requirement accordingly.
 - At the beginning of year 20, PG&E shall true up or rectify the difference between the estimated O&M activity impacts with the actual post-O&M activity impact acres associated with each mitigation ratio (defined above) for years 10 through 19 and provide that information to CDFW. CDFW will review and, if in agreement, will provide concurrence. Any excess compensatory mitigation acreage will be applied to the next compensatory mitigation period. PG&E shall provide any deficit required mitigation no later than 90 days prior to the start of Year 21.
- Compensatory Mitigation Period 4 (Year 21 through Year 25)

- PG&E shall mitigate for the years 21 through 25 impacts by providing 390 acres of compensatory mitigation. Any excess compensatory mitigation acres from years 10 through 19 shall be applied to reduce the acre requirement accordingly.
 - At the beginning of year 25, PG&E shall true up or rectify the difference between the estimated O&M activity impacts with the actual post-O&M activity impact acres associated with each mitigation ratio (defined above) for years 20 through 24 and provide that information to CDFW. CDFW will review and, if in agreement, will provide concurrence. Any excess compensatory mitigation acreage would be applied to the next compensatory mitigation period. PG&E shall provide any deficit required mitigation no later than 90 days prior to the start of Year 26.
 - **Compensatory Mitigation Period 5 (Year 26 through Year 30)**
 - PG&E shall mitigate for the years 26 through 30 impacts by providing 390 acres of compensatory mitigation. Any excess compensatory mitigation acres from years 20 through 24 shall be applied to reduce the acre requirement accordingly. PG&E shall provide any deficit required mitigation no later than 90 days prior to the end of Year 30.
- C. Reporting.** PG&E shall track and report impacts to desert tortoise and Mohave ground squirrel and their habitat, and western Joshua tree, if applicable, and its habitat to CDFW through quarterly and annual reporting (for CDFW's review and concurrence, or CDFW shall make its own determination of required compensatory mitigation based on CDFW assessment of the impact data). Reporting shall be used to compare PG&E's project-related impacts and required mitigation to date relative to the compensatory habitat previously provided by PG&E to ensure impacts during each compensatory mitigation period are mitigated in advance.

MM BIO-3 **Protection of Fish and Wildlife from Alteration of Rivers, Streams, and Lakes.** Prior to activities in jurisdictional waters of the state, including streams, or any activity subject to CFGC Section 1600 et seq., PG&E shall notify CDFW as required by law and, as necessary by law, shall enter into a Lake and Streambed Alteration (LSA) Agreement with CDFW. PG&E shall also implement all conditions of approval included in the Final LSA Agreement and any other conditions imposed through the related exercise of regulatory authority by any other state or federal agency.

PG&E shall implement practices identified below to minimize adverse impacts to streams and watersheds.

- Vehicles and equipment shall not be operated in ponded or flowing water.
- PG&E shall minimize road building, construction activities, and vegetation clearing within ephemeral streams to the extent feasible.
- PG&E shall prevent water containing mud, silt, or other pollutants from grading, hydrotesting, or other activities from entering ephemeral streams or being placed in locations that may be subjected to high storm flows.
- Spoil sites shall not be located within 30 feet from the boundaries of streams or in locations that may be subjected to high storm flows, where spoils might be washed back into streams.

- Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources resulting from project-related activities shall be prevented from contaminating the soil and/or entering ephemeral streams. PG&E shall ensure that safety precautions specified by this measure, as well as all other safety requirements of other measures and permit conditions, are followed during all phases of the project.
- When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high-water mark of any streams during construction, operation, and future decommissioning the project.
- No petroleum products or other pollutants from the equipment shall be allowed to enter any state or federal jurisdictional waters under any flow.
- PG&E shall ensure that O&M activities do not impair water flow (velocity and low flow channel width).
- No broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into any waters of the state.
- Stationary equipment such as motors, pumps, generators, and welders located within or adjacent to a drainage shall be positioned over drip pans. Stationary heavy equipment shall have suitable containment to handle a catastrophic spill/leak. Cleanup equipment such as brooms, absorbent pads, and skimmers shall be on site prior to the start of construction.
- The cleanup of all spills shall begin immediately. CDFW shall be notified immediately by PG&E of any spills.
- PG&E O&M activities will impact up to two acres each year and shall impact no more than 30 acres over the 30-year term of the proposed incidental take permit (ITP) of rivers, streams, and lakes, including playa, lake/pond, reservoir, and stream washes, subject to Section 1602 of the CFGC. PG&E shall provide compensatory mitigation for impacts to rivers, streams, and lakes. CDFW will calculate and identify the final amount of required compensatory mitigation as provided by this measure prior to issuance of an LSA Agreement using the following criteria:
 - For any O&M activity that impacts a river, stream, or lake and associated fish and wildlife resources which can be returned as closely as possible to pre-project conditions, restoring the physical and ecological function of the feature, PG&E shall mitigate impacts to rivers, streams, or lakes at a minimum 1:1 ratio (provide 1 acre of compensatory habitat for 1 acre of impact) as determined in a final LSA Agreement.
 - For any O&M activity that impacts a river, stream, or lake and associated fish and wildlife resources which permanently alters the physical and ecological function of the feature or installs permanent structures or materials into the areas subject to CFGC Section 1602, PG&E shall mitigate impacts to rivers, streams, or lakes at a minimum 3:1 ratio (provide 3 acres of compensatory habitat for 1 acre of impact) as determined in a final LSA Agreement.
 - Compensatory mitigation required for MM BIO-3 may be fulfilled by the compensatory mitigation lands acquired to fulfill MM BIO-2 to the extent that the mitigation lands provide adequate acres of rivers, streams, and/or lakes as required by this measure.

MM BIO-4 Pre-Activity Special-Status Resources Assessment.

A. Assessments. To augment the O&M Activity Habitat Assessments proposed under APM BIO-9 and as part of the PG&E environmental screening process described in Section 2.4, PG&E shall conduct a pre-activity special-status resources assessment (Assessment) prior to an O&M activity. The Assessment includes presence and absence surveys to document the presence of a special-status resource and, if present, an evaluation of distribution of the special-status resource in the O&M activity area, including acres, number of individuals, and number and occupancy status of dens, burrows, roosts, and other native wildlife nursery sites. The Assessment shall be conducted in the O&M impact areas and in appropriate buffer areas and shall address special-status plant and wildlife species identified in Table 4.4-2 and Table 4.4-3 in the study area. The Assessment shall also address riparian habitat and sensitive natural communities, including rivers, streams, and lakes; state or federally protected wetlands; and any other resource subsequently identified as special status during the term of the proposed incidental take permit (ITP). PG&E shall conduct an Assessment in areas where O&M activities and related staging will result in surface disturbance, including use of equipment and vehicles that may impact vegetation, burrows, dens, or roosts. Assessments for special-status plant species are not required in areas that do not support any vegetation. The Assessments shall include the following:

- PG&E shall time Assessments to be appropriate to determine the presence or absence of the special-status resource. If Assessments cannot be properly timed for the resources, PG&E shall assume presence of the special-status resource based on the vegetation community and distribution range and implement the avoidance, minimization, and mitigation measures presented in MM BIO-5 and MM BIO-6, as appropriate for the resource.
- PG&E shall have a qualified botanist conduct an Assessment for special-status plant species. Botanical surveys shall be floristic in nature and follow CDFW's Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities. The surveys shall be seasonally appropriate and conducted at the time of year when species are both evident and identifiable (i.e., blooming, flowering, or fruiting). If surveys cannot be performed during the appropriate season due to scheduling of urgent repairs, the qualified botanist shall perform the survey within the 30 days prior of the start of O&M activities.
- Within 14 days (and within 3 days for nesting birds) prior to O&M activities, PG&E shall have a qualified biologist conduct an Assessment for special-status wildlife species in the O&M work areas and an adequate buffer zone for the indirect impacts of the specific O&M activities.
- If at any point O&M activities at the site cease for more than 5 days, PG&E shall conduct an additional Assessment prior to the resumption of O&M activities.
- PG&E shall implement the following resource and species-specific assessment requirements:
 - **Western Burrowing Owl.** PG&E shall have a qualified avian biologist conduct surveys for western burrowing owl following the survey guidance in the Staff Report on Burrowing Owl Mitigation (Staff Report) (DFG 2012). Surveys shall be sufficient to

identify all active burrows within the recommended setback distances from the O&M activity, depending on the planned level of disturbance and timing of O&M activities.

- ***Nesting Birds.*** PG&E shall have a qualified avian biologist conduct surveys in areas that will be impacted by O&M activities and an adequate buffer using appropriate methodologies, at the appropriate time of day/night, and during appropriate weather conditions. Surveys shall encompass all suitable areas including, but not limited to, trees, shrubs, bare ground, burrows, cavities, cliffs, and structures. Survey duration shall take into consideration the size of the area, density and complexity of the habitat, number of survey participants, and survey techniques employed. Survey duration shall be sufficient to ensure the data collected is complete and accurate.
 - ***Listed Riparian Birds.*** If O&M activities conducted within riparian habitat along the Mojave River or Colorado River during the period from April 1 through September 15 will result in ground disturbance, vegetation removal, or noise, PG&E shall have a qualified avian biologist conduct pre-activity protocol surveys for least Bell's vireo and southwestern willow flycatcher.
 - ***Large Mammals.*** PG&E shall have a qualified biologist conduct surveys to determine if active or potential desert kit fox, American badger, or ringtail dens are present in the project area. Surveys shall encompass both the project area and a buffer distance adequate to determine the potential for direct or indirect impacts. Surveys shall attain 100% visual coverage and be conducted using 10-meter (33-foot) transects (or reduced based on topography and vegetation), to determine the presence or absence of individuals, dens, and sign.
 - ***Bats.*** PG&E shall have a qualified biologist conduct a survey and habitat assessment for special-status bat species and their roosts within the O&M activity area and a buffer distance adequate to complete a visual inspection for the presence of potential day and night roosting features (bats need not be present) including, but not limited to, rocky outcrops, rock crevices, snags, man-made structures, mines, caves, and vegetation as well as bat sign (guano, urine staining, and culled insect parts). The survey shall be sufficient in nature to identify bats occupying the roost to species and, if conducted during the pupping season, to determine if the roost is a maternal roost.
 - ***Small Mammals.*** PG&E shall have a qualified biologist conduct surveys to determine if active or potential special-status small mammal species burrows are present. Surveys shall encompass both the project area and a buffer distance adequate to determine the potential for direct or indirect impacts. Surveys shall attain 100% visual coverage to determine the presence or absence of burrows.
- In O&M activity work areas with the potential to impact riparian habitat or other sensitive natural communities, including rivers, streams or lakes, or state or federally protected wetlands, PG&E shall conduct an Assessment that includes mapping of riparian habitat or other sensitive natural communities, including rivers, streams and lakes and a jurisdictional delineation of state or federally protected wetlands.
 - Based on the Assessment, PG&E shall identify the temporary and permanent impacts to each special-status species resource for the site-specific O&M activity.

- B. Reporting.** PG&E shall document the methods and results of the Assessments in a Pre-Activity Special-Status Resources Assessment Report. Methods and results documented by PG&E shall include at a minimum: methods, dates, area assessed, an evaluation of distribution of the special-status resource in the O&M activity area including acres, number of individuals, and number and occupancy status of dens, burrows, roosts, and other native wildlife nursery sites, mapping of riparian habitat or other sensitive natural communities, including rivers, streams and lakes and a jurisdictional delineation of state or federally protected wetlands, and the temporary and permanent impacts to any special-status resource caused by the site-specific O&M activity. The Pre-Activity Special-Status Resources Assessment Reports from all Assessments shall be compiled and maintained by PG&E and shall be provided annually to CDFW by December 31.

MM BIO-5 **Avoidance and Minimization for Special-Status Resources.** In areas where the Pre-Activity Special-Status Resources Assessment Report documents the presence of one or more special-status resources in an O&M activity work area, PG&E shall implement the follow measures:

- A. Education Program.** PG&E shall conduct an education program for all persons employed or otherwise working on behalf of PG&E in the O&M activity work area before implementing the O&M activity. The program shall consist of a presentation from a qualified biologist that includes on-site resources, and the distribution, behavior, and habitat needs of the special-status species or resource, legal protections for those species or resource, penalties for violations, and project-specific protective measures. PG&E shall prepare and distribute wallet-sized cards or a fact sheet handout containing this information for workers to carry in the O&M activity work area. PG&E shall provide interpretation for non-English-speaking workers, and the same instruction shall be provided to any new workers before they are authorized to perform work in the O&M activity work area. Upon completion of the program, PG&E shall have employees sign a form stating they attended the program and understand all protection measures. The program shall:
- Be developed by or in consultation with the Authorized Biologist and consist of an on-site presentation with supporting written material and/or electronic media, including photographs of special-status species, available to all participants.
 - Provide an explanation of the function of flagging that designates authorized work areas or resources marked for avoidance and specify the prohibition of soil disturbance or vehicle travel outside designated areas.
 - Discuss general safety protocols such as vehicle speed limits, hazardous substance spill prevention and containment measures, and fire prevention and protection measures.
 - Review avoidance, minimization, and mitigation requirements.
 - Explain the sensitivity of the vegetation and habitat within and adjacent to work areas and proper identification of these resources.
 - Discuss the federal and state Endangered Species Acts, Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act and the consequences of non-compliance with these acts.
 - Discuss CFGC Sections 3503, 3503.5, 3513, 4700 and the consequences of non-compliance with these sections of code.

- Discuss the locations and types of special-status resources on the project site and adjacent areas and explain the reasons for protecting these resources.
- Inform participants that no snakes, other reptiles, mammals, birds, bats, or any other wildlife will be harmed or harassed.
- Place special emphasis on species that may occur in the project area, including special-status plant and wildlife species.
- Provide contact information for the biologist and instructions for notification of any vehicle-wildlife collisions or dead or injured wildlife species encountered during O&M activities.

B. Entrapment Inspections. When the Pre-Activity Special-Status Resources Assessment Report documents the presence of special-status wildlife species in an O&M activity area, PG&E shall have a qualified biologist inspect any pipes, culverts, or similar structures with a diameter greater than 3 inches and less than 8 inches aboveground for special-status wildlife species before the material is moved, buried, or capped. The biologist shall inspect all open holes and trenches at a minimum of twice a day and just prior to backfilling. At the end of each workday, PG&E shall place an escape ramp at each end of trenches to allow any animals that may have become trapped in the hole or trench to climb out overnight. The ramp may be constructed of either dirt fill or wood planking or other suitable material that is placed at an angle no greater than 30 degrees. If any worker discovers that special-status wildlife have become trapped, they shall notify PG&E immediately and PG&E shall halt the O&M activity and notify the biologist immediately. Project workers and the biologist shall allow the individual to escape unimpeded if possible, or an appropriately permitted biologist may move the individual out of harm's way before allowing work to continue.

If the Pre-Activity Special-Status Resources Assessment Report identifies the presence of a special-status resource within an O&M activity work area, PG&E shall implement the following avoidance and minimization measures:

- C. Avoidance.** PG&E shall, in consultation with the botanist or biologist, flag the area where special-status species occur and an appropriate buffer sufficient for full avoidance (e.g., seedbank) of direct and indirect impacts. If a special-status wildlife species is observed, PG&E shall not begin work until the species departs the construction area or is moved, if necessary permits have been obtained, out of the construction area.
- D. Minimization.** If full avoidance is not feasible during implementation of the O&M activity, PG&E shall minimize the area of direct and indirect impact to the maximum extent feasible through flagging of areas where work will occur and flagging of areas where no work activities shall occur. PG&E shall monitor work areas and following completion of work activities, PG&E shall document the area of impact to special-status plant and wildlife species and their habitat. For special-status wildlife species, PG&E shall, prior to O&M activities, prepare a species-specific relocation plan to minimize impacts and PG&E shall implement the species-specific relocation plan prior to implementation of O&M activities. Any relocations shall take place in the appropriate season.

D1. Western Burrowing Owl. If western burrowing owl are located within or adjacent to an area subject to impact from an O&M activity, PG&E shall postpone the O&M activity, if possible, until burrowing owls are no longer present. If postponement of impacts is not feasible due to O&M activity urgency, PG&E shall implement the following actions to minimize impacts.

- PG&E shall implement measures consistent with practices identified in the Staff Report on Burrowing Owl Mitigation (Department of Fish and Game, March 2012) to minimize potential impacts to western burrowing owl. Measures may include, but are not limited to, the use of buffer zones, visual screens (e.g., hay bales monitored during the day and removed at night to prevent raptor perching; screens shall not exceed 4 feet in height and shall be at least 30 feet from active burrows), or other measures while O&M activities are occurring.
- PG&E shall conduct site-specific monitoring to inform development of buffers. The buffer zone may be increased or decreased based on the individual owl's sensitivity to visual or audible disturbances. Based on existing vegetation, human development, and land uses in an area, O&M activities may occur within 50 meters to 500 meters of an active burrow (based on level of disturbance), however, if O&M activities occur closer than 50 meters to 500 meters (based on level of disturbance), a broad-scale, long-term, scientifically rigorous monitoring program shall be implemented by PG&E to ensure that western burrowing owls are not adversely affected by the O&M activity.
- PG&E shall make every effort to minimize impacts to occupied owl burrows.
- If PG&E proposes to relocate western burrowing owls from an active burrow or an active burrow will be impacted, a burrowing owl exclusion plan shall be prepared for CDFW review and approval that will be performed outside of breeding season and after fledgling independence and any relocation shall be subject to compensatory mitigation as described in MM BIO-6.

D2. Nesting Birds. If active nests containing eggs or young are found, PG&E shall have a qualified avian biologist document species, baseline behavior, stage of reproduction, and existing site conditions, including vertical and horizontal distances from proposed work areas, visual or acoustic barriers, and existing level of disturbance to avoid impacts to nesting birds, eggs, and nests. The biologist shall establish an appropriate nest buffer based on the species and the planned activity's level of disturbance, site conditions, and the observed bird behavior. The on-site biologist shall increase buffer sizes as needed if nesting individuals show signs of disturbance. The buffer zone may be decreased, at the biologist's discretion, based on the individual's sensitivity to visual or audible disturbances but shall not be decreased below 300 feet for special-status avian species or raptor species. Active nests shall be monitored until the biologist has determined the young have fledged or the project is finished. The biologist has the authority to halt or stop work if nesting individuals exhibit signs of disturbance. Established buffers shall remain until the biologist determines the young have fledged or the nest is no longer active, or until O&M activities cease.

D3. Listed Riparian Birds. If an Assessment determines that least Bell's vireo or southwestern willow flycatcher are nesting within the O&M activity work area or within 300 feet of the O&M activity work area, PG&E shall postpone such activities until young have fledged and the nest is no longer in use.

D4. Large Mammals. If potential desert kit fox, American badger, or ringtail dens are located, PG&E shall have a qualified wildlife biologist monitor the dens using observation and tracking material and/or trail cameras over a three (3) day period to determine the status of the den. If non-natal active dens can be avoided and buffered from O&M activities, the biologist shall flag a minimum 100-foot disturbance-free buffer zone. A minimum 500-foot disturbance-free buffer shall be placed around the natal den and maintained until juvenile independence is determined by the biologist. The biologist shall block inactive dens within the O&M work area or buffer zone that will not be directly impacted by project activities with rocks and sticks to discourage use. The biologist shall periodically check and ensure the inactive burrows remain blocked and are not occupied. The biologist shall remove the obstruction when O&M activities are complete. The biologist has the authority to halt or stop work if individuals exhibit signs of disturbance. Established buffers shall remain until the biologist determines the young have dispersed or the den is no longer active, or until O&M activities cease. If desert kit fox, American badger, or ringtail are proposed to be relocated from an active den or an active den will be impacted, an exclusion plan shall be prepared for CDFW review and approval that will be performed outside of breeding/pupping season and after juvenile dispersal. Relocation from an active den or impacts to an active den shall be subject to compensatory mitigation as described in MM BIO-6.

D5. Bats. Should confirmed or potential day or night bat roosts be identified in the project area and buffer zone, PG&E shall have a qualified bat biologist place a minimum 250-foot disturbance-free buffer surrounding the roost. If active roost sites may be impacted by O&M activities, the biologist shall identify the species of bat and implement species-specific appropriate minimization and mitigation measures. If avoidance is not possible and the roost is composed of vegetation, PG&E shall remove vegetation using a two-step process, implemented over a two (2)-day period, and monitored by a qualified biologist to ensure take is prevented. On Day 1, branches and limbs that do not contain crevices or cavities shall be removed using hand tools. The goal is to create a disturbance sufficient to cause any bats roosting in the vegetation to leave that night and not return, but not at a level of intensity that will cause bats to fly out of the tree during the disturbance itself (i.e., during the daytime, when roost abandonment will likely result in predation). On Day 2, the remainder of the vegetation may be removed if bats are not present. PG&E shall not disturb active maternity day roosting sites. Impacts to a bat roosting site, including removal of vegetation roosting sites or impacts that cause bats to leave a roosting site during the day or abandon a roosting site shall be subject to compensatory mitigation as described in MM BIO-6.

D6. Small Mammals (Rodents). PG&E shall flag and avoid any small mammal burrow that may contain a special-status wildlife species. PG&E shall flag and avoid any small mammal

burrow that may contain Mojave River vole in suitable habitat such as grassy or riparian habitats within the Mojave River corridor. If burrows cannot be avoided, PG&E shall have a qualified small mammal biologist implement a trapping protocol adequate to identify the presence of any special-status small mammal wildlife species. If special-status small mammal burrows cannot be avoided or impacts minimized through implementation of relocation actions and documentation of species survival after 1 month, those impacts shall be subject to compensatory mitigation as described in MM BIO-6.

- E. **Reporting.** In areas subject to impacts from O&M activities where an Assessment has identified a special-status resource or where PG&E did not conduct an Assessment and assumed presence, PG&E shall track the implementation of special-status resources avoidance and minimization measures. PG&E shall also track the locations and acres with special-status resources that are subject to impacts after the implementation of avoidance and minimization measures. PG&E shall compile and retain tracked information into a Special-Status Resources Avoidance and Minimization Report and shall provide the report annually to CDFW by December 31.

MM BIO-6 Compensatory Mitigation for Special-Status Resources.

- A. **Compensatory Mitigation.** PG&E shall provide compensatory mitigation for significant impacts to special-status resources as provided by this measure. Compensatory mitigation shall be required where site-specific O&M activity will cause a significant impact to special-status resources, as documented in the Special-Status Resources Avoidance and Minimization Report, that is not reduced to below a level of significance with implementation of the avoidance and minimization measures in MM BIO-5. Compensatory mitigation shall be required for direct impacts to the following special-status resources:
- **Wildlife:** Western burrowing owl, American badger, desert kit fox, bats, Mojave fringe-toed lizard, and special-status small mammal wildlife species, and active burrows, dens, roosts, or other native wildlife nursery sites of those special-status wildlife species
 - **Plants:** *Cymopterus deserticola*, *Eriophyllum mohavense*, *Erigeron parishii*, *Cryptantha clokeyi*, *Phacelia parishii*, *Euphorbia jaegeri*, *Astragalus albens*, *Astragalus bernardinus*, *Astragalus preussii* var. *laxiflorus*, *Pediomelum castoreum*, *Calochortus striatus*, *Mentzelia tricuspidis*, *Abronia villosa* var. *aurita*, *Menodora spinescens* var. *mojavensis*, *Diplacus mojavensis*, *Penstemon albomarginatus*, *Puccinellia parishii*, *Linanthus killipii*, *Linanthus maculatus* ssp. *maculatus*, *Saltugilia latimeri*, *Polygala intermontana*, *Acanthoscyphus parishii* var. *goodmaniana*, *Eriogonum kennedyi* var. *pinicola*, and *Eriogonum ovalifolium* var. *vineum*
 - **Sensitive Natural Communities:** *Ericameria linearifolia*, Great Basin pinyon-juniper woodland, North American warm desert bedrock cliff and outcrop, Arizonan upland Sonoran desert scrub, *Krascheninnikovia lanata*, lower bajada and fan Mojavean-Sonoran desert scrub, *Yucca brevifolia*, *Panicum urvilleanum*, *Prosopis glandulosa* coppice dunes, California annual and perennial grassland, *Chilopsis linearis*, *Lepidospartum squamatum*, Madrean warm semi-desert wash woodland/scrub, *Populus fremontii*, *Prosopis glandulosa*, *Prunus fasciculata*, *Salix laevigata*, *Allenrolfea occidentalis*, North American warm desert alkaline scrub and herb playa and wet flat, Southwestern North American salt basin and high marsh, and *Suaeda moquinii*

- **State or Federally Protected Wetlands**

PG&E shall provide compensatory mitigation for impacts at a 2:1 ratio (e.g., provide 2 acres of compensatory habitat for 1 acre of impact). PG&E shall acquire, preserve, and enhance habitat occupied by the special-status species through (1) the purchase of CDFW-approved mitigation bank credits; or (2) acquisition and transfer of fee title of lands, protection in perpetuity through recordation of a conservation easement with a legally appropriate entity acting as grantee, land management in perpetuity, and funding of management activities through the calculation and deposit of an endowment fund; or (3) if mitigation for Mojave River vole, a species with restricted range in which compensatory mitigation land may not be available for acquisition, enhancement of species habitat at a 2:1 ratio (provide 2 acres of enhanced habitat for 1 acre of impact) based on a plan for enhancement of species habitat prepared by a qualified biologist prior to impact to the species.

The compensatory mitigation required by this measure may be fulfilled by compensatory mitigation required by MM BIO-2 to the extent the mitigation lands required by MM BIO-2 include the sensitive natural community, state or federally protected wetland, or occupied habitat of the special-status plant and wildlife species that are the subject of the compensatory mitigation required by MM BIO-6.

- **Western Burrowing Owl.** If impacts occur to an occupied burrow or if a burrowing owl relocation plan is implemented, PG&E shall provide compensatory mitigation. Mitigation shall be implemented consistent with the recommendations in the Staff Report on Burrowing Owl Mitigation (Department of Fish and Game, March 2012) such that the habitat acreage, number of burrows, and burrowing owls impacted are replaced or as required above in MM BIO-6, whichever is greater.
 - **Large Mammals.** If desert kit fox, American badger, or ringtail are proposed to be relocated from an active burrow or an active burrow will be impacted, PG&E shall have a qualified wildlife biologist prepare and implement an exclusion plan to be performed outside of breeding/pupping season and after juvenile dispersal. PG&E shall implement compensatory mitigation such that the habitat acreage, number of dens, and individuals impacted are replaced as required above in MM BIO-6, whichever is greater.
 - **Bats.** If impacts occur to bat roosting habitat, PG&E shall provide compensatory mitigation sufficient to replace the total area of day/night roosting habitat at a 2:1 ratio, in advance of impacts.
 - **Small Mammals (Rodents).** If direct impacts occur to special-status small mammal wildlife species or their active burrows occur, PG&E shall provide compensatory habitat as identified above.
- B. **Reporting.** PG&E shall track impacts to and compensatory mitigation for special-status species. PG&E shall prepare and retain annual reports identifying impact locations, species impacted, acres impacted, and the location and acres of permanently conserved compensatory mitigation habitat, and the survey results documenting presence of the special-status species on the compensatory mitigation habitat and shall provide a report annually to CDFW by December 31.

4.4.5 Cumulative Impacts

The geographic scope for cumulative impacts related to biological resources includes related projects within 5 miles of the pipeline alignment (refer to Table 3-1, Geographic Scope of Cumulative Impacts and Method of Evaluation). The proposed project and planned O&M activities could occur simultaneously with the construction projects shown in Figure 3-1, Planned and Proposed Projects within 5 Miles of the Study Area, and listed in Table 3-2, Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area.

As described in Section 4.4.4, Impact Analysis, ongoing O&M activities would have a less-than-significant impact on special-status species, sensitive natural communities, jurisdictional waters, and native wildlife movement. The project would not conflict with local policies or conservation plans, and thus would not contribute to a cumulative impact. PG&E's O&M activities required for the existing gas transmission line are ongoing and would not change from those currently required for the existing system. Temporary disturbances from ongoing O&M activities include vegetation clearing, soil excavation, soil stockpiling, repair work to the ROW and access roads, and work at staging/laydown areas. Permanent impacts are those which result in the conversion of habitat to a facility footprint. O&M activities would result in a minimal amount of permanent habitat disturbance. Cumulative impacts to biological resources could occur as a result of increased ground-disturbing activities by multiple projects. These cumulative activities could increase the disruption of normal animal breeding, foraging, and migration behavior; the removal of suitable habitat for multiple special-status plant and wildlife species; and the degradation of jurisdictional water features.

Nine of the planned and proposed projects in Table 3-2 have construction timelines that are unknown and could overlap with the proposed project and planned O&M activities. Of these planned and proposed projects, some are anticipated to impact some of the same special-status species, sensitive natural communities, or habitats as the project and planned O&M activities in the study area.

Of the 102 special-status plant species considered, 4 are known to be present, 13 are likely to occur, 11 have a potential to occur, and 20 are unlikely to occur. The 54 remaining special-status plant species are potentially absent due to range restrictions or lack of suitable habitat in the study area. The ongoing O&M activities are not anticipated to result in increased impacts to special-status plant species compared to the current baseline. With the planned and proposed projects within 5 miles of the study area (refer to Figure 3-1 and Table 3-2), impacts to special-status plants are anticipated in the study area. While the proposed project and other planned and proposed projects would have impacts to special-status plant species, all projects within the cumulative scenario would be subject to the same permitting requirements under the ESA and CESA, which are intended to avoid and minimize impacts to species, both at the project level and in a regional context. Accordingly, the incremental contribution from ongoing O&M activities to cumulative special-status plant species impacts, caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to special-status plant species.

Although PG&E's O&M activities are not anticipated to result in increased impacts to desert tortoise from the current baseline, the ongoing activities could contribute to a cumulative impact to desert tortoise. The planned and proposed projects within 5 miles of the study area (refer to Figure 3-1 and Table 3-2) could contribute to habitat fragmentation and degradation, removal of food and shelter resources, changing normal behavior patterns, and attracting predator species such as ravens and coyotes. However, all of these projects would be

subject to permitting and mitigation requirements under the ESA and CESA, which are intended to minimize and mitigate for impacts to species, both at the project level and in a regional context.

PG&E provides compensatory mitigation for disturbance to desert tortoise habitat on a landscape level. Mitigation credits or conservation easement lands would be provided in defined compensatory mitigation periods (Period 1 – Year 1; Period 2 – Year 2 through Year 10; Period 3 – Year 11 through Year 20; Period 4 – Year 21 through Year 25; and Period 5 – Year 26 through Year 30). This landscape-level approach is more beneficial for the species than mitigating in habitat fragments on a project-by-project basis. With incorporation of the APMs listed in Section 4.4.4.2 and the additional required mitigation measures listed in Section 4.4.4.4 into PG&E's ongoing O&M activities, potential direct and indirect impacts to special-status reptile species or their habitat would be avoided and/or minimized. Other projects would likely implement similar measures. The APMs and mitigation measures would reduce the O&M activities' contribution to cumulative impacts. Accordingly, the incremental contribution from ongoing O&M activities to cumulative desert tortoise and its critical habitat impacts, caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to desert tortoise and its critical habitat.

Eight special-status bird species are present, likely to occur, or have the potential to occur within the study area. Due to the ongoing nature of the O&M activities, most O&M activities have been and are expected to continue to be located in previously disturbed areas, such as existing pipeline ROWs and access roads. Furthermore, ongoing O&M activities involve O&M activities on existing pipelines and associated facilities and would not result in an increase in disturbance to nesting and foraging habitat. Cumulative impacts to these species and others protected under the Migratory Bird Treaty Act may result from the disturbance or degradation of suitable foraging and nesting habitat within 5 miles of the study area. The planned and proposed projects within 5 miles of the study area (refer to Figure 3-1 and Table 3-2) could contribute to impacts to bird species. However, with PG&E's commitment to incorporate APMs (listed in Section 4.4.4.2) and mitigation measures (listed in Section 4.4.4.4) into its O&M activities and with other projects in the study area being subject to permitting and mitigation requirements, cumulative impacts to special-status bird species and other protected bird species would be avoided and/or minimized. Accordingly, the incremental contribution from ongoing O&M activities to cumulative special-status bird species and other protected bird species impacts, caused by other past, present, and probable future projects would not be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW approves the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to special-status bird species and other protected bird species.

Three special-status mammal species—Mohave ground squirrel, American badger, and desert kit fox—are assumed to be present within the study area. Additionally, 11 special-status mammals, 1 special-status reptile, and 1 special-status invertebrate are likely to occur or have the potential to occur in the study area. Other planned and proposed projects are anticipated to potentially impact suitable habitat for one or more of those species. For example, the Eldorado–Lugo–Mohave Upgrade Project would potentially impact bighorn sheep, pallid bat, and western mastiff bat. Although the ongoing O&M activities and other planned and proposed projects would have impacts to special-status species, all projects within the cumulative scenario would be subject to the same permitting requirements under the ESA and CESA, which are intended to minimize and mitigate for impacts to species, both at the project level and in a regional context. Accordingly, the incremental contribution from ongoing O&M activities to cumulative special-status mammal, reptile, and invertebrate species impacts, caused by other past, present, and probable future projects would not be cumulatively

considerable or significant. These O&M activities will continue regardless of whether CDFW approves the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to special-status mammal, reptile, and invertebrate species.

O&M activities are not anticipated to impact special-status fish species, and no special-status amphibian species have the potential to occur in the study area. Accordingly, the incremental contribution from ongoing O&M activities to cumulative special-status fish and amphibian species impacts, caused by other past, present, and probable future projects would not be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW approves the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to special-status fish and amphibian species.

None of the planned and proposed projects with environmental review documents available identified the same sensitive natural communities as the study area. Impacts from ongoing O&M activities to sensitive natural communities would be primarily temporary, and with PG&E commitment to incorporate the APMs in Section 4.4.4.2 and mitigation measures in Sections 4.4.4.4 for biological resources, and BMPs for water quality in Section 4.10.4.2 during O&M activities, potential impacts to these resources would be avoided and/or minimized. Accordingly, the incremental contribution from the ongoing O&M activities to cumulative sensitive natural communities impacts, caused by other past, present, and probable future projects would not be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to sensitive natural communities.

Federally and state-protected water features (including wetlands) occur within the study area. Most of the water features within the study area consist of ephemeral streams and dry washes. PG&E avoids these features to the extent practicable; however, certain O&M activities may result in impacts to jurisdictional waters in the study area and downstream. With PG&E's commitment to incorporating biological resources APMs, water quality BMPs, and BMPs associated with SWRCB permits, impacts to jurisdictional wetlands and water features would be avoided and/or minimized. Additionally, PG&E would implement MM BIO-3 (Protection of Fish and Wildlife from Alteration of Rivers, Streams, and Lakes), which would minimize the effects of O&M activities in jurisdictional wetlands and water features, and MM BIO-4 (Pre-Activity Special-Status Resources Assessment), which would require a jurisdictional delineation of wetland and water features subject to federal or state jurisdiction in O&M activity areas with the potential to affect these resources. Prior to beginning an activity within jurisdictional wetlands or water features, PG&E would coordinate with and obtain any necessary authorizations from USACE, CDFW, and RWQCB on a per-activity basis. Implementation and compliance with the requirements of the CWA Section 404 Nationwide Permits, RWQCB Water Quality Certification under Section 401 of the CWA, and LSA Agreement would reduce impacts by limiting the amount of construction work conducted within jurisdictional areas, protecting channels and banks from potential erosion, and providing for restoration of impacted jurisdictional areas. For O&M activities affecting less than 1 acre of the study area, PG&E would continue to implement BMPs for water quality (e.g., keep absorbent materials on site to recover any accidental spills; monitor, maintain, and prevent discharges from waste disposal containers to the storm drain system or surface waters; and contain and protect stockpiled waste materials). For areas impacting 1 acre or more, compliance with the Construction General Permit and implementation of an associated SWPPP would reduce potential impacts to water quality by minimizing erosion and limiting sediment transport from the study area. PG&E would also comply with all permit conditions. Other planned and proposed projects within 5 miles have the potential to impact jurisdictional waters/wetlands and riparian areas (refer to Figure 3-1 and Table 3-2). However, any project impacting jurisdictional water features would

obtain the necessary permits from USACE pursuant to CWA Section 404, RWQCB pursuant to CWA Section 401, and CDFW pursuant to CFGC Section 1600. Implementation of permit conditions would minimize and mitigate for impacts to these resources at the project level and watershed level. Accordingly, the incremental contribution from the ongoing O&M activities to cumulative jurisdictional resources impacts, caused by other past, present, and probable future projects would not be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to jurisdictional resources.

O&M activities would not significantly impair or impede the movement of wildlife due to the short-term work in isolated locations and incorporation of the APMs. Repaired pipelines are buried below grade and minimal amounts of permanent habitat disturbance to linkage habitat would result from O&M activities. Temporarily disturbed areas would also be restored in a manner that would assist in the reestablishment of biological connectivity, and permanent impacts to wildlife movement would not occur. Other planned and proposed projects may have effects on wildlife movement but have proposed measures to avoid sensitive foraging habitat and wildlife corridors. Accordingly, the incremental contribution from the ongoing O&M activities to cumulative wildlife movement impacts caused by other past, present, and probable future projects would not be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to wildlife movement.

O&M activities in the study area would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP. Two adopted HCPs overlap with the study area, the LCR MSCP and PG&E's Hinkley Remediation HCP, and PG&E's ongoing O&M activities would not conflict with these plans. Planned and proposed projects within the cumulative scenario would be subject to environmental review and the same permitting requirements under the ESA and CESA; accordingly, the incremental contribution from the ongoing O&M activities to cumulative impacts relating to conflict with an adopted HCP or NCCP caused by other past, present, and probable future projects would not be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW approves the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to a conflict with an adopted HCP or NCCP.

Therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to biological resources.

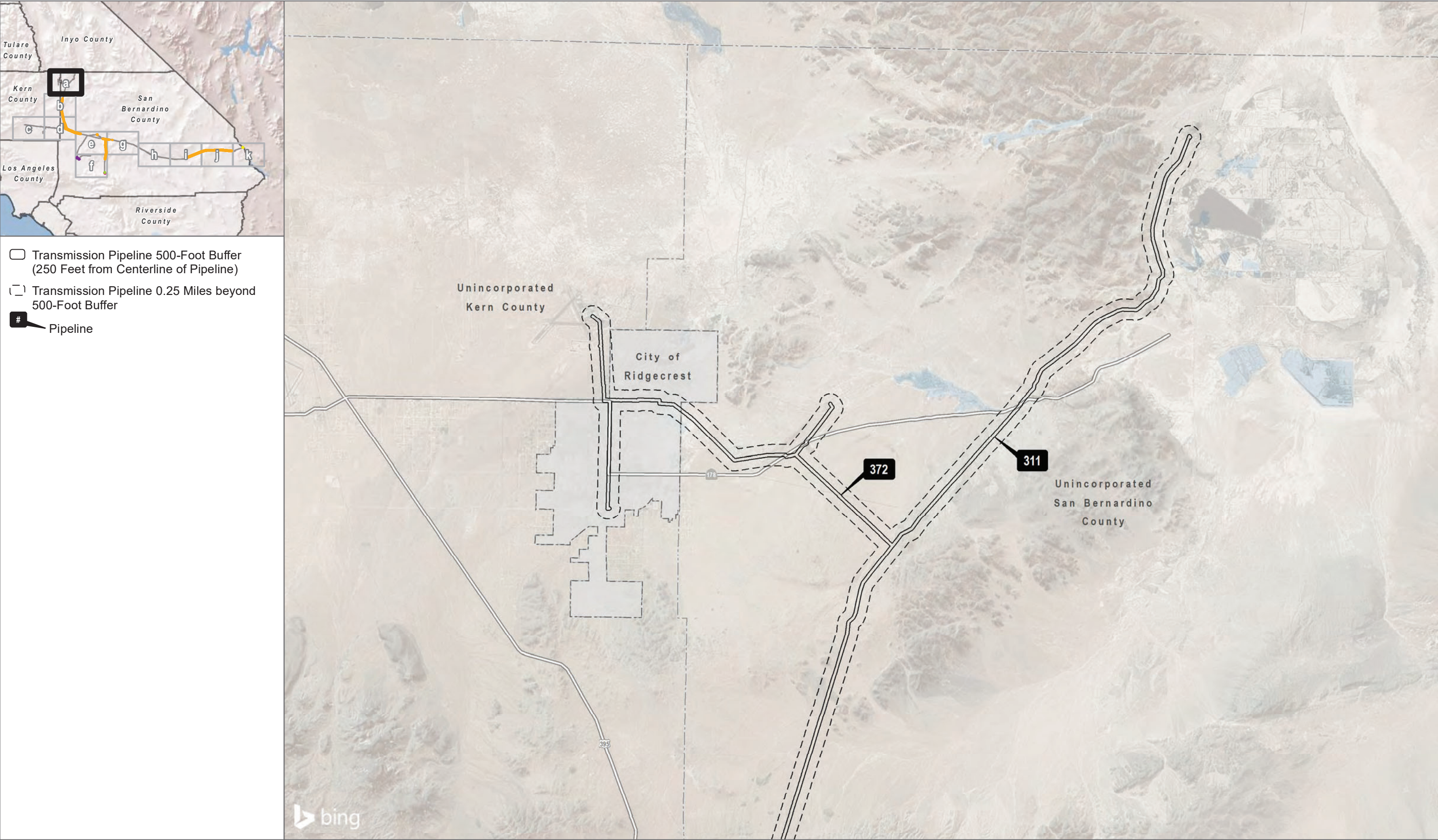
4.4.6 Residual Impacts

PG&E's O&M activities have been ongoing and are a component of the existing baseline conditions in the study area. The O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's commitment to implementing relevant APMs, BMPs, standard practices, and MM BIO-1 through MM BIO-6 provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect on biological resources.

4.4.7 References

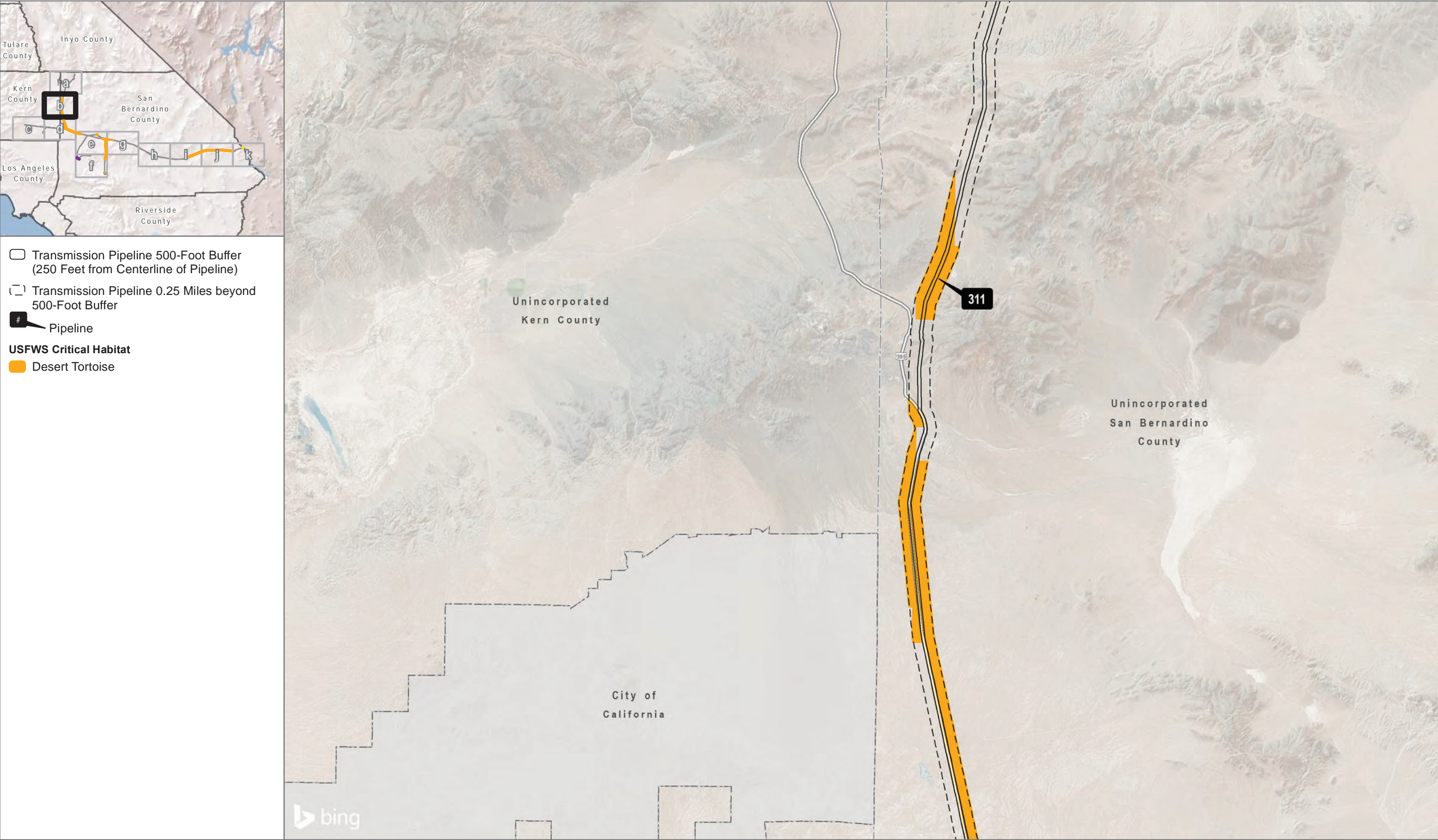
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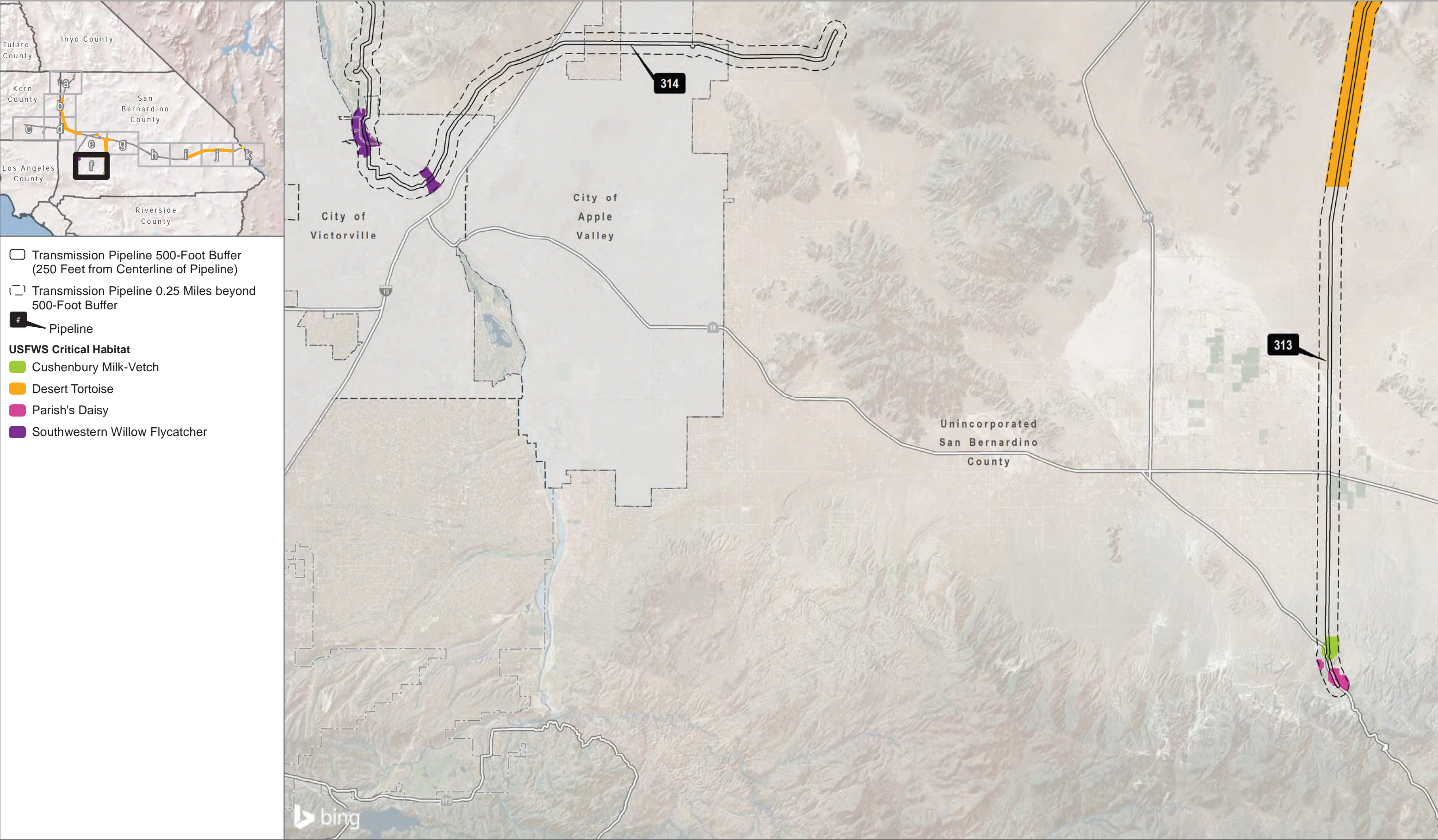
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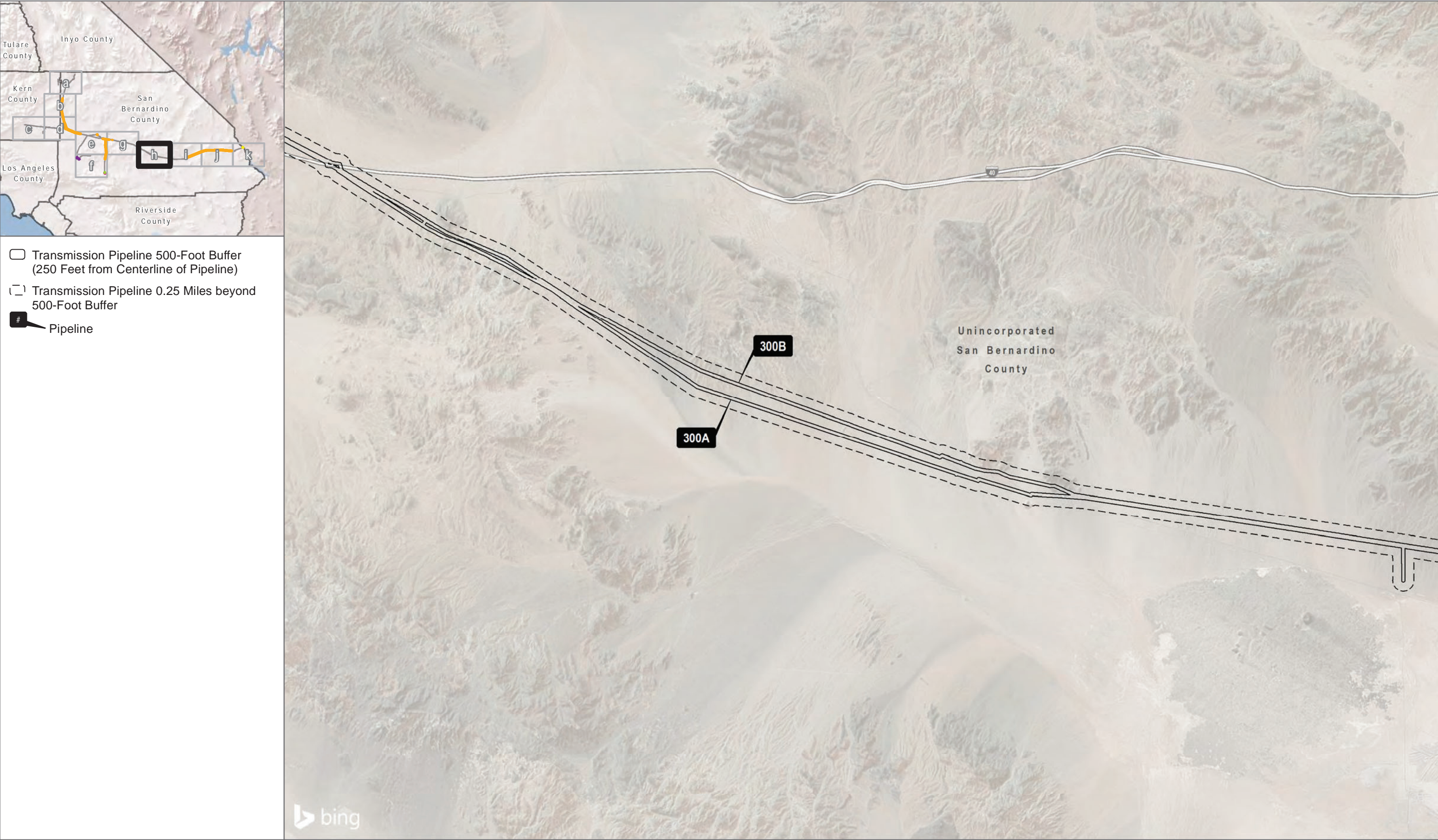
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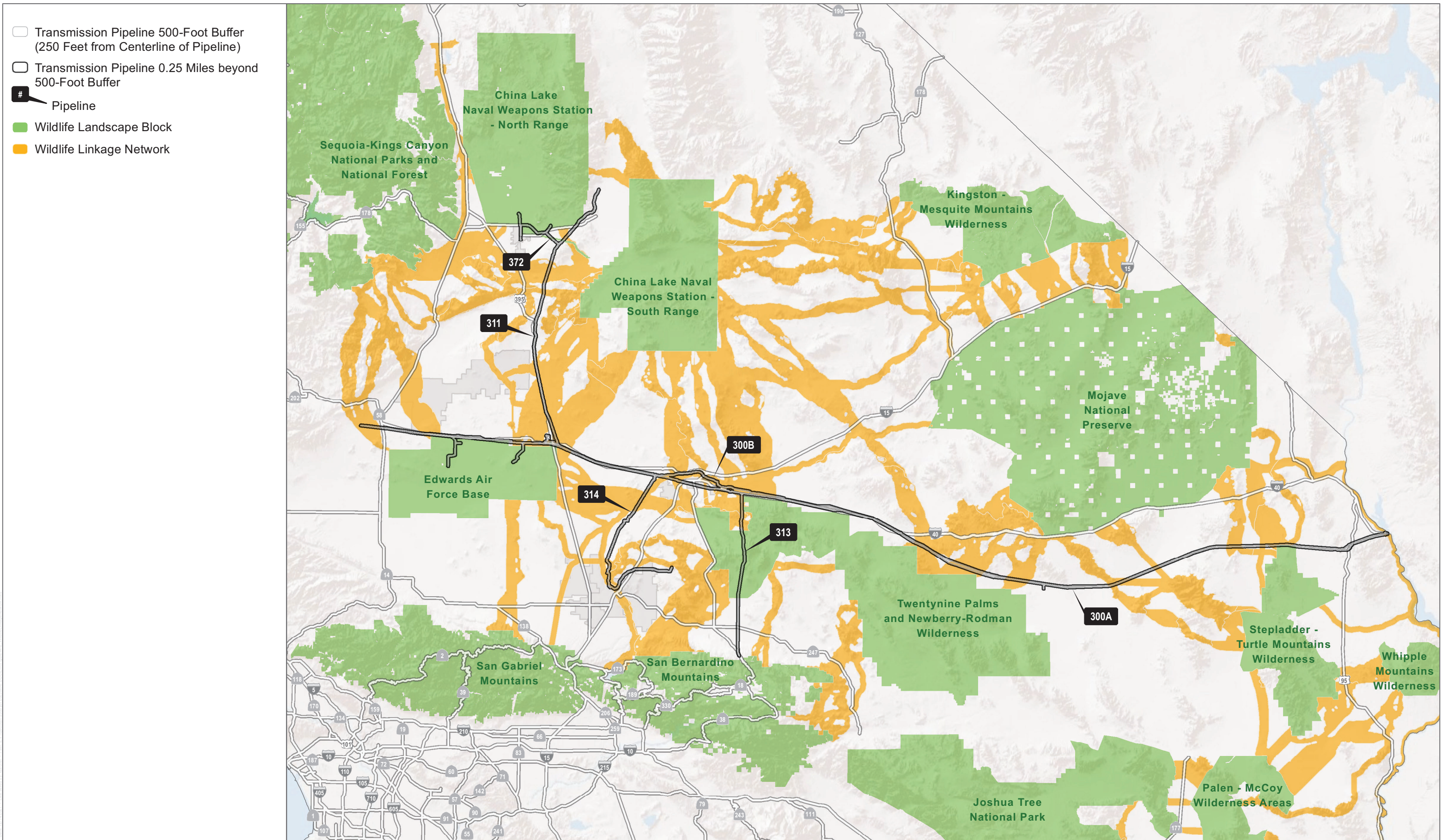


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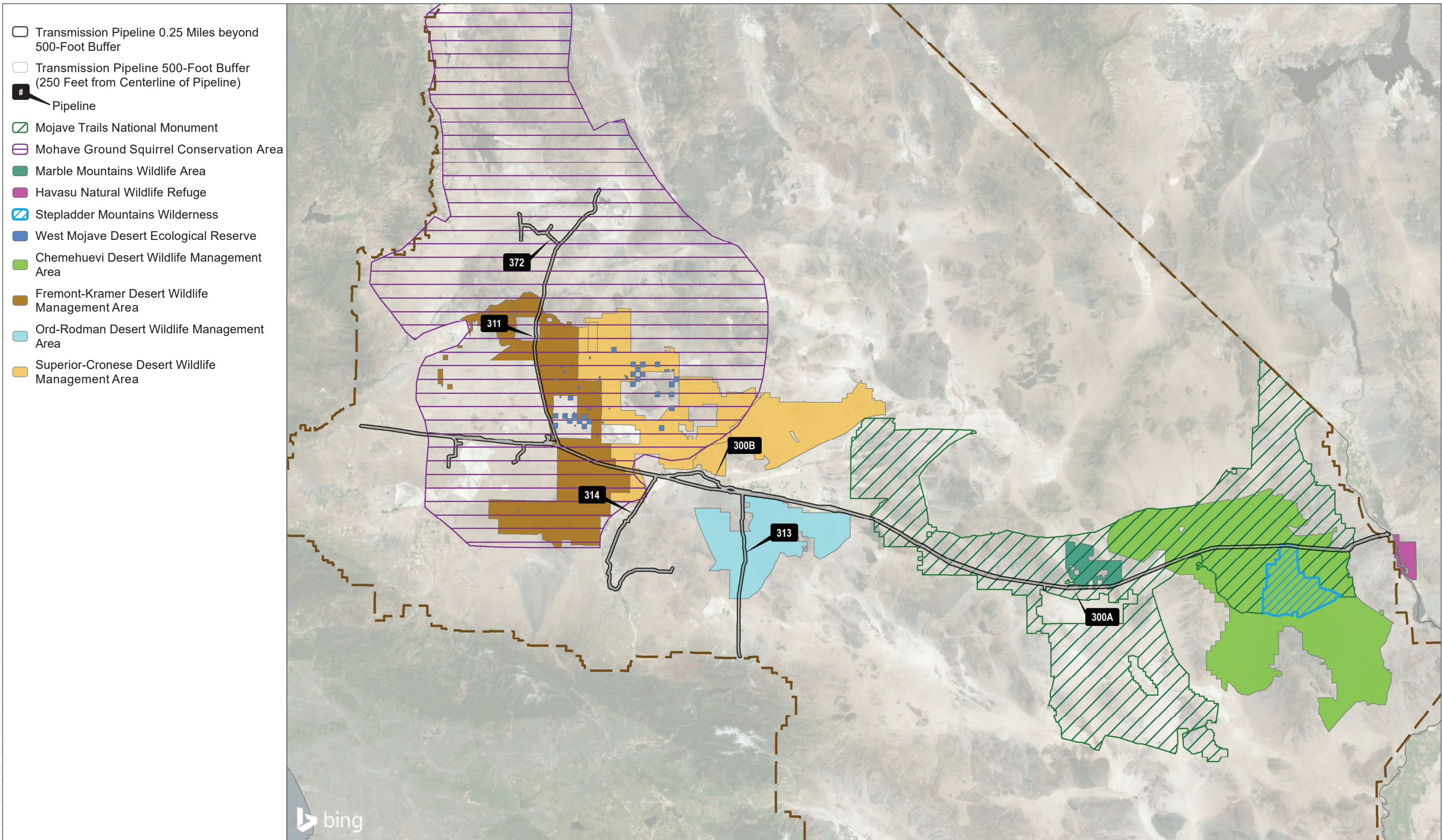


SOURCE: SC Wildlands 2012

FIGURE 4.4-2

Wildlife Linkage Network

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SOURCES: BLM 2021; USFWS 2021; NPS 2021

FIGURE 4.4-3

Management Areas in the Study Area

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4.5 Cultural Resources

4.5.1 Introduction

The proposed project for the purposes of the California Environmental Quality Act (CEQA) is of the requested issuance of an Incidental Take Permit (ITP) that would authorize take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGF). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section evaluates the environmental impacts on cultural resources that may result directly or indirectly from CDFW's issuance of the ITP and the expected LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on cultural resources that could result with continuing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the project for purposes of CEQA). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this section.

Section 4.5.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have been occurring and will continue to occur, specific to cultural resources.

Section 4.5.3 provides a description of the existing baseline conditions for cultural resources in the O&M activities area ("study area"). Specifically, this section provides a description relative to cultural resources in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities, regardless of whether CDFW issues the requested permits. This existing baseline condition, which includes the ongoing O&M activities already being implemented by PG&E relative to their past, present, and continued potential effects, is the benchmark used in the Section 4.5.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these environmental baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.5.4 provides an analysis of whether issuance of the requested permits (pursuant to the CFGF) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline and a substantial or potentially substantial adverse effect related to cultural resources. The section also identifies the significance criteria used for the impact analysis and applicant proposed measures (APMs) and best management practices (BMPs). The APMs and BMPs are those that PG&E has identified, currently incorporates into its ongoing O&M activities, and has committed to continue to incorporate to avoid or minimize impacts associated with its ongoing activities. Furthermore, this section discusses applicable regulatory authority or governing law that has applied and will continue to apply, specific to cultural resources.

Section 4.5.5 provides an analysis of whether the project-related incremental change to the environmental baseline is cumulatively considerable and therefore significant.

Section 4.5.6 identifies the residual environmental impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.5.7 lists the references cited in this section.

Comments received during the scoping process related to cultural resources included comments from the Native American Heritage Commission (NAHC) relating to compliance with Assembly Bill 52 and Senate Bill 18 and other applicable laws.

The analysis included in this section is based on information that PG&E provided to CDFW, as well as relevant information gathered and considered by CDFW, with assistance from its environmental consultant.

4.5.2 Applicable Regulations, Plans, and Policies

The following subsections describe the regulations and regulatory agencies that pertain to cultural resources that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and CDFW analysis of whether the proposed issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would cause an incremental physical change to the existing environment and cause significant impacts to cultural resources.

Federal

National Historic Preservation Act

Section 106 of the National Historic Preservation Act requires federal agencies to consult with the Advisory Council on Historic Preservation to take into account the effects of their undertakings on historic properties, and the procedures in Title 36, Part 800 of the Code of Federal Regulations (CFR) defines how federal agencies meet these responsibilities. Title 36, Section 800.5(a) of the CFR describes procedures for evaluating a project's adverse effects on cultural resources. An adverse effect is found when a federal undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualifies the property for inclusion in the National Register of Historic Places (NRHP) in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Examples of adverse effects are provided in Title 36, Section 800(a)(2) of the CFR and include, but are not limited to, the following:

- Physical destruction of or damage to all or part of the property
- Alteration of a property—including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access—that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR, Part 68) and applicable guidelines
- Removal of the property from its historic location
- Changing the character of the property's use or of physical features within the property's setting that contribute to its historic significance
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features

- Neglect of a property, which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe¹ or Native Hawaiian organization
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance

National Register of Historic Places Eligibility Criteria

The National Park Service regulation provided in Title 36, Part 60 of the CFR is the primary reference for determining the historical significance of a cultural resource. The regulation defines the criteria by which a property is determined to be eligible for listing in the NRHP as follows (36 CFR, Part 60):

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:

- a. Are associated with events that have made a significant contribution to the broad patterns of our history; or
- b. Are associated with the lives of persons significant in our past; or
- c. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant distinguishable entity whose components may lack individual distinction; or
- d. Have yielded or may be likely to yield information important in history or prehistory.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 provides for the protection of archaeological resources that are more than 100 years old and that occur on federally owned or controlled lands. The statute makes it unlawful to excavate and remove items of archaeological interest from federal lands without a permit, and it defines the process for obtaining such a permit from the responsible federal agency. This process includes a 30-day notification from the agency to interested persons, including Indian tribes, to receive comments regarding the intended issuance of a permit. The law establishes a process for prosecuting persons who illegally remove archaeological materials from lands subject to the Archaeological Resources Protection Act. The law also provides for the curation of archaeological artifacts, ecofacts,² notes, records, photographs, and other items associated with collections made on federal lands. Standards for curation are provided in Title 36, Part 79 of the CFR.

National Environmental Policy Act

The National Environmental Policy Act of 1970 requires the federal government to carry out its plans and programs in such a way as to “preserve important historic, cultural, and natural aspects of our national heritage” (42 USC Section 4331[b][4]). The intent of the statute is to require that agencies obtain sufficient

¹ *Indian tribe* means an Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges to exist as an Indian tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994 (25 USC 479a).

² *Ecofacts* are natural materials that have been used by humans, or that have been recovered from archaeological sites or other sealed deposits and that are relevant to the study of ancient environments and ecology.

information regarding historic and cultural properties to make a determination of the historical and cultural significance of affected historic or cultural properties and to take into account whether irreversible adverse impacts to such resources can or should be avoided, minimized, or mitigated.³

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 provides a process for museums and federal agencies to return certain Native American cultural items (i.e., human remains, funerary objects, sacred objects, and objects of cultural patrimony) to lineal descendants, culturally affiliated Indian tribes (i.e., tribes recognized by the Secretary of the Interior), and Native Hawaiian organizations, if the legitimate cultural affiliation of the cultural items can be determined according to the law. Museums, as defined under the statute, are required to inventory cultural items in their possession and determine which items can be repatriated to the appropriate party. Cultural items intentionally or unintentionally excavated and removed from federal lands may be subject to NAGPRA.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act of 1978 directs federal agencies to consult with Native Americans to determine appropriate procedures to protect the inherent rights of Native Americans to believe, express, and exercise their traditional religions. These rights include, but are not limited to, access to sites, use and possession of sacred objects, and freedom to worship through ceremonies and traditional rites.

Executive Order 13007

Executive Order (EO) 13007 directs that, in managing federal lands, each executive branch agency with statutory or administrative responsibility for the management of federal lands will—to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions—do the following:

- Accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners.
- Avoid adversely affecting the physical integrity of such sacred sites.

Where appropriate, agencies will maintain the confidentiality of sacred sites. EO 13007 requires that affected agencies must establish a process for implementing the executive order.

Executive Order 13175

EO 13175 was issued to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, to strengthen the government-to-government relationships between the United States and Indian tribes, and to reduce the imposition of unfunded mandates on Indian tribes. Relevant federal agencies are directed to establish policies and procedures for implementing consultation with federally recognized tribes on a government-to-government basis.

³ Obtaining sufficient information may include consulting, for example, appropriate members of the public; federal, state, and local government agencies; and Indian tribes, organizations, and individuals.

Executive Order 13287

EO 13287 establishes that, among other things, it is the policy of the federal government to provide leadership in preserving America's heritage by actively advancing the protection, enhancement, and contemporary use of the historic properties owned by the federal government, and by promoting intergovernmental cooperation and partnerships for the preservation and use of historic properties. The federal government will recognize and manage the historic properties in its ownership as assets that can support department and agency missions while contributing to the vitality and economic well-being of the nation's communities and fostering a broader appreciation for the development of the United States and its underlying values.

State

State regulations affecting cultural resources include Sections 21083.2 and 21084.1 of CEQA (California Public Resources Code Section 21000 et seq.), and CEQA Guidelines Section 15064.5 and Appendix G (14 CCR 15000 et seq.).

As defined in CEQA, cultural resources include prehistoric- and historic-era archaeological sites, districts, and objects; historic buildings, structures, objects, and districts; and traditional/cultural sites or the locations of important historic events. Section 15064.5 of the CEQA Guidelines states that a project may have a significant environmental effect if it causes a substantial adverse change in the significance of a historical resource. Additionally, the lead agency must consider properties that are eligible for listing on the California Register of Historical Resources (CRHR), defined as a unique archaeological resource in California Public Resources Code Section 21083.2, or defined as a tribal cultural resource in California Public Resources Code Section 21074.

California Register of Historical Resources

Cultural resources include archaeological and historic objects, sites and districts, historic buildings and structures, and sites and resources of concern to local Native Americans and other ethnic groups. Cultural resources that meet the eligibility criteria for the CRHR are termed "historic resources." Archaeological resources that do not meet CRHR criteria also may be evaluated as unique, and impacts to such resources could be considered significant.

A site is eligible for inclusion on the CRHR if it meets one or more of the following criteria:

- It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage (Criterion 1).
- It is associated with the life or lives of a person or people important to California's past (Criterion 2).
- It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values (Criterion 3).
- It has yielded, or may be likely to yield, information that is important to prehistory or history (Criterion 4).

A resource eligible for the CRHR must meet one of the criteria of significance described previously and retain enough of its historic character or appearance (i.e., integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historical resource may not retain sufficient integrity to meet the criteria for listing in the NRHP, but it may still be eligible for listing in the CRHR.

The CRHR automatically includes the following:

- California properties listed on the NRHP and those formally determined eligible for the NRHP
- California Registered Historical Landmarks from No. 770 onward
- California Points of Historical Interest that have been evaluated by the Office of Historic Preservation and that have been recommended to the State Historical Resources Commission for inclusion on the CRHR

Other resources that may be nominated to the CRHR include the following:

- Historical resources with a significance rating of Category 3 through 5
- Individual historical resources
- Historical resources contributing to historic districts
- Historical resources designated or listed as local landmarks, or designated under any local ordinance (e.g., a historic preservation overlay zone)

Impacts to unique archaeological resources also are considered under CEQA, as described in California Public Resources Code Section 21083.2. A *unique archaeological resource* is an archaeological artifact, object, or site that clearly demonstrates that—without merely adding to the current body of knowledge—there is a high probability that it meets one of the following criteria:

- It contains information needed to answer important scientific questions, and there is a demonstrable public interest in that information.
- It has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- It is directly associated with a scientifically recognized, important prehistoric or historic event or person.

A *non-unique resource* is one that does not fit the previous criteria.

Local

Pursuant to Article XII, Section 8 of the California Constitution, the California Public Utilities Commission (CPUC) has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, operation, maintenance, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with CPUC. Although local governments do not have the power to regulate such activities, CPUC encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has reviewed regional and county documents for relevant policies and issues to analyze in this environmental impact report (EIR).

The following plans from local jurisdictions were reviewed, and no specific goals or policies that are relevant to O&M activities in the study area were identified:

- San Bernardino County 2020 Countywide Policy Plan
- City of Barstow 2015–2020 General Plan
- City of Victorville General Plan 2030
- Town of Apple Valley 2009 General Plan

- Kern County General Plan
- City of California City Final General Plan 2009–2028
- City of Ridgecrest General Plan

4.5.3 Existing Baseline Conditions

This section provides a description of the existing baseline conditions relative to cultural resources in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. PG&E's gas pipeline system has been in place for more than 70 years. Impact data collected by PG&E from 2017 to September 2021 regarding temporary and permanent disturbance impacts caused by O&M activities provide important detail about the environmental baseline for purposes of CEQA (refer to Section 1.1, Proposed Project and Environmental Review). The existing baseline condition from 2017 to 2021, which includes PG&E's past and ongoing O&M activities, is the benchmark used in the Section 4.5.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

The study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands. Federal lands constitute a majority of the land area in the Mojave Desert region, including lands under the jurisdiction of the Bureau of Land Management (BLM), the U.S. Fish and Wildlife Service, and the U.S. Department of Defense. Portions of the study area cross the City of Barstow, City of Victorville, Town of Apple Valley, City of California City, and City of Ridgecrest. A majority of the study area is within undeveloped, open areas. A detailed description of the locations of each pipeline in the study area is provided in Chapter 2, Project Description.

Cultural Resources Inventory in the Study Area

A cultural resources inventory was previously conducted along Lines 300 A and 300 B in the study area. Far Western Anthropological Research Group Inc. (Far Western) was contracted by PG&E to conduct the archival and California Historical Resources Information System records search and subsequent pedestrian survey. As depicted on Figure 2-1, PG&E Facility Location Map, the two pipelines span approximately 227 linear miles between Topock Compressor Station and the community of Mojave. Two approximately 100-foot-wide survey corridors were established from the center of each pipeline and surveyed. It was noted during the survey that the two pipeline segments are themselves more than 50 years old. Far Western did not record these two historic-age features as sites because they currently fall under the Federal Register's 2002 Exemption Regarding Historic Preservation Review Process for Projects Involving Historic Natural Gas Pipelines (67 FR 16364–16365). The pipelines will not be eligible for consideration until they are proposed to be abandoned by PG&E. Due to the proximity of the pipelines, the survey corridors overlapped in some locations. Excluding the overlapping areas, the total acreage of the survey corridor was approximately 5,360 acres.

As summarized in Table 4.5-1, the cultural resources inventory documented 252 sites (i.e., groupings of three or more artifacts in a 25-square-meter [270-square-foot] area), of which 106 were previously recorded sites and 146 were newly recorded sites. The documented sites included 34 that are prehistoric, 206 that are from the historic era, and 12 that are multicomponent (i.e., historic and prehistoric components). Approximately 94 of the newly recorded sites are historic-era roads. A total of 175 isolates (i.e., groupings of two or fewer artifacts or multiple fragments of the same artifact) were also identified, which included 31 prehistoric isolates, 142 historic-era isolates, and 2 multicomponent isolates. Isolates are not listed in the table because they are not eligible for the CRHR or the NRHP by definition.

PG&E initiated this survey to proactively manage and avoid impacts to cultural resources within the study area. As such, formal evaluations of resources (to determine eligibility for listing in the CRHR or NRHP) were not included in the cultural resources inventory. BLM requested that Far Western provide preliminary assessments of eligibility, when possible, based on the data gathered during the cultural resources inventory. Only 15 of the 252 total sites in the survey area were previously determined to be eligible or recommended for eligibility. Another 29 were previously recommended ineligible from earlier evaluations. An additional 48 sites are recommended for further research to assess their eligibility or are potentially eligible. Lastly, the majority of the sites within the study area, 160 in total, appear ineligible for listing in the CRHR or NRHP from an initial assessment.

Table 4.5-1. Cultural Resources Inventory Summary

Attribute	2013 Site Inventory				
	Recommended/ Previously Determined Eligible	Determined/ Recommended Ineligible	Further Research Needed for Eligibility Listing/ Potentially Eligible	Appears Ineligible	Total
Prehistoric	1	7	7	20	34
Historic	11	20	37	136	206
Multicomponent	3	2	4	4	12
Total	15	29	48	160	252

The original pipelines were installed more than 50 years ago and appear on historical maps before the 1960s. Data from PG&E confirm that installation for Line 300 A was started and mostly finished in 1950 and Line 300 B was installed and mostly finished by 1957 (Higgins et al. 2013). Because O&M activities have been ongoing throughout the study area for 70 years, the associated areas are not pristine for cultural resources. Although surveys of the approximately 100-foot-wide corridors along Lines 300 A and 300 B were completed, surveys of access roads or facilities that are associated with these pipelines and outside of PG&E's current right-of-way (ROW) have not been conducted. When identifying cultural resources in the remainder of the study area, PG&E uses a confidential geospatial database it maintains, which encompasses the entire study area and contains more than 36,500 linked cultural site records and more than 25,000 reports and other documents.

According to the San Bernardino County 2007 General Plan, more than 11,000 prehistoric or historic archaeological sites and over 2,000 historic structures have been documented within San Bernardino County. Approximately 15% of San Bernardino County has been surveyed, and nearly 12,000 cultural resources have been recorded. Potential cultural sites in the study area include the following, as well as a variety of other sites:

- Historic roads, trails, bridges, and buildings
- Engineering features
- Native American villages
- Temporary campsites
- Rock shelters
- Milling stations
- Lithic scatters
- Cemeteries

The Kern County General Plan does not provide a definition of cultural resources, but it provides a policy wherein preservation of cultural and historical resources is promoted for its general value to residents and visitors. This plan also provides general implementation measures to limit the disturbances to resources and provides for the involvement of Native American consultation.

Prehistoric Setting

The archaeological chronology of the Mojave Desert is divided into the Lake Mojave, Pinto, Gypsum, Saratoga Springs, and Protohistoric periods. The first evidence of human occupation is known from fluted spear points mostly concentrated around China Lake, although the precise age for deposition of these items and associated cultural material has not been established. Solid evidence of human occupation of the Mojave Desert began with the Lake Mojave period between 10,000 and 7,500 before present (BP). Archaeological assemblages from the Lake Mojave period consist of percussion-flaked cores and flake-based tools, pressure-flaked bifaces, and stemmed Lake Mojave and Silver Lake projectile points. The Pinto period (7,500 to 4,000 BP) is traditionally defined by the presence of projectile points with characteristic shoulders and concave bases. In addition, Pinto period sites often contain milling stones and other tools indicative of an increased usage of plants and small seeds. Sites identified within the Gypsum period (4,000 to 1,500 BP) exhibit a higher frequency of milling stones; mortars and pestles; and flaked, ground, and battered stone tools. Artifact assemblages (e.g., smaller Rose Spring and Eastgate-series projectile points) and bow-and-arrow technology characterized the Saratoga Springs period, which occurred between 1,500 and 800 BP. The Mojave Desert contains several large Saratoga Springs period sites that have been interpreted as potential village sites with collector-based settlement organizations. From 800 BP until historic times, the study area is defined by the presence of Cottonwood and desert side-notched arrow points; rough brownware ceramics; small steatite and shell beads; and large, unshaped milling implements.

Ethnographic Setting

The major Native American tribes that historically inhabited the Mojave Desert included the Serrano, Vanyume, Tatavium, Kitanemuk, and Kawaiisu. The Serrano occupied the San Bernardino Mountains east of Cajon Pass at the base and north of the mountains near the City of Victorville. The estimated population of the Serrano prior to European contact was estimated to be 1,500 to 2,500 individuals. Serrano settlements were chosen based on the availability of water resources and were located primarily in the foothills of the San Bernardino Mountains.

The majority of the Vanyume settlements were located along the Mojave River, and the Vanyume held a tract of land along the Mojave River from the vicinity of the City of Victorville to areas near the City of Barstow. The Vanyume often traveled to the foothills to collect nuts, hunt large game (e.g., mountain sheep), and trade with the foothill Serrano.

The Tatavium existed in mountainous regions between 1,500 and 3,000 feet above mean sea level, and primarily on the south-facing slopes of the Liebre and Sawmill Mountains. This location encouraged the Tatavium to exploit the yucca plant, which was a major food source, along with small mammals, deer, acorns, sage seeds, and juniper and islay berries.

The Kitanemuk occupied areas along the Tehachapi Mountains that were bordered by the San Joaquin Valley to the north, the Sierra Nevada to the east, and the Antelope Valley to the south. The population size of the Kitanemuk was estimated to be 500 to 1,000 individuals, who lived in permanent villages of 50 to 80 individuals or more.

The Kawaiisu occupied regions surrounding the Sierra Nevada–Tehachapi watershed between the San Joaquin Valley and the Mojave Desert. The Kawaiisu used various types of basketry in the gathering and preparation of foods, such as acorns, seeds, nuts, berries, and roots. Birds and animals were generally hunted using bows made of juniper wood. The Kawaiisu often traveled far from the boundaries of their established settlements and openly traded with groups entering Kawaiisu territory.

Historic Setting

The historic era in the study area can be divided into the Spanish Mission period, the Mexican Rancho period, and the American period. Spanish exploration in the study area began in approximately 1540 with Hernando de Alarcón's ocean expedition traveling northward up the Gulf of California and into the mouth of the Colorado River. Sea trade routes were established in the 1560s that facilitated the transfer of goods from Asian commercial outposts to territories in present-day Mexico by using the California coast. The San Fernando Mission was founded in 1797 and resulted in a reduction of Native American populations and an increase in settlement and migration. Mexico successfully fought for independence from Spain in 1821, and the Secularization Act of 1833 marked the end of the Spanish Mission period.

The Mexican Rancho period occurred between 1821 and 1848 and was characterized by the dismantling of the mission system throughout California in the mid-1830s. Rancheros who thrived during this period were known for their unrivaled horsemanship, hospitality, and weeklong rodeos and fiestas to celebrate weddings and holy days. The Mexican Rancho period ended in 1848 in conjunction with the end of the Mexican War, which lasted for nearly 2 years. After the signing of the Treaty of Guadalupe Hidalgo in 1848, California was ceded to the United States. The American Period (1848 to present) is characterized by growth, industry, increased settlement, commercial resource extraction, and the development of transportation. Several regions in the study area grew to become centers of gold and silver mining during the American period. Randburg, Calico, and Oro Grande were established mining towns during this period, and Rosamond, Barstow, and Mojave were suppliers for mining operations in the study area.

4.5.4 Impact Analysis

4.5.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of cultural resources impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For the purposes of this EIR, cultural resources impacts would be significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would:

1. Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5.
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.
3. Disturb any human remains, including those interred outside of formal cemeteries.

4.5.4.2 Applicable Measures

As part of its standard practice, PG&E will continue to incorporate the following APM and BMPs into its ongoing O&M activities to avoid or minimize the potential for adverse cultural resources impacts to the extent feasible. The APMs and BMPs, where applicable, are included in the impact discussion in Section 4.5.4.3.

Applicant Proposed Measure

APM CUL-1 Inventory and Evaluate Historical Resources. Due to the long-term nature of the O&M activities, PG&E would continue to review historical resources that were previously recorded,

as well as structures that meet the 50-year threshold throughout the duration of O&M activities. If any resources have the potential to be eligible for listing on the California Register of Historical Resources or National Register of Historic Places, PG&E would follow standard procedures for their evaluation.

Best Management Practices

- All work exclusion zones, as indicated by flagging, environmentally sensitive area signage, or depicted on program maps, would be observed.
- PG&E would limit ground disturbance to the greatest extent feasible.
- PG&E requires that O&M personnel who plan, manage, or conduct work involving ground disturbance complete general awareness training on cultural resources.
- In the event of an unanticipated discovery of prehistoric or historic period materials, PG&E would do the following:
 - Stop work immediately within 100 feet.
 - Contact the designated program inspector and Cultural Resource Specialist immediately.
 - Protect the site from further impacts, including looting, erosion, or other human or natural damage.
 - Record the location of the resource, the circumstances that led to its discovery, and the condition of the resource.

4.5.4.3 Impact Discussion

Impact CUL-1 Would the project cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.5.3, Existing Baseline Conditions, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands, with a majority of the study area located within undeveloped, open areas. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause a substantial adverse change in the significance of a historical resource.

PG&E's O&M activities have occurred, can occur, and will continue to occur within existing ROWs where soils were previously disturbed during construction of the original pipelines. As described in Section 4.5.3, PG&E identified cultural and historical resources for the majority of the study area during a cultural resources inventory that was conducted along Lines 300 A and 300 B. As discussed, potential cultural resources have been and will continue to be identified prior to any O&M activities using PG&E's confidential geospatial database that encompasses the entire study area and contains more than 36,500 linked cultural site records and more than 25,000 reports and other documents.

PG&E has evaluated and continues to evaluate potential impacts to cultural and historical resources based on the extent and location of ground disturbance prior to each O&M activity. Ground disturbance includes, but is not limited to, driving off paved surfaces, road grading, trenching, boring, augering, drilling, clearing and grubbing, and excavation. Some O&M work (e.g., pipeline segment repairs/replacements, valve relocation/automation, and the installation of pig launchers and receivers) requires ground disturbance that has had or could have the potential to affect a historical resource that meets CRHR/NRHP criteria.

All of PG&E's ongoing O&M activities with the potential to cause a substantial adverse change in the significance of a historical resource will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to cultural resources. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR (Biological Resources, Impact Analysis), issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not cause a substantial adverse change in the significance of a historical resource.

PG&E's commitment to implementing APM CUL-1 (Inventory and Evaluate Historical Resources) and standard practices and BMPs (outlined in Section 4.5.4.2, Applicable Measures) and complying with applicable cultural resources regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline or a substantial adverse effect related to adverse changes in the significance of a historical resource. For example, cultural resource sites that are identified within the study area would be subject to APM CUL-1 and standard BMPs, which specifically require the continued review of O&M activities for the identification of historical resources that may meet the 50-year threshold for the duration of O&M activities and identification of potential impacts to those historical resources. If any resources have the potential to be eligible for listing on the CRHR or NRHP, PG&E follows standard regulatory procedures for their evaluation. In addition, through PG&E's environmental screening process (refer to Section 2.4 of this EIR), projects within the study area are reviewed by a Cultural Resource Specialist, who conducts cultural resource screenings and works directly with internal project managers, land planners, construction crews, O&M staff, and engineers during the construction and O&M of PG&E infrastructure. Cultural resource screenings include a review of several sources, such as PG&E's confidential geospatial database and linked document library, published literature, historic topographic and plat maps, recent listings for the CRHR and NRHP, and publicly available documents (e.g., EIRs and environmental impact statements [EISs]).

If historical resources are identified during field reviews, in accordance with PG&E cultural resources BMPs, work is stopped immediately within 100 feet; the designated program inspector and Cultural Resource Specialist are contacted; site protections from potential looting, erosion, or other human or natural damage are implemented; and the resources are recorded. Depending on the nature of the O&M activity, PG&E may

also conduct additional research, review buried site sensitivity modeling, conduct community outreach activities, and consult with NAHC.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with cultural resources is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to adverse changes in the significance of a historical resource; any related effect would be **less than significant**.

Impact CUL-2 Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.5.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands, with a majority of the study area located within undeveloped, open areas. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause a substantial adverse change in the significance of an archaeological resource.

As described in Impact CUL-1, the majority of O&M activities have taken place and will continue to take place within PG&E's existing ROW where soils have been previously disturbed. Because this disturbance occurred during construction of the pipelines and during O&M activities throughout the years and will continue to occur, it is unlikely that O&M activities in the study area would cause a substantial adverse change in the significance of an archaeological resource within PG&E's ROW. However, during O&M activities that have involved or would continue to involve ground disturbance and that extend outside existing ROWs, a possibility exists that archaeological resources could be uncovered or damaged.

All of PG&E's ongoing O&M activities with the potential to cause a substantial adverse change in the significance of an archaeological resource will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to cultural resources. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant.

In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not cause a substantial adverse change in the significance of an archaeological resource.

PG&E's commitment to implementing APM CUL-1 and standard practices and BMPs (outlined in Section 4.5.4.2) and complying with applicable cultural resources regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline or a substantial adverse effect related to adverse changes in the significance of a historical resource. For example, potential archaeological resources in the study area would be evaluated pursuant to PG&E's environmental screening process (refer to Section 2.4) prior to any ground-disturbing O&M activities by using PG&E's confidential geospatial database and linked document library, published literature, historic topographic and plat maps, recent listings for the CRHR and NRHP, and publicly available documents (e.g., EIRs and EISs). In the event that impacts to archaeological resources are anticipated during ground-disturbing O&M activities, PG&E incorporates cultural resources BMPs that include implementing employee and field crew general awareness training, establishing buffers and/or exclusion zones, and conducting monitoring to avoid archaeological resources and ensure that proper procedures are implemented in the event of their discovery.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with cultural resources is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to adverse changes in the significance of an archaeological resource; any related effect would be **less than significant**.

Impact CUL-3 Would the project disturb any human remains, including those interred outside of formal cemeteries?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.5.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands, with a majority of the study area located within undeveloped, open areas. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would disturb any human remains, including those interred outside of formal cemeteries.

As described in Impact CUL-1, O&M activities in the study area have occurred and will continue to occur primarily within existing ROWs, where soils have been previously disturbed. However, human remains have had the potential to be encountered and will continue to have the potential to be encountered during O&M activities that require ground disturbance outside existing ROWs.

All of PG&E's ongoing O&M activities with the potential to disturb human remains will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to cultural resources. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not disturb any human remains, including those interred outside of formal cemeteries.

PG&E's commitment to implementing APM CUL-1 and standard practices and BMPs (outlined in Section 4.5.4.2) and complying with applicable cultural resources regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline or a substantial adverse effect related to adverse changes in the significance of a historical resource. For example, if human burial sites are encountered during O&M activities, PG&E halts further excavation or disturbance of the site and notifies the county coroner immediately, as required by state law (California Health and Safety Code Section 7050.5). PG&E's Cultural Resource Specialist is also notified. Pursuant to Section 7050.5(c) of the California Health and Safety Code, the Cultural Resource Specialist initiates the legally mandated notification and responses protocol. If the county coroner determines that the remains are Native American, the coroner contacts NAHC. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie human remains is permitted until the county coroner has determined that no investigation of the cause of death is required and has determined whether the remains are of Native American origin. In the event that the remains are of Native American origin, the tribal Most Likely Descendant provides a recommendation to PG&E regarding the excavation work, unless NAHC is unable to identify a Most Likely Descendant, or the Most Likely Descendant fails to make a recommendation within 48 hours after being notified by NAHC. This recommendation includes a means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, as provided in Section 5097.98 of the California Public Resources Code. PG&E also complies with federal regulations regarding human remains, funerary objects, sacred objects, or objects of cultural patrimony under Section 10.4 of NAGPRA on BLM-managed lands. Regulations require that construction work must cease within the immediate area and that written notification must be provided within 3 working days of the discovery. BLM secures and protects the inadvertent discovery, notifies any known lineal descendants, and initiates consultation pursuant to Section 10.5 of NAGPRA and Section 106 of the National Historic Preservation Act for O&M activities on BLM-managed lands.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with cultural resources is so attenuated that, although the prospect of a

related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not disturb human remains, including those interred outside of formal cemeteries; any related effect would be **less than significant**.

4.5.5 Cumulative Impacts

The geographic area for the cumulative analysis is the area of potential effect of where the O&M activities (work areas) would occur in the O&M activity study area (refer to Table 3-1, Geographic Scope of Cumulative Impacts and Method of Evaluation). This geographic scope is appropriate because the archaeological and historical resources within this area are expected to be similar to those that occur in the study area because of their proximity and because similar environments, landforms, and hydrology would result in similar land use and therefore similar site types. Numerous significant archaeological and historical resources have been previously discovered within this broader geographical area. The cumulative projects listed in Table 3-2, Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area, would also all involve grading or other excavation that would have the potential to impact cultural resources.

An analysis of cumulative impacts takes into consideration the entirety of impacts that O&M activities have had and continue to have on cultural resources in conjunction with any effects that could occur as a result of the past, present, and reasonably foreseeable projects considered in the cumulative scenario (refer to Table 3-2). This includes consideration of historical resources, archaeological resources, and human remains, as defined under CEQA. Cumulative impacts on cultural resources could occur if other projects, in conjunction with the O&M activities, have or would have impacts on cultural resources that, when considered together, would be significant.

O&M activities are routine and ongoing under existing baseline conditions and the majority of O&M activities would be temporary and would occur over a short duration. Cumulative impacts to cultural resources could occur as a result of increased ground-disturbing activities from the construction of multiple projects within the area. Table 3-2 lists 28 projects where construction timelines would potentially overlap with the O&M activities. Similar to PG&E's environmental screening process, APM, and BMPs, the planned and proposed project applicants for the surrounding projects are subject to applicable laws and regulations that provide for the identification and mitigation of cultural resources and would implement measures as necessary (e.g., requiring construction monitoring to address potential impacts to buried resources) to further reduce potential impacts. In the event that a potential historical or cultural resource is encountered during O&M activities, PG&E would incorporate APM CUL-1 and BMPs as outlined in Section 4.5.4.2. Accordingly, the incremental contribution from ongoing O&M activities to cumulative cultural resources impacts caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to cultural resources.

4.5.6 Residual Impacts

PG&E's O&M activities have been ongoing and are a component of the existing baseline conditions in the study area. O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's commitment to implementing APM CUL-1 and cultural resources BMPs and standard practices provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect on cultural resources.

4.5.7 References

67 FR 16364–16365. Notice: Exemption Regarding Historic Preservation Review Process for Projects Involving Historic Natural Gas Pipelines. April 5, 2002.

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4.6 Energy

4.6.1 Introduction

The proposed project for the purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) that would authorize take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGC). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section evaluates the potential energy impacts that may result directly or indirectly from CDFW's issuance of the ITP and the expected LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on energy that could result with continuing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the project for purposes of CEQA). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this section.

Section 4.6.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have been occurring and will continue to occur, specific to energy.

Section 4.6.3 provides a description of the existing baseline conditions for energy in the O&M activities area ("study area"). Specifically, this section provides a description relative to energy in the study area that has been and could continue to be affected by PG&E's ongoing O&M activities, regardless of whether CDFW issues the requested permits. This existing baseline condition, which includes the ongoing O&M activities already being implemented by PG&E relative to their past, present, and continued potential effects, is the benchmark used in the Section 4.6.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these environmental baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.6.4 provides an analysis of whether issuance of the requested permits (pursuant to the CFGC) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline and a substantial or potentially substantial adverse effect related to energy. The section also identifies the significance criteria used for the impact analysis and any applicable best management practices (BMPs). Furthermore, this section discusses applicable regulatory authority or governing law that has applied and will continue to apply, specific to energy.

Section 4.6.5 provides an analysis of whether the project-related incremental change to the environmental baseline is cumulatively considerable and therefore significant.

Section 4.6.6 identifies the residual environmental impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.6.7 lists the references cited in this section.

During the scoping effort, no party identified any public concerns related to potential energy impacts.

The analysis included in this section is based on information that PG&E provided to CDFW, as well as relevant information gathered and considered by CDFW, with assistance from its environmental consultant.

4.6.2 Applicable Regulations, Plans, and Policies

The following subsections describe the regulations and regulatory agencies that pertain to energy that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and CDFW analysis of whether the proposed issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would cause an incremental physical change to the existing environment and cause significant impacts to energy.

Federal

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 FR 62624–63200). The National Highway Traffic Safety Administration is proposing to amend the Corporate Average Fuel Economy CAFE standards set in 2020 for passenger cars and light trucks manufactured in model years 2024–2026, so that standards would increase in stringency at a rate of 8% per year rather than the 1.5% year set previously (49 CFR, Part 531). Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

Intermodal Surface Transportation Efficiency Act of 1991

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 promoted the development of intermodal transportation systems to maximize mobility and address national and local interests in air quality and energy. ISTEA contained factors for metropolitan planning organizations to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, metropolitan planning organizations adopted policies defining the social, economic, energy, and environmental values guiding transportation decisions.

Transportation Equity Act for the 21st Century

The Transportation Equity Act for the 21st Century was signed into law in 1998 and builds on the initiatives established in the ISTEA legislation. The act authorizes highway, highway safety, transit, and other efficient surface transportation programs. The act continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and

focus on a strong planning process as the foundation of transportation decisions. The act also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of intelligent transportation systems to help improve operations and management of transportation systems and vehicle safety.

Energy Independence and Security Act of 2007

On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law. In addition to setting increased Corporate Average Fuel Economy standards for motor vehicles, the EISA includes the following other provisions related to energy efficiency:

- Renewable Fuel Standard (RFS) (Section 202)
- Appliance and Lighting Efficiency Standards (Sections 301–325)
- Building Energy Efficiency (Sections 411–441)

This federal legislation requires ever-increasing levels of renewable fuels (the RFS) to replace petroleum (EPA 2017). The U.S. Environmental Protection Agency (EPA) is responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the EISA, the RFS program was expanded in several key ways that lay the foundation for achieving significant reductions in greenhouse gas (GHG) emissions from the use of renewable fuels, reducing imported petroleum, and encouraging the development and expansion of the renewable fuels sector in the United States. The updated program is referred to as RFS2 and includes the following:

- The EISA expanded the RFS program to include diesel, in addition to gasoline.
- The EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
- The EISA established new categories of renewable fuel and set separate volume requirements for each one.
- The EISA required EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits less GHGs than the petroleum fuel it replaces.

Additional provisions of the EISA address energy savings in government and public institutions, research for alternative energy, additional research in carbon capture, international energy programs, and the creation of “green” jobs.

Infrastructure Investment and Jobs Act

On November 6, 2021, Congress passed the Infrastructure Investment and Jobs Act (Bipartisan Infrastructure Deal), a once-in-a-generation investment in our nation’s infrastructure and competitiveness. This Bipartisan Infrastructure Deal will rebuild America’s roads, bridges, and rails; expand access to clean drinking water; ensure that every American has access to high-speed internet; tackle the climate crisis; advance

environmental justice; and invest in communities that have too often been left behind. The legislation will help ease inflationary pressures and strengthen supply chains by making long-overdue improvements for our nation's ports, airports, rail, and roads. It will drive the creation of union jobs that pay well and will grow the economy sustainably and equitably so that everyone gets ahead for decades to come. Combined with the president's Build Back Framework, it will add on average 1.5 million jobs per year for the next 10 years. It will improve transportation options for millions of Americans to reduce energy use and GHG emissions and will increase investment in electric vehicle (EV) chargers and renewable energy production.

State

Warren-Alquist Act

The California legislature passed the Warren-Alquist Act in 1974. The Warren-Alquist Act created the California Energy Commission (CEC). The legislation also incorporated the following three key provisions designed to address the demand side of the energy equation:

- It directed CEC to formulate and adopt the nation's first energy conservation standards for buildings constructed and appliances sold in California.
- The act removed the responsibility of electricity demand forecasting from the utilities, which had a financial interest in high demand projections, and transferred it to the more impartial CEC.
- CEC was directed to embark on an ambitious research and development program, with a particular focus on fostering what were characterized as non-conventional energy sources.

State of California Energy Action Plan

CEC and California Public Utilities Commission (CPUC) approved the first State of California Energy Action Plan in 2003. The plan established shared goals and specific actions to ensure that adequate, reliable, and reasonably priced electrical power and natural gas supplies are provided, and identified policies, strategies, and actions that are cost effective and environmentally sound for California's consumers and taxpayers. In 2005, a second Energy Action Plan was adopted by CEC and CPUC to reflect various policy changes and actions of the prior 2 years.

At the beginning of 2008, CEC and CPUC determined that it was not necessary or productive to prepare a new energy action plan. This determination was based, in part, on a finding that the state's energy policies have been significantly influenced by the passage of Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (discussed below). Rather than produce a new energy action plan, the CEC and CPUC prepared an update that examines the state's ongoing actions in the context of global climate change.

Renewables Portfolio Standard

Senate Bill (SB) 1078 (2002) established the California Renewables Portfolio Standard (RPS) Program and required that a retail seller of electricity purchase a specified minimum percentage of electricity generated by eligible renewable energy resources as defined in any given year, culminating in a 20% standard by December 31, 2017. These retail sellers include electrical corporations, community choice aggregators, and electric service providers. The bill relatedly required CEC to certify eligible renewable energy resources, design and implement an accounting system to verify compliance with the RPS by retail sellers, and allocate and award supplemental energy payments to cover above-market costs of renewable energy.

SB 107 (2006) accelerated the RPS established by SB 1078 by requiring that 20% of electricity retail sales be served by renewable energy resources by 2010 (not 2017). Additionally, SB X1-2 (2011) required all California utilities to generate 33% of their electricity from eligible renewable energy resources by 2020. Specifically, SB X1-2 sets a three-stage compliance period: by December 31, 2013, 20% of electricity had to come from renewables; by December 31, 2016, 25% of electricity had to come from renewables; and by December 31, 2020, 33% was required to come from renewables.

SB 350 (2015) requires retail seller and publicly owned utilities to procure 50% of their electricity from eligible renewable energy resources by 2030, with interim goals of 40% by 2024 and 45% by 2027.

SB 100 (2018) accelerated and expanded the standards set forth in SB 350 by establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024; 52% by December 31, 2027; and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 also states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity does not increase carbon emissions elsewhere in the western grid. Additionally, 100% zero-carbon electricity cannot be achieved through resource shuffling.

Consequently, utility energy generation from non-renewable resources is expected to be reduced based on implementation of the RPS requirements described above. The proposed project's reliance on non-renewable energy sources would be reduced accordingly.

Assembly Bill 1007

AB 1007 (2005) required CEC to prepare a statewide plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). CEC prepared the plan in partnership with the California Air Resources Board (CARB) and in consultation with other state agencies, plus federal and local agencies. The State Alternative Fuels Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Assembly Bill 32 and Senate Bill 32

In 2006, the state legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020. In 2016, the legislature enacted SB 32, which extended the horizon year of the state's codified GHG reduction planning targets from 2020 to 2030, requiring California to reduce its GHG emissions to 40% below 1990 levels by 2030. In accordance with AB 32 and SB 32, CARB prepares scoping plans to guide the development of statewide policies and regulations for the reduction of GHG emissions. Many of the policy and regulatory concepts identified in the scoping plans focused on increasing energy efficiencies, using renewable resources, and reducing the consumption of petroleum-based fuels (such as gasoline and diesel). As such, the state's GHG emissions reduction planning framework creates co-benefits for energy-related resources.

California Building Standards

Part 6 of Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Part 6 establishes energy efficiency standards for residential and non-

residential buildings constructed in California to reduce energy demand and consumption. Notably, Title 24 categorizes residential buildings that have four or more habitable levels as high-rise residential rather than mid-rise. High-rise residential buildings are included in the nonresidential section of Title 24 and are subject to the nonresidential (not residential) code. Part 6 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies.

The current Title 24, Part 6 standards, referred to as the 2019 Title 24 Building Energy Efficiency Standards, became effective on January 1, 2020. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy due to energy efficiency measures than those built to the 2016 standards; once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards will use approximately 53% less energy than those under the 2016 standards (CEC 2018a). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018a).

On August 11, 2021, CEC adopted the 2022 California Energy Code (2022 Energy Code). In December 2021, it was approved by the California Building Standards Commission for inclusion into the California Building Standards Code. The 2022 Energy Code encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and more. Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code.

Title 24 also includes Part 11, the California Green Building Standards (CALGreen). CALGreen establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The 2019 CALGreen standards are the current applicable standards. For nonresidential projects (which includes the proposed project), some of the key mandatory CALGreen 2019 standards involve requirements related to bicycle parking, designated parking for clean air vehicles, EV charging stations, shade trees, water-conserving plumbing fixtures and fittings, outdoor potable water use in landscaped areas, recycled water supply systems, construction waste management, excavated soil and land clearing debris, and commissioning (24 CCR Part 11).

Integrated Energy Policy Report

CEC is responsible for preparing integrated energy policy reports that identify emerging trends related to energy supply, demand, and conservation; public health and safety; and maintenance of a healthy economy. CEC's 2018 Integrated Energy Policy Report discusses the state's policy goals of decarbonizing buildings, doubling energy efficiency savings, and increasing flexibility in the electricity grid system to integrate more renewable energy (CEC 2018b). Specifically, for the decarbonizing of building energy, the goal would be achieved by designing future commercial and residential buildings to have their energy sourced almost entirely from electricity in place of natural gas. Regarding the increase in renewable energy flexibility, the goal would be achieved through increases in energy storage capacity within the state, increases in energy efficiency, and adjusting energy use to the time of day when the largest amount of renewable energy is being generated. Over time these policies and trends would serve to reduce the project's GHG emissions profile and energy consumption as they are implemented.

State Vehicle Standards

In response to the transportation sector accounting for more than half of California's carbon dioxide (CO₂) emissions, AB 1493 was enacted in 2002. AB 1493 required CARB to set GHG emissions standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles whose primary use is noncommercial personal transportation in the state. The bill required that CARB set GHG emissions standards for motor vehicles manufactured in 2009 and all subsequent model years. The 2009–2012 standards resulted in a reduction in approximately 22% of GHG emissions compared to emissions from the 2002 fleet, and the 2013–2016 standards resulted in a reduction of approximately 30% compared to the 2002 fleet.

In 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global-warming gases with requirements for greater numbers of zero-emissions vehicles (ZEVs) into a single package of standards called Advanced Clean Cars. By 2025, when the rules would be fully implemented, new automobiles would emit 40% fewer global-warming gases and 75% fewer smog-forming emissions (CARB 2020).

Although the focus of the state's vehicle standards is on the reduction of air pollutants and GHG emissions, one co-benefit of implementation of these standards is a reduced demand for petroleum-based fuels.

Executive Order N-79-20

EO N-79-20 (2020) sets the goal for the state that 100% of in-state sales of new passenger cars and trucks will be ZEVs by 2035. EO-N-79-20 also sets goals for transition to 100% zero emissions for all medium- and heavy-duty vehicles by 2045, zero emissions for drayage trucks by 2035, and zero emissions for off-road vehicles and equipment by 2035, where feasible. Among other directives to further this executive order, for passenger cars and trucks, the Governor of California directed CARB to develop and propose regulations requiring increasing volumes of new ZEVs sold in the state toward the target of 100% of in-state sales by 2035. The governor also directed the Governor's Office of Business and Economic Development to develop a California Zero-Emission Vehicle Market Development Strategy, which was completed in February 2021 (GO-Biz 2021). The executive order also directs updates and assessments to ensure that ZEV infrastructure is in place to support the levels of EV adoption required by the order.

Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or SB 375, coordinates land use planning, regional transportation plans, and funding priorities to help California meet its GHG emissions reduction mandates established in AB 32. As codified in California Government Code Section 65080, SB 375 requires metropolitan planning organizations to include a sustainable communities strategy in their regional transportation plan. The main focus of the sustainable communities strategy is to plan for growth in a fashion that will ultimately reduce GHG emissions, but the strategy is also part of a bigger effort to address other development issues, including transit and vehicle miles traveled, that influence the consumption of petroleum-based fuels.

Local

Pursuant to Article XII, Section 8 of the California Constitution, CPUC has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, O&M, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with the CPUC. Although local governments do not have the power to regulate such activities, the CPUC encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has considered relevant regional and county policies and issues in this environmental impact report (EIR).

San Bernardino County Transportation Authority

The San Bernardino County Regional GHG Reduction Plan was prepared by the San Bernardino County Transportation Authority's (SBCTA's) predecessor, the San Bernardino Associated Governments (SANBAG).¹ The plan is intended to present goals identified by participating cities for reducing GHG emissions to levels they have individually selected, which also reduces energy consumption. The plan includes an inventory of current GHG emissions, forecasts of 2020 and 2030 emissions, initiatives to reduce emissions, and baseline information for the development of city climate action plans.

City of Victorville

City of Victorville Climate Action Plan

The City of Victorville's climate action plan presents the GHG inventories, identifies the effectiveness of California initiatives to reduce GHG emissions and energy consumption, and identifies local measures that were selected by the City of Victorville to reduce GHG emissions. The plan builds on regional efforts, provides city-specific information, and identifies an implementation plan for GHG reduction measures. The climate action plan is considered a qualified GHG reduction plan through 2020 in accordance with the CEQA Guidelines Section 15183.5 and can be tiered from for project analyses.

Town of Apple Valley

Town of Apple Valley Climate Action Plan

The Town of Apple Valley's climate action plan includes general information about GHGs and climate change, as well as assumptions and data used to determine the 2005 inventory and baseline, the 2020 and 2030 forecasts under business-as-usual conditions, and the proposed reduction measures that will enable the town to achieve the targeted reduction level. The plan was prepared using 2005 as the baseline and set a GHG emissions reduction target of 15% below 2005 levels by 2020 and 40% below 2005 levels by 2030. The climate action plan is not considered a qualified GHG reduction plan in accordance with CEQA Guidelines Section 15183.5 and cannot be tiered from for project analyses.

¹ In 2016, SBCTA and SANBAG consolidated into one entity, now referred to as the SBCTA.

Kern County

Kern County Communitywide GHG Emission Inventory

In 2011, Kern County developed a communitywide GHG emissions inventory for the base year of 2005 and forecasted year of 2020. The GHG emissions inventories were estimated for nine primary sectors (i.e., electricity production and consumption, residential/commercial/industrial combustion, transportation, fossil fuels industry, industrial processes, waste management, agriculture, forestry and land use, and other sources). The objective of the communitywide inventory is to identify the sources and quantities of GHG emissions to develop an emissions reduction strategy.

PG&E Programs

PG&E's Air Quality Program consists of promoting and disseminating of air quality educational materials via training sessions and on job sites as necessary, along with BMPs to avoid and minimize air quality effects. In addition, PG&E is committed to decreasing its GHG emissions and energy use and has already instituted several operational changes in an effort to decrease the organization's carbon footprint. In addition to complying with mandatory GHG inventory reporting requirements by CARB and EPA, PG&E voluntarily reports a more comprehensive emissions inventory to The Climate Registry, a nonprofit organization that assists organizations in reporting emissions in order to manage and reduce them. PG&E has committed to a 55% renewable energy target by the year 2031 and also has been working to reduce GHG emissions from its vehicle fleet by deploying alternative-fuel vehicles, including hybrid-electric bucket trucks and compressed natural gas (CNG) vehicles. PG&E is continuing to invest in new vehicles and technologies that further reduce GHG emissions from its vehicle fleet. Some of these efforts include the deployment of bucket trucks equipped with electric power takeoff, which allows crews to operate the trucks without idling the engines, and installing EV chargers at PG&E facilities to promote the adoption of electric vehicles by employees.

4.6.3 Existing Baseline Conditions

This section provides a description of the existing baseline conditions relative to energy in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. PG&E's gas pipeline system has been in place for more than 70 years. Impact data collected by PG&E from 2017 to September 2021 regarding temporary and permanent disturbance impacts caused by O&M activities provides important detail about the environmental baseline for purposes of CEQA (refer to Section 1.1, Proposed Project and Environmental Review). The existing baseline condition from 2017 to 2021, which includes PG&E's past and ongoing O&M activities, is the benchmark used in the Section 4.6.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Electricity

According to the U.S. Energy Information Administration (EIA), California used approximately 255,224 gigawatt-hours of electricity in 2018 (EIA 2020). Electricity usage in California for different land uses varies substantially by the types of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita in the residential sector is lower than any other state except Hawaii (EIA 2020).

Southern California Edison (SCE) provides electricity to the study area and the majority of San Bernardino County. SCE, a subsidiary of Edison International, serves approximately 180 cities in 11 counties across Central and Southern California. SCE administers various energy efficiency and conservation programs that may be available to residents, businesses, and other organizations in San Bernardino and Kern Counties. According to CPUC, approximately 84 billion kilowatt-hours (kWh) of electricity was used in SCE's service area in 2017. Demand forecasts anticipate that approximately 75 billion kWh of electricity will be used in SCE's service area in 2020 (CPUC 2018).

SCE receives electric power from a variety of sources. According to CPUC's 2019 California Renewables Portfolio Standard Annual Report, 36% of SCE's power came from eligible renewables, such as biomass/waste, geothermal, small hydroelectric, solar, and wind sources (CPUC 2019). SCE maintains a lower percentage of renewable energy procurement when compared with California's two other large investor-owned utilities, PG&E and San Diego Gas & Electric Company, both of which procured 39% and 44% of their electric power, respectively, from eligible renewables (CPUC 2019). SCE also maintains a slightly lower percentage of renewables relative to statewide procurement. Renewable resources, including hydropower and small-scale (less than 1-megawatt), customer-sited solar photovoltaics, supplied almost half of California's in-state electricity generation in 2018 (EIA 2020). The California RPS Program establishes a goal for California to increase the amount of electricity generated from renewable energy resources to 20% by 2010 and to 33% by 2020. Recent legislation revised the current RPS target for California to obtain 50% of total retail electricity sales from renewable sources by 2030, with interim targets of 40% by 2024, 45% by 2027, and 60% by 2030.

Within San Bernardino County, annual non-residential electricity use is approximately 10 billion kWh per year, while residential electricity use is approximately 5 billion kWh per year, as reported by the state's Energy Consumption Data Management System for 2018 (CEC 2020a). In Kern County, annual non-residential electricity use is approximately 14 billion kWh per year, while residential electricity use is approximately 2 billion kWh per year (CEC 2020a).

Natural Gas

According to the EIA, California used approximately 2,144 billion cubic feet of natural gas in 2019 (EIA 2020). The majority of California's natural gas customers are residential and small commercial customers (core customers). These customers account for approximately 35% of the natural gas delivered by California utilities (CPUC 2020). Large consumers, such as electric generators and industrial customers (noncore customers), account for approximately 65% of the natural gas delivered by California utilities (CPUC 2020). CPUC regulates California natural gas rates and natural gas services, including in-state transportation over transmission and distribution pipeline systems, storage, procurement, metering, and billing. Most of the natural gas used in California comes from out-of-state natural gas basins. Biogas (e.g., from wastewater treatment facilities or dairy farms) is just beginning to be delivered into the gas utility pipeline systems, and the state has been encouraging its development (CPUC 2020).

The Southern California Gas Company (SoCalGas) provides the study area (Kern and San Bernardino Counties) with natural gas service. SoCalGas's service territory encompasses approximately 20,000 square miles and more than 500 communities. In the California Energy Demand mid-energy demand scenario, natural gas demand is projected to have an annual growth rate of 0.03% in SoCalGas's service territory. As of 2019, approximately 7,498 million therms (749.8 billion thousand British thermal units [kBtu]) were used in

SoCalGas's service area per year (CEC 2020b).² By 2024, natural gas demand is anticipated to be approximately 7,500 million therms per year in SoCalGas's service area, per the high demand estimate (CEC 2018c). The total capacity of natural gas available to SoCalGas in 2019 was estimated to be 3.5 billion cubic feet per day. In 2020 and 2023, the total capacity available is also estimated to be 3.7 and 3.6 billion cubic feet per day,³ respectively (California Gas and Electric Utilities 2020). This amount is approximately equivalent to 3.77 and 3.67 billion kBtu per day, respectively (or 37.7 and 36.7 million therms per day, respectively). Over the course of a year, the available capacity would therefore be 14.5 billion therms per year, which is well above the existing and future anticipated natural gas demand in SoCalGas's service area.

Within San Bernardino County, annual non-residential natural gas use is approximately 268 million therms per year, while residential natural gas use is approximately 231 million therms per year, as reported by the state's Energy Consumption Data Management System for 2018 (CEC 2020a). Within Kern County, annual non-residential natural gas use is approximately 2.4 billion therms per year, while residential natural gas use is approximately 94 million therms per year (CEC 2020a).

Petroleum

According to the EIA, California used approximately 681 million barrels of petroleum in 2018, with the majority (584 million barrels) used for the transportation sector (EIA 2020). This total annual consumption equates to a daily use of approximately 1.9 million barrels of petroleum. There are 42 U.S. gallons in a barrel, so California consumes approximately 78.4 million gallons of petroleum per day, adding up to an annual consumption of 28.7 billion gallons of petroleum. By sector, transportation uses utilize approximately 85.5% of the state's petroleum, followed by 11.1% from industrial, 2.5% from commercial, 0.9% from residential, and 0.01% from electric power uses (EIA 2018). In California, petroleum fuels refined from crude oil are the dominant source of energy for transportation sources. Petroleum usage in California includes petroleum products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel. California has implemented policies to improve vehicle efficiency and to support use of alternative transportation, which are described in Section 4.6.2, Applicable Regulations, Plans, and Policies.

4.6.4 Impact Analysis

4.6.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of energy impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For the purposes of this EIR, energy impacts would be significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would:

1. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

² One therm is equal to 100,000 British thermal units (Btu), or 100 kBtu.

³ One cubic foot of natural gas has approximately 1,020 Btu of natural gas, or 1.02 kBtu of natural gas.

Approach and Methodology

Emissions from off-road equipment were estimated using the activity data in Chapter 2, Project Description, and the emission factors within the CARB OFFROAD 2011 model. The emissions from on-road vehicles were estimated using the activity data in Chapter 2 and the emission factors from the CARB EMFAC 2014 model. Helicopters are anticipated to continue to be used for aerial leak surveys, which are typically conducted in April and October of each year. To account for the use of helicopters, sample fuel flow rates and emission factors were obtained from the Federal Office of Civil Aviation’s Guidance on Determination of Helicopter Emissions, Edition 2. All details for construction criteria air pollutants discussed in Section 4.3, Air Quality, of this EIR, and Appendix C, CalEEMod Reports, of this EIR are also applicable for the estimation of construction-related GHG emissions. The estimated GHG emissions were back-calculated based on carbon content (i.e., kilograms of CO₂ per gallon) in order to estimate fuel usage during O&M activities. The conversion factor for gasoline is 8.78 kilograms per metric ton of CO₂ per gallon (kg/MT CO₂/gal), and the conversion factor for diesel is 10.21 kg/MT CO₂/gal (The Climate Registry 2020).

4.6.4.2 Applicable Measures

Best Management Practices

As part of its standard practice, PG&E will continue to incorporate BMPs from Section 4.3.4.2 (Air Quality, Applicable Measures) into its ongoing O&M activities to avoid or minimize the potential for adverse energy impacts to the extent feasible. The BMPs, where applicable, are included in the impact discussion in Section 4.6.4.3.

Refer to Section 4.3.4.2 and Section 2.5, Applicable Measures, of the EIR for the full text of air quality BMPs.

4.6.4.3 Impact Discussion

Impact ENE-1 Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

PG&E’s ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.6.3, Existing Baseline Conditions, the study area is located within the San Bernardino and Kern Counties in the Mojave Desert region of California and is within the service territory of SCE for electric power and SoCalGas for natural gas. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E’s ongoing O&M activities in the study area would result in wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.

Electricity

Temporary electric power for as-necessary lighting and electronic equipment such as computers inside temporary construction trailers is provided by SCE. As described, PG&E’s O&M activities will continue to occur as they have in the past under baseline conditions and will continue regardless of whether CDFW issues the

permits; therefore, the electricity used for O&M activities has been and would continue to be temporary and would have a negligible contribution to the overall energy consumption.

Natural Gas

Natural gas is not anticipated to be required during O&M activities, because PG&E’s O&M activities will continue to occur as they have in the past under baseline conditions and will continue regardless of whether CDFW issues the permits. Fuels used would primarily consist of diesel and gasoline, which are discussed under the “petroleum” subsection. Any minor amounts of natural gas that may be consumed as a result of issuance of the permits would have a negligible contribution to the overall energy consumption during PG&E’s ongoing O&M activities.

Petroleum

Heavy-duty construction equipment associated with PG&E’s O&M activities have relied on and will continue to rely on diesel fuel, as do trucks involved in traveling to and from the study area. Construction workers have traveled and will continue to travel to and from the study area throughout the duration of each O&M activity. It is assumed in this analysis that construction workers travel to and from the study area in gasoline-powered passenger vehicles.

For modeling purposes, fuel consumption from construction equipment was estimated by converting the total CO₂ emissions from each construction phase to gallons using the conversion factors for CO₂ to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kg/MT CO₂/gal, and the conversion factor for diesel is 10.21 kg/MT CO₂/gal (The Climate Registry 2020). The estimated diesel fuel usage from construction equipment is shown in Table 4.6-1.

Table 4.6-1. Off-Road Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment Emissions (MT CO ₂)	kg/MT CO ₂ /Gal	Gal
O&M Activities	93	6,108.71	10.21	598,306.17

Sources: Appendix C (for pieces of equipment and equipment CO₂ emissions); The Climate Registry 2020 (for kg/CO₂/gal).

Notes: MT = metric ton; CO₂ = carbon dioxide; kg = kilogram; gal = gallon; O&M = operation and maintenance.

Fuel consumption from worker and vendor trips is estimated by converting the total CO₂ emissions from each construction phase to gallons using the conversion factors for CO₂ to gallons of gasoline or diesel. The model assumptions are that worker vehicles use gasoline and vendor/hauling vehicles use diesel.

Calculations for total worker and truck fuel consumption are provided in Tables 4.6-2 and 4.6-3.

Table 4.6-2. Worker Gasoline Demand

Phase	Trips	Vehicle Emissions (MT CO ₂)	kg/CO ₂ /Gal	Gal
O&M Activities	220	2,301.31	8.78	262,108.09

Sources: Appendix C (for trips and vehicle CO₂ emissions); The Climate Registry 2020 (for kg/CO₂/gal).

Notes: MT = metric ton; CO₂ = carbon dioxide; kg = kilogram; gal = gallon; O&M = operation and maintenance.

Table 4.6-3. Truck Diesel Demand

Phase	Trips	Vehicle Emissions (MT CO ₂)	kg/CO ₂ /Gal	Gal
O&M Activities	57	1,991.08	10.21	195,013.12

Sources: Appendix C (for trips and vehicle CO₂); The Climate Registry 2020 (for kg/CO₂/gal).

Notes: MT = metric ton; CO₂ = carbon dioxide; kg = kilogram; gal = gallon; O&M = operation and maintenance.

In summary, PG&E’s ongoing O&M activities are anticipated to consume 262,108 gallons of gasoline and 793,319 gallons of diesel per year. By comparison, across all of Kern and San Bernardino Counties, total petroleum use by vehicles and equipment is expected to be 1.3 billion gallons per year by 2021 (CARB 2021).

O&M activities have been and will continue to be subject to CARB’s In-Use Off-Road Diesel Vehicle Regulation, which applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation (1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; (2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; (3) restricts the adding of older vehicles into fleets starting on January 1, 2014; and (4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). The fleet must show either that its fleet average index was less than or equal to the calculated fleet average target rate, or that the fleet has met the Best Achievable Control Technology requirements.

Statewide emission reduction measures proposed in the CARB-adopted amendments to the Pavley regulations include measures aimed at reducing GHG emissions associated with transportation. These amendments are part of California’s commitment to a nationwide program to reduce new passenger vehicle GHGs from 2012 through 2016. Pavley regulations reduced GHG emissions from California passenger vehicles by about 22% in 2012. It was expected that Pavley regulations would reduce GHG emissions from California passenger vehicles by about 30% in 2016, all the while improving fuel efficiency and reducing motorists’ costs. In 2012, CARB adopted the Low-Emission Vehicle (LEV) III regulations as part of the Advanced Clean Cars rulemaking package that also includes the state’s ZEV regulation. The LEV III regulations include increasingly stringent emission standards for both criteria pollutants and GHGs for new passenger vehicles through the 2025 model year. As such, vehicle trips associated with O&M activities have used and will continue to use less petroleum due to advances in fuel economy over time.

CARB has adopted a new approach to passenger vehicles—cars and light trucks—by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and ZEVs in California (CARB 2017).

All of PG&E’s ongoing O&M activities with the potential to result in wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW’s issuance of the permits conditioning PG&E’s ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to energy use. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW’s issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR (Biological Resources, Impact Analysis) issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn,

influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in wasteful, inefficient, or unnecessary consumption of energy resources.

PG&E's commitment to implementing standard practices and BMPs and complying with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to wasteful, inefficient, or unnecessary consumption of energy resources. For example, as part of standard practice, and in accordance with PG&E's air quality BMPs, PG&E construction workers shall use natural gas-powered vehicles for passenger cars and light-duty trucks when feasible and available and will limit vehicle idling time to no longer than 5 consecutive minutes.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with energy is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to wasteful, inefficient, or unnecessary consumption of energy; any related effects would be **less than significant**.

Impact ENE-2 Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.6.3, the project is located within the San Bernardino and Kern Counties in the Mojave Desert region of California and is within the service territory of SCE for electric power and SoCalGas for natural gas. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The electricity and natural gas used during O&M activities have had and are expected to continue to have a negligible contribution to the overall energy consumption, because they would will to occur as they have in the past under baseline conditions and will continue regardless of whether CDFW issues the permits. As described in Impact ENE-1, O&M activities are anticipated to consume 262,108 gallons of gasoline and 793,319 gallons of diesel. This is considered a fraction of the petroleum that would be consumed in California and across both Kern County and San Bernardino Counties each year.

It was expected that the Pavley regulations would reduce GHG emissions from California passenger vehicles by about 22% in 2012 and about 30% in 2016, all while improving fuel efficiency. By 2025, when the Advanced Clean Cars rules are fully implemented, one in seven new cars sold in California (1.4 million) will be non-polluting or nearly so, including plug-in hybrids, fully electric battery-powered cars, and hydrogen-powered fuel cell vehicles. Meanwhile, gasoline- and diesel-powered passenger vehicles would grow ever cleaner and more efficient. A variety of new technologies, from direct fuel injection to lower rolling resistance tires, will also cut pollution and create more energy-efficient vehicles (CARB 2011). As such, petroleum usage associated with O&M activities is expected to continue to decrease due to advances in fuel economy over time and fleet turnover. As further discussed in Section 4.8, Greenhouse Gas Emissions (Section 4.8.4.3, Impact Discussion), O&M activities are not expected to conflict with AB 32, SB 32, the CARB Scoping Plan, the City of Victorville's Climate Action Plan, the County of San Bernardino's GHG Reduction Plan, Kern County's Communitywide GHG Emission Inventory Plan, the Town of Apple Valley's Climate Action Plan, or the San Bernardino County Regional GHG Reduction Plan.

All of PG&E's ongoing O&M activities with the potential to conflict with or obstruct a state or local plan for renewable energy or energy efficiency will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to energy. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in conflicts with any state or local plan for renewable energy or energy efficiency.

PG&E's commitment to implementing standard practices and BMPs and complying with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to conflicts with obstruct a state or local plan for renewable energy or energy efficiency. For example, as part of standard practice, and in accordance with PG&E's air quality BMPs, PG&E would implement restrictions to vehicle idling time, ensure that all vehicles are maintained and tuned according to the manufacturer's specifications, and use low-emission or electric construction equipment.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with energy efficiency is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be

significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to conflicting with or obstructing a state or local plan for renewable energy or energy efficiency; any related effect would be **less than significant**.

4.6.5 Cumulative Impacts

For energy, the geographic scope that could be affected by implementation of the proposed project and O&M activities in combination with other projects is based on projections included in regional plans (refer to Table 3-1, Geographic Scope of Cumulative Impacts and Method of Evaluation). However, there are no separate thresholds for evaluating whether a project would have a cumulatively considerable energy impact.

PG&E's ongoing O&M activities have had and will continue to have the potential to result in cumulative impacts to energy that could result in a wasteful, inefficient, or unnecessary consumption of energy resources. However, because the O&M activities are routine and ongoing under existing baseline conditions, overall energy use is anticipated to be part of the baseline conditions considered in state or local plans for renewable energy or energy efficiency. Furthermore, as described in Section 4.6.4.2, PG&E is committed to decreasing its GHG emissions and energy use and has instituted several operational changes to decrease the organization's carbon footprint (e.g., committing to a 55% renewable energy target by the year 2031 and reducing GHG emissions from its vehicle fleet by deploying alternative-fuel vehicles). On this basis, petroleum usage by cumulative projects in the study area would not be expected to be cumulatively considerable due to advances in fuel economy over time and fleet turnover. Accordingly, the incremental contribution from ongoing O&M activities to cumulative energy impacts caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in cumulatively considerable impacts relative to energy.

4.6.6 Residual Impacts

PG&E's O&M activities have been ongoing and are a component of the existing baseline conditions in the study area. O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's commitment to implementing standard practices and BMPs and complying with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect on energy.

4.6.7 References

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4.7 Geology and Soils

4.7.1 Introduction

The proposed project for the purposes of the California Environmental Quality Act (CEQA) is the requested issuance of the Incidental Take Permit (ITP) that would authorize take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGC). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section evaluates the environmental impacts on geology, soils, and paleontological resources that may result directly or indirectly from CDFW's issuance of the ITP and expected LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on geology, soils, and paleontological resources that could result with continuing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the project for purposes of CEQA). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this section.

Section 4.7.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have occurred and will continue to occur, specific to geology, soils, and paleontological resources

Section 4.7.3 provides a description of the existing baseline conditions for geology, soils, and paleontological resources in the O&M activities area ("study area"). Specifically, this section provides a description relative to geology, soils, and paleontological resources in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities, regardless of whether CDFW issues the requested permits. This existing baseline condition, which includes the ongoing activities already being implemented by PG&E relative to their past, present, and continued potential effects, is the benchmark used in the Section 4.7.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these existing baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.7.4 provides an analysis of whether issuance of the requested permits (pursuant to the CFGC) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline conditions and a substantial or potentially substantial adverse effect related to geology, soils, and paleontological resources. The section also identifies the significance criteria used for the impact analysis and specifies applicable standard practices and an applicant proposed measure (APM). Furthermore, this section discusses applicable regulatory authority or governing law that has applied and will continue to apply, specific to geology, soils, and paleontological resources.

Section 4.7.5 provides an analysis of whether the project-related incremental change to the environmental baseline condition is cumulatively considerable and therefore significant.

Section 4.7.6 identifies the residual environmental impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.7.7 lists the references cited in this section.

During the scoping effort, no party identified any public concerns related to potential impacts to geology, soils, or paleontological resources.

The analysis included in this section is based on information that PG&E provided to CDFW, as well as relevant information gathered and considered by CDFW, with assistance from its environmental consultant, including publicly available resources from the U.S. Geological Survey (USGS) and California Geological Survey (CGS).

4.7.2 Applicable Regulations, Plans, and Policies

The following subsections describe the regulations and regulatory agencies that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and CDFW analysis of whether the issuance of the permits would cause an incremental physical change to the existing environment and cause significant impacts to geology, soils, and paleontological resources.

Federal

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act (42 USC, Chapter 86) was enacted in 1977 to “reduce the risks of life and property from future earthquakes and increase the resilience of communities in the United States through the establishment and maintenance of an effective earthquake hazards reduction program” (42 USC, Part 7702). To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). The NEHRP was substantially amended in November 1990 to refine the description of agency responsibilities and program goals and objectives.

The NEHRP's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The NEHRP designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under the NEHRP help inform and guide planning and building code requirements such as emergency evacuation responsibilities and seismic code standards.

Occupational Safety and Health Administration Regulations

The Occupational Safety and Health Administration (OSHA) Excavation and Trenching Standard, Title 29 of the Code of Federal Regulations (CFR), Part 1926.650, covers requirements for excavation and trenching operations. OSHA requires that all excavations in which employees could be exposed to cave-ins be protected by sloping or benching the sides of the excavation, supporting the sides of the excavation, or placing a shield between the side of the excavation and the work area.

Title 49, Part 192 of the Code of Federal Regulations

Title 49, Part 192 of the CFR outlines the minimum federal safety standards for the transportation of natural gas and other gas by pipeline. Subparts A through P summarize the minimum requirements for the selection and qualification of pipe components, corrosion control regulations, pipeline testing, pipeline integrity management, and additional pipeline design specifications. Subpart O describes regulations for gas transmission pipeline integrity management, which requires pipeline operators to explicitly consider and account for seismicity in identifying and evaluating potential threats. Section 192.917 requires pipeline operators to incorporate topographic data, soil conditions, and earthquake fault data into evaluations regarding outside force threats. Specific data requirements are described in Appendix A of American Society of Mechanical Engineers Document B31.8S: Managing System Integrity of Gas Pipelines.

Pipeline Safety Regulations

The Natural Gas Pipeline Safety Act of 1968 and additional federal pipeline safety regulations are discussed in Section 4.9, Hazards and Hazardous Materials, of this environmental impact report (EIR).

Federal Land Policy and Management Act of 1976

The management and preservation of paleontological resources on public lands is prescribed under various laws, regulations, and guidelines. For the past several decades, the Bureau of Land Management (BLM) has used the Federal Land Policy and Management Act (FLPMA) of 1976 as the legislative foundation for its paleontological resource management policies. BLM has also developed general procedural guidelines (Manual H-8720-1, Instruction Memorandum [IM] 2008-009, IM 2009-011, and IM 2016-124) for the management of paleontological resources (BLM 2007, 2008, 2016). Paleontological resource management objectives include the evaluation, management, protection, and location of fossils on BLM-managed lands. Management policy also includes measures to ensure that proposed land use projects do not inadvertently damage or destroy scientifically significant paleontological resources.

The FLPMA defines significant fossils as being unique, rare, or particularly well preserved; being an unusual assemblage of common fossils; being of high scientific interest; or providing important new data concerning the following:

- Evolutionary trends
- Development of biological communities
- Interaction between or among organisms
- Unusual or spectacular circumstances in the history of life
- Anatomical structure

Omnibus Public Land Management Act of 2009

The Omnibus Public Land Management Act (OPLMA) directs the Secretaries of the Interior and Agriculture to act jointly to manage and protect paleontological resources on federal land using “scientific principles and expertise.” The OPLMA incorporates most of the recommendations of the Secretary of the Interior’s Assessment of Fossil Management on Federal and Indian Lands (DOI 2000) to formulate a consistent paleontological resources management framework. In passing the OPLMA, Congress officially recognized

the scientific importance of paleontological resources on some federal lands by declaring that fossils from these lands are federal property that must be preserved and protected. The OPLMA codifies existing policies of BLM, the National Park Service, the U.S. Forest Service, the Bureau of Reclamation, and the U.S. Fish and Wildlife Service and provides the following:

- Uniform criminal and civil penalties for illegal sale, transport, theft, and vandalism of fossils from federal lands
- Uniform minimum requirements for paleontological resource use permit issuance (e.g., terms, conditions, and qualifications of applicants)
- Uniform definitions for “paleontological resources” and “casual collecting”
- Uniform requirements for curating federal fossils in approved repositories

State

Alquist-Priolo Earthquake Fault Zoning Act of 1972

The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (California Public Resources Code Sections 2621 through 2630) was passed in 1972 to mitigate the hazard of surface faulting to structures designed for human occupancy. The main purpose of the law is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. A structure for human occupancy is defined as any structure used or intended for supporting or sheltering any use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person-hours per year. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The Alquist-Priolo Act requires the state geologist to establish regulatory zones known as Earthquake Fault Zones around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for their use in planning efforts. Before a structure for human occupancy can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, the local agency must require a geologic investigation to demonstrate that proposed buildings would not be constructed across an active fault.

California Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (California Public Resources Code Section 2690 et seq.), passed by the California Legislature in 1990, addresses earthquake hazards from non-surface fault rupture, including liquefaction and seismically induced landslides. The act established a mapping program for areas that have the potential for liquefaction, strong ground shaking, or other earthquake and geologic hazards. To date, CGS has created liquefaction hazard maps only for USGS quadrangle maps in the greater Los Angeles area and the San Francisco Bay Area.

California Building Code

The state regulations protecting structures from geo-seismic hazards are contained in the California Code of Regulations (CCR), Title 24, Part 2 (the California Building Code [CBC]), which is updated every 3 years. These regulations apply to public and private buildings in the state and establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, and general stability. The CBC is based on the International Building Code of the International Code Council, with

California amendments. The 2019 CBC, which became effective January 1, 2020, is based on the 2018 International Building Code and enhances the sections dealing with existing structures. Seismic-resistant construction design is required to meet more stringent technical standards than those set by previous versions of the CBC.

Construction activities are subject to occupational safety standards for excavation and trenching, as specified in the California Safety and Health Administration regulations (Title 8 of the CCR) and in Chapter 33 of the CBC. These regulations specify the measures to be used for excavation and trench work where workers could be exposed to unstable soil conditions. PG&E would be required to employ these safety measures during excavation and trenching for implementation of ongoing O&M activities.

Pipeline Safety Regulations

State pipeline safety regulations are discussed in Section 4.9 of this EIR.

California Environmental Quality Act

Paleontological resources are limited, nonrenewable resources of scientific, cultural, and educational value and are afforded protection under state laws and regulations, notably, CEQA (California Public Resources Code Section 21000 et seq.). This report satisfies project requirements in accordance with CEQA and California Public Resources Code Section 5097.5. This analysis also complies with guidelines and significance criteria specified by the Society of Vertebrate Paleontology (SVP 2010).

Paleontological resources are explicitly afforded protection by CEQA, specifically in Section VII(f) of CEQA Guidelines Appendix G, the Environmental Checklist Form, which addresses the potential for adverse impacts to “unique paleontological resource[s] or site[s] or unique geological feature[s]” (14 CCR 15000 et seq.). This provision covers fossils of signal importance—remains of species or genera new to science, for example, or fossils exhibiting features not previously recognized for a given animal group—as well as localities that yield fossils significant in their abundance, diversity, preservation, and so forth. Further, CEQA provides that, generally, a resource shall be considered “historically significant” if it has yielded or may be likely to yield information important in prehistory (14 CCR 15064.5[a][3][D]). Paleontological resources would fall within this category.

Local

The following subsections describe local regulations regarding geology, soils, and paleontological resources that are relevant to the proposed project. Pursuant to Article XII, Section 8 of the California Constitution, the California Public Utilities Commission (CPUC) has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, operation, maintenance, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with the CPUC. Although local governments do not have the power to regulate such activities, the CPUC encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has considered relevant regional and county policies and issues in this EIR.

The following plans from local jurisdictions were reviewed, and no specific goals or policies were identified that are relevant to the proposed project or ongoing O&M activities in the study area:

- City of Barstow 2015–2020 General Plan
- City of Victorville General Plan 2030
- City of California City Final General Plan 2009–2028
- City of Ridgecrest General Plan

Local plans with relevant policies are discussed in the subsections that follow.

San Bernardino County

San Bernardino County 2020 Countywide Policy Plan. The Hazards Element of the San Bernardino 2020 Countywide Policy Plan provides goals and policies to protect life, property, and commerce from impacts associated with natural hazards, human-generated hazards, and increased risk due to climate change. The Countywide Policy Plan also include paleontological resources goals and policies in the Cultural Resources Element. The following Hazards Element policies (San Bernardino County 2020) would be relevant to geology, soils, and paleontological resources:

Policy HZ-1.6: Critical and essential facility location. We require new critical and essential facilities to be located outside of hazard areas, whenever feasible.

Policy HZ-1.7: Underground utilities. We require that underground utilities be designed to withstand seismic forces, accommodate ground settlement, and hardened to fire risk.

Policy HZ-1.12: Local hazard mitigation plan implementation. We require adherence to the goals, objectives and actions in the Multi-jurisdictional Hazard Mitigation Plan and subsequent amendments to reduce and mitigate damages from hazards in the county.

The following Cultural Resources Element goal and policy (San Bernardino County 2020) would also be relevant to geology, soils, and paleontological resources:

Goal CR-2: Historic and Paleontological Prehistoric Resources. [Historic resources (buildings, structures, or archaeological resources)] and paleontological resources that are protected and preserved for their cultural importance to local communities as well as their research and educational potential.

Policy CR-2.3: Paleontological and archaeological resources. We strive to protect paleontological and archaeological resources from loss or destruction by requiring that new development include appropriate mitigation to preserve the quality and integrity of these resources. We require new development to avoid paleontological and archeological resources whenever possible. If avoidance is not possible, we require the salvage and preservation of paleontological and archeological resources.

Town of Apple Valley

Town of Apple Valley 2009 General Plan. The Geotechnical Element of the Town of Apple Valley's 2009 General Plan provides information about the geologic and seismic conditions and hazards that affect the Town of Apple

Valley. The Geotechnical Element contains the following goal and policies that are relevant to geology and soils in the study area:

Goal: The protection and safety of human life, land, and property from the effects of seismic and geotechnical hazards shall be increased.

Policy 1.F: Development in areas susceptible to collapsible or expansive soils as shown in soils mapping in the General Plan EIR shall be required to conduct soil sampling and laboratory testing and to implement mitigation measures that reduce potential hazards below levels of significance.

Policy 1.H: To minimize the potential for localized collapse of soils, new septic tank leach fields, seepage pits, drainage facilities, and heavily irrigated areas shall be located away from structural foundations and supports.

County of Kern

Kern County General Plan. The Safety Element of the Kern County General Plan contains the following goal that is relevant to geology and soils in the study area (County of Kern 2009, p. 154):

Goal 8: Reduce the public's exposure to fire, explosion, blowout, and other hazards associated with the accidental release of crude oil, natural gas, and hydrogen sulfide gas.

The Kern County General Plan (2009) also provides the following policy and implementation measure with regard to protection and preservation of paleontological resources:

Policy 25: The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute heritage value to residents and visitors.

Implementation Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

4.7.3 Existing Baseline Conditions

This section provides a description of the existing baseline conditions relative to geology, soils, and paleontological resources in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. PG&E's gas pipeline system has been in place for more than 70 years. Impact data collected by PG&E from 2017 to September 2021 regarding temporary and permanent disturbance impacts caused by O&M activities provides important detail about the environmental baseline for purposes of CEQA (refer to Section 1.1, Proposed Project and Environmental Review). The existing baseline condition from 2017 to 2021, which includes PG&E's past and ongoing O&M activities, is the benchmark used in the Section 4.7.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

4.7.3.1 Geologic Setting

Except for the northern portion of Line 311 and the southern portion of Line 313 (Figure 2-1, PG&E Facility Location Map), the study area is within the Mojave Desert geomorphic province, which encompasses a broad interior region of isolated mountain ranges separated by expansive desert plains. The topography within this region is largely influenced by prominent northwest-southeast-trending faults (e.g., the San Andreas Fault) and secondary east-west-trending faults (e.g., the Garlock Fault) (CGS 2002).

The northern portion of Line 311, in the vicinity of the City of Ridgecrest, is within the Basin and Range geomorphic province, north of the Mojave Desert province, which is characterized by interior drainage into lakes and playas. The topography in this geomorphic province is characterized by what is known as horst and graben, which consists of subparallel, fault-bounded mountain ranges (horsts) separated by down-dropped basins (grabens). The Basin and Range geomorphic province includes the Death Valley graben, which is the lowest area in the United States, at 280 feet below sea level (CGS 2002).

The southern portion of Line 313, southeast of the community of Lucerne Valley, is within the Transverse Ranges geomorphic province, west of the Mojave Desert province, which consists of an east-west-trending series of steep mountain ranges that extend offshore and includes San Miguel, Santa Rosa, and Santa Cruz Islands. This geomorphic province is characterized by folded and faulted Cenozoic-age (66 million years ago to the present) petroleum-rich sedimentary rocks. CGS indicates that intense north-south compression is squeezing the Transverse Ranges geomorphic province, making this area one of the most rapidly rising regions on earth (CGS 2002).

Most of the study area is underlain by Pliocene-age (5.3 to 2.6 million years ago) to Holocene-age (11,700 years ago) alluvial deposits on alluvial fans and valley floors. Lower elevations in the study area consist of playas with aeolian accumulations along their downward fringes.¹ Upland areas in the study area consist of isolated mountain ranges underlain by pre-Cenozoic metamorphic and igneous rocks, Paleozoic (542 to 251 million years ago) carbonates, Mesozoic (250 to 66 million years ago) granitics, and Cenozoic non-marine sedimentary and volcanic deposits (USGS 2021).

Faults

As depicted on Figure 4.7-1, Regional Faults in the Study Area, several faults in the study area are recognized as active and are mapped within Alquist-Priolo Earthquake Fault Zones, pursuant to the Alquist-Priolo Act.² In the northern study area, Line 311 and associated pipelines intersect the active Little Lake and Garlock Fault Zones, as well as sections of the pre-Holocene Helendale-South Lockhart Fault Zone. The Garlock Fault is within an Alquist-Priolo Earthquake Fault Zone. The primarily east-west-trending Line 300 and the southern Lines 313 and 314 intersect active sections of the Helendale-South Lockhart, Calico-Hidalgo, Pisgah-Bullion, and Lavic Lake Fault Zones.

Additional active fault zones or faults located within 25 miles of the study area are depicted on Figure 4.7-1. The study area is located within 25 miles of the San Andreas and San Jacinto Fault Zones, which are

¹ *Aeolian accumulations* are sediments deposited by wind and consist primarily of sand or finer silt-sized particles typically found in arid regions.

² Faults are considered active if there is evidence of displacement within the last 11,700 years, also referred to as a *Holocene-active fault*. Those that have evidence of displacement older than 11,700 years ago are known as *pre-Holocene faults* but have in the past been referred to as *potentially active*.

considered two of the most active fault zones in California. The closest sections of the San Andreas and San Jacinto Fault Zones to the study area are capable of producing a maximum moment magnitude of 7.4 and 6.7, respectively. The Garlock, Helendale–South Lockhart, and Calico–Hidalgo Fault Zones are all crossed by the study area, and these fault zones are all are capable of producing a maximum moment magnitude of 7.3.

Ground Shaking, Liquefaction, Landslides, and Subsidence

In addition to surface rupture, strong ground shaking and liquefaction can occur as a result of seismic activity in the study area. Seismically induced landslides are anticipated to occur only in regions of the study area that contain steeper terrain, such as those present in the central portion of the study area near the City of Barstow and areas along the northern portion of the study area in the vicinity of the City of Ridgecrest. However, landslides or mudflows triggered by heavy precipitation could occur throughout the study area under certain conditions. In addition, seismically induced subsidence could occur throughout the study area if certain soil conditions are present.

Liquefaction occurs in loose, saturated soils when seismic activity transforms the behavior of unconsolidated sediments to move more like a fluid due to loss of shear strength by increasing pore-water pressure during a strong seismic event. The presence of shallow groundwater (generally less than 50 feet below ground surface [bgs]) also increases the potential for liquefaction. Based on a review of available hydrogeologic data, groundwater levels in the study area can range from approximately 44 to 280 feet bgs (DWR 2021). Liquefaction susceptibility has not been mapped in the majority of the study area; therefore, the potential for liquefaction is not well known. However, the arid conditions in the Mojave Desert, as well as the general absence of shallow groundwater, indicate that the potential for liquefaction in the study area is likely low for most areas but would depend on site-specific data.

The soils in the study area could be liquefied if a strong seismic event coincided with a period of saturation in areas that contain sandy sediments and shallow groundwater. The closest mapped liquefaction areas to the study area are located southwest of the City of Rosamond near Edwards Air Force Base (CGS 2021).

Subsidence is a phenomenon associated primarily with groundwater and petroleum withdrawal and can occur from operations involving the removal of large amounts of groundwater from certain types of soils as well as from extraction of petroleum oils from deeper units. Approximately 80% of the identified subsidence in the United States is a consequence of human impacts on subsurface water. However, subsidence can also result from earthquake-induced ground failure, as well as the settling and compaction of unconsolidated sediments during liquefaction. Soils susceptible to subsidence are predominantly filled with unconsolidated sand and silty sand and include thin layers of silt and clayey silt. Fine-grained alluvium and organic matter often underlie these areas. The unconsolidated and semi-unconsolidated alluvial fans and sandy soils underlying the study area would potentially be susceptible to subsidence.

4.7.3.2 Soils Setting

The soils in the study area are categorized within the Mojave Desert Major Land Resource Area (MLRA) 30. An MLRA is a planning unit defined by similar elevations and topography, climate, water resources, soils, natural vegetation communities, and land uses. The Mojave Desert MLRA encompasses approximately 43,750 square miles from the Tehachapi Mountains in the west to the southwest corner of Utah in the northeast. The dominant soil orders in the study area include Aridisols and Entisols. These soils are characterized by a thermic soils temperature regime, an aridic soil moisture regime, and a mixed or carbonatic mineralogy. Aridisols and

Entisols are generally shallow to very deep, well drained to excessively drained, and loamy-skeletal or sandy-skeletal. The Cajon, Nebona–Cuddeback complex, and Villa series are the most common soil series in the study area. The erosion potential associated with these soil series ranges from slight to moderate. Topsoil is present between 0 and 3 inches in the Cajon and Nebona–Cuddeback complex soils, and topsoil exists between 0 and 7 inches in Villa series soils.

Expansive soils are characterized by fine-grained soils (i.e., generally high-plasticity clays) that can undergo a significant increase in volume with an increase in water content, and a significant decrease in volume with a decrease in water content.³ Changes in the water content of a highly expansive soil can result in severe distress to structures constructed on or against the soil over long periods of cyclical changes. The majority of the soils in the study area contain little to no clays with swelling potential or have insufficient data to indicate the clay content and/or swelling potential of underlying soils.

4.7.3.3 Paleontological Resources Setting

Paleontological Sensitivity Analysis

The San Bernardino County Museum Regional Paleontological Locality Inventory contains more than 3,000 paleontological localities on record from the southwestern United States and numerous localities from San Bernardino County. Some localities are present on private land and others are protected by federal agencies, such as BLM and the U.S. Forest Service. Fossils in San Bernardino County are generally preserved in sedimentary rock units composed of fine- to medium-grained marine, lake, and stream deposits, such as limestone, siltstone, sandstone, or shale. Fossil localities in Kern County have been historically identified in Miocene-, Middle Pleistocene-, Late Pleistocene-, and Latest Pleistocene-age geologic units. Additional fossils recorded in Kern County include woodrat middens within Quaternary alluvium.

The study area vicinity contains a variety of fossil localities dating from the Precambrian Era (4.6 billion years ago to 550 million years ago) to the Pleistocene (approximately 2.58 million years ago to 11,700 years ago). Precambrian fossils in the vicinity of the study area include 1.3-billion-year-old life forms known to be the world's oldest known mitosing cells, which are typically found in the Beck Spring Dolomite. The shales of the Marble Mountains, as well as the limestones of the Providence Mountains, contain a Paleozoic Era (550 to 245 million years ago) class of arthropods called trilobites. Areas in the City of Victorville, the Community of Oro Grande, and Clark Mountain contain an abundance Paleozoic Era fossil remains, including invertebrate corals, brachiopods, and gastropods.

Mesozoic-Era (252 to 66 million years ago) fossils in the vicinity of the study area include fossil remains of mosasaurs, elasmosaurs, and other giant marine reptiles located near Cajon Pass. The Cady Mountains, located northeast of the study area near the community of Newberry Springs, contain the earliest vertebrate fossils known in the Mojave Desert, which are approximately 26 million years old. Fossils originating from the Barstovian North American Land Mammal Age exist from the Yermo Hills to the Community of Baker. These fossils are typically 17 to 13 million years old and are found throughout exposures to the Barstow Formation. In addition, the Barstow fossil beds, located approximately 10 miles north of the City of Barstow, contain a variety of vertebrate, invertebrate, and plant remains, as well as fossil footprints. Plio-Pleistocene-age fossils in the vicinity of the study area include extinct elephants and rodents. Evaluation of these Plio-Pleistocene-age fossils revealed a chronology of fault activity associated with the San Andreas and San Jacinto Fault Systems in the study area.

³ Expansive soils have the highest concentration of two-to-one clay minerals, which have the potential to shrink and swell.

According to previous paleontological technical studies for Line 300 A, Line 300 B, and Line 311 within the study area (Paleo Solutions 2018a, 2018b), this portion of the study area contains rocks dating from the Precambrian Era (approximately 4.6 billion to 550 million years ago) to the Holocene Epoch (<11,700 years ago). The Precambrian and Mesozoic Era (approximately 252 to 66 million years ago) igneous and metamorphic rocks mapped within the study area do not preserve recognizable fossils and are assigned a Potential Fossil Yield Classification (PFYC) of 1 using the BLM (2016) guidelines. Similarly, Tertiary (approximately 66 to 2.58 million years ago) igneous rocks mapped within the study area do not preserve recognizable fossils and are also assigned PFYC 1. The majority of the study area is underlain by Pliocene (approximately 5.3 to 2.58 million years ago) to Holocene-age alluvium. Holocene-age alluvium is generally assigned a low Potential Fossil Yield Classification (PFYC) rating of 2 because this geologic unit is too young to contain fossils. However, geologic units predating the Holocene age are present in the study area and may contain geologic units with a PFYC rating of 3 to 4. A PFYC rating of 3 indicates a moderate potential to encounter fossils within a geologic unit, and geologic units with a high potential to contain fossils are assigned a PFYC rating of 4. The paleontological sensitivities assigned to the geologic formations in the study area are provided in Section 4.7.4.3, Impact Discussion.

4.7.4 Impact Analysis

4.7.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of geology, soils, and paleontological resources impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For the purposes of this EIR, impacts to geology, soils, and paleontological resources would be significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - a. 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.
 - b. Strong seismic ground shaking.
 - c. Seismic-related ground failure, including liquefaction.
 - d. Landslides.
2. Result in substantial soil erosion or the loss of topsoil.
3. 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.
4. 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.
5. 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.
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

4.7.4.2 Applicable Measures

PG&E will continue to incorporate the following standard practices for paleontological resources, as well as APM BIO-13, into its ongoing O&M activities and will follow the applicable regulatory requirements to avoid or minimize the potential for adverse geology, soils, and paleontological resources impacts to the extent feasible. These standard practices and APM BIO-13, where applicable, are included in the impact discussion in Section 4.7.4.3.

Paleontological Resources Standard Practices

- Prior to conducting O&M activities involving excavation, trenching, or boring activities that would extend beyond 2 feet bgs, PG&E would identify paleontologically sensitive areas in the vicinity of the particular O&M activity. Should paleontologically sensitive areas be identified in the vicinity of a particular O&M activity, PG&E would conduct additional analyses, which may include a geologic map review, literature review (including, as available, other paleontological studies for the study area or for the relevant geological formations), agency/institutional records search, and aerial photo review. Additional landownership analysis and consultation with local paleontological experts may also be conducted as part of the analysis, where applicable. All components of the analysis would be summarized in a paleontological resources impact evaluation report (PRIER). The PRIER would include maps depicting sensitive geologic formations, recorded fossil localities, landownership, and/or natural landscape features. The results of the PRIER would be used to determine the need for additional study or impact avoidance and minimization measures.
- For units with a moderate PFYC, screening and protection measures designed to avoid and minimize effects would only be considered if significant fossils are highly likely to be encountered within a location with a PFYC rating of 3 or higher. These screening and protection measures include the following:
 - **Unanticipated Discovery:** If potential paleontological resources are discovered during construction activities, the following procedures would be followed:
 - Stop work immediately within 100 feet.
 - Contact the designated program inspector and Cultural Resources Specialist immediately.
 - Protect the site from further impacts, including looting, erosion, or other human or natural damage.
 - The program Cultural Resources Specialist would arrange for a Paleontological Principal Investigator to evaluate the discovery. If the discovery is determined to be significant, PG&E would implement measures to protect and document the paleontological resource. Such measures may include preservation in place, excavation, documentation, curation, or other appropriate measures. Permission from the landowner must be secured before treating the fossil. Work may not resume within 100 feet of the find until approved by the Paleontological Principal Investigator and Cultural Resources Specialist.
 - **Workers' Environmental Awareness Training:** Because moderate- to high-sensitivity formations are present within the study area, PG&E (or the contractor) would provide environmental awareness training on paleontological resources protection for O&M activities requiring excavations that could potentially impact paleontological resources. This training may be administered by the program paleontologist/archaeologist/environmental inspector as a stand-alone training, or it may be

included as part of the overall environmental awareness training required by the Workers' Environmental Awareness Training Program. At a minimum, the training would include the following:

- The types of fossils that could occur at the program site.
- The types of lithologies in which the fossils could be preserved.
- The procedures that should be taken in the event of a fossil discovery.
- Penalties for disturbing paleontological resources.
- **Avoidance/Work Exclusion Zones:** In areas of high or very high sensitivity with exposed geologic units, or where surface fossils are abundant, avoidance and redesign is recommended when possible. If high-sensitivity formations or significant surface fossils cannot be avoided, paleontological monitoring may be required.
- **Monitoring:** Monitoring should take place only in geological units that regularly and predictably produce significant fossils, or where identifiable factors indicate that fossils are likely to be present in an otherwise less productive unit. This includes locations with a PFYC rating of 3 or higher based on a paleontological records search conducted prior to O&M activities. Monitoring must be conducted by a qualified professional. All monitoring activities would be documented on daily logs, and the frequency of reporting the daily activities would depend on the O&M activity. Monitoring logs and reports should include the activities observed, geology encountered, description of any resources encountered, and measures taken to protect or recover discoveries. Photographs and other supplemental information should be included as necessary and would meet professional standards.
- **Fossil Recovery:** In the event that significant paleontological resources are encountered during the O&M activities, protection and recovery of those resources may be required. On public lands, treatment and curation of fossils would follow procedures outlined by the land managing agency. On private property, treatment and curation of fossils would be conducted in consultation with the landowner, PG&E, and CDFW. A Paleontological Principal Investigator is responsible for developing the recovery strategy and would lead the recovery effort, which would include establishing recovery standards; preparing specimens for identification and preservation, documentation, and reporting; and securing a curation agreement from the approved agency. A Paleontological Field Supervisor or Field Paleontologist may conduct the recovery of fossil discoveries under the direction of the Paleontological Principal Investigator.

Best Management Practices

PG&E would continue to incorporate Hydrology and Water Quality BMPs, as provided in Section 4.10.4.2, into its O&M activities to avoid or substantially lessen impacts.

Applicant Proposed Measure

The following APM from Section 4.4, Biological Resources, would also avoid or substantially lessen potentially significant geology and soils impacts:

- APM BIO-13: Restoration

Refer to Section 4.4.4.2, Biological Resources – Applicable Measures, and Section 2.5, Applicable Measures, of this EIR for the full text of APM BIO-13.

4.7.4.3 Impact Discussion

Impact GEO-1 **Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:**

- a. 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 California Geological Survey Special Publication 42.**

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2, Project Description. As discussed in Section 4.7.3, Existing Baseline Conditions, the study area is located in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands. The majority of the study area is located within undeveloped, open areas and it is crossed by eight active fault zones and/or sections. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause substantial adverse effects, directly or indirectly, due to the rupture of a known earthquake fault.

The active faults that are crossed by the pipeline system in the study area are generally located in unpopulated areas. As described in Chapter 2, pipeline segments that cross active faults are designed to resist potential ground rupture and fault displacement. To ensure that new pipeline segments in such areas remain fixed relative to a potential fault rupture, PG&E has included, can include, and will continue to include design features, such as use of ductile (pliable) materials, suspending the pipeline in granular bedding material, widening the pipeline trench, or constructing the pipeline at a greater depth. Furthermore, the majority of the pipeline system in the study area was constructed in the 1950s; therefore, pipeline segments installed during ongoing repair and replacement activities are constructed in accordance with the most recent seismic standards, which exceed the requirements of those in place when the pipelines were originally installed, and also incorporate more modern design measures where engineering design can be implemented to withstand anticipated displacements from fault rupture. Because of this, ongoing pipeline repair or replacement activities are considered an improvement over when the pipelines were originally installed.

During ongoing O&M activities PG&E has conducted, can conduct, and will continue to conduct evaluations to identify geologic and soil characteristics prior to installing new or replacement facilities. As warranted, these evaluations include site-specific geotechnical investigations, which consider geologic structure, primary and secondary seismic hazards, soils, slope stability, previous history of excavation and fill placement, and additional recommendations by PG&E's design engineer.

As described in the most recent Gas Safety Plan (refer to Appendix E to this EIR), PG&E implements its Valve Automation Program, which accelerates emergency response by allowing transmission pipelines to be rapidly isolated through remote-control technology. As part of the Valve Automation Program, PG&E replaced, automated, and upgraded gas shutoff valves across its natural gas transmission system between 2011 and 2014. PG&E installed 18 additional valves in 2016 and will continue to evaluate and improve its remote and automatic control valve technology during ongoing O&M activities in the study area. In the event of a pipeline rupture due to an

earthquake, trained gas control personnel within PG&E's Gas Control Center immediately initiate and execute shutdown zone plans to remotely isolate gas pipeline systems surrounding the affected area. Gas control personnel primarily use Supervisory Control and Data Acquisition (SCADA) system data to monitor and control critical assets remotely. If critical locations are identified, shutdown zone plans may also require the deployment of field personnel to manually operate valves and gas controls. In conjunction with these activities, PG&E notifies the appropriate emergency response centers to ensure that emergency responders are aware of a potential gas-related incident.

All of PG&E's ongoing O&M activities with the potential to cause substantial adverse effects, directly or indirectly, due to the rupture of a known earthquake fault will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts due to a known earthquake fault. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR (Biological Resources, Impact Analysis), issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not cause substantial adverse effects, directly or indirectly, due to the rupture of a known earthquake fault.

PG&E's commitment to implementing standard practices and complying with applicable regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to a known earthquake fault. For example, PG&E includes a Fault Crossings Program in its Gas Safety Plan that addresses the specific threat of land movement at active fault crossings. Measures that are used to minimize potential damage from fault rupture include modified trench designs, trench adjustments, pipe replacement, and automated isolation valves. PG&E also operates a Gas Control Center that can quickly detect a rupture and isolate pipeline sections to minimize releases should one be triggered by a fault rupture event. Repairs and replacement of existing pipelines have been conducted and will continue to be conducted in accordance with CPUC General Order (GO) 112-F, which incorporates U.S. Department of Transportation (DOT) regulations from Title 49, Part 192 of the CFR. In addition, PG&E would comply with CBC earthwork standards during O&M activities.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with earthquake fault ruptures is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to earthquake fault rupture; any related effect would be **less than significant**.

b. Strong seismic ground shaking?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.7.3, the study area is located in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands. The majority of the study area is located within undeveloped, open areas, and it is crossed by eight active fault zones and/or sections. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause substantial adverse effects, directly or indirectly, due to strong seismic ground shaking.

The most recent and the most significant seismic events recorded in the study area include the 2019 Ridgecrest earthquakes, the 1997 Calico earthquake along the Calico-Hidalgo Fault Zone, the 1992 Landers earthquake, and a 1947 earthquake in the vicinity of the Pisgah-Bullion Fault Zone. The 1997 Calico earthquake and the 1947 earthquake generated moment magnitudes of 5.3 and 6.5, respectively. According to forecasts conducted by USGS, there is a 93% chance that a magnitude 6.7 or greater earthquake will occur in the Southern California region before the year 2045 (USGS 2015). The ground shaking effects would depend on a number of different factors, including distance and depth to epicenter, duration of the event, and site-specific characteristics of underlying materials. Therefore, a seismic event associated with any of the regional faults could damage structures and utilities such as natural gas pipelines. The 2019 Ridgecrest event included magnitude 6.4 and magnitude 7.1 earthquakes that resulted in more than 250 gas leaks and deformation to approximately 600 feet of transmission pipelines that required replacement (Appendix E). However, no known pipeline damage occurred following the Calico earthquake, the Landers earthquake, and/or other minor earthquakes in the study area. The 1947 earthquake occurred prior to the construction of the pipeline system in the study area.

The segments of the pipeline system that are closest to active faults are generally located in remote, undeveloped areas where the population is sparse. As described, pipelines that cross active faults in the study area are ductile and were installed with specific padding material that would buffer the pipeline and prevent damage resulting from seismic activity. As such, pipeline damage resulting from seismic activity in the study area is not anticipated to be substantial, but as was shown by the 2019 Ridgecrest earthquakes, some damage could occur. However, new pipeline segments that have been installed, can be installed, and will continue to be installed during repair and replacement activities are constructed in accordance with current applicable regulations and design standards related to the resistance of seismic activity that would include current seismic design measures. Furthermore, PG&E has conducted, and will continue to conduct, internal inspections and the repair and replacement of existing facilities to ensure that existing pipelines meet DOT and CPUC regulations for threats due to outside forces. As described in Impact GEO-1(a), in the event of a pipeline rupture caused by seismic ground shaking, PG&E implements the emergency response procedures provided in the most recent Gas Safety Plan.

All of PG&E's ongoing O&M activities with the potential to cause substantial adverse effects, directly or indirectly, due to strong seismic ground shaking will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts due to seismic ground shaking. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are

also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not cause substantial adverse effects, directly or indirectly, due to strong seismic ground shaking.

PG&E's commitment to implementing standard practices and complying with applicable regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to strong seismic ground shaking. For example, PG&E would continue to implement requirements from the most recent Gas Safety Plan, incorporate applicable engineering and design standards during pipeline repair activities, and comply with regulatory requirements.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with strong seismic shaking is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to strong seismic shaking; any related effect would be **less than significant**.

c. Seismic-related ground failure, including liquefaction?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.7.3, the study area is located in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands. The majority of the study area is located within undeveloped, open areas, and it is crossed by eight active fault zones and/or sections. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause substantial adverse effects, directly or indirectly, due to ground failure and liquefaction.

No CGS-designated liquefaction areas are mapped in the vicinity of the study area and known groundwater conditions indicate that much of the study area has a relatively low potential for susceptibility to liquefaction (CGS 2021). However, liquefaction hazards are better determined by site-specific evaluations, in which underlying materials can be evaluated for characteristics such as grain size and moisture content. PG&E would continue to conduct site-specific geotechnical investigations that evaluate geologic hazards and soil prior to

the construction of replacement facilities. In addition, the purpose of the O&M activities is to ensure that the safety and integrity of PG&E's pipelines are maintained. In the event of a pipeline rupture, PG&E would continue to implement the emergency response procedures described in the most recent Gas Safety Plan. Based on the general absence of shallow saturated soils and the arid conditions in the desert region, ground failure and liquefaction are not anticipated to be commonly present in the study area. In the event of a liquefaction event, the previously described pipeline characteristics and design standards associated with existing pipelines in the study area would prevent pipeline damage during ground failure. Therefore, ground failure and liquefaction are not anticipated to adversely impact the pipeline system in the study area, directly or indirectly, and CDFW's issuance of the permits and its broader approval of the whole of the action under CEQA, including PG&E's adherence to regulatory compliance, would result in less-than-significant impacts.

All of PG&E's ongoing O&M activities with the potential to cause substantial adverse effects, directly or indirectly, due to ground failure and liquefaction will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts due to ground failure and liquefaction. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not cause substantial adverse effects, directly or indirectly, due to ground failure and liquefaction.

PG&E's commitment to implementing standard practices and the requirements from the most recent Gas Safety Plan and complying with applicable regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to ground failure and liquefaction.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with ground failure and liquefaction is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to ground failure and liquefaction; any related effect would be **less than significant**.

d. Landslides?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.7.3, the study area is located in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands. The majority of the study area is located within undeveloped, open areas, and it is crossed by eight active fault zones and/or sections. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause substantial adverse effects, directly or indirectly, due to landslides.

Hazards related to slope instability and landslides are generally associated with foothill areas and mountain terrain. As previously discussed, steep slopes are present in the central portion of the study area near the City of Barstow and along the northern portion of the study area near the City of Ridgecrest. However, the majority of the study area is located within relatively flat topography or rolling terrain, where landslides are less likely to occur. The soils in the study area are well drained and are not likely to reach a point of saturation that would induce landslide activity. Saturated soils are relatively rare in the desert because soil saturation generally occurs only for brief periods of time during washes after heavy rains. Therefore, slope failure resulting from saturated soils in the study area is not anticipated.

All of PG&E's ongoing O&M activities with the potential to cause substantial adverse effects, directly or indirectly, due to landslides will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts due to landslides. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists any at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not cause substantial adverse effects, directly or indirectly, due to landslides.

PG&E's commitment to implementing standard practices and the requirements from the most recent Gas Safety Plan and complying with applicable regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to landslides. For example, PG&E inspects the pipeline system for indications of imminent slope failure and conducts soil stabilization efforts (e.g., drainage control improvements, soil stabilization, revegetation, and regrading) when unstable slopes are discovered. Also, as part of the design process, when appropriate, PG&E conducts site-specific geotechnical evaluations by California-licensed geotechnical engineers or engineering geologists. When geotechnical investigations are conducted, they typically include an evaluation of slope

stability and provide recommendations to minimize the risk of landslide damage to the extent feasible. In addition, PG&E will continue to comply with all applicable codes and regulations, including CBC earthwork standards and recommendations.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with landslides is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to landslides; any related effect would be **less than significant**.

Impact GEO-2 Would the project result in substantial soil erosion or the loss of topsoil?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.7.3, the study area is located in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands, and the majority of the study area is located within undeveloped, open areas. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would result in substantial soil erosion or the loss of topsoil.

The soils in the study area are characterized primarily by non-production topsoil that is not used for agricultural crop production, and most soils that would be encountered have likely already been disturbed by initial construction of the pipelines. However, O&M activities that have involved, can involve, and will continue to involve vegetation clearing, excavation, and grading could expose soils to erosion or result in losses of topsoil.

All of PG&E's ongoing O&M activities with the potential to result in substantial soil erosion or the loss of topsoil will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to geology and soils. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in substantial soil erosion or the loss of topsoil.

PG&E's commitment to implementing standard practices and erosion control BMPs (i.e., through PG&E's preparation and implementation of the stormwater pollution prevention plan [SWPPP]) provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to soil erosion or the loss of topsoil. For example, as part of its standard practices PG&E would implement erosion-control measures that include installing water bars (diagonal channels to divert surface water into a suitable drainage area) along temporary or dirt roads; using water to stabilize spoil sites; creating diversion channels to reduce runoff; installing ditch plugs to prevent washout; and using jute mats, wood mulching, and other soil stabilization practices. In addition, when O&M activities disturb more than 1 acre of land outside the existing pipeline right-of-way, PG&E would continue to obtain coverage under the State Water Resources Control Board Construction General Permit (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ) and prepare and implement a SWPPP that would include erosion-control BMPs. For O&M activities that disturb less than 1 acre of land, PG&E would continue to implement standard practices for water quality as described in Section 4.10, Hydrology and Water Quality, of this EIR. These standard practices would include erosion-control measures that would be effective in minimizing the potential for erosion or loss of topsoil. Following work activities, PG&E implements APM BIO-13, Restoration, which promotes recovery of vegetation and thereby also reduces erosion and loss of topsoil. Furthermore, PG&E would continue to segregate topsoil from subsoil and windrow (form into a long low pile) the topsoil separately from the subsoil within designated work areas. The soil piles would then be covered during rain events in accordance with applicable stormwater permit requirements or activity-specific erosion and sedimentation control plans. When backfilling pipeline excavations, PG&E would continue to first cover the pipeline with subsoil and then spread the preserved topsoil over the graded excavation.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with geology, soils, and paleontological resources is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to soil erosion or the loss of topsoil; any related effect would be **less than significant**.

Impact GEO-3 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?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.7.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands, and a majority of the study area is located within undeveloped, open areas. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause direct and indirect impacts, such as on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse, due to an unstable geologic unit or soil.

The pipeline system is located within several Alquist-Priolo Earthquake Fault Zones and crosses eight active fault zones and/or sections. The Alquist-Priolo Earthquake Fault Zoning Act was passed to mitigate the hazard of surface faulting to structures built for human occupancy. PG&E's ongoing O&M activities in the study area do not involve the construction of buildings for human occupancy and are not subject to the laws set by the Alquist-Priolo Earthquake Fault Zoning Act. However, based on the presence of active faults, pipelines in the study area have had, can have, and will continue to have the potential to be exposed to lateral spreading, subsidence, or liquefaction during a strong seismic event if soil conditions prone to these phenomena are present.

All of PG&E's ongoing O&M activities with the potential to cause direct and indirect impacts due to geological instability will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to geology and soils. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in direct and indirect impacts due to geological instability.

PG&E's commitment to implementing standard practices and complying with applicable regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to direct and indirect impacts due to geological instability. For example, O&M activities will continue to be conducted in accordance with CPUC GO 112-F, which incorporates the DOT regulations in Title 49, Part 192 of the CFR. In addition, and when appropriate, PG&E conducts site-specific geotechnical investigations for the repair and replacement of existing facilities and incorporates recommendations from these investigations to prevent landslides during O&M activities.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with geology and soils is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to direct and indirect impacts due to geological instability; any related effect would be **less than significant**.

Impact GEO-4 Would the project 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?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.7.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands, and a majority of the study area is located within undeveloped, open areas. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause substantial risks to life or property due to being located on expansive soil.

According to available USGS data, the majority of the soils in the study area contain little to no clays with swelling potential. In addition, most of the soils in the study area are well-drained, sandy soils that are not capable of absorbing enough water to cause substantial swelling and subsequent shrinking. Available data also indicate that a few locations in the study area may contain clayey soils that are subject to shrinking or swelling. However, because the pipelines in the study area are designed to withstand movement, minor soil movement associated with the shrink/swell action of expansive soils would not be likely to affect pipeline integrity or operability.

All of PG&E's ongoing O&M activities with the potential to cause direct and indirect impacts due to geological instability will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to geology and soils. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in substantial risks to life or property due to being located on expansive soil.

PG&E's commitment to implementing standard practices and complying with applicable regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to direct and indirect impacts due to expansive soils. For example, new or replaced pipelines would be installed with specific padding material (i.e., sand) during backfill that buffer the pipeline from expansive soils.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with geology and soils is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to expansive soils; any related effect would be **less than significant**.

Impact GEO-5 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?

O&M activities have not and will not involve the construction of a septic system or alternative wastewater disposal system. In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing wastewater disposal systems baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects on wastewater disposal systems is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not require the construction of a septic system or alternative wastewater disposal system; **no impact** would occur.

Impact GEO-6 Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.7.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands, and a majority of the study area is located within undeveloped, open areas. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

O&M activities have had, can have, and will continue to have the potential to encounter unique paleontological resources or geologic features during ground disturbance. The potential to expose unique fossils primarily occurs during O&M activities involving excavation, trenching, and boring operations that extend at least 1 to 2 feet bgs. As shown in Table 4.7-1, approximately 27,394 acres of the study area and approximately 113,779 acres within the 0.25 miles of the study area are within geologic formations that have a moderate or high paleontological potential. However, not all ground disturbance has occurred in, can occur in, or will continue to occur in paleontologically sensitive geological units. Also, within 0.25 miles beyond the study area boundary, activities have been, can be, and will continue to be limited to staging area and access roads improvements, where needed, and no major trenching is anticipated.

Table 4.7-1. Geologic Unit Acreages in the Study Area

PFYC	Geologic Unit	Age	Acreages within the Study Area	Acres within 0.25 Miles of the Study Area ^a
3 to 4: Moderate to High Potential	QPc – continental sedimentary rocks	Pliocene to Pleistocene	684	3,381
	Tc – continental sedimentary rocks	Tertiary	491	1,538
	Mc – continental sedimentary rocks	Miocene	174	1,024
	Ooa – marine and non-marine sedimentary rocks	Pleistocene	5,661	21,382
3: Moderate Potential	Q – marine and non-marine sedimentary rocks	Pleistocene to Holocene	20,338	86,310
	C – marine sedimentary and carboniferous rocks	Carboniferous	46	164
	Ca – marine sedimentary rocks	Cambrian	0	4
2 to 3: Low to Moderate Potential	Qs – marine and non-marine sedimentary rocks	Quaternary	590	2,211
	Pm – marine and metasedimentary rocks	Permian	0	86
2: Low Potential	pCc – mixed rocks	Precambrian	463	2,337
	Tv – volcanic rocks	Tertiary	330	886
	pC – marine and metasedimentary rocks	Precambrian	32	398
	Tvp – volcanic rocks	Tertiary	5	595
1 to 2: Very Low to Low	Sch – marine and metasedimentary rocks	Paleozoic to Mesozoic	1	97
1: Very Low	grMz – plutonic rocks	Permian to Tertiary: mostly Mesozoic	2,889	13,070
	grpC – plutonic	Precambrian	541	1,657
	Qrv – volcanic rocks	Holocene	187	904
	Mv – metavolcanic rocks	Paleozoic to Mesozoic	196	846
	Ti – volcanic rocks	Tertiary	115	529
	Mzv – metavolcanic rocks	Triassic to Cretaceous	115	729
	Qv – volcanic rocks	Quaternary	16	134

Sources: BLM 2016; CEC et al. 2014.

Note: PFYC = Potential Fossil Yield Class.

All of PG&E's ongoing O&M activities with the potential to directly or indirectly destroying a unique paleontological resource or site or unique geologic feature will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to paleontological resources. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in directly or indirectly destroying a unique paleontological resource or site or unique geologic feature.

PG&E's commitment to implementing standard practices and complying with applicable regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to directly or indirectly destroying a unique paleontological resource or site or unique geologic feature. For example, prior to conducting O&M activities involving excavation, trenching, or boring that would extend beyond 2 feet bgs, PG&E identifies paleontologically sensitive areas in the vicinity of the particular O&M activity. When paleontologically sensitive areas are identified in the vicinity of a particular O&M activity, PG&E conducts additional analyses, which may include a geologic map review, literature review (including, as available, other paleontological studies for the study area or for the relevant geological formations), agency/institutional records search, and aerial photo review. All components of the analysis are summarized in a paleontological resources impact evaluation report (PRIER). Also, because the study area crosses land under BLM jurisdiction, federal protections for paleontological resources in those areas apply under the National Environmental Policy Act, FLPMA, and OPLMA. The recovery of all paleontological resources on BLM-administered lands must be approved and coordinated by BLM. As required by federal regulations, PG&E acquires the necessary permits. All fossils collected from federal agency lands must be housed in a federally approved paleontological repository.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with paleontological resources is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to directly or indirectly destroying a unique paleontological resource or site or unique geologic feature; any related effect would be **less than significant**.

4.7.5 Cumulative Impacts

The geographic extent for the consideration of cumulative impacts to geologic resources, soils or paleontological resources is a 1-mile-wide area along the gas pipeline alignment in the study area (refer to Table 3-1, Geographic Scope of Cumulative Impacts and Method of Evaluation).

The study area traverses a large area of California that includes a wide range of underlying conditions (i.e., soils, bedrock types, and gradients) that also vary in proximity to active faults. Impacts related to geology and soils tend to be site specific because conditions, including site hazards, can vary greatly over short distances. Potential cumulative impacts to paleontological resources result from projects that combine to create an environment where exposed fossils are at risk of destruction by construction equipment, looting by the public, and natural causes such as weathering and erosion. Generally, paleontological resources are site specific. As a result, impacts to geology, soils, and paleontological resources tend to be localized and do not combine to become cumulatively considerable.

O&M activities are routine and ongoing under existing baseline conditions and the majority of O&M activities would be temporary and would occur over a short duration. As shown in Table 3-2, Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area, of this EIR, several related projects would occur within 1 mile of the PG&E gas pipeline. However, all projects, including the O&M activities, are expected to comply with the CBC and relevant regulatory requirements to avoid or minimize effects on geology, soils, and paleontological resources. In addition, PG&E commits to implementing requirements from the most recent Gas Safety Plan and complying with applicable regulations, including CPUC GO 112-F and Title 49, Part 192 of the CFR. Also, all projects, including the O&M activities, would be expected to follow regulatory requirements, including erosion control BMPs and habitat restoration activities (APM BIO-13), and guidelines of the Society of Vertebrate Paleontology (SVP 2010) to avoid or minimize paleontological resources effects. Furthermore, PG&E would implement its paleontological standard practices and procedures for its O&M activities. Accordingly, the incremental contribution from O&M activities to cumulative impacts on geology, soils, or paleontological resources caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to geology, soils, or paleontological resources.

4.7.6 Residual Impacts

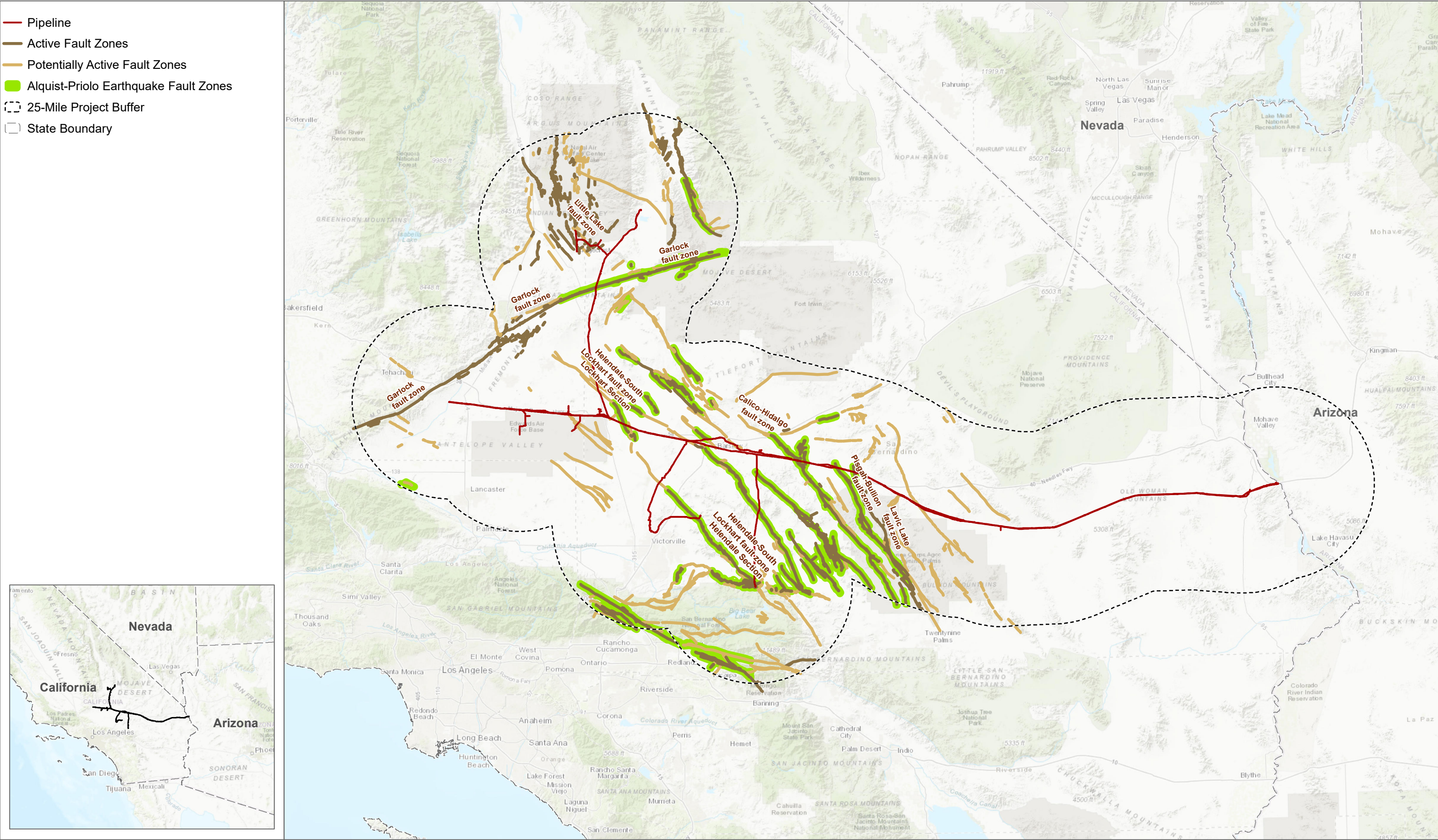
PG&E's O&M activities have been ongoing and are a component of the existing baseline conditions in the study area. O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's commitment to implementing standard practices provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect on geology, soils, or paleontological resources.

4.7.7 References

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SOURCES: Insignia 2021; NALCC 2014; PG&E 2021

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4.8 Greenhouse Gas Emissions

4.8.1 Introduction

The proposed project for the purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) that would authorize take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGC). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section evaluates the environmental impacts on greenhouse gas (GHG) emissions that may result directly or indirectly from CDFW's issuance of the ITP and expected LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on GHG emissions that could result with continuing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the proposed project for purposes of CEQA). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this section.

Section 4.8.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have occurred and will continue to occur, specific to GHG emissions.

Section 4.8.3 provides a description of the existing baseline conditions for GHG emissions in the O&M activities area ("study area"). Specifically, this section provides a description relative to GHG emissions in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities, regardless of whether CDFW issues the requested permits. This existing baseline condition, which includes the ongoing O&M activities already being implemented by PG&E relative to their past, present, and continued potential effects, is the benchmark used in the Section 4.8.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these environmental baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.8.4 provides an analysis of whether issuance of the requested permits (pursuant to the CFGC) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline conditions and a substantial or potentially substantial adverse effect related to GHG emissions. The section also identifies the significance criteria used for the impact analysis and specifies best management practices (BMPs). Furthermore, this section discusses applicable regulatory authority or governing law that has applied and will continue to apply, specific to GHG emissions.

Section 4.8.5 provides an analysis of whether the project-related incremental change to the environmental baseline conditions is cumulatively considerable and therefore significant.

Section 4.8.6 identifies the residual environmental impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.8.7 lists the references cited in this section.

During the scoping effort, no party identified any public concerns related to potential GHG emissions impacts.

The analysis included in this section is based on information that PG&E provided to CDFW, as well as relevant information gathered and considered by CDFW, including information from the California Air Resources Board (CARB), with assistance from its environmental consultant.

4.8.2 Applicable Regulations, Plans, and Policies

The following subsections describe the regulations and regulatory agencies that pertain to GHG emissions that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and analysis of whether CDFW's proposed issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would cause an incremental physical change to the existing environment and cause significant impacts related to GHG emissions.

International and Federal

United Nations Framework Convention on Climate Change, Kyoto Protocol, and Paris Agreement

In 1992, numerous countries joined an international treaty, the United Nations (UN) Framework Convention on Climate Change, as a framework for international cooperation to combat climate change by limiting average global temperature increases and the resulting climate change and coping with associated impacts. Currently, there are 197 parties (196 states and 1 regional economic integration organization) to the UN Framework Convention on Climate Change (UNFCCC 2019).

By 1995, countries launched negotiations to strengthen the global response to climate change and, 2 years later, adopted the Kyoto Protocol, which was the first international agreement to regulate GHG emissions. The Kyoto Protocol legally binds developed country parties to emission reduction targets. The Kyoto Protocol's first commitment period started in 2008 and ended in 2012. The second commitment period began on January 1, 2013, and ended in 2020. More than 160 countries signed the Kyoto Protocol (UNFCCC 2019). In 2001, President George W. Bush indicated that he would not submit the treaty to the U.S. Senate for ratification, which effectively ended U.S. involvement in the Kyoto Protocol.

The 2015 Paris Agreement, adopted in Paris on December 12, 2015, marks the latest step in the evolution of the UN climate change regime and builds on the work undertaken under the UN Framework Convention on Climate Change. The Paris Agreement charts a new course in the global effort to combat climate change. The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping the rise of global temperature this century well below 2°C (3.6°F) above pre-industrial levels and to pursue efforts to limit the temperature increase even further, to 1.5°C (2.7°F) (UNFCCC 2019). The Paris Agreement also aims to strengthen the ability of countries to deal with the impacts of climate change. The Paris Agreement requires all parties to put forward their best efforts through nationally determined contributions and to strengthen these efforts in the years ahead.

The Paris Agreement entered into force on November 4, 2016, 30 days after the date on which at least 55 parties to the UN Framework Convention on Climate Change, accounting in total for an estimated 55% of the total global GHG emissions, deposited their instruments of ratification, acceptance, approval, or accession with the depositary (UNFCCC 2019). On June 2, 2017, President Donald Trump announced his intention to withdraw from the Paris Agreement. However, under the terms of the agreement, the United States cannot formally announce its resignation until November 4, 2019. Subsequently, withdrawal would be effective 1 year after notification in 2020. On January 20, 2021, President Biden rejoined the Paris Agreement to commit the United States to its climate change goals.

Infrastructure Investment and Jobs Act

On November 6, 2021, Congress passed the Infrastructure Investment and Jobs Act (Bipartisan Infrastructure Deal), a once-in-a-generation investment in U.S. infrastructure and competitiveness. This Bipartisan Infrastructure Deal will rebuild America's roads, bridges and rails, expand access to clean drinking water, ensure that every American has access to high-speed internet, tackle the climate crisis, advance environmental justice, and invest in communities that have too often been left behind. The Bipartisan Infrastructure Deal will help ease inflationary pressures and strengthen supply chains by making long-overdue improvements for U.S. ports, airports, rail, and roads. It will drive the creation of well-paid union jobs and grow the economy sustainably and equitably so that everyone gets ahead for decades to come. Combined with the President's Build Back Framework, it will add on average 1.5 million jobs per year for the next 10 years. The Bipartisan Infrastructure Deal will improve transportation options for millions of Americans to reduce energy use and GHG emissions and will increase investment in electric vehicle (EV) chargers and renewable energy production.

Executive Order on Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability. President Biden will sign an executive order that demonstrates how the United States will leverage its scale and procurement power to lead by example in tackling the climate crisis. The executive order will reduce emissions across federal operations, invest in American clean energy industries and manufacturing, and create clean, healthy, and resilient communities. The President's executive order will direct the federal government to use its scale and procurement power to achieve five ambitious goals:

- 100% carbon-pollution-free electricity (CFE) by 2030, at least half of which will be locally supplied clean energy to meet 24/7 demand
- 100% zero-emission vehicle (ZEV) acquisitions by 2035, including 100% zero-emission light-duty vehicle acquisitions by 2027
- Net-zero emissions from federal procurement no later than 2050, including a Buy Clean policy to promote use of construction materials with lower embodied emissions
- A net-zero emissions building portfolio by 2045, including a 50% emissions reduction by 2032
- Net-zero emissions from overall federal operations by 2050, including a 65% emissions reduction by 2030

Massachusetts v. EPA

In *Massachusetts v. EPA* (April 2007), the U.S. Supreme Court directed the U.S. Environmental Protection Agency (EPA) administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science

is too uncertain to make a reasoned decision. In December 2009, the administrator signed a final rule with the following two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act:

- The Administrator found that elevated concentrations of GHGs—carbon dioxide (CO₂), methane (CH₄), N₂O (nitrous oxide), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)—in the atmosphere threaten the public health and welfare of current and future generations. This is the “endangerment finding.”
- The Administrator further found the combined emissions of GHGs—CO₂, CH₄, N₂O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is the “cause or contribute finding.”

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007, among other key measures, would do the following, which would aid in the reduction of national GHG emissions (EPA 2007):

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020, and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy-efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Federal Vehicle Standards

In response to *Massachusetts v. EPA*, the George W. Bush Administration issued Executive Order (EO) 13432 in 2007 directing EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011 (74 FR 61537-61555), and in 2010, EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016 (75 FR 25324–25728).

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO₂ in model year 2025 on an average industry-fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021 (77 FR 62624–63200). On January 12, 2017, EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks (EPA 2017).

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011 EPA and NHTSA announced fuel-economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018 (76 FR 57106–57513). The standards for CO₂ emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6% to 23% over the 2010 baselines.

In August 2016, EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018–2027 for certain trailers, and model years 2021–2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO₂ emissions by approximately 1.1 billion metric tons (MT) and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

In August 2018, EPA and NHTSA proposed to amend certain fuel economy and GHG standards for passenger cars and light trucks and establish new standards for model years 2021–2026. Compared to maintaining the post-2020 standards now in place, the 2018 proposal would increase U.S. fuel consumption by about half a million barrels per day (2%–3% of total daily consumption, according to the Energy Information Administration) and would impact the global climate by 3/1000th of 1°C by 2100 (EPA and NHTSA 2018). California and other states have stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives. Thus, the timing and consequences of the 2018 federal proposal are speculative at present.

On September 27, 2019, EPA and NHTSA published the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program (84 FR 51310), which became effective November 26, 2019. The Part One Rule revokes California’s authority to set its own GHG emissions standards and set ZEV mandates in California. On March 31, 2020, EPA and NHTSA issued the Part Two Rule, which will go into effect 60 days after being published in the Federal Register. The Part Two Rule sets CO₂ emissions standards and Corporate Average Fuel Economy (CAFE) standards for passenger vehicles and light-duty trucks for model years 2021 through 2026. On January 20, 2021, President Biden issued EO 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, which includes review of the Part One Rule by April 2021 and review of the Part Two Rule by July 2021. On April 22, 2021, NHTSA issued a notice of proposed rulemaking that would repeal those portions of SAFE 1 (including the regulatory text and interpretive statements in the preamble) that found California’s GHG and ZEV mandates pre-empted by EPA. One day after NHTSA issued its notice, EPA announced its parallel action on SAFE 1. On December 21, 2021, after reviewing all the public comments submitted on NHTSA’s April 2021 Notice of Proposed Rulemaking, NHTSA finalized the CAFE Pre-emption rulemaking to withdraw its portions of the so-called SAFE I Rule.

Clean Power Plan and New Source Performance Standards for Electric Generating Units

On October 23, 2015, EPA published a final rule (effective December 22, 2015) establishing the Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (80 FR 64510–64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO₂ emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam-generating units and

(2) stationary combustion turbines. Concurrently, EPA published a final rule (effective October 23, 2015) establishing standards of performance for GHG emissions from new, modified, and reconstructed stationary sources: electric utility generating units (80 FR 64661–65120). The rule prescribes CO₂ emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the Clean Power Plan on February 9, 2016 pending resolution of several lawsuits.

State

The statewide GHG emissions regulatory framework is summarized below by category: state climate change targets, building energy, renewable energy and energy procurement, mobile sources, solid waste, water, and other state actions. The following text describes executive orders, legislation, regulations, and other plans and policies that would directly or indirectly reduce GHG emissions and/or address climate change issues.

State Climate Change Targets

The state has taken many actions to address climate change. These include executive orders, legislation, and CARB plans and requirements and are summarized below.

EO S-3-05

EO S-3-05 (June 2005) established the following statewide goals: GHG emissions should be reduced to 2000 levels by 2010, GHG emissions should be reduced to 1990 levels by 2020, and GHG emissions should be reduced to 80% below 1990 levels by 2050.

AB 32

In furtherance of the goals established in EO S-3-05, the legislature enacted Assembly Bill (AB) 32. The bill is referred to as the California Global Warming Solutions Act of 2006 (September 27, 2006). AB 32 provided initial direction on creating a comprehensive multiyear program to limit California's GHG emissions at 1990 levels by 2020 and initiate the transformations required to achieve the state's long-range climate objectives.

CARB's 2007 Statewide Limit

In 2007, in accordance with California Health and Safety Code, Section 38550, CARB approved a statewide limit on the GHG emissions level for year 2020 consistent with the determined 1990 baseline (427 million metric tons [MMT] carbon dioxide equivalent [CO₂e]).

CARB's Climate Change Scoping Plan

One specific requirement of AB 32 is for CARB to prepare a scoping plan for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020 (California Health and Safety Code, Section 38561[a]), and to update the plan at least once every 5 years. In 2008, CARB approved the first scoping plan: The Climate Change Scoping Plan: A Framework for Change (Scoping Plan), which included a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG

emission limit and initiate the transformations needed to achieve the state's long-range climate objectives. The key elements of the Scoping Plan include the following (CARB 2008):

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
2. Achieving a statewide renewable energy mix of 33%
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions
4. Establishing targets for transportation related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard (17 CCR, Section 95480 et seq.)
6. Creating targeted fees, including a public goods charge on water use, fees on high GWP [global warming potential] gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation

The Scoping Plan also identified local governments as essential partners in achieving California's goals to reduce GHG emissions because they have broad influence and, in some cases, exclusive authority over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Specifically, the Scoping Plan encouraged local governments to adopt a reduction goal for municipal operations and for community emissions to reduce GHGs by approximately 15% from then levels (2008) by 2020. Many local governments developed community-scale local GHG reduction plans based on this Scoping Plan recommendation.

In 2014, CARB approved the first update to the Scoping Plan. The First Update to the Climate Change Scoping Plan: Building on the Framework (First Update) defined the state's GHG emission reduction priorities for the next 5 years and laid the groundwork to start the transition to the post-2020 goals set forth in EO S-3-05 and EO B-16-2012. The First Update concluded that California is on track to meet the 2020 target but recommended that a 2030 mid-term GHG reduction target be established to ensure a continuum of action to reduce emissions. The First Update recommended a mix of technologies in key economic sectors to reduce emissions through 2050, including energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies. As part of the First Update, CARB recalculated the state's 1990 emissions level, using more recent GWPs identified by the IPCC from 427 MMT CO₂e to 431 MMT CO₂e (CARB 2014).

In 2015, as directed by EO B-30-15, CARB began working on an update to the Scoping Plan to incorporate the 2030 target of 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05. The governor called on California to pursue a new and ambitious set of strategies, in line with the five climate change pillars from his inaugural address, to reduce GHG emissions and prepare for the unavoidable impacts of climate change. In the summer of 2016, the legislature affirmed the importance of addressing climate change through passage of Senate Bill (SB) 32 (Chapter 249, Statutes of 2016).

In December 2017, CARB adopted the 2017 Climate Change Scoping Plan Update (2030 Scoping Plan) (CARB 2017). The 2030 Scoping Plan builds on the successful framework established in the initial Scoping Plan and First Update, while identifying new, technologically feasible and cost-effective strategies that will serve as the framework to achieve the 2030 GHG target and define the state’s climate change priorities to 2030 and beyond. The strategies’ known commitments include implementing renewable energy and energy efficiency (including the mandates of SB 350), increased stringency of the Low Carbon Fuel Standard, measures identified in the Mobile Source and Freight Strategies, measures identified in the proposed Short-Lived Climate Pollutant Plan, and increased stringency of SB 375 targets. To fill the gap in additional reductions needed to achieve the 2030 target, it recommends continuing the cap-and-trade program and a measure to reduce GHGs from refineries by 20%.

For local governments, the 2030 Scoping Plan replaced the initial Scoping Plan’s 15% reduction goal with a recommendation to aim for community-wide goals of no more than 6 MT CO₂e per capita by 2030 and no more than 2 MT CO₂e per capita by 2050, which are consistent with the state’s long-term goals. These goals are also consistent with the Under 2 Memorandum of Understanding of 2016 and the Paris Agreement, which are developed around the scientifically based levels necessary to limit global warming below 2 °C (3.6 °F). The 2030 Scoping Plan recognized the benefits of local government GHG planning (e.g., through climate action plans) and provide more information regarding tools that CARB is working on to support those efforts. It also recognizes CEQA streamlining provisions for project-level review where there is a legally adequate climate action plan.¹

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32, SB 32, and the executive orders and establishes an overall framework for the measures that will be adopted to reduce California’s GHG emissions. A project is considered consistent with the statutes and executive orders if it meets the general policies in reducing GHG emissions to facilitate the achievement of the state’s goals and does not impede attainment of those goals. As discussed in several cases, a given project need not be in perfect conformity with every planning policy or goal to be consistent. A project would be consistent if it would further the objectives and not obstruct their attainment.

CARB currently is preparing the *2022 Scoping Plan Update*, which will assess progress toward achievement of the state’s 2030 reduction target and lay out a path for the state’s achievement of carbon neutrality by 2045. CARB has held public workshops to provide information on the plan update and solicit feedback from stakeholders. A draft plan has not yet been released for public review and comment.

CARB’s Regulation for the Mandatory Reporting of Greenhouse Gas Emissions

CARB’s Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (“Mandatory Reporting Regulation”; 17 CCR 95100–95157) incorporated by reference certain requirements that EPA promulgated in its Final Rule on Mandatory Reporting of Greenhouse Gases (40 CFR, Part 98). Specifically, Section 95100(c) of the Mandatory Reporting Regulation incorporated those requirements that EPA promulgated in the Federal Register on October 30, 2009; July 12, 2010; September 22, 2010; October 28, 2010; November 30, 2010; December 17, 2010; and April 25, 2011. In general, entities subject to the Mandatory Reporting Regulation that emit more than 10,000 MT CO₂e per year are required to report annual GHGs through the California Electronic GHG Reporting Tool. Certain sectors, such as refineries and cement

¹ *Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490; *San Francisco Tomorrow et al. v. City and County of San Francisco* (2015) 229 Cal.App.4th 498; *San Franciscans Upholding the Downtown Specific Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656; *Sequoiah Hills Homeowners Assn. v. City of Oakland* (1993) 23 Cal.App.4th 704, 719.

plants, are required to report regardless of emission levels. Entities that emit more than the 25,000 MT CO₂e per year threshold are required to have their GHG emissions report verified by a CARB-accredited third party.

EO B-18-12

EO B-18-12 (April 2012) directed state agencies, departments, and other entities under the governor's executive authority to take action to reduce entity-wide GHG emissions by at least 10% by 2015 and 20% by 2020, as measured against a 2010 baseline.

SB 605 and SB 1383

SB 605 (2014) requires CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants in the state. SB 1383 (2016) required CARB to approve and implement that strategy by January 1, 2018. SB 1383 also establishes specific targets for the reduction of short-lived climate pollutants (40% below 2013 levels by 2030 for CH₄ and HFCs, and 50% below 2013 levels by 2030 for anthropogenic black carbon) and provides direction for reductions from dairy and livestock operations and landfills. Accordingly, CARB adopted its Short-Lived Climate Pollutant Reduction Strategy in March 2017. The Short-Lived Climate Pollutant Reduction Strategy establishes a framework for the statewide reduction of emissions of black carbon, CH₄, and fluorinated gases.

EO B-30-15

EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under EO S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050, as set forth in EO S-3-05. To facilitate achieving this goal, EO B-30-15 called for CARB to update the Scoping Plan to express the 2030 target in terms of MMT CO₂e. The executive order also called for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets.

SB 32 and AB 197

SB 32 and AB 197 (enacted in 2016) are companion bills. SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40% below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the senate and three members of the assembly, to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the legislature to the CARB Board as nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and requires CARB to identify specific information for GHG emissions reduction measures when updating the Scoping Plan.

EO B-55-18

EO B-55-18 (September 2018) establishes a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." This executive order directs CARB to "work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal."

Building Energy

Title 24, Part 6

Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically established building energy efficiency standards that are designed to ensure new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. These energy efficiency standards are reviewed every few years by the Building Standards Commission and the California Energy Commission (CEC) (and revised if necessary) (California Public Resources Code, Section 25402[b][1]). The regulations receive input from members of industry, as well as the public, with the goal of "reducing of wasteful, uneconomic, inefficient, or unnecessary consumption of energy" (California Public Resources Code, Section 25402). These regulations are scrutinized and analyzed for technological and economic feasibility (California Public Resources Code, Section 25402[d]) and cost effectiveness (California Public Resources Code, Sections 25402[b][2] and [b][3]). As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The 2019 Title 24 standards are the currently applicable building energy efficiency standards and became effective on January 1, 2020. The 2019 Title 24 building energy efficiency standards will further reduce energy used and associated GHG emissions compared to current standards. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy due to energy efficiency measures than those built to the 2016 standards; once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards will use approximately 53% less energy than those under the 2016 standards (CEC 2018). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018).

On August 11, 2021, CEC adopted the 2022 Energy Code. In December 2021, it was approved by the California Building Standards Commission for inclusion into the California Building Standards Code. The 2022 Energy Code encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and more. Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code.

Title 24, Part 11

In addition to CEC's efforts, in 2008 the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24), commonly referred to as California's Green Building Standards (CALGreen), establishes minimum mandatory standards and voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and state-owned buildings and schools and hospitals. The 2019 CALGreen standards are the current applicable standards. For nonresidential projects, some of the key mandatory CALGreen 2019 standards involve requirements related to bicycle parking, designated parking for clean air vehicles, EV charging stations, shade trees, water-conserving plumbing fixtures and fittings, outdoor potable water use in landscaped areas, recycled water supply systems, construction waste management, excavated soil and land clearing debris, and commissioning (24 CCR Part 11).

The CALGreen standards also include voluntary efficiency measures that are provided at two tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15% improvement in energy requirements, stricter water conservation, 65% diversion of construction and demolition waste, 10% recycled content in building materials, 20% permeable paving, 20% cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30% improvement in energy requirements, stricter water conservation, 80% diversion of construction and demolition waste, 15% recycled content in building materials, 30% permeable paving, 25% cement reduction, and cool/solar-reflective roofs.

Title 20

Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. CEC certifies an appliance based on a manufacturer's demonstration that the appliance meets the standards. New appliances regulated under Title 20 include refrigerators, refrigerator-freezers, and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwaters; clothes washers and dryers; cooking products; electric motors; low-voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems.

SB 1

SB 1 (August 2006, "Go Solar California" or "Million Solar Roofs") established a \$3 billion rebate program to support the goal of the state to install rooftop solar energy systems with a generation capacity of 3,000 megawatts through 2016. The goals included establishing solar energy systems as a viable mainstream option for both homes and businesses within 10 years of adoption and placing solar energy systems on 50% of new homes within 13 years of adoption.

AB 1470

This bill established the Solar Water Heating and Efficiency Act of 2007. The bill includes findings and declarations of the legislature relating to the promotion of solar water heating systems and other technologies that reduce natural gas demand.

Renewable Energy and Energy Procurement

SB 1078

SB 1078 (September 2002) established the Renewables Portfolio Standard program, which required an annual increase in renewable generation by the utilities equivalent to at least 1% of sales, with an aggregate goal of 20% by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20% of their power from renewable sources by 2010 (EO S-14-08 and S-21-09).

SB 1368

SB 1368 (September 2006) required CEC to develop and adopt regulations for GHG emission performance standards for the long-term procurement of electricity by local publicly owned utilities.

AB 1109

Enacted in 2007, AB 1109 required CEC to adopt minimum energy efficiency standards for general-purpose lighting to reduce electricity consumption by 50% for indoor residential lighting and 25% for indoor commercial lighting.

EO S-14-08

EO S-14-08 (November 2008) focused on the contribution of renewable energy sources to meet the electrical needs of California while reducing the GHG emissions from the electrical sector. This executive order required that all retail suppliers of electricity in California serve 33% of their load with renewable energy by 2020.

EO S-21-09 and SB X1-2

EO S-21-09 (September 2009) directed CARB to adopt a regulation consistent with the goal of EO S-14-08 by July 31, 2010. On September 23, 2010, CARB initially approved regulations to implement a Renewable Electricity Standard. However, this regulation was not finalized because of subsequent legislation (SB X1-2, Simitian, Statutes of 2011) signed by Governor Brown in April 2011.

SB X1-2 expanded the Renewables Portfolio Standard by establishing a renewable energy target of 20% of the total electricity sold to retail customers in California per year by December 31, 2013, and 33% by December 31, 2020, and in subsequent years. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation (30 megawatts or less), digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. SB X1-2 applies to all electricity retailers in the state including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators.

SB 350

SB 350 (October 2015, Clean Energy and Pollution Reduction Act) further expanded the Renewables Portfolio Standard by establishing a goal of 50% of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 included the goal to double the energy efficiency savings in electricity and natural gas final end uses (e.g., heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the California Public Utilities Commission (CPUC), in consultation with CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal. Regarding mobile sources, as one of its elements SB 350 establishes a statewide policy for widespread electrification of the transportation sector, recognizing that such electrification is required for achievement of the state's 2030 and 2050 reduction targets (refer to California Public Utilities Code, Section 740.12).

SB 100

SB 100 (2018) increased the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024; 52% by December 31, 2027; and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail

sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity resources not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Mobile Sources

CARB's Mobile Source Strategy

On May 16, 2016, CARB released the 2016 Mobile Source Strategy that demonstrates how the state can simultaneously meet air quality standards, achieve GHG emission reduction targets, decrease health risk from transportation emissions, and reduce petroleum consumption over the next 15 years. The actions contained in the 2016 Mobile Source Strategy will deliver broad environmental and public health benefits, as well as support much needed efforts to modernize and upgrade transportation infrastructure, enhance system-wide efficiency and mobility options, and promote clean economic growth in the mobile sector. The 2016 Mobile Source Strategy would also result in a 45% reduction in GHG emissions and a 50% reduction in the consumption of petroleum-based fuels (CARB 2016).

On October 28, 2021, CARB received and heard the 2020 Mobile Source Strategy, which continues and builds upon the foundation established by the 2016 Mobile Source Strategy. The 2020 Mobile Source Strategy, if implemented, would achieve a 76% reduction in GHG emissions from 2020 levels from mobile sources by 2045, as largely attributable to transitioning toward a zero-emissions fleet. Moving forward, CARB anticipates that the programs and concepts in the 2020 Mobile Source Strategy will be incorporated into other aspects of CARB's regulatory and planning frameworks.

State Vehicle Standards (AB 1493 and EO B-16-12)

AB 1493 (July 2002) was enacted in a response to the transportation sector accounting for more than half of California's CO₂ emissions. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by CARB to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. EO B-16-12 (March 2012) required that state entities under the governor's direction and control support and facilitate the rapid commercialization of ZEVs. It ordered CARB, CEC, CPUC, and other relevant agencies to work with the Plug-In Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to help achieve benchmark goals by 2015, 2020, and 2025. On a statewide basis, EO B-16-12 established a target reduction of GHG emissions from the transportation sector equaling 80% less than 1990 levels by 2050. This directive did not apply to vehicles that have special performance requirements necessary for the protection of the public safety and welfare. As explained under "Federal Vehicle Standards," EPA and NHTSA approved the SAFE Vehicles Rule Parts One and Two, which revoked California's authority to set its own GHG emissions standards and set ZEV mandates in California. Because the EPA rule is the subject of pending legal challenges and President Biden issued an executive order to review Part One and Part Two, this analysis used the best available information at this time, as set forth on CARB's EMFAC website (which is based on the EMFAC model that estimates official emissions inventories of on-road mobile sources in California) and assumed in the California Emissions Estimator Model.

Heavy Duty Diesel

CARB adopted the final Heavy Duty Truck and Bus Regulation, Title 13, Division 3, Chapter 1, Section 2025, on December 31, 2014, to reduce particulate matter and oxides of nitrogen (NO_x) emissions from heavy-duty diesel vehicles. The rule requires particulate matter filters be applied to newer heavier trucks and buses by January 1, 2012, with older vehicles required to comply by January 1, 2015. The rule requires nearly all diesel trucks and buses to be compliant with the 2010 model year engine requirement by January 1, 2023. CARB also adopted an Airborne Toxic Control Measure to limit idling of diesel-fueled commercial vehicles on December 12, 2013. This rule requires diesel-fueled vehicles with gross vehicle weights greater than 10,000 pounds to idle no more than 5 minutes at any location (13 CCR 2485).

EO S-1-07

EO S-1-07 (January 2007, implementing regulation adopted in April 2009) sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO₂e grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard was to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020 (17 CCR 95480 et seq.). The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered.

SB 375

SB 375 (September 2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 requires CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035 and to update those targets every 8 years. SB 375 requires each of the state's 18 regional metropolitan planning organizations (MPOs) to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP) that will achieve the GHG reduction targets set by CARB. If an MPO is unable to devise an SCS to achieve the GHG reduction target, the MPO must prepare an alternative planning strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to California Government Code, Section 65080(b)(2)(K), an SCS does not (1) regulate the use of land; (2) supersede the land use authority of cities and counties; or (3) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

In September 2010, CARB adopted the first SB 375 targets for the regional MPOs. The targets for the Southern California Association of Governments (SCAG) are an 8% reduction in emissions per capita by 2020 and a 13% reduction by 2035. Achieving these goals through adoption of an SCS is the responsibility of the MPOs. SCAG adopted its first RTP/SCS in April 2012. The plan quantified a 9% reduction by 2020 and a 16% reduction by 2035 (SCAG 2012). In June 2012, CARB accepted SCAG's quantification of GHG reductions and its determination that the SCS, if implemented, would achieve SCAG targets. On April 4, 2016, the SCAG Regional Council adopted the 2016 RTP/SCS, which builds on the progress made in the 2012 RTP/SCS. The updated RTP/SCS quantified an 8% reduction by 2020 and an 18% reduction by 2030 (SCAG 2016). In June 2016, CARB accepted SCAG's quantification of GHG reductions and its determination that the SCS, if implemented, would achieve SCAG targets. In September 2020, SCAG adopted its 2020 RTP/SCS and CARB accepted the 2020 RTP/SCS emission quantification in October 2020.

Advanced Clean Cars Program and Zero-Emissions Vehicle Program

The Advanced Clean Cars Program (January 2012) is a new emissions-control program for model years 2015–2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars. To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75% less smog-forming pollution than the average new car sold in 2015. To reduce GHG emissions, CARB, in conjunction with EPA and NHTSA, adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34% in 2025. The ZEV Program will act as the focused technology of the Advanced Clean Cars Program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in the 2018 to 2025 model years.

AB 1236

AB 1236 (October 2015) required a city, county, or city and county to approve an application for the installation of EV charging stations, as defined, through the issuance of specified permits, unless the city or county makes specified written findings based on substantial evidence in the record that the proposed installation would have a specific adverse impact on public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific adverse impact; the bill provided for appeal of that decision to the planning commission, as specified. AB 1236 provided that the implementation of consistent statewide standards to achieve the timely and cost-effective installation of EV charging stations is a matter of statewide concern and it required EV charging stations to meet specified standards. AB 1236 required a city, county, or city and county with a population of 200,000 or more residents to adopt an ordinance by September 30, 2016, that created an expedited and streamlined permitting process for EV charging stations, as specified. The bill also required a city, county, or city and county with a population of less than 200,000 residents to adopt this ordinance by September 30, 2017.

Small Offroad Engines

CARB approved a measure on December 9, 2021, that will require most newly manufactured small off-road engines such as those found in leaf blowers, lawn mowers, and other equipment be zero emission starting in 2024. Portable generators, including those in recreational vehicles, would be required to meet more stringent standards in 2024 and meet zero-emission standards starting in 2028.

Solid Waste

AB 939, AB 341, and AB 1826

In 1989, AB 939, known as the California Integrated Waste Management Act (California Public Resources Code, Sections 40000 et seq.), was passed because of the increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed of where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25% by 1995 and 50% by the year 2000.

AB 341 (Chapter 476, Statutes of 2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75% of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle conducted several general stakeholder workshops and several focused workshops, and in August 2015 published a discussion document titled AB 341 Report to the Legislature, which identifies five priority strategies that CalRecycle believes would assist the state in reaching the 75% goal by 2020, legislative and regulatory recommendations, and an evaluation of program effectiveness (CalRecycle 2015).

AB 1826 (Chapter 727, Statutes of 2014, effective 2016) requires businesses to recycle their organic waste (i.e., food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste) depending on the amount of waste they generate per week. This law also requires local jurisdictions across the state to implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units. The minimum threshold of organic waste generation by businesses decreases over time, which means an increasingly greater proportion of the commercial sector will be required to comply.

SB 1383

Beginning in 2022, SB 1383 requires every jurisdiction to provide organic waste collection services to all residents and businesses. Jurisdictions can select from a variety of organic waste collection services to match their unique communities and local infrastructure, while producing clean streams of organic feedstock that can be recycled into high-quality, marketable recycled products, including compost, renewable natural gas, electricity, and paper. Jurisdictions will educate all residents and businesses about collection requirements, including what materials to put in curbside bins. Education to residents and businesses may vary by jurisdiction and educational content may be provided electronically, through hardcopy materials, or through direct outreach.

Water

EO B-29-15

In response to the ongoing drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25% relative to water use in 2013. The term of the executive order extended through February 28, 2016, although many of the directives have since become permanent water-efficiency standards and requirements. EO B-29-15 includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

EO B-37-16

Issued May 2016, EO B-37-16 directed the State Water Resources Control Board (SWRCB) to adjust emergency water conservation regulations through the end of January 2017 to reflect differing water supply conditions across the state. SWRCB also developed a proposal to achieve a mandatory reduction

of potable urban water usage that builds off the mandatory 25% reduction called for in EO B-29-15. SWRCB and the California Department of Water Resources were to develop new, permanent water use targets that build on the existing state law requirements that the state achieve 20% reduction in urban water usage by 2020. EO B-37-16 also specifies that the SWRCB permanently prohibit water-wasting practices such as hosing off sidewalks, driveways, and other hardscapes; washing automobiles with hoses not equipped with a shut-off nozzle; using non-recirculated water in a fountain or other decorative water feature; watering lawns in a manner that causes runoff, or within 48 hours after measurable precipitation; and irrigating ornamental turf on public street medians.

Other State Actions

SB 97

SB 97 (August 2007) directed the Governor's Office of Planning and Research to develop guidelines under CEQA for the mitigation of GHG emissions. In 2008, the Office of Planning and Research issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents. The advisory indicated that the lead agency should identify and estimate a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities (OPR 2008). The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures necessary to reduce GHG emissions to a level that is less than significant. The California Natural Resources Agency (CNRA) adopted the CEQA Guidelines amendments in December 2009, and they became effective in March 2010.

Under the amended CEQA Guidelines, a lead agency has the discretion to determine whether to use a quantitative or qualitative analysis or apply performance standards to determine the significance of GHG emissions resulting from a particular project (14 CCR 15064.4[a]). The CEQA Guidelines require a lead agency to consider the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]). The CEQA Guidelines also allow a lead agency to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through the implementation of project features or off-site measures. The adopted amendments do not establish a GHG emission threshold, instead allowing a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts. CNRA also acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions (CNRA 2009a).

With respect to GHG emissions, the CEQA Guidelines state in Section 15064.4(a) that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions. The CEQA Guidelines note that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or other performance-based standards" (14 CCR 15064.4[a]). Section 15064.4(b) states that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment: (1) the extent to which a project may increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]).

EO S-13-08

EO S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. Therefore, the executive order directs state agencies to take specified actions to assess and plan for such impacts. The final 2009 California Climate Adaptation Strategy report was issued in December 2009 (CNRA 2009b), and an update, *Safeguarding California: Reducing Climate Risk*, followed in July 2014 (CNRA 2014). To assess the state's vulnerability, the report summarizes key climate change impacts to the state for the following areas: agriculture, biodiversity and habitat, emergency management, energy, forestry, ocean and coastal ecosystems and resources, public health, transportation, and water. Issuance of the *Safeguarding California: Implementation Action Plans* followed in March 2016 (CNRA 2016). In January 2018, CNRA released the *Safeguarding California Plan: 2018 Update*, which communicates current and needed actions that state government should take to build climate change resiliency (CNRA 2018). The draft 2021 California Climate Adaptation Strategy was released for public comment on October 18, 2021; the public comment period closed on November 17, 2021 (CNRA 2021).

Local

The local air pollution control district or air quality management district regulates GHG emissions at the local level. Each of these agencies is responsible for regulating stationary emission sources at industrial and commercial facilities within its respective geographic area, and for preparing the air quality management plans required under the Clean Air Act and the California Clean Air Act.

Pursuant to Article XII, Section 8 of the California Constitution, CPUC has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, O&M, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with CPUC. Although local governments do not have the power to regulate such activities, CPUC encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has considered relevant regional and county policies and issues in this environmental impact report (EIR).

The following local jurisdictions' plans were reviewed, and no specific goals or policies were identified that are relevant to ongoing O&M activities in the study area:

- City of Barstow
- City of California City
- City of Ridgecrest

Plans with relevant goals or policies are discussed in the subsections that follow "San Bernardino County."

Southern California Association of Governments

As noted previously, California's 18 MPOs have been tasked with creating SCSs in an effort to reduce the region's vehicle miles traveled in order to help meet AB 32 targets through integrated transportation, land use, housing, and environmental planning. Pursuant to SB 375, CARB set per capita GHG emissions reduction targets from passenger vehicles for each of the state's 18 MPOs. For SCAG, the state's initial mandated reductions were set at 8% by 2020 and 13% by 2035. In March 2018, CARB updated the SB 375 targets for SCAG to require 8% reduction by 2020 and a 19% reduction by 2035 in per capita passenger vehicle GHG emissions.

Pursuant to California Government Code Section 65080(b)(2)(B), the SCS must “set forth forecasted development pattern for the region which when integrated with the transportation network, and other transportation measures and policies, will reduce the GHG emissions from automobiles and light trucks to achieve the GHG reduction targets.” To that end, SCAG has developed Connect SoCal, the 2020–2045 RTP/SCS, which complies with CARB’s updated emissions reduction targets and meets the requirements of SB 375 by achieving per capita GHG emissions reductions relative to 2005 of 8% by 2020 and 19% by 2035 (SCAG 2020). In addition, the 2020–2045 RTP/SCS anticipates a 25.7% decrease in time spent in traffic delay per capita and a 5% decrease in daily miles driven per capita from 2016 to 2045. The 2020–2045 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals, and charts a path toward a more mobile, sustainable, and prosperous region by making connections between transportation networks, between planning strategies, and between the people whose collaboration can improve the quality of life for Southern Californians. Connect SoCal embodies a collective vision for the region’s future and was developed with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the Counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The following are the 2020–2045 RTP/SCS goals (SCAG 2020):

1. Encourage regional economic prosperity and global competitiveness.
2. Improve mobility, accessibility, reliability, and travel safety for people and goods.
3. Enhance the preservation, security, and resilience of the regional transportation system.
4. Increase person and goods movement and travel choices within the transportation system.
5. Reduce GHG emissions and improve air quality.
6. Support healthy and equitable communities.
7. Adapt to a changing climate and support an integrated regional development pattern and transportation network.
8. Leverage new transportation technologies and data-driven solutions that result in more efficient travel.
9. Encourage development of diverse housing types in areas that are supported by multiple transportation options.
10. Promote conservation of natural and agricultural lands and restoration of habitats.

On September 3, 2020, the Regional Council approved the 2020–2045 RTP/SCS in its entirety (SCAG 2020).

Kern Council of Governments

The 2018 RTP by the Kern Council of Governments (Kern COG) is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It has been developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between federal, state, regional, and local agencies. Included in the 2018 RTP is the SCS required by California’s Sustainable Communities and Climate Protection Act as provided in SB 375. CARB set Kern County GHG emissions reductions from passenger vehicles and light-duty trucks at 5% per capita by 2020 and 10% per capita by 2035, relative to 2005 emission levels. In addition, SB 375 provides for closer integration of the RTP/SCS with the Regional Housing Needs Allocation (RHNA), ensuring consistency between low-income housing need and transportation planning. Kern COG engaged in the RHNA process concurrently with the development of the 2018 RTP. This process required Kern COG to work with its member agencies to identify areas within the region that can

provide sufficient housing for all economic segments of the population and ensure that the state's housing goals are met.

Eastern Kern Air Pollution Control District

Air districts are primarily responsible for regulating stationary emission sources at industrial and commercial facilities within their respective geographic areas, as well as preparing the air quality plans that are required under the Clean Air Act and the California Clean Air Act. The Eastern Kern Air Pollution Control District (EKAPCD) stipulates rules and regulations with which all projects must comply. In addition, EKAPCD provides methodologies for analyzing a project's impacts under CEQA. EKAPCD adopted a document titled "Addendum to CEQA Guidelines Addressing GHG Emission Impacts for Stationary Source Projects When Serving as the Lead CEQA Agency." This addendum set forth a significance threshold of 25,000 tons per year of CO₂e for "determining the individual and cumulative significance of project specific GHG emissions on climate change when issuing permits for new stationary source projects" (EKAPCD 2012). The proposed project and the broader context of the whole of the action (the ongoing O&M activities as conditioned by the CDFW permits) do not qualify as a new stationary source, so this threshold is not applicable. The EKAPCD's CEQA Guidelines do not set forth numerical significance thresholds for GHG emissions (EKAPCD 1999).

Mojave Desert Air Quality Management District

The Mojave Desert Air Quality Management District (MDAQMD) adopted significance thresholds for GHGs in 2016, which are set forth in the latest version of the MDAQMD CEQA and Federal Conformity Guidelines. The guidelines state that any project where GHG emissions exceed 100,000 tons of CO₂e per year or 548,000 pounds of CO₂e per day will be considered significant. The document also states the following (MDAQMD 2020):

A significant project must incorporate mitigation sufficient to reduce its impact to a level that is not significant. A project that cannot be mitigated to a level that is not significant must incorporate all feasible mitigation. Note that the emission thresholds are given as a daily value and an annual value, so that multi-phased project (such as project with a construction phase and a separate operational phase) with phases shorter than one year can be compared to the daily value.

San Bernardino County

San Bernardino County Regional Greenhouse Gas Reduction Plan. The San Bernardino County Regional GHG Reduction Plan was prepared by the San Bernardino County Transportation Authority's (SBCTA's) predecessor, the San Bernardino Associated Governments (SANBAG).² The plan is intended to present goals identified by participating cities for reducing GHG emissions to levels they have individually selected. The plan includes an inventory of current GHG emissions, forecasts of 2020 and 2030 emissions, initiatives to reduce emissions, and baseline information for the development of city climate action plans.

San Bernardino County adopted a Regional GHG Reduction Plan in September 2011 that included statewide, San Bernardino County, and local community measures. The most recent update to the Regional GHG Reduction Plan occurred in March 2021 and updates goals through 2030. These measures target all sectors but primarily focus on the building energy and transportation sectors.

² In 2016, the SBCTA and SANBAG consolidated into one entity, now referred to as the SBCTA.

City of Victorville

City of Victorville Climate Action Plan. The City of Victorville Climate Action Plan presents the GHG inventories, identifies the effectiveness of California initiatives to reduce GHG emissions, and identifies local measures that were selected by the City of Victorville to reduce GHG emissions (2015). The plan builds on regional efforts, provides city-specific information, and identifies an implementation plan for GHG reduction measures. The climate action plan is considered a qualified GHG reduction plan through 2020 in accordance with CEQA Guidelines Section 15183.5 and can be tiered from for project analyses.

Town of Apple Valley

Town of Apple Valley Climate Action Plan. The Town of Apple Valley's Climate Action Plan includes general information about GHGs and climate change, as well as assumptions and data used to determine the 2005 inventory and baseline, the 2020 and 2030 forecasts under business-as-usual conditions, and the proposed reduction measures that will enable the town to achieve the targeted reduction level (Town of Apple Valley 2013). The plan was prepared using 2005 as the baseline and set a GHG emissions reduction target of 15% below 2005 levels by 2020 and 40% below 2005 levels by 2030. The climate action plan is not considered a qualified GHG reduction plan in accordance with CEQA Guidelines Section 15183.5 and cannot be tiered from for project analyses.

County of Kern

Kern County Communitywide Greenhouse Gas Emission Inventory. In 2011, Kern County developed a communitywide GHG emissions inventory for the base year of 2005 and forecasted year of 2020. The GHG emissions inventories were estimated for nine primary sectors (i.e., electricity production and consumption, residential/commercial/industrial combustion, transportation, fossil fuels industry, industrial processes, waste management, agriculture, forestry and land use, and other sources). The objective of the communitywide inventory is to identify the sources and quantities of GHG emissions to develop an emissions reduction strategy.

4.8.3 Existing Baseline Conditions

This section provides a description of the existing baseline conditions relative to GHG emissions in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. PG&E's gas pipeline system has been in place for more than 70 years. Impact data collected by PG&E from 2017 to September 2021 regarding temporary and permanent disturbance impacts caused by O&M activities provides important detail about the environmental baseline conditions for purposes of CEQA (refer to Section 1.1, Proposed Project and Environmental Review). The existing baseline condition from 2017 to 2021, which includes PG&E's past and ongoing O&M activities, is the benchmark used in the Section 4.8.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

GHG Emission Sources

CO₂, CH₄, N₂O, SF₆, HFCs, and PFCs are all GHGs that contribute to global climate change. Emissions of CO₂ occur largely from combustion of fossil fuels. The major categories of fossil fuel combustion sources

can be broken into the following five sectors—residential, commercial, industrial, transportation, and electricity generation. GHG emissions (e.g., CH₄ and N₂O, which occur in smaller quantities) are also tracked by state inventories.

Per the EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2018 (EPA 2020), total U.S. GHG emissions were approximately 6,676.6 MMT CO₂e in 2018 (EPA 2020). The primary GHG emitted by human activities in the United States was CO₂, which represented approximately 81.3% of total GHG emissions (5,428.1 MMT CO₂e). The largest source of CO₂, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 92.8% of CO₂ emissions in 2018 (5,031.8 MMT CO₂e). Relative to 1990, gross U.S. GHG emissions in 2018 are higher by 3.7%, down from a high of 15.2% above 1990 levels in 2007. GHG emissions decreased from 2017 to 2018 by 2.9% (188.4 MMT CO₂e) and overall, net emissions in 2018 were 10.2% below 2005 levels (EPA 2020).

According to California’s 2000–2018 GHG emissions inventory (2020 edition), California emitted 425 MMT CO₂e in 2018, including emissions resulting from out-of-state electrical generation (CARB 2020a). The sources of GHG emissions in California include transportation, industry, electric power production from both in-state and out-of-state sources, residential and commercial activities, agriculture, high GWP substances, and recycling and waste. The California GHG emission source categories and their relative contributions in 2018 are presented in Table 4.8-1.

Table 4.8-1. GHG Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO ₂ e)	Percentage of Total ^a
Transportation	169.50	40%
Industrial	89.18	21%
Electric power ^b	63.11	15%
Agriculture	32.57	8%
Residential	25.74	6%
Commercial	13.46	4%
High GWP substances	20.46	5%
Recycling and waste	9.09	2%
Total	425.28	100%

Source: CARB 2020a.

Notes: GHG = greenhouse gas; MMT CO₂e = million metric tons of carbon dioxide equivalent; GWP = global warming potential. Emissions reflect the 2018 California GHG inventory.

^a Percentage of total has been rounded; total may not sum precisely due to rounding.

^b Includes emissions associated with imported electricity, which account for 24.57 MMT CO₂e annually.

Between 2000 and 2018, per capita GHG emissions in California have dropped from a peak of 14.0 MT per person in 2001 to 10.7 MT per person in 2018, representing a 24% decrease (CARB 2020a). In 2016, statewide GHG emissions dropped below the 2020 GHG Limit of 431 MMT CO₂e and have remained below the limit since that time (CARB 2020a).

Table 4.8-2 presents the GHG inventories prepared for the jurisdictions in the study area. Because PG&E has historically conducted O&M activities in the study area, these GHG emissions are captured in the various jurisdictions and in CARB’s planning activities.

Table 4.8-2. GHG Emissions Sources in the Study Area

Jurisdiction	Year	GHG Inventory (MT CO ₂ e)	2020 GHG Forecast (MT CO ₂ e)
San Bernardino County	2016	2,873,469	—
San Bernardino County	2008	17,487,636	19,988,054
City of Victorville	2008	871,976	1,193,933
Town of Apple Valley	2016	532,765	410,718
County of Kern	2005	27,045,617	27,272,709

Source: CARB 2020a.

Notes: GHG = greenhouse gas; MT CO₂e = metric tons of carbon dioxide equivalent.

The California Climate Action Registry offers protocols to facilitate the preparation of inventories of GHG emissions. The registry is a non-profit public corporation that records GHG emissions inventories, which are voluntarily reported by California entities. California is responsible for approximately 500 MMT CO₂e, or more than 1% of the approximately 49,000 MMT CO₂e emitted globally.

Under AB 32's annual reporting requirements, PG&E reports GHG emissions, including emissions from electric generation facilities, natural gas compressor stations, natural gas supplied to customers, and the fugitive emissions from its natural gas distribution system and compressor stations to CARB. PG&E's historical reported emissions from natural gas releases associated with regular O&M of the gas distribution system is provided in Table 4.8-3.

Table 4.8-3. Fugitive GHG Emissions from PG&E's Gas Distribution System

Year	CO ₂ e Emissions (MT per Year)
2011	224,298
2012	222,995
2013	213,858
2014	750,223
2015	676,458
2016	605,690
2017	630,249
2018	497,299
2019	496,789

Source: CARB 2020b.

Notes: GHG = greenhouse gas; PG&E = Pacific Gas and Electric Company; CO₂e = carbon dioxide equivalent; MT = metric tons.

4.8.4 Impact Analysis

4.8.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of GHG emissions impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For the purposes of this EIR, GHG emissions impacts would be significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. There are currently no established thresholds for assessing whether the GHG emissions of a project, such as the proposed project, would be considered a cumulatively considerable contribution to global climate change; however, all reasonable efforts should be made to minimize a project's contribution to global climate change. In addition, while GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008), GHG emissions impacts must also be evaluated at a project level under CEQA.

The CEQA Guidelines do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009a). The State of California has not adopted emission-based thresholds for GHG emissions under CEQA. The Governor's Office of Planning and Research's Technical Advisory, titled "Discussion Draft CEQA and Climate Change Advisory," states the following (OPR 2018):

[N]either the CEQA statute nor the CEQA Guidelines prescribe thresholds of significance or particular methodologies for performing an impact analysis. This is left to lead agency judgment and discretion, based upon factual data and guidance from regulatory agencies and other sources where available and applicable. Even in the absence of clearly defined thresholds for GHG emissions, such emissions must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact.

Furthermore, the advisory document indicates that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice." Section 15064.7(c) of the CEQA Guidelines specifies that "when adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence."

As described in Section 4.8.2, Applicable Regulations, Plans, and Policies, MDAQMD and EKAPCD have established GHG significance thresholds that are relevant to the proposed project and continuing O&M activities as conditioned by the permits. As a result, the emissions from O&M activities will be compared to the significance thresholds from MDAQMD and EKAPCD, as summarized in Table 4.8-4.

Table 4.8-4. Thresholds of Significance

Threshold Type	Value (CO ₂ e)
MDAQMD	
Annual	100,000 tons per year
Daily	548,000 pounds per day
EKAPCD	
Annual	25,000 tons per year

Sources: MDAQMD 2020; EKAPCD 2012.

Notes: CO₂e = carbon dioxide equivalent; MDAQMD = Mojave Desert Air Quality Management District; EKAPCD = Eastern Kern Air Pollution Control District.

4.8.4.2 Applicable Measures

Best Management Practices

As part of its standard practice and as part of its Air Quality Program, PG&E will continue to incorporate BMPs from Section 4.3, Air Quality, into its ongoing O&M activities to avoid or minimize the potential for adverse GHG impacts to the extent feasible. The BMPs, where applicable, are included in the impact discussion in Section 4.8.4.3.

Refer to Section 4.3.4.2 and Section 2.5, Applicable Measures, of the EIR for the full text of Air Quality BMPs.

4.8.4.3 Impact Discussion

In addition to PG&E's Air Quality Program and the air quality BMPs listed in Section 4.3.4.2, PG&E is committed to decreasing its GHG emissions and has instituted several operational changes in an effort to decrease the organization's carbon footprint. In addition to complying with mandatory GHG inventory reporting requirements by CARB and EPA, PG&E voluntarily reports a more comprehensive emissions inventory to The Climate Registry, a nonprofit organization that assists organizations in reporting emissions in order to manage and reduce them. PG&E has committed to a 55% renewable energy target by the year 2031 and has been working to reduce GHG emissions from its vehicle fleet by deploying alternative-fuel vehicles, including hybrid-electric bucket trucks and compressed natural gas vehicles. PG&E is continuing to invest in new vehicles and technologies that further reduce GHG emissions from its vehicle fleet. Some of these efforts include the deployment of bucket trucks equipped with electric power take-off, which allows crews to operate the trucks without idling the engines, and installing EV chargers at PG&E facilities to promote the adoption of electric vehicles by employees.

Impact GHG-1 **Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2, Project Description. As discussed in Section 4.8.3, Existing Baseline

Conditions, PG&E reports GHG emissions, including emissions from electric generation facilities, natural gas compressor stations, natural gas supplied to customers, and the fugitive emissions from its natural gas distribution system and compressor stations to CARB annually in accordance with AB 32. PG&E's historical reported emissions from natural gas releases associated with regular O&M of the gas distribution system are provided in Table 4.8-3. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

As described in Chapter 2, PG&E operates and maintains gas pipelines, compressor stations, associated gas transmission pipelines, and their related equipment and facilities in the study area. O&M activities have generated and will continue to generate a minor amount of GHG emissions from vehicles and/or equipment used to inspect and maintain the facilities. GHG emissions for O&M activities were calculated using the same approach as criteria air pollutant emissions, as described in Section 4.3. Typical O&M activities have required and will continue to require limited construction equipment and generally last only a few days at a time at any location. In addition, O&M activities have included and will continue to include installation of aboveground facilities (e.g., pig launcher/receiver facilities, electronic test system stations and cathodic test stations, and thermoelectric generators). Because PG&E has historically conducted O&M activities in the study area, these GHG emissions have also been captured in the CARB California GHG Emissions Inventory and have already been included in various planning activities.

Based on existing baseline conditions, during certain O&M activities that require the pipelines to be cleared (i.e., hydrotesting, pipeline segment replacement, and valve replacement/automation), fugitive emissions of CH₄ and CO₂ result from the release of natural gas into the atmosphere. However, any such releases have been, can be, and will continue to be typically limited to sections of pipe located between adjacent valves. Natural gas releases required for these activities are expected to be short-term and infrequent and disperse quickly. PG&E aggressively strives to minimize the volume of gas being released from a gas transmission pipeline blowdown through the following methods:

- Reducing the gas pressure in the line through valving operations
- Drafting high-pressure gas into an adjacent or downstream segment of pipeline
- Isolating the pipeline
- Using portable compressors that pull gas from the isolated pipeline section and compress the gas into an adjacent section of pipeline prior to blowdowns

These practices reduce the volume of natural gas being released, thereby reducing the volume of CH₄ released into the atmosphere.

Based on existing practices, the estimated annual volume of natural gas released during blowdowns resulting from hydrotesting,³ pipeline segment replacement, and valve replacement/automation is shown in

³ While pig launcher installation could require that a pipeline segment undergo a blowdown, this activity would be concurrent with hydrostatic testing. Therefore, natural gas emissions resulting from blowdowns associated with pig launcher installation are captured by the blowdown emission estimate for hydrostatic testing provided in Table 4.8-5.

Table 4.8-5. The operational emissions also include on-road vehicles, off-road equipment, and the occasional use of helicopters. The annual natural gas release volumes resulting from blowdowns required for these activities are highly variable from year to year; some years, PG&E does not conduct any blowdowns. The upper limit of the blowdown ranges assumes that five 2-mile-long pipeline segments are replaced and one 10-mile-long pipeline segment undergoes hydrostatic testing in a year. The upper limit of the range provided for valve replacement/automation assumes that up to seven valve replacements occur annually and that valves are set 20 miles apart, resulting in seven 20-mile-long pipeline segments undergoing blowdowns annually. It is also assumed that the pressure of gas in the pipeline segments decreases to 100 pounds per square inch prior to the blowdown using either cross-compression or drafting. The total estimated annual GHG emissions in CO₂e resulting from blowdowns are 0 to 85,302 tons per year.

Table 4.8-5. Estimated Annual Operational GHG Emissions

Source	Emissions (Tons per Year)		
	CO ₂	CH ₄	CO ₂ e
MDAQMD			
Off-road equipment	4,395.40	0.70	4,410.30
Vehicles	1,278.32	0.21	1,282.65
Helicopters	1.90	0.10	3.80
Blowdowns	—	—	72,506.70
Total	5,675.62	1.01	78,203.45
<i>Threshold</i>	—	—	100,000
Threshold exceeded?	—	—	No
EKAPCD			
Off-road equipment	775.70	0.10	778.30
Vehicles	225.59	0.04	226.35
Helicopters	0.30	0.10	0.70
Blowdowns	—	—	12,795.30
Total	1,001.59	0.24	13,800.65
<i>Threshold</i>	—	—	25,000
Threshold exceeded?	—	—	No

Source: Appendix C.

Notes: CO₂ = carbon dioxide; CH₄ = methane; CO₂e = carbon dioxide equivalent; MDAQMD = Mojave Desert Air Quality Management District; EKAPCD = Eastern Kern Air Pollution Control District.

The total annual GHG emissions in CO₂e resulting from the project are estimated to be approximately 78,203 tons of CO₂e per year in the MDAQMD jurisdiction and 13,801 tons of CO₂e per year in the EKAPCD jurisdiction.⁴ This is most likely an overestimate of annual emissions, because in some years O&M activities would not require blowdowns.

All of PG&E's ongoing O&M activities with the potential to generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities

⁴ As discussed in Section 4.3 of this EIR, the California Emissions Estimator Model was used to generate maximum daily emissions for each O&M activity. These emissions were then multiplied by the anticipated duration and frequency of each O&M activity to project the annual estimated GHG emissions for PG&E's O&M activities in the study area.

under the CFGC would not change or otherwise affect these activities or their impacts to GHG. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR (Biological Resources, Impact Analysis), issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

PG&E's commitment to implementing standard practices and BMPs and complying with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. For example, PG&E's Air Quality Program includes incorporation of BMPs (refer to Section 4.3.4.2 of this EIR) to avoid and minimize air quality effects, including developing a carpooling program to minimize the number of single-occupant vehicle trips and thus total GHG emissions. The carpooling BMP includes developing a carpooling program for each O&M activity, dependent on the proximity of carpool facilities to the area, the geographical commute departure points of construction workers, and the extent to which carpooling would not adversely affect worker arrival time and the construction schedule for O&M activities.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with GHG emissions is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to the generation of GHG emissions; any related effects would be **less than significant**.

Impact GHG-2 Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.8.3, because PG&E has historically conducted O&M activities in the study area, GHG emissions due to the ongoing O&M activities are captured in the various climate planning documents prepared by CARB and the local agencies in San Bernardino and Kern Counties. Section 4.8.2 identifies and addresses each plan related to reducing GHG emissions that is applicable within the study area. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory

authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause a significant environmental impact due to a conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

AB 32, SB 32, and CARB Scoping Plan

The AB 32 Scoping Plan approved by CARB on December 12, 2008, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The AB 32 Scoping Plan identifies several state regulatory measures aimed at the identification and reduction of GHG emissions and recommends strategies for implementation at the statewide level to meet the goals of AB 32. It establishes an overall framework for the measures that would be adopted to reduce California's GHG emissions.

PG&E's ongoing O&M activities maintain and/or improve the infrastructure used in distribution of California's energy supply. O&M activities do not adversely affect California's ability to supply renewable energy, PG&E's ability to meet its Renewables Portfolio Standard obligations, or the ability of the counties in the study area to achieve any GHG reduction goals they may have. For these reasons, PG&E's O&M activities are consistent with the goals of the AB 32 Scoping Plan.

SB 32 (which includes the goal of reducing GHG emissions to 40% below 1990 levels by 2030) and EO S-3-05 (which includes the goal of reducing GHG emissions to 80% below 1990 levels by 2050) establish the state's long-term GHG emissions reduction framework. The CARB's 2017 Scoping Plan extends many of the AB 32 Scoping Plan policies, and PG&E's O&M activities do conflict with any of these strategies. Infrastructure maintenance and/or upgrades that occur as part of the O&M activities contribute to long-term improvements to the state's natural gas systems, thus enhancing climate resiliency and flexibility for adaptive management.

City of Victorville Climate Action Plan

This plan does not specifically address the utility sector; however, it does list goals that include the implementation of electric-powered construction equipment and reducing construction equipment idling. As standard practice and in accordance with the air quality BMPs, PG&E employs a fleet of clean construction and on-road equipment (including hybrid vehicles) throughout its service territory and minimizes unnecessary construction vehicle idling time.

San Bernardino County GHG Reduction Plan

This plan contains goals intended to reduce GHG emissions by reducing vehicle miles traveled, encouraging the use of alternate fuels, and regulating the idling of diesel-fueled vehicles. As standard practice and in accordance with the air quality BMPs, PG&E employs a fleet of clean vehicles, encourages carpooling to reduce vehicle miles traveled, and minimizes unnecessary construction vehicle idling time.

Kern County Communitywide GHG Emission Inventory Plan

This plan does not include any policies that apply to PG&E's O&M activities.

Town of Apple Valley Climate Action Plan

This plan does not have any policies that are applicable to PG&E's O&M activities.

SANBAG Regional GHG Reduction Plan

Similar to the City of Victorville's Climate Action Plan, this plan lists goals that include the implementation of electric-powered construction equipment and reducing construction equipment idling. As standard practice and in accordance with the air quality BMPs, PG&E employs a fleet of clean construction and on-road equipment (including hybrid vehicles) throughout its service territory and minimizes unnecessary construction vehicle idling time.

All of PG&E's ongoing O&M activities with the potential to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the GHG emissions will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to GHG. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if any exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

PG&E's commitment to implementing standard practices, BMPs, and to comply with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to conflicts with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. For example, PG&E's Air Quality Program includes incorporation of BMPs (refer to Section 4.3.4.2 of this EIR) that would minimize GHG emissions through minimizing unnecessary construction vehicle idling time, minimizing construction equipment exhaust by using low-emission or electric construction equipment, and encouraging use of natural gas-powered vehicles for passenger cars and light-duty trucks. In addition, as described above, PG&E is investing in new vehicles and technologies that further reduce GHG emissions from its vehicle fleet, including the deployment of bucket trucks equipped with electric power take-off, which allows crews to operate the trucks without idling the engines, and installing EV chargers at PG&E facilities to promote the adoption of electric vehicles by employees.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with GHG emissions is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to conflicts with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs; any related effects would be **less than significant**.

4.8.5 Cumulative Impacts

This impact assessment describes contribution of PG&E's O&M activities toward global climate change through GHG emissions that occur due to the O&M activities. Because the direct environmental effect of GHG emissions is to influence global climate change, GHG emissions are inherently a cumulative concern with a cumulatively global scope. No single project could, by itself, result in a substantial change in climate. Virtually all the cumulative projects would also contribute to global GHG concentrations due to the generation of short-term and/or long-term GHG emissions associated with the construction and operation of the projects. PG&E's O&M activities have emitted and will continue to emit GHGs that contribute to increased accumulation of GHGs from more than one project and many sources in the atmosphere that may result in global climate change. An individual project's GHG emissions typically would be very small in comparison to state or global GHG emissions. Due to the complex physical, chemical, and atmospheric mechanisms involved in global climate change and the nature of the issue, a project's GHG emissions and the resulting significance of potential impacts are assessed on a cumulative basis. A cumulative GHG impact in the study area could occur during construction of planned and proposed projects (refer to Table 3-2, Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area), as well as other projects located within the EKAPCD and MDAQMD. The thresholds developed by MDAQMD and EKAPCD consider the cumulative development and the ability for the air basin to meet the required emissions reductions. As shown in Section 4.8.4.3, O&M activities do not exceed the MDAQMD or EKAPCD significance thresholds.

The population growth and urbanization highlighted in the San Bernardino County and Kern County general plan projections would also contribute to increased use in fuel combustion and vehicle travel. However, the general plans contain goals, policies, and programs to moderate effects to GHG emissions. GHG analyses and thresholds are cumulative by nature, so if a project is less than significant under applicable thresholds of significance, the project does not contribute to cumulatively significant GHG impacts. As described in Section 4.8.4.3, Impact Discussion, PG&E's ongoing O&M activities have generated and will continue to generate GHG emissions that would not have a significant impact on the environment. The total annual GHG emissions in CO₂e resulting from PG&E's O&M activities are estimated to be approximately 78,203 tons of CO₂e per year in the MDAQMD jurisdiction and 13,801 tons of CO₂e per year in the EKAPCD jurisdiction, which does not exceed the thresholds in each jurisdiction. The O&M activities do not conflict with the applicable air quality management plans adopted for the purpose of reducing the emissions of GHG. Additionally, PG&E has incorporated and will continue to incorporate air quality BMPs into its ongoing O&M activities, which would contribute to GHG emission reductions. Lastly, over time GHG emissions will be reduced through use of lower-carbon fuels and efficiency improvements in equipment and vehicles.

Permanent cumulative impacts are not anticipated as a result of PG&E's ongoing O&M activities in combination with other planned and proposed projects and county general plan projections. The PG&E O&M activities continue to be ongoing, short term in any one location, and infrequent. As such, PG&E's ongoing O&M activities would not generate GHG emissions that would interfere with the implementation of GHG reduction goals for 2030 and 2050. Other cumulative projects in the region would also be required to follow the local district and city guidelines and are expected to implement similar emission control measures. Accordingly, the incremental contribution from PG&E's ongoing O&M activities to cumulative GHG emissions caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, the issuance of the permits would not result in cumulatively considerable impacts relative to GHG emissions.

4.8.6 Residual Impacts

PG&E's O&M activities have been ongoing and are a component of the existing baseline conditions in the study area. O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's commitment to implementing relevant air quality BMPs and complying with applicable GHG regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect on GHG emissions.

4.8.7 References

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4.9 Hazards and Hazardous Materials

4.9.1 Introduction

The proposed project for the purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) that would authorize take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGC). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section evaluates the environmental impacts on hazards and hazardous materials that may result directly or indirectly from CDFW's issuance of the ITP and the LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on hazards and hazardous materials that could result with continuing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the proposed project for purposes of CEQA). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this section.

Section 4.9.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have occurred and will continue to occur, specific to hazards and hazardous materials.

Section 4.9.3 provides a description of the existing baseline conditions for hazards and hazardous materials in the O&M activities area ("study area"). Specifically, this section provides a description relative to hazards and hazardous materials in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities, regardless of whether CDFW approves the requested permits. This existing baseline condition, which includes the ongoing activities already being implemented by PG&E relative to their past, present, and continued potential effects, is the benchmark used in the Section 4.9.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these environmental baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.9.4 provides an analysis of whether issuance of the requested permits (pursuant to the CFGC) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline conditions and a substantial or potentially substantial adverse effect related to hazards and hazardous materials. The section also identifies the significance criteria used for the impact analysis and specifies relevant applicant proposed measures (APMs) and best management practices (BMPs). The APMs and BMPs are those that PG&E has identified, currently incorporates into their ongoing O&M activities, and has committed to continue to incorporate to avoid or minimize impacts associated with their ongoing activities. Furthermore, this section discusses applicable regulatory authority or governing law that has applied and will continue to apply, specific to hazards and hazardous materials.

Section 4.9.5 provides an analysis of whether the project-related incremental change to the environmental baseline conditions would be cumulatively considerable and therefore significant.

Section 4.9.6 identifies the residual environmental impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.9.7 lists the references cited in this section.

During the scoping effort, no party identified any public concerns related to potential hazards and hazardous materials impacts.

The analysis included in this section is based on information that PG&E provided to CDFW, as well as relevant information gathered and considered by CDFW, with assistance from its environmental consultant.

4.9.2 Applicable Regulations, Plans, and Policies

The following subsections describe the regulations and regulatory agencies that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and CDFW analysis of whether CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would cause an incremental physical change to the existing environment and cause significant impacts to hazards and hazardous materials.

Federal

U.S. Department of Transportation

The U.S. Department of Transportation Office of Pipeline Safety was created under the Natural Gas Pipeline Safety Act of 1968 and continues to be the lead federal regulator of pipeline safety. The Natural Gas Pipeline Safety Act of 1968, as amended through March 2006 (49 USC, Chapter 601), specifies the minimum safety standards for designing, installing, constructing, initially inspecting, and initially testing a new natural gas pipeline facility. The standards include the characteristics of the material used in constructing a facility, design factors for specific locations, and public safety factors, particularly its ability to prevent and contain a natural gas spill. The design standards for specific locations reflect site-specific geological, topographical, seismic, and soil conditions.

Federal pipeline safety regulations that relate specifically to natural gas are codified in Title 49, Parts 190 through 192 of the Code of Federal Regulations. Title 49, Part 192 prescribes federal safety standards for transportation of natural gas by pipeline. One of the key pipeline design factors is the class location. Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation. The class location level is defined by the number of dwelling units, high-occupancy buildings, or open areas within 660 feet of approximately 1 continuous mile of the pipeline centerline. Based on this definition, natural gas pipelines are classified as one of the following four classes that correspond to the number of dwelling units, high-occupancy buildings, or open occupied areas:

- A Class 1 location has 10 or fewer dwelling units per mile intended for human occupancy.
- A Class 2 location has between 11 and 46 dwelling units per mile intended for human occupancy.

- A Class 3 location has one of the following characteristics:
 - It has 46 or more dwelling units per mile intended for human occupancy.
 - It is located within 100 yards of either a building (e.g., a school, restaurant, or other business) or a small, well-defined outside area (e.g., a playground, recreation area, outdoor theater, or other place of public assembly) that is occupied by 20 or more people on at least 5 days a week for 10 weeks in any 12-month period. The days and weeks need not be consecutive.
- A Class 4 location is in any class location unit where buildings with four or more stories aboveground are prevalent.

In 2002, Congress passed an act to strengthen the nation's pipeline safety laws. The Pipeline Safety Improvement Act of 2002 requires gas transmission operators to develop and follow a written integrity management program to address risks on each covered transmission pipeline segment within high-consequence areas (HCAs). HCAs may be defined by one of two methods. In the first method (i.e., Method 1), an HCA includes the following:

- Current Class 3 and 4 locations
- Any area in Class 1 or 2 locations where the potential impact radius is greater than 660 feet and there are 20 or more buildings intended for human occupancy within the potential impact radius
- Any area in Class 1 or 2 locations where the potential impact radius includes an identified site¹

In the second method (i.e., Method 2), an HCA includes any area within a potential impact radius that contains 20 or more buildings intended for human occupancy, or an identified site.

Federal and state regulations require operators of gas pipelines in HCAs to conduct a risk analysis and implement integrity management programs. Integrity management programs include measures designed to protect HCAs and enhance public safety from pipeline failure. These measures include the installation of low-pressure alarms, emergency flow-restricting devices, automatic safety shut-off valves, and computerized monitoring and leak detection systems. The integrity management programs continually assess and evaluate pipeline safety, as well as identifying and incorporating newly populated areas. The pipeline integrity management rule requires an assessment of HCAs at least every 7 years. Integrity assessments are also required for moderate-consequence areas (MCAs). These assessments provide information to operators about the conditions of their pipelines and provide an elevated level of safety for the populations in MCAs while continuing to allow operators to prioritize the safety of HCAs. MCAs are defined as follows:

- An onshore area that is within a potential impact circle, containing one of the following:
 - Five or more buildings intended for human occupancy
 - Any portion of the paved surface, including shoulders, of a designated interstate, other freeway, or expressway, as well as any other principal arterial roadway with four or more lanes

In 2011, Congress passed the Pipeline Safety, Regulatory Uncertainty, and Job Creation Act to amend Title 49 of the Code of Federal Regulations. The purpose of this legislation was to enhance the safety, environmental protection, and reliability associated with the transportation of energy products by pipeline.

¹ An *identified site* is an outside area or open structure that is occupied by 20 or more people for at least 50 days in any 12-month period or a facility that is occupied by people who are confined, are of impaired mobility, or would be difficult to evacuate.

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) maintains a list of materials considered to be hazardous to the environment or to human health. Those materials are categorized as follows:

- **F-List:** Wastes from the F-List are published under Title 40, Section 261.31 of the Code of Federal Regulations. They include non-specific source wastes that are common in manufacturing and industrial processes.
- **K-List:** K-List wastes are published under Title 40, Section 261.32 of the Code of Federal Regulations. They include source-specific wastes from particular industries, including pesticide manufacturing and petroleum refining.
- **P-List and U-List:** Wastes from the P-List and U-List are published under Title 40, Section 261.33 of the Code of Federal Regulations. They include discarded commercial chemical products in an unused form.

Waste that has not been previously listed may still be considered hazardous if it exhibits one or more of the following characteristics: ignitability, corrosivity, reactivity, or toxicity (40 CFR, Part 261, Subpart C). Information regarding the hazard classification of natural gas is available in Title 49, Part 172 of the Code of Federal Regulations.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) of 1976 established a program administered by EPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. EPA implements this law through Title 42, Subtitle C, Section 6921 et seq. of the U.S. Code and its implementing regulations (40 CFR, Part 260 et seq.). The generation, transportation, treatment, storage, and disposal of hazardous waste is regulated through Subtitle C of RCRA, which establishes a “cradle-to-grave” approach to hazardous waste management. All states are subject to Subtitle C with regard to hazardous waste generation. RCRA also specifies the quantities of wastes that are regulated.

Comprehensive Environmental Response, Compensation, and Liability Act and Superfund Amendments and Reauthorization Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA)—together with their implementing regulations—govern the use, planning, reporting, cleanup, and notification of hazardous materials and hazardous material releases into the environment. These statutes are codified in Title 40, Parts 239 through 282 of the Code of Federal Regulations, and the regulations are defined in Title 40, Parts 302 through 355.

Annual reporting requirements for hazardous materials released into the environment—including both routine discharges and spill releases—are provided in Title 42, Section 11023 and Title 40, Section 372.30 of the U.S. Code. In addition, Title III of SARA (identified as the Emergency Planning and Community Right-To-Know Act of 1986) requires that all states develop and implement local chemical emergency preparedness programs and make available information pertaining to hazardous materials used at facilities within local communities.

Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) of 1976 provides EPA with authority to require reporting, record-keeping, testing requirements, and restrictions relating to chemical substances and/or mixtures. The regulations set forth by the TSCA address the production, importation, use, and disposal of specific chemicals including polychlorinated biphenyls (PCBs), asbestos, radon, and lead-based paint. The TSCA also requires the EPA to maintain the TSCA Inventory, which includes a current list of approximately 85,000 chemical substances that are manufactured or processed in the United States for uses under the TSCA.

Clean Water Act and Clean Air Act

The Clean Water Act provides measures governing the accidental release of hazardous materials to surface waters, and the Clean Air Act provides measures aimed at preventing the accidental release of hazardous materials into the atmosphere. Spill prevention control and countermeasure plan requirements were developed as part of the Clean Water Act regulations. Spill Prevention Control and Countermeasure Plan requirements are provided in Title 40, Part 112 (Oil Spill Prevention) of the Code of Federal Regulations. Regulations for implementing the Clean Air Act and governing hazardous material emissions are provided in Title 40, Part 68.

Occupational Safety and Health Act

The hazardous materials regulations of the Occupational Safety and Health Act govern worker safety, with separate standards developed for construction and industrial workers. Generally, Title 29, Part 1926 of the Code of Federal Regulations governs construction worker safety, whereas Title 29, Part 1910 applies to industrial workers.

Hazardous Materials Transportation Act

U.S. Department of Transportation regulations govern the transport of hazardous materials and wastes through implementation of the Hazardous Materials Transportation Act. The Hazardous Materials Transportation Act contains requirements for hazardous material shipments and packaging, as well as guidelines for marking, manifesting, labeling, packaging, placarding, and spill reporting. Specific regulations dealing with hazardous materials are covered in the Code of Federal Regulations in the following locations:

- Title 49, Section 173.50 et seq.
- Title 49, Section 173.56 (Hazardous Material Regulations, Shippers – General Requirements for Shipping and Packaging)
- Title 49, Part 397 (Transportation of Hazardous Materials; Driving and Parking Rules)

Code of Federal Regulations Title 14

All airports and navigable airspace not administered by the Department of Defense are under the jurisdiction of the Federal Aviation Administration (FAA). Title 14, Part 77 of the Code of Federal Regulations establishes the standards and required notification for objects affecting navigable airspace. In general, construction projects exceeding 200 feet in height—or those extending at a ratio greater than 100 to 1 (horizontal to vertical) from a public or military airport runway more than 3,200 feet long, out to a horizontal distance of 20,000 feet—are considered potential obstructions and require FAA notification. In addition, construction

projects extending at a ratio greater than 50 to 1 (horizontal to vertical) from a public or military airport runway measuring 3,200 feet or less, out to a horizontal distance of 10,000 feet, are considered potential obstructions and require FAA notification. Title 14, Part 133 of the Code of Federal Regulations also requires an operating plan to be developed in coordination with and approved by the local FAA Flight Standards District Office that has jurisdiction over when helicopter use would be required.

State

California Public Utilities Commission

Maintenance and repair of the pipeline system in the study area is required by California Public Utilities Commission (CPUC) General Order (GO) 112-F (CPUC 2016), which governs the design, construction, testing, operation, and maintenance of gas gathering and transmission and distribution piping systems in the State of California. GO 112-F includes requirements for leak testing, inspections of pipelines and associated appurtenances, and incident reporting. Specifications for electrical equipment associated with natural gas pipelines are also discussed within GO 112-F. These rules are supplements to the federal regulations and do not supersede federal pipeline safety regulations.

State regulations also provide specific safety requirements that are more stringent than the federal rules, and cover the following areas:

- Exemptions
- Hazardous pipeline safety technical standards
- Intrastate pipeline operators
- Leak detection and cathodic protection
- Periodic hydrostatic testing
- Hydrostatic test results
- Maps, records procedures, and inspections
- Contingency plans
- Notification of break, explosion, or fire
- Local enforcement
- Regulations for enforcement proceedings

In response to the 2010 natural gas pipeline incident in the City of San Bruno, California, Senate Bill (SB) 216 was approved by the governor on October 7, 2011. New pipeline safety regulations set forth in SB 216 were codified in California Public Utilities Code Section 957; the regulations include requiring the installation of automatic shut-off or remote-controlled valves on intrastate transmission lines if it is determined that the valves are necessary for the protection of the public. SB 216 also sets forth requirements for valve location plans and requires owners or operators of CPUC-regulated gas pipeline facilities to adopt guidelines for determining which automatic valve installations should be prioritized.

Natural Gas Pipeline Safety Act of 2011

Assembly Bill 1937 was approved by the governor on August 25, 2014, and was subsequently enacted in Section 955.5 of the California Public Utilities Code. This bill requires gas corporations to provide notification to schools or hospitals within 500 feet of proposed nonemergency construction or excavation of a gas pipeline. Notifications must be provided no less than 3 working days prior to the commencement of construction activities. The bill also requires that corporations maintain records detailing the date and time of notifications, as well as relevant administrative contact information. These records must be available for inspection for a minimum of 5 years from the date of notification. Each notification is required to include the name, address, telephone number, and emergency contact information of the gas corporation and the specific location of proposed construction activities. In addition, each hospital or school would be provided a telephone number to call for information on what to do in the event of a gas leak.

Division of Occupational Safety and Health

The California Occupational Safety and Health Act of 1970 provides measures that address the safety of construction and industrial workers; Title 8 of the California Code of Regulations implements most of these measures. The California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) is responsible for enforcing the occupational and public safety laws adopted by the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA). OSHA is responsible for the regulation of workplace hazards and hazardous materials at the federal level, while Cal/OSHA regulates hazards and hazardous materials at the state level.

California Environmental Protection Agency's Department of Toxic Substances Control

The California EPA (CalEPA) is charged with developing, implementing, and enforcing the state's environmental protection laws. CalEPA's Department of Toxic Substances Control (DTSC) regulates hazardous waste, cleans up existing contamination, and works to reduce the amount of hazardous waste produced in California.

California Hazardous Materials and Waste Codes

Within the State of California, the storage, handling, use, and/or disposal of hazardous materials is regulated through various sections of the California Health and Safety Code. Individual states are required by RCRA to develop their own programs for the regulation of hazardous waste discharges; however, such plans are required to meet or exceed RCRA requirements.

The California Hazardous Waste Control Law addresses the control of hazardous wastes for the state. The Hazardous Waste Control Law regulates generators of universal waste (e.g., batteries, mercury control devices, dental amalgams, aerosol cans, and lamps/cathode ray tubes) under California Health and Safety Code Section 25100 et seq., as well as hydrocarbon waste (e.g., oils, lubricants, and greases) that is not classified as hazardous waste under RCRA. DTSC is responsible for the administration and enforcement of the Hazardous Waste Control Law.

The Hazardous Materials Release Response Plans and Inventory Act (California Health and Safety Code Section 25500 et seq.) and regulations provided in Title 19, Section 2620 et seq. of the California Code of Regulations require local governments to be responsible for the regulation of facilities that store, handle, or use hazardous materials above threshold quantities. The threshold quantities for identified hazardous materials are as follows:

- 55 gallons for liquids
- 500 pounds for solids
- 200 cubic feet for compressed gases measured at standard temperature and pressure

Any facility storing such hazardous materials in excess of threshold quantities is required to prepare a Hazardous Materials Business Plan (HMBP) to identify its internal response requirements to accidental spills. The HMBP may identify emergency contacts, hazardous material inventory and quantities, control methods, emergency response measures, and employee training methods. HMBPs must be submitted to the appropriate local administering agency (e.g., the local fire department or public health agency). In the event of a spill from such a facility, both the local administrative agency and the California Governor's Office of Emergency Services must be notified. HMBPs also require an emergency response/contingency plan in the event of a release of a hazardous material, which may consist of employee training requirements, evacuation plans, and coordination with emergency response agencies.

California Health and Safety Code Section 25249.5 et seq., the Safe Drinking Water and Toxics Enforcement Act of 1986 (i.e., Proposition 65), is administered through the California Office of Environmental Health Hazard Assessment and regulates cancer-causing and reproduction-impairing chemicals. Under this act, users of such regulated chemicals are required to issue a public warning before a potential exposure to chemicals above a threshold quantity occurs (California Health and Safety Code Section 25249.6). In addition, this legislation is aimed at preventing discharges or releases of specified hazardous materials into a drinking water source. Chemicals of concern are periodically updated and listed in California Health and Safety Code Section 25249.5.

California Health and Safety Code Section 25404 et seq. includes the California Unified Hazardous Waste and Hazardous Material Management Regulatory Program Act, which establishes specific requirements for the local handling of hazardous waste by instituting a Certified Unified Program Agency. The responsibility for managing local hazardous wastes is delegated by CalEPA to the Certified Unified Program Agency through a Memorandum of Understanding.

Local

The following subsections describe local regulations regarding hazards and hazardous materials that are relevant to the O&M activities in the study area. Pursuant to Article XII, Section 8 of the California Constitution, CPUC has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, operation, maintenance, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with CPUC. Although local governments do not have the power to regulate such activities, CPUC encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has considered relevant regional and county policies and issues in this environmental impact report (EIR).

The following plans from local jurisdictions were reviewed and no specific goals or policies were identified that are relevant to ongoing O&M activities in the study area:

- City of Barstow 2015–2020 General Plan
- City of Victorville General Plan 2030
- City of Ridgecrest General Plan

Local plans with relevant goals or policies are discussed in the subsections that follow.

San Bernardino County

San Bernardino County 2020 Countywide Policy Plan. The Hazards Element of the 2020 Countywide Policy Plan (San Bernardino County 2020) provides goals and policies to protect life, property, and commerce from impacts associated with natural hazards, human-generated hazards, and increased risk due to climate change. The following goal and policies would be relevant to ongoing O&M activities in the study area:

Goal HZ-2: Human-Generated Hazards. People and the natural environment protected from exposure to hazardous materials, excessive noise, and other human-generated hazards.

Policy HZ-2.3: Safer alternatives. We minimize the use of hazardous materials by choosing and by encouraging others to use non-toxic alternatives that do not pose a threat to the environment.

Policy HZ-2.4: Truck routes for hazardous materials. We encourage designated truck routes for the transportation of hazardous materials through unincorporated areas and prohibit routes that pass through residential neighborhoods to the maximum extent feasible.

San Bernardino County Emergency Operations Plan. The San Bernardino County Emergency Operations Plan (EOP; San Bernardino County 2013) establishes the framework of the San Bernardino County Operational Area's emergency organization consisting of the county, cities, towns, special districts, schools, volunteer and private sector organizations, and state and federal agencies. This EOP conforms to current state and federal guidelines for emergency plans. It was created and is updated by the San Bernardino County Fire Department (SBCFD) Office of Emergency Services to ensure the most effective allocation of resources for the benefit and protection of the residences of San Bernardino County in times of emergency. This EOP has specific information on wildland fires as a hazard in the county; prevention and mitigation measures; and preparedness, response, and recovery activities.

Town of Apple Valley

Town of Apple Valley 2009 General Plan. The Hazardous and Toxic Materials Element of the Town of Apple Valley 2009 General Plan identifies factors that need to be considered to provide protection to residents and visitors from potentially harmful hazardous and toxic materials within the town. The Hazardous and Toxic Materials Element contains the following program that is relevant to ongoing O&M activities in the study area:

Program 1.J.1: The Town shall ensure that all major natural gas transmission lines and liquid fuel lines that run through the Town are clearly identified, that right-of-way and maintenance easements are maintained, and that all existing and proposed development is located a safe distance from these lines.

County of Kern

Kern County General Plan. The Safety Element within the Kern County General Plan (County of Kern 2004) contains the following goal that is relevant to ongoing O&M activities in the study area:

Goal 8: Reduce the public's exposure to fire, explosion, blowout, and other hazards associated with the accidental release of crude oil, natural gas, and hydrogen sulfide gas

Kern County Emergency Operations Plan. The Kern County EOP establishes an emergency management organization and provides for the integration and coordination of planning efforts of the county/operational area of its cities, special districts, and the region. It addresses the planned response to extraordinary emergency situations and identifies sources of external support that may need to be provided. The EOP discusses the hazards and impacts associated with wildland fires, along with procedural information in case of a wildland fire emergency.

City of California City

City of California City Final General Plan 2009–2028. The Safety Element of the California City Final General Plan 2009–2028 identifies flooding, geologic and seismic, fire, and overflight hazards in the city. The Safety Element contains the following implementation measure that is relevant to the ongoing O&M activities in study area (City of California City 2009):

S-10: The City shall minimize potential risk to residents from natural gas or other gas exposure by recommending available locations for proposed above-ground transfer and/or monitoring stations. The City shall recommend the location of these types of facilities stations within the Heavy Industrial land use designation as shown on General Plan Land Use Plan and consistent with the Airport Land Use Compatibility Plan.

4.9.3 Existing Baseline Conditions

This section provides a description of the existing baseline conditions relative to hazards and hazardous materials in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW approves the requested permits. PG&E's gas pipeline system has been in place for more than 70 years. Impact data collected by PG&E from 2017 to September 2021 regarding temporary and permanent disturbance impacts caused by PG&E's O&M activities provides important detail about the environmental baseline conditions for purposes of CEQA (refer to Section 1.1, Proposed Project and Environmental Review). The existing baseline condition from 2017 to 2021, which includes PG&E's past and ongoing O&M activities, is the benchmark used in the Section 4.9.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Existing Hazardous Sites

The study area encompasses a broad range of land uses that require the use of hazardous materials; these land uses include agriculture, petroleum and mineral extraction, industry and manufacturing, military, rail and highway corridors, and residential development. Hazardous materials associated with these land uses may include fuels, oils, pesticides, herbicides, fertilizers, other agricultural chemicals, lead, and epoxies.

Two comprehensive hazardous materials databases—the State Water Resources Control Board GeoTracker website (SWRCB 2021) and the DTSC EnviroStor database (DTSC 2021)—were used to identify hazardous materials sites in the study area. A review of these databases revealed approximately 28 hazardous sites within approximately 1 mile of the pipelines in the study area. In addition, the pipelines in the study area cross the Hinkley Compressor Station Groundwater Remediation Project site and the Topock Compressor Station Groundwater Remediation Project site. The site classifications and cleanup statuses associated with the hazardous sites in the study area are provided in Table 4.9-1.

Table 4.9-1. Hazardous Materials Sites in the Study Area

Hazardous Materials Site	Cleanup Status	Approximate Distance to Nearest Pipeline in the Study Area	Affected Media	Associated Risk	Reason
San Bernardino County					
Searles Valley Minerals – Argus Plant	Open – Site Assessment as of 2/2/07	Adjacent to pipeline associated with Line 311	Surface water contaminated with hydrocarbons	Moderate Risk	Based on the proximity of this site to pipelines in the study area, this site would pose a potential risk during ground-disturbing O&M activities that may be required in the vicinity of this site.
Searles Valley Minerals – Trona Plant	Case Closed as of 9/17/2013	Adjacent to pipeline associated with Line 311	Surface water contaminated with hydrocarbons	Low Risk	Based on the proximity of this site to pipelines in the study area and the current status of the case, this site would pose a low potential risk during ground-disturbing O&M activities that may be required in the vicinity of this site.
ACE Cogeneration Facility/Ash	Completed – Case Closed as of 1/13/17	0.1 miles east of pipeline associated with Line 311	Not specified	Low Risk	This is a closed landfill site and would not pose a substantial risk during potential O&M activities in the vicinity of this site.
Trona/Argus Class III Landfill	Open – Closed with Monitoring as of 1/1/65	0.6 miles west of pipeline associated with Line 311	TDS, chloride, and sulfate in groundwater	Low Risk	Based on the distance between this site and the study area, this site would not pose a significant risk during potential O&M activities. In addition, the analytical results presented in the most recent groundwater monitoring report indicated that this site is not currently contributing to the degradation of groundwater quality. Closed with monitoring as of January 1, 1965.
PG&E Hinkley Compressor Station Surface Impoundments	Open as of 1/1/65	0.3 miles north of Line 300 B	Oils, boron, and sodium in groundwater	Low Risk	Based on the distance between this site and pipelines in the study area, this site would not pose a significant risk during continuing O&M activities in the study area.
PG&E Waste Pit	Open – Inactive as of 11/15/2019	0.1 miles south of Line 300 A	Soil and groundwater contaminated with diesel and motor oil range total petroleum hydrocarbons	Low Risk	Based on the distance between this site and pipelines in the study area, this site would not pose a significant risk during potential O&M activities. In addition, the depth to groundwater in the vicinity of this site is more than 80 feet bgs. Therefore, groundwater would not be encountered during potential ground-disturbing O&M activities.

Table 4.9-1. Hazardous Materials Sites in the Study Area

Hazardous Materials Site	Cleanup Status	Approximate Distance to Nearest Pipeline in the Study Area	Affected Media	Associated Risk	Reason
PG&E Two Land Treatment Units	Open as of 1/1/65	0.2 miles southeast of Line 314	Not specified	Low Risk	Based on the distance between this site and pipelines in the study area, this site would not pose a significant risk during continuing O&M activities in the study area.
PG&E Hinkley Compressor Station Interim Plume Containment and Hexavalent Chromium Treatment	Open Inactive as of 3/10/2014	Adjacent to Lines 300 A and 300 B	Groundwater contaminated with hexavalent chromium	Low Risk	Groundwater is not anticipated to be encountered during ground-disturbing O&M activities. Therefore, this site would not pose a significant risk during continuing O&M activities in the study area.
Victorville Class III Landfill (Numerous Cases)	Two cases are Open – Verification monitoring as of 11/1/1998	0.7 miles southeast of Line 314	Groundwater contaminated with TDS, nitrate, sulfate, and tetrachloroethene	Low Risk	Based on the distance between this site and pipelines in the study area, this site would not pose a significant risk during continuing O&M activities in the study area.
Barstow Classification Yard	Case Closed as of 4/10/2018	0.7 miles south of Line 300 B	Groundwater contaminated with benzene and diesel	Low Risk	Based on the distance between this site and pipelines in the study area as well as the case status, this site would not pose a significant risk during continuing O&M activities in the study area.
Former Barstow Diesel Shops	Open – Assessment and Interim Remedial Action as of 4/8/10	0.7 miles south of Line 300 B	Groundwater contaminated with benzene, chromium, diesel, gasoline, nickel, chlorinated hydrocarbons, waste/motor/hydraulic oils, xylene	Low Risk	Based on the distance between this site and pipelines in the study area, this site would not pose a significant risk during continuing O&M activities in the study area.

Table 4.9-1. Hazardous Materials Sites in the Study Area

Hazardous Materials Site	Cleanup Status	Approximate Distance to Nearest Pipeline in the Study Area	Affected Media	Associated Risk	Reason
Former EZ Serve Texaco	Open – Site Assessment as of 11/20/2017	0.9 miles south of Line 300 B	Groundwater contaminated with gasoline	Low Risk	Based on the distance between this site and pipelines in the study area, this site would not pose a significant risk during continuing O&M activities in the study area.
Transmission World	Open Site Assessment as of 4/29/2019	0.9 miles south of Line 300 B	Groundwater contaminated with benzene and other hydrocarbons	Low Risk	Based on the distance between this site and pipelines in the study area, this site would pose a low risk during continuing O&M activities in the study area.
Barstow Perchlorate	Open – Assessment and interim remedial action as of 12/12/12	Less than 0.1 miles northeast of Line 300 B	Groundwater contaminated with perchlorate	Moderate Risk	According to available documentation, pipelines in the study area are located within the designated area of investigation for determining the extent of perchlorate contamination in groundwater. Historical data indicate that the depth to groundwater in the vicinity of this site ranges from 14 to 45 feet bgs. Therefore, it is not anticipated that groundwater would be encountered during continuing O&M activities in the study area. However, based on the presence of a subsurface contaminant plume and monitoring wells in the vicinity of the pipeline system, this site would pose a potential risk during ground-disturbing O&M activities that may be required in the vicinity of this site.
Barstow Nitrate Groundwater Cleanup	Open – Assessment and Interim Remedial Action as of 7/1/14	0.8 miles southwest of Line 300 B	Soil and groundwater contaminated with nitrate	Low Risk	Based on the distance between this site and pipelines in the study area, this site would not pose a significant risk during continuing O&M activities in the study area.
Marine Corps Logistics Base Barstow – Multiple Sites	Open and Inactive	0.1 miles southwest of Line 300 B	Soil and groundwater contaminated with benzene, toluene, xylene, and heating/fuel oils	Moderate Risk	Based on the proximity of this site to pipelines in the study area, this site would pose a potential risk during ground-disturbing O&M activities that may be required in the vicinity of the Marine Corps Logistics Base Barstow.

Table 4.9-1. Hazardous Materials Sites in the Study Area

Hazardous Materials Site	Cleanup Status	Approximate Distance to Nearest Pipeline in the Study Area	Affected Media	Associated Risk	Reason
Barstow–Daggett Airport – Multiple Sites	Open – Site Assessment as of 7/25/1995N	Less than 0.1 miles north of Line 300 B	Soil and/or groundwater contaminated with gasoline, volatile organic compounds, and heating/fuel oils	Moderate Risk	Based on the proximity of this site to pipelines in the study area, this site would pose a potential risk during ground-disturbing O&M activities that may be required in the vicinity of the Barstow–Daggett Airport.
Newberry Springs Plant	Open as of 11/9/95	Adjacent to the north of Line 300 B	Groundwater contaminated with TDS, chloride, and sodium	Low Risk	Based on the reported depth to groundwater at this site, which is between 40 and 70 feet bgs, potential ground-disturbing O&M activities in the vicinity of this site would not encounter groundwater. Therefore, this site would not pose a risk during continuing O&M activities in the study area.
Newberry Compressor Station	Open as of 10/3/05	0.9 miles south of Line 300 A	Groundwater contaminated with boron, fluoride, and TDS	Low Risk	Based on the distance between this site and pipelines in the study area, this site does not pose a significant risk during continuing O&M activities in the study area.
All American Pipeline Amboy	Case Closed as of 6/29/2020	0.4 miles south of a pipeline associated with Line 300 A	Groundwater contaminated with crude oil	Low Risk	Based on the existing contaminant plume, current case status, and the distance between this site and pipelines in the study area, this site does not pose a significant risk during continuing O&M activities in the study area.
PG&E Topock Compressor Station	Open	Adjacent to Lines 300 A and 300 B	Soil and groundwater contaminated with hexavalent chromium	Moderate Risk	The depth to groundwater in the vicinity of this site ranges from 5 feet bgs in floodplain monitoring wells to 170 feet bgs in upland alluvial terrace areas. Therefore, based on the proximity of this site to pipelines in the study area, this site would pose a potential risk during ground-disturbing O&M activities that may be required in the vicinity of this site.
Oriental Mill/Waterloo Mill	Inactive – Needs Evaluation as of 10/1/13	0.5 miles north of Line 300 B	Soil contaminated with arsenic, lead, and mercury	Low Risk	Based on the distance between this site and pipelines in the study area, this site does not pose a significant risk during continuing O&M activities in the study area.

Table 4.9-1. Hazardous Materials Sites in the Study Area

Hazardous Materials Site	Cleanup Status	Approximate Distance to Nearest Pipeline in the Study Area	Affected Media	Associated Risk	Reason
Daggett Sample Works	Inactive – Needs Evaluation as of 10/1/13	Adjacent to the north of Line 300 B	Soil contaminated with arsenic, lead, and mercury	Moderate Risk	Based on the proximity of this site to pipelines in the study area, this site would pose a potential risk during ground-disturbing O&M activities that may be required in the vicinity of this site.
Kern County					
Former Angels Truck Stop	Open – Site Assessment as of 1/31/2018	0.9 miles north of Line 300 A	Soil and groundwater contaminated with diesel	Low Risk	Based on the distance between this site and the study area, this site would not pose a significant risk during ongoing O&M activities in the study area.
Kramer Potash Plant	Inactive – Needs evaluation as of 7/1/05	0.1 miles north of Line 300 A	None specified	N/A	N/A
U.S. Adaptive Resource Center Outdoor Training	Inactive – Needs evaluation as of 7/1/05	0.3 miles east of Line 311	Not Specified	Low Risk	Based on the distance between this site and the study area, this site would not pose a significant risk during ongoing O&M activities in the study area.
New Murray Middle School	Removal Action completed and approved 9/20/2016	0.5 miles east of pipeline associated with Line 311	Soil contaminated with organochlorine pesticides, aldrin, and dieldrin	Low Risk	Based on the distance between this site and pipelines the study area, this site would not pose a significant risk during ongoing O&M activities in the study area.
China Lake Naval Air Weapons Station – Multiple Sites	Active as of 3/29/09	Adjacent to pipeline associated with Line 311	Groundwater contaminated with dioxin, explosives, and PCBs	Moderate Risk	Based on the proximity of this site to pipelines in the study area, this site would pose a potential risk during ground-disturbing O&M activities that may be required in the vicinity of this site.

Sources: DTSC 2021; SWRCB 2021.

Notes: O&M = operation and maintenance; TDS = total dissolved solids; PG&E = Pacific Gas and Electric Company; bgs = below ground surface; N/A = not applicable; PCB = polychlorinated biphenyl.

Additional hazardous sites identified in the vicinity of the study area were closed and/or do not pose a risk based on the distance from the study area. Hazardous sites listed with a “Completed – Case Closed” or a “No Further Action” status in the regulatory documentation include sites for which a closure letter or other formal closure decision has been issued. Based on the closure status, as well as the remediation and/or containment of hazardous materials on these sites, closed sites were not further evaluated, although some were included in Table 4.9-1 because of their proximity to the study area.

Fire Hazards

The California Department of Forestry and Fire Protection (CAL FIRE) has produced Fire Hazard Severity Zone maps to assess areas of fire hazard risk as part of the Fire and Resource Assessment Program (FRAP) database. As depicted in these maps, wildfire suppression and prevention responsibility is geographically divided by Federal, State, and Local Responsibility Areas (FRAs, SRAs, and LRAs, respectively) and then further categorized into Fire Hazard Severity Zones (FHSZs), which are ranked as Moderate, High, and Very High. FHSZs are determined by a region’s land cover, vegetation, terrain, climate, fire history, and several other factors that contribute to the fire environment. The maps are developed using a science-based and field-tested model that assigns a hazard score based on the factors that influence fire likelihood and fire behavior. The land underlying the study area consists of FRA and LRA primarily designated as Moderate FHSZ or non-Very High FHSZ. Section 4.17, Wildfire, provides further analysis regarding the fire hazard severity zones in the study area and within 0.25 miles of the study area.

Schools

San Bernardino County has 41 school districts and Kern County has 48. The following 11 public schools, preschools, daycare centers, and/or private educational facilities are located within 0.25 miles of the study area:

- Riverside Preparatory High School
- Riverside Preparatory Elementary School
- Mesquite Continuation High School
- Wind in the Willows Preschool
- Murray Middle School
- Balas Montessori
- Sprout Daycare
- Barstow Head Start/State Preschool
- Back to Nature Preparatory School
- Himmelrick Day Care Center
- Crestline Elementary School

Airports

Several airports are located in the vicinity of the study area. Approximately 12 airports and/or heliports are located within 2 miles of the study area, including the following:

- Mojave Air and Space Port
- Edwards Air Force Base
- Boron Airstrip
- Naval Air Weapons Station China Lake
- Depue Airport
- Palisades Ranch Airport
- Adelanto Airport
- Southern California Logistics Airport
- Osborne Airport
- Apple Valley Airport
- Barstow-Daggett Airport
- Ludlow Airport

Public and private airports in San Bernardino County and Kern County are summarized in Table 4.9-2.

Table 4.9-2. Public and Private Airports

County	Public Airports	Private Airports
San Bernardino	17	55
Kern	16	29

Source: Toll-Free Airline Numbers 2016.

Emergency Response and Evacuation Plans

The SBCFD Office of Emergency Services maintains the San Bernardino County EOP, which provides guidance for the county to respond to catastrophic natural, environmental, or conflict-related risks. The SBCFD Office of Emergency Services serves a population of more than 2 million people and more than 20,100 square miles. In addition, SBCFD participates in the Mountain Area Safety Taskforce, which is a coalition tasked with preventing catastrophic wildfires and consists of federal, state, and local government agencies; private companies; and volunteer organizations.

The Kern County Fire Department maintains an Emergency Operations Center to facilitate multi-agency and/or multi-jurisdiction disaster response coordination and communication (KCFD 2016). The Emergency Operations Center operates as the designated point of contact between jurisdictions within the county, the state, and the Kern Operational Area. Kern County maintains the Kern County EOP, which provides an overview of the Kern Operational Area, emergency procedures that should be implemented during an emergency or disaster, Emergency Operations Center procedures and functions, and specific contingency plans. Both the San Bernardino County EOP and the Kern County EOP are consistent with California's Standardized Emergency Management System and the National Incident Management System.

Major arterials in the vicinity of the study area include Interstate (I) 15, I-40, U.S. Route 395, U.S. Route 95, U.S. Historic Route 66, SR-58, SR-247, SR-178, SR-18, and SR-14. I-15 travels northeast-southwest, and I-40 travels east-west. Based on their accessibility, several of these roadways are generally identified as major evacuation routes for communities in the study area.

4.9.4 Impact Analysis

4.9.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of hazards and hazardous materials impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For the purposes of this EIR, hazards and hazardous materials impacts would be significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
2. 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.

3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
4. 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, create a significant hazard to the public or the environment.
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area.
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

4.9.4.2 Applicable Measures

As part of its standard practice, PG&E will continue to incorporate the following APMs and BMPs into their ongoing O&M activities to avoid or minimize the potential for adverse hazards and hazardous materials impacts to the extent feasible. The APMs and BMPs, where applicable, are included in the impact discussion in Section 4.9.4.3.

Applicant Proposed Measures

APM HAZ-1 Hazardous Materials Management Plan Preparation. Prior to the following O&M activities, PG&E would prepare a Hazardous Materials Management Plan (HMMP), which would be implemented to prevent the release of hazardous materials and hazardous waste:

- Installation of pig launcher/receiver facilities
- Valve/pipeline excavation and recoating
- Valve replacement/automation
- Hydrostatic testing
- Pipeline segment replacement

The plan would include the following requirements and procedures:

- Training requirements for workers in appropriate work practices, including spill prevention and response measures and identifying signs of potentially hazardous contamination (e.g., stained or discolored soil and odor)
- Requirements for containment of all hazardous materials at work sites and proper handling of all such materials
- Requirements for storing hazardous materials on pallets or in appropriate containers within designated fenced and secured areas protected from exposure to weather and further contamination

- Requirements for maintaining hazardous material spill kits at all active work sites and staging areas and thorough cleanup of all spills as soon as they occur
- Procedures for notifying agency personnel in the event of the discovery of contaminated soil and/or groundwater

In addition, PG&E would incorporate hydrology and water quality BMPs and the following APMs from Section 4.10, Hydrology and Water Quality, and Section 4.4, Biological Resources, into its ongoing O&M activities to avoid or minimize the potential for adverse hazards and hazardous materials impacts:

- APM HYD-1: Frac-Out Response
- APM BIO-4: Invasive Weeds

Refer to Section 4.4.4.2, Section 4.10.4.2, and Section 2.5, Applicable Measures, of this EIR for the full text of APM BIO-4, APM HYD-1, and the hydrology and water quality BMPs.

Best Management Practices

- PG&E personnel and/or licensed contractors are trained in the legal requirements for the storage, transportation, handling, and cleanup of hazardous materials prior to conducting O&M activities.
- PG&E would promote and distribute educational materials to O&M personnel, and may provide these materials on job sites, as necessary.
- PG&E would implement legal protocols for hazardous materials handling to avoid exposure of workers, the public, and the environment; and removing litter and construction materials from job sites after work is complete.

4.9.4.3 Impact Discussion

Impact HAZ-1 Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2, Project Description. As discussed in Section 4.9.3, Existing Baseline Conditions, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands. The majority of the study area is located within undeveloped, open areas. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

O&M activities have required, can require, and will continue to require the use of limited quantities of hazardous materials (e.g., lubricants, paints, oils, and solvents), which could affect the health and safety of O&M personnel, residents, and the environment if not handled appropriately. An inadvertent spill of one or more of these hazardous materials could potentially occur and adversely affect human health and/or the

environment. PG&E has transported, can transport, and will continue to transport hazardous wastes, or has contracted, can contract, or will continue to contract the transportation of hazardous wastes, in compliance with U.S. Department of Transportation, EPA, California Highway Patrol (CHP), and DTSC regulations. In addition, PG&E maintains several pipeline facilities that contain hazardous materials in the study area, including the Hinkley Compressor Station, Topock Compressor Station, and Ridgecrest Service Center. Hazardous materials stored at these facilities include gasoline, diesel fuel, pipe coatings, WD-40, and spray paint. Furthermore, during the construction processes that have occurred, can occur, and will continue to occur during O&M activities, compressed gas containers could be used for welding, cutting, and brazing. Containers of oxygen, nitrogen, argon, acetylene, hydrogen, and helium have been, can be, and will continue to be necessary for construction. In addition, epoxy coatings and related solvents have been used, can be used, and will continue to be used for coating newly welded sections of pipeline. Fuel used to power portable engines has been, can be, and will continue to be on site during construction, but it would be kept in PG&E's vehicles and not stored on site.

All of PG&E's ongoing O&M activities with the potential to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to hazards and hazardous materials. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR (Biological Resources – Impact Analysis), issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

PG&E's commitment to incorporating APM HAZ-1 (preparation of an HMMP), standard practices, and BMPs (outlined in Section 4.9.4.2) and complying with applicable regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to creating a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. For example, with incorporation of APM HAZ-1, PG&E would prepare an HMMP for specific O&M activities to prevent the release of hazardous materials into the environment. The HMMP would provide a list of management practices and activities designed to minimize the effect of inadvertent releases of hazardous materials and to ensure the proper handling, storage, and disposal of hazardous and non-hazardous waste during O&M activities. The types of measures and procedures that would be outlined in the HMMP include training requirements for O&M personnel, storage requirements for hazardous materials, spill prevention and control procedures, vehicle and equipment maintenance procedures, and notification procedures in the event of an accidental release. As part of PG&E's standard practice, PG&E personnel and/or licensed contractors are trained in the legal requirements for the storage,

transportation, handling, and cleanup of hazardous materials prior to conducting O&M activities. Furthermore, the use, storage, transport, and disposal of hazardous materials used for O&M activities would be completed in accordance with federal, state, and local laws, policies, and regulations.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with hazards and hazardous materials is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to creating a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials; any related effect would be **less than significant**.

Impact HAZ-2 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?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.9.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands. The majority of the study area is located within undeveloped, open areas. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would 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.

The storage, transport, and usage of hazardous materials associated with vehicles and equipment used for O&M activities is expected to have resulted in, and could continue to result in, inadvertent release or spill. However, the volume of hazardous materials used during O&M activities is relatively small. In the event of a minor spill or release of hazardous materials, O&M personnel are trained to adequately contain and clean up the spill in accordance with PG&E's incorporation of APM HAZ-1 and APM HYD-1, as well as with incorporation of hydrology and water quality BMPs that include measures such as keeping a spill kit at work areas, avoiding the storage of hazardous materials on or near work areas, fueling and servicing vehicles off site, and storing hazardous materials in secondary containment. Construction and O&M personnel are also trained to properly store, transport, and handle hazardous materials. As described in Section 4.9.2, Applicable Regulations, Plans, and Policies, Parts 190 through 192 of the Code of Federal Regulations provide federal safety standards and pipeline design requirements associated with four pipeline classes. These classes are assigned to pipelines based on their location, the number of dwellings and/or buildings in the vicinity of these pipelines, and whether the buildings are high occupancy. Part 190 includes a description of potential enforcement actions and a summary of the regulatory authority associated with routine pipeline inspections and investigations. Part 191 includes the procedural requirements for incident notifications and reports and safety-related condition reports. The minimum requirements for the maintenance of pipeline facilities are described in Title 49,

Part 192, Subpart M – Maintenance, and include guidelines for pipeline patrolling, pipeline markers, and pipeline signage. These regulations also include inspection requirements for pipelines, compressor stations, and compressor limiting stations. The O&M activities in the study area will ensure that the existing pipeline system will continue to operate in accordance with these regulations.

To ensure continued pipeline safety, O&M activities conducted include, but are not limited to, valve inspections, pipeline integrity management, internal pipeline inspections, valve replacement/automation, hydrostatic testing, and pipeline segment repair. Although these ongoing O&M activities would ultimately reduce the potential for pipeline rupture, excavation activities that have occurred, can occur, and will continue to occur within existing PG&E rights-of-way (ROWs) have the potential to damage existing pipelines and result in a leak or rupture. To avoid potential damage to existing underground infrastructure, PG&E contacts Underground Service Alert South (also known as DigAlert) prior to conducting excavation activities and uses potholing methods to determine the specific location of existing underground utilities in the study area. As described in Section 4.7, Geology and Soils, PG&E will continue to implement the procedures outlined in PG&E's most recently updated Gas Safety Plan. The 2021 Gas Safety Plan is provided in Appendix E to this EIR. As described in the 2021 Gas Safety Plan, PG&E would accelerate emergency response by continuing to monitor and control the flow of gas through the Gas Control Center and by implementing the Valve Automation Program. The Valve Automation Program allows PG&E to isolate gas transmission systems remotely in the event of a pipeline rupture.

As part of PG&E's Pipeline Safety Enhancement Plan and Valve Automation Program, PG&E replaced, automated, and upgraded gas shut-off valves across PG&E's natural gas transmission system between 2011 and 2014. PG&E installed 18 additional valves to further expand PG&E's ability to rapidly isolate and control pipelines through remote and automatic control valve technology. PG&E's Gas Control Center monitors and controls the flow of natural gas across PG&E's pipeline system 24 hours a day and 365 days a year. PG&E's Gas Transmission Control Center, Gas Distribution Control Center, and Gas Dispatch functions are co-located in a single facility, which enables PG&E to better communicate and provide superior emergency response coordination. Operators within these facilities use real-time gas system operational data to quickly and efficiently inform the decision-making process, such that abnormal situations can be easily identified.

All of PG&E's ongoing O&M activities with the potential to 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 will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to hazards and hazardous materials. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR (Biological Resources – Impact Analysis), issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the

permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not 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.

PG&E's commitment to implementing relevant APMs, BMPs, and standard practices and complying with applicable regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to reasonably foreseeable upset or accident conditions. For example, PG&E would prepare an HMMP for certain O&M activities in the study area (APM HAZ-1), incorporate APM HYD-1 (Frac-Out Response), implement relevant hydrology and water quality BMPs, and continue to comply with all applicable environmental and safety regulations. These regulations include CPUC GO 112-F and the federal pipeline safety regulations under Title 49, Subtitle B, Chapter 1, Subchapter D – Pipeline Safety, of the Code of Federal Regulations. Furthermore, in the event of a pipeline rupture, PG&E implements the measures in the most recent Gas Safety Plan.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with hazards and hazardous materials is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to creating 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; any related effect would be **less than significant**.

Impact HAZ-3 Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.9.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and is located within 0.25 miles of 11 schools. PG&E has been conducting O&M activities in the study area as they have in the past under baseline conditions and will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school.

Although 11 schools are located within 0.25 miles of the study area, O&M activities are not expected to require the use of large quantities of hazardous materials, and PG&E, to the extent practicable, does not store hazardous materials (e.g., paints, solvents, or epoxies) in work areas or staging areas. If the storage of hazardous materials is required at a work area, quantities are minimized, and all hazardous liquids and wastes are securely stored in secondary containment as appropriate. Hazardous materials that have been, can be, and will continue to be used during O&M activities include the following:

- ABC fire extinguisher
- Acetylene gas
- Air tool oil
- Ammonium hydroxide
- Antifreeze (ethylene glycol)
- Automatic transmission fluid
- Battery acid (in vehicles)
- Bottled oxygen
- Brake fluid
- Canned spray paint
- Chain lubricant (contains methylene chloride)
- Connector grease (penotox)
- Contact Cleaner 2000 (precision aerosol cleaner)
- Diesel de-icer
- Diesel fuel
- Diesel fuel additive
- Eyeglass cleaner (contains methylene chloride)
- Gasoline
- Gasoline treatment
- Hot stick cleaner (cloth treated with polydimethylsiloxane)
- Hydraulic fluid
- Insecticide (1,1,1-trichloroethene)
- Insulating oil (inhibited, non-polychlorinated biphenyl)
- Lubricating grease
- Mastic coating
- Methyl alcohol
- Motor oils
- Paint thinner
- Propane
- Puncture seal tire inflator
- Safety fuses
- Starter fluid
- Two-cycle oil (contains distillates and hydro-treated heavy paraffinic)
- WD-40
- ZEP (safety solvent)
- ZIP (1,1,1-trichloroethane)

All of PG&E's ongoing O&M activities with the potential to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to hazards and hazardous materials. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the

permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in emitting hazardous emissions or handling hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school.

PG&E's commitment to implementing relevant APMs, BMPs, and standard practices and complying with applicable regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to emitting hazardous emissions or handling hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school. For example, All waste would be properly disposed of in accordance with all federal, state, and local laws, policies, and regulations. In addition, PG&E's O&M personnel are trained to properly store, handle, transport, and dispose of hazardous materials. As part of PG&E's environmental awareness program, O&M personnel are provided with specific information on hazardous materials, such as the definitions of hazardous materials and the legal requirements for hazardous materials storage, transportation, handling, and cleanup. In addition, PG&E will continue to implement standard practices, including the promotion and distribution of educational materials to O&M personnel, and may provide these materials on job sites, as necessary. PG&E would also continue to incorporate spill prevention measures included as part of APM HAZ-1, APM HYD-1, and the hydrology and water quality BMPs. Additional standard practices include implementing legal protocols for hazardous materials handling to avoid exposure of workers, the public, and the environment, and removing litter and construction materials from job sites after work is complete.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with hazards and hazardous materials is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to emitting hazardous emissions or handling hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school; any related effect would be **less than significant**.

Impact HAZ-4 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?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.9.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and encompasses a broad range of land uses that require the use of hazardous materials; these land uses include agriculture, petroleum and mineral extraction, industry and manufacturing, military, rail and highway corridors, and residential development. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause a significant hazard to the public or the environment.

As shown in Table 4.9-1, approximately 28 hazardous sites are located within 1 mile of the pipelines in the study area, with a total of 12 sites identified within 0.1 miles. In addition, the pipelines in the study area are located in the vicinity of potential subsurface contaminants associated with the Hinkley Compressor Station Chromium Contamination Cleanup site and the Topock Compressor Station Environmental Investigation and Remediation Project site.

All of PG&E's ongoing O&M activities with the potential to cause a significant hazard to the public or the environment will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to hazards and hazardous materials. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in a significant hazard to the public or the environment.

PG&E's commitment to implementing relevant APMs, BMPs, and standard practices and complying with applicable regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to a significant hazard to the public or the environment. For example, PG&E prepares an HMMP (APM HAZ-1) and in accordance with federal, state, local laws, policies, and regulations, PG&E's O&M personnel are trained to identify and handle any suspect materials as part of standard protocols. In the event that hazardous materials are suspected, O&M personnel are trained regarding the isolation and notification requirements, and the protection of suspect soils until laboratory testing and overseeing agency coordination can confirm the presence or absence of harmful contaminants.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with hazards and hazardous materials is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to a significant hazard to the public or the environment; any related effect would be **less than significant**.

Impact HAZ-5 **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?**

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.9.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California. The majority of the study area is located within undeveloped, open areas. Also, as previously discussed, 12 airports and/or heliports are located within 2 miles of the study area. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause a safety hazard or excessive noise for people residing or working in the project area.

O&M activities requiring the replacement of pipeline facilities are primarily conducted underground and within existing PG&E ROWs and are generally completed within short time frames. O&M activities in the study area include the installation of aboveground facilities, such as pig launcher/receiver facilities, electronic test system stations, cathodic test stations, valves, fencing associated with the installation of deep-well anodes, and other support facilities. However, these facilities have low profiles, ranging from 4 to 7 feet in height. Boom trucks and cranes are the tallest equipment used during O&M activities. This equipment has been, can be, and will continue to be used to lift pipelines and pig launchers/receivers, as well as to install and/or dismantle hydrotesting equipment. The height of boom trucks and cranes varies based on the extension of the boom and/or jib. However, it is not anticipated that boom trucks or cranes extend beyond 50 feet when lifting pipeline materials. Therefore, boom trucks and cranes would not extend beyond a height (i.e., 200 feet above the ground surface) that would violate obstruction standards or require notification under the regulations provided in Title 14, Part 77 of the Code of Federal Regulations.

The Barstow–Daggett Airport and Naval Air Weapons Station China Lake are located adjacent to the existing pipeline system. However, new aboveground facilities have been installed, and will continue to be installed, primarily within or immediately adjacent to existing ROWs where pipeline facilities currently exist. Therefore, aboveground facilities that have been installed and will continue to be installed during O&M activities in the study area would not interfere with air traffic or result in safety hazards.

All of PG&E's ongoing O&M activities with the potential to cause a safety hazard or excessive noise for people residing or working in the project area will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to safety hazards or excessive noise. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely

unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in a safety hazard or excessive noise for people residing or working in the project area.

PG&E's commitment to implementing standard practices and complying with applicable regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to safety hazards or excessive noise for people residing or working in the project area. For example, prior to O&M activities occurring near an airport, in accordance with FAA requirements, PG&E confirms the applicability of FAA notification requirements during the screening process for each O&M activity. Furthermore, O&M activities are temporary and short term, and are also primarily located in undeveloped, open areas; therefore, excessive noise for people residing or working in the study area is expected to be minimal.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with safety hazards or excessive noise is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to a safety hazard or excessive noise for people residing or working in the project area; any related effect would be **less than significant**.

Impact HAZ-6 Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.9.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands. The majority of the study area is located within undeveloped, open areas. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

O&M activities occasionally have required, can require, and will continue to require lane closures; however, typically they do not require any temporary or permanent road closures.

All of PG&E's ongoing O&M activities with the potential to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to an emergency response plan or emergency evacuation plan. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

PG&E's commitment to implementing standard practices and complying with applicable regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to impairing implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan. For example, as part of its standard practice, when temporary lane closures are required, PG&E coordinates with local jurisdictional agencies to obtain the necessary encroachment permits and perform the work according to the relevant permit requirements. In addition, and in accordance with the encroachment permit conditions, PG&E notifies the local fire and police departments regarding potential lane closures and specifies the duration of the activity. Furthermore, encroachment permits generally include requirements for signs and/or flaggers to regulate traffic, cyclists, and pedestrians to maintain a safe transportation corridor. Also, in the event of a pipeline rupture, PG&E implements the emergency response procedures outlined in the most recent version of the Gas Safety Plan (Appendix E) during ongoing O&M activities in the study area. As described under Impact HAZ-2, PG&E will continue to monitor the pipeline system 24 hours a day and 365 days a year at the Gas Control Center. Gas control personnel primarily use supervisory control and data acquisition (SCADA) system data to monitor and control critical assets remotely. The SCADA systems alert gas control personnel with alarms, which may result in the immediate execution of a shutdown zone plan or the deployment of field personnel to the critical location. In the event of an alarm, PG&E notifies the appropriate 911 agencies and departments within PG&E so that emergency responders are informed and dispatched in a timely manner.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with safety hazards is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to impairing implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan; any related effect would be **less than significant**.

Impact HAZ-7 Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.9.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands. The majority of the study area is located within undeveloped, open areas. Most of the study area is on land designated as moderate FHSZ or non-very high FHSZ and consists of primarily flat desert landscape with limited vegetation (CAL FIRE 2012). PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would either directly or indirectly expose people or structures to significant wildfire risks, including loss, injury, or death. Also, refer to Section 4.17, Wildfire, for additional analysis related to wildfire impacts.

O&M activities that introduce potential sources of ignition to the study area, including vehicles, heavy equipment, hot work, and personnel on site, have contributed, can contribute, and will continue to contribute to the risk of fire in the study area. Additionally, excavation activities have had, can have, and will continue to have the potential to result in pipeline rupture and a subsequent leak of natural gas.

All of PG&E's ongoing O&M activities with the potential to expose people or structures to significant wildfire risks, including loss, injury, or death, will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to wildfire risk. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not expose people or structures to significant wildfire risks, including loss, injury, or death.

PG&E's commitment to implementing relevant APMs and standard practices and complying with applicable agency regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to expose people or structures to significant wildfire risks, including loss, injury, or death. For example, PG&E reviews their Utility Fire Potential Index Rating and Wildfire Risk Checklist daily and implements all other fire safety requirements outlined in Utility Standard TD-1464S. Safety practices include having vehicle and worksite fire suppression equipment on site, conducting vegetation clearance around work areas of high fire risk, and training personnel prior to starting work, among others. To reduce fire risk, additional measures at job sites are required when the Utility Fire Potential Index

Rating is higher than R3. The additional measures include establishing a Fire Watch to monitor for fire at the work site, evaluating weather conditions, and maintaining resources on site for fire suppression. In general, PG&E also conducts vegetation clearance once per year, including approximately 5 feet of vegetation clearance around station facilities. Moreover, PG&E would incorporate APM BIO-4, which prevents the spread of invasive weeds, into its ongoing O&M activities. In addition, PG&E's Public Safety Emergency Preparedness group regularly meets with all fire departments that respond to incidents within the study area. PG&E continues to strengthen its coordination with first responders to ensure that local governments and fire departments are prepared to respond to fires and emergencies. PG&E would also continue to notify emergency responders and respond to fires at the discretion of local fire departments during ongoing O&M activities in the study area. Furthermore, PG&E would implement requirements of the most recent version of the Gas Safety Plan (Appendix E) and OSHA fire safety standards (OSHA Standard 1910, Subpart L), and would conduct emergency response procedures accordingly during O&M activities.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with wildfire is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not expose people or structures to significant wildfire risks, including loss, injury, or death; any related effect would be **less than significant**.

4.9.5 Cumulative Impacts

The geographic scope of cumulative impacts with respect to hazards and hazardous materials is generally site specific, because unauthorized releases tend to be localized and occur at varying times such that they do not combine to become cumulatively considerable (refer Table 3-1, Geographic Scope of Cumulative Impacts and Method of Evaluation, as well as Table 4.9-1 for a list of known hazards sites within approximately 1 mile of the proposed project).

O&M activities are routine and ongoing under existing baseline conditions and most O&M activities would be temporary and would occur over a short duration. Similar to O&M activities, other cumulative projects would have to comply with applicable federal, state, and local laws and regulations concerning the transport, use, and storage of hazardous materials such that exposure risks from routine use, upset and accident conditions as well as exposures to schools are minimized to less-than-significant levels (refer to Table 3-2, Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area, of this EIR for a list of cumulative projects). The identification and management of hazardous materials unexpectedly encountered, airport hazards, fire protection, and interference with emergency plans also tend to be site specific. With incorporation of APM HAZ-1, APM HYD-1, standard practices, and hydrology and water quality BMPs into the ongoing O&M activities and adherence to existing regulatory requirements, it is expected that hazards and hazardous materials impacts would be localized, short term, and occurring sporadically throughout O&M activity implementation. Accordingly, the incremental contribution from ongoing O&M activities to cumulative hazards and hazardous materials impacts caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW approves the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to hazards and hazardous materials.

4.9.6 Residual Impacts

PG&E's O&M activities have been ongoing and are a component of the existing baseline conditions in the study area. The O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's commitment to implementing relevant APMs, BMPs, and standard practices provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect on hazards and hazardous materials.

4.9.7 References

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4.10 Hydrology and Water Quality

4.10.1 Introduction

The proposed project for purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) for take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGC). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section evaluates the environmental impacts on hydrology and water quality that may result directly or indirectly from CDFW's issuance of the ITP and the LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on hydrology and water quality that could result with continuing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the proposed project for purposes of CEQA). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this section.

Section 4.10.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have been occurring and will continue to occur, specific to hydrology and water quality.

Section 4.10.3 provides a description of the existing baseline conditions for hydrology and water quality in the O&M activities area ("study area"). Specifically, this section provides a description of the resources relative to hydrology and water quality in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. This existing baseline condition, which includes the ongoing activities already being implemented by PG&E relative to their past, present, and continued potential effect on these resources, is the benchmark used in the Section 4.10.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these existing baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.10.4 provides an analysis of whether issuance of the requested permits (pursuant to the CFGC) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline conditions and a substantial or potentially substantial adverse effect related to hydrology and water quality. The section also identifies the significance criteria used for the impact analysis and specifies applicant proposed measures (APMs) and best management practices (BMPs). The APMs and BMPs are those that PG&E has identified, currently incorporates into its ongoing O&M activities, and has committed to continue to incorporate to avoid or minimize impacts associated with its ongoing activities. Furthermore, where appropriate, potentially feasible biological resources mitigation measures to avoid or substantially lessen project-related effects are discussed

in this section, as well as any applicable regulatory authority or governing law that has applied and will continue to apply, specific to hydrology and water quality.

Section 4.10.5 provides an analysis of whether the project-related incremental change to the environmental baseline conditions is cumulatively considerable and therefore significant.

Section 4.10.6 identifies the residual environmental impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.10.7 lists the references cited in this section.

Scoping comments related to hydrology and water quality include concerns expressed by the Lahontan Regional Water Quality Control Board (RWQCB) and the San Bernardino County Department of Public Works (refer to Appendix B, Public Scoping, and Appendix B-4, NOP Comment Letters, of this environmental impact report [EIR]).

The analysis included in this section is based on information that PG&E provided to CDFW, as well as relevant information gathered and considered by CDFW, with assistance from its environmental consultant, including information from the California Department of Water Resources and the Federal Emergency Management Agency (FEMA).

4.10.2 Applicable Regulations, Plans, and Policies

The following subsections describe the regulations and regulatory agencies that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and CDFW's analysis of whether the proposed issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would cause an incremental physical change to the existing environment and cause significant impacts to hydrology or water quality.

Federal

Clean Water Act

The Clean Water Act (CWA) (33 USC 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of waters of the United States. The definition of waters of the United States includes the following:

- Waters currently or previously used for interstate or foreign commerce
- All other waters that, if degraded, could affect interstate or foreign commerce
- The territorial seas
- All navigable waters¹

¹ A water body qualifies as a navigable water of the United States if it is subject to the ebb and flow of the tide and/or it is presently used, has been used in the past, or may be susceptible for use (with or without reasonable improvements) to transport interstate or foreign commerce. Determinations have been made on whether water bodies qualify as navigable waters for purposes of asserting jurisdiction under Sections 9 and 10 of the Rivers and Harbors Appropriation Act of 1899. However, the fact that a water body lacks a determination does not indicate that it is not navigable.

The limits of non-tidal waters extend to the ordinary high water mark or to the limit of adjacent wetlands. The term “wetlands” is defined by Title 33, Section 328.37b of the Code of Federal Regulations as those areas “that are inundated or saturated by surface or ground water 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.” In addition, waters of the United States include impoundments and tributaries of waters of the United States, as well as waters determined to have a significant nexus (connection) to waters of the United States.

Under the CWA, federal facilities have regulatory responsibilities that include preventing water pollution, obtaining discharge permits, meeting applicable water quality standards, developing risk management plans, and maintaining records. The CWA also requires states to set standards to protect, maintain, and restore water quality through the regulation of point-source and certain nonpoint-source discharges to surface water.

Sections 303 and 304

Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States (33 USC 1313). Section 304(a) requires the U.S. Environmental Protection Agency (EPA) to publish water quality criteria that accurately reflect the latest scientific knowledge on the kind of effects and extent of effects that pollutants in water may have on health and welfare (33 USC 1314[a]). Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based on biomonitoring methods may be employed when numerical standards cannot be established or when they are needed to supplement numerical standards.

Section 303(c)(2)(b) of the CWA requires states to adopt numerical water quality standards for toxic pollutants for which the EPA has published water quality criteria and which could reasonably be expected to interfere with designated uses in a water body. Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop a list of water bodies where beneficial uses are impaired. The waters on the list do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for water segments on the lists and develop action plans (i.e., total maximum daily load plans) to improve water quality.

Section 404

Section 404 of the CWA prohibits the discharge of dredge or fill material into waters of the United States without a permit from the U.S. Army Corps of Engineers (USACE). Under the recently revised USACE-administered Nationwide Permit program, “activities required for the construction, maintenance, repair, and removal of oil and natural gas pipelines and associated facilities” may be authorized under Nationwide Permit 12 (Oil or Natural Gas Activities) if the activity does not result in the loss of more than 0.5 acres of waters of the United States “for each single and complete project.” Permanent impacts to waters of the United States that exceed 0.5 acres may require an Individual Permit. The study area is under the jurisdiction of the Los Angeles District of USACE.

Section 401

Under Section 401 of the CWA, any applicant for a federal license or permit to conduct any activity that may result in any discharge into waters of the United States must obtain a Water Quality Certification (WQC) pursuant to Section 401 of the CWA to certify that the proposed activity would comply with state water quality standards. Because the authority to issue WQCs has been delegated to the state, additional information regarding Section 401 WQCs is included under “State” in this section.

Section 402

The National Pollutant Discharge Elimination System (NPDES) program was established in 1972 to control discharges of pollutants from defined point sources (33 USC 1342). On September 2, 2009, the State Water Resources Control Board (SWRCB) adopted Order No. 2009-0009-DWQ (as amended by 2010-0014-DWQ and 2012-0006-DWQ) (Construction General Permit), which reissued Water Quality Order 99-08-DWQ and incorporated Water Quality Order 2003-0007 (Small Linear Utility General Permit) for projects disturbing 1 acre or more of land, or that are part of a common plan of development or sale that disturbs more than 1 acre of land where the rainfall erosivity waiver does not apply. The new permit became effective on July 1, 2010, whereby all existing dischargers and new dischargers are required to obtain coverage under the new permit by submitting permit registration documents.

On January 26, 2018, SWRCB issued a Notice of Applicability to PG&E that the Statewide General Order for Discharges from Natural Gas Utility Construction, Operation, and Maintenance Activities (Statewide Natural Gas Utility Permit) would serve as the NPDES permit for point-source discharges to waters of the United States, pursuant to Section 402 of the CWA.² Because the authority to implement Section 402 of the CWA has been delegated to the state, additional information regarding permitting under Section 402 of the CWA is included under “State” in this section.

Rivers and Harbors Appropriation Act Section 10

Section 10 of the Rivers and Harbors Appropriation Act of 1899 (33 USC 401 et seq.) makes it unlawful to obstruct or alter a navigable river or other navigable water of the United States. Construction, excavation, or deposition of materials in, over, or under such waters—or any work that would affect the course, location, condition, or capacity of those waters—requires a Section 10 permit and approval from USACE.

National Flood Insurance Program

FEMA is responsible for determining flood elevations and floodplain boundaries based on USACE studies. FEMA is also responsible for distributing the Flood Insurance Rate Maps used in the National Flood Insurance Program. These maps identify the locations of special flood hazard areas, including the 100-year floodplain. FEMA allows non-residential development in floodplains; however, construction activities are restricted within flood hazard areas, depending on the potential for flooding within each area. Federal regulations governing development in a floodplain are set forth in Title 44, Part 60 of the Code of Federal Regulations and enable FEMA to require municipalities that participate in the National Flood Insurance Program to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains.

² The Statewide Natural Gas Utility Permit also serves as Waste Discharge Requirements (WDRs), pursuant to the Porter-Cologne Water Quality Control Act, as described under “Porter-Cologne Water Quality Control Act” in this section.

State

Clean Water Act

The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point-source and certain nonpoint-source discharges to surface water. The following subsections describe the responsibilities of the State of California in the implementation of the CWA via the RWQCBs.

Section 401

As discussed under “Federal” in this section of the EIR, the authority to issue Section 401 WQCs has been delegated to the state. Under Section 401, any applicant for a federal license or permit to conduct any activity that may result in any discharge into waters of the United States must provide the licensing or permitting agency with a WQC that the discharge would comply with the applicable CWA provisions (33 USC 1341). If a federal permit is required under CWA Section 404, the applicant must also obtain a WQC from the appropriate RWQCB(s).

Section 402

As discussed under “Federal,” the NPDES program was established to control discharges of pollutants from defined point sources (33 USC 1342). In California, NPDES permitting authority is delegated to and administered by the nine RWQCBs. The Construction General Permit (Order No. 2009-0009-DWQ [as amended by 2010-0014-DWQ and 2012-0006-DWQ]) requires the implementation of a stormwater pollution prevention plan (SWPPP), which must be prepared before construction begins and kept on site (or readily available) throughout the construction process. In accordance with the Construction General Permit, a SWPPP must include the following:

- Identification of pollutant sources and non-stormwater discharges associated with construction activity
- Specifications for BMPs that will be implemented during project construction to minimize the potential for accidental releases and runoff from the construction areas, including temporary construction yards, pull sites, and other temporary work areas
- Calculations and design details, as well as BMP controls for site run-on
- BMPs used to eliminate or reduce pollutants after construction is complete
- A WQC from a Qualified SWPPP Developer

The Construction General Permit requires that the site sediment risk be calculated based on rainfall, soil erodibility, and slope. It also requires that the receiving water risk be calculated based on whether the disturbed areas discharge to a 303(d)-listed water body that is impaired for sediment or that has an EPA-approved total maximum daily load plan for sediment. The receiving water risk must also be calculated based on whether the disturbed areas discharge to a water body with a beneficial use of fish spawning, cold freshwater habitat, or fish migration. The result of this analysis determines the combined risk (i.e., 1, 2, or 3), which dictates the monitoring and reporting requirements. Linear underground/overhead projects can be broken into two or more segments for permitting purposes based on several factors, one of which is risk.

On January 26, 2018, SWRCB issued a Notice of Applicability to PG&E that the Statewide Natural Gas Utility Permit would serve as the NPDES permit for point-source discharges to waters of the United States pursuant to Section 402 of the CWA.³ The Statewide Natural Gas Utility Permit provides regulatory coverage for planned, emergency, and unplanned discharges to waters of the United States, non-federal surface waters, and land resulting from the following activities:

- Hydrostatic testing of new and existing natural gas facilities
- Site dewatering
- Other discharges resulting from construction and O&M of natural gas facilities

To comply with the Statewide Natural Gas Utility Permit, PG&E would take the following actions:

- Establish and implement appropriate BMPs.
- Ensure that all planned discharges comply with the terms and requirements of the Statewide Natural Gas Utility Permit, including all applicable effluent limitations.
- Take all necessary steps to review and update the effectiveness and adequacy of the control measures and BMPs.
- Keep BMP manuals updated and available on the applicable project site for all system operators.
- Conduct monitoring and reporting in compliance with the provisions and requirements in the monitoring and reporting program described in the Statewide Natural Gas Utility Permit.
- Maintain self-monitoring reports, including compliant and non-compliant discharge monitoring information, and have information available upon request by SWRCB and the RWQCB(s).
- Submit an annual report to the applicable RWQCB(s) and all reporting information required by the monitoring and reporting program.
- Notify the applicable RWQCB(s) per the notification requirements in the monitoring and reporting program.

California Fish and Game Code

Section 1602

Sections 1602 requires submittal of a Notification of Lake or Streambed Alteration and fee to CDFW before beginning any project that will “substantially divert or obstruct the natural flow of or, substantially change or use any material from the bed, channel, or bank of any river, stream, or lake,” whether intermittent or perennial. “Intermittent” streams include ephemeral streams, such as desert washes.

If CDFW determines the proposed project could substantially adversely affect an existing fish or wildlife resource, it will provide the project proponent a draft “streambed alteration agreement” that includes measures to protect the resources the project could harm. If the measures are acceptable, CDFW will issue the agreement as final once it is determined to be compliant with CEQA.

³ The Statewide Natural Gas Utility Permit also serves as WDRs, pursuant to the Porter-Cologne Water Quality Control Act, as described under “Porter-Cologne Water Quality Control Act” in this section.

Section 5650

Section 5650 makes it illegal to discharge any substance that may impact fish, plants, or bird life into waters of the state, unless authorized by the RWQCB Waste Discharge Requirements (WDRs) or a federal permit for which a CWA Section 401 state certification is issued.

California Public Resources Code

The regulatory authority of the California State Land Commission (CSLC) is defined in Division 6 of the California Public Resources Code Sections 6001 through 8558. Under these provisions, CSLC is allowed to lease tidelands and submerged lands within its jurisdiction for specific public-interest purposes, including navigation, fisheries, recreation, commerce, and environmental protection and preservation. If an activity is not considered to be categorically or statutorily exempt, CSLC may act as a lead agency under CEQA, making it responsible for the preparation of the environmental analysis. If CSLC is not acting as the lead agency, it may review and comment on projects relevant to CSLC-managed lands.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1967 (Porter-Cologne Act; California Water Code, Section 13000 et seq.) requires that SWRCB and the nine RWQCBs adopt water quality criteria to protect waters of the state.⁴ All waters of the state, regardless of their designations, are subject to jurisdiction of the RWQCBs. The water quality criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The WDRs program, pursuant to the Porter-Cologne Act and administered by the RWQCBs, regulates point discharges. The RWQCBs prepare and periodically update water quality control plans (basin plans; refer to the following sections), which provide the technical basis for determining WDRs, taking enforcement actions, and evaluating clean water grant proposals.

Projects that would discharge waste to waters of the state must file a report of waste discharge with the appropriate RWQCB if the discharge could affect the quality of waters of the state (California Water Code Section 13260). The RWQCB would then issue WDRs or a waiver of the WDRs for the project. The requirements would implement any relevant basin plans that have been adopted and must take into consideration the beneficial uses to be protected and the water quality objectives that are reasonably required for that purpose (California Water Code Section 13263).

The Lahontan and Colorado River Basin RWQCBs have jurisdiction in the study area and have issued general WDRs for common activities that involve discharges to waters of the state. The Statewide Natural Gas Utility Permit serves as a WDR under the Porter-Cologne Act.

In 2020, SWRCB developed Procedures for the Discharges of Dredged or Fill Material to Waters of the State (Procedures) to protect waters of the state. In accordance with Executive Order W-59-93, the Procedures ensure that the regulation of dredge or fill activities is conducted in a manner that ensures no overall net loss and a long-term net gain in the quantity, quality, and permanence of these resources. The Procedures include processes for the submission, review, and approval of applications for activities that could result in the discharge of dredged or fill material to any waters of the state. The Procedures include elements of the CWA Section 404(b)(1)30 Guidelines, thereby bringing uniformity to the RWQCBs' regulation of discharges of dredged or fill material to waters of the state.

⁴ *Waters of the State* in California is defined as any surface water or groundwater, including saline waters, within the boundaries of the state. Definitions vary by state and are generally broader than those of the federal CWA.

Lahontan Regional Water Quality Control Board Water Quality Control Plan

The Lahontan RWQCB is responsible for protecting the beneficial uses of surface water and groundwater resources from the Oregon border to the northern Mojave Desert, including all of those in California that are east of the Sierra Nevada crest. The Lahontan RWQCB adopted the Water Quality Control Plan for the Lahontan Region (Basin Plan) in 1995 with amendments up to October 2019 (RWQCB 2019). The Basin Plan designates beneficial uses for surface water and groundwater, sets standards and numeric objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy, and describes implementation programs to protect all waters in the Lahontan region. NPDES permits, WDRs, and waivers are mechanisms used by the RWQCBs to control discharges and protect water quality. The Basin Plan is regularly reviewed and updated with amendments, as necessary. A basin plan must include:

- A statement of beneficial water uses that the RWQCB would protect
- The water quality objectives needed to protect the designated beneficial water uses
- Strategies to be implemented, with time schedules for achieving the water quality objectives

Colorado River Basin Regional Water Quality Control Board Water Quality Control Plan

Portions of the study area are located within the jurisdictional boundaries of the Colorado River Basin RWQCB. The Colorado River Basin region covers approximately 13 million acres (20,000 square miles) in the southeastern portion of California, including all of Imperial County and portions of San Bernardino, Riverside, and San Diego Counties. Geographically, the region represents only a small portion of the total Colorado River water feature, which includes portions of Arizona, Nevada, Utah, Wyoming, Colorado, New Mexico, and Mexico. The Colorado River Basin RWQCB adopted its Basin Plan in 1993. As with the Lahontan Region Basin Plan, the purpose of the Colorado River Basin Region Basin Plan is to designate beneficial uses for surface water and groundwater, set standards and numeric objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy, and describe implementation programs to protect all waters in the Colorado River Basin region. The Basin Plan is regularly reviewed and updated with amendments, as necessary.

Sustainable Groundwater Management Act

On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package—Assembly Bill 1739, Senate Bill 1168, and Senate Bill 1319—collectively known as the Sustainable Groundwater Management Act (SGMA), which requires local and regional Groundwater Sustainability Agencies with management authority over high- and medium-priority basins to manage their respective basins within their sustainable yield, in line with minimum thresholds to avoid undesirable results including chronic lowering of groundwater levels. Under SGMA, these basins should reach sustainability within 20 years of implementing their Groundwater Sustainability Plans (GSPs). For critically overdrafted basins, the agencies must develop planning goals and criteria to achieve sustainability by 2040. For the remaining high- and medium-priority basins, 2042 is the deadline. Through SGMA, the California Department of Water Resources provides ongoing support to local agencies through GSP review, guidance, financial assistance, and technical assistance. SGMA empowers local agencies to form Groundwater Sustainability Agencies to manage basins sustainably and requires completion of GSPs for crucial (i.e., medium- to high-priority) groundwater basins in California. Among other requirements, GSPs must consider the interests of all beneficial uses and users of groundwater, including environmental users of groundwater, and develop planning goals and criteria to avoid impacts such

as significant and unreasonable depletions of interconnected surface water. GSPs must also identify and consider impacts to groundwater-dependent ecosystems within the basin. As trustee for California's fish and wildlife resources, CDFW engages as a stakeholder in groundwater planning processes, where resources allow, to represent the groundwater needs of groundwater-dependent ecosystems and fish and wildlife beneficial uses.

Local

The following subsections describe local regulations regarding water quality that are relevant to the ongoing O&M activities and the study area. Pursuant to Article XII, Section 8 of the California Constitution, the California Public Utilities Commission (CPUC) has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, operation, maintenance, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with CPUC. Although local governments do not have the power to regulate such activities, CPUC encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has considered relevant regional and county policies and issues in this EIR.

San Bernardino County 2020 Countywide Policy Plan

The San Bernardino County 2020 Countywide Policy Plan (San Bernardino County 2020) includes the following policies to ensure that San Bernardino County promotes safety and preserves water quality and the use of existing water resources:

Policy HZ-1.6: Critical and essential facility location. We require new critical and essential facilities to be located outside of hazard areas, whenever feasible.

Policy NR-2.1: Coordination on water quality. We collaborate with the state, regional water quality control boards, watermasters, water purveyors, and government agencies at all levels to ensure a safe supply of drinking water and a healthy environment.

Policy NR-2.2: Water management plans. We support the development, update, and implementation of ground and surface water quality management plans emphasizing the protection of water quality from point and non-point source pollution.

Policy NR-2.4: Wastewater discharge. We apply federal and state water quality standards for wastewater discharge requirements in the review of development proposals that relate to type, location, and size of the proposed project in order to safeguard public health and shared water resources.

Policy NR-2.5: Stormwater discharge. We ensure compliance with the County's Municipal Stormwater NPDES (National Pollutant Discharge Elimination System) Permit by requiring new development and significant redevelopment to protect the quality of water and drainage systems through site design, source controls, stormwater treatment, runoff reduction measures, best management practices, low impact development strategies, and technological advances. For existing development, we monitor businesses and coordinate with municipalities.

Policy IU-1.8: Groundwater management coordination. We collaborate with watermasters, groundwater sustainability agencies, water purveyors, and other government agencies to ensure groundwater basins are being sustainably managed. We discourage new development when it would create or aggravate groundwater overdraft conditions, land subsidence, or other “undesirable results” as defined in the California Water Code. We require safe yields for groundwater sources covered by the Desert Groundwater Management Ordinance.

Policy IU-3.2: Local flood control. We require new development to install and maintain stormwater management facilities that maintain predevelopment hydrology and hydraulic conditions.

Policy IU-3.4: Natural floodways. We retain existing natural floodways and watercourses on County-controlled floodways, including natural channel bottoms, unless hardening and channelization is the only feasible way to manage flood risk. On floodways not controlled by the County, we encourage the retention of natural floodways and watercourses. Our priority is to reduce flood risk, but we also strive to protect wildlife corridors, prevent loss of critical habitat, and improve the amount and quality of surface water and groundwater resources.

City of Barstow 2015–2020 General Plan

The Resource Conservation and Open Space Element within the City of Barstow 2015–2020 General Plan contains policies that ensure protection of water quality and quantity for the community by working in cooperation with all water purveyors in the area to preserve, augment, capture, and purify all waters in the Mojave River system. The following policies (City of Barstow 2015) are relevant to the proposed project:

Policy 1 C: Strive to ensure that adequate water remains available to the community in order to maintain continued growth.

Policy 1 E: Maintain a storm drainage system adequate to protect the lives and property of Barstow residents.

City of Victorville General Plan 2030

The Land Use Element of the City of Victorville General Plan 2030 contains goals and policies to meet multiple infrastructure needs within common public rights-of-way (ROWs). The following policy (City of Victorville 2008) is relevant to the proposed project:

Policy 3.1.1: Planning and design of new roadways and expansion/completion of existing roadways shall include consideration of water, sewer, storm drainage, communications, and energy facilities that can be co-located within the road right of way.

Town of Apple Valley 2009 General Plan

The Water Resources Element of the Town of Apple Valley 2009 General Plan addresses water sources, availability, current and future demand, conservation, water quality, and the future of the water resources serving the community. The following policy (Town of Apple Valley 2009) is relevant to the proposed project:

Policy 1.H: The Town shall confer with appropriate water agencies and purveyors, as necessary, to assure adequate review and mitigation of potential impacts of proposed development on local water resources.

Kern County General Plan

Section 1.10.6 of the Land Use, Open Space, and Conservation Element within the Kern County General Plan (County of Kern 2004) contains policies that ensure that adequate water storage, treatment, and transmission facilities are constructed concurrently with planned growth, utilization of community water systems, and maintenance and repair of existing water systems. The following policies are relevant:

Policy 34: Ensure that water quality standards are met for existing users and future development.

Policy 38: Encourage utilization of wastewater treatment facilities which provide for the reuse of wastewater.

Policy 39: Encourage the development of the County's groundwater supply to sustain and ensure water quality and quantity for existing users, planned growth, and maintenance of the natural environment.

Policy 40: Encourage utilization of community water systems rather than the reliance on individual wells.

Policy 43: Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.

Policy 44: Discretionary projects shall analyze watershed impacts and mitigate for construction-related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act (CEQA), to prevent the degradation of the watershed to the extent practical.

City of California City Final General Plan 2009–2028

The Open Space and Conservation Element of the City of California City Final General Plan 2009–2028 provides policies for the conservation and utilization of natural resources, including water, floodplains, mineral resources, air quality, sensitive biological resources, and historical and cultural resources. The following policies are relevant to the proposed project:

- Provide sufficient water to meet the existing and projected needs of the community, while emphasizing conservation goals.
- Continue to promote and encourage water conservation to residents and businesses in the community.
- Establish a water conservation program encouraging and promoting xeriscaping and municipal recycled water usage.

City of Ridgecrest General Plan

The Open Space and Conservation Element of the City of Ridgecrest General Plan (2009) establishes policies and goals to ensure that a supply of acceptable quality water is available to meet the present and future needs of the city and the Indian Wells Valley. The following policy is relevant to the proposed project:

Policy OSC-6.1: Reduce Surface and Runoff. The City shall require a construction plan prior to the groundbreaking that uses site design and grading techniques to reduce the amount of impervious surface and runoff for all new urban commercial or residential developments proposed projects.

4.10.3 Existing Baseline Conditions

This section provides a description of the existing baseline conditions relative to hydrology and water quality in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. PG&E's gas pipeline system has been in place for more than 70 years. Impact data collected by PG&E from 2017 to September 2021 regarding temporary and permanent disturbance impacts caused by O&M activities provides important detail about the environmental baseline conditions for purposes of CEQA (refer to Section 1.1, Proposed Project and Environmental Review). The existing baseline condition from 2017 to 2021, which includes PG&E's past and ongoing O&M activities, is the benchmark used in the Section 4.10.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Surface Waters

Substantial surface waters and flows are extremely scarce and unpredictable in the arid desert climate found in the study area. Stream channels are typically ephemeral and formed by flash-flood events, especially during the monsoon season. The existing PG&E gas transmission pipelines in the study area cross the South Lahontan and Colorado River hydrologic regions (HRs). The water features within these HRs may be subject to regulation under USACE, CDFW, and RWQCB. As described in Section 4.10.2, Applicable Regulations, Plans, and Policies, under the respective regulations (refer to CFGC 1602), CDFW's jurisdiction is any river, stream, or lake, including those that are perennial, intermittent, or ephemeral. This also includes any substantial change or use of any material from the bed, channel, or bank of any river, stream, or lake. All waters of the state, regardless of their designations, are subject to RWQCB jurisdiction. USACE's jurisdiction is based on a hydrologic connection with definable navigable waters, which constitute waters of the United States, and typically extends to the ordinary high water mark for non-tidal waters.

The surface water data included in this document are based on the 1999 California Water Service (Cal Water) Geographic Dataset (CAL FIRE 2012), which identifies six levels of watershed boundaries in descending order of size (i.e., hydrologic region [HR], hydrologic unit [HU], hydrologic area, hydrologic sub-area, super-planning watershed, and planning watershed).⁵ This section discusses surface waters at the HR and HU levels. HRs and HUs within the study area are shown on Figure 4.10-1, Surface Waters in the Study Area, and are described in the following paragraphs.

The South Lahontan HR is composed of approximately 21.2 million acres bounded by the Sierra Nevada to the west, the watershed boundary between Mono Lake and the East Walker River drainage to the north, Nevada to the east, and the San Gabriel and San Bernardino mountains to the south. The average annual precipitation within this HR is approximately 7.9 inches, and runoff is approximately 1.3 million acre-feet per year. Within this HR, O&M activities would occur in the Indian Wells, Trona, Cuddeback, Fremont, Antelope, Mojave, and Broadwell HUs. Pipelines in the study area are located in the southern portion of the South

⁵ The Cal Water boundary naming and numbering system does not directly correspond to the federal system (i.e., the National Hydrography Dataset) produced by the U.S. Geological Survey.

Lahontan HR, which includes three major surface water systems—the Owens River, the Mojave River, and Mono Lake. Additionally, the Antelope HU contains a large, closed intrastate basin located within the western Mojave Desert with no outlets to the ocean. The major water features within the Antelope HU—Rosamond, Buckhorn, and Rogers Lakes—are three playa lakes that are located on Edwards Air Force Base, in the center of the HU. The Mojave HU also contains a closed intrastate basin that is unnamed and is located within the study area. These playa lakes are usually dry and receive water only during occasional large winter storms and summer monsoons. Soils are virtually impermeable, so very little water enters the groundwater system and surface runoff quickly evaporates. All tributaries to the lakes—and the lakes themselves—are non-jurisdictional waters of the United States, because the waters are not tributaries to a traditional navigable water and have not demonstrated a potential nexus to waters of the United States.

The Colorado River HR is composed of approximately 13 million acres bounded by Nevada and Arizona to the east; Mexico to the south; the Laguna, San Jacinto, and San Bernardino Mountains to the west; and the New York, Providence, Granite, Old Dad, Bristol, Rodman, and Ord Mountains to the north. The average annual precipitation within the Colorado River HR is approximately 5.5 inches, making it the most arid HR in California. Within the Colorado River HR, O&M activities take place in the Lavic, Lucerne Lake, Route Sixty-Six, Homer, Ward, and Chemehuevi HUs. The Colorado River HR occupies only a small portion of the entire Colorado River drainage area, which is mostly located within Arizona, Nevada, Utah, Wyoming, Colorado, New Mexico, and Mexico. Average annual runoff in the Colorado River HR is approximately 20,000 acre-feet, and most runoff flows to closed basins or to the Colorado River. The major water feature within the region is the Colorado River. All tributaries to the Colorado River are waters of the United States and waters of the state. These waters are also under the jurisdiction of CDFW, which regulates water features containing a bed, bank, and channel.

Groundwater

The pipelines in the study area cross the following 18 groundwater basins:

- | | | |
|---------------------|------------------------------|-----------------------------|
| ▪ Antelope Valley | ▪ Indian Wells Valley | ▪ Salt Wells Valley |
| ▪ Bristol Valley | ▪ Lavic Valley | ▪ Searles Valley |
| ▪ Broadwell Valley | ▪ Lower Mojave River Valley | ▪ Upper Mojave River Valley |
| ▪ Chemehuevi Valley | ▪ Lucerne Valley | ▪ Ward Valley |
| ▪ Cuddeback Valley | ▪ Middle Mojave River Valley | |
| ▪ Fenner Valley | ▪ Needles Valley | |
| ▪ Fremont Valley | | |
| ▪ Harper Valley | | |

These groundwater basins are shown on Figure 4.10-2, Groundwater Basins in the Study Area. Groundwater basins underlie approximately 55% of the South Lahontan HR and are concentrated mostly in the southern portion of the region (DWR 2003). The unpopulated areas of the HR—where most of the pipelines in the study area are located—have very few groundwater wells. Groundwater in this region provides approximately 41% of the water supply for agriculture and urban uses. Although groundwater occurs in unconfined alluvial aquifers in the smaller basins, larger groundwater basins near dry lakes may be confined. Groundwater basin depths in the South Lahontan HR range from shallow (i.e., tens of feet) to deep (i.e., thousands of feet), and aquifer thickness ranges from tens to hundreds of feet.

Groundwater basins underlie approximately 26% of the Colorado River HR and provide approximately 8% of the water supply for agricultural and urban uses. Like groundwater in the South Lahontan HR, groundwater in the Colorado River HR occurs in unconfined alluvial aquifers in the smaller basins and confined aquifers in the larger groundwater basins. The thickness of aquifers also ranges from tens to hundreds of feet. The depths of smaller groundwater basins along the ephemeral rivers range from tens to hundreds of feet, while the depths to groundwater in larger basins measure up to thousands of feet. Surface water and groundwater have been used together for a substantial number of years in this HR. Water imported from the Colorado River is used for irrigation in the Imperial, Coachella, and Palo Verde Valleys and is used for groundwater recharge in the Coachella Valley. Groundwater basins in the less populated areas of this HR are considered to store water for use during drought years.

Surface Water Quality

Surface water quality in the desert portions of the South Lahontan HR is naturally poor, with relatively high concentrations of salts and minerals. The surface water quality of the Colorado River HR is also poor and is primarily affected by silt, nutrient, and pesticide pollution from the agricultural drains in the Imperial Valley and leaking underground storage tanks. The surface waters in the study area include beneficial uses, in accordance with characterizations identified in the Basin Plan, that include municipal and domestic supply; agricultural supply; groundwater recharge; freshwater replenishment; navigation; rare, threatened, and endangered species; water contact recreation; non-contact water recreation; commercial and sportfishing; warm freshwater habitat; cold freshwater habitat; wildlife habitat; water quality enhancement; and flood peak attenuation/floodwater storage.

Groundwater Quality

The chemical character of groundwater in the South Lahontan HR is characterized by the dissolved minerals calcium or sodium bicarbonate (DWR 2003). Areas near and beneath dry lakes may display sodium chloride and sodium sulfate–chloride groundwater. Total dissolved solids, fluoride, and boron content are often too high to meet drinking water standards, and three military installations in the Antelope Valley and Mojave River Valley groundwater basins are federal Superfund sites due to contamination from volatile organic compounds. In addition, the pipelines in the study area cross the Hinkley Compressor Station Groundwater Remediation Project site and the Topock Compressor Station Groundwater Remediation Project site. Historic activities at these sites resulted in the contamination of groundwater from hexavalent chromium, a carcinogen (cancer-causing substance). Chromium containment and cleanup at these sites is currently in progress. The chemical character of the groundwater in the Colorado River HR varies, but sodium and calcium cation concentrations and bicarbonate anion concentrations are generally high, with high magnesium, sulfate, and chloride concentrations appearing less often. Groundwater in this region is often high in total dissolved solids, fluoride, and nitrate, and occasionally high in sulfate.

Floodplains

Based on FEMA's National Flood Hazard Layer, portions of the study area are located within the 100-year floodplain (1% annual chance of flooding in any given year) and 500-year floodplain (0.5% annual chance of flooding in any given year) of the Mojave River and various other waterways within the drainage basins of the Tehachapi and El Paso Mountain Ranges (FEMA 2021).

Tsunamis, Seiches, and Mudflows

According to the California Governor's Office of Emergency Services, the study area is located within the inundation area for the Mojave River Dam. However, the study area is not subject to tsunamis,⁶ as it is not located near the coast. The most likely location for a seiche near the study area is the Salton Sea.⁷ However, this water body is approximately 75 miles from the study area and has no documented occurrences of seiches. Pipelines in the study area that are located near fractured and steep slopes (e.g., near the San Bernardino Mountains) can be at risk for mudflows. These areas could be more prone to mudflows during catastrophic events, such as earthquakes or heavy rains. Because the study area contains stable soils and receives limited amounts of annual rainfall, mudflows are not anticipated to occur under normal circumstances.

4.10.4 Impact Analysis

4.10.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of hydrology and water quality impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For purposes of this EIR, hydrology and water quality impacts would be significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
 - a. Result in substantial erosion or siltation on- or off-site;
 - b. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
 - c. 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; or
 - d. Impede or redirect flood flows.
4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

4.10.4.2 Applicable Measures

As part of its standard practice, PG&E will continue to incorporate the following APMs and BMPs into its ongoing O&M activities to avoid or minimize the potential for adverse hydrology and water quality impacts

⁶ A *tsunami* is a very large sea wave caused by an earthquake, landslide, or volcanic eruption.

⁷ A *seiche* is a standing wave that sloshes back and forth in a semi- or fully enclosed body of water.

to the extent feasible. The APMs and BMPs, where applicable, are included in the impact discussion in Section 4.10.4.3.

Applicant Proposed Measures

APM HYD-1 **Frac-Out Response.** PG&E would store pertinent materials on site to quickly contain potential frac-outs, and these materials would be determined on a case-by-case basis. At the entry or exit of the drill and for the duration of the drilling activity, PG&E would maintain a supply of sediment barriers (e.g., weed-free straw bales and silt fence), plastic sheeting, shovels and buckets, mud pumps and additional hose, mud storage tanks, and a vacuum truck. In addition, PG&E may store sandbags, floating booms or silt curtains, plywood, a small backhoe to dig sumps, and corrugated pipe.

A potential frac-out may occur if there is a loss of drilling lubricant, a loss of circulation, or an unexpected change in pressure. In the event of a frac-out, the release would be assessed immediately and PG&E would take the following steps:

- Initiate immediate suspension of the drilling operation.
- Contain the frac-out with supplies and materials as appropriate.
- Verify that the drilling lubricant would not enter a jurisdictional water feature.
- Assess the containment structure and determine if additional supplies and materials are needed to prevent the spread of surfaced drilling lubricant.
- Determine if cleanup of the frac-out material is needed.

If a frac-out is identified in a jurisdictional water feature or other sensitive resource area, the following additional steps would be taken:

- PG&E would notify the appropriate agency authorities with jurisdiction (i.e., the USACE, CDFW, and RWQCB).
- The drill angle would be increased to move below the frac-out and to reduce the amount of drilling lubricant reaching the surface. The current drill profile would be evaluated, and drill pressures and pump volume rates would be adjusted, as needed.
- If standing water is present, hand-placed containment, silt curtains, or other containment techniques for water releases would be deployed if necessary. To the extent feasible, surface releases of excess drilling lubricant would be held in a contained area and removed using small collection sumps with portable pumps and hoses, and without undue disturbance to the banks and bed of the water feature.
- Frac-out cleanup would be conducted in a manner that avoids damage to existing and adjacent vegetation. Soils that come in contact with drilling lubricant would be removed to the extent feasible without causing excessive loss of topsoil or vegetation.
- Once the frac-out is contained, drilling may resume upon approval from the appropriate agency officials and PG&E representatives. Frac-out material would be collected and stored in containers until it can be reused or disposed of in an approved disposal facility.

PG&E would also continue to implement the following APM from Section 4.4, Biological Resources, into its ongoing O&M activities to avoid or minimize the potential for adverse hydrology and water quality impacts when incorporated by PG&E as standard practice:

- APM BIO-3: Disturbance Minimization

Refer to Section 4.4.4.2 and Section 2.5, Applicable Measures, of this EIR for the full text of APM BIO-3.

Best Management Practices

- Conduct activities near water features during the dry season. If work is necessary during the rainy season, it would be conducted during dry spells between rain events to the extent feasible.
- Refuel at least 100 feet from water features. Vehicles operating adjacent to water features would be inspected and maintained daily to prevent leaks.
- Keep spill cleanup kits on site (with fueling and maintenance vehicles) and accessible at all times.
- Train all personnel with regard to the location, use, and contents of the spill kits. If a spill occurs, clean it up immediately with absorbents, notify the Environmental Field Specialist, and dispose of the materials properly.
- Minimize hazardous material storage on site and store hazardous liquids, wastes, and all chemicals in watertight containers with appropriate secondary containment. Contain and protect stockpiled waste materials and cover liquid pollutant containment BMPs prior to rain, at the end of each day, and during non-workdays.
- Monitor BMPs daily during construction activities. Repair, replace, and/or maintain BMPs to correct any deficiencies.
- Return work areas to their pre-existing contours and conditions upon completion of work. Restoration work, including revegetation and soil stabilization, would be evaluated upon completion of work and performed as needed.

Mitigation Measures

PG&E's implementation of the following mitigation measure from Section 4.4 into its ongoing O&M activities would further minimize the potential for adverse hydrology and water quality impacts in combination with PG&E's commitment to incorporating applicable APMs and BMPs as standard practice:

- MM BIO-3: Protection of Fish and Wildlife from Alteration of Rivers, Streams, and Lakes

Refer to Section 4.4.4.4, Mitigation Measures, for the full text of this mitigation measure.

4.10.4.3 Impact Discussion

Impact HYD-1 Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2, Project Description. As discussed in Section 4.10.3, Existing Baseline Conditions, these activities may occur within or near surface waters and drainages and may cross groundwater

basins, as they have in the past under baseline conditions, and this will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality (i.e., cause a significant effect on the environment).

Ground-disturbing activities have occurred and will continue to occur that have the potential to degrade surface water and groundwater quality in the study area associated with equipment use, construction methods, and crews at work sites. Activities that have occurred and could continue to occur near waters of the state or stream features, including near areas where groundwater could be affected, include road surface maintenance; ROW and access road repair; culvert repair/installation; installation of erosion control devices; vehicle crossings over water features, open-trench waterway crossings, and water diversion channels; geotechnical investigations; hydrostatic testing; and vegetation clearing. In addition, with activities that involve excavation, trenching, boring, and deep-well anode drilling activities, there is the potential for contaminated groundwater to be encountered.

As described in Chapter 2, pipeline replacements across a waterway could require an open trench through a water body, water diversions, or the use of boring techniques. PG&E installs temporary low-water vehicle crossings for construction traffic only if an existing crossing, such as a bridge, is not available in the vicinity. Temporary vehicle crossings consist of culvert bridges, Flexifloats (floating platforms), portable bridges, fords, timber bridges, geotextile fabric, mats, pallets, or gravel. To protect surface water quality during ongoing O&M activities PG&E has used, can use, and will continue to use these types of crossings to prevent direct contact of surface waters and vehicles and construction equipment. Temporary crossings are removed at the completion of O&M activities. PG&E generally avoids using an open-trench waterway crossing, doing so only when a waterway is very small or seasonal (i.e., when surface flow is absent or minimal). Because the majority of water features in the study area are ephemeral and are located in a desert environment, work is, and generally can be, conducted when the features are dry and water diversion would not be necessary.

PG&E typically uses subsurface boring methods beneath drainages to install pipeline improvements when crossing flowing waterways. The most common boring methods are horizontal directional drilling (HDD); horizontal boring or slick boring; jack and bore; and microtunneling underneath the waterway. The chosen method is based on the crossing type, soil type, terrain, and type of facility being installed. PG&E avoids work within water features through the implementation of appropriate boring techniques. However, even with the use of the various boring techniques that minimize impacts to water features, erosion and sedimentation associated with the excavations on the sides of the crossing have occurred, can occur, and will continue to occur. Furthermore, HDD is a highly specialized boring technique that involves the use of drilling lubricant.⁸ Therefore, the accidental release of drilling lubricant, known as a *frac-out*, can occur when HDD activities are performed. HDD is used to cross large, active waterways that typically measure more than 120 feet in width. Pursuant to CFGC Section 5650, discharges into waters of the state that may be harmful to fish, plants, mammals, or birds are prohibited unless the discharge is expressly authorized pursuant to the terms of a WDR in accordance with the Porter-Cologne Act. In the event of an incidental frac-out, PG&E follows regulatory permit conditions outlined in one or more the following permits:

⁸ Drilling lubricant can also be referred to as *drilling mud* or *bentonite slurry*.

- CWA Section 401 WQC
- CWA Section 404 permit
- LSA Agreement pursuant to CFGC Section 1602

For O&M activities that have involved, can involve, and will continue to involve hydrostatic testing, the used water would be discharged in accordance with the Statewide Natural Gas Utility Permit. PG&E only discharges clean water, and the water is not released under high pressure. Most, if not all, of the wastewater resulting from hydrostatic testing is used, can be used, and would be used for dust control. If wastewater cannot be used for dust control due to identified contamination, it is sent to Kettleman Hills Hazardous Waste Facility for disposal.

PG&E's ongoing O&M activities have also required and will continue to require the use of other hazardous materials (e.g., fuels, oils, pesticides, herbicides, fertilizers, other agricultural chemicals, lead, and epoxies), as described in Section 4.9, Hazards and Hazardous Materials. The use of hazardous materials during O&M activities can have the potential to result in accidental leaks or spills associated with the operation or refueling of equipment, or other releases of non-stormwater, including construction dewatering, frac-outs, and hydrostatic test discharges. Therefore, such activities have had, can have, and will continue to have the potential to degrade surface or groundwater quality.

All of PG&E's ongoing O&M activities with the potential to affect water quality will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to water quality. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts to water quality. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline hydrology and water quality conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing hydrology and water quality baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not cause a substantial adverse impact on surface or groundwater quality.

PG&E is committed to incorporating APM HYD-1 (Frac-Out Response) and BMPs into ongoing O&M activities as part of its standard practice (outlined in Section 4.10.4.2) and as required by regulatory agencies designed to protect water quality. This commitment provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to existing water quality baseline conditions or a substantial adverse effect on hydrology in the study area. For example, APM HYD-1 implements specific measures for monitoring frac-outs and containing drilling lubricant during HDD operations. PG&E's standard practices also include cleaning and safely disposing of any spilled materials, scheduling activities to avoid rainfall events and periods of high flow, checking and maintaining equipment and vehicles, and restoring disturbed areas. In cases where grading or ground disturbance is required to establish a temporary work area, the pre-construction contours are restored following the completion of O&M activities. In addition, PG&E adheres to agency-required permits that include WQCs from the RWQCB under Section 401 of the CWA, authorization from USACE under Section 404 of the

CWA, and/or an LSA Agreement from CDFW pursuant to Section 1602 of the CFGC, as well as the Statewide Natural Gas Utility Permit to ensure that water quality is protected during O&M activities. All applicable activities that require agency permitting through the RWQCB, USACE, CDFW, and local jurisdictions (e.g., flood control districts) on a per-activity basis (as required) would be conducted in accordance with the permit requirements following appropriate consultation with the issuing agency. Furthermore, PG&E's ongoing O&M activities are required to comply with the most recent version of the Basin Plan and the applicable water quality standards and prohibitions, and, where applicable, FEMA's current regulations for construction within a Special Flood Hazard Area.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing surface or groundwater quality baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related surface or groundwater quality effects is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality; any related effects would be **less than significant**.

Impact HYD-2 Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

PG&E's ongoing O&M activities have resulted in and will continue to result in various levels of disturbance, water use, and water-related activities, including (but not limited to) dewatering, hydrostatic testing, and dust control, as described in Chapter 2. As discussed in Section 4.10.3, the O&M activities would cross through various groundwater basins. PG&E has been conducting ongoing O&M activities in the study area, as it has in the past under baseline conditions, and these activities will continue regardless of whether CDFW issues the permits. If the permits are issued, CDFW would condition how PG&E conducts ongoing O&M activities during the term of the permits, through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

Similar to baseline conditions, continuing O&M activities in the study area would not involve the significant use of groundwater and would not substantially impede groundwater recharge. Groundwater has been and may continue to be encountered during trenching, excavation, and deep-well anode drilling activities that require temporary dewatering to complete construction. However, dewatering activities are typically short term, lasting only a few hours, and do not involve substantial quantities of groundwater supplies. Similar to baseline conditions, dewatered groundwater would be tested and discharged in accordance with the Statewide Natural Gas Utility Permit, which may be to storm drains with proper filtration or to land with proper filtration and where no ponding or vector issues would be created. PG&E has complied, is complying, and will continue comply with the water sampling, monitoring, and reporting requirements set forth in the Statewide Permit. Therefore, impacts to groundwater supplies due to dewatering historically have been, and are expected to continue to be, negligible.

Hydrostatic testing is required to verify the strength and integrity of the pipeline. PG&E normally uses water as the test medium during hydrostatic testing, but compressed air or compressed nitrogen gas can also be used for testing short segments or small-diameter pipes (i.e., less than 6 inches). Approximately 551,450 to 1.5 million gallons of water per year are estimated to be required for hydrostatic testing under PG&E's ongoing O&M activities (refer to Table 4.16-1, Water Requirements for O&M Activities in the Study Area, in this EIR). This water is generally sourced from domestic water provided by local municipal sources (e.g., community water, well water, or water from a well drilled specifically for this purpose). Although hydrostatic testing may require water obtained from groundwater sources or municipal supplies sourced from groundwater, the required volume is small relative to basin supplies and because these are isolated short-term demands. As described in Section 4.16, Utilities and Service Systems, PG&E has been able to secure up to 12 million gallons of water from existing PG&E facilities and local landowners for hydrotest projects in the past. As a result, the anticipated maximum water demand for hydrostatic testing and dust control per year (approximately 1.5 million gallons) is not expected to exceed the amount of water previously required for PG&E activities during the baseline period. Accordingly, ongoing hydrostatic testing is anticipated to have a negligible effect on groundwater supplies. Following the hydrostatic test, the used water is tested and discharged in accordance with applicable federal, state, and local regulations. In addition, water discharged during hydrostatic testing would infiltrate pervious surfaces in the vicinity of testing activities and recharge groundwater. Hydrostatic testing has already been a component of PG&E's ongoing O&M activities in the study area and will continue regardless of whether CDFW issues the permits.

O&M activities have required and will continue to require the use of water for dust control purposes, as described in Section 4.16, Utilities and Service Systems. The majority of the O&M activities associated with the study area occur less often than 10 times per year, and many do not require the use of water for dust control. The amount of water needed for dust control during activities that disturb the ground or generate dust associated with access roads varies depending on the frequency and location of each activity. Between 2 million and 4.5 million gallons (approximately 6 to 13 acre-feet) of water per year are estimated to be required for dust control for O&M activities and hydrostatic testing.⁹ However, as described in Chapter 2, a review of previously completed O&M activities between 2017 and September 2021 (the "baseline period") indicated an annual average of 14 O&M activities (e.g., erosion control, valve recoating, valve replacement, and hydrotesting), and during the baseline period, the average water use for O&M activities was approximately 3.3 million gallons per year. The water required is typically sourced from domestic water provided by local municipal sources. The local water suppliers in San Bernardino and Kern Counties primarily receive their water from the Metropolitan Water District of Southern California and from the State Water Project. Refer to Section 4.16.3 (Existing Baseline Conditions – Utilities and Service Systems) for additional information regarding water suppliers in the study area. Although municipal water may be sourced from groundwater supplies, the volume of water sourced in this way has historically had a negligible effect on groundwater supplies. As described in Section 4.16, PG&E has been able to secure up to 12 million gallons of water in the past. As a result, the anticipated maximum annual water demand for dust control for O&M activities and

⁹ Estimates of water per year for dust control are based on the assumption that all O&M activities that require dust control (i.e., ROW and access road repair, below-grade pipe and coating inspection, internal pipe inspection, installation of pig launcher/receiver facilities, valve/pipeline excavation and recoating, installation of magnesium anodes, installation of deep-well anodes/thermoelectric generators, installation of flex anodes, installation or replacement of horizontal anode beds, electronic test system station and cathodic test station installation, and pipeline segment repair) occur during the year, excluding hydrostatic testing and dust control associated with hydrostatic testing. PG&E anticipates that four hydrostatic tests would be conducted annually over the next 5 years. This is a conservative estimate; actual water used for most years has been and would continue to be well below these estimates.

hydrostatic testing (approximately 4.5 million gallons), is not expected to exceed the amount of water previously required for PG&E activities during the baseline period.

O&M activities have resulted in, and will continue to result in, creating minimal amounts of new impervious surfaces. Similar to the baseline conditions, impervious surfaces created by O&M activities would continue to encompass relatively small areas; therefore, they would have negligible effects on groundwater recharge. Most areas of ground disturbance would generally be backfilled to match surrounding materials or graveled. O&M activities that create new impervious surfaces may include the following:

- Installation of erosion control structures (from 20 to 200 square feet)
- Installation of culverts (from 360 to 720 square feet)
- Construction of new pig launcher/receiver facilities (approximately 30,000 square feet, most of which would be graveled)
- Installation of a photovoltaic or natural gas-powered thermoelectric generator, if the installation of a deep-well anode requires permanent, aboveground equipment to generate electricity (from 40 to 100 square feet)
- Expansion of existing fenced facilities to accommodate the automation/replacement of valves (approximately 2,500 square feet)

All of PG&E's ongoing O&M activities with the potential to affect groundwater supplies or interfere with groundwater recharge will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to groundwater supplies and recharge capabilities. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts to groundwater. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline groundwater use and recharge conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions associated with groundwater use or groundwater recharge capability in the study area. Accordingly, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not cause a substantial adverse impact on groundwater use or groundwater recharge capability.

PG&E's commitment to incorporating BMPs as part of its standard practice (outlined in Section 4.10.4.2) provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to existing baseline conditions or a substantial adverse effect associated with groundwater use or recharge capabilities in the study area. For example, in cases where grading or ground disturbance is required to establish a temporary work area, the pre-construction contours are restored following the completion of O&M activities, thereby removing temporary impervious surfaces. In addition, PG&E participates, with CPUC encouragement, in cooperative discussions with affected local governments to address their concerns, where feasible, and PG&E's ongoing O&M activities are required to comply with the most recent version of the Basin Plan and applicable water quality standards

and prohibitions. Furthermore, PG&E recognizes the importance of water conservation and, where appropriate, and in compliance with applicable permits and regulations, has evaluated and will continue to evaluate the value of water used for hydrostatic testing that can be reused for dust control. Also, in compliance with its Statewide Permit, PG&E could discharge water to land with proper filtration. Water discharged to land would percolate into the ground, thereby recharging aquifers.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions associated with groundwater supply and recharge capabilities in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with groundwater use or recharge capabilities is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial decrease in groundwater supplies or interfere substantially with groundwater recharge in a manner that would impede sustainable groundwater management of the basin; any related effects would be **less than significant**.

Impact HYD-3a 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 through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.10.3, PG&E's gas pipeline system has been in place for more than 70 years within the Mojave Desert region of California. Although surface water and flows are scarce in the arid desert climate, some of PG&E's existing facilities in the study area traverse or lie within various drainage courses, including buried pipe, pipeline spans, access roads, and culverts. PG&E has been conducting ongoing O&M activities in the study area as it has in the past under baseline conditions, and these activities will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation on or off site.

Similar to baseline conditions, some of the disturbance caused by PG&E's O&M activities could be near surface water or drainage features, or result in the addition of impervious surfaces, that could expose soils to erosion or siltation and thereby adversely affect the water quality of receiving waters. These activities include grading and/or trenching to maintain access roads or repair existing pipe segments, boring (including HDD), hydrostatic testing, geotechnical investigations, and vegetation clearing. In addition, pipeline erosion repairs within streambeds have sometimes required installation of articulated concrete block mats to stabilize the stream bottom and reduce erosion above the underground pipeline.

All of PG&E's ongoing O&M activities with the potential to alter existing drainage patterns, the course of a stream or river, or increase impervious surfaces in a manner that would result in substantial erosion or siltation on or off site will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance

of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to drainage patterns or the course of a stream or river, including a potential increase in impervious surfaces, in a manner that could result in erosion or siltation. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions associated with erosion or siltation on or off site in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not cause a substantial adverse impact as a result of altering existing drainage patterns through alteration of the course of a stream or river, or through the addition of impervious surfaces.

PG&E's commitment to implementing APMs and BMPs as part of its standard practice, as well as complying with all applicable regulatory requirements, provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to existing baseline conditions or a substantial adverse effect associated with erosion or siltation on or off site. For example, with implementation of APM BIO-3, PG&E uses state-of-the-art construction and installation techniques that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation. Also, as standard practice, PG&E coordinates with and obtains required authorizations from CDFW, USACE, RWQCB, and local jurisdictions (e.g., flood control districts) on a per-activity basis (as required) and will continue to comply with each agency's permit conditions, as discussed in Impact HYD-1. Furthermore, as required with implementation of MM BIO-3 (refer to Section 4.4.4.4), for the protection of streams and watersheds, PG&E would implement all conditions of approval included in the Final LSA Agreement and any other conditions imposed through the related exercise of regulatory authority by any other state or federal agency. In accordance with PG&E's standard practices and BMPs (outlined in Section 4.10.4.2), PG&E restores disturbed areas to match pre-construction conditions as part of all O&M activities, where applicable. PG&E would also continue to comply with the requirements of the Construction General Permit, which requires the implementation of a SWPPP for activities disturbing 1 acre or more of land. Stormwater discharge for activities that disturb smaller areas will continue to be addressed through PG&E's commitment to implementing APM HYD-1 and BMPs. To address erosion and siltation for activities that disturb less than 1 acre of land, as standard practice PG&E returns disturbed areas to their pre-construction grade and cover with a combination of temporary and permanent vegetative stabilization measures, including reseeding where appropriate to match pre-construction conditions. PG&E also installs and maintains a stabilized entrance and exit to work areas, as well as restoring disturbed entrance and exit areas to their pre-construction contours following the completion of its O&M activities.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with erosion or siltation on-or off-site is so attenuated that, although the prospect

of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to altering the existing drainage pattern through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation on or off site; any related effect would be **less than significant**.

Impact HYD-3b **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 through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?**

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.10.3, PG&E's gas pipeline system has been in place for more than 70 years within the Mojave Desert region of California. Although surface water and flows are scarce in the arid desert climate, some of PG&E's existing facilities in the study area traverse or lie within various drainage courses, including buried pipe, pipeline spans, access roads, and culverts. PG&E has been conducting ongoing O&M activities in the study area as it has in the past under baseline conditions, and these activities will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in on- or off-site runoff and flooding.

Similar to the discussion under Impact HYD-3a, all of PG&E's ongoing O&M activities will continue to occur regardless of whether CDFW issues the permits. Specific to this HYD-3b discussion, the ongoing activities also have the potential to result in on- or off-site flooding. However, PG&E's commitment to implementing BMPs as part of its standard practice, as well as complying with regulatory requirements, provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to existing baseline conditions or a substantial adverse effect associated with on-or off-site runoff and flooding in the study area. For example, PG&E implements its BMPs as part of its standard practice to ensure that areas affected by O&M activities are only temporarily affected and that they are restored to pre-construction conditions upon completion of O&M activities, where applicable.

In addition, PG&E implements dewatering and/or flow diversion activities consistent with BMPs from the California Stormwater Quality Association's Stormwater BMP Handbook: New Development and Redevelopment ("BMP Handbook"; CASQA 2003); in compliance with federal, state, and local regulations; and in a manner that would minimize increases in impervious surfaces and control runoff to avoid any flooding potential from runoff for both on- and off-site areas. This would include continuing to coordinate with and obtaining any required authorizations from USACE, CDFW, RWQCB, and local jurisdictions (e.g., flood control districts) on a per-activity basis (as required) and restoring disturbed areas to match pre-construction conditions. Pumps, sandbags, hay bales, and/or temporary holding tanks would continue to be utilized, where necessary and in accordance with regulatory BMPs. Incorporation of PG&E's BMPs as part of its standard practice would help prevent any runoff that could cause adverse effects related to drainage patterns, including slowing the rate or amount of surface runoff. Furthermore, O&M-related excavation activities near water

features generally have been and will continue to be conducted during the dry season and have occurred and will continue to occur in previously disturbed areas within the existing ROW. Also, as required with implementation of MM BIO-3 (refer to Section 4.4.4.4), for the protection of streams and watersheds, PG&E would implement all conditions of approval included in the Final LSA Agreement and any other conditions imposed through the related exercise of regulatory authority by any other state or federal agency.

In summary, and similar to Impact HYD-3a, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with the alteration to drainage patterns or to the course of a stream or rivers, or through the addition of impervious surfaces is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Therefore, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to altering drainage patterns through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in on- or off-site runoff and flooding; any related effect would be **less than significant**.

Impact HYD-3c 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 through the addition of impervious surfaces, in a manner which would 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?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.10.3, PG&E's gas pipeline system has been in place for more than 70 years within the Mojave Desert region of California, and the majority of PG&E's facilities are located underground. PG&E has been conducting ongoing O&M activities in the study area as it has in the past under baseline conditions, and these activities will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the Permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would 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.

Minimal amounts of new impervious surfaces have been created or will continue to be created through PG&E's ongoing O&M activities. Activities that have created, can create, and will continue to create impervious surfaces include installation of erosion control structures, installation or repair of culverts, development of pig launcher/receiver facilities, installation of deep-well anodes, and valve automation/replacements. However, the impervious surfaces created by these O&M activities are, and will continue to be, relatively small and spatially discontinuous, with many areas not having any existing drainage systems. Therefore, because much of the study area does not include existing or planned stormwater drainage systems and the O&M activities are expected to result in minimal new impervious surfaces, there would be no exceedance of drainage

capacities. Furthermore, none of the ongoing O&M activities would have the potential to introduce any new sources of pollutants beyond what was discussed in Impact HYD-1.

Similar to the discussions under Impact HYD-1 (water quality/pollutants) and Impact HYD-3a (alteration of drainage patterns, alteration of a stream or river, or the addition of impervious surfaces), all of PG&E's ongoing O&M activities with the potential to 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 will continue to occur regardless of whether CDFW issues the permits. However, PG&E's commitment to implementing APMs and BMPs as part of its standard practice, as well as complying with regulatory requirements, provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to existing baseline conditions or a substantial adverse effect associated with altering existing drainage patterns through alteration of the course of a stream or river or through the addition of impervious surfaces in the study area. For example, during drilling activities, as necessary, PG&E implements APM HYD-1 (Frac-Out Response) to avoid and minimize effects of a potential frac-out. In addition, as part of its standard practice, PG&E implements construction and post-construction BMPs for water quality in accordance with existing regulatory requirements. PG&E's BMPs also include cleaning and safely disposing of any spilled materials, scheduling activities to avoid rainfall events and periods of high flow, checking and maintaining equipment and vehicles, and restoring disturbed areas. In cases where grading or ground disturbance is required to establish a temporary work area, the pre-construction contours are restored following the completion of construction. Also, as required with implementation of MM BIO-3 (refer to Section 4.4.4.4), for the protection of streams and watersheds, PG&E would implement all conditions of approval included in the Final LSA Agreement and any other conditions imposed through the related exercise of regulatory authority by any other state or federal agency.

In summary, and similar to Impact HYD-1 and Impact HYD-3a, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with the additional sources of polluted runoff is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Therefore, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to altering existing drainage patterns through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which 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; any related effect would be **less than significant**.

Impact HYD-3d 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 through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.10.3, PG&E's gas pipeline system has been in place for more than 70 years within the Mojave Desert region of California. Although surface water and flows are scarce in the arid desert climate, some of PG&E's existing facilities in the study area traverse or lie within various drainage courses, including buried pipe, pipeline spans, access roads, and culverts. PG&E has been conducting ongoing O&M activities in the study area as it has in the past under baseline conditions, and these activities will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how

PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would impede or redirect flood flows.

The majority of PG&E's O&M activities have involved, can involve, and will continue to involve the maintenance of an existing underground pipeline system, with only relatively few new aboveground structures (e.g., pig launcher/receiver facilities, electronic test system stations and cathodic test stations, and thermoelectric generators) to be installed as part of the continuing activities. All of these facilities would have very small footprints (i.e., not exceeding 30,000 square feet per facility) and generally would be constructed in open, undeveloped areas. As discussed, these facilities would not consist of substantial new impervious surfaces and thus would make negligible changes to drainage patterns.

Refer to the discussion under Impacts HYD-3a through HYD-3c regarding altering existing drainage patterns through alteration of the course of a stream or river or increase in impervious surfaces. These potential impacts, including impeding or redirecting flood flows, will continue to occur regardless of whether CDFW issues the permits. However, PG&E's commitment to implementing standard practices and BMPs, as well as complying with regulatory requirements, including conditions in the LSA Agreement issued by CDFW (refer to MM BIO-3), provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to existing baseline conditions or a substantial adverse effect associated with impeding or redirecting flood flows in the study area. For example, PG&E conducts all work within or adjacent to drainages in accordance with applicable water quality standards as well as regulatory and permit requirements as issued by CDFW, USACE, RWQCB, and local jurisdictions (e.g., flood control districts) on a per-activity basis (as required). Furthermore, should PG&E's O&M work require any necessary flow diversion activities, they would be conducted in a manner consistent with BMPs from the BMP Handbook (CASQA 2003) and/or would comply with federal, state, and local regulations.

In summary, and similar to Impacts HYD-3a through HYD-3c, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with impeding or redirecting flood flows is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to altering existing drainage patterns through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that creates or contributes runoff water that would impede or redirect flood flows; any related effect would be **less than significant**.

Impact HYD-4 In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.10.3, PG&E's gas pipeline system has been in place for more than 70 years within the Mojave Desert region of California. Although surface water and flows are scarce in the arid desert climate, some of PG&E's existing facilities in the study area traverse or lie

within various drainage courses, including buried pipe, pipeline spans, access roads, and culverts. PG&E has been conducting ongoing O&M activities in the study area as it has in the past under baseline conditions, and these activities will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would risk release of pollutants due to project inundation.

As described in Chapter 2, PG&E's O&M activities have involved and will continue to involve the maintenance of an existing underground pipeline system. Any aboveground features installed during continuing O&M activities would be limited in scope, would occupy relatively small footprints, and would not involve the storage of substantial quantities of hazardous materials or other pollutants (refer to Section 4.9 and the discussion under Impact HYD-1). O&M activities would also not increase the possibility of inundation by tsunami or seiche waves, because of the distance of the study area from where these hazards typically occur. The study area is well inland, not near the ocean; therefore, the risk of tsunami is negligible. Earthquakes are known to occur within the area, and these events could result in the creation of seiche waves. The Salton Sea, which is the most likely location for a seiche to occur near the study area, is more than 75 miles from the study area and has no documented occurrences of seiche waves. Accordingly, the risk of seiche hazards in the study area is extremely low.

All of PG&E's ongoing O&M activities with the potential to release pollutants due to project inundation will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts related to flood hazards and risk of release of pollutants. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing hydrology and water quality baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not cause a substantial adverse impact related to flood hazards and risk of release of pollutants due to project inundation.

PG&E's commitment to implementing BMPs as part of its standard practice (outlined in Section 4.10.4.2) and complying with regulatory requirements regarding hazardous materials use and storage provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to existing baseline conditions or a substantial adverse effect related to flood hazards and risk of release of pollutants due to project inundation. For example, as part of PG&E's standard practices and BMPs, PG&E would minimize hazardous material storage on site and store hazardous liquids, wastes, and all chemicals in watertight containers with appropriate secondary containment. In addition, prior to rain, at the end of each day, and during non-work days PG&E contains and protects

stockpiled waste materials and implements liquid pollutant containment BMPs that provide measures to ensure their safe storage such that the risk of release during a flooding event would be minimized.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with the release of pollutants due to inundation is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not result in a release of pollutants due to inundation in flood hazard, tsunami, or seiche zones; any related effects would be **less than significant**.

Impact HYD-5 Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.10.3, PG&E's gas pipeline system has been in place for more than 70 years within the Mojave Desert region of California. Although surface water and flows are scarce in the arid desert climate, some of PG&E's existing facilities in the study area traverse or lie within various drainage courses, including buried pipe, pipeline spans, access roads, and culverts. PG&E has been conducting ongoing O&M activities in the study area as it has in the past under baseline conditions, and these activities will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

As discussed in Impact HYD-1, PG&E adheres to existing state and federal water quality regulations, which are intended to ensure that water quality standards and waste discharge standards are not violated, consistent with applicable requirements from CDFW, RWQCB, and USACE. Specific to sustainable groundwater management, as discussed in Impact HYD-2, groundwater has been, can be, and may continue to be involved as part of temporary dewatering activities to complete construction of some improvements and also as a component of water use for other activities, including hydrostatic testing. Dewatering activities are typically short term, lasting only a few hours, and do not involve substantial quantities of groundwater supplies. Dewatered groundwater is also typically discharged in accordance with the Statewide Natural Gas Utility Permit; it may be discharged to storm drains with proper filtration or to land with proper filtration and where no ponding or vector issues would be created. PG&E has and will continue comply with the water sampling, monitoring, and reporting requirements set forth in the Statewide Permit. Water for hydrostatic testing has often been and will continue to be sourced from domestic water provided by local municipal sources (e.g., community water, well water, or water from a well drilled specifically for this purpose) and may include groundwater sources or municipal supplies sourced from groundwater. However, the volumes required are typically relatively small compared to basin supplies, represent short-term demands, and do not represent a substantial change relative to what has historically occurred with ongoing O&M activities that are part of existing baseline conditions.

All of PG&E's ongoing O&M activities with the potential to conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to land use and planning. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in a conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

PG&E's commitment to implementing standard practices and complying with applicable agency-required permits provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to conflicting with or obstructing implementation of a water quality control plan or sustainable groundwater management plan. For example, as discussed in Impact HYD-1, PG&E adheres to agency-required permits that include WQCs from the RWQCB under Section 401 of the CWA, authorization from USACE under Section 404 of the CWA, and/or an LSA Agreement from CDFW pursuant to Section 1602 of the CFGC for PG&E's past and continuing O&M activities, as well as applicable agency-required permits (e.g., an NPDES Construction General Permit from RWQCB, WQCs from the RWQCB under Section 401 of the CWA, authorization from USACE under Section 404 of the CWA, and/or one or more LSA Agreements from CDFW pursuant to Section 1602 of the CFGC). Adherence to these practices and permit requirements would be consistent with RWQCB Basin Plan policies and water quality objectives; as a result, there would be no conflict with or obstruction of the plan.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with a conflict with a water quality control plan or sustainable groundwater management plan is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan; any related effects would be **less than significant**.

4.10.5 Cumulative Impacts

The geographic context for the cumulative analysis of hydrology and water quality is the South Lahontan and Colorado River HRs. Table 3-2, Planned and Proposed Projects within 5 Miles of the Pipelines in the Study

Area, lists the locations of the existing, proposed, and reasonably foreseeable projects within 5 miles of the study area (also shown on Figure 3-1), which are also located in these two HRs.

As discussed in Section 4.10.3, surface water quality in these HRs varies but is generally poor, due largely to natural conditions and also due to human activities that have disturbed native conditions. O&M activities are routine and ongoing under existing baseline conditions, and the majority of O&M activities would be temporary and would occur over a short duration. Many of the O&M activities that have occurred and will continue to occur result in ground disturbance with the potential to expose soils to the effects of wind and water erosion. Work within drainages and surface waters has increased, can increase, and will continue to increase sediment mobility and water turbidity, with the potential for adverse effects on downstream waters. However, as PG&E completes ongoing O&M activities, disturbed areas have been and will continue to be restored to pre-construction or pre-maintenance conditions to the extent possible in accordance with standard practices and BMPs. This restoration has included, can include, and will continue to include post-activity grading to match natural contours, compaction of fill materials, and revegetation. Under baseline conditions, PG&E has complied, and it will continue to comply, with the requirements of the federal CWA, including preparation and incorporation of a SWPPP and compliance with all agency-required permits, which could include WQCs from the RWQCB under Section 401 of the CWA, authorization from USACE under Section 404 of the CWA, applicable Basin Plan policies, and/or one or more LSA Agreements from CDFW pursuant to Section 1602 of the CFGC (also refer to MM BIO-3). These permit requirements not only are designed to ensure that O&M-specific impacts are minimized but also were developed with the intention of protecting water resources on a watershed basis. PG&E has complied, and will continue to comply, with the Statewide Natural Gas Utility Permit, which limits discharges to drainage systems and requires implementation of BMPs to protect water quality.

In addition, the study area intersects 18 groundwater basins with varying groundwater conditions in terms of available groundwater supplies, depths, demands, and groundwater quality. Some of these basins are in critical overdraft, where extractions exceed inflows (e.g., Indian Wells Valley). Basins such as Antelope Valley are adjudicated to provide a framework for sustainable management, while all the other basins within the study area are considered low-priority basins largely because of the low density of population and water demand in these basins (DWR 2021). PG&E's O&M activities have required and will continue to require water sourced from local municipal sources and water purveyors. PG&E has been able to secure up to 12 million gallons of water from existing PG&E facilities and local landowners for hydrotest projects in the past. Although municipal water may be sourced from groundwater supplies, the volume of water sourced from groundwater has historically had a negligible effect on groundwater supplies.

All projects, including the ongoing O&M activities, would be expected to incorporate BMPs as standard practice and to comply with regulatory requirements for hydrology and water quality, including groundwater. Accordingly, the incremental contribution from ongoing O&M activities to cumulative hydrology and water quality impacts, including groundwater, caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to hydrology and water quality, including groundwater.

4.10.6 Residual Impacts

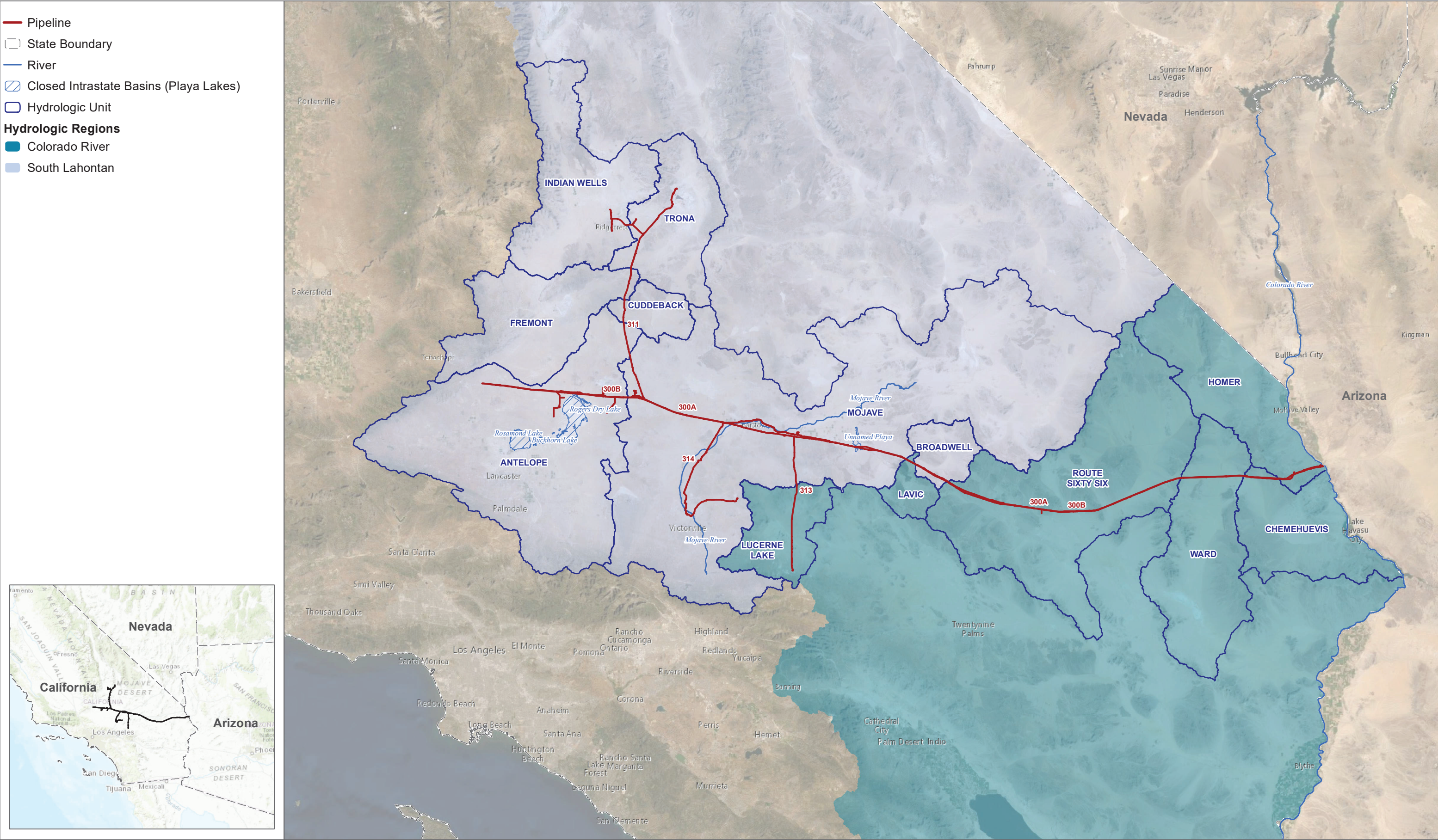
PG&E's O&M activities have been ongoing and are a component of the existing baseline conditions in the study area. O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's

commitment to implementing APM HYD-1, APM BIO-3, and BMPs as part of its standard practice, as well as conditions in the Final LSA Agreement issued by CDFW (refer to MM BIO-3), provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect on hydrology or water quality.

4.10.7 References

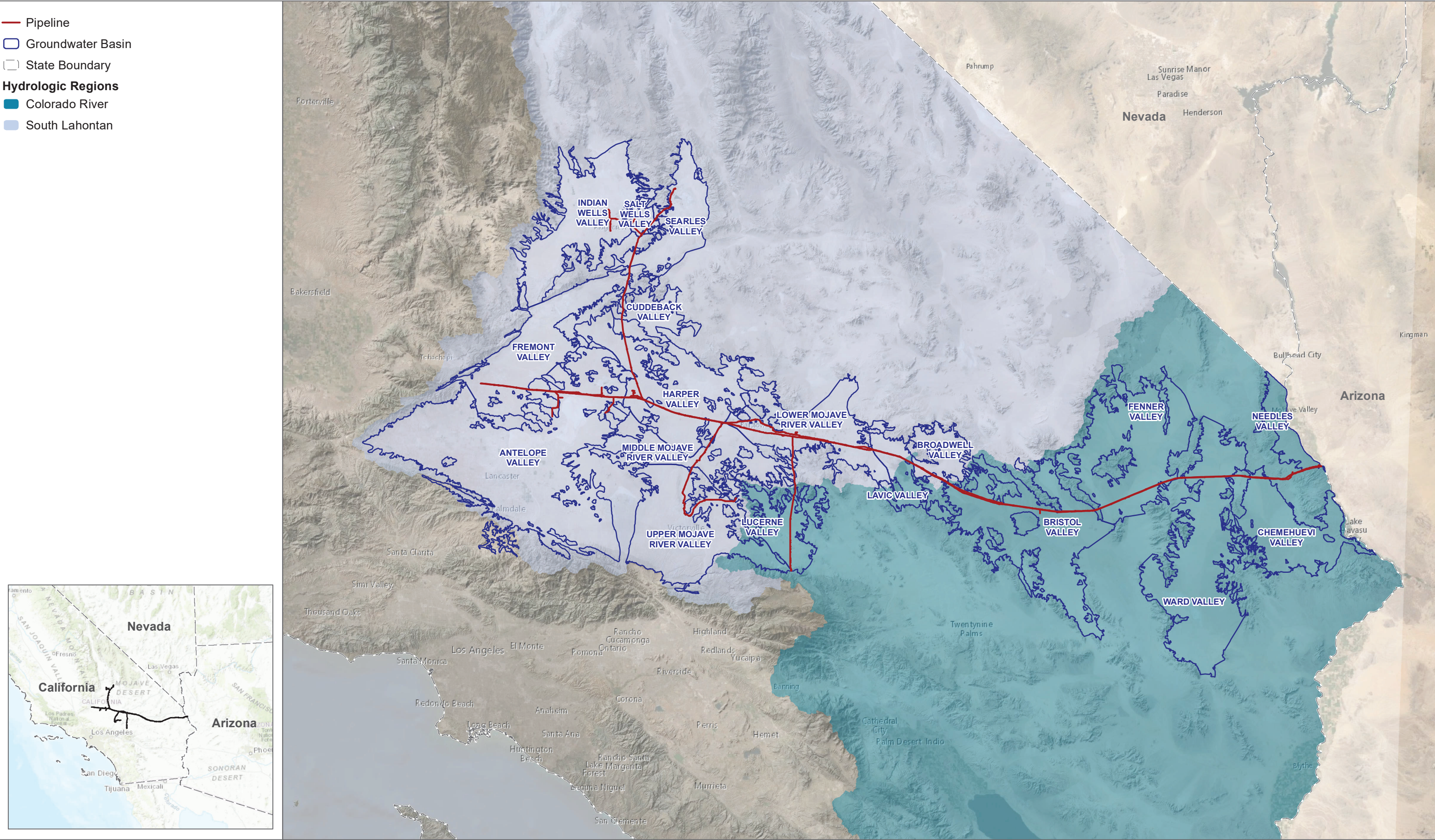
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SOURCES: California Department of Water Resources 1999; Insignia 2018; PG&E 2018

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SOURCES: California Department of Water Resources 2006; Insignia 2018; PG&E 2018

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4.11 Land Use and Planning

4.11.1 Introduction

The proposed project for the purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) that would authorize take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGC). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section evaluates the environmental impacts on land use and planning that may result directly or indirectly from CDFW's issuance of the ITP and the expected LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on land use and planning that could result with continuing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the project for purposes of CEQA).

Section 4.11.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have been occurring and will continue to occur, specific to land use and planning.

Section 4.11.3 provides a description of the existing baseline conditions for land use and planning in the O&M activities area ("study area"). Specifically, this section provides a description relative to land use and planning in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities, regardless of whether CDFW issues the requested permits. This existing baseline condition, which includes the ongoing activities already being implemented by PG&E relative to their past, present, and continued potential effects, is the benchmark used in the Section 4.11.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these environmental baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.11.4 provides an analysis of whether issuance of the requested proposed permits (pursuant to the CFGC) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline and a substantial or potentially substantial adverse effect related to land use and planning. The section also identifies the significance criteria used for the impact analysis. Furthermore, this section discusses applicable regulatory authority or governing law that has and will continue to apply, specific to land use and planning.

Section 4.11.5 provides an analysis of whether the project-related incremental change to the environmental baseline would be cumulatively considerable and therefore significant.

Section 4.11.6 identifies the residual environmental impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.11.7 lists the references cited in this section.

During the scoping effort, no party identified any public concerns related to potential land use and planning impacts.

The analysis included in this section is based on information that PG&E provided to CDFW, as well as relevant information gathered and considered by CDFW, with assistance from its environmental consultant.

4.11.2 Applicable Regulations, Plans, and Policies

The following subsections describe the regulations and regulatory agencies that pertain to land use that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and CDFW analysis of whether the proposed issuance of the permits would cause an incremental physical change to the existing environment and cause significant impacts to land use and planning.

Federal

Federal Land Policy and Management Act

The Federal Land Policy and Management Act (FLPMA) provides a regulatory framework for the management of Bureau of Land Management (BLM) land and its use of resources. An important aspect of the FLPMA is that it supports multiple uses on public lands. The BLM also regulates rights-of-way (ROWs) for electrical power generation, transmission and distribution systems, systems for the transmission and reception of electronic signals and other means of communication, pipelines (other than oil and gas), railroads, highways, and other facilities or systems developed in the interest of the public under the FLPMA.

California Desert Conservation Area Plan

The California Desert Conservation Area (CDCA) is an approximately 25-million-acre expanse of land in Southern California that was designated by Congress in 1976 through the FLPMA. The CDCA Plan is a comprehensive, long-range plan for the management, use, development, and protection of lands within the CDCA, and is required as part of the FLPMA and implemented by the BLM. The BLM adopted a Land Use Plan Amendment (LUPA), which amended the CDCA Plan in September 2016 as part of Phase I of the Desert Renewable Energy Conservation Plan (DRECP). The purpose of the DRECP LUPA is to conserve and manage plant and wildlife communities in the desert regions of California while facilitating federal permitting of compatible renewable energy projects. The DRECP covers over 10 million acres of BLM-administered land. The BLM Record of Decision for the DRECP was issued in September 2016. Projects that comply with the Conservation and Management Actions (CMAs) specified in the DRECP can be approved by BLM in a Development Focus Area without the need for a LUPA. BLM describes the DRECP as a landscape-level plan that streamlines renewable energy development while conserving unique and valuable desert ecosystems and providing outdoor recreation opportunities. No state or local agency, including CDFW, has adopted or approved the DRECP. CDFW recognizes the DRECP under federal law as a land use plan for BLM. It is also a relevant regional plan for purposes of CDFW's lead agency review of the O&M activities under CEQA as the whole of the action, including the DRECP's landscape-level focus on the conservation of, among other things, unique desert ecosystems in the plan area, which includes the study area.

BLM DRECP LUPA

The BLM LUPA establishes management direction for the permitting of renewable energy and transmission development on approximately 10 million acres of BLM-managed lands in the DRECP area. The LUPA Decision Area includes conservation designations and recreation designations throughout the CDCA, including California Desert National Conservation Lands, Areas of Critical Environmental Concern (ACECs), and Wildlife Allocations.¹ ACECs are managed using CMAs and ACEC-specific disturbance caps, which range from 0.1% to 1.0% of total ACEC and/or National Conservation Land unit acreage, and cumulatively consider past, present, and future disturbance. The disturbance caps are expressed as a percentage of total ACEC and/or National Conservation Land unit acreage, which ranges from 40 to 875,400 acres (DRECP 2016). The ground disturbance caps serve as an objective, triggering a specific disturbance mitigation requirement if the ground disturbance condition of the ACECs and/or California Desert National Conservation Lands is at or above its designated cap. The disturbance mitigation requirement remains in effect until the unit drops below its specified cap, at which time the disturbance cap becomes a limitation.

State

California Public Utilities Commission General Order 112-F

California Public Utilities Commission (CPUC) General Order 112-F requires the maintenance and repair of natural gas pipelines. In October 2011, the California legislature signed into law Senate Bill (SB) 705, which declared “[i]t is the policy of the state that the commission and each gas corporation place safety of the public and gas corporation employees as the top priority.” SB 705 was codified as Public Utilities Code (PUC) Sections 961 and 963(b)(3). Section 961 of the PUC requires gas operators go beyond what is considered “adequate” to develop and implement gas safety plans that are “consistent with best practices in the gas industry.” On April 20, 2012, CPUC amended the scope of its Pipeline Safety Rulemaking to include compliance with the requirements of PUC Sections 961 and 963.4. CPUC further directed each California natural gas corporation to develop and implement a plan for the safe and reliable operation of its gas pipeline facilities.

Local

The following subsections describe local regulations regarding land use that are relevant to the study area. Pursuant to Article XII, Section 8 of the California Constitution, CPUC has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, operation, maintenance, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with CPUC. Although local governments do not have the power to regulate such activities, CPUC encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has considered relevant regional and county policies and issues in this environmental impact report (EIR).

The following plans from local jurisdictions were reviewed, and no specific goals or policies were identified that are relevant to ongoing O&M activities in the study area:

- City of Barstow 2015–2020 General Plan
- City of Victorville General Plan 2030
- Town of Apple Valley 2009 General Plan

¹ *Wildlife Allocations* is a land use designation wherein the management of the identified lands emphasizes protection and enhancement of plant and wildlife habitats.

- Kern County General Plan
- City of Ridgecrest General Plan

Plans with relevant goals or policies are described in the subsections that follow.

San Bernardino County

San Bernardino County 2020 Countywide Policy Plan. The Land Use Element of the San Bernardino County 2020 Countywide Policy Plan functions as a guide to the ultimate pattern of development for San Bernardino County. The policy plan also includes an Infrastructure and Utilities Element, which sets forth policies related to natural gas and electricity. The 2020 Countywide Policy Plan includes the following relevant goal and policies (San Bernardino County 2020):

Goal IU-5: Power and Communications. Unincorporated area residents and businesses have access to reliable power and communication systems.

Policy IU-5.1: Electricity and natural gas service. We partner with other public agencies and providers to improve the availability and stability of electricity and natural gas service in unincorporated communities.

Policy IU-5.5: Energy and fuel facilities. We encourage the development and upgrade of energy and regional fuel facilities in areas that do not pose significant environmental or public health and safety hazards, and in a manner that is compatible with military operations and local community identity.

San Bernardino County Code of Ordinances. Division 2: Land Use Zoning Districts and Allowed Land Uses of San Bernardino County's Code of Ordinances implements the county's general plan. A majority of the land crossed by the pipelines in San Bernardino County is within the resource conservation zoning designation. Section 82.03.040 of the San Bernardino County Code of Ordinances regulates development within this zoning district.

City of Barstow

City of Barstow Municipal Code. Title 19: Zoning Code of the City of Barstow's Municipal Code implements the city's general plan. A majority of the land the pipelines cross in the City of Barstow is within the residential zoning designation. Section 19.10 of the City of Barstow Municipal Code regulates development within this zoning district.

City of Victorville

City of Victorville Code of Ordinances. Title 16: Development of the City of Victorville's Code of Ordinances (City of Victorville 2017) implements the city's general plan. A majority of the land crossed by the pipelines in the City of Victorville is within the specific plan zoning designation. Section 16-3.14.030 of the City of Victorville Code of Ordinances controls development within this designation.

Town of Apple Valley

Town of Apple Valley Code of Ordinances. The Title 9: Development Code of the Town of Apple Valley's Code of Ordinances implements the town's general plan. The land crossed by the pipelines in the Town of Apple Valley is entirely within the specific plan zoning designation. Section 9.56.040 of the Town of Apple Valley Code of Ordinances controls development within this designation.

Kern County

Kern County Code of Ordinances. Title 19: Zoning of Kern County's Code of Ordinances (County of Kern 2015) implements the county's general plan. A majority of the land crossed by the pipelines in Kern County is within the agriculture zoning designation. Sections 19.12.020 and 19.14.020 of the Kern County Code of Ordinances regulate development within this zoning district.

City of California City

City of California City Final General Plan 2009–2028. The Land Use Element of the City of California City Final General Plan 2009–2028 presents a plan for land uses guided by goals, policies, and implementation measures that resolve to enhance and protect the quality of life in the City of California City. The following goals are relevant (City of California City 2009):

Goal 1: To facilitate and implement growth and development coordinated with the provision of infrastructure, public facilities, and public services.

Goal 3: Implement growth management decisions which achieve the following benefit:

- Maximize use of existing service systems and facilities.

City of California City Code of Ordinances. Title 9: Land Use and Development of the City of California City's Code of Ordinances (City of California City 2017) implements the city's general plan. The land crossed by the pipelines in the City of California City is entirely within the open space/residential/agricultural district zoning designation. Sections 9-2.2302 and 9-2.401 of the City of California City Code of Ordinances controls development within the open space/residential/agricultural district zoning designation.

City of Ridgecrest

City of Ridgecrest Municipal Code. Chapter 20: Zoning of the City of Ridgecrest's Municipal Code (City of Ridgecrest 2005) implements the city's general plan. A majority of the land crossed by the pipelines in the City of Ridgecrest is within the commercial and urban reserve zoning designations. Sections 20.16.2 and 20.5.2 of the City of Ridgecrest's Municipal Code control development within this designation.

4.11.3 Existing Baseline Conditions

This section provides a description of the existing baseline conditions relative to land use and planning in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. PG&E's gas pipeline system has been in place for more than 70 years. Impact data collected by PG&E from 2017 to September 2021 regarding temporary and permanent

disturbance impacts caused by O&M activities provides important detail about the environmental baseline for purposes of CEQA (refer to Section 1.1, Proposed Project and Environmental Review, of this EIR). The ongoing baseline condition from 2017 to 2021, which includes PG&E's past and ongoing O&M activities, is the benchmark used in the Section 4.11.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

The study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands. Federal lands constitute a majority of the land area in the Mojave Desert region, including lands under the jurisdiction of the BLM, U.S. Fish and Wildlife Service (USFWS), and the U.S. Department of Defense (DoD). Portions of the study area cross the City of Barstow, City of Victorville, Town of Apple Valley, City of California City, and City of Ridgecrest. A majority of the study area is within undeveloped, open areas. A detailed description of the locations of each pipeline in the study area is provided in Chapter 2, Project Description.

Existing Land Uses

The existing land uses in the vicinity of the study area are primarily vacant or managed open space. Table 4.11-1 summarizes the federal and state lands within the study area, and each land use is discussed in the subsections that follow.

Table 4.11-1. Existing Federal and State Land Uses in the Study Area

Owner/ Manager	Land Uses	Acres within the Study Area	Acres within 0.25 miles beyond the Study Area
Federal			
BLM	CDCA	22,176	101,058
	Marble Mountains Wildlife Area	498	1,667
	Mojave Trails National Monument	9,941	34,362
	Open Access Public Land	127	412
USFWS	Havasu National Wildlife Refuge (NWR)	115	320
DoD	Edwards Air Force Base	1,676	7,275
	Marine Corps Logistics Base Barstow	218	954
	Naval Air Weapons Station China Lake	740	3,972
State			
CDFW	West Mojave Desert Ecological Reserve	6	114
CSLC	School Lands	152	748

Sources: CPAD 2020; USFWS 2021; DoD 2017.

Notes: BLM = Bureau of Land Management; CDCA = California Desert Conservation Area; USFWS = U.S. Fish and Wildlife Service; DoD = U.S. Department of Defense; CDFW = California Department of Fish and Wildlife; CSLC = California State Lands Commission.

Federal

Bureau of Land Management

California Desert Conservation Area

The CDCA was created by Congress in 1976 to preserve historical, scenic, archaeological, environmental, biological, cultural, scientific, educational, recreational, and economic resources that are uniquely located adjacent to an area with a large population. Section 601 of the FLMPA required preparation of a long-range plan for the CDCA. The CDCA Plan was adopted in 1980 to provide for the use of public lands and resources of the CDCA in a manner that enhances, wherever possible, and does not diminish, on balance, the environmental, cultural, and aesthetic values of the desert and its productivity (BLM 1980). The CDCA Plan is a comprehensive, long-range plan covering 25 million acres. Approximately 10 million acres of this total are public lands administered by BLM on behalf of the CDCA.

The CDCA Plan contains goals and specific actions for the management, use, development, and protection of the resources and public lands within the CDCA, and is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality. A consistency analysis, including review of all applicable Conservation and Management Actions, has been done to ensure the projects align with the goals and objectives of the CDCA Plan, as amended. This is included in the Plan of Development and reviewed by BLM.² The CDCA Plan identifies ACECs as special management areas where attention is required to protect important historic, cultural, scenic, biological, or other natural resources. Approximately 32,615 acres of the CDCA is within the study area and 132,876 acres of the CDCA is within the area 0.25 miles beyond the study area.

The LUPA Decision Area includes conservation designations and recreation designations throughout the CDCA, including California Desert National Conservation Lands, ACECs, and Wildlife Allocations. There are approximately 14,945 acres of ACECs within the study area and approximately 59,851 acres within 0.25 miles beyond the study area. The DRECP also includes two recreation designations: Special Recreation Management Areas (SRMAs) and Extensive Recreation Management Areas (ERMAs). There are approximately 8,514 acres of SRMAs and 3,104 acres of ERMAs within the study area and approximately 36,177 acres of SRMAs and 10,283 acres of ERMAs within 0.25 miles beyond the study area, as shown in Table 4.11-2 (DRECP 2016). Refer to Section 4.13, Recreation, for additional information on SRMAs and ERMAs within the study area.

Table 4.11-2. DRECP Designations in the Study Area

DRECP Designation	Acres within the Study Area	Acres within 0.25 Miles beyond the Study Area
SRMAs	8,514	36,178
ERMAs	3,104	10,283
ACECs	14,945	59,851

Source: DRECP 2015.

Notes: SRMA = Special Recreation Management Area; ERMA = Extensive Recreation Management Area; ACEC = Area of Critical Environmental Concern.

² The Plan of Development can be found on the BLM project ePlanning website at <https://eplanning.blm.gov/eplanning-ui/project/1502789/570>.

Marble Mountains Wildlife Area

The Marble Mountains Wildlife Area, which is co-managed by the BLM and CDFW, is located approximately 12 miles southeast of the community of Baker, along Kelbaker Road, and within the eastern portion of the Mojave National Scenic Area. The Marble Mountains Wildlife Area covers approximately 225,114 acres and offers opportunities for camping, hiking, and horse riding (CDFW 2016a). The study area includes approximately 498 acres of the Marble Mountains Wildlife Area. Approximately 1,667 acres of the Marble Mountains Wildlife Area is within 0.25 miles beyond the study area.

Mojave Trails National Monument

The Mojave Trails National Monument is located between Joshua Tree National Park and the Mojave National Preserve along U.S. Route 66 in San Bernardino County. The Mojave Trails National Monument is managed by the BLM and covers approximately 965,000 acres. The Mojave Trails National Monument offers opportunities for camping, hiking, and hunting. The study area includes approximately 9,941 acres of the Mojave Trails National Monument. Approximately 34,362 acres of the Mojave Trails National Monument is within 0.25 miles beyond the study area.

United States Fish and Wildlife Service

Havasu National Wildlife Refuge

The Havasu NWR is located along the lower Colorado River in Arizona and California and is managed by the USFWS. The Havasu NWR covers approximately 37,515 acres and offers opportunities for canoeing, kayaking, hunting, boating, fishing, and wildlife observation (USFWS 2015). The study area includes approximately 115 acres of the Havasu NWR. Approximately 320 acres of the Havasu NWR is within 0.25 miles beyond the study area.

United States Department of Defense

Edwards Air Force Base

Edwards Air Force Base is located in Southern California, approximately 15 miles east of the community of Rosamond and 22 miles northeast of the City of Lancaster, and it covers approximately 301,000 acres. The base serves as a test site for aerospace technology and supports research and development of aerospace systems (Edwards Air Force Base 2017). The study area includes approximately 1,676 acres of Edwards Air Force Base. Approximately 7,275 acres of Edwards Air Force Base is within 0.25 miles beyond the study area.

Marine Corps Logistics Base Barstow

The Marine Corps Logistics Base Barstow is located in the Mojave Desert approximately 2.5 miles southeast of the City of Barstow. The base is composed of three principal sites, which total approximately 6,176 acres (USMC 2017). The base is part of the U.S. Marine Corps and supports the Marine Corps, Army, and other government components by rebuilding and repairing equipment. The study area includes approximately 218 acres of the Marine Corps Logistics Base Barstow. Approximately 954 acres of the Marine Corps Logistics Base Barstow is within 0.25 miles beyond the study area.

Naval Air Weapons Station China Lake

The Naval Air Weapons Station China Lake is in the Western Mojave Desert region of California Lake and occupies three counties in Southern California—Kern, San Bernardino, and Inyo—and is approximately 150 miles north of the City of Los Angeles. The Station’s two ranges and main site cover more than 1.1 million acres. The Naval Air Weapons Station China Lake is the U.S. Navy’s largest single landholding, and it provides and maintains facilities, lands, and other assets that support the U.S. Navy (CNIC 2017). The study area includes approximately 740 acres of the Naval Air Weapons Station China Lake. Approximately 3,972 acres of the Naval Air Weapons Station China Lake is within 0.25 miles beyond the study area.

West Mojave Desert Ecological Reserve

The West Mojave Desert Ecological Reserve, which is managed by the CDFW, is located approximately 7 miles east of U.S. Route 395 and north of Kramer Junction (State Route [SR-] 58 and U.S. Route 395). The West Mojave Desert Ecological Reserve covers approximately 18,000 acres and offers opportunities for wildlife viewing, hiking, and seasonal hunting (CDFW 2016b). The study area includes approximately 6 acres of the West Mojave Desert Ecological Reserve. Approximately 114 acres of the West Mojave Desert Ecological Reserve is within 0.25 miles beyond the study area.

California State Lands Commission School Lands

School lands are generally located in the California desert and are what remain of the approximately 5.5 million acres granted to California by Congress in 1853 to benefit public education. The study area includes approximately 152 acres of school lands (CSLC 2015). Approximately 748 acres of school lands are within 0.25 miles beyond the study area.

Local

Because the study area encompasses a large area, the city and county designated land uses and zoning vary significantly depending on the location. The primary designated land uses allow for resource conservation-related uses. Designated land uses in more urban areas include low-density residential development. Appendix F, General Plan Land Use Designations Within the Study Area, depicts the land use designations within the study area.^{3,4} The local land uses are summarized in Table 4.11-3 and described in the subsections that follow.

Table 4.11-3. General Plan Land Use Designations in the Study Area

County/City General Plan Land Use Designation	Acres within the Study Area	Acres within 0.25 Miles beyond the Study Area
Kern County	4,658	19,138
City of California City	405	1,315
Non-Jurisdictional Lands	405	1,309
Resource	0.1	5

³ Other includes “Cemeteries,” “Check,” “Non-Attended Public Parking,” “Open Storage,” and “Other Special Care Use” land use designations.

⁴ State or federal land is included within the non-jurisdictional land use designation.

Table 4.11-3. General Plan Land Use Designations in the Study Area

County/City General Plan Land Use Designation	Acres within the Study Area	Acres within 0.25 Miles beyond the Study Area
City of Ridgecrest	322	1,780
Non-Jurisdictional Lands	2521	1,598
Roadway	70	181
Vacant	0.1	0.4
Unincorporated	3,931	16,043
Agriculture	421	1,713
Commercial	153	412
Industrial	271	911
Infrastructure	26	90
Non-Jurisdictional Lands	1,701	7,709
Parks/Recreation	3	81
Public/Institutional	53	115
Residential	267	1,302
Resource	1,037	3,711
San Bernardino County	28,237	118,773
City of Adelanto	0	15
Floodways	0	2
Vacant	0	12
City of Barstow	675	3,584
Base (built-up area)	23	296
Commercial	2	12
Floodways	40	245
Industrial	0.1	5
Infrastructure	43	218
Mineral Extraction	0	29
Office	0	2
Other	0	4
Parks/Recreation	0	26
Public Facilities	17	81
Public/Institutional	7	34
Residential	40	260
Roadway	19	142
Vacant	484	2,232
City of Victorville	343	1,805
Commercial	0	2
Floodways	2	42
Industrial	0	21
Infrastructure	129	207
Mineral Extraction	12	64

Table 4.11-3. General Plan Land Use Designations in the Study Area

County/City General Plan Land Use Designation	Acres within the Study Area	Acres within 0.25 Miles beyond the Study Area
Mixed Use	0	9
Other	8	45
Parks/Recreation	0	3
Public/Institutional	4	35
Residential	20	68
Roadway	4	31
Vacant	164	1,279
Town of Apple Valley	238	1,176
Residential	6	26
Roadway	12	34
Vacant	221	1,117
Unincorporated	26,982	112,192
Agriculture	401	1,727
Base (built-up area)	135	737
Commercial	14	77
Floodways	123	1,018
Grazing/Livestock	24	143
Industrial	169	309
Infrastructure	93	3,530
Mineral Extraction	291	1,919
Non-Jurisdictional Lands	0	0.5
Other	19	36
Parks/Recreation	28	121
Public/Institutional	6	58
Residential	664	3,483
Roadway	422	1,121
Vacant	23,755	97,913
Total	32,895	137,910

Source: PG&E, pers. comm., 2021.

Kern County

Approximately 4,658 acres of the study area and 19,138 acres within 0.25 miles outside of the study area are within Kern County. The western portion of the existing pipelines are located in the eastern portion of unincorporated Kern County. The unincorporated area of Kern County in the vicinity of the study area is largely managed by BLM and DoD.

City of California City

The City of California City is in northern Antelope Valley and is surrounded entirely by unincorporated Kern County. Edwards Air Force Base is located approximately 11 miles south of the city. Approximately 405 acres of the study area and 1,315 acres within 0.25 miles outside of the study area are within the City of California City.

City of Ridgecrest

The City of Ridgecrest is located near U.S. Route 395 in the Indian Wells Valley and is surrounded entirely by unincorporated Kern County to the west, south, and east. The northern portion of the city is on Naval Air Weapons Station China Lake. Approximately 322 acres of the study area and 1,780 acres within 0.25 miles outside of the study area are within the City of Ridgecrest.

San Bernardino County

Approximately 28,237 acres of the study area and 118,773 acres within 0.25 miles outside of the study area are within San Bernardino County. The unincorporated area of San Bernardino County in the vicinity of the study area is largely managed by BLM and DoD. The study area is located within the Desert Planning Region of San Bernardino County.

City of Adelanto

The City of Adelanto is located just northwest of the City of Victorville. The study area is not within the City of Adelanto, however approximately 15 acres within 0.25 miles outside of the study area are within the City of Adelanto.

City of Barstow

The City of Barstow is located at the convergence of several major highways, including Interstate (I-) 15, I-40, SR-58, and U.S. Route 66. The City of Barstow is surrounded by unincorporated areas of San Bernardino County. Approximately 675 acres of the study area and 3,584 acres within 0.25 miles outside of the study area are within the City of Barstow.

City of Victorville

The City of Victorville is located in southwestern San Bernardino County along I-15. The city is bordered by the Town of Apple Valley to the east, the City of Hesperia to the south, the City of Adelanto to the northwest, and unincorporated San Bernardino County to the west. Approximately 342 acres of the study area and 1,805 acres within 0.25 miles outside of the study area are within the City of Victorville.

Town of Apple Valley

The Town of Apple Valley is located in the southwestern portion of San Bernardino County and is bordered to the southwest by Mojave Narrows Regional Park and the City of Hesperia, to the west by the City of Victorville, and to the east and north by unincorporated San Bernardino County. Approximately 238 acres of the study area and 1,176 acres within 0.25 miles outside of the study area are within the Town of Apple Valley.

4.11.4 Impact Analysis

4.11.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of land use and planning impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For the purposes of this EIR, land use and planning impacts would be significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would:

1. Physically divide an established community.
2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

4.11.4.2 Applicable Measures

No applicable measures specific to land use and planning are required. However, PG&E is committed to implementing its ongoing standard practices and complying with applicable land use regulations.

4.11.4.3 Impact Discussion

Impact LU-1 Would the project physically divide an established community?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.11.3, Existing Baseline Conditions, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands, with a majority of the study area located within undeveloped, open areas. PG&E has been conducting ongoing O&M activities in the study area, as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would physically divide an established community.

The unincorporated area of San Bernardino County in the vicinity of the study area is largely maintained by the BLM and DoD, and approximately 90% of the land crossed by the existing pipelines within unincorporated San Bernardino County is vacant. A small portion of the land crossed by the existing pipelines within unincorporated San Bernardino County is designated infrastructure/industrial and residential (approximately 4% and 2%, respectively). Less than 4% of the existing pipelines cross the City of Barstow, the City of Victorville, and the Town of Apple Valley. Within these cities, the existing land uses within the study area consist mostly of residential and specific plan designations. A majority of the study area in unincorporated Kern County is maintained by the BLM and DoD, and the study area primarily includes land that is designated as federal or state land and resources (approximately 38% and 28%, respectively). Less than 2% of the existing pipelines cross the City of California City and the City of Ridgecrest. Within these cities, the existing land use within the study area consists mostly of open space/residential/agricultural. More than 84% of the existing pipelines are within vacant land and do not cross established communities.

O&M activities have resulted in, can result in, and will continue to result in temporary disturbance in areas that have been previously disturbed, such as along existing pipeline ROWs and existing access roads. In addition, some O&M activities include installation of aboveground structures, such as pig/launcher receiver facilities, electronic test system stations, cathodic test stations, and thermoelectric generators. These permanent aboveground structures have small footprints in relation to the size of existing communities (ranging from 100 to 30,000 square feet per facility) and are low profile. In addition, PG&E sites aboveground structures along the existing underground natural gas pipeline network (within the study area), which is an existing linear feature. O&M activities (e.g., staging yards and access roads) that may occur within 0.25 miles beyond the study area buffer would not be of the scale or magnitude to divide an established community.

All of PG&E's ongoing O&M activities with the potential to physically divide an established community will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to land use and planning. Issuing the permits conditioning PG&E's ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if any exists at all. That said, as discussed in Section 4.4 of this EIR (Biological Resources), issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in physically dividing an established community.

PG&E's commitment to implementing standard practices and complying with applicable land use regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to physically dividing an established community. For example, as part of its standard practice, PG&E land agents and land planners verify that the necessary land rights are obtained for both temporary and permanent easements.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with land use and planning is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to physically dividing an established community; any related effects would be **less than significant**.

Impact LU-2 Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.11.3, Existing Baseline Conditions, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands, with a majority of the study area located within undeveloped, open areas. PG&E has been conducting ongoing O&M activities in the study area, as they have in the past under baseline conditions, and will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

This section specifically discusses consistency with the following plans and policies⁵:

- Federal Land Policy and Management Act (FLPMA)
- Bureau of Land Management Land Use Plan Update (BLM LUPA)
- County of San Bernardino 2007 General Plan
- City of California City Final General Plan 2009–2028

As detailed in the following subsections, O&M activities have been and continue to be required to be consistent with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the study area. Furthermore, because the past and ongoing O&M activities would not facilitate any changes or modifications to the existing land uses, these activities would be expected to remain consistent with existing agricultural, industrial, commercial, institutional, residential, and open space uses.

Federal Land Policy and Management Act

Section 501 of the FLPMA regulates granting, issuing, or renewing ROWs for pipelines (other than oil and gas) within public lands. Existing land grants and licenses for the existing pipelines were issued in compliance with the FLPMA, and any expansion or renewal of ROWs associated with O&M activities within public lands would be required to comply with the FLPMA.

Bureau of Land Management Land Use Plan Update

O&M activities would occur within the BLM's LUPA Decision Area, which includes a number of land use designations, such as ACECs. As discussed in Section 4.11.2, Applicable Regulations, Plans, and Policies, ground-disturbing activities within ACECs are subject to disturbance caps. The disturbance caps are expressed as a percentage of total ACEC and/or National Conservation Land unit acreage, which ranges from 40 to

⁵ The Kern County General Plan, City of Barstow 2015–2020 General Plan, Town of Apple Valley 2009 General Plan, City of Ridgecrest General Plan, and City of Victorville General Plan 2030 do not contain specific goals or policies that are relevant to the proposed project or the study area.

875,400 acres. Based on temporary and permanent disturbance resulting from O&M activities as part of baseline conditions, the O&M activities have the potential to result in an annual average of 40 acres of temporary impacts and 3 acres of permanent impacts, but could increase up to 150 acres of temporary and/or permanent impacts to Mojave desert tortoise habitat and up to 25 acres (within the 150 acres) of temporary and/or permanent impacts to suitable Mohave ground squirrel habitat. If the permit is approved for a 30-year term, impacts over that time could total up to 1,200 acres of temporary impacts and 90 acres of permanent impacts. However, these impacts would be relatively small compared to the size of ACEC units, and they would not exceed the prescribed disturbance caps. In addition, as discussed in Chapter 2, it is anticipated that most years will involve a minimal number of O&M activities and that disturbance resulting from O&M activities will typically be lower than these anticipated disturbance estimates.

PG&E has adopted measures to protect plant and animal species, as described in Section 4.4. The measures were adopted from applicable CMAs described in BLM's LUPA, and were intended to address the conditions in the study area. BLM's land use determination regarding the projects' consistency with the DRECP under federal law is entitled to deference. From a CEQA perspective, CDFW as a lead agency has not identified any inconsistency in its independent judgment between the project and the DRECP. Similarly, CDFW has not identified and is not aware of any conflict between the DRECP and the proposed project that may cause a physical change to the environment not already considered in this EIR. As such, and per PG&E's ongoing standard practice, it is expected that O&M activities would continue to remain consistent with policies or regulations adopted for the purpose of avoiding or mitigating an environmental effect.

County of San Bernardino 2007 General Plan

Goal CI 18 and Policy CI 18.1 of the Land Use Element in the County of San Bernardino 2007 General Plan stipulate that the County of San Bernardino will work with utility suppliers to ensure that there is adequate capacity and supply for current and planned development in the county (San Bernardino County 2007). Per PG&E's ongoing standard practice, it is expected that O&M activities would continue to remain consistent with this goal and policy.

City of California City Final General Plan 2009–2028

Goal 1 of the Land Use Element of the City of California City Final General Plan 2009–2028 focuses on facilitating and implementing growth in coordination with infrastructure, public facilities, and public services, and Goal 3 describes the efficient utilization of existing services systems and facilities (City of California City 2009). O&M activities would not construct new pipelines or expand the service area of existing pipelines; therefore, Goal 1 is not applicable. PG&E does not currently serve the City of California City; therefore, Goal 3 is not applicable.

All of PG&E's ongoing O&M activities with the potential to conflict with applicable land use plans, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental effect will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to land use and planning. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how

PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in conflicts with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

PG&E's commitment to implementing standard practices and complying with applicable land use regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to conflicts with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. For example, as part of its standard practice, PG&E land agents and land planners verify that the necessary land rights are obtained for both temporary and permanent easements.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with land use and planning is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to conflicts with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect; any related effect would be **less than significant**.

4.11.5 Cumulative Impacts

The geographic scope for cumulative impacts related to land use and planning includes related projects within a 1-mile-wide area along the entire length of the pipeline alignment within Kern and San Bernardino Counties (refer to Table 3-1, Geographic Scope of Cumulative Impacts and Method of Evaluation).

O&M activities have had and continue to have the potential to result in cumulative impacts to land use and planning in combination with other projects in the study area if ongoing activities were to occur simultaneously and combine to physically divide an established community and/or cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

O&M activities are routine and ongoing under existing baseline conditions, and the majority of O&M activities would be temporary and would occur over a short duration. As shown in Table 3-2, Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area, several related projects would occur within 1 mile of the PG&E gas pipeline. However, all projects, including the ongoing O&M activities, would be expected to remain consistent with local land use plans. In addition, PG&E would commit to implementing standard practices and complying with applicable land use regulations, and PG&E's land agents and land planners

would verify with local jurisdictions that the necessary land rights are obtained for both temporary and permanent easements. Accordingly, the incremental contribution from ongoing O&M activities to cumulative land use and planning impacts caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to land use and planning.

4.11.6 Residual Impacts

PG&E's O&M activities have been ongoing and are a component of the existing baseline conditions in the study area. O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's commitment to implementing standard practices provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect on land use and planning.

4.11.7 References

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4.12 Noise

4.12.1 Introduction

The proposed project for the purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) that would authorize take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGF). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section evaluates the environmental impacts on noise that may result directly or indirectly from CDFW issuance of the ITP and the expected LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on noise or vibration that could result with ongoing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the proposed project for purposes of CEQA). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this section.

Section 4.12.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have occurred and will continue to occur, specific to noise or vibration.

Section 4.12.3 provides a description of the existing baseline conditions for noise in the O&M activities area ("study area"). Specifically, this section provides a description relative to noise or vibration in the study area that has been and could continue to be affected by PG&E's ongoing O&M activities, regardless of whether CDFW issues the requested permits. This existing baseline condition, which includes the ongoing O&M activities already being implemented by PG&E relative to their past, present, and continued potential effects, is the benchmark used in the Section 4.12.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these environmental baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.12.4 provides an analysis of whether issuance of the requested permits (pursuant to the CFGF) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline conditions and a substantial or potentially substantial adverse effect related to noise or vibration. The section also identifies the significance criteria used for the impact analysis and specifies applicant proposed measures (APMs). Furthermore, this section discusses applicable regulatory authority or governing law that has applied and will continue to apply, specific to noise or vibration.

Section 4.12.5 provides an analysis of whether the project-related incremental change to the environmental baseline conditions is cumulatively considerable and therefore significant.

Section 4.12.6 identifies the residual environmental impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.12.7 lists the references cited in this section.

During the scoping effort, no party identified any public concerns related to potential noise or vibration impacts.

The analysis included in this section is based on information that PG&E provided to CDFW, as well as relevant information gathered and considered by CDFW, with assistance from its environmental consultant.

4.12.2 Applicable Regulations, Plans, and Policies

The following subsections describe the regulations and regulatory agencies that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and CDFW analysis of whether the proposed issuance of the permits would cause an incremental physical change to the existing environment and cause significant impacts related to noise or vibration.

Federal

No federal noise standards directly regulate noise from the O&M of natural gas facilities. However, in 1974, the U.S. Environmental Protection Agency (EPA) established guidelines for noise levels, below which the general population should not be at risk from any of the identified effects of noise. The EPA (1974) guidelines include the following:

- A 24-hour energy-equivalent sound pressure level ($L_{eq}[24]$) that is less than or equal to 70 A-weighted decibels (dBA) to protect against hearing loss¹
- A day-night sound level (L_{dn}) that is less than or equal to 55 dBA to protect against activity interference and annoyance in residential areas, farms, and other outdoor areas where quiet is a basis for use
- An $L_{eq}(24)$ that is less than or equal to 55 dBA to protect against outdoor activity interference where limited time is spent, such as schoolyards and playgrounds
- An L_{dn} that is less than or equal to 45 dBA to protect against indoor activity interference and annoyance in residences
- An $L_{eq}(24)$ that is less than or equal to 45 dBA to protect against indoor activity interference in schoolyards

These levels are not standards, criteria, regulations, or goals, but are established to protect public health and welfare with an adequate margin of safety, and to provide guidelines for implementing noise standards locally. The federal government has passed various general laws to regulate and limit noise levels, as identified in the following subsections.

Noise Pollution and Abatement Act of 1970

The Noise Pollution and Abatement Act of 1970 established the Office of Noise Abatement and Control (ONAC) within EPA and authorized ONAC to conduct a full and complete investigation of noise and its effect on public

¹ The human ear is not uniformly sensitive to all sound frequencies; therefore, the A-weighting scale has been devised to correspond with the human ear's sensitivity. The A-weighting scale uses the specific weighting of sound pressure levels from about 31.5 hertz to 16 kilohertz for determining the human response to sound.

health and welfare. The investigation was conducted to identify noise sources; projected noise levels; and effects of noise on persons, animals, and property.

In 1981, EPA concluded that noise issues were best handled at the state or local government level. As a result, EPA phased out ONAC's funding in 1982 as part of a shift in the federal noise control policy to transfer the primary responsibility of regulating noise to state and local governments. However, the Noise Control Act of 1972 and the Quiet Communities Act of 1978, which are described in the following sections, were not rescinded by Congress and remain in effect today.

Noise Control Act of 1972

The Noise Control Act of 1972 was the first comprehensive statement of national noise policy. It declares, "It is the policy of the U.S. to promote an environment for all Americans free from noise that jeopardizes their health or welfare."

Quiet Communities Act of 1978

The Noise Control Act was amended by the Quiet Communities Act of 1978 to promote the development of effective state and local noise control programs, to provide funds for noise research, and to produce and disseminate educational materials to the public on the harmful effects of noise and ways to effectively control it. By 2002, federal agencies (e.g., the Department of Transportation, Department of Labor, Federal Railroad Administration, and the Federal Aviation Administration) developed their own noise control programs, with each agency setting its own criteria.

Occupational Health and Safety Act of 1970

The Occupational Health and Safety Act of 1970 covers all employers and their employees in the 50 states, the District of Columbia, Puerto Rico, and other U.S. territories. Administered by the Occupational Health and Safety Administration (OSHA), the act assigns OSHA two regulatory functions—setting standards and conducting inspections to ensure that employers are providing safe and healthful workplaces. OSHA standards may require that employers adopt certain practices, means, methods, or processes that are reasonably necessary and appropriate to protect workers on the job. Employers must become familiar with the standards that are applicable to their establishments and eliminate hazards. This act included a regulation for worker noise exposure at 90 dBA over an 8-hour work shift. Areas where exposure exceeds 85 dBA must be designated and labeled as high-noise-level areas, and hearing protection is required.

Federal Aviation Administration

The Federal Aviation Administration has established a community noise equivalent level (CNEL) of 65 dBA as the noise standard associated with aircraft noise measured at exterior locations in noise-sensitive land uses.² This standard is also generally applied to railroad noise.

² A noise-sensitive land use is defined as any residence, hospital, school, hotel, resort, library, or any other facility where quiet is an important attribute of the environment.

Federal Transit Administration

The Federal Transit Administration (FTA), under the Department of Transportation, created a noise and vibration impact assessment manual (FTA 2018). It provides guidance for evaluating construction, roadway, and railway noise sources. The manual also presents techniques for predicting and assessing potential noise and vibration impacts, primarily based on the receptor land use. By way of example, in the absence of quantified local jurisdictional noise level limits for assessing construction noise, the FTA guidance recommends 80 dBA L_{eq} over an 8-hour period within daytime hours and 70 dBA L_{eq} over an 8-hour period during nighttime hours at the exterior of a residential receptor.

State

California Noise Control Act

The California Noise Control Act states that excessive noise is a serious hazard to public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also recognizes that continuous and increasing bombardment of noise exists in urban, suburban, and rural areas. This act declares that the State of California has the responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise.

Local

The following subsections describe local regulations regarding noise that are relevant to O&M activities in the study area. Pursuant to Article XII, Section 8 of the California Constitution, the California Public Utilities Commission (CPUC) has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, O&M, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with the CPUC. Although local governments do not have the power to regulate such activities, CPUC encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has considered relevant regional and county policies and issues in this environmental impact report (EIR).

The following regulations from local jurisdictions were reviewed, and no specific goals or policies were identified that are relevant to ongoing O&M activities in the study area:

- City of Ridgecrest Code of Ordinances
- City of Barstow Code of Ordinances

Plans and regulations with relevant goals or policies are discussed in the subsections that follow.

San Bernardino County

County of San Bernardino 2007 General Plan

The Noise Element in the County of San Bernardino 2007 General Plan contains specific goals and policies focused on reducing noise to a level that is consistent with health and quality of life goals. The Noise Element contains the following policies (San Bernardino County 2007) that are relevant to O&M activities in the study area:

Policy N1.5: Limit truck traffic in residential and commercial areas to designated truck routes; limit construction, delivery, and through-truck traffic to designated routes; and distribute maps of approved truck routes to County traffic officers.

Policy N1.6: Enforce the hourly noise-level performance standards for stationary and other locally regulated sources, such as industrial, recreational, and construction activities as well as mechanical and electrical equipment.

Policy N2.1: The County will require appropriate and feasible on-site noise attenuating measures that may include noise walls, enclosure of noise generating equipment, site planning to locate noise sources away from sensitive receptors, and other comparable features.

San Bernardino County Code of Ordinances

Title 8 of the San Bernardino County Code of Ordinances (San Bernardino County 2016) governs noise and vibration. Section 83.01.080I provides daytime (i.e., 7:00 a.m. to 10:00 p.m.) and nighttime (i.e., 10:00 p.m. to 7:00 a.m.) noise standards for stationary noise sources affecting various land uses. Table 4.12-1 provides a summary of noise standards for stationary noise sources in San Bernardino County.

Table 4.12-1. San Bernardino County Noise Standards for Stationary Noise Sources

Noise Zone	Time Period	Allowable Noise Level (dBA)
Residential	7:00 a.m.–10:00 p.m.	55
	10:00 p.m.–7:00 a.m.	45
Professional Services	7:00 a.m.–10:00 p.m.	55
	10:00 p.m.–7:00 a.m.	55
Other Commercial	7:00 a.m.–10:00 p.m.	60
	10:00 p.m.–7:00 a.m.	60
Industrial	7:00 a.m.–10:00 p.m.	70
	10:00 p.m.–7:00 a.m.	70

Source: San Bernardino County 2016.

Notes: dBA = A-weighted decibels.

Section 83.01.080(g) of the San Bernardino County Code of Ordinances exempts temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except on Sundays and federal holidays.

The following portions of Section 83.01.090 of the San Bernardino County Code of Ordinances govern maximum vibration allowances and exemptions from the Code of Ordinances:

- a. Vibration standard. No ground vibration shall be allowed that can be felt without the aid of instruments at or beyond the lot line, nor shall any vibration be allowed which produces a particle velocity greater than or equal to two-tenths (0.2) inches per second measured at or beyond the lot line.
- c. Exempt vibrations. The following sources of vibration shall be exempt from the regulations of this Section.

- (1) Motor vehicles not under the control of the subject use.

- (2) Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and federal holidays.

City of Barstow

City of Barstow 2015–2020 General Plan

The Noise Element of the City of Barstow 2015–2020 General Plan (City of Barstow 2015) contains the following goals, policies, strategies, and implementation measure that are relevant to the study area within the city limits of Barstow:

Goal 1: Provide an environment free of potentially hazardous sounds and noise.

Policy 1.A: The City shall adhere to the State of California interior and exterior standards for desirable sound levels in various land use categories as shown in Table N-1 [Table 4.12-2 in this EIR].³

Strategy 1.A.1: For projects that are expected to generate potentially harmful noise levels, conduct noise analyses and prepare projections and incorporate mitigation measures to ensure that exterior noise levels at property lines of sensitive noise receptors (e.g., residential, institutional and open space) do not exceed 65 dBA.

Policy 2.A: Proposals for development as well as changes proposed to the Land Use Map shall include consideration of the potential noise impacts associated with such activities.

Policy 2.B: Minimize noise and ground vibration associated with project construction.

Strategy 2.B.1: Exempt construction activities from the operational noise standards set forth in Table N-1 [Table 4.12-2] between the hours of 7:00 a.m. and 7:00 p.m. and enforce the standards outside of these hours.

Strategy 2.B.2: Pursuant to San Bernardino County Ordinance 87.0910, vibration levels shall be limited to 0.2 inches per second at the property line (or nearest sensitive receptor).

Goal 2: Noise Control. Manage the effects of noise emissions to help ensure reduction of adverse effects on the community.

Objective 2.1: Ensure existing and future noise sources are properly attenuated.

Policy 2.1.1: Continue to implement acceptable standards for noise for various land uses throughout the City.

Implementation Measure 2.1.1.5: Continue to restrict noise and require mitigation measures for any noise-emitting construction equipment or activity.

³ Table 4.12-2, City of Barstow Noise Standards, contains the standards from Table N-1.

Table 4.12-2. City of Barstow Noise Standards

Category	Uses	Allowable Noise Level (CNEL) (dBA)	
		Interior	Exterior
Residential	Single-family, duplex, multi-family	45	65
	Mobile homes	N/A	65
Commercial/ Industrial	Hotel, motel, transient lodge	45	65
	Commercial retail, bank, restaurants	55	N/A
	Office building, research and development, professional and government offices	50	N/A
	Amphitheater, concert hall, auditorium, meeting hall	45	N/A
	Gymnasiums (multipurpose)	50	N/A
	Sports clubs	55	N/A
	Manufacturing, warehousing, wholesale, utilities	65	N/A
	Movie theaters	45	N/A
Institutional	Hospitals, schools, classrooms	45	65
	Churches, libraries	45	N/A
Open Space	Parks and outdoor active and passive recreation facilities	N/A	65

Source: City of Barstow 2015.

Notes: CNEL = community noise equivalent level; dBA = A-weighted decibels; N/A = not applicable.

Indoor environments exclude bathrooms, toilets, closets, and corridors. Outdoor environments are limited to a private yard of a single-family residence; a multi-family private patio or balcony, which is served by a means of exit from inside; a mobile home park; a hospital patio; a park picnic area; a school playground; and a hotel and motel recreation area. Commercial and industrial standards do not apply to those areas affected by aircraft noise.

City of Victorville

City of Victorville General Plan 2030

The Noise Element of the City of Victorville General Plan 2030 includes general policies related to controlling noise in the community. The Noise Element (City of Victorville 2008) contains the following goals, policy, objective, and implementation measure that are relevant to the study area within the city limits of Victorville:

Goal 1: Noise Sensitivity. Identify significant noise sources that could adversely affect community.

Goal 2: Noise Control. Manage the effects of noise emissions to help ensure reduction of adverse effects on the community.

Objective 2.1: Ensure existing and future noise sources are properly attenuated.

Policy 2.1.1: Continue to implement acceptable standards for noise for various land uses throughout the City.

Implementation Measure 2.1.1.5: Continue to restrict noise and require mitigation measures for any noise-emitting construction equipment or activity.

The City of Victorville General Plan 2030 defines sensitive receptors as hospitals, convalescent homes, schools, churches, and sensitive wildlife habitat, including the habitat of rare, threatened, or endangered species.

City of Victorville Code of Ordinances

Chapter 13.01 Noise Control of the City of Victorville Code of Ordinances regulates noise within the Victorville city limits. Section 13.01.060 (City of Victorville 2017) provides exemptions to the noise standards, including the following:

- (2) The provisions of this regulation shall not preclude the construction, operation, maintenance and repairs of equipment, apparatus or facilities of park and recreation projects, public works projects or essential public works services and facilities, including those utilities subject to the regulatory jurisdiction of the CPUC.

Town of Apple Valley

Town of Apple Valley 2009 General Plan

The Noise Element of the Town of Apple Valley 2009 General Plan includes general policies related to controlling noise in the town (Town of Apple Valley 2009). The Noise Element contains the following goal and program that are relevant to the study area within the town limits of Apple Valley:

Goal: Noise levels that are consistent with the Town's rural character and high quality of life.

Program 1.A.1: The Town shall continue to maintain and enforce its Noise Control Ordinance.

The Noise Element also defines sensitive receptors, which include residences, schools, libraries, churches, hospitals, nursing homes, and other healthcare facilities. Daycare centers, parks, and other outdoor recreation areas may also be considered sensitive receptors. Moderately sensitive land uses include cemeteries, golf courses, hotels and motels, and dormitories.

Town of Apple Valley Code of Ordinances

Section 9.73.050 of the Apple Valley Code of Ordinances (Town of Apple Valley 2017) regulates noise within the town limits of Apple Valley and states the following:

- b) No person shall produce or cause to be produced any sound at any location within the incorporated Town or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level when measured on any other property, either incorporated or unincorporated, to exceed:
 - 1) the noise standard for that land use as specified in Table 9.73.050-A [Table 4.12-3]⁴ for a cumulative period of more than 30 minutes in any hour; or
 - 2) the noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour;
 - 3) the noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour;

⁴ Table 4.12-3, Town of Apple Valley Operational Noise Standards, contains the standards from Table 9.73.050-A.

- 4) the noise standard plus 15 dBA for a cumulative period of more than 1 minute in any hour; or
- 5) the noise standard plus 20 dBA or the maximum measured ambient level, for any period of time.

Table 4.12-3. Town of Apple Valley Operational Noise Standards

Receiving Land Use Category	Time Period	Allowable Noise Level (dBA)
Single family residential	10:00 p.m. – 7:00 a.m.	40
	7:00 a.m. – 10:00 p.m.	50
Multiple dwelling residential, public space	10:00 p.m. – 7:00 a.m.	45
	7:00 a.m. – 10:00 p.m.	50
Limited commercial and office	10:00 p.m. – 7:00 a.m.	55
	7:00 a.m. – 10:00 p.m.	60
General commercial	10:00 p.m. – 7:00 a.m.	60
	7:00 a.m. – 10:00 p.m.	65
Light industrial	Any time	70
Heavy industrial	Any time	75

Source: Town of Apple Valley 2017.

Note: dBA = A-weighted decibels.

In addition, Section 9.73.060 of the Apple Valley Code of Ordinances regulates maximum noise levels for construction, as shown in Table 4.12-4.

Table 4.12-4. Town of Apple Valley Construction Noise Standards

Equipment Category	Uses	Days and Times	Allowable Noise Level (dBA)
Mobile Equipment: Maximum noise levels for nonscheduled intermittent, short-term operation (i.e., less than 10 days)	Single-family residential	Daily (7:00 a.m. – 7:00 p.m.), except Sundays and federal holidays	75
	Multi-family residential		80
	Semi-residential/commercial		85
	Single-family residential	Daily (7:00 p.m. – 7:00 a.m.), all day Sunday, and federal holidays	60
	Multi-family residential		65
	Semi-residential/commercial		70
	Other	Daily (all hours), including Sundays and federal holidays	85
Stationary Equipment: Maximum noise levels for repetitively scheduled and relatively long-term operation (i.e., 10 days or more)	Single-family residential	Daily (7:00 a.m. – 7:00 p.m.), except Sundays and federal holidays	60
	Multi-family residential		65
	Semi-residential/commercial		70
	Single-family residential	Daily (7:00 p.m. – 7:00 a.m.), all day Sunday, and federal holidays	50
	Multi-family residential		55
	Semi-residential/commercial		60
	Other	Daily (all hours), including Sundays and legal holidays	75

Source: Town of Apple Valley 2017.

Note: dBA = A-weighted decibels.

Section 9.73.060 of the Apple Valley Code of Ordinances also regulates vibration, as follows:

Operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold (motion velocity of 0.01 inch per second [in/sec] over the range of 1 to 100 Hz [hertz]) of an individual at or beyond the property boundary of the source if on private property or at 150 feet (46 meters) from the source if on a public space or public right-of-way.

Kern County

Kern County General Plan

The Noise Element of the Kern County General Plan (County of Kern 2007) contains the following goal and policies related to noise in the county:

Goal 1: Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.

Policy 2: Require noise level criteria applied to all categories of land uses to be consistent with the recommendations of the California Division of Occupational Safety and Health.

Policy 3: Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise.

Policy 7: Employ the best available methods of noise control.

The Noise Element also defines noise-sensitive land uses as schools, convalescent and acute care hospitals, parks and recreational areas, and churches.

Kern County Code of Ordinances

Chapter 8.36 Noise Control of the Kern County Code of Ordinances (County of Kern 2017) regulates noise within unincorporated areas of the county. Section 8.36.020 prohibits noise from nighttime construction between the hours of 9:00 p.m. and 6:00 a.m. on weekdays and 9:00 p.m. and 8:00 a.m. on weekends within 1,000 feet of an occupied residential dwelling, if the noise is audible to a person with an average hearing ability and who is 150 feet from the construction site. This section exempts emergency work and other limited construction work within county jurisdiction at the discretion of the Kern County Development Services Agency director or his/her designated representative.

City of California City

City of California City Final General Plan 2009–2028

The Noise Element of the City of California City Final General Plan 2009–2028 includes general goals and policies related to noise. The Noise Element (City of California City 2009) contains the following goal, policy, and implementation measures that are relevant to the study area within the city limits of California City:

Goal: To protect residents and workers in the City from the harmful and annoying effects of exposure to excessive noise.

Policy: Noise created by existing stationary noise sources which undergo modifications or proposed stationary noise sources that may increase noise levels shall be mitigated so as not to exceed the noise level standards for noise-sensitive land uses as defined in the Noise Element. This policy does not apply to noise levels associated with agricultural operations.

Implementation Measure N-1. The City shall review public and private development proposals to determine conformance with the policies of the Noise Element.

Implementation Measure N-2. For development proposals not subject to a discretionary approval or environmental review, an acoustical analysis shall be required as a part of the site plan review process. The requirements for the content of an acoustical analysis are provided in Exhibit 1 to the Noise Element.

Implementation Measure N-14. The City shall restrict the hours of activity per Title 5, Article 4, Noise and Vibration, Section 5-1.407 of the City of California Municipal Code:

- (d) Noise sources associated with or vibration created by construction, repair or remodeling of real property or during authorized seismic surveys under the following conditions:
 - (1) The activities occur between the hours of 6:00 a.m. and 8:00 p.m. between May 15 and September 15 of each year or between the hours of 7:00 a.m. and 8:00 p.m. during the remainder of the year.
 - (2) The activities do not take place on Sundays or federal holidays.

The City of California City Final General Plan 2009–2028 contains noise standards for mobile and stationary noise sources, as shown in Tables 4.12-5 and 4.12-6.

Table 4.12-5. City of California City Noise Standards for Mobile Sources

Category	Land Uses	Allowable CNEL (dBA)	
		Interior	Exterior
Residential	Single-family and multi-family	45 ^a 55 ^b	65
	Mobile homes	N/A	65
Commercial Industrial	Hotel, motel, and transient lodge	45	65
	Commercial retail, bank, and restaurants	55	N/A
	Office building, professional offices, and research and development	50	N/A
	Amphitheater, concert hall, auditorium, and meeting hall	45	N/A
	Gymnasiums (multipurpose)	50	N/A
	Health clubs	55	N/A
	Manufacturing, warehousing, wholesale, and utilities	65	N/A
	Movie theaters	45	N/A

Table 4.12-5. City of California City Noise Standards for Mobile Sources

Category	Land Uses	Allowable CNEL (dBA)	
		Interior	Exterior
Institutional	Hospitals, schools, and classrooms	45	65
	Churches and libraries	45	N/A
Open Space	Parks	N/A	65

Source: City of California City 2009.

Notes: CNEL = community noise equivalent level; dBA = A-weighted decibels; N/A = not applicable.

An indoor environment excludes bathrooms, toilets, closets, and corridors. An outdoor environment is limited to a private yard of a single-family residence; a multi-family private patio or balcony, which is accessed by a means of exit from inside the unit; a mobile home park; a hospital patio; a park picnic area; a school playground; and a hotel and motel recreation area. Commercial and industrial exterior standards do not apply to those areas affected by aircraft noise.

^a This is the noise level requirement with closed windows.

^b This is the noise level requirement with open windows, if they are used to meet natural ventilation requirements.

Table 4.12-6. City of California City Noise Standards for Stationary Sources

Duration	Allowable Daytime Level (7:00 a.m. to 10:00 p.m.) (dBA)	Allowable Nighttime Level (10:00 p.m. to 7:00 a.m.) (dBA)
Hourly L_{eq}	55	50
Maximum level	75	70

Source: City of California City 2009.

Notes: dBA = A-weighted decibels; L_{eq} = equivalent sound pressure level.

These noise levels are determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers or other property line noise mitigation measures.

City of California City Code of Ordinances

Article 4 of the City of California City Code of Ordinances (City of California City 2017) regulates noise within the city limits. Section 5-1.405 established exterior noise standards for each noise zone, as shown in Table 4.12-7.

Table 4.12-7. City of California City Noise Standards

Noise Zone	Land Use ^a	Time Period	Allowable Noise Level (dBA)
I	Single-, double-, and multiple-family residential properties located more than 600 feet from a major roadway	10:00 p.m. – 7:00 a.m.	45
		7:00 a.m. – 10:00 p.m.	50
II	Single-, double-, and multiple-family residential properties located at a distance that is 600 feet or less from a major roadway	10:00 p.m. – 7:00 a.m.	50
		7:00 a.m. – 10:00 p.m.	55
III	Commercial properties	10:00 p.m. – 7:00 a.m.	60
		7:00 a.m. – 10:00 p.m.	65
IV	Manufacturing or industrial properties	Anytime	70

Source: City of California City 2017.

^a Land uses include schools, hospitals, churches, and libraries located within the Noise Zone.

In addition, the following portions of Section 5-1.405 of the City of California City Code of Ordinances regulate noise increases allowed on neighboring properties:

- b) No person shall create noise which causes the noise level when measured on any other property to exceed:
 - 1) the noise standard for a cumulative period of more than 30 minutes in any hour, or
 - 2) the noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour,
 - 3) the noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour,
 - 4) the noise standard plus 15 dBA for a cumulative period of more than 1 minute in any hour, or
 - 5) the noise standard plus 20 dBA for any period of time.
- c) If the ambient noise level exceeds any of the above five noise limit categories, the cumulative period applicable to the category shall be increased to reflect the noise level.
- d) Each of the noise limits specified above shall be reduced by 5 dBA for impact or simple tone noises, or for noises consisting of speech or music.
- e) If the measurement location is on a boundary between two different noise zones, the lower noise level standard applicable to the noise zone shall apply. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be determined, the measured noise level obtained while the source is in operation shall be compared directly to the allowable noise level standards.

Section 5-1.407 allows exemptions from the noise limits, including the following:

- c) Mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle, work or warning alarm or bell, provided the sounding of bell or alarm on building or motor vehicle shall terminate its operation within 30 minutes of being activated.
- d) Noise sources associated with or vibration created by construction, repair or remodeling of real property or during authorized seismic surveys under the following conditions:
 - 1) the activities occur between the hours of 6:00 a.m. and 8:00 p.m. between May 15 and September 15 of each year or between the hours of 7:00 a.m. and 8:00 p.m. during the remainder of the year.
 - 2) the activities do not take place on Sundays or federal holidays.

- 3) the noise level created by such activities does not exceed 60 dBA plus the limits specific herein as measured on residential property; and
- 4) a vibration does not endanger the public health, welfare and safety.

Section 5-1.410 of the City of California City Code of Ordinances limits vibrations perceptible without instruments on an adjoining property to 0.05 in/sec. Variances from the noise or vibration standards may be approved by the city's Planning Commission.

City of Ridgecrest

City of Ridgecrest General Plan

The Health and Safety Element of the City of Ridgecrest General Plan contains goals and policies related to noise. The Health and Safety Element (City of Ridgecrest 2009) contains the following goals and policies that are relevant to O&M activities in the study area:

Goal HS-1: Protect the City and its residents from injury and damage resulting from natural catastrophes and hazardous conditions including aircraft operations, air quality, flooding, fire, and noise.

Goal HS-8: Maintain a desirable quality of life and protect citizen's health and welfare by reducing noise sources within the community and lessening the effects of noise sources which cannot be avoided.

Policy HS-8.1: Comprehensive Noise Ordinance. The City shall develop and enforce a comprehensive noise ordinance seeking to ensure noise compatible land uses and to reduce noise levels at their source.

Policy HS-8.11: Construction Noise. The City shall seek to limit the potential noise impacts of construction activities on surrounding land uses.

Policy HS-8.12: Limiting Construction Activities. The City shall limit construction activities to the hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday. No construction shall occur on Sundays or national holidays without a written permit from the City.

Policy HS-8.17: California Vehicle Code Standards. The City shall actively support enforcement of California Vehicle Code sections relating to vehicle mufflers and modified exhaust systems.

4.12.3 Existing Baseline Conditions

This section provides a description of the existing baseline conditions relative to noise or vibration in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. PG&E's gas pipeline system has been in place for more than 70 years. Impact data collected by PG&E from 2017 to September 2021 regarding temporary and permanent disturbance impacts caused by O&M activities provides important detail about the environmental baseline conditions for purposes of CEQA (refer to Section 1.1, Proposed Project and Environmental Review). The existing baseline condition from 2017 to 2021, which includes PG&E's past and ongoing O&M activities, is the benchmark used in the Section 4.12.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Noise

Terminology

Noise is often defined simply 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.

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, thereby achieving a strong correlation with how people perceive acceptable and unacceptable sound levels. A-weighted sound levels are typically measured or presented as the L_{eq} , which is defined as the average noise level on an equal-energy basis for a defined duration, and commonly is used to quantify and evaluate a sound environment featuring levels that may vary with time. 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% of the measurement period, which typically represents a continuous or steady-state noise source. Similarly, L_{10} represents the noise level exceeded for 10% of the measurement period, which would represent the acoustical contribution from loud but intermittent sources of noise in the environment.

Another metric used in determining the impact of environmental noise is the differences 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 L_{dn} and the CNEL descriptors were developed. The L_{dn} is a noise metric that accounts for the greater annoyance of noise during the nighttime hours (i.e., 10:00 p.m. to 7:00 a.m.). The CNEL is a noise index that accounts for the greater annoyance of noise during both the evening hours (i.e., 7:00 p.m. to 10:00 p.m.) and nighttime hours.

L_{dn} values are calculated by averaging hourly L_{eq} sound levels for a continuous 24-hour period on an energy basis, and applying a weighting factor of 10 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} 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: 7:00 a.m. to 7:00 p.m. (12 hours) – adjustment of 0 dB
- Evening hours (for CNEL only): 7:00 p.m. to 10:00 p.m. (3 hours) – adjustment of +5 dB
- Nighttime hours (for both CNEL and L_{dn}): 10:00 p.m. to 7:00 a.m. (9 hours) – adjustment of +10 dB

The hourly adjusted time period noise levels are then averaged (on an energy basis) to compute the overall L_{dn} or CNEL value. Similarly, the CNEL for a continuous noise source is computed by adding 6.7 dB to the overall 24-hour L_{eq} .

The general human response to changes in noise levels are summarized as follows:

- A 3 dB change in sound level is perceived to be a barely noticeable difference.

- A 5 dB change in sound level typically is noticeable.
- A 10 dB increase is perceived to be a doubling in loudness.

Existing Noise Sources

Due to the vast area encompassed by PG&E's O&M activities, dominant and existing noise sources vary by location. In undeveloped areas, noise sources are generally intermittent and typically include passing aircraft associated with nearby airports, public and private airstrips, and military facilities; trains; and vehicular traffic. In more developed areas (e.g., cities and suburbs), vehicular traffic along major highways and interstates tends to be the most dominant noise source. Industry, manufacturing, trains, and passing aircraft can also contribute to localized ambient noise levels.

The County of San Bernardino 2007 General Plan also identifies additional sources such as industrial sites, wrecking yards, rock crushing, racetracks, outdoor concerts, and shooting facilities. Within the City of Barstow, specific sources include Interstate (I) 15, I-40, and State Route (SR) 58, as well as the BNSF Railway. Within the City of Victorville, sources include I-15, SR-18, U.S. Highway 395 and Route 66, and D Street. Other major sources include the BNSF Railway and the Southern California Logistics Airport. The Town of Apple Valley identifies I-15 and SR-18 as major noise sources, as well as aircraft noise associated with the Apple Valley Airport and rail noise associated with the Mojave Northern Mining Quarry.

Within Kern County, major noise sources are identified as the railroads and major highways, including SR-14 and SR-58. Within California City, SR-58, Union Pacific Railroad, the Mojave Air and Space Port, and Edwards Air Force Base are major noise generators. The City of Ridgecrest identifies aircraft noise associated with Naval Air Weapons Station China Lake as a major source of noise.

Aside from the potential noise contribution from these aviation traffic and industrial noise sources in San Bernardino and Kern Counties, the outdoor ambient sound level at virtually any location can be coarsely estimated with guidance from the FTA's Transit Noise and Vibration Impact Assessment Manual (FTA 2018). This guidance is expressed as a matrix, shown in Table 4.12-8. By inputting two factors—distance to a major ground transportation route and the population density of the surrounding area—the matrix can be used to arrive at an estimated L_{dn} value that reasonably represents the baseline expected outdoor sound level. Proximity to aviation traffic and/or industrial noise sources would tend to raise this baseline outdoor sound level at a receptor position (e.g., at a residence).

Table 4.12-8. Existing Outdoor Ambient Day-Night Sound Level Estimated from Roadway Proximity and Population Density

Distance Ranges Associated with Major Ground Transportation Route nearest to Receptor	Estimated Day-Night Sound Level (L_{dn}) of Receptor Located within Area Having Population Density (People per Square Mile) Range Category			
	Pop. 300–1,000	Pop. 1,000–3,000	Pop. 3,000–10,000	Pop. 10,000–30,000
Distance to Interstate Highway^{a,b}				
= 10–50 feet	75	75	75	75
= 50–100 feet	70	70	70	70
= 100–200 feet	65	65	65	65
= 200–400 feet	60	60	60	60

Table 4.12-8. Existing Outdoor Ambient Day-Night Sound Level Estimated from Roadway Proximity and Population Density

Distance Ranges Associated with Major Ground Transportation Route nearest to Receptor	Estimated Day-Night Sound Level (L_{dn}) of Receptor Located within Area Having Population Density (People per Square Mile) Range Category			
	Pop. 300–1,000	Pop. 1,000–3,000	Pop. 3,000–10,000	Pop. 10,000–30,000
= 400–800 feet	55	55	55	60
= 800 or more feet	50	50	55	60
Distance to Parkway (55 mph) or City Streets (30 mph)^{a,c}				
= 10–50 feet	70	70	70	70
= 50–100 feet	65	65	65	65
= 100–200 feet	60	60	60	60
= 200–400 feet	55	55	55	60
= 400 or more feet	50	50	55	60
Distance to Railway^{a,d}				
= 10–30 feet	75	75	75	75
= 30–60 feet	70	70	70	70
= 60–120 feet	65	65	65	65
= 120–240 feet	60	60	60	60
= 240–500 feet	55	55	55	60
= 500–800 feet	50	50	55	60
= 800 or more feet	45	50	55	60

Source: FTA 2018.

Notes:

- ^a Distances do not include shielding from intervening rows of buildings.
- ^b Roadways with four or more lanes that permit trucks, with traffic at 60 mph.
- ^c Parkways with traffic at 55 mph, but without trucks, and city streets with the equivalent of 75 or more heavy trucks per hour and 300 or more medium trucks per hour at 30 mph.
- ^d Main line railroad corridors typically carrying 5–10 trains per day at speeds of 30–40 mph.

For example, the census designated place of Lenwood, California, has a population density of 1,600 persons per square mile (U.S. Census Bureau 2010a). For residential land uses in Lenwood along Jasper Road 400 feet north of the BNSF railway, Table 4.12-8 indicates—by cross-referencing the 240–500 feet range row for distance to railway with the 1,000–3,000 population density column—that such receptors experience L_{dn} values of approximately 55 dBA.

Study Area Noise Sources

Because O&M activities in the study area have been occurring for 70 years, the intermittent noise generated by equipment during O&M activities is considered a part of the baseline conditions in the study area. Ranges of A-weighted maximum noise levels (L_{max} values) commonly associated with construction equipment used for ongoing O&M activities in the study area are provided in Table 4.12-9. The “acoustical usage factor” (AUF) percentage values represent the cumulative portion of a sample measurement period, such as an hour, at which the operating construction equipment actually works at a level exhibiting the L_{max} value; hence, an L_{eq} value may be estimated by applying an adjustment equal to 10 times the base-ten logarithm (LOG) of the AUF expressed as a decimal (i.e., $=10 \times \text{LOG}[\text{AUF}]$). Using either the L_{max} or L_{eq} derived reference sound value at the

50-foot reference distance, the corresponding noise level metric at any unblocked horizontal distance (D) to the equipment can be estimated by applying a $-20 \cdot \text{LOG}(D/50)$ decibel adjustment.

Table 4.12-9. Noise Levels Generated by Typical Construction Equipment

Equipment Type by Function or Activity (Acoustical Usage Factor)	Maximum Noise Level (L_{\max}) Range at 50 Feet (dBA)
Earthmoving	
Front loader (40%)	79–80
Backhoe (40%)	78–80
Tractor, dozer (40%)	82–85
Scraper, grader (40%)	84–85
Paver (50%)	77–85
Truck (40%)	74–84
Materials Handling	
Concrete mixer truck (40%)	79–85
Concrete pump truck (20%)	81–82
Crane, movable (16%)	81–85
Stationary	
Pump (50%)	77–81
Generator (50%)	70–82
Compressor, air (40%)	78–80
Impact	
Jackhammers and rock drills (20%)	81–89
Compactors (20%)	80–83
Miscellaneous Activities or Functions	
All other equipment, > 5 horsepower (50%)	85

Source: FHWA 2006.

Notes: dBA = A-weighted decibels.

Another type of intermittent noise occurs during certain O&M and emergency activities, when natural gas is evacuated from portions of the pipeline system—a process referred to as a gas “blowdown.” These gas releases can generate up to 143 dBA L_{\max} at 25 feet from the vent and can last for 2 hours or more (Boland et al. 2016). The actual noise level at any given receptor depends on the distance to the vent, the size of the pipeline, the size of the valve, and the volume of gas that needs to be released. To reduce the noise levels from this activity, PG&E regularly affixes a temporary flow restrictor (e.g., muffler or silencer) to the vent prior to the release. The noise reduction from such vent silencers can vary significantly due to the conditions at the time of venting and the design of the silencer, and the acoustical insertion loss would usually vary by frequency; however, typical vent silencer designs can achieve between 40 and 60 dB of reduction at 1,000 Hz (i.e., the frequency that the human ear is most sensitive to according to A-weighting). PG&E also regularly uses drafting and/or cross-compression to reduce the pressure within the pipeline section and total volume released prior to venting activities, which offers an opportunity for as much as 51 dB of noise reduction. Blowdowns occur on an as-needed basis at vents located throughout the study area, and the annual frequency basis ranges from 0 to no more than 12. For a conservative analysis, baseline blowdown event frequency for purposes of assessment in this EIR is 12 times annually.

As an example of blowdown event noise level, on April 8, 2021, Insignia Environmental performed short-term noise monitoring in the vicinity of blowdown activities being conducted in Daggett, California (PG&E, pers. comm., 2021). These activities used cross-compression to reduce the volume and pressure of gas in the pipe. During the cross-compression process on April 8, 2021, a tripod-mounted sound level meter was placed approximately 60 feet southeast of the cross-compression process. During an approximately 12-minute measurement period (between 5:43 and 5:55 p.m.), which was selected to avoid acoustical intrusion from regular railway traffic located approximately 175 feet south of the monitoring location, a maximum of 81.5 dBA L_{max} , a minimum of 74.5 dBA minimum noise value (L_{min}), and an energy-average of 76.7 dBA L_{eq} were recorded. Following the completion of cross-compression at this site, additional noise monitoring was conducted on April 9, 2021, between 1:38 and 1:53 p.m. The tripod-mounted sound level meter was placed approximately 130 feet southeast of the vent. During the venting process, noise levels reached 82.6 dBA L_{max} , 70.5 dBA L_{min} , and 75.9 dBA L_{eq} . A vent silencer was not used during this particular blowdown process. At a distance of 400 feet, L_{eq} would be approximately 66 dBA based on geometric divergence (i.e., 6 dB reduction per doubling of distance) from the vent—a point-type source of noise emission. By the same principle, the estimated L_{max} at 25 feet would be 97 dBA; because this noise value is 46 dB less than the aforementioned 143 dBA L_{max} at 25 feet for a blowdown without cross-compression, this decibel difference supports the noise reduction capability of cross-compression applied to blowdown processes.

With respect to continuous sources of noise from O&M facilities, the existing gas pipelines in the study area do not typically generate any audible airborne noise, because they are located belowground and are therefore buried under substantially sound-attenuating earthen mass. However, O&M facilities above the ground surface that produce potentially audible and generally continuous sources of airborne noise include the two facility types summarized in the following subsections.

Aboveground Valves

PG&E's existing distribution system includes numerous aboveground valves dispersed throughout the study area. By way of example, operational noise levels measured by Insignia Environmental over a period of 15 minutes at approximately 20 feet from the fenced aboveground valve at Kramer Junction reached 52.9 dBA L_{max} , 30.0 dBA L_{min} , and 40.3 dBA L_{eq} . During the noise monitoring period, from 8:12 a.m. to 8:27 a.m. on April 7, 2021, no atypical transient noise sources were observed in the valve vicinity. Even at such a small distance (20 feet) from the aboveground valve, the measured L_{eq} of 40 dBA is likely to be inaudible when compared to the range of possible L_{dn} values exhibited in Table 4.12-8.

Existing Compressor Stations

Short-term noise level monitoring was also conducted by Insignia Environmental at the Hinkley Compressor Station on April 7, 2021, between 12:32 and 12:48 p.m. A tripod-mounted sound level meter was placed on the shoulder of Fairview Road, directly adjacent to the western boundary of the compressor station and approximately 750 feet from the center of the facility. Noise levels during the monitoring period were 59.3 dBA L_{max} , 41.3 dBA L_{min} , and 47.1 dBA L_{eq} . During the noise monitoring period, no atypical transient noise sources were observed. Compared to the range of possible L_{dn} values exhibited in Table 4.12-8, an L_{eq} of 47 dBA may be audible in relatively more remote or less densely populated environments that are distant from ground transportation routes, aviation traffic, and industrial noise sources.

Vibration

Generally speaking, vibration is energy transmitted in waves through the ground. Because energy is lost during the transfer of energy from one particle to another, vibratory energy is reduced with increasing distance from the source. Vibration attenuates at a rate of approximately 50% for each doubling of distance from the source when the path of travel is through hard rock; essentially, this represents attenuation from geometric spreading. Because additional factors can reduce vibration over distance (e.g., damping from terrain and soil conditions), this approach tends to provide for a conservative assessment of vibration level at the receiver. Human perception of vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels (e.g., people in an urban environment) may tolerate a higher vibration level. The Transportation and Construction Vibration Guidance Manual (Caltrans 2013) provides practical guidance to California Department of Transportation (Caltrans) engineers, planners, and consultants who must address vibration issues associated with the construction and O&M of Caltrans projects. Continuous or frequent intermittent vibration sources, such as roadway traffic, at a magnitude described as “begins to annoy” occurs when peak particle velocity (PPV) at a receptor exceeds 0.1 in/sec. More specific criteria for human annoyance have been developed by Caltrans and will be used to evaluate potential O&M activity vibration sources. Table 4.12-10 lists the Caltrans thresholds of perception.

Table 4.12-10. Human Response to Transient Vibration

Human Response	Peak Particle Velocity (Inches per Second)
Severe	2.0
Strongly perceptible	0.9
Distinctly perceptible	0.24
Barely perceptible	0.035

Source: Caltrans 2013.

Existing Vibration Sources

Groundborne vibration in the study area is generated by a variety of existing sources, including trains, heavy trucks on roadways, and construction equipment. Like sound, amplitudes of such existing sources of vibration depend both on the magnitude of the vibration source and the distance to a receptor, over which the vibration amplitude attenuates through the intervening rock and soil. Generally, the background vibration velocity level from such typical and existing sources is expected to be 50 vibration decibels (i.e., 0.00132 in/sec when a crest factor of 4 is presumed) or lower (FTA 2018).

Sensitive Receptors

Noise-sensitive receptors generally are defined as locations where people reside or where the presence of unwanted sound may adversely affect the existing land use. Typically, and as usually defined by the relevant jurisdictional ordinances or community general plan, 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. The nearest noise-sensitive receptors to the gas pipelines in the study area are residential properties, some of which are adjacent to the existing gas pipelines, particularly within the census designated place of Lenwood and the City of Barstow, where the closest residential structures are approximately 15 feet and 25 feet, respectively, from Line 300 A. Several motels, residences, a hospital, medical clinics, and churches are located within 500 feet of an existing gas pipeline along China Lake

Boulevard (SR-178) in the City of Ridgecrest. The existing pipelines also pass through several protected recreational areas; however, these are generally open areas without recreational facilities. One pipeline in the study area crosses approximately 0.52 miles of one local park—Leroy Jackson Park—in the City of Ridgecrest. Barstow Community College in the City of Barstow is the only school within 500 feet of an existing gas pipeline.

4.12.4 Impact Analysis

4.12.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of noise and vibration impacts based on Appendix G of the California Environmental Quality Act Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For the purposes of this EIR, noise and vibration impacts would be significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would result in:

1. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
2. Generation of excessive groundborne vibration or groundborne noise levels.
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

4.12.4.2 Applicable Measures

As part of its standard practice, PG&E will continue to incorporate the following APMs into its ongoing O&M activities to avoid or minimize the potential for adverse noise or vibration impacts. The APMs, where applicable, are included in the impact discussion in Section 4.12.4.3.

APM NOI-1 Construction Hours Restriction. All planned construction activities within 900 feet of occupied residential parcels that require the use of off-road construction equipment would be limited to between the hours of 7:00 a.m. and 7:00 p.m. to the greatest extent possible. Should work in these locations be required outside of these hours, construction would proceed as expediently as safely possible to reach a safe and convenient stopping point.

APM NOI-2 Construction near Occupied Residences. When using off-road construction equipment to conduct O&M activities within 250 feet of occupied residences in the Town of Apple Valley, "quiet" equipment (i.e., equipment designed with noise control elements) and/or standard equipment fitted with noise control devices (e.g., mufflers) that meet manufacturers' specifications would be used.

APM NOI-3 Blowdowns near Occupied Residences. When a blowdown is scheduled to occur within 5 miles of an occupied residence, and where feasible, PG&E would use drafting and/or cross-compression to reduce the total volume of gas released, and/or would use temporary flow restrictors to reduce blowdown noise. For blowdowns required on pipeline segments within 5 miles of an occupied residence, PG&E would select the gas valve that is farthest from occupied residences for the blowdown site whenever feasible. If adequate notice is available, at least 15 days prior to the start of blowdown activities within 5 miles of an occupied residence, PG&E

would notify these residents by mail of the planned activities. PG&E would provide a telephone number for the public to report any undesirable noise conditions and document, investigate, evaluate, and attempt to resolve all legitimate, activity-related noise complaints.

4.12.4.3 Impact Discussion

Impact NOI-1 Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2, Project Description. As discussed in Section 4.12.3, Existing Baseline Conditions, the study area is located in San Bernardino and Kern Counties and the intermittent noise generated by equipment during O&M activities is considered a part of the baseline conditions, which will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would generate a substantial temporary or permanent increase in ambient noise levels in excess of standards established in the local general plans or noise ordinances within the study area, or applicable standards of other agencies.

Construction Activities

The levels shown in Table 4.12-9, Noise Levels Generated by Typical Construction Equipment, represent the typical noise intensity of construction equipment at a distance of 50 feet. The loudest equipment used during O&M activities generates, as a worst case, approximately 89 dBA L_{max} at a distance of approximately 50 feet and represents a jackhammer operating at full power. If an O&M construction activity required this equipment to operate concurrently with the second-loudest piece of equipment having an L_{max} value of 85 dBA at full power, then the acoustic combination of these two sources at a distance of 900 feet would be approximately 60 dBA hourly L_{eq} . This estimated noise exposure value derived from the "two-loudest" evaluation technique consistent with FTA's "general assessment" guidance can thus conservatively represent noise associated with a sample O&M construction activity, representing activities that have occurred, can occur, and will continue to occur with PG&E's ongoing O&M activities. The 60 dBA hourly L_{eq} value is also compatible with the most stringent of the applicable construction noise criteria summarized in Section 4.12.2, Applicable Regulations, Plans, and Policies: the daytime (7:00 a.m. to 7:00 p.m.) construction noise level limit for the Town of Apple Valley when construction activity may exceed 10 days in duration, and the limit per the City of California City from 6:00 a.m. to 8:00 p.m. as allowed from May 15 to September 15.

Noise-generating activities associated with O&M construction-type tasks are typically anticipated to be short term and would generally last less than 10 days in each location, although in some instances they could be longer term (e.g., lasting between 6 and 8 weeks). However, noise-generating activities are not continuous during these periods. The majority of the O&M activities occur along existing facilities where heavy equipment is currently used to operate and maintain the existing pipelines and aboveground facilities. As a result, these activities would not contribute to a substantial change in ambient noise levels, because normal operational noise emissions from such aboveground O&M facilities—such as the compressor station example described in Section 4.12.3—are already expected to be dominant acoustical contributors to the local baseline sound environment where major transportation routes, dense residential development, and other non-PG&E sources are not nearby.

Furthermore, as shown in Table 4.12-8, Existing Outdoor Ambient Day-Night Sound Level Estimated from Roadway Proximity and Population Density, the estimated existing outdoor ambient sound level at a potentially affected noise-sensitive receptor may already be comparable to, or even higher than, the anticipated noise level from PG&E's O&M construction activity. For instance, based on its population density of just under 1,000 people per square mile (U.S. Census Bureau 2010b), an Apple Valley residence could already be experiencing an L_{dn} ranging from 60 to 75 dBA depending on proximity to major roads or rail. This means that temporary O&M construction-type noise levels rendered compliant with Apple Valley standards would be comparable to existing outdoor ambient noise levels.

Operational Activities

Vent Blowdowns

In addition to the temporary noise emitted by construction equipment, natural gas has been, can be, and will continue to be evacuated during certain O&M and emergency activities, reaching levels of approximately 143 dBA L_{max} at approximately 25 feet from the vent. These events are occasional, occurring as needed to maintain pipelines in the study area, and are temporary in duration, generally lasting up to approximately 2 hours per event, and may occur up to 12 times per year. PG&E anticipates that blowdowns could occur where gas valves are located. The locations of existing valves are shown on Figure 4.12-1, Valve Locations in the Study Area. Although located near several residential areas, more than 600 miles of the study area's approximately 645 total miles (approximately 93% of the pipelines) are classified as non-residential space. In these large regions of unoccupied space, many valves and potential blowdown locations do not have identified sensitive receptors within 5 miles of their location. For valves within those non-residential regions that have identified sensitive receptors, many of these receptors are independent homesteads separated from established communities. Due to residential proximity in a variety of pipeline locations, the nearest sensitive receptor to a PG&E valve location has been calculated to be approximately 30 feet from the valve location, and approximately 21% (91 of the 424) of the valves are located within 0.25 miles of at least one sensitive receptor. Examples of existing noise-sensitive receptors within a 1,100-foot-wide corridor (i.e., 550 feet each side of the centerline of the pipeline) nearest to valve locations appearing on Figure 4.12-1 are as follows:

- In the community of Trona, receptors are potentially as close as approximately 1,800 feet to a valve.
- Along U.S. Highway 395 east of California City, near Hoffman Road, receptors are within 700–800 feet of a valve.
- Along California Highway 58 near North Edwards, near Schultz Road, valves are approximately 1,600 feet from the nearest receptor and approximately 6,400 feet from residences on Borax Road.
- Between Hinkley and Barstow, valves appear to be within 600 feet of residences on Aquarius Road and Dixie Road, and about 350 feet west of Barstow Road receptors.
- Near Daggett, the Soapmine Road valve is approximately 1,500 feet from receptors on Clay River Road.
- West of Troy Lake, receptors south of Elkhorn Street are approximately 600 feet from a valve, and a Newberry Road receptor is approximately 2,600 feet from a valve.
- Near Cadiz Road, with Amboy to the west, receptors appear to be more than 2 miles away from the nearest valves.
- Along Line 313 in the study area, receptors near Northside Road are about a mile from the nearest valve, and receptors are approximately 1,100 feet from a valve on Rabbit Springs Road.
- Along Line 314 in the study area, the valve near Bonanza Trail appears to be approximately 2,000 feet from the nearest receptors, and the southernmost valve near East Abbey Lane appears to be more than 2,000 feet from the nearest receptor.

Depending on the work that is performed, PG&E may blow down natural gas to the atmosphere at any of the identified valve locations. General locations where blowdowns have been conducted in the past include the eastern Mojave Desert and the western edge of the study area near Edwards Air Force Base. These previous desert blowdown locations are surrounded by non-residential space, and sensitive receptors do not exist within 5 miles of these locations. In addition to the desert locations, a previous blowdown was conducted outside Edwards Air Force Base. Although located close to the Air Force Base, the closest identified sensitive receptor was approximately 1.7 miles west of the blowdown. Within the study area, two independent blowdown locations in San Bernardino County are not directly adjacent to a pipeline valve. Of the two independent blowdown locations, only one has been identified to be within 5 miles of a sensitive receptor. This blowdown location is located approximately 3.7 miles southwest of Park Moabi Road, where approximately 50 mobile homes are located.

When determining potential blowdown locations at which to perform the necessary pipeline maintenance and repairs, PG&E determines the location with the least impact to the surrounding community that would still allow for all the needed maintenance. In cases where a blowdown may be necessary, but the location is close to sensitive receptors, to reduce potential blowdown noise emissions PG&E may consider using drafting and/or cross-compression means, summarized as follows:

- Drafting the pipeline to the maximum extent practical is the preferred method to reduce the volume and pressure of the gas that will be vented. This method is performed by closing a valve between the gas source and load. While the load consumes gas in the pipe, the pipe is monitored. Once drafting is complete down to the minimum feasible pressure, an additional valve is closed between the section to be vented and the load to isolate the blowdown section. The drafting technique can be limited in instances where customers are operating under conditions that require minimum pressure to achieve flow or run equipment.
- Cross-compression is a very effective technique to reduce the volume and pressure of a blowdown. The section to be blown down is fully vacated, then a large compressor is attached and gas is pumped from the isolated section into the load side of the pipeline or an adjacent pipeline. Cross-compression requires large, specialized equipment; therefore, adequate space must be available for this technique. In addition, a specific piping configuration must exist for this method to be used.

These techniques would be combined (i.e., first drafting to the maximum extent, followed by cross-compression) when feasible to reduce noise levels and the amount of gas vented to the atmosphere. The effects of PG&E's application of APM NOI-3 for a blowdown within 5 miles of an occupied residence can be quantifiably estimated as follows and thus inform what the resulting noise exposure level might be:

- **Implementation of drafting and/or cross-compression:** Based on the previously stated capability of noise reduction (i.e., 51 dB) due to reduced gas volumes from these techniques, sound could be reduced to as low as 92 dBA hourly L_{eq} at a distance of 25 feet, or 6 dB less with each doubling of distance from this point source of sound emission—for example, 80 dBA at 100 feet. Under such conditions, 50 dBA hourly L_{eq} could be expected at an unblocked distance of 2,800 feet from the valve, 55 dBA hourly L_{eq} could be expected at a distance of 1,750 feet from the valve, and 65 dBA L_{eq} could be expected at a distance of only 660 feet from the valve.
- **Installation of a vent silencer featuring a minimum of 40 dB insertion loss:** Sound could be reduced to 103 dBA hourly L_{eq} at a distance of 25 feet, or 6 dB less with each doubling of distance from this point source of sound emission—for example, 91 dBA at 100 feet. Under such conditions, 50 dBA hourly L_{eq}

could be expected at an unblocked distance of 6,400 feet from the valve, 55 dBA hourly L_{eq} could be expected at a distance of 4,500 feet from the valve, and 65 dBA L_{eq} could be expected at a distance of only 1,900 feet from the valve.

Where the distance between a blowdown valve and a noise-sensitive receptor may be less than those presented above to achieve the indicated noise exposure levels, or in situations when a blowdown may need to occur during nighttime hours and thus when jurisdictional noise levels are more stringent, a combination of these distinct measures would typically be used, which would further lower the noise associated with the blowdown. As evidenced by the previously described sample measurements of blowdown noise levels in Section 4.12.3, such measures to reduce blowdown noise proximate to occupied residences are already practiced, have been practiced, and will continue to be practiced by PG&E in a manner consistent with APM NOI-3.

Other Operations

O&M activities have included and will include installation of aboveground facilities (e.g., pig launcher/receiver facilities, electronic test system stations and cathodic test stations, and thermoelectric generators). These facilities generate little or no aboveground noise during operation. Similarly, existing and new underground pipelines generate no noise. Because these noise levels are well below the noise level standards in the applicable noise ordinances, they have not and would not generate a substantial or permanent increase in ambient noise, especially when compared with estimates of existing outdoor ambient noise per usage of Table 4.12-8.

All of PG&E's ongoing O&M activities with the potential to increase ambient noise levels will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to noise levels. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR (Impact Analysis – Biological Resources), issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not generate a substantial temporary or permanent increase in ambient noise levels in excess of standards established in the local general plans or noise ordinances within the study area, or applicable standards of other agencies.

PG&E's commitment to implementing relevant APMs provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or generate a substantial temporary or permanent increase in ambient noise levels in excess of standards established in the local general plans or noise ordinances within the study area, or applicable standards of other agencies. For example, as part of standard practice and in accordance with APM NOI-1, if off-road construction equipment is required within 900 feet of occupied residential parcels, PG&E will limit construction activities to between the hours of 7:00 a.m. and 7:00 p.m. In

addition, as standard practice and in accordance with APM NOI-2, when using off-road construction equipment to conduct O&M activities within 250 feet of occupied residences in the Town of Apple Valley, “quiet” equipment (i.e., equipment designed with noise control elements) and/or standard equipment fitted with noise control devices (e.g., mufflers) that meet manufacturers’ specifications would be used. For blowdown activities near occupied residences, as standard practice and in accordance with APM NOI-3, PG&E would use drafting and/or cross-compression to reduce the total volume of gas released, and/or would use temporary flow restrictors to reduce blowdown noise. In addition, PG&E would provide advance notice to nearby residents in the study area prior to beginning O&M activities that require blowdowns. Furthermore, because blowdown noise levels are expected to comply with local standards per applicable noise ordinances, they would not generate a substantial temporary increase of the pre-existing outdoor ambient noise environment, especially when compared with estimates of existing outdoor ambient noise per usage of Table 4.12-8.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW’s issuance of the permits conditioning PG&E’s ongoing O&M activities under the CFGC and related effects associated with noise is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW’s issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to generating a substantial temporary or permanent increase in ambient noise levels in excess of standards established in the local general plans or noise ordinances within the study area, or applicable standards of other agencies; any related effect would be **less than significant**.

Impact NOI-2 Would the project cause generation of excessive groundborne vibration or groundborne noise levels?

PG&E’s ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.12.3, O&M activities generate varying degrees of groundborne vibration, depending on the specific maintenance procedure and the equipment used. PG&E has been conducting O&M activities in the study area, these activities are ongoing, and they will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E’s ongoing O&M activities in the study area would generate excessive groundborne vibration or groundborne noise levels.

The operation of heavy-duty vehicles and ground-disturbing activities (e.g., trenching and excavation) generate groundborne vibrations that spread through the ground and diminish in amplitude with distance from the source. As a result, O&M activities have generated, can generate, and will continue to generate varying degrees of groundborne vibration, depending on the specific maintenance procedure and the equipment used. Table 4.12-10, Human Response to Transient Vibration, shows that vibration becomes perceptible at an amplitude of approximately 0.035 in/sec PPV. Caltrans has developed guidance on addressing vibration issues associated with construction and O&M of transportation projects. Based on this Caltrans guidance, continuous or intermittent but frequent vibration sources are significant when their PPV exceeds 0.1 in/sec. It is anticipated that most O&M activities would occur more than 50 feet from sensitive receptors. Where activities are located within 50 feet of sensitive receptors, any perceivable levels of groundborne vibration are

momentary; for instance, while loaded trucks pass through the study area. Vibration from trenching or other ground-disturbing activities typically lasts a few days in each location. At approximately 10 feet, trenching activities from an excavator (based on FTA-based reference vibration levels from comparable types of heavy construction equipment, such as a large bulldozer) would generate a PPV of approximately 0.3 in/sec, which is considered distinctly perceptible, but not strongly or permanently.

PG&E's ongoing O&M activities have included, can include, and will continue to include the installation of aboveground facilities (e.g., pig launcher/receiver facilities, electronic test system stations and cathodic test stations, and thermoelectric generators). Once operational, these aboveground facilities do not generate vibration.

All of PG&E's ongoing O&M activities with the potential to generate groundborne vibration or groundborne noise levels will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or groundborne vibration or groundborne noise level impacts. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts due to groundborne vibration or groundborne noise levels. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline groundborne vibration or groundborne noise levels is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing groundborne vibration or groundborne noise level baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not generate excessive groundborne vibration or groundborne noise levels.

PG&E's commitment to implementing regulatory and standard practices provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse increase in groundborne vibration or groundborne noise levels.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects on groundborne vibration or groundborne noise levels is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse increase in groundborne vibration or groundborne noise levels; any related effect would be **less than significant**.

Impact NOI-3 For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two 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?

There are several airports located in the vicinity of the study area. The following airports are located in San Bernardino County:

- | | |
|--|---|
| ▪ Boron Airstrip | ▪ Osborne Airport |
| ▪ Naval Air Weapons Station China Lake | ▪ Apple Valley Airport |
| ▪ Depue Airport | ▪ Southern California Logistics Airport |
| ▪ Palisades Ranch Airport | ▪ Barstow–Daggett Airport |
| ▪ Adelanto Airport | ▪ Ludlow Airport |

Mojave Air and Space Port and Edwards Air Force Base are located in Kern County. Some of the pipelines in the study area are currently located within 2 miles of these airports. Because O&M activities would not result in the construction of residences or other facilities that would be used by the public, no people residing or working in the study area would be exposed to additional noise from air traffic.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects regarding exposure of people residing or working in the project area to excessive noise levels is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not expose people residing or working in the study area to excessive noise levels from air traffic; **no impact** would occur.

4.12.5 Cumulative Impacts

The geographic scope for cumulative analysis of noise and vibration is generally localized. Noise sources attributable to cumulative projects may cause adverse effects within approximately 1 mile of an O&M activity, including truck routes, but the area of greatest influence is typically within 0.5 miles of the boundary of where an O&M activity is conducted (refer to Table 3-1, Geographic Scope of Cumulative Impacts and Method of Evaluation). Similarly, vibration sources that typically occur from construction activity or vehicle traffic have a region of influence that is limited to approximately 200 feet.

PG&E's O&M activities are routine and ongoing under existing baseline conditions, and the majority of PG&E's O&M activities would be temporary and would occur over a short duration. The ongoing O&M activities have resulted in and continue to result in temporary noise increases during construction activities and performance of natural gas vent blowdowns, as described in Section 4.12.4, Impact Analysis. PG&E O&M-activity-related construction periods have had and will continue to have the potential to overlap with the construction of other projects in the municipalities and unincorporated county areas that constitute the study area (refer to Table 3-2, Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area, for a list of cumulative projects). Due to the decrease in noise levels with distance, atmospheric and ground surface acoustical absorption, and

the presence of physical barriers (i.e., intervening buildings and topography), noise due to construction of other projects does not meaningfully combine with O&M construction activities to produce a cumulative noise effect. By way of illustration, if there are two concurrent construction projects of comparable sound emission intensity, and the activity nearest to the studied noise-sensitive receptor is compliant with the relevant standard (e.g., 75 dBA hourly L_{eq} for an activity lasting less than 10 days in Apple Valley), the other activity could be no closer than three times the distance of the receptor to the nearest activity and would not make a cumulatively measurable contribution to the total noise exposure level. Further, if two concurrent construction activities (i.e., one associated with PG&E's ongoing O&M activities and another unassociated with PG&E) were close to a receptor, the cumulative noise would be one of the following:

- The louder (in dBA) of the two concurrent activities
- A logarithmic sum of the two activity noise levels that, per acoustic principles, cannot be more than 3 dB greater than the louder of the two individual noise-producing activities

In summary, cumulative construction noise is likely to be dominated by the closest or loudest activity to the receptor, and the combination will be no more than a barely perceptible difference (i.e., up to a 3 dB change). On this basis, cumulative noise would not be expected to be cumulatively considerable. Accordingly, the incremental contribution from ongoing O&M activities to cumulative noise and vibration impacts caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would not result in cumulatively considerable impacts relative to noise and vibration.

4.12.6 Residual Impacts

PG&E's O&M activities have been ongoing and are a component of the existing baseline conditions in the study area. PG&E's ongoing O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's commitment to implementing relevant APMs provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause substantial increases in noise or vibration.

4.12.7 References

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4.13 Recreation

4.13.1 Introduction

The proposed project for purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) for take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGF). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section evaluates the environmental impacts on recreational facilities that may result directly or indirectly from CDFW's issuance of the ITP and the expected LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on recreation that could result with continuing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the project for purposes of CEQA). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this section.

Section 4.13.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have been occurring and will continue to occur, specific to recreation.

Section 4.13.3 provides a description of the existing baseline conditions for recreation in the O&M activities area ("study area"). Specifically, this section provides a description of the resources relative to recreation in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. This existing baseline condition, which includes the ongoing activities already being implemented by PG&E relative to their past, present, and continued potential effect on these resources, is the benchmark used in the Section 4.13.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these environmental baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.13.4 provides an analysis of whether issuance of the requested permits (pursuant to the CFGF) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline conditions and a substantial or potentially substantial adverse effect related to recreation. The section also identifies the significance criteria used for the impact analysis. Furthermore, this section discusses applicable regulatory authority or governing law that has applied and will continue to apply, specific to recreation.

Section 4.13.5 provides an analysis of whether the project-related incremental change to the environmental baseline conditions is cumulatively considerable and therefore significant.

Section 4.13.6 identifies the residual environmental impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.13.7 lists the references cited in this section.

During the scoping effort, no party identified any public concerns related to potential recreation impacts.

The analysis included in this section is based on information PG&E provided to CDFW, as well as relevant information gathered and considered by CDFW with assistance from its environmental consultant, including information from the Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (USFWS), CDFW, and the County of Kern.

4.13.2 Applicable Regulations, Plans, and Policies

The following subsections describe the regulations and regulatory agencies that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and CDFW's analysis of whether the proposed issuance of the permits would cause an incremental physical change to the existing environment and cause significant impacts to recreation.

Federal

Federal Land Policy and Management Act

Under the Federal Land Policy and Management Act (FLPMA) of 1976 (43 USC 1701), land management agencies are required to manage federally owned public lands in a manner that protects the quality of resources, while supporting multiple uses on public lands. The FLPMA designated the approximately 26-million-acre California Desert Conservation Area (CDCA) in Southern California, and approximately 10.4 million acres are managed by BLM. The FLPMA provided a framework for BLM to manage resources in perpetuity and led to the development of the CDCA Plan, which acts as BLM's land use guide for the management of public lands and resources.

Desert Renewable Energy Conservation Plan

The Desert Renewable Energy Conservation Plan (DRECP) covers approximately 22.5 million acres in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties. The DRECP includes two types of recreation designations: Special Recreation Management Areas (SRMAs) and Extensive Recreation Management Areas (ERMAs) (DRECP 2016). The pipelines in the study area cross four SRMAs and one ERMA, as described in Section 4.13.3, Existing Baseline Conditions.

State

California Department of Fish and Wildlife

CDFW's mission is to manage California's diverse fish, wildlife, and plant resources, and the habitats on which they depend, for their ecological values and for their use and enjoyment by the public. CDFW manages wildlife and recreation areas, two of which—the Marble Mountains Wildlife Area (MMWA) and the West Mojave Desert Ecological Reserve (Reserve)—are crossed by gas pipelines in the study area.

Local

The following subsections describe local regulations regarding recreational facilities that are relevant to the proposed project and the study area. Pursuant to Article XII, Section 8 of the California Constitution, the California Public Utilities Commission (CPUC) has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, operation, maintenance, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with CPUC. Although local governments do not have the power to regulate such activities, CPUC encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has considered relevant regional and county policies and issues in this environmental impact report (EIR).

The following plans from local jurisdictions were reviewed, and no specific goals or policies were identified that are relevant to the O&M activities in the study area:

- City of Barstow 2015–2020 General Plan
- Kern County General Plan (2009)
- Kern County Parks and Recreation Master Plan (2010)

Plans with relevant policies are discussed in the subsections that follow.

San Bernardino County 2020 Countywide Policy Plan

The Natural Resources Element of the San Bernardino County 2020 Countywide Policy Plan is intended to provide guidance on coordinating with others to manage, conserve, and protect natural resources such as watersheds, wildlife habitat areas and corridors, and other natural and open space areas. The Natural Resources Element of the 2020 Countywide Policy Plan (San Bernardino County 2020) contains the following policy that is relevant to ongoing O&M activities in the study area:

Policy NR-3.1: Open Space Preservation. The County of San Bernardino regulates land use and coordinates with public and nongovernmental agencies to preserve open space areas that protect natural resources, function as a buffer against natural hazards or between land uses, serve as a recreation or tourist destination, or are central to the identity of an unincorporated community.

City of Victorville General Plan 2030

The Resource Element of the City of Victorville General Plan 2030 is intended to function as a guide to the protection, use, and maintenance of the city's natural and cultural resources and a variety of open space lands, and to fulfill the state-mandated requirements for a Conservation Element and an Open Space Element. The Resource Element of the General Plan 2030 (City of Victorville 2008) contains the following policy that is relevant to ongoing O&M activities in the study area:

Policy 2.1.2: Prohibit development on land identified for outdoor recreation purposes in a local or regional parks, trails, and/or open space plan.

Town of Apple Valley 2009 General Plan

The Resource Element of the Town of Apple Valley 2009 General Plan is intended to provide for the inclusive long-term preservation and conservation of natural resources and open space lands located within the general plan study area. The Open Space and Conservation Element of the 2009 General Plan (Town of Apple Valley 2009) contains the following policy that is relevant to ongoing O&M activities in the study area:

Policy 4.B: Subject to appropriate permitting or approvals, where practical, new development shall integrate pipeline, above- and under-ground utility corridors and other easements (including electric, cable and telephone distribution lines) into a functional open space network.

City of California City Final General Plan 2009–2028

The Open Space and Conservation Element of the City of California City Final General Plan 2009–2028 provides goals, policies, and implementation measures that seek to preserve and protect open space resources and conservation resources in the city. The Open Space and Conservation Element of the Final General Plan 2009–2028 (City of California City 2009) contains the following implementation policy that is relevant to ongoing O&M activities in the study area:

Policy OS-1: Develop open-space corridors along utility easements, drainages, slopes, and other natural features, whenever possible.

City of Ridgecrest General Plan

The Open Space and Conservation Element of the City of Ridgecrest General Plan recognizes the finite limits of natural resources and presents policies and measures for the conservation, development, and utilization of the local natural resources. The Open Space and Conservation Element (City of Ridgecrest 2009) contains the following implementation policies that are relevant to ongoing O&M activities in the study area:

Policy OSC-1.3: Protect Natural Resources: The City shall strive to protect natural resource areas, wildlife habitat areas, scenic areas, open space areas and parks from encroachment or destruction by incompatible development.

Policy OSC-7.13: Parks and Infill: The City will evaluate park development opportunities to ensure that access to recreational facilities and programs are balanced across the City. This will include a focus on development of parks within the existing, developed portions of the City.

4.13.3 Existing Baseline Conditions

This section provides a description of the existing baseline conditions relative to recreation in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. PG&E's gas pipeline system has been in place for more than 70 years. Impact data collected by PG&E from 2017 to September 2021 regarding temporary and permanent disturbance impacts caused by O&M activities provides important detail about the environmental baseline conditions for purposes of CEQA (refer to Section 1.1, Proposed Project and Environmental Review). The existing baseline condition from 2017 to 2021, which includes PG&E's past and ongoing O&M activities, is the benchmark used in the Section 4.13.4 impact analysis to evaluate whether CDFW's issuance of the

permits would cause a related incremental physical change to baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Recreational facilities in the study area are described in the following subsections. These facilities are specifically listed by owner/manager in Table 4.13-1 and are depicted on Figure 4.13-1, Regional Recreational Facilities in the Study Area, and Figure 4.13-2, Local Park Facilities in the Study Area.

Table 4.13-1. Recreational Facilities Crossed by the Pipelines in the Study Area

Owner/ Manager	Property	Recreational Opportunities	Acres within the Study Area ^a	Acres within 0.25 Miles of the Study Area ^a
BLM	CDCA ^b	Open space, hiking trails, and an OHV area	32,615	169,702
	SRMA	Open space, hiking trails, and an OHV area	8,514	36,178
	ERMA	Open space, hiking trails, and an OHV area	3,104	10,283
	Mojave Trails National Monument ^c	Hiking trails, campgrounds, picnic areas, fossil sites, historic sites, rock collecting, and four-wheel-drive trails	9,941	34,363
CDFW	West Mojave Desert Ecological Reserve	Wildlife viewing, hiking, and hunting (seasonal)	6	114
USFWS	Havasu National Wildlife Refuge	Boating, fishing, hunting, wildlife viewing, canoeing, kayaking, and special events	115	320
BLM/ CDFW	Marble Mountains Wildlife Area ^d	Deer hunting and wildlife viewing	498	1,668
City of Barstow Parks and Recreation Division	Robert A. Sessions Memorial Sportspark	Ballfields, soccer fields, volleyball courts, batting cages, basketball courts, and picnic areas	0	15.0
Edwards Air Force Base	Onizuka Park	Baseball and softball fields and picnic areas	0	20.0
Kern County Parks and Recreation Department	Boron Park	A playground and baseball and softball fields	0	9.4
City of Ridgecrest Parks and Recreation Department	Freedom Park	A playground, picnic areas, sports fields, and a veterans' memorial	0	5.5

Table 4.13-1. Recreational Facilities Crossed by the Pipelines in the Study Area

Owner/ Manager	Property	Recreational Opportunities	Acres within the Study Area ^a	Acres within 0.25 Miles of the Study Area ^a
City of Ridgecrest Parks and Recreation Department	Helmer's Park	Disc golf, picnic areas, and horseshoe pits	0	2.8
Kern County Parks and Recreation Department	Leroy Jackson Park ^e	Softball fields, tennis courts, basketball courts, soccer fields, horseshoe pits, and a dog park	8	54
Kern County Parks and Recreation Department	North Edwards Park	A picnic area, a playground, and an OHV area	0	4
Kern County Parks and Recreation Department	Petroglyph Park	Petroglyphs, a picnic area, and a playground	4	9

Sources: BLM 2020; USFWS 2021; CPAD 2020; Kern County Parks 2020; San Bernardino Regional Parks 2021; City of Ridgecrest 2022.

Notes: BLM = Bureau of Land Management; CDCA = California Desert Conservation Area; OHV = off-highway vehicle; SRMA = Special Recreation Management Area; ERMA = Extensive Recreation Management Area; CDFW = California Department of Fish and Wildlife; USFWS = U.S. Fish and Wildlife Service.

^a Numbers are rounded to the nearest whole number.

^b The CDCA includes 8,514 acres of SRMAs in the study area, approximately 36,178 acres of SRMAs 0.25 beyond the study area, 3,104 acres of ERMAs in the study area, and approximately 10,283 acres of ERMAs 0.25 miles beyond the study area. The SRMA- and ERMA-designated lands are located within the boundary of the CDCA; therefore, the acreages overlap.

^c The Mojave Trails National Monument is located within the boundary of the CDCA; therefore, the acreages overlap.

^d The Marble Mountains Wildlife Area is located within the boundary of the CDCA and the Mojave Trails National Monument; therefore, the acreages overlap.

^e Leroy Jackson Park is located within the boundary of the CDCA; therefore, the acreages overlap.

San Bernardino County

California Desert Conservation Area

The CDCA is an approximately 25-million-acre expanse of land in Southern California that was designated by Congress in 1976 through the FLPMA. Nealy 11 million acres of the CDCA is managed by the California Desert District of BLM (BLM 2006). Recreational activities in the California Desert District include hiking, hunting, camping, land sailing, sightseeing, and the use of off-highway vehicles (OHVs). Approximately 32,615 acres of the CDCA is within the study area and 132,876 acres of the CDCA is within 0.25 miles of the study area.

As shown on Figure 4.13-1, the CDCA includes SRMAs and ERMAs. SRMAs are high-priority areas for outdoor recreation opportunities, as defined in the BLM Land Use Planning Handbook. SRMAs help BLM direct recreation program priorities toward areas with high resource values, high levels of public concern, or significant amounts of recreational activity. The CDCA includes approximately 8,514 acres of SRMAs in the study area and approximately 36,17 acres of SRMAs 0.25 miles beyond the study area. ERMAs are BLM administrative units that require specific management consideration to address recreation use and demand.

BLM manages these areas to support and sustain principal recreation activities and associated qualities and conditions. Recreation management actions within an ERMA are limited to those of a custodial nature. The CDCA area includes approximately 3,104 acres of ERMA in the study area and approximately 10,283 acres of ERMA 0.25 miles beyond the study area.

Mojave Trails National Monument

The Mojave Trails National Monument (National Monument) is located between Joshua Tree National Park and the Mojave National Preserve along U.S. Historic Route 66 in San Bernardino County. The National Monument is managed by BLM and covers approximately 965,000 acres. The National Monument offers opportunities for camping, hiking, and hunting. Approximately 9,941 acres of the National Monument is within the study area and 34,363 acres of the National Monument is within 0.25 miles of the study area.

West Mojave Desert Ecological Reserve

The Reserve is located approximately 7 miles east of U.S. Route 395 and north of Kramer Junction (State Route 58 and U.S. Route 395) and is managed by CDFW. The Reserve covers approximately 18,000 acres and offers opportunities for wildlife viewing, hiking, and seasonal hunting (CDFW 2016a). Approximately 6 acres of the Reserve is within the study area and 114 acres of the Reserve is within 0.25 miles of the study area.

Havasu National Wildlife Refuge

The Havasu National Wildlife Refuge (NWR) is located along the lower Colorado River in Arizona and California and is managed by USFWS. The Havasu NWR covers approximately 37,515 acres and offers opportunities for canoeing, kayaking, hunting, boating, fishing, and wildlife observation (USFWS 2015). Approximately 115 acres of the Havasu NWR is within the study area and 320 acres of the Havasu NWR is within 0.25 miles of the study area.

Marble Mountains Wildlife Area

The MMWA, which is co-managed by BLM and CDFW, is located approximately 12 miles southeast of the Community of Baker, along Kelbaker Road, and within the eastern portion of the Mojave National Scenic Area. The MMWA covers approximately 225,114 acres and offers opportunities for camping, hiking, and horse riding (CDFW 2016b). Approximately 498 acres of the MMWA is within the study area and 1,667 acres of the MMWA is within 0.25 miles of the study area.

City of Barstow

Robert A. Sessions Memorial Sportspark

Robert A. Sessions Memorial Sportspark (the Sportspark) is located within the City of Barstow along the west side of Mayor Katy Parkway, just south of Pipeline Road. The Sportspark is managed by the City of Barstow Parks and Recreation Division. The Sportspark is approximately 40 acres and includes ballfields, soccer fields, volleyball courts, batting cages, basketball courts, and picnic areas. Although the study area does not include the Sportspark, approximately 15 acres of the Sportspark is within 0.25 miles of the study area.

Edwards Air Force Base

Onizuka Park

Onizuka Park is located within Edwards Air Force Base at the southeast corner of Fitzgerald Boulevard and Coliseum Drive and is managed by Edwards Air Force Base. Onizuka Park is approximately 32 acres and includes baseball fields, softball fields, and picnic areas. Although the study area does not include Onizuka Park, approximately 20 acres of Onizuka Park is within 0.25 miles of the study area.

County of Kern

Boron Park

Boron Park is located within the City of Boron at the southwest corner of John Street and Boron Avenue and is managed by the Kern County Parks and Recreation Department. Boron Park is approximately 9 acres and includes a playground area, baseball fields, and softball fields. Although the study area does not include Boron Park, the entirety of Boron Park is located within 0.25 miles of the study area.

Freedom Park

Freedom Park is located within the City of Ridgecrest along the east side of South Warner Street and directly east of Helmer's Park. It is managed by the City of Ridgecrest Parks and Recreation Department. Freedom Park is approximately 6 acres and offers a playground area, sports fields, picnic areas, and a veterans' memorial (City of Ridgecrest. 2022). Although the study area does not include Freedom Park, the entirety of Freedom Park is located within 0.25 miles of the study area.

Helmer's Park

Helmer's Park is located within the City of Ridgecrest along the west side of South Warner Street, directly west of Freedom Park, and is managed by the City of Ridgecrest Parks and Recreation Department. Helmer's Park is approximately 12 acres and includes disc golf, picnic areas, and horseshoe pits (City of Ridgecrest. 2022). Although the study area does not include Helmer's Park, approximately 3 acres of Helmer's Park is within 0.25 miles of the study area.

Leroy Jackson Park

Leroy Jackson Park is located in the City of Ridgecrest at the corner of East French Avenue and La Mirage Lane and is managed by the Kern County Parks and Recreation Department. Leroy Jackson Park covers approximately 100 acres and offers softball fields, tennis courts, basketball courts, soccer fields, horseshoe pits, and a dog park (City of Ridgecrest. 2022). Approximately 8 acres of Leroy Jackson Park is included in the study area and 54 acres of Leroy Jackson Park is within 0.25 miles of the study area.

North Edwards Park

North Edwards Park is located in Kern County at the corner of Granada Street and Lorraine Avenue; it is managed by the Kern County Parks and Recreation Department. North Edwards Park covers approximately 4.3 acres. Although the study area does not include North Edwards Park, the entirety of North Edwards Park is located within 0.25 miles of the study area.

Petroglyph Park

Petroglyph Park is located in the City of Ridgecrest at the corner of East French Avenue and La Mirage Lane, directly southwest of Leroy Jackson Park. It is managed by the Kern County Parks and Recreation Department. Petroglyph Park covers approximately 13 acres and includes petroglyphs, a picnic area, and a playground (City of Ridgecrest. 2022). Approximately 4 acres of Petroglyph Park is within the study area and 9 acres of Petroglyph Park is within 0.25 miles of the study area.

4.13.4 Impact Analysis

4.13.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of recreation impacts based on Appendix G of the California Environmental Quality Act Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For the purposes of this EIR, recreation impacts would be significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would:

1. 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.
2. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

4.14.4.2 Applicable Measures

No applicable measures regarding recreation are required.

4.13.4.3 Impact Discussion

Impact REC-1 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?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2, Project Description. As discussed in Section 4.13.3 and shown on Figures 4.13-1 and 4.13-2, several federal, state, and local recreational facilities are located within the study area. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would 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.

PG&E's ongoing O&M activities in the study area have caused and will continue to cause temporary impacts to recreational facilities associated with the presence of equipment, materials, and crews at work sites. Although O&M activities present employment opportunities, the number of O&M activities and workers are not expected to exceed the number currently working under baseline conditions. Additionally, the ongoing O&M activities do not include the development of new commercial or residential structures. Increases in demand for recreational facilities are typically associated with substantial increases in population. Therefore, because no increase in workers or population is expected, there would continue to be no increase in demand for existing recreational facilities within or in close proximity to the study area.

Recreational space is available for public use on approximately 32,749 acres within the study area and on 137,644 acres within 0.25 miles of the study area in the following 13 different recreational areas located in San Bernardino County and Kern County: the CDCA, Mojave Trails National Monument, West Mojave Desert Ecological Reserve, Havasu National Wildlife Refuge, MMWA, Robert A. Sessions Memorial Sportspark, Onizuka Park, Boron Park, Freedom Park, Helmer's Park, Leroy Jackson Park, North Edwards Park, and Petroglyph Park. Due to the size of these recreation areas and because the O&M activity work areas are limited to locations near the pipeline alignments, many of the O&M activities have not restricted and would not restrict recreational activities. Although many of the O&M activities would not restrict recreational activities, temporary access restrictions to parks and recreation areas within the study area have occurred, can occur, and will continue to occur (refer to Table 4.13-1). During 2017 to September 2021 (the "baseline period"), the annual amount of temporary disturbance resulting from O&M activities averaged approximately 40 acres and permanent disturbance averaged approximately 3 acres throughout the study area. Over the term of the permits, O&M activities would continue to affect only a small portion of recreational areas, and the activity duration would be short term, generally lasting between 1 and 60 days.

Several of the identified recreational facilities within and near the study area contain sports complexes that have been used, can be used, and will continue to be used for various tournaments and youth sporting events throughout the year. Facilities such as, but not limited to, Leroy Jackson Park, Boron Park, Helmer's Park, and Robert A. Sessions Memorial Sportspark contain developed fields for competitive sports, including soccer, baseball, and disc golf. In addition to hosting several athletic competitions, the Sportspark is located within the City of Barstow and is an advertised venue that can be rented for events such as company picnics and family gatherings. The City of Barstow can be contacted for reservations for this facility at any point during the year. Larger O&M activities that would require work outside PG&E's existing ROW may affect planned events if the timing and location of O&M activities and planned events coincided. Further, other recreational areas near those with temporary closures may experience some short-term increases in use, as users who would normally use the temporarily closed recreational areas may use other recreational areas that are open nearby. The temporary closure of recreational facilities over the term of the permits is not expected to exceed the baseline. As discussed in Section 4.14, Transportation, of this EIR, O&M activities in the study area may result in temporary lane closures while the necessary repairs and maintenance are performed on PG&E's gas pipelines. Although recreation facility and lane closures have affected and will continue to affect access to the surrounding recreational facilities, closures would be temporary and PG&E would coordinate with the affected land-management agencies prior to any temporary access restrictions. Through this coordination, the agencies and PG&E would evaluate the potential for conflicts with planned recreational events and plan accordingly.

All of PG&E's ongoing O&M activities with the potential to 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 will continue to occur regardless of whether CDFW issues the permits. Likewise,

CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to recreation. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR (Biological Resources, Impact Analysis), issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result an increase in use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated.

PG&E's commitment to implementing standard practices and complying with applicable regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing recreation baseline conditions or a substantial adverse effect on recreational facilities. For example, if O&M activities are anticipated to require temporary access restrictions and/or closure of recreational areas outside PG&E's right-of-way, PG&E coordinates with the affected land-management agency prior to any temporary access restrictions. Through this coordination, the agency and PG&E evaluate the potential for conflicts with planned recreational events and plan the timing of O&M work accordingly.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing recreational facilities baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects on recreational facilities is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated; any related effect would be **less than significant**.

Impact REC-2 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?

O&M activities have not included and will not include the construction or expansion of recreational facilities. As described in Impact REC-1, O&M activities are not expected to increase the use of existing facilities beyond the baseline over the term of the permits. Although the temporary closure of recreational facilities during O&M activities may temporarily increase the use of nearby recreational facilities, the temporary increase in use would not be substantial enough to require the expansion of recreational facilities.

In summary, similar to Impact REC-1, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing recreational facilities baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA (i.e., CDFW's issuance of the permits under the CFGC and PG&E's ongoing baseline O&M activities conditioned by the permits). The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects on recreational facilities is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not require the construction or expansion of recreational facilities; **no impact** would occur.

4.13.5 Cumulative Impacts

The geographic scope for cumulative impacts related to recreational facilities includes related projects within 0.5 miles of the center line of the gas pipeline (i.e., a 1-mile-wide area along the entire length of the pipeline alignment) in the study area (refer to Table 3-1, Geographic Scope of Cumulative Impacts and Method of Evaluation).

O&M activities have had and continue to have the potential to result in cumulative impacts to recreational facilities in combination with other projects in the study area if these activities were to occur simultaneously and combine to cause a substantial increase in use of recreational areas and/or the closure of recreational areas. As shown in Table 3-2, Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area, of this EIR, several related projects would occur within 1 mile of the PG&E gas pipeline. If related projects along portions of the PG&E gas pipeline are proposed at the same time and in the same geographic area as O&M activities, such activities would be coordinated with the affected land-management agencies, such that substantial impacts on recreational facilities would not occur.

PG&E's O&M activities are routine and ongoing under existing baseline conditions and most O&M activities are temporary and occur over a short duration (typically 1 to 60 days). In addition, the majority of O&M activities have affected and will continue to affect only a small portion of the recreational areas in the study area at any one time. If temporary closures of recreational areas occur as a result of O&M activities, PG&E coordinates with land management agencies prior to any temporary access restrictions. Through this coordination, the agencies and PG&E evaluate the potential for conflicts with planned recreational events and plan the timing of the O&M activities to minimize effects to the recreational events. Accordingly, the incremental contribution from ongoing O&M activities to cumulative recreation impacts caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to recreation.

4.13.6 Residual Impacts

PG&E's O&M activities have been ongoing and are a component of the existing baseline conditions in the study area. O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's commitment to implementing standard practices and relevant APMs and BMPs provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing recreation baseline conditions or a substantial adverse effect on recreational facilities.

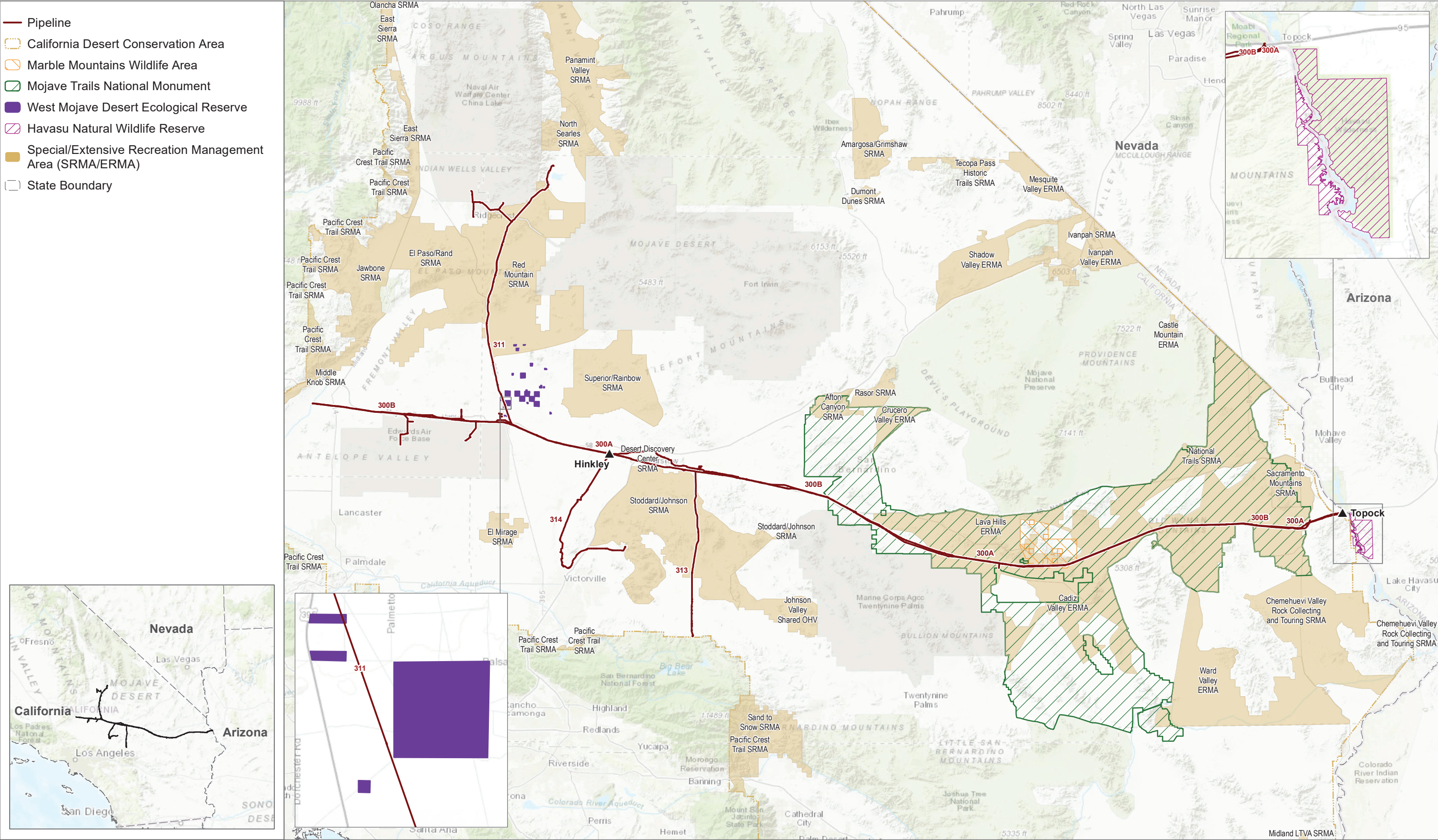
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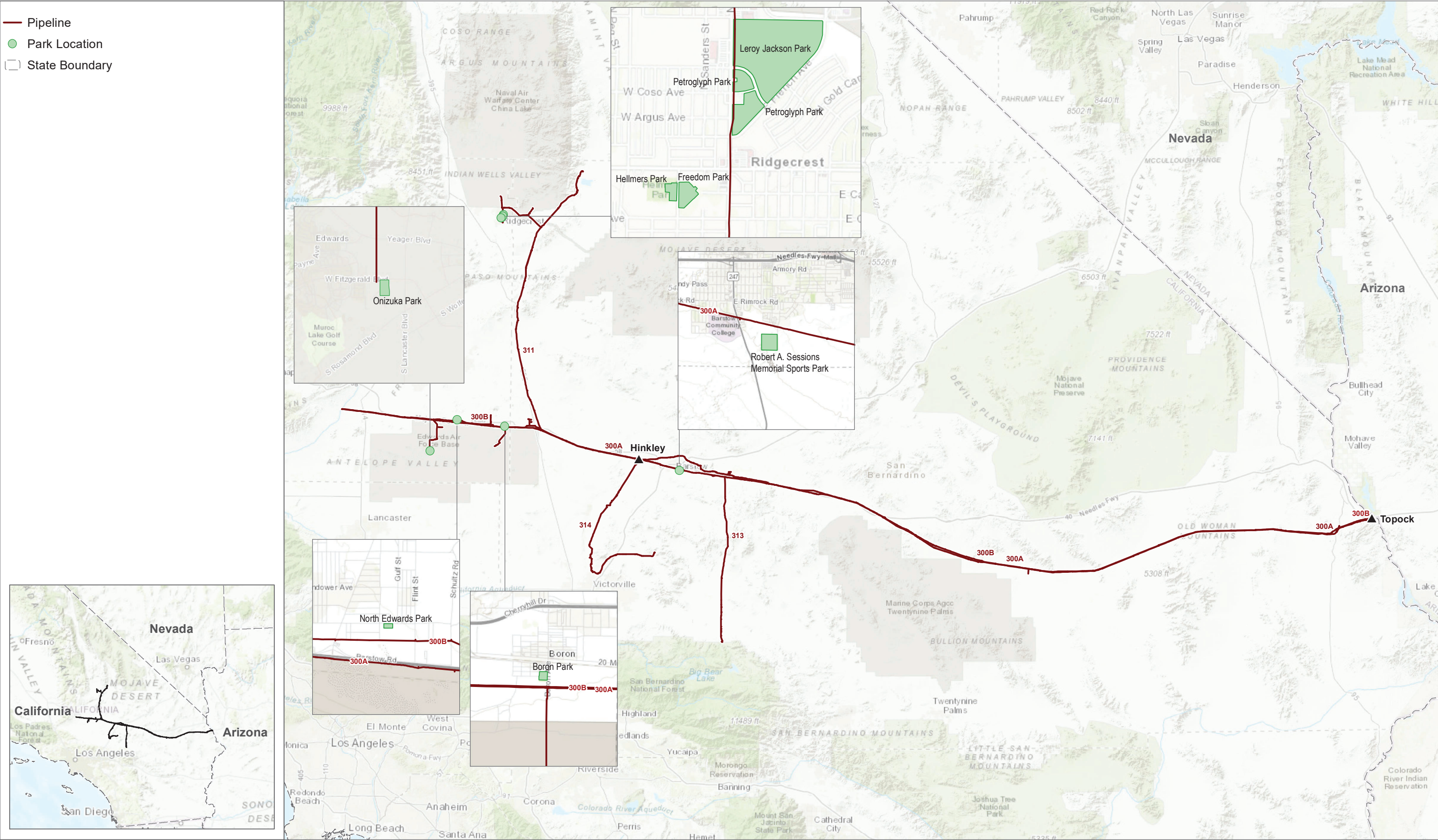
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SOURCES: BLM 2020; CPAD 2020; Insignia 2020; PG&E 2020; U.S. Geological Survey 2013

FIGURE 4.13-1
Regional Recreational Facilities in the Study Area
 PG&E Southern California Desert Gas Pipeline O&M EIR for ITP and LSA Agreements

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SOURCES: CPAD 2021; Insignia 2020; PG&E 2020

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4.14 Transportation

4.14.1 Introduction

The proposed project for the purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) that would authorize take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGC). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section evaluates the environmental impacts on transportation that may result directly or indirectly from CDFW's issuance of the ITP and the expected LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on transportation that could result with continuing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the project for purposes of CEQA). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this section.

Section 4.14.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have been occurring and will continue to occur, specific to transportation.

Section 4.14.3 provides a description of the existing baseline conditions for transportation in the O&M activities area ("study area"). Specifically, this section provides a description relative to transportation in the study area that has been and could continue to be affected by PG&E's ongoing O&M activities, regardless of whether CDFW issues the requested permits. This existing baseline condition, which includes the ongoing activities already being implemented by PG&E relative to their past, present, and continued potential effects, is the benchmark used in the Section 4.14.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these existing baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.14.4 provides an analysis of whether issuance of the requested permits (pursuant to the CFGC) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline and a substantial or potentially substantial adverse effect related to transportation. The section also identifies the significance criteria used for the impact analysis and best management practices (BMPs). Furthermore, this section discusses applicable regulatory authority or governing law that has applied and will continue to apply, specific to transportation.

Section 4.14.5 provides an analysis of whether the project-related incremental change to the environmental baseline conditions would be cumulatively considerable and therefore significant.

Section 4.14.6 identifies the residual environmental impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.14.7 lists the references cited in this section.

Comments received on the notice of preparation that were related to transportation included requests from the California Department of Transportation (Caltrans) District 9. Caltrans requested that PG&E continue to adhere to the Joint Use Agreements and the Consent to Common Use Agreement for pipeline facilities within the Caltrans rights-of-way (ROWs), which in some cases will require an encroachment permit.

The analysis included in this section is based on information that PG&E provided to CDFW, as well as relevant information gathered and considered by CDFW with assistance from its environmental consultant.

4.14.2 Applicable Regulations, Plans, and Policies

The following subsections describe the regulations and regulatory agencies that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and CDFW analysis of whether the proposed issuance of the permits would cause an incremental physical change to the existing environment and cause significant impacts to transportation.

Federal

Title 49, Part 192 of the Code of Federal Regulations

All gas pipelines and facilities are required to be designed, constructed, operated, and maintained in accordance with Title 49, Part 192 of the Code of Federal Regulations. These regulations include specific requirements for the design, materials, testing, and corrosion protection of gas facilities, as well as for worker training and all other aspects that pertain to gas facility O&M activities.

State

California Streets and Highways Code

The use of California state highways for purposes other than normal transportation may require written notification or an encroachment permit from Caltrans. Caltrans has jurisdiction over the state's highway system and is responsible for protecting the public and infrastructure. Section 660 of the California Streets and Highways Code allows Caltrans to issue encroachment permits authorizing activities related to the placement of encroachments within, under, or over state highway ROWs. Caltrans reviews all requests from utility companies that plan to conduct activities within state highway ROWs. Caltrans's encroachment permits may include conditions or restrictions on the time frame for construction activities performed within or above roadways that are under Caltrans's jurisdiction.

The California Streets and Highways Code also includes regulations for the care and protection of state and county highways and requires permits for any load that exceeds Caltrans's weight, length, or width standards for public roadways. Sections 700 through 711 of the code give provisions that are specific to utility providers. Additionally, the California Streets and Highways Code outlines directions for cooperation with local agencies, guidelines for permits, and general provisions relating to state highways and Caltrans's jurisdiction.

Senate Bill 743

In 2013, Senate Bill (SB) 743 was signed into law. SB 743 creates a process to change the way that transportation impacts are analyzed under CEQA. SB 743 required the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines (14 CCR 15000 et seq.) to provide an alternative to level of service for evaluating transportation impacts. Under the new transportation guidelines, level of service, or vehicle delay, will no longer be considered an environmental impact under CEQA. OPR recommended vehicle miles traveled (VMT) as the most appropriate measure of project transportation impacts for land use projects and land use plans. The updates to the CEQA Guidelines required under SB 743 were approved on December 28, 2018.

Under these guidelines, VMT has been adopted as the most appropriate measure of transportation impacts under CEQA. OPR's regulatory text indicates that a public agency may immediately commence implementation of the new transportation impact guidelines, and that the guidelines must be implemented statewide by July 1, 2020. The updated CEQA Guidelines state that "generally, vehicle miles traveled (VMT) is the most appropriate measure of transportation impacts" and define VMT as "the amount and distance of automobile travel attributable to a project." It should be noted that "automobile" refers to on-road passenger vehicles, specifically cars and light trucks. Heavy-duty truck VMT could be included for modeling convenience and ease of calculation (for example, where models or data provide combined auto and heavy truck VMT). Other relevant considerations may include the effects of a project on transit and non-motorized travel.

Local

Pursuant to Article XII, Section 8 of the California Constitution, the California Public Utilities Commission (CPUC) has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, operation, maintenance, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with CPUC. Although local governments do not have the power to regulate such activities, CPUC encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has considered relevant regional and county policies and issues in this environmental impact report (EIR).

The following plans from local jurisdictions were reviewed, and no specific goals or policies were identified that are relevant to the proposed project, including ongoing O&M activities, in the study area:

- The 2016 Congestion Management Plan developed by the San Bernardino Associated Governments (SANBAG 2016)¹
- The 2007 Congestion Management Plan for San Bernardino County
- City of Barstow 2015–2020 General Plan
- City of Victorville General Plan 2030
- Town of Apple Valley 2009 General Plan
- City of California City Final General Plan 2009–2028
- Kern County General Plan

¹ In 2016, the San Bernardino Associated Governments and the San Bernardino County Transportation Authority consolidated into one entity, now referred to as the San Bernardino County Transportation Authority.

- Kern Council of Governments 2018 Regional Transportation Plan/Sustainable Communities Strategy
- City of Ridgecrest General Plan

A plan with relevant goals, the San Bernardino County 2020 Countywide Policy Plan, is discussed below.

San Bernardino County

San Bernardino County 2020 Countywide Policy Plan. The Transportation and Mobility Element within the 2020 Countywide Policy Plan contains goals and policies to establish the location and operational conditions of the roadway network; coordinate the transportation and mobility system with future land use patterns and growth; provide guidance for the local and subregional mobility needs of residents, visitors, and businesses; and address access and connectivity among the various communities, cities, towns, and regions, across all modes. The Transportation and Mobility Element (San Bernardino County 2020) contains the following goals that are relevant to continuing O&M activities in the study area:

Goal TM-1: Roadway Capacity. Unincorporated areas served by roads with capacity that is adequate for residents, businesses, tourists, and emergency services.

Goal TM-2: Road Design Standards. Roads designed and built to standards in the unincorporated areas that reflect the rural, suburban, and urban context as well as regional (valley, mountain, and desert) context.

Goal TM-3: Vehicle Miles Traveled. A pattern of development and transportation system that minimizes vehicle miles traveled.

Goal TM-4: Complete Streets, Transit, and Active Transportation. On- and off-street improvements that provide functional alternatives to private car usage and promote active transportation in mobility focus areas.

Goal TM-5: Goods Movement. A road, rail, and air transportation system that supports the logistics industry and minimizes congestion in unincorporated areas.

4.14.3 Existing Baseline Conditions

This section provides a description of the existing baseline conditions relative to transportation in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. PG&E's gas pipeline system has been in place for more than 70 years. Impact data collected by PG&E from 2017 to September 2021 regarding temporary and permanent disturbance impacts caused by O&M activities provides important detail about the environmental baseline for purposes of CEQA (refer to Section 1.1, Proposed Project and Environmental Review). The existing baseline condition from 2017 to 2021, which includes PG&E's past and ongoing O&M activities, is the benchmark used in the Section 4.14.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Existing Roadway Network

The study area includes a network of state, county, and city roadways, as shown on Figure 2-1, PG&E Facility Location Map. The approximately 1,240 miles of roadway in San Bernardino County includes six federal (e.g., interstate) freeways, two U.S. highways, and 18 state highways. Major roads in the vicinity of the pipeline in San Bernardino County include Interstate (I) 15, I-40, U.S. Highway 395, U.S. Highway 95, U.S. Historic Route 66, State Route (SR) 58, SR-247, SR-178, and SR-18. Major roads in the vicinity of the study area in Kern County include SR-58 and SR-14. Continued O&M activities in the study area would require the use of local roadways in San Bernardino County, Kern County, the Town of Apple Valley, and the Cities of California City, Ridgecrest, Barstow, and Victorville.

Railway

Several railroad lines and operators are in the vicinity of the study area, including both passenger and freight rail services. Three Amtrak trains travel through San Bernardino County: the Southwest Chief, Sunset Limited, and Texas Eagle. The Southwest Chief travels between Los Angeles and Chicago, and the Sunset Limited and Texas Eagle trains stop in the Cities of Pomona, Ontario, and Palm Springs. Two Class I freight railroad companies—BNSF Railway and Union Pacific Railroad—operate railroad lines and facilities in the study area. Class III railroads in the study area include the Trona Railway in the northwestern portion of San Bernardino County and the Arizona & California Railroad.

Public Transit

Public transit operators in San Bernardino County (SBCTA 2021) include the following:

- Barstow Area Transit
- Morongo Basin Transit Authority
- Mountain Area Regional Transit Authority
- Needles Area Transit
- Omnitrans
- Valley Transportation Services
- Victor Valley Transit Authority

The San Bernardino County Transportation Authority provides financial support to many of these transportation authorities.

The Kern Council of Governments serves as the regional transportation agency for Kern County and prepares the Regional Transportation Plan for Kern County (Kern COG 2018). Kern Transit provides local bus service throughout Kern County. Amtrak also provides rail and bus service in Kern County. Additional commuter rail services in San Bernardino County and Kern County are provided by Metrolink, which runs through the Cities of San Bernardino, Fontana, Ontario, and Pomona, and terminates to the west in the City of Los Angeles and to the south in the City of Oceanside.

Bicycle Facilities

Bicycle facilities (e.g., designated bicycle lanes, routes, and paths) are located along many of the county and city roads in the vicinity of the study area. Bicycle facilities are also located within several of the recreational facilities in the area, such as the Havasu National Wildlife Refuge, as described in Section 4.13, Recreation, of this EIR.

4.14.4 Impact Analysis

4.14.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of transportation impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For the purposes of this EIR, transportation impacts would be significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would:

1. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
2. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
4. Result in inadequate emergency access.

4.14.4.2 Applicable Measures

Best Management Practices

As part of its standard practice, PG&E will continue to incorporate the following BMP into its ongoing O&M activities to avoid or minimize the potential for adverse transportation impacts. This BMP, where applicable, is discussed in the impact discussion in Section 4.14.4.3.

- Restrict parking to existing ROWs and pre-approved staging areas, providing through access for emergency vehicles, maintaining access for private roads, avoiding key commute routes, and avoiding “rate-limiting” intersections during peak traffic periods.

In addition, BMPs from Section 4.3, Air Quality, would also avoid or substantially lessen transportation impacts.

Refer to Section 4.3.4.2 and Section 2.5, Applicable Measures, of this EIR for the full text of air quality BMPs.

4.14.4.3 Impact Discussion

Impact TRA-1 Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause potential effects on the circulation system. As discussed in Section 4.14.3, Existing Baseline Conditions, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and is traversed by a number of major roadways and highways, railroad lines, public transit routes, and bicycle facilities. PG&E has been conducting O&M activities in the study area, as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

The San Bernardino County 2020 Countywide Policy Plan includes several goals that are related to maintaining roadway capacity and road design standards, minimizing VMT, providing street improvements that provide alternatives to private car usage and promote active transportation, and supporting goods movement in unincorporated areas. Except for portions of the pipeline system located in the vicinity of the Town of Apple Valley and the Cities of Barstow, Victorville, and Ridgecrest, the study area is generally located in remote areas in San Bernardino and Kern Counties. Although O&M activities would occur primarily within PG&E ROWs, some O&M activities conducted within the public ROW could intermittently reduce, disrupt, or temporarily eliminate access to portions of adjacent bus stops, bicycle paths, and public sidewalks. During ongoing O&M activities some roads in the vicinity of the study area have been, can be, and will continue to be temporarily blocked to through traffic due to the transportation of vehicles and materials. In all cases, disruptions are expected to be short term and isolated, and no permanent changes to existing pedestrian, bicycle, transit, or roadway facilities are anticipated.

PG&E's standard BMP for parking restricts parking to existing ROWs and pre-approved staging areas, providing through access for emergency vehicles, maintaining access for private roads, and avoiding key commute routes and intersections during peak traffic periods. In addition, PG&E will continue to obtain and implement applicable encroachment permit conditions, the associated and approved traffic control plans, and its standard transportation and circulation practices to minimize these disruptions and ensure adequate access. Typical traffic control measures and permit conditions required by county or city encroachment permits may include, but are not limited to, lane closures; the use of warning signs, cones, crossing structures, flaggers, lights, and barricades; and cleaning up roadways upon the completion of work. PG&E is also a member of the California Joint Utility (CJU) Traffic Control Committee, which publishes the CJU Traffic Control Manual.² PG&E would follow the recommendations in the CJU Traffic Control Manual regarding basic standards for the safe movement of traffic on highways and streets. If O&M activities are required within the ROW of existing railways, PG&E would coordinate with the applicable railway companies and agencies to obtain encroachment and/or crossing permits prior to initiating O&M activities. Furthermore, PG&E and Caltrans have an existing Joint Use

² The CJU Traffic Control Manual provides guidelines for ensuring that the needs of all road users (e.g., motorists, bicyclists, and pedestrians) are met through the establishment of a temporary traffic control zone during highway construction, utility work, and maintenance operations.

Agreement and Consent Use Agreement for pipeline facilities within state highway ROWs. For the O&M activities, PG&E will continue to adhere to those agreements when working within Caltrans ROWs.

All of PG&E's ongoing O&M activities with the potential to conflict with adopted plans, policies, or programs associated with public transit, bicycle, and pedestrian facilities will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to transportation. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing transportation baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4, Impact Analysis (Biological Resources), of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing transportation baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in a conflict with adopted plans, policies, or programs associated with public transit, bicycle, and pedestrian facilities.

PG&E is committed to implementing standard practices and BMPs and complying with regulatory requirements. This commitment provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline or cause a substantial adverse effect related to a conflict with a program, plan, ordinance, or policy addressing the circulation system. For example, as part of its standard practice and in accordance with the parking BMP, PG&E will restrict parking to existing ROWs and pre-approved staging areas. In addition, PG&E will continue to obtain applicable encroachment permits required by local jurisdictions and applicable state and railway agencies in the study area and implement related conditions.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with transportation is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to a conflict with adopted plans, policies, or programs associated with public transit, bicycle, and pedestrian facilities; any related effects would be **less than significant**.

Impact TRA-2 Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause potential effects on the circulation system. As discussed in Section 4.14.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal

lands, with a majority of the study area located within undeveloped, open areas. PG&E has been conducting O&M activities in the study area, as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would conflict or be inconsistent with CEQA Guidelines Section 15064.3(b).

CEQA Guidelines Section 15064.3(b) sets forth specific criteria for determining the significance of transportation impacts. Section 15064.3(b) pertains to land use projects and describes factors that may indicate whether the amount of a land use project's VMT may be significant or not. However, the OPR Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR Technical Advisory; OPR 2018) does not provide specific guidance for evaluating public utility projects. Given this and the substantial geographic area of the study area (approximately 645 miles of pipeline covering two counties), a qualitative analysis of VMT is provided in this section.

O&M activities have involved, can involve, and will continue to involve a varying number of personnel driving to and from work areas throughout the day. Personnel typically drive to the work site at the beginning of the day and leave at the end of the day, with fewer people traveling to and from the work site throughout the day. O&M personnel have been, can be, and will continue to be required to travel between 30 and 200 miles per day, depending on the O&M activity and where O&M crews depart from. As described in Chapter 2, Project Description, most of the O&M activities in the study area involve crews consisting of 2 to 5 workers. However, a small number of O&M activities (e.g., the installation of pig launchers/receivers, hydrostatic testing, and pipeline segment repair) typically require 12 to 15 workers, and for the pipeline segment replacement activity, as many as 24 workers could be needed.

Based on existing baseline conditions, the estimated duration of each activity (shown in number of days per year) and the anticipated number of daily vehicle trips for each O&M activity are provided in Table 4.14-1. For example, pipeline segment replacement has generated and will continue to generate up to 48 workforce-related daily vehicle trips and typically takes 1 to 6 months to complete. Although there is some overlap between when activities are occurring, not all the activities occur at the same time.

Table 4.14-1. Estimated Vehicle Trips for O&M Activities

Activity Number	O&M Activity	Duration – Annual Days ^a	Daily Workforce Trips	Daily Non-Workforce Trips ^b
1	Pipeline patrols	30	2	2
2	Valve inspections and lubrication	45	3	2
3	Integrity management	72	2	2
4	Telecommunication site inspections	20	2	2
5	Road surface maintenance	60	4	—
6	ROW and access road repair	60	2	1
7	Erosion control	15	3	2
8	Telecommunication site maintenance	20	5	2
9	Span painting/air to soil corrosion protection	36	6	2

Table 4.14-1. Estimated Vehicle Trips for O&M Activities

Activity Number	O&M Activity	Duration – Annual Days ^a	Daily Workforce Trips	Daily Non-Workforce Trips ^b
10	Below-grade pipe and coating inspection	60	4	5
11	Internal pipeline inspection	105	2	2
12	Installation of pig launcher/receiver facilities	210	15	9
13	Valve/pipeline excavation and recoating	225	10	8
14	Installation of magnesium anodes	10	3	4
15	Installation of deep-well anodes/thermoelectric generators	99	8	4
16	Installation of flex anodes	12	4	2
17	Installation/replacement of horizontal anode beds	18	5	5
18	Electronic test system station	38	1	1
19	Cathodic test station installations	75	5	3
20	Valve replacement/automation	135	13	6
21	Hydrostatic testing	144	10	10
22	Pipeline segment replacement	210	48	28
23	High-pressure regulator deactivation	30	5	6
24	Soil stabilization	15	1	—
25	Water diversion channels	2	1	—
26	Fire response	5	1	—

Notes: O&M = operation and maintenance; ROW = right-of-way.

^a Reports the estimated number of days each activity would occur annually.

^b Represents trips associated with pickup trucks, graders, water trucks, flatbed trucks, dump trucks, and welding trucks.

The OPR Technical Advisory (OPR 2018) suggests that agencies may screen out VMT impacts using project size, maps, transit availability, and provision of affordable housing. One of the criteria for screening out a VMT analysis is whether the project would generate less than 110 daily vehicle trips. As a conservative estimate, if every O&M activity occurred simultaneously, there would be 165 daily trips (passenger vehicles) that would generally be split between Kern County and San Bernardino County. This equates to approximately 83 daily trips per county, which falls within the screening criteria threshold.

PG&E's O&M activities are short-term construction-related activities that start and stop, with no continuous or permanent traffic generation. Traffic that has been and will continue to be generated is also dispersed throughout the approximately 645-mile pipeline system, across two counties. Because ongoing O&M activities require a relatively small number of trips, the trips are dispersed across a large geographic area, and the project is not a land use project and would result in only short-term temporary VMT, the ongoing O&M activities are not expected to conflict with CEQA Guidelines Section 15064.3(b).

All of PG&E's ongoing O&M activities will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to transportation. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as

discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in conflict or be inconsistent with CEQA Guidelines Section 15064.3(b).

PG&E is committed to implementing standard practices and BMPs and complying with regulatory requirements. This commitment provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline or conflict or be inconsistent with CEQA Guidelines Section 15064.3(b). For example, PG&E's Air Quality Program includes incorporation of BMPs (refer to Section 4.3.4.2 of this EIR) to avoid and minimize air quality effects, including developing a carpooling program to minimize the number of single-occupant vehicle trips and thus total VMT. The carpooling BMP includes developing a carpooling program for each O&M activity, dependent on the proximity of carpool facilities to the area, the geographical commute departure points of construction workers, and the extent to which carpooling would not adversely affect worker arrival time and the construction schedule for O&M activities.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with transportation is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to VMT; any related effects would be **less than significant**.

Impact TRA-3 Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance along the pipeline alignment and access roads, as described in Chapter 2. As discussed in Section 4.14.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and is traversed by a number of major roadways and highways, railroad lines, public transit routes, and bicycle facilities. PG&E has been conducting O&M activities in the study area, as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would potentially increase hazards due to a geometric design feature or incompatible uses.

O&M activities in the study area have been, can be, and will continue to be conducted within existing PG&E ROWs, thereby minimizing the potential for the creation of hazards or incompatible uses. As discussed under

Impact TRA-1, traffic flow along roads has been, can be, and will continue to be temporarily impeded, or lanes temporarily closed, during certain O&M activities. However, PG&E's O&M activities do not include land use development or new road construction that could affect the geometric design of roadways in the study area.

All of PG&E's ongoing O&M activities with the potential to substantially increase potential hazards or incompatible uses will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to transportation. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not substantially increase hazards due to a geometric design feature or incompatible uses.

PG&E is committed to implementing standard practices and BMPs and complying with regulatory requirements. This commitment provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline or substantially increase hazards due to a geometric design feature or incompatible uses. Furthermore, as part of its standard practice and in accordance with the parking BMP, PG&E will restrict parking to existing ROWs and pre-approved staging areas. In addition, PG&E will continue to obtain applicable encroachment permits issued by local jurisdictions (local counties, cities, and Caltrans) and implement related conditions, which include traffic control measures such as proper signage and flaggers.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with transportation is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to a substantial increase of hazards due to a geometric design feature or incompatible uses; any related effects would be **less than significant**.

Impact TRA-4 Would the project result in inadequate emergency access?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance along the pipeline alignment and access roads. As discussed in Section 4.14.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and is traversed by a number of major roadways and highways. PG&E has been conducting O&M activities in the study area, as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits.

If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would result in inadequate emergency access.

O&M activities have resulted in, can result in, and will continue to result in temporary lane closures and/or traffic delays. Delays are generally short term and isolated, and emergency vehicle access is expected to be maintained using agency-permitted traffic control measures.

All of PG&E's ongoing O&M activities with the potential to result in inadequate emergency access will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to transportation. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in inadequate emergency access.

PG&E is committed to implementing standard practices and BMPs and complying with regulatory requirements. This commitment provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or result in inadequate emergency access. Furthermore, as part of its standard practice and in accordance with the parking BMP, PG&E restricts parking to existing ROWs and pre-approved staging areas, providing through access for emergency vehicles, maintaining access for private roads, avoiding key commute routes, and avoiding using rate-limiting intersections during peak traffic periods. In addition, PG&E will continue to coordinate with local jurisdictional agencies to obtain the necessary encroachment permits and inform emergency responders of potential lane closures in accordance with the relevant permit requirements. Traffic control measures and permit conditions required by county or city encroachment permits may include, but are not limited to, lane closures; the use of warning signs, cones, crossing structures, flaggers, lights, and barricades; and cleaning up roadways upon the completion of work.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with transportation is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Thus, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to inadequate emergency access; any related effects would be **less than significant**.

4.14.5 Cumulative Impacts

The geographic scope for cumulative impacts related to transportation includes related projects within a 1-mile-wide area along the entire length of the pipeline alignment, and within the Kern County and San Bernardino County regions (refer to Table 3-1, Geographic Scope of Cumulative Impacts and Method of Evaluation).

O&M activities are routine and ongoing under existing baseline conditions, and the majority of O&M activities would be temporary and would occur over a short duration. As shown in Table 3-2, Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area, several related projects would occur within 1 mile of the PG&E gas pipeline. O&M activities have not generated a substantial number of vehicle trips, nor would ongoing activities cause an increase in vehicle trips. Also, the ongoing O&M activities would not involve any new design features that would result in inadequate emergency access, and there would be no associated major redesign or reconfiguration of roadways. During some O&M activities, there have been, can be, and will continue to be short term and temporary impacts associated with construction activities within the public ROW. However, as necessary, PG&E coordinates with the local jurisdictions and/or affected agencies/entities regarding any temporary road or lane closures and temporary access routes necessary to accommodate construction. Potential cumulative considerations to emergency or alternative transportation access during construction are avoided or minimized through PG&E's standard practice and incorporation of the parking BMP and through obtaining the necessary encroachment permits from local jurisdictions (Caltrans, counties, and cities). In addition, PG&E's standard practice and incorporation of the carpooling BMP minimizes the number of single-occupant vehicle trips and thus total VMT. Per OPR guidelines, a project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact, meaning a finding of a less-than-significant project impact would imply a less-than-significant cumulative impact, and vice versa. PG&E's O&M activities will continue regardless of whether CDFW issues the requested permits and would not contribute to cumulative regional transportation impacts associated with other projects in the region. Thus, the incremental contribution to the cumulative transportation impacts caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. Therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to transportation.

4.14.6 Residual Impacts

PG&E's O&M activities have been ongoing and are a component of the existing baseline conditions in the study area. O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's commitment to implementing standard practices and BMPs and complying with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect on transportation.

4.14.7 References

- Kern COG (Kern Council of Governments). 2018. *2018 Regional Transportation Plan and Sustainable Communities Strategy*. August 16, 2018. <https://www.kerncog.org/category/docs/rtp/>.
- OPR (California Governor's Office of Planning and Research). 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. April 2018. <https://opr.ca.gov/ceqa/updates/sb-743/>.
- SANBAG (San Bernardino Associated Governments). 2016. *San Bernardino County Congestion Management Plan*. June 2016. <https://www.gosbcta.com/plan/congestion-management-plan-2016/>.
- San Bernardino County. 2020. *San Bernardino County 2020 Countywide Policy Plan: County Policy Plan*. Adopted in October 2020. <https://countywideplan.com/policy-plan/>.
- SBCTA (San Bernardino County Transportation Authority). 2021. "Public Transit & Rail." Accessed June 2021. <https://www.gosbcta.com/commuter-services/public-transportation-providers/>.

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4.15 Tribal Cultural Resources

4.15.1 Introduction

The proposed project for the purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) that would authorize take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGC). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section of the environmental impact report (EIR) evaluates the environmental impacts on tribal cultural resources (TCRs) that may result directly or indirectly from CDFW's issuance of the ITP and the expected LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on TCRs that could result with continuing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the project for purposes of CEQA). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this section.

Section 4.15.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have been occurring and will continue to occur, specific to TCRs.

Section 4.15.3 provides a description of the existing baseline conditions for TCRs in the O&M activities area ("study area"). Specifically, this section provides a description relative to TCRs in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities, regardless of whether CDFW issues the requested permits. This existing baseline condition, which includes the ongoing activities already being implemented by PG&E relative to their past, present, and continued potential effects, is the benchmark used in the Section 4.15.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these environmental baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.15.4 provides an analysis of whether issuance of the requested permits (pursuant to the CFGC) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline conditions and a substantial or potentially substantial adverse effect related to TCRs. The section also identifies the significance criteria used for the impact analysis, an applicant proposed measure (APM), and applicable best management practices (BMPs). Furthermore, this section discusses applicable regulatory authority or governing law that has applied and will continue to apply, specific to TCRs.

Section 4.15.5 provides an analysis of whether the project-related incremental change to the environmental baseline conditions would be cumulatively considerable and therefore significant

Section 4.15.6 identifies the residual environmental impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.15.7 lists the references cited in this section.

Comments received during the scoping process related to TCRs included comments from the Native American Heritage Commission (NAHC) relating to compliance with Assembly Bill (AB) 52 and Senate Bill 18 and other applicable laws.

The analysis included in this section is based on information that PG&E provided to CDFW, as well as relevant information gathered and considered by CDFW, with assistance from its environmental consultant.

4.15.2 Applicable Regulations, Plans, and Policies

The following subsections describe the regulations and regulatory agencies that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and CDFW analysis of whether the proposed issuance of the permits would cause an incremental physical change to the existing environment and cause significant impacts to TCRs.

Federal

Both the National Environmental Policy Act and National Historic Preservation Act analyze and protect cultural resources. These acts are described in Section 4.5, Cultural Resources, of this EIR.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 provides for the protection of archaeological resources that are more than 100 years old and that occur on federally owned or controlled lands. The statute makes it unlawful to excavate and remove items of archaeological interest from federal lands without a permit, and it defines the process for obtaining such a permit from the responsible federal agency. This process includes a 30-day notification from the agency to interested persons, including Indian tribes, to receive comments regarding the intended issuance of a permit. The law establishes a process for prosecuting persons who illegally remove archaeological materials from lands subject to the Archaeological Resources Protection Act. The law also provides for the curation of archaeological artifacts, ecofacts,¹ notes, records, photographs, and other items associated with collections made on federal lands. Standards for curation are provided in Title 36, Part 79 of the Code of Federal Regulations.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act of 1990 provides a process for museums and federal agencies to return certain Native American cultural items (i.e., human remains, funerary objects, sacred objects, and objects of cultural patrimony) to lineal descendants, culturally affiliated Indian tribes (i.e., tribes recognized by the Secretary of the Interior), and Native Hawaiian organizations, if the legitimate cultural affiliation of the cultural items can be determined according to the law. Museums, as defined under the statute, are required to inventory cultural items in their possession and determine which items can be

¹ *Ecofacts* are natural materials that have been used by humans, or that have been recovered from archaeological sites or other sealed deposits and that are relevant to the study of ancient environments and ecology.

repatriated to the appropriate party. Cultural items intentionally or unintentionally excavated and removed from federal lands may be subject to the Native American Graves Protection and Repatriation Act.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act of 1978 directs federal agencies to consult with Native Americans to determine appropriate procedures to protect the inherent rights of Native Americans to believe, express, and exercise their traditional religions. These rights include, but are not limited to, access to sites, use and possession of sacred objects, and freedom to worship through ceremonies and traditional rites.

Executive Order 13007

Executive Order (EO) 13007 directs that, in managing federal lands, each executive branch agency with statutory or administrative responsibility for the management of federal lands will—to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions—do the following:

- Accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners.
- Avoid adversely affecting the physical integrity of such sacred sites.

Where appropriate, agencies will maintain the confidentiality of sacred sites. EO 13007 requires that affected agencies must establish a process for implementing the executive order.

Executive Order 13175

EO 13175 was issued to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, to strengthen the government-to-government relationships between the United States and Indian tribes, and to reduce the imposition of unfunded mandates on Indian tribes. Relevant federal agencies are directed to establish policies and procedures for implementing consultation with federally recognized tribes on a government-to-government basis.

State

Assembly Bill 52

AB 52 (which amended Section 5097.94 of the California Public Resources Code and added Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3) established a process and related requirements governing state and local agency consideration of California Native Americans as a part of required public review of proposed projects under CEQA (California Public Resources Code Section 21000 et seq.). The goal of AB 52, among other things, is to promote the involvement of California Native American tribes in the decision-making process, especially to identify resources significant to tribes and feasible ways to avoid or substantially lessen significant or potentially significant impacts to those resources. To reach this goal, AB 52 established a formal role for tribes in the CEQA process and formally recognized the unique expertise California Native American tribes may provide as substantial evidence to identify the locations, types, and significance of TCRs within their traditionally and culturally affiliated geographic area (California Public Resources Code Section 21080.3.1[a]). CEQA defines a California Native American tribe as a “Native American tribe located in California that is on the contact list maintained by the Native American Heritage Commission.” This definition does not distinguish between federally recognized and non-federally recognized tribal groups and is therefore more inclusive than the federal definition of “Indian tribe” (California Public Resources Code Section 21073).

CEQA lead agencies are required to consult with tribes about potential TCRs in a project area, the potential significance of project impacts on those resources, the development of project alternatives, and the type of environmental document that should be prepared. AB 52 specifically states that a project that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment (California Public Resources Code Section 21084.2).

CEQA Section 21074(a)(1), which incorporates by reference California Public Resources Code Section 5024.1(c), defines TCRs to include either of the following:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
 - a. Included or determined to be eligible for inclusion in the California Register of Historical Resources.
 - b. Included in a local register of historical resources as defined in Public Resources Code section 5020.1(k).
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Public Resources Code section 5024.1(c). In applying the criteria set forth in 5024.1(c) for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

A cultural landscape that meets one or both of the criteria highlighted above is also a TCR under CEQA Section 21074(b), where the landscape is geographically defined in terms of the size and scope of the landscape. Likewise, historical resources, unique archaeological resources, and non-unique archaeological resources, as defined by CEQA, that conform with one or both of the criteria highlighted above are also TCRs under CEQA Section 21074(c). All these resources, including cultural landscapes, can be significant TCRs because of their sacred and/or cultural tribal value rather than being important for their scientific value, as determined by a CEQA lead agency (for this project, CDFW).

CDFW Tribal Communication and Consultation Policy

CDFW has adopted a Tribal Communication and Consultation Policy to help establish and foster tribal relationships (CDFW 2014). The policy is the foundation of CDFW's efforts to work cooperatively, communicate effectively, and consult with tribes. It establishes a formal process for engaging in government-to-government consultations. The policy implements and builds on EO B-10-11 and the California Natural Resources Agency's Tribal Consultation Policy. Through implementation of this policy and through additional means, including entering into memoranda of agreement with individual tribes, CDFW seeks to establish a positive, cooperative relationship with tribes. While the primary purpose of this policy is to establish effective tools for communicating with tribes and a formal process for engaging in government-to-government consultations with tribes, CDFW seeks and encourages collaborative relationships with tribes, including for the co-management of resources, where appropriate.

Local

Pursuant to Article XII, Section 8 of the California Constitution, the California Public Utilities Commission (CPUC) has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, operation, maintenance, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with CPUC. Although local governments do not have the power to regulate such activities, CPUC

encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has reviewed regional and county documents for relevant policies.

The following plans from local jurisdictions were reviewed, and no specific goals or policies that are relevant to the proposed project or the O&M activities in the study area were identified:

- San Bernardino County 2020 Countywide Policy Plan
- City of Barstow 2015–2020 General Plan
- City of Victorville General Plan 2030
- Town of Apple Valley 2009 General Plan
- Kern County General Plan
- City of California City Final General Plan 2009–2028
- City of Ridgecrest General Plan

4.15.3 Existing Baseline Conditions

This section provides a description of the existing baseline conditions relative to TCRs in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. PG&E's gas pipeline system has been in place for more than 70 years. Impact data collected by PG&E from 2017 to September 2021 regarding temporary and permanent disturbance impacts caused by O&M activities provide important detail about the environmental baseline conditions for purposes of CEQA (refer to Section 1.1, Proposed Project and Environmental Review, of this EIR). The existing baseline condition from 2017 to 2021, which includes PG&E's past and ongoing O&M activities, is the benchmark used in the Section 4.15.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Tribal Cultural Resources Inventory in the Study Area

A cultural resources inventory was previously conducted along Lines 300 A and 300 B in the study area. Far Western Anthropological Research Group Inc. (Far Western) was contracted by PG&E to conduct the archival and California Historical Resources Information System records search and subsequent pedestrian survey. As depicted on Figure 2-1, PG&E Facility Location Map, the two pipelines span approximately 227 linear miles between Topock Compressor Station and the Community of Mojave. Two approximately 100-foot-wide survey corridors were established from the center of each pipeline and surveyed. It was noted during the survey that the two pipeline segments are themselves more than 50 years old. Far Western did not record these two historic-age features as sites because they currently fall under the Federal Register's 2002 Exemption Regarding Historic Preservation Review Process for Projects Involving Historic Natural Gas Pipelines (67 FR 16364–16365). The pipelines will not be eligible for consideration until they are proposed to be abandoned by PG&E. Due to the proximity of the pipelines, the survey corridors overlapped in some locations. Excluding the overlapping areas, the total acreage of the survey corridor was approximately 5,360 acres.

As summarized in Table 4.5-1, Cultural Resources Inventory Summary, of this EIR, the cultural resources inventory documented 252 sites (i.e., groupings of three or more artifacts in a 25-square-meter [270-square-foot] area), of which 106 were previously recorded sites and 146 were newly recorded sites. The documented sites included 34 that are prehistoric, 206 that are from the historic era, and 12 that are multicomponent (i.e., historic and prehistoric components). Approximately 94 of the newly recorded sites are historic-era roads. A total of 175 isolates (i.e., groupings of two or fewer artifacts or multiple fragments of the same artifact) were also identified, which included 31 prehistoric isolates, 142 historic-era isolates, and 2 multicomponent isolates. Isolates are not listed in the table because by definition they are not eligible for the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP).

PG&E initiated this survey to proactively manage and avoid impacts to cultural resources within the study area. As such, formal evaluations of resources (to determine eligibility for listing in the CRHR or NRHP) were not included in the cultural resources inventory. The Bureau of Land Management (BLM) requested that Far Western provide preliminary assessments of eligibility, when possible, based on the data gathered during the cultural resources inventory. Only 15 of the 252 total sites in the survey area were previously determined to be eligible or recommended for eligibility. Another 29 were previously recommended ineligible from earlier evaluations. A further 48 sites are recommended for further research to assess their eligibility or are potentially eligible. Lastly, the majority of the sites within the study area, 160 in total, appear ineligible for listing in the CRHR or NRHP based on an initial assessment.

The original pipelines were installed more than 70 years ago and appear on historical maps before the 1960s. Data from PG&E confirm that installation for Line 300 A was started and mostly finished in 1950 and Line 300 B was installed and mostly finished by 1957 (Higgins et al. 2013). Because O&M activities have been ongoing throughout the study area for 70 years, the associated areas are not pristine for cultural resources. Although surveys of the approximately 100-foot-wide corridors along Lines 300 A and 300 B were completed, surveys of access roads or facilities that are associated with these pipelines and are outside PG&E's current right-of-way have not been conducted. When identifying cultural resources in the remainder of the study area, PG&E uses a confidential geospatial database it maintains, which encompasses the entire study area and contains more than 36,500 linked cultural site records and more than 25,000 reports and other documents.

According to the San Bernardino County 2007 General Plan, more than 11,000 prehistoric or historic archaeological sites and more than 2,000 historic structures have been documented within San Bernardino County (San Bernardino County 2007). Approximately 15% of San Bernardino County has been surveyed, and nearly 12,000 cultural resources have been recorded. Potential cultural sites in the study area include the following, along with a variety of other sites:

- Historic roads, trails, bridges, and buildings
- Engineering features
- Native American villages
- Temporary campsites
- Rock shelters
- Milling stations
- Lithic scatters
- Cemeteries

The Kern County General Plan does not provide a definition of cultural resources, but it provides a policy wherein preservation of cultural and historical resources is promoted for its general value to residents and visitors. This plan also provides general implementation measures to limit the disturbances to resources and provides for the involvement of Native American consultation.

Prehistoric Setting

The archaeological chronology of the Mojave Desert is divided into the Lake Mojave, Pinto, Gypsum, Saratoga Springs, and Protohistoric periods. The first evidence of human occupation is known from fluted spear points mostly concentrated around China Lake, although the precise age for deposition of these items and associated cultural material has not been established. Solid evidence of human occupation of the Mojave Desert began with the Lake Mojave period between 10,000 and 7,500 before present (BP). Archaeological assemblages from the Lake Mojave period consist of percussion-flaked cores and flake-based tools, pressure-flaked bifaces, and stemmed Lake Mojave and Silver Lake projectile points. The Pinto period (7,500 to 4,000 BP) is traditionally defined by the presence of projectile points with characteristic shoulders and concave bases. In addition, Pinto period sites often contain milling stones and other tools indicative of an increased usage of plants and small seeds. Sites identified within the Gypsum period (4,000 to 1,500 BP) exhibit a higher frequency of milling stones; mortars and pestles; and flaked, ground, and battered stone tools. Artifact assemblages (e.g., smaller Rose Spring and Eastgate-series projectile points) and bow-and-arrow technology characterized the Saratoga Springs period, which occurred between 1,500 and 800 BP. The Mojave Desert contains several large Saratoga Springs period sites that have been interpreted as potential village sites with collector-based settlement organizations. From 800 BP until historic times, the study area is defined by the presence of Cottonwood and Desert side-notched arrow points; rough brownware ceramics; small steatite and shell beads; and large, unshaped milling implements.

Ethnographic Setting

The major Native American tribes that historically inhabited the Mojave Desert included the Serrano, Vanyume, Tatavium, Kitanemuk, and Kawaiisu. The Serrano occupied the San Bernardino Mountains east of Cajon Pass at the base and north of the mountains, near the City of Victorville. The population of the Serrano prior to European contact was estimated to be 1,500 to 2,500 individuals. Serrano settlements were chosen based on the availability of water resources and were located primarily in the foothills of the San Bernardino Mountains.

The majority of the Vanyume settlements were located along the Mojave River, and the Vanyume held a tract of land along the Mojave River from the vicinity of the City of Victorville to areas near the City of Barstow. The Vanyume often traveled to the foothills to collect nuts, hunt large game (e.g., mountain sheep), and trade with the foothill Serrano.

The Tatavium existed in mountainous regions between 1,500 and 3,000 feet above mean sea level, primarily on the south-facing slopes of the Liebre and Sawmill Mountains. This location encouraged the Tatavium to exploit the yucca plant, which was a major food source, along with small mammals, deer, acorns, sage seeds, and juniper and islay berries.

The Kitanemuk occupied areas along the Tehachapi Mountains that were bordered by the San Joaquin Valley to the north, the Sierra Nevada to the east, and the Antelope Valley to the south. The population size of the Kitanemuk was estimated to be 500 to 1,000 individuals, who lived in permanent villages of 50 to 80 individuals or more.

The Kawaiisu occupied regions surrounding the Sierra Nevada–Tehachapi watershed between the San Joaquin Valley and the Mojave Desert. The Kawaiisu used various types of basketry in the gathering and preparation of foods, such as acorns, seeds, nuts, berries, and roots. Birds and animals were generally hunted using bows made of juniper wood. The Kawaiisu often traveled far from the boundaries of their established settlements and openly traded with groups entering Kawaiisu territory.

Historic Setting

The historic era in the study area can be divided into the Spanish Mission period, the Mexican Rancho period, and the American period. Spanish exploration in the study area began in approximately 1540 with Hernando de Alarcón's ocean expedition traveling northward up the Gulf of California and into the mouth of the Colorado River. Sea trade routes were established in the 1560s that facilitated the transfer of goods from Asian commercial outposts to territories in present-day Mexico by using the California coast. The San Fernando Mission was founded in 1797 and resulted in a reduction of Native American populations and an increase in settlement and migration. Mexico successfully fought for independence from Spain in 1821, and the Secularization Act of 1833 marked the end of the Spanish Mission period.

The Mexican Rancho period occurred between 1821 and 1848 and was characterized by the dismantling of the mission system throughout California in the mid-1830s. Rancheros who thrived during this period were known for their unrivaled horsemanship, hospitality, and weeklong rodeos and fiestas to celebrate weddings and holy days. The Mexican Rancho period ended in 1848 in conjunction with the end of the Mexican War, which lasted for nearly 2 years. After the signing of the Treaty of Guadalupe Hidalgo in 1848, California was ceded to the United States. The American Period (1848 to present) is characterized by growth, industry, increased settlement, commercial resource extraction, and the development of transportation. Several regions in the study area grew to become centers of gold and silver mining during the American period. Randburg, Calico, and Oro Grande were established mining towns during this period; and Rosamond, Barstow, and Mojave were suppliers for mining operations in the study area.

4.15.4 Impact Analysis

4.15.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of TCR impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For the purposes of this EIR, TCR impacts would be considered significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would:

1. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
 - a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).
 - b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

4.15.4.2 Applicable Measures

In addition to BMPs relating to cultural resources (refer to Section 4.5.4.2), PG&E will continue to incorporate the following APM from Section 4.5 into its ongoing O&M activities as part of its standard practice. This APM and BMPs, where applicable, are included in the impact discussion in Section 4.15.4.3.

- APM CUL-1 (Inventory and Evaluate Historical Resources)

Refer to Section 4.5.4.2 and Section 2.5, Applicable Measures, of this EIR for the full text of APM CUL-1 and cultural resources BMPs.

4.15.4.3 Impact Analysis

Information presented in this section was gathered through CDFW's ongoing consultation under CEQA with California Native American tribes that have cultural affiliations with the study area.

Per CEQA requirements, TCRs are primarily identified through outreach to NAHC and government-to-government consultation between CDFW as lead agency and the appropriate California Native American tribes. CDFW sent a request to NAHC for a search of its Sacred Lands File and a list of tribes that may be affiliated with the study area and received a response on November 19, 2020. NAHC's records search of the Sacred Lands File was positive. The NAHC letter indicated that CDFW should contact the Chemehuevi Indian Tribe and the San Manuel Band of Mission Indians and provided a list of Native American tribes that may have knowledge of cultural resources in the study area. On December 9, 2020, CDFW provided notification of the O&M activities under CEQA Section 21080.3.1 and CDFW's Tribal Communication and Consultation Policy (CDFW 2014) to the 22 tribes identified by NAHC. The notification letters included a description of PG&E's O&M activities and potential impacts on tribal interests and invited consultation pursuant to CEQA and CDFW's Tribal Communication and Consultation Policy. Three tribes responded: the San Manuel Band of Mission Indians, who requested additional information; the Fort Yuma Quechan Tribe, who after discussions with CDFW indicated they had no concerns and responded to the project Notice of Preparation indicating they do not have any comments; and the Agua Caliente Band of Cahuilla Indians, who indicated they did not wish to consult regarding this project. Following review of additional information provided by CDFW, the San Manuel Band of Mission Indians indicated they had no concerns at this time.

Following the initial CDFW request for consultation in December 2020, the Fort Mohave Indian Tribe sent an email to CDFW on March 8, 2021, requesting additional information. CDFW reached out to the Fort Mohave Indian Tribe to initiate communications in March 2021 and June 2022. In addition, the Colorado River Indian Tribe requested government-to-government consultation by letter on May 4, 2021. CDFW reached out to the Colorado River Indian Tribes to initiate communications in May 2021 and June 2022. CDFW is having ongoing discussions with the tribes.

Impact TCR-1a **Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?**

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.15.3, Existing Baseline Conditions, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands, and the majority of the study area is located within undeveloped, open areas. PG&E has been conducting ongoing O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause a substantial adverse change in the significance of a TCR that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in California Public Resources Code Section 5020.1(k).

Through CDFW's consultation with the tribes, no known TCRs were identified within the study area. However, it is possible that previously unidentified TCRs that may be eligible for inclusion in the CRHR or in local registers could be discovered and damaged or destroyed during ongoing ground-disturbing O&M activities.

All of PG&E's ongoing O&M activities with the potential to cause a substantial adverse change in the significance of a TCR will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to TCRs. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4, Biological Resources, of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not cause a substantial adverse change in the significance of a TCR.

PG&E's commitment to implementing APM CUL-1 (Inventory and Evaluate Historical Resources), standard practices, and BMPs (outlined in Section 4.5.4.2) and complying with applicable cultural resource and TCR regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to adverse changes in the significance of a TCR. For example, potential historical resources in the study area would be evaluated pursuant to PG&E's environmental

screening process (refer to Section 2.4) prior to any ground-disturbing O&M activities by using PG&E's confidential geospatial database and linked document library, published literature, historic topographic and plat maps, recent listings for the CRHR and NRHP, and publicly available documents (e.g., EIRs and environmental impact statements [EISs]). In the event that impacts to TCRs are anticipated during ground-disturbing O&M activities, PG&E incorporates cultural resources BMPs that include implementing employee and field crew general awareness training, establishing buffers and/or exclusion zones, and conducting monitoring to ensure that proper procedures are implemented in the event of observation of a TCR. If a TCR is known in the area prior to planned activities, a monitor would be on site during work near the TCR to ensure that it is not adversely affected. Should a potential TCR be discovered during O&M activities, work in the vicinity of the TCR would be halted until a qualified cultural resource professional could evaluate the find and provide clearance for the activity to proceed.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with TCRs is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to adverse changes in the significance of a TCR that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in California Public Resources Code Section 5020.1(k); any related effect would be **less than significant**.

Impact TCR-1b **Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.15.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California and crosses multiple federal, state, private, and municipal lands, and the majority of the study area is located within undeveloped, open areas. PG&E has been conducting ongoing O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause a substantial adverse change in the significance of a TCR pursuant to criteria set forth in California Public Resources Code Section 5024.1(c).

No known TCRs were identified during CEQA tribal consultation or determined by CDFW to qualify as historical resources within the study area. However, it is possible that previously unidentified TCRs that may be eligible for inclusion in the CRHR or local registers could be discovered and damaged or destroyed during ongoing ground-disturbing O&M activities.

All of PG&E's ongoing O&M activities with the potential to cause a substantial adverse change in the significance of a TCR will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to TCRs. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not cause a substantial adverse change in the significance of a TCR.

PG&E's commitment to implementing APM CUL-1 (Inventory and Evaluate Historical Resources), standard practices, and BMPs (outlined in Section 4.5.4.2) and complying with applicable cultural resource and TCR regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to adverse changes in the significance of a TCR. For example, potential historical resources in the study area would be evaluated pursuant to PG&E's environmental screening process (refer to Section 2.4) prior to any ground-disturbing O&M activities by using PG&E's confidential geospatial database and linked document library, published literature, historic topographic and plat maps, recent listings for the CRHR and NRHP, and publicly available documents (e.g., EIRs and EISs). When impacts to TCRs are anticipated during ground-disturbing O&M activities, PG&E incorporates cultural resources BMPs that include implementing employee and field crew general awareness training, establishing buffers and/or exclusion zones, and conducting monitoring to ensure that proper procedures are implemented in the event of observation of a TCR. If a TCR is known in the area prior to planned activities, a monitor would be on site during work near the TCR to ensure that it is not adversely affected. Should a potential TCR be discovered during O&M activities, work in the vicinity of the TCR would be halted until a qualified cultural resource professional could evaluate the find and provide clearance for the activity to proceed.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with TCRs is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to adverse changes in the significance of a TCR that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in California Public Resources Code Section 5020.1(k); any related effect would be **less than significant**.

4.15.5 Cumulative Impacts

The geographic area for the cumulative analysis is the area of potential effect of where the O&M activities (work areas) would occur in the O&M activity study area (refer to Table 3-1, Geographic Scope of Cumulative Impacts and Method of Evaluation). This geographic area for the cumulative analysis is defined by the area within which the TCRs are expected to be similar to those that would occur within the study area, because of their proximity and because similar environments, landforms, and hydrology would result in similar land use and thus similar site types. The cumulative projects listed in Table 3-2, Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area, would also all involve grading or other excavation that has the potential to impact TCRs.

An analysis of cumulative impacts takes into consideration the entirety of impacts that O&M activities have had and continue to have on cultural landscapes and TCRs in conjunction with any effects that could occur as a result of the past, present, and reasonably foreseeable projects considered in the cumulative scenario. Cumulative impacts to TCRs could occur as a result of increased ground-disturbing activities from the construction of the cumulative projects within the area. Table 3-2 lists 28 projects where construction timelines would potentially overlap with ongoing O&M activities. O&M activities are routine and ongoing under existing baseline conditions, and the majority of O&M activities would be temporary and would occur over a short duration. Furthermore, as with the O&M activities, all projects in the geographic area are subject to applicable federal, state, and local laws and regulations that provide for the identification and mitigation of significant impacts. These regulations minimize impacts to TCRs by preservation of significant resources through avoidance where feasible, or with the incorporation of APMs and BMPs to reduce significant impacts specific to each TCR. Accordingly, the incremental contribution from ongoing O&M activities to cumulative TCR impacts caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to TCRs.

4.15.6 Residual Impacts

PG&E's O&M activities have been ongoing and are a component of the existing baseline conditions in the study area. O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's commitment to implementing relevant APMs, BMPs, and standard practices provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect on TCRs.

4.15.7 References

67 FR 16364–16365. Notice: *Exemption Regarding Historic Preservation Review Process for Projects Involving Historic Natural Gas Pipelines*. April 5, 2002.

CDFW (California Department of Fish and Wildlife). 2014. "Tribal Communication and Consultation Policy." CDFW Departmental Bulletin No. 2014-07. October 2, 2014.

Higgins, C., R. Kellawan, D.G. Duke, and T. Lucas. 2013. *Cultural Resources Inventory of 5,300 Acres for the PG&E Pipelines 300A and 300B, San Bernardino and Kern Counties, California*. Far Western Anthropological Research Group Inc.

San Bernardino County. 2007. *San Bernardino County 2007 General Plan*. Accessed March 2, 2016.
<http://cms.sbcounty.gov/lus/planning/generalplan.aspx>.

4.16 Utilities and Service Systems

4.16.1 Introduction

The proposed project for the purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) that would authorize take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGC). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section evaluates the environmental impacts to utilities and service systems that may result directly or indirectly from CDFW's issuance of the ITP and the expected LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on utilities and service systems that could result with continuing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the proposed project for purposes of CEQA). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this section.

Section 4.16.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have occurred and will continue to occur, specific to utilities and service systems.

Section 4.16.3 provides a description of the existing baseline conditions for utilities and service systems in the O&M activities area ("study area"). Specifically, this section provides a description relative to utilities and service systems in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities, regardless of whether CDFW issues the requested permits. This existing baseline condition, which includes the ongoing O&M activities already being implemented by PG&E relative to their past, present, and continued potential effects, is the benchmark used in the Section 4.16.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these environmental baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.16.4 provides an analysis of whether issuance of the requested permits (pursuant to the CFGC) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline conditions and a substantial or potentially substantial adverse effect related to utilities and service systems. The section also identifies the significance criteria used for the impact analysis and specifies relevant best management practices (BMPs). Furthermore, this section discusses applicable regulatory authority or governing law that has applied and will continue to apply, specific to utilities and service systems.

Section 4.16.5 provides an analysis of whether the project-related incremental change to the environmental baseline conditions is cumulatively considerable and therefore significant.

Section 4.16.6 identifies the residual environmental impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.16.7 lists the references cited in this section.

A Notice of Preparation comment related to utilities and service systems was received from the San Bernardino County Department of Public Works, which noted the possible need for a permit from the San Bernardino County Flood Control District prior to project-related construction adjacent to or crossing Flood Control District facilities or right-of-way (refer to Appendix B-4, NOP Comment Letters).

The analysis included in this section is based on information that PG&E provided to CDFW, as well as relevant information gathered and considered by CDFW, with assistance from its environmental consultant.

4.16.2 Applicable Regulations, Plans, and Policies

The following subsections describe the regulations and regulatory agencies that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and CDFW analysis of whether the proposed issuance of the permits would cause an incremental physical change to the existing environment and cause significant impacts to utilities and service systems.

Federal

Safe Drinking Water Act

Originally passed by Congress in 1974 and amended in 1986 and 1996, the Safe Drinking Water Act allows the U.S. Environmental Protection Agency to establish drinking water standards and oversee water supplies to ensure that they comply with those standards. The standards apply to public and private water suppliers serving 25 or more individuals. The Safe Drinking Water Act is intended to protect drinking water supplies from both naturally occurring and artificially introduced contaminants.

State

Drinking Water Program

In 2014, the regulatory authority of the state Drinking Water Program was transferred from the California Department of Public Health to the State Water Resources Control Board. The purpose of this transition was to promote a more integrated water quality management strategy, thereby decreasing the number of regulators involved in water supply and water quality regulation. The Drinking Water Program adopts design and operational standards, water quality standards, and monitoring requirements for public water systems.

Safe Drinking Water Plan for California

In 1993, the California Department of Health Care Services submitted to the California State Legislature a plan to review drinking water quality issues, which included emerging water quality threats, treatment technologies, funding, and the challenges faced by small drinking water systems. In 1996, Senate Bill 1307 was passed, which required periodic updates of the Safe Drinking Water Plan and outlined specific components that would be required in future updates. Some of the required components of the plan include

analysis of the health risks associated with the pollutants identified in the plan, research for inexpensive methods for screening for harmful pollutants, and recommendations for improving water quality in the state. The most recent update was made in June 2015.

Urban Water Management Planning Act

All urban water suppliers within the State of California are required to prepare Urban Water Management Plans. California Water Code Sections 10610 through 10657 detail the information that must be included in these plans, as well as who must file them.

Integrated Waste Management Act of 1989

The Integrated Waste Management Act of 1989, otherwise known as Assembly Bill 939, mandates that California's jurisdictions divert 50% of their solid waste from landfills. The California Department of Resources Recycling and Recovery (CalRecycle) is under the umbrella of the California Environmental Protection Agency and is responsible for the development and promotion of statewide recycling efforts.

California Department of Toxic Substances Control

The California Department of Toxic Substances Control regulates hazardous waste in California, primarily under the authority of the federal Resource Conservation and Recovery Act of 1976 (RCRA) and the California Health and Safety Code. The California Hazardous Waste Control Law and other state laws that regulate the handling, storage, transportation, treatment, cleanup, and disposal of hazardous wastes are provided in Section 4.9, Hazards and Hazardous Materials, of this environmental impact report (EIR).

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 study area, Underground Service Alert of Southern California (also known as DigAlert) is the regional notification center. DigAlert notifies utility providers of 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. Before using power equipment, the code also requires excavators to probe and expose existing utilities, in accordance with state law.

California Code of Regulations Title 27

Title 27 of the California Code of Regulations was promulgated by the California Integrated Waste Management Board and defines regulations for the treatment, storage, processing, and disposal of solid waste. The purpose of Title 27 is to promote the health, safety, and welfare of the people and environment by establishing minimum standards for the handling and disposal of solid wastes at disposal sites. These standards also establish waste and site classifications in compliance with State Water Resources Control Board regulations and require operators to submit technical or monitoring reports for the discharge of waste. When necessary to protect water quality, the Regional Water Quality Control Boards (RWQCBs) may implement the standards promulgated by the California Integrated Waste Management Board in Title 27 of the California Code of Regulations. Compliance with Title 27 during ongoing O&M activities in the study area would be enforced by the Lahontan RWQCB and the Colorado River Basin RWQCB.

Local

Pursuant to Article XII, Section 8 of the California Constitution, the California Public Utilities Commission (CPUC) has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, operation, maintenance, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with CPUC. Although local governments do not have the power to regulate such activities, CPUC encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has considered relevant regional and county policies and issues in this EIR.

The following plans from local jurisdictions were reviewed, and no specific goals or policies were identified that are relevant to the issuance of the permits or continuing O&M activities in the study area:

- City of Barstow 2015–2020 General Plan
- City of Victorville General Plan 2030
- Town of Apple Valley 2009 General Plan
- Kern County General Plan
- City of California City Final General Plan 2009–2028
- City of Ridgecrest General Plan

San Bernardino County

San Bernardino County 2020 Countywide Policy Plan: County Policy Plan

The Infrastructure and Utilities Element of the San Bernardino County 2020 Countywide Policy Plan provides goals and policies to maintain an adequate supply of potable water; the safe disposal, treatment, and recycling of wastewater; and the recycling and safe disposal of solid waste. In addition, the goals and policies provide direction on system integration, resource conservation, and the protection of the natural environment. The following policies would be relevant to the proposed project and O&M activities in the study area:

Policy IU-1.8: Groundwater management coordination. We collaborate with watermasters, groundwater sustainability agencies, water purveyors, and other government agencies to ensure groundwater basins are being sustainably managed. We discourage new development when it would create or aggravate groundwater overdraft conditions, land subsidence, or other “undesirable results” as defined in the California Water Code. We require safe yields for groundwater sources covered by the Desert Groundwater Management Ordinance.

Policy IU-3.1: Regional flood control. We maintain a regional flood control system and regularly evaluate the need for and implement upgrades based on changing land coverage and hydrologic conditions in order to manage and reduce flood risk. We require any public and private projects proposed anywhere in the county to address and mitigate any adverse impacts on the carrying capacity and stormwater velocity of regional stormwater drainage systems.

Policy IU-3.2: Local flood control. We require new development to install and maintain stormwater management facilities that maintain predevelopment hydrology and hydraulic conditions.

Policy IU-3.4: Natural floodways. We retain existing natural floodways and watercourses on County-controlled floodways, including natural channel bottoms, unless hardening and channelization is the only feasible way to manage flood risk. On floodways not controlled by the County, we encourage the retention of natural floodways and watercourses. Our priority is to reduce flood risk, but we also strive to protect wildlife corridors, prevent loss of critical habitat, and improve the amount and quality of surface water and groundwater resources.

Policy IU-4.3: Waste diversion. We shall meet or exceed state waste diversion requirements, augment future landfill capacity, and reduce greenhouse gas emissions and use of natural resources through the reduction, reuse, or recycling of solid waste.

Policy IU-5.5: Energy and fuel facilities. We encourage the development and upgrade of energy and regional fuel facilities in areas that do not pose significant environmental or public health and safety hazards, and in a manner that is compatible with military operations and local community identity.

4.16.3 Existing Baseline Conditions

This section provides a description of the existing baseline conditions relative to utilities and service systems in the study area that have been and could continue to be affected by PG&E's ongoing O&M activities regardless of whether CDFW issues the requested permits. PG&E's gas pipeline system has been in place for more than 70 years. Impact data collected by PG&E from 2017 to September 2021 regarding temporary and permanent disturbance impacts caused by O&M activities provides important detail about the environmental baseline conditions for purposes of CEQA (refer to Section 1.1, Proposed Project and Environmental Review). The existing baseline condition from 2017 to 2021, which includes PG&E's past and ongoing O&M activities, is the benchmark used in the Section 4.16.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Potable Water

Approximately 85% of San Bernardino County's domestic water is supplied by local sources, and approximately 15% is imported from water purchased from other sources. Local sources include surface water and groundwater supplied from the South Lahontan, South Coast, and Colorado River hydrologic regions (HRs). Imported water is primarily purchased from the Metropolitan Water District of Southern California and from the State Water Project (SWP). Although the Metropolitan Water District distributes water through local pipelines, three SWP contractors (the Crestline–Lake Arrowhead Water Agency, the Mojave Water Agency, and the San Bernardino Valley Municipal Water District) and one subcontractor (the Inland Empire Utilities Agency) also distribute water in San Bernardino County.

Approximately 46% of the water in Kern County is supplied by the Kern River and the SWP (i.e., the California Aqueduct). The Friant–Kern Canal, local streams, and other sources provide approximately 18% of the water in Kern County. Groundwater supplies approximately 36% of the water in Kern County. The Kern County Water Agency, which is the second largest participant in the SWP, acts as a local contracting entity for the SWP in Kern County. Water requirements for O&M activities in the study area are summarized in Table 4.16-1. Water sources for all O&M activities may include the following:

- Well water from either an existing or a newly installed well

- Domestic water from an existing, aboveground source
- Ponded water
- Purchased water

Table 4.16-1. Water Requirements for O&M Activities in the Study Area

O&M Activity	General Use	Estimated Water Use (gpy)
Right-of-way and access road repair	Dust control during right-of-way and access road repair	158,000
Below-grade pipe and coating inspection	Dust control during pipe inspections	32,700
Internal pipeline inspection	Dust control during pigging activities or in-line inspections	1,000
	Dust control during calibration testing	263,000
Installation of pig launcher/receiver facilities	Dust control during pig launcher/receiver installation	635,700
Valve/pipeline excavation and recoating	Dust control during valve/pipeline excavation and recoating	349,200
Installation of magnesium anodes	Dust control during magnesium anode installation	4,200
Installation of deep-well anodes/thermoelectric generators	Dust control during the installation of deep-well anodes and thermoelectric generators	28,400
Installation of flex anodes	Dust control during the installation of flex anodes	2,700
Installation or replacement of horizontal anode beds	Dust control during horizontal anode bed installation	800
Electronic test system station and cathodic test station installations	Dust control during cathodic test station installations	800
Hydrostatic testing	Hydrostatic testing	551,450–1,500,000 ^a
	Dust control during hydrostatic testing	18,300
Pipeline segment replacement	Dust control during pipeline segment replacement	44,900–1,500,000 ^b
Emergency repair activities	Dependent on the activities required for the emergency	Variable
Total (Range)		2–4.5 million gpy
Average		3.3 million gpy

Notes: O&M = operation and maintenance; gpy = gallons per year; N/A = not applicable.

^a PG&E anticipates that four hydrostatic tests would be conducted annually over the next 5 years. Therefore, the minimum volume of water in this range represents the water that would be required for four hydrostatic tests in the smallest pipelines in the study area, which are approximately 8 inches in diameter. The maximum volume of water in this range represents the volume of water that would be required for four hydrostatic tests in the largest pipelines in the study area, which are approximately 36 inches in diameter. Water used for hydrostatic testing is typically secured from local municipal sources and either piped or trucked to the site and stored in aboveground storage tanks.

^b The minimum volume in this range represents the water that would be required for the minimum length of a pipeline segment

replacement activity, which is approximately 40 feet. The maximum volume in this range represents the water that would be required for the maximum length of a pipeline segment replacement activity and the maximum work area width, which is approximately 2 miles long and 100 feet wide. Because this entire area is much larger than what would be worked on in one day, this value is an overestimate and the annual water requirement for this activity would be less than this value.

Stormwater Drainage Facilities and Flood Control

The study area is located primarily within the South Lahontan HR. Within this HR, the pipeline system in the study area is located primarily within the Indian Wells, Trona, Cuddeback, Fremont, Antelope, Mojave, and Broadwell hydrologic units (HUs). Elevations within the South Lahontan HR range from 8,500 feet above mean sea level at Butler Peak in the San Bernardino Mountains to 1,400 feet above mean sea level at Afton Canyon near the terminus of the Mojave River. The primary geographic and surface hydrologic features in the South Lahontan HR include the Owens River, Mojave River, Mono Lake, and other playa lakes. Smaller portions of the study area in eastern San Bernardino County are located within the Colorado River HR. Within the Colorado River HR, the study area is located in the Lavic, Lucerne Lake, Route Sixty-Six, Homer, Ward, and Chemehuevi HUs.

The San Bernardino County Flood Control District is responsible for providing flood control and related services throughout the county, including the incorporated areas within cities.

The Antelope–Fremont Valleys hydrologic subbasin (HS) encompasses the entirety of the study area in Kern County. This HS is bordered by the San Gabriel Mountains to the south, the Indian Wells–Searles Valleys HS to the north, the Coyote–Cuddeback Lakes and Mojave HSs to the east, and the Tehachapi Mountains to the west. Stormwater that does not percolate into the ground in the Antelope–Fremont Valleys HS eventually flows to the impermeable dry lakebeds within Rosamond and Rogers Dry Lakes near Edwards Air Force Base. Kern County maintains the Kern County Flood Management Code, as well as the Kern County Hydrology Manual, to provide flood protection for all habitable structures and other non-flood-proofed structures.

Electricity and Natural Gas Services

Electricity in the study area is provided primarily by Southern California Edison (SCE). In 2015, SCE delivered more than 87 billion kilowatts of electricity to 15 million customers in 15 counties and 180 incorporated cities. The City of Needles provides electricity for portions of the study area located south of Interstate 40 near the California–Nevada border.

As described in Chapter 2, Project Description, PG&E's natural gas transmission pipeline system in the study area consists of six natural gas pipelines (i.e., Line 300 A, Line 300 B, Line 311, Line 313, Line 314, and Line 372) and several distribution feeder mains, customer lines, and associated facilities that transport natural gas to commercial, industrial, and utility electric generation customers. The PG&E pipeline system in the study area is approximately 645 miles in length and encompasses 60 U.S. Geological Survey topographic quadrangles.

Natural gas is provided to customers in the study area by Southern California Gas Company (SoCalGas) and Southwest Gas Corporation. Although PG&E maintains six natural gas pipelines in the study area, PG&E does not provide natural gas services to customers residing in the study area.

Cable, Telephone, and Internet Services

Cable and telecommunications services in the study area are provided by Charter Communications, Time Warner Cable, Mediacom, and Bright House Networks. AT&T and Verizon also provide telephone and internet services.

Sewer

Sewer services are provided by municipal or county agencies in urban areas within the study area. In the unincorporated areas of San Bernardino County, wastewater collection is largely provided by septic systems. Kern County Waste Management manages liquid and solid waste in Kern County. The Kern County Sanitation Authority operates the wastewater treatment plant and sewer system that services various areas in metropolitan Bakersfield. The Ford City/Taft Heights Sanitation District provides sewer service and wastewater treatment plant operations for the Ford City/Taft Heights area of Kern County.

Solid Waste

Wastes generated by the O&M activities are classified as either Non-Hazardous, Non-RCRA Hazardous, or RCRA Hazardous. Hazardous waste disposal sites are determined by assessing the waste acceptance criteria for individual disposal facilities; depending on the waste produced, typical methods of disposal are landfill, treatment, or incineration. Non-hazardous waste can generally go to the local landfill facility.

The San Bernardino County Solid Waste Management Division (SWMD) is responsible for the operation and management of San Bernardino County's solid waste disposal system in the study area. SWMD manages and operates five regional landfills and nine transfer stations. In addition, the SWMD administers the county's solid waste handling franchise program and the refuse collection permit program, which authorizes and regulates trash collection by private haulers in unincorporated areas. The Victorville and Barstow landfills are the closest SWMD-operated landfills in the study area. The Victorville Landfill has a remaining capacity of 79,400,000 cubic yards, which is projected to be reached in 2047 (CalRecycle 2021a). The Barstow Landfill has a remaining capacity of 71,481,660 cubic yards and is projected to reach that capacity in 2071 (CalRecycle 2021b).

The Kern County Public Works Department operates seven landfills, nine transfer stations, and one bin site in Kern County (County of Kern 2021). The Boron, Mojave–Rosamond, Ridgecrest, and Tehachapi landfills are the closest landfills to the study area in Kern County. The Boron Landfill has a remaining capacity of 191,380 cubic yards, with a projected closure date of 2048 (CalRecycle 2021c). The Mojave–Rosamond Landfill has a remaining capacity of 76,310,297 cubic yards and is not projected to cease operation until 2123 (CalRecycle 2021d). The Ridgecrest Landfill has a remaining capacity of only 5,037,428 cubic yards and is projected to cease operations in 2045 (CalRecycle 2021e). Finally, the Tehachapi Landfill has a remaining capacity of 522,298 cubic yards as of September 2015, at which time the projection for full capacity was June 2020; however, the landfill is still in operation as of preparation of this EIR (CalRecycle 2021f).

In addition, disposal of hazardous waste would go to Waste Management's McKittrick Waste Landfill, located in Kern County, which has a capacity of approximately 2.9 million cubic yards, and an anticipated 22 years of remaining operation. There are three landfills at Waste Management's Kettleman Hills Hazardous Waste Facility, located in Kings County, for the following waste types: B17 (non-hazardous), B18 (hazardous), and B19 (non-hazardous). The B18 hazardous waste landfill has a remaining capacity of 3,392,437 tons, with an anticipated 12 years of remaining operation, as capacity is expected to be reached in 2033. The B17 and B19 non-hazardous waste landfills collectively have a remaining capacity of 12,707,439 tons, with an anticipated 59 years of remaining operation. Capacity for these two landfills is expected to be reached in 2080.

4.16.4 Impact Analysis

4.16.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of utilities and service systems impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For the purposes of this EIR, utilities and service systems impacts would be significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities would:

1. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.
2. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.
3. 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.
4. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
5. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

4.16.4.2 Applicable Measures

Best Management Practices

As part of its standard practice, PG&E will continue to incorporate BMPs from Section 4.3, Air Quality, and Section 4.10, Hydrology and Water Quality, into its ongoing O&M activities to avoid or substantially lessen impacts to utilities and service systems. Refer to Section 4.3.4.2, Section 4.10.4.2, and Section 2.5, Applicable Measures, of the EIR for the full text of air quality and hydrology and water quality BMPs.

4.16.4.3 Impact Discussion

Impact UTL-1 **Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?**

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.16.3, Existing Baseline Conditions, the study area is located in San Bernardino and Kern Counties, where utility services include services for potable water, flood control, electricity, natural gas, cable, telephone, internet, sewer, and solid waste. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing

O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would cause a significant environmental impact due to requiring or resulting in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

As described in Chapter 2, PG&E's existing pipeline system includes approximately 645 miles of transmission pipelines, distribution pipelines, compressor stations, and associated facilities that transport natural gas. Ongoing O&M activities may require the permanent construction of electric and natural gas facilities; however, PG&E has sited and will continue to site O&M activities requiring the expansion of existing and/or the installation of new aboveground or permanent facilities to avoid sensitive resources (refer to Section 2.4, Environmental Screening Process). Additionally, similar to existing O&M activities conducted in the study area, any new aboveground structures due to ongoing O&M activities are expected to have small footprints, ranging from 100 to 30,000 square feet per facility.

O&M activities include the maintenance and inspection of telecommunication sites. Each telecommunication site consists of a supervisory control and data acquisition (SCADA) system that monitors pipeline functions remotely and transmits pipeline operational information to PG&E's operations offices via PG&E's utility telecommunication system. The maintenance and inspection of the telecommunication sites does not involve ground disturbance and does not result in the construction or relocation of the telecommunication sites.

All of PG&E's ongoing O&M activities with the potential to require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to utilities and service systems. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR (Impact Analysis – Biological Resources), issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

PG&E's commitment to implementing standard practices and BMPs and complying with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities. For example,

in conjunction with the small footprint and location of any expanded and/or new natural gas and electric facility that is developed as part of any of PG&E's ongoing O&M activities, PG&E would comply with all the requirements set forth in PG&E's Statewide Natural Gas Utility Permit, such as implementing appropriate BMPs, discharging wastewater according to permit requirements, and would comply with the water sampling, monitoring, and reporting requirements set forth in the Statewide Permit.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with utilities and service systems is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects; any related effects would be **less than significant**.

Impact UTL-2 Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.16.3, the study area is located in San Bernardino and Kern Counties, where utility service includes potable water services. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

As described in Section 4.16.3, PG&E obtains water from an existing or newly installed well, domestic water from an existing aboveground source, ponded water, or purchased water. Using these water sources, PG&E's O&M activities, including hydrostatic testing, are not expected to impact water supply availability. PG&E has been able to secure up to 12 million gallons of water from existing PG&E facilities and local landowners for previous hydrotest projects. As a result, the anticipated maximum water demand for hydrostatic testing and dust control activities per year, approximately 4.5 million gallons, is not expected to exceed the amount of water previously required for PG&E activities during the baseline period.

Due to the ongoing drought in parts of California and the west, the availability of potable water for use during O&M activities for the term of the permits is unknown. Depending on the persistence of the drought during the term of the permits, new mandates may be in place that restrict or limit the use of potable water for ongoing O&M activities. Similarly, PG&E's BMPs for water usage for dust control or hydrostatic testing may change over time to reduce water use.

All of PG&E's ongoing O&M activities with the potential to impact water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to utilities and service systems. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not impact water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

PG&E's commitment to implementing standard practices and BMPs and complying with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or conflict or impact water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. For example, PG&E recognizes the importance of water conservation and, where appropriate, and in compliance with applicable permits and regulations, has evaluated and will continue to evaluate the value of water used for hydrostatic testing that can be reused for dust control. In addition, in compliance with PG&E's Statewide Permit, PG&E could discharge water to land with proper filtration. Water discharged to land would percolate into the ground, thereby recharging aquifers. Furthermore, PG&E will continue to use the previously described water sources during ongoing O&M activities to ensure that the available water supply in the area will not be exceeded.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with utilities and service systems is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years; any related effects would be **less than significant**.

Impact UTL-3 Would the project 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?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.16.3, the study area is located in San Bernardino and Kern Counties, where utility services include services for flood control and sewer. PG&E has

been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would result in a determination by the wastewater treatment provider that 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.

PG&E's O&M activities are routine and ongoing under existing baseline conditions, and the majority of the O&M activities would be temporary and would occur over a short duration. Water usage during ongoing O&M activities includes water used for dust control that is distributed over the work areas, and either evaporates or infiltrates into the ground, and has not been disposed of and will continue to not be disposed of at wastewater treatment facilities unless it is contaminated. PG&E has discharged and will continue to discharge water used for hydrostatic testing or water from groundwater dewatering in compliance with the requirements set forth in PG&E's Statewide Permit. During ongoing O&M activities, water used for hydrostatic testing will continue to be discharged consistent with the permit requirements, which may be to storm drains with proper filtration or to land with proper filtration and where no ponding or vector issues would be created. PG&E has complied, and will continue comply, with the water sampling, monitoring, and reporting requirements set forth in the Statewide Permit.

In addition, ongoing O&M activities lasting for extended periods of time have required and will continue to require the use of one or two portable restrooms. When the use of portable restrooms is necessary, PG&E has hired, and will continue to hire, a licensed sanitation contractor to supply and maintain portable restrooms. The licensed contractor has disposed of, and will continue to dispose of, the waste at an off-site location and in compliance with standards established by the Lahontan RWQCB or the Colorado River Basin RWQCB.

Depending on the O&M activity, crews generally consist of two to five workers, and O&M activities have typically lasted, and will continue to last, between 1 and 60 days. Due to the small crew size associated with most O&M activities, a very minimal amount of wastewater is generated during ongoing O&M activities in the study area. The amount of wastewater generated by ongoing O&M activities represents baseline environmental conditions that would not change following the issuance of the permits. Consistent with the current use of wastewater, the majority of wastewater generated by O&M activities will continue to be used for dust control.

In the rare event that wastewater is generated that cannot be used for dust control due to contamination (approximately 0%–1% of wastewater generated from O&M activities), PG&E has transported and disposed of, and will continue to transport and dispose of, the contaminated wastewater at the Kettleman Hills Hazardous Waste Facility. Because the baseline amount of wastewater generated from O&M activities has been minimal and will continue to be minimal and will be disposed of at Kettleman Hills in the rare cases where it cannot be used for dust control, the capacity of wastewater treatment facilities is expected to continue to not be exceeded.

All of PG&E's ongoing O&M activities with the potential to result in an exceedance of the wastewater capacity by the wastewater treatment provider that 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 will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to utilities and service systems. Issuing the permits conditioning ongoing O&M activities would not cause direct

impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in a determination by the wastewater treatment provider that 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.

PG&E's commitment to implementing standard practices and BMPs and complying with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or result in a determination by the wastewater treatment provider that 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. For example, and as previously stated, PG&E has discharged and will continue to discharge water used for hydrostatic testing or water from groundwater dewatering in compliance with the requirements set forth in PG&E's Statewide Permit and applicable BMPs for water quality (refer to Section 4.10.4.2, Applicable Measures – Hydrology and Water Quality).

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with utilities and service systems is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect to wastewater treatment providers and their capacity to serve existing and projected commitments; any related effect would be **less than significant**.

Impact UTL-4 Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.16.3, the study area is located in San Bernardino and Kern Counties, where utility service includes solid waste services. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

Solid waste materials generated as a result of PG&E's O&M activities have included and will continue to include trash from consumables; pipe bandings and spacers; spent welding rods; timber skids; and cleared vegetation, stumps, and rocks. Non-hazardous construction debris have included and will continue to include empty bags, plastic wrapping, cardboard boxes, and shipping containers. The annual estimated amount of waste produced by O&M activities during baseline conditions from 2017 to September 2021, which includes PG&E's past and ongoing O&M activities, in the study area is approximately 30 tons (111 cubic yards). The waste generated from O&M activities is not expected to change following the issuance of the permits.

When feasible, PG&E has recycled and will continue to recycle materials (e.g., cardboard and metal), thereby minimizing the overall amount of waste generated. As such, PG&E's O&M activities are not expected to result in more waste than could be accommodated by existing landfills in the region (refer to Section 4.16.3). Gas pipelines that are removed from service and retired in place are purged of gas, checked for free liquids, segmented, and capped. In some cases, removal of gas pipelines has been required and would continue to be required if conditions warrant their removal, such as conflicting utilities or new construction. Small cut-out sections of metal pipe are recycled as scrap metal when possible but in some cases require disposal at an appropriate licensed disposal facility. Small cut-out sections of plastic pipe are disposed of at an appropriate, licensed disposal facility.

As described in Section 4.16.3, several landfills in both San Bernardino County and Kern County are available for use in the study area to accommodate disposal needs associated with O&M activities. In addition, PG&E also uses the McKittrick Waste Landfill (Kern County) and Kettleman Hills (Kings County), which are both owned and operated by Waste Management, for hazardous and non-hazardous wastes.

All of PG&E's ongoing O&M activities with the potential to generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to utilities and service systems. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in the generation of solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

PG&E's commitment to implementing standard practices and BMPs and complying with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to generating solid waste in excess of standards or capacity or impairing the attainment of solid waste reduction goals. For example, in accordance with the air

quality BMPs (refer to Section 4.3.4.2, Applicable Measures – Air Quality), PG&E would recycle construction waste. Waste materials that are not recyclable would be characterized by PG&E to ensure the appropriate disposal of these materials. Non-hazardous waste would be transported to the local waste management facilities identified in Section 4.16.3.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with utilities and service systems is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to the generation of solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; any related effects would be **less than significant**.

Impact UTL-5 Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.16.3, the study area is located in San Bernardino and Kern Counties and crosses multiple federal, state, and locally managed lands. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would comply with federal, state, and local solid waste management and reduction statutes and regulations.

All of PG&E's ongoing O&M activities with the potential to not comply with federal, state, and local solid waste management and reduction statutes and regulations will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to utilities and service systems. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in the project conflicting with federal, state, and local solid waste management and reduction statutes and regulations.

PG&E's commitment to implementing standard practices and complying with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to the project conflicting with federal, state, and local solid waste management and reduction statutes and regulations. PG&E will continue to dispose of waste in accordance with federal, state, or local solid waste statutes and regulations.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with utilities and service systems is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not conflict with federal, state, and local solid waste management and reduction statutes and regulations; any related effects would be **less than significant**.

4.16.5 Cumulative Impacts

The geographic scope for cumulative impacts related to utilities and service systems considers related projects within 0.5 miles of the center line of the gas pipeline (i.e., a 1-mile-wide area along the entire length of the pipeline alignment) in the study area (refer to Table 3-1, Geographic Scope of Cumulative Impacts and Method of Evaluation).

O&M activities have had and will continue to have the potential to result in cumulative impacts to utilities and service systems in combination with other projects in the study area if O&M activities were to occur simultaneously and combine to cause a substantial increase in the amount of wastewater generated, a substantial increase in the demand on the existing water supply, a substantial increase in the demand on the existing wastewater treatment provider, and/or a substantial increase in the amount of solid and/or hazardous waste generated.

PG&E's O&M activities are routine and ongoing under existing baseline conditions, and the majority of the O&M activities would be temporary and would occur over a short duration. As shown in Table 3-2, many related projects would occur within 1 mile of the PG&E gas pipeline. However, all projects, including the PG&E O&M activities, would be expected to remain consistent with federal, state, and local statutes and regulations related to utilities and service systems. In addition, PG&E would comply with its Statewide Natural Gas Utility Permit, as well as implementing its hydrology and water quality and air quality BMPs.

The amount of water needed for ongoing O&M activities, approximately 2 to 4.5 million gallons of water per year (an average of 3.3 million gallons per year), is significantly less than the amount of water PG&E has been able to secure (up to 12 million gallons of water per year) from existing PG&E facilities and local landowners for previous hydrotest projects within the study area. Additionally, the amount of contaminated wastewater, solid waste, and/or hazardous waste generated from ongoing O&M activities is expected to be minimal and is therefore not expected to significantly reduce the capacity of nearby facilities and/or landfills to accommodate wastewater, solid waste, and/or hazardous waste from other nearby projects that may occur simultaneously. Accordingly, the incremental contribution from ongoing O&M activities to cumulative utilities and service

systems impacts caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to utilities and service systems.

4.16.6 Residual Impacts

PG&E's O&M activities have been ongoing and are a component of the existing baseline conditions in the study area. O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's commitment to implementing standard practices and BMPs and complying with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect to utilities and service systems.

4.16.7 References

- CalRecycle (California Resource Recovery and Recycling). 2021a. "SWIS Facility/Site Activity Details: Victorville Sanitary Landfill (36-AA-0045)." Solid Waste Information System (SWIS). Accessed August 17, 2021. <https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1870?siteID=2652>.
- CalRecycle. 2021b. "SWIS Facility/Site Activity Details: Barstow Sanitary Landfill (36-AA-0046)." Solid Waste Information System (SWIS). Accessed August 17, 2021. <https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1871?siteID=2653>.
- CalRecycle. 2021c. "SWIS Facility/Site Activity Details: Boron Sanitary Landfill (15-AA-0045)." Solid Waste Information System (SWIS). Accessed August 17, 2021. <https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/3880?siteID=694>.
- CalRecycle. 2021d. "SWIS Facility/Site Activity Details: Mojave-Rosamond Sanitary Landfill (15-AA-0058)." Solid Waste Information System (SWIS). Accessed August 17, 2021. <https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/3892?siteID=706>.
- CalRecycle. 2021e. "SWIS Facility/Site Activity Details: Ridgecrest Sanitary Landfill (15-AA-0059)." Solid Waste Information System (SWIS). Accessed August 17, 2021. <https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/3893?siteID=707>.
- CalRecycle. 2021f. "SWIS Facility/Site Activity Details: Tehachapi Sanitary Landfill (15-AA-0062)." Solid Waste Information System (SWIS). Accessed August 17, 2021. <https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/3896?siteID=710>.
- County of Kern. 2021. "Disposal Sites." Accessed May 27, 2021. <https://kernpublicworks.com/waste-management/disposal-sites/>.
- San Bernardino County. 2020. *San Bernardino County 2020 Countywide Policy Plan: County Policy Plan*. Adopted in October 2020. <https://countywideplan.com/policy-plan/>.

4.17 Wildfire

4.17.1 Introduction

The proposed project for the purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) that would authorize for take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGC). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

This section evaluates the environmental impacts related to wildfire that may result directly or indirectly from CDFW's issuance of the ITP and the expected LSA Agreements (collectively referred to as "the permits"). This includes specifically the effects on wildfire that could result with continuing O&M activities conditioned by the CDFW permits. Note that PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the proposed project for purposes of CEQA). The incremental physical change to the environment caused by CDFW issuing permits that will condition ongoing PG&E O&M activities is the focus of the analysis in this section.

Section 4.17.2 describes the regulatory setting. The section also includes any other regulatory authority (non-CDFW) with oversight applicable to the O&M activities that have occurred and will continue to occur, specific to wildfire.

Section 4.17.3 provides a description of the existing baseline conditions for wildfire in the O&M activities area ("study area"). Specifically, this section provides a description relative to wildfire in the study area that has been and could continue to be affected by PG&E's ongoing O&M activities, regardless of whether CDFW issues the requested permits. This existing baseline condition, which includes the ongoing O&M activities already being implemented by PG&E relative to their past, present, and continued potential effects, is the benchmark used in the Section 4.17.4 impact analysis to evaluate whether CDFW's issuance of the permits would cause a related incremental physical change to these environmental baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Section 4.17.4 provides an analysis of whether issuance of the requested permits (pursuant to the CFGC) conditioning PG&E's ongoing O&M activities (and the related approval of the proposed project for the purposes of CEQA) would cause an incremental physical change to the existing environmental baseline conditions and a substantial or potentially substantial adverse effect related to wildfire. The section also identifies the significance criteria used for the impact analysis and specifies applicant proposed measures (APMs). The APMs are those that PG&E has identified, currently incorporates into its ongoing O&M activities, and has committed to continue to incorporate to avoid or minimize impacts associated with its ongoing activities. Furthermore, this section discusses applicable regulatory authority or governing law that has applied and will continue to apply, specific to wildfire.

Section 4.17.5 provides an analysis of whether the project-related incremental change to the environmental baseline conditions is cumulatively considerable and therefore significant.

Section 4.17.6 identifies the residual environmental impacts of ongoing O&M activities conditioned by the permits, if issued as requested.

Section 4.17.7 lists the references cited in this section.

During the scoping effort, no party identified any public concerns related to potential wildfire impacts.

The analysis included in this section is based on information that PG&E provided to CDFW, as well as relevant information gathered and considered by CDFW, with assistance from its environmental consultant.

4.17.2 Applicable Regulations, Plans, and Policies

In addition to the applicable regulations, plans, and policies outlined in Section 4.9, Hazards and Hazardous Materials, related to fire and fire safety, the following subsections describe regulations and regulatory agencies that may be applicable and relevant to an informed understanding of PG&E's ongoing O&M activities in the study area, and CDFW analysis of whether the proposed issuance of the permits would cause an incremental physical change to the existing environment and cause significant impacts related to wildfire.

Federal

National Fire Protection Association Codes, Standards, Practices, and Guides

National Fire Protection Association codes, standards, recommended practices, and guides are developed through a consensus standards development process approved by ANSI. This process brings together professionals representing varied viewpoints and interests to achieve consensus on fire and other safety issues. National Fire Protection Association standards are recommended guidelines and nationally accepted good practices in fire protection but are not laws or codes unless adopted as such or referenced as such by the California Fire Code (CFC) or the local fire agency.

Federal Wildland Fire Management Policy

The Federal Wildland Fire Management Policy was developed in 1995. The policy was updated in 2001 and again in 2009 by the National Wildfire Coordinating Group, a federal multi-agency group that establishes consistent and coordinated fire management policy across multiple federal jurisdictions. An important component of the Federal Wildland Fire Management Policy is the acknowledgment of the essential role of fire in maintaining natural ecosystems.

National Fire Plan

The National Fire Plan was a presidential directive in 2000 as a response to severe wildland fires that had burned throughout the United States. The National Fire Plan focuses on reducing fire impacts on rural communities and ensuring sufficient firefighting capacity in the future. It is a long-term investment that will help protect natural resources in addition to communities, as well as a long-term commitment based on cooperation and communication among federal agencies, states, local governments, tribes, and interested members of the

public. Five key areas are addressed under the National Fire Plan: Firefighting and Preparedness, Rehabilitation and Restoration, Hazardous Fuels Reduction, Community Assistance, and Accountability.

International Fire Code

Created by the International Code Council, the International Fire Code (IFC) addresses a wide array of conditions hazardous to life and property including fire, explosions, and hazardous materials handling or usage. The IFC, as a product of the International Code Council, is not a federal regulation. The IFC emphasizes prescriptive and performance-based approaches to fire prevention and fire protection systems. Updated every 3 years, the IFC uses a hazards classification system to determine the appropriate measures (often including construction standards and specialized equipment) to be incorporated to protect life and property. The IFC uses a permit system (based on hazard classification) to ensure that required measures are instituted.

State

California Strategic Fire Plan

The 2019 Strategic Fire Plan for California reflects the focus of the California Department of Forestry and Fire Protection (CAL FIRE) on (1) fire prevention and suppression activities to protect lives, property, and ecosystem services and (2) natural resource management to maintain the state's forests as a resilient carbon sink to meet California's climate change goals and to serve as important habitat for adaptation and mitigation. The Strategic Fire Plan for California provides a vision for a natural environment that is more fire resilient; buildings and infrastructure that are more fire resistant; and a society that is more aware of and responsive to the benefits and threats of wildland fire, all achieved through local, state, federal, tribal, and private partnerships.

California Government Code

California Government Code Sections 51175 through 51189 provide guidance for classifying lands in California as fire hazard areas and requirements for management of property within those lands. CAL FIRE is responsible for classifying Fire Hazard Severity Zones (FHSZs) based on statewide criteria and makes the information available for public review. Furthermore, local agencies designate, by ordinance, very high FHSZs within their jurisdiction based on the recommendations of CAL FIRE.

California Fire Code

The CFC is Chapter 9 of Title 24 of the California Code of Regulations. It was created by the California Building Standards Commission and is based on the IFC. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The CFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The CFC and the California Building Code use a hazards classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the CFC employs a permit system based on hazard classification. The CFC is updated every 3 years.

California Department of Forestry and Fire Protection

CAL FIRE is tasked with reducing wildfire-related impacts and enhancing California's resources. CAL FIRE responds to all types of emergencies, including wildland fires and residential/commercial structure fires. In addition, CAL FIRE is responsible for the protection of approximately 31 million acres of private land within the state and, at the local level, is responsible for inspecting defensible space around private residences. CAL FIRE is responsible for enforcing State of California fire safety codes included in the California Code of Regulations and the California Public Resources Code.

CAL FIRE also inspects utility facilities and makes recommendations regarding improvements in facility design and infrastructure. Joint inspections of facilities by CAL FIRE and the utility owner are recommended by CAL FIRE so each entity may assess the current state of the facility and successfully implement fire prevention techniques and policies. Violations of state fire codes discovered during inspections are required to be brought into compliance with the established codes. If a CAL FIRE investigation reveals that a wildfire occurred as a result of a violation of a law or negligence, the responsible party could face criminal and/or misdemeanor charges. For cases where a violation of a law or negligence has occurred, CAL FIRE has established the Civil Cost Recovery Program, which requires parties liable for wildfires to pay for wildfire-related damages.

CAL FIRE is also tasked with mapping FHSZs based on fuel loading, slope, fire history, weather, and other relevant factors as directed by California Public Resources Code Sections 4201–4204 and California Government Code Sections 51175–51189. FHSZs are ranked from moderate to very high and are categorized for fire protection within a Federal Responsibility Area (FRA), State Responsibility Area (SRA), or Local Responsibility Area (LRA) under the jurisdiction of a federal agency, CAL FIRE, or local agency, respectively.

California Public Utilities Commission Fire Threat Zones

In 2018, the California Public Utilities Commission (CPUC) approved a statewide Fire-Threat Map (CPUC 2021), which delineates a High Fire-Threat District and is intended to assist with implementation of new fire prevention rules. The map delineates areas in the state where there is an elevated risk and an extreme risk (including likelihood and potential impacts on people and property) from utility-associated wildfires. The Fire-Threat Map helps prioritize fire hazard areas to allow for implementation of new fire-safety regulations adopted by CPUC in December 2017. Increased vegetation management and new fire regulations also apply to the High Fire-Threat District.

Mutual Aid Agreements

There are multiple regional, state, and local agreements and operating plans currently in use that provide for mutual aid among federal, state, and local fire agencies. The statewide mutual aid system exists to ensure that adequate resources, facilities, and other supports are provided to jurisdictions whenever resources prove to be inadequate for a given situation. Each jurisdiction controls its own personnel and facilities but can give and receive help whenever needed.

Local

The following subsections describe local regulations related to wildfire hazards that are relevant to the proposed project and the study area. Pursuant to Article XII, Section 8 of the California Constitution, CPUC has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, operation,

maintenance, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with CPUC. Although local governments do not have the power to regulate such activities, CPUC encourages, and PG&E participates in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, CDFW has considered relevant regional and local policies and issues in this environmental impact report (EIR).

The following plans from local jurisdictions were reviewed, and no specific goals or policies were identified that are relevant to the proposed project and O&M activities in the study area:

- City of Victorville General Plan 2030
- Town of Apple Valley 2009 General Plan
- City of Ridgecrest General Plan

Plans with relevant goals or policies are described in the subsections that follow, by jurisdiction.

San Bernardino County

Bernardino County 2020 Countywide Policy Plan: County Policy Plan. The Hazards Element of the San Bernardino County 2020 Countywide Policy Plan identifies potential natural and human-generated hazards, and addresses risks to residents, businesses, workers, and visitors. Policy Map HZ-5 identifies the fire hazard severity zones in San Bernardino County and Policy Map HZ-6 identifies fire responsibility areas throughout the county. In addition, the following policies (San Bernardino County 2020) may be applicable to the proposed project:

HZ-1.14: Long-term fire hazard reduction and abatement. We require proactive vegetation management/hazard abatement to reduce fire hazards on existing private properties, along roadsides of evacuation routes out of wildfire prone areas, and other private/public land where applicable, and we require new development to enter into a long-term maintenance agreement for vegetation management in defensible space, fuel modification, and roadside fuel reduction in the Fire Safety Overlay and/or Very High Fire Hazard Severity Zones.

HZ-1.15: Evacuation route adequacy. We coordinate with CAL FIRE, California's Office of Emergency Services, and other local fire districts to identify strategies that ensure the maintenance and reliability of evacuation routes potentially compromised by wildfire, including emergency evacuation and supply transportation routes.

San Bernardino County Emergency Operations Plan. The San Bernardino County Emergency Operations Plan (EOP) establishes the framework of the San Bernardino County Operational Area's emergency organization consisting of the county, cities, towns, special districts, schools, volunteer and private sector organizations, and state and federal agencies. This EOP conforms to current state and federal guidelines for emergency plans. It was created and is updated by the San Bernardino County Fire Department (SBCFD) Office of Emergency Services (OES) to ensure the most effective allocation of resources for the benefit and protection of the residences of San Bernardino County in times of emergency. This EOP has specific information on wildland fires as a hazard in the county; prevention and mitigation measures; and preparedness, response, and recovery activities.

County of Kern

Kern County General Plan. The Kern County General Plan's Safety Element includes an implementation measure that is relevant to the proposed project and the study area (County of Kern 2009, p. 156):

- E) Maintain adequate setbacks between oil/gas wells and development through the use of the zone districts DI (Drilling Island) or PE (Petroleum Extraction) and implementation of the uniform Fire Code 7904.32.3

Kern County Emergency Operations Plan. The Kern County EOP establishes an emergency management organization and provides for the integration and coordination of planning efforts of the county/operational area of its cities, special districts, and the region. It addresses the planned response to extraordinary emergency situations and identifies sources of external support that may need to be provided. The EOP discusses the hazards and impacts associated with wildland fires, along with procedural information in case of a wildland fire emergency.

City of Barstow

City of Barstow 2015–2020 General Plan. The City of Barstow 2015–2020 General Plan Safety Element sets forth goals, policies, and strategies geared toward ensuring the safety of city residents and visitors to the community. Provision of public safety services is addressed, as well as the need for community preparedness in the event of an emergency. Emergency evacuation routes are identified in Exhibit S-2. These routes include State Route (SR) 247, SR-58, and SR-66, which would be utilized in the event that interstate highways become impassable or inaccessible during an emergency (City of Barstow 2015). The Safety Element also contains the following policy that may be applicable to the project:

Policy 2.A: Cooperate and coordinate with San Bernardino County Emergency Services, Golden State Water Company, Southern California Edison and Southwest Gas Company and other agencies and utilities in the development and dissemination of information and instructions on appropriate actions in the event of a local disaster or emergency.

City of California City

City of California City Final General Plan 2009–2028. The Safety Element of the California City Final General Plan 2009–2028 identifies flooding, geologic and seismic, fire, and overflight hazards in the city. The Safety Element contains the following implementation measure (IM) that is relevant to the O&M activities in the study area (City of California City 2009, p. 6-17):

IM S-10: The City shall minimize potential risk to residents from natural gas or other gas exposure by recommending available locations for proposed above-ground transfer and/or monitoring stations. The City shall recommend the location of these types of facilities stations within the Heavy Industrial land use designation as shown on General Plan Land Use Plan and consistent with the Airport Land Use Compatibility Plan.

4.17.3 Existing Baseline Conditions

This section provides a description of the existing baseline conditions relative to wildfire in the study area that have been and could continue to be affected by PG&E’s ongoing O&M activities regardless of whether CDFW issues the requested permits. PG&E’s gas pipeline system has been in place for more than 70 years. Impact data collected by PG&E from 2017 to September 2021 regarding temporary and permanent disturbance impacts caused by O&M activities provide important detail about the environmental baseline conditions for purposes of CEQA (refer to Section 1.1, Proposed Project and Environmental Review). The existing baseline condition from 2017 to 2021, which includes PG&E’s past and ongoing O&M activities, is the benchmark used in the Section 4.17.4 impact analysis to evaluate whether CDFW’s issuance of the permits would cause a related incremental physical change to baseline conditions, and if so, could cause a significant or potentially significant impact to the environment.

Wildfire is a continuous and increasing threat throughout Southern California. Factors influencing wildfire behavior and magnitude include (but are not limited to) forest structure, fuel conditions, terrain, climate, weather, and ignition sources. Weather is one of the most significant biophysical factors of wildfire behavior. Wet winters and dry summers with mild seasonal changes characterize the Southern California climate. The summer months of Southern California are arid and warm, with very little precipitation. This climate pattern is occasionally interrupted by extreme periods of hot weather, drought, winter storms, or dry, easterly Santa Ana winds. Drought and Santa Ana winds are unique weather conditions that occur in Southern California that drive catastrophic wildfires. Santa Ana winds bring hot, dry desert air from the east into the region during late summer and fall, which increases wildland fire hazards during these seasons. Dry vegetation, low humidity, and high air temperature can combine to produce large-scale fire events. Periodic and seasonal Santa Ana winds create extreme wildfire weather, and fires driven by these winds have the potential to result in a greater risk to people and property.

Fire Hazard Severity Zones

CAL FIRE is responsible for mapping fire hazard areas throughout the state and provides these maps through the Fire and Resource Assessment Program (FRAP) database. As depicted in these maps, wildfire suppression and prevention responsibility is geographically divided by Federal, State, and Local Responsibility Area (FRA, SRA, and LRA, respectively) and further categorized into FHSZs. FHSZs are determined by a region’s land cover, vegetation, terrain, climate, fire history, and several other factors that contribute to the fire environment. This information is provided to the public and local agencies to incorporate fire hazard mapping into local planning efforts. The land underlying the study area consists of FRA and LRA designated as primarily moderate FHSZ or non-very high FHSZ. As shown in Table 4.17-1, there is no land within the study area designated as high or very high FHSZ. The nearest SRA lands designated as high or very high FHSZ are located south of Line 313 (within 0.25 miles of the study area) within the San Bernardino Mountains and west and northwest of Line 300 A (more than 0.25 miles beyond the study area) within the Tehachapi Mountains (CAL FIRE 2007).

Table 4.17-1. CAL FIRE Fire Hazard Severity Zones

FHSZ	Acres within the Study Area	Acres within 0.25 Miles of the Study Area
Very High	0	36.28
High	0	23.4
Moderate	30,864	126,504.6

Table 4.17-1. CAL FIRE Fire Hazard Severity Zones

FHSZ	Acres within the Study Area	Acres within 0.25 Miles of the Study Area
Non-Wildland/Non-Urban/No Data	1,060.8	5,366.2
Urban/Unzoned	962.28	6,016.4

Source: CAL FIRE 2007.

Notes: CAL FIRE = California Department of Forestry and Fire Protection; FHSZ = Fire Hazard Severity Zone.

CPUC has also adopted a statewide fire-threat map that delineates the boundaries of a High Fire-Threat District. The majority of the study area is located outside of the areas designated as elevated or extreme fire threat. Table 4.17-2 provides the acres within the study area and within a 0.25-mile buffer of the study area that are designated as elevated or extreme fire threat. There is no land within the study area designated as extreme fire threat, and approximately 47.85 acres of land in the study area is designated as elevated fire threat.

Table 4.17-2. CPUC High Fire Threat District

Fire Threat	Acres within the Study Area	Acres within 0.25 Miles of the Study Area
Extreme	0	0
Elevated	47.85	324.96

Source: CPUC 2021.

Note: CPUC = California Public Utilities Commission.

Land Cover and Vegetation

The majority of the study area consists of undeveloped land with sparse vegetation. CAL FIRE's FRAP land cover data depict vegetation types in the study area primarily as desert with small segments of urban, barren/other, agriculture, and herbaceous land cover (CAL FIRE 2019). As such, the study area does not contain land cover or vegetation that would typically facilitate fire spread.

Slopes/Topography

The study area is generally located within relatively flat topography or rolling terrain. Some areas of steeper slopes are found near the City of Barstow extending east toward the California–Arizona border. These slopes flatten to the west of the City of Barstow. Another series of ranges occurs to the north of the study area, between the City of Ridgecrest and the City of Boron.

Weather and Climate

General climate conditions in the study area are typical of high desert, which is characterized by large fluctuations in daily temperature, strong seasonal winds, and low humidity. Summers in the Mojave Desert reach temperatures above 100°F, whereas winter temperatures can reach lows of 8°F. The Pacific Coast Ranges serve as a broad rain shadow, resulting in very little rain reaching the Mojave Desert; annual precipitation ranges from 3.5 inches at lower elevations to nearly 10 inches in the mountains. Summer thunderstorms may bring sudden, heavy rainfall. Winds are a prominent feature of Mojave Desert weather. Strong winds occur in fall, late winter, and early spring months (NPS 2021).

The combination of arid weather, strong winds, and the surrounding steep slopes (where present) contribute to increased fire risk in some parts of the study area.

Emergency Response

The PG&E pipelines primarily traverse land designated as LRA and FRA. FRAs are controlled and managed by federal fire response teams (e.g., U.S. Forest Service fire crews, Bureau of Land Management [BLM] fire crews, agency personnel, and additional volunteers from local communities), often in collaboration with CAL FIRE. LRAs in the study area are managed by local fire agencies. In the event of a wildfire, emergency response to the study area would initially come from local agencies, including SBCFD or Kern County Fire Department (KCFD). The locations of county fire stations and the nearest BLM fire stations are presented in Table 4.17-3. In addition to these fire stations, many of the incorporated cities in the study area also have their own fire departments, including the Cities of Barstow and Victorville and the Town of Apple Valley. All other incorporated cities and unincorporated areas in the study area are served by the county fire departments.

Table 4.17-3. Fire and Emergency Response in the Study Area

Station No.	Location	Miles to Study Area
San Bernardino County Fire Department		
Station No. 32	1113 East Broadway Street, Needles, California 92363	8.5
Station No. 52	39059 Kathy Lane, Newberry Springs, California 92365	9
Station No. 56	37284 Flower Road, Hinkley, California 92347	1.4
Station No. 4	27089 Helendale Road, Helendale, California 92342	2.2
Station No. 8	33269 Old Woman Springs Road, Lucerne Valley, California 92356	7.4
Station No. 322	10370 Rancho Road, Adelanto, California 92301	6.3
Station No. 57	83732 Trona Road, Trona, California 93562	1.1
Kern County Fire Department		
Station No. 74	139 East Las Flores, Ridgecrest, California 93555	0.1
Station No. 73	6919 Monache Mountain Avenue, Inyokern, California 93527	8.2
Station No. 77	815 West Dolphin Avenue, Ridgecrest, California 93555	1
Station No. 75	26804 Butte Avenue, Randsburg, California 93554	2.4
Station No. 17	26965 Cote Street, Boron, California 93516	0.6
Station No. 14	1773–1999 Mojave–Barstow Highway, Mojave, California 93501	0.9
Federal		
BLM Apple Valley Fire Station	18809 Central Road, Apple Valley, California 92307	1.5
BLM Hole-in-the-Wall Fire Station	1 Black Canyon Road, Essex, California 92332	16.2

Sources: SBC Fire 2020; KCFD 2021; Google Maps 2021.

Note: BLM = Bureau of Land Management.

Emergency Plans and Evacuation Plans

As identified in Section 4.9, San Bernardino County and Kern County each have a designated Office of Emergency Services (OES) that prepares and implements county-wide emergency plans through the county fire departments. Both the San Bernardino County EOP and the Kern County EOP are consistent with California's Standardized Emergency Management System and the National Incident Management System.

The SBCFD OES maintains the San Bernardino County EOP, which provides guidance for the county to respond to catastrophic natural, environmental, or conflict-related risks. The SBCFD OES serves a population of more than 2 million people and an area of more than 20,100 square miles. In addition, SBCFD participates in the Mountain Area Safety Taskforce, which is a coalition tasked with preventing catastrophic wildfires and consists of federal, state, and local government agencies; private companies; and volunteer organizations.

The San Bernardino County EOP was developed in 2013 and includes a specific hazard profile for wildfire, as well as standard procedures for county-identified emergencies. The EOP includes response procedures, direction for training civilian emergency volunteers, installation of potential emergency operations centers (EOCs), and plans for recovery in the wake of emergency situations (SBCFD OES 2013). San Bernardino County EOCs are located at the following sites:

- Primary EOC Location: County Fire OES, 1743 Miro Way, Rialto, California 92376
- Alternate EOC Location: High Desert EOC, 15900 Smoke Tree Street, Hesperia, California 92345

In the event of an emergency requiring evacuation, SBCFD and the San Bernardino County Sheriff's Department notify residents of evacuation information and critical updates via a system known as the Telephone Emergency Notification System (TENS). Additionally, the San Bernardino County Ready mobile application (app) is available to residents to help prepare and plan for a disaster (SBCSD 2021). In the case of evacuations in response to a wildfire event, the best evacuation routes are communicated via the app to ensure the safest and most efficient evacuation of the region.

The County of Kern is the lead agency for the Kern Operational Area and is tasked with coordinating emergency activities between the county, cities, and special districts and serving as a communications link focusing on the collection, processing, and dissemination of vital disaster information. KCFD maintains an EOC to facilitate multi-agency and/or multi-jurisdiction disaster response coordination and communication. The EOC operates as the designated point of contact between jurisdictions within the county, the state, and the Kern Operational Area. The Kern County EOP was adopted in 2008 and provides an overview of the Kern Operational Area, emergency procedures that should be implemented during an emergency or disaster, EOC procedures and functions, and specific contingency plans (KCFD 2008).

Additional emergency plans that are applicable to the study area include the City of Barstow EOP and the Town of Apple Valley EOP. Wildfire is not identified as a potential threat in the City of Barstow EOP. The Town of Apple Valley EOP ranks wildfires as having a high probability of occurrence and impact in the town and provides guidelines for activating the EOC in the event of a wildfire.

Major arterials in the vicinity of the study area that would likely serve as evacuation routes in the event of a wildfire emergency include Interstate (I) 15, I-40, U.S. Highway 395, U.S. Highway 95, U.S. Historic Route 66, SR-58, SR-247, SR-178, SR-18, and SR-14. Of these nearby routes, I-40, U.S. Highway 395, and SR-58 have the longest adjacency to the pipeline study area; the pipeline generally follows I-40 for approximately 43 miles,

U.S. Highway 395 for approximately 26 miles, and SR-58 for approximately 68 miles. Based on their accessibility, several of these roadways are generally identified as major evacuation routes for communities in the study area.

4.17.4 Impact Analysis

4.17.4.1 Significance Criteria

The State of California has developed guidelines to address the significance of wildfire impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provide guidance to inform public agency analysis of whether a proposed project would have a significant environmental impact. For the purposes of this EIR, wildfire impacts would be significant if CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities, which are located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan.
2. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
4. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

4.17.4.2 Applicable Measures

As part of its standard practice, PG&E will continue to incorporate APMs and regulatory requirements into its ongoing O&M activities to avoid or minimize the potential for adverse wildfire impacts. The following APMs, where applicable, are included in the impact discussion in Section 4.17.4.3:

- APM BIO-3: Disturbance Minimization
- APM BIO-4: Invasive Weeds
- APM BIO-13: Restoration

Refer to Section 4.4.4.2 and Section 2.5, Applicable Measures, of this EIR for the full text of these APMs.

4.17.4.3 Impact Discussion

Impact WF-1 Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2, Project Description. As discussed in Section 4.17.3, Existing Baseline Conditions, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California, which are traversed by a number of major roadways and highways. PG&E has been conducting O&M

activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would substantially impair an adopted emergency response plan or emergency evacuation plan.

As discussed in Section 4.9, Hazards and Hazardous Materials, and Section 4.14, Transportation, PG&E's ongoing O&M activities in the study area have required and will continue to require lane closures but typically would not require any temporary or permanent road closures. Although temporary traffic delays and lane closures have occurred and will continue to occur during PG&E's O&M activities in the study area, the delays are expected to be short term. In the event of evacuation due to a wildfire, PG&E complies with all evacuation orders provided by the jurisdictional agencies, and as required, roads are opened for emergency evacuation.

All of PG&E's ongoing O&M activities with the potential to substantially impair an adopted emergency response plan or emergency evacuation plan will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to wildfire. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR (Impact Analysis – Biological Resources), issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not substantially impair an adopted emergency response plan or emergency evacuation plan.

PG&E's commitment to implementing standard practices and complying with applicable local and agency regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to impairing an adopted emergency response plan or emergency evacuation plan. For example, when temporary lane closures are required due to O&M activities, PG&E's standard practice is to coordinate with jurisdictional agencies, including relevant counties, cities, and the California Department of Transportation (Caltrans), to obtain the necessary encroachment permits and perform the work according to the relevant permit requirements. In addition, and in accordance with the encroachment permit conditions, PG&E would notify the local fire and police departments regarding potential lane closures. In the event of an emergency associated with the gas pipeline, PG&E implements the emergency response procedures outlined in the most recent version of the Gas Safety Plan (refer to Appendix E of this EIR for the 2021 Gas Safety Plan) during ongoing O&M activities. Furthermore, PG&E monitors the pipeline system 24 hours a day and 365 days a year at the Gas Control Center. Gas control personnel primarily use supervisory control and data acquisition (SCADA) system data to monitor and control critical assets remotely. The SCADA systems alert gas control personnel with alarms, which may result in the immediate execution of

a shutdown zone plan or the deployment of field personnel to the critical location. In the event of an alarm, PG&E also notifies the appropriate fire and police agencies and departments within PG&E so that emergency responders are informed and dispatched in a timely manner.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with wildfire is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to impairing an adopted emergency response plan or emergency evacuation plan; any related effect would be **less than significant**.

Impact WF-2 Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.17.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California, in an area designated as primarily moderate FHSZ or non-very high FHSZ. There is no land within the study area designated as high or very high FHSZ. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

The O&M activities, which do not include human-occupied structures, have occurred, and will continue to occur, along the existing 645-mile gas pipeline. As such, project occupants are limited to workers who are on site temporarily during O&M activities. As discussed in Section 4.17.3, the majority of the study area is located within FRAs and LRAs on land designated as moderate FHSZ and consists of primarily flat desert landscape with limited vegetation. As such, the majority of the study area does not contain slopes, wind and weather conditions, vegetation, or other factors that would generally contribute to a high fire hazard environment. The study area does not contain any land designated as high or very high FHSZ. The nearest SRA land designated as high and very high FHSZ is located south of Line 313 and west/northwest of Line 303 A, as shown on Figure 4.17-1, Fire Hazard Severity Zones and State Responsibility Areas. Steeper slopes, seasonal winds, high temperatures, and arid conditions increase fire risk in these areas. The available CAL FIRE Fire Perimeter Data (1950 to present) were reviewed for the study area and no incidents in the region are attributed to the existing pipeline (CAL FIRE 2021).

O&M activities have contributed to, can contribute to, and will continue to contribute to the risk of fire by introducing potential sources of ignition to the study area, including vehicles, heavy equipment, hot work, and personnel on site. The risk of fire ignition during O&M activities is minimized by implementing the fire safety practices outlined in PG&E's Utility Standard TD-1464S for the various fire weather scenarios as determined by the Utility Fire Potential Index Ratings.

All of PG&E's ongoing O&M activities with the potential to exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to wildfire. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

PG&E's commitment to implementing standard practices and complying with applicable agency regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to exacerbating wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. For example, on a daily basis prior to starting any O&M activities, PG&E reviews the Utility Fire Potential Index Rating and Wildfire Risk Checklist and implements all other fire safety requirements outlined in Utility Standard TD-1464S. Safety practices include having vehicle and worksite fire suppression equipment on site, conducting vegetation clearance around work areas of high fire risk, and training personnel prior to starting work, among others. To reduce fire risk, additional measures at job sites are required when the Utility Fire Potential Index Rating is higher than R3. The additional measures include establishing a Fire Watch to monitor for fire at the work site, evaluating weather conditions, and maintaining resources on site for fire suppression. In instances when clearing is necessary, such clearing would conform to permits issued by regulatory agencies and BLM and/or agreements with the landowner (when the activity is on private property). Once work areas are delineated within the existing right-of-way, maintenance personnel treat vegetation within the work area to the extent necessary to allow safe and efficient use of equipment. In general, PG&E also conducts vegetation clearance once per year, including approximately 5 feet of vegetation clearance around station facilities. Additionally, in compliance with Utility Standard TD-1464S, PG&E staff or contractors must identify and comply with federal, state, and local authority permits and restrictions related to fire safety in the areas where the work would be performed.

In addition to the wildfire safety requirements outlined in Utility Standard TD-1464S, APM BIO-4 would be incorporated to prevent the spread of invasive weeds, which could be flammable. Furthermore, as stated in Chapter 2, in the event of a fire emergency, local fire agencies provide initial response, and fire crews may need to create firebreaks or fire roads in an effort to stop the fire and minimize any resulting damage. Also, at the request of the local fire agencies PG&E may conduct vegetation clearance prior to emergency events to create fire breaks.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with wildfire is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not cause a substantial adverse effect related to exacerbating wildfire risks and thereby exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire; any related effect would be **less than significant**.

Impact WF-3 Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.17.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California, in an area designated as primarily moderate FHSZ or non-very high FHSZ. There is no land within the study area designated as high or very high FHSZ. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would require the installation or maintenance of associated infrastructure that may exacerbate wildfire risk or result in temporary or ongoing impacts to the environment.

O&M activities are not anticipated to directly require the installation of new or expanded infrastructure apart from what is required as part of ongoing O&M activities, as described in Chapter 2. As discussed in Section 4.16, Utilities and Service Systems, no new utility connections, water/wastewater facilities, or other service utilities are required to serve the PG&E pipelines or PG&E's ongoing O&M activities. However, O&M activities may include the permanent construction of electric and natural gas facilities along the pipeline, maintenance and inspection of telecommunication sites (i.e., the pipeline SCADA system), and maintenance and repairs to access roads. The maintenance and inspection of the telecommunication sites do not involve ground disturbance and have not resulted in and would not result in the construction or relocation of the telecommunication sites. The activities involved with installation or maintenance of electric and natural gas facilities and maintenance of access roads have required, can require, and will continue to require ground disturbance and the use of heavy machinery associated with trenching and excavating, grading, and other O&M activities. As such, the installation and maintenance of this infrastructure is anticipated to potentially result in increased wildfire risk or potential impact to the environment.

All of PG&E's ongoing O&M activities with the potential to require the installation or maintenance of associated infrastructure that may exacerbate wildfire risk or result in temporary or ongoing impacts to the environment will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to wildfire. Issuing the permits conditioning ongoing O&M activities would not

cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not exacerbate wildfire risk or result in impacts to the environment due to installation or maintenance of associated infrastructure.

PG&E's commitment to implementing standard practices and complying with applicable agency regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to exacerbating wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. For example, PG&E reviews their Utility Fire Potential Index Rating and Wildfire Risk Checklist daily and implements all other fire safety requirements outlined in Utility Standard TD-1464S. In addition, PG&E would incorporate APM BIO-4, which prevents the spread of invasive weeds, into its ongoing O&M activities. Furthermore, PG&E would comply with all regulatory requirements.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with wildfire is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not exacerbate wildfire risk or result in impacts to the environment due to installation or maintenance of associated infrastructure; any related effect would be **less than significant**.

Impact WF-4 **Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?**

PG&E's ongoing O&M activities have caused, can cause, and will continue to cause various levels of disturbance, as described in Chapter 2. As discussed in Section 4.17.3, the study area is located in San Bernardino and Kern Counties in the Mojave Desert region of California. PG&E has been conducting O&M activities in the study area as it has in the past under baseline conditions, and it will continue regardless of whether CDFW issues the permits. If the permits are issued, they would condition how PG&E conducts ongoing O&M activities during the term of the permits, subject to various conditions imposed by CDFW through the requested exercise of its regulatory authority under the CFGC. The discussion that follows analyzes whether issuance of the permits conditioning PG&E's ongoing O&M activities in the study area would expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Downslope or downstream flooding and landslides as a result of runoff, post-fire slope instability, or drainage changes are typically associated with areas of steeper slopes, such as foothills or mountainous terrain. The study area is primarily located on flat to rolling terrain, with some areas of steeper slopes near the Cities of Ridgecrest and Barstow. As discussed in Section 4.7, Geology and Soils, the soils in the study area are well drained and are not anticipated to become saturated to a point that would induce landslide activity. Further, rainfall is limited in the study area and saturated soils are relatively rare. Therefore, slope failure resulting from saturated soils in the study area is not anticipated. In addition, PG&E inspects the gas pipeline system for indications of imminent slope failure and conducts soil stabilization efforts (e.g., drainage control improvements, soil stabilization, revegetation, and regrading) in the event that unstable slopes are discovered. O&M activities such as grading and/or trenching to maintain access roads or repair existing pipe segments; boring operations, horizontal directional drilling, and hydrostatic testing; geotechnical investigations; and vegetation clearing include ground disturbance that have resulted in, can result in, and will continue to result in runoff, erosion, or drainage changes (refer to Section 4.7, Geology and Soils, and Section 4.10, Hydrology and Water Quality).

All of PG&E's ongoing O&M activities with the potential to expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes will continue to occur regardless of whether CDFW issues the permits. Likewise, CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not change or otherwise affect these activities or their impacts to wildfire risk. Issuing the permits conditioning ongoing O&M activities would not cause direct impacts. Indirect effects are also not expected because the causal connection between CDFW's issuance of the permits and the prospect of a related indirect physical change to existing baseline conditions is extremely attenuated, if it exists at all. That said, as discussed in Section 4.4.4 of this EIR, issuance of the permits will authorize certain previously prohibited impacts under the CFGC that could, in turn, influence how PG&E implements ongoing O&M activities in the future. Accordingly, the prospect that issuance of the permits may cause an indirect physical change to existing baseline conditions is possible, but extremely unlikely. In any event, even if that potential exists, any physical change to baseline conditions caused indirectly by issuance of the permits would not be significant. In short, the proposed issuance of the permits would not cause an incremental physical change to the existing baseline conditions in the study area. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not expose people or structures to significant risk involving flooding, landslides, slope instability, runoff, or drainage changes.

PG&E's commitment to implementing standard practices and comply with applicable agency regulations provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect related to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. For example, PG&E would comply with agency requirements and the provisions of the Construction General Permit, which requires the implementation of a stormwater pollution prevention plan and best management practices to reduce erosion and runoff that could cause drainage changes. Furthermore, with incorporation of APM BIO-3, soil disturbance is minimized, and with incorporation of APM BIO-13, following O&M activities, work areas are restored, which prevents erosion or invasive plant species. Vegetative stabilization measures include reseeding where appropriate to match pre-construction conditions as much as possible to reduce drainage changes.

In summary, the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not cause a direct or reasonably foreseeable indirect physical change to existing baseline conditions in or near the study area, as informed by the analysis of the whole of the action for purposes of CEQA. The causal connection between CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC and related effects associated with wildfire is so attenuated that, although the prospect of a related physical change to existing conditions cannot be ruled out entirely, any such change would not be significant even if it did occur. Accordingly, CDFW's issuance of the permits and its lead agency approval of the proposed project for purposes of CEQA would not expose people or structures to significant risk involving flooding, landslides, slope instability, runoff, or drainage changes; any related effect would be **less than significant**.

4.17.5 Cumulative Impacts

The geographic scope for the cumulative wildfire impacts considers projects within 1-mile-wide area along the gas pipeline alignment in the study area (refer to Table 3-1, Geographic Scope of Cumulative Impacts and Method of Evaluation).

O&M activities are routine and ongoing under existing baseline conditions, and the majority of O&M activities would be temporary and would occur over a short duration. As shown in Table 3-2, Planned and Proposed Projects within 5 Miles of the Pipelines in the Study Area, several related projects would occur within 1 mile of the PG&E gas pipeline. O&M activities have had and continue to have the potential to result in cumulative wildfire impacts in combination with other projects in the study area if ongoing activities were to occur simultaneously and combine to exacerbate wildfire risks. Review of PG&E's Utility Fire Potential Index Rating and Wildfire Risk Checklist prior to O&M activities would reduce the severity of the O&M activities' contribution to cumulative wildfire impacts. In addition, the vegetation in this region is low-growing and scarce, which reduces the potential risk of fire for the O&M activities and other past, present, and probable future projects. Given the sparsely vegetated landscape and its low potential to ignite and facilitate wildfire spread, the greatest potential for cumulative impacts relating to wildfire hazards is when equipment and crews are implementing O&M activities in the study area. Similar to the O&M activities, cumulative projects would be required to comply with federal, state, and local fire hazard policies (and develop their own fire management plan), if required by the jurisdictional agencies, as well as complying with applicable regulatory requirements to reduce erosion and runoff (i.e., preparation of a stormwater pollution prevention plan and implementation of best management practices). In the event of evacuation due to a wildfire, roads would be opened for emergency evacuation should it be required, and PG&E and other past, present, and probable future projects would comply with all evacuation orders provided by the jurisdictional agencies. Furthermore, any road closures would be coordinated with jurisdictional agencies, including counties, cities, and Caltrans. Accordingly, the incremental contribution from the ongoing O&M activities to cumulative wildfire impacts caused by other past, present, and probable future projects would not be expected to be cumulatively considerable or significant. These O&M activities will continue regardless of whether CDFW issues the requested permits; therefore, CDFW's issuance of the permits would not result in cumulatively considerable impacts relative to wildfire.

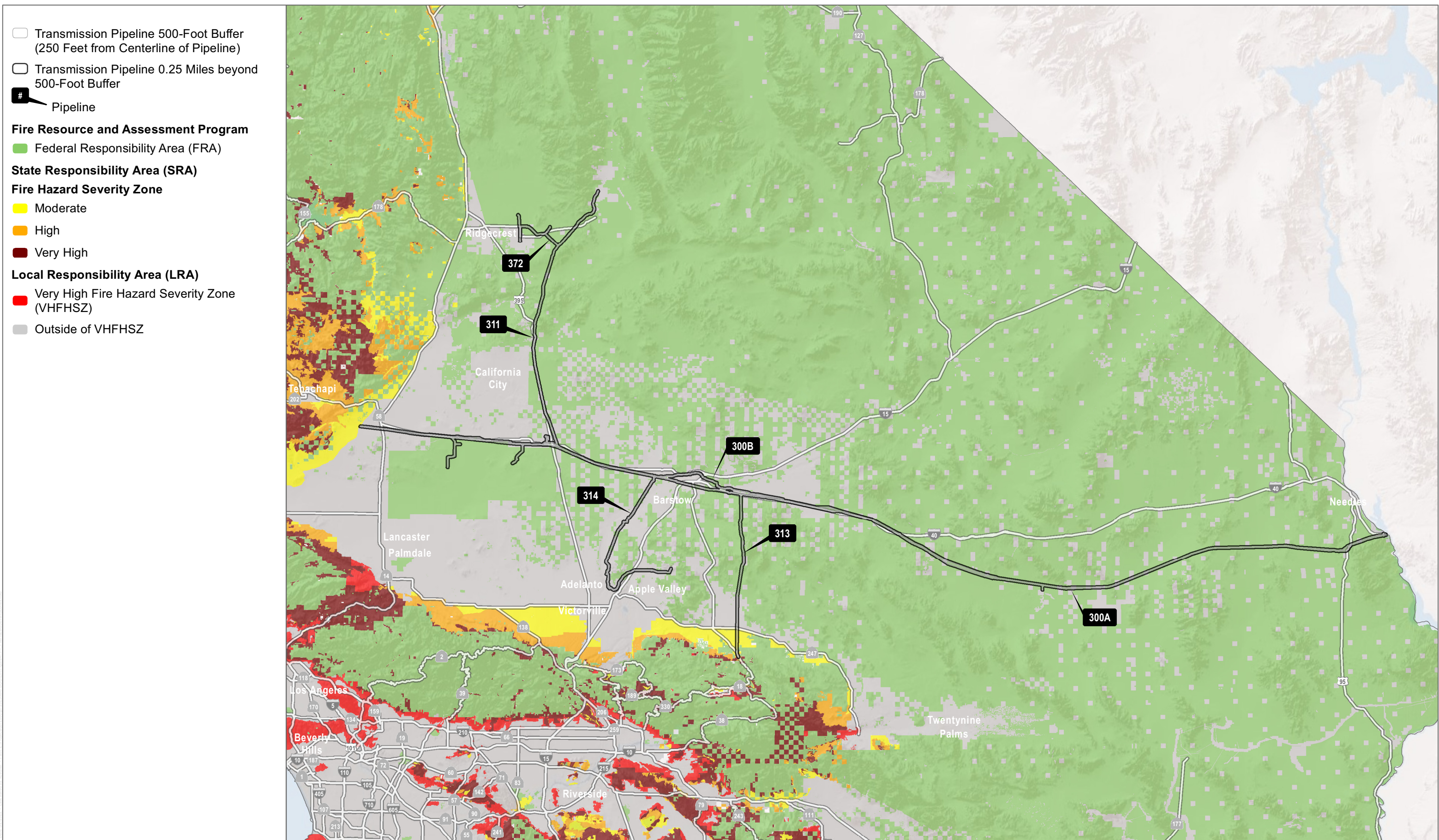
4.17.6 Residual Impacts

PG&E's O&M activities have been ongoing and are a component of the existing baseline conditions in the study area. O&M activities will continue regardless of CDFW's issuance of the permits. In addition, PG&E's commitment to implementing standard practices and APMs and complying with regulatory requirements provides additional support for the determination that issuance of the permits conditioning PG&E's ongoing O&M activities under the CFGC would not cause a significant physical change to the existing baseline conditions or a substantial adverse effect on wildfire.

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SOURCE: CalFire 2022

FIGURE 4.17-1

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5 Alternatives

5.1 Introduction

The proposed project consists of the California Department of Fish and Wildlife (CDFW) issuing an Incidental Take Permit (ITP) and the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements under the California Fish and Game Code (CFGF) for the Pacific Gas and Electric Company's (PG&E's) ongoing operation and maintenance (O&M) activities for its Southern California desert gas pipelines in the Mojave Desert region. The ITP and the expected LSA Agreements are referred to collectively in this document as "the permits." The term "project" for the purposes of the EIR impacts analysis does not mean each separate approval by CDFW under the CFGF. The term "project" means the O&M activities that PG&E is continuing to carry out as conditioned by the permits issued by CDFW. This chapter identifies potential alternatives to the proposed project and evaluates these alternatives, as required by CEQA.

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, environmental impact reports (EIRs) are required to "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives" (14 CCR 15126.6[a]). The EIR "must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation" (14 CCR 15126.6[a]). This alternatives discussion is required even if these alternatives "would impede to some degree the attainment of the project objectives, or would be more costly" (14 CCR 15126.6[b]).

The inclusion of an alternative in an EIR does not constitute definitive evidence that the alternative is in fact "feasible." The final decision regarding the feasibility of alternatives lies with the decision maker for a given project, who must make the necessary findings addressing the potential feasibility of an alternative, including whether it meets most of the basic project objectives or reduces the severity of significant environmental effects per CEQA (California Public Resources Code, Section 21081; see also 14 CCR 15091).

5.2 Proposed Project Objectives and Impacts

5.2.1 Project Objectives

PG&E has established the following objectives for its ongoing O&M activities:

- Implement a plan for the safe and reliable operation of PG&E's gas pipeline facilities in accordance with California Public Utilities Commission (CPUC) regulations.
- Continue PG&E's ongoing O&M activities and focus on testing, inspecting, replacing, and automating the gas transmission system.
- Obtain a long-term ITP under the California Endangered Species Act for the covered species and coverage under CDFW's LSA Program for PG&E's ongoing O&M activities in the Mojave Desert region.

CDFW's project objectives associated with issuing the permits to PG&E include the following:

- Protect and conserve fish and wildlife resources and minimize environmental impacts and land disturbance by, among other things, implementing O&M activities and siting work areas within PG&E's existing pipeline right-of-way (ROW) corridors, or in already disturbed areas adjacent to the ROW and along access roads.
- Promote environmentally responsible project activities that minimize incidental take by implementing species-specific minimization and avoidance measures.
- Protect and conserve the resources of the State of California and mitigate any impacts on these resources, consistent with CDFW's mission, its status as California's trustee agency for fish and wildlife, and the public trust doctrine.

5.2.2 Proposed Project Impacts

The incremental physical change to the environment caused by CDFW issuing permits conditioning ongoing PG&E O&M activities is the focus of the analysis in Chapter 4, Environmental Analysis. Based on the analysis presented in Chapter 4, the ongoing O&M activities would have potentially significant impacts with regard to biological resources. Environmental impacts to biological resources would be mitigated to less-than-significant levels with incorporation of applicant proposed measures (APMs) by PG&E (refer to Section 4.4.4.2 of this EIR) and implementation of mitigation measures (refer to Section 4.4.4.3 of this EIR). For all other resource categories, the proposed project would result in "no impacts" or "less than significant impacts" without the need for mitigation.

5.3 Alternatives Considered but Rejected

As described in this section, alternatives considered but rejected include the following: (1) Changed Practices, (2) Fewer Covered Species, and (3) Alternative Location. All of these potential alternatives for the proposed project have been rejected as infeasible because, among other things, they would not achieve most of the basic project objectives. Section 15126.6(a) of the CEQA Guidelines states that an EIR shall describe "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project," as well as provide an evaluation of "the comparative merits of the alternatives." Under Section 15126.6(a) of the CEQA Guidelines, an EIR does not need to consider alternatives that are not feasible, nor does it need to address every conceivable alternative to the project. The range of alternatives "is governed by the 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice" (14 CCR 15126.6[f]). The focus is on informed decision making and public participation rather than providing a set of alternatives simply to satisfy format. Based on the nature of the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits), with the exception of the No Project Alternative described in Section 5.4, additional alternatives were not identified other than the three described in this section.

O&M activities planned by PG&E for the purpose of ensuring the safety and reliability of existing pipelines and associated facilities are generally small projects at specific locations with limited options for methods of construction. Furthermore, PG&E's O&M activities are historic and ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the project for purposes of CEQA). For these reasons, identification of feasible

alternatives to the proposed project was limited. The following discussion presents the alternatives that were considered but rejected and specifies why they were rejected. Given the rejection of these alternatives, they are not discussed in further detail in this EIR and have been eliminated from further consideration. This discussion is followed by an analysis of the No Project Alternative (refer to Section 5.4).

5.3.1 Changed Practices Alternative

A variety of changed practices were considered to avoid the take of Mojave desert tortoise (*Gopherus agassizii*) or Mohave ground squirrel (*Xerospermophilus mohavensis*)—the two species proposed for coverage under the permits (the “covered species”)—when conducting O&M activities. Changed practices considered in this alternative involved changing construction methods, modifying activities, and/or seasonally restricting activities (e.g., prohibiting all activities during a defined breeding season). PG&E already modifies its practices on an activity-by-activity basis through its existing environmental review and screening processes (refer to Section 2.4 of this EIR).

A total reduction of impacts is often impossible due to public safety, regulatory, and site-specific requirements necessary for PG&E to complete its O&M activities. Changed practices from the practices already ongoing may be ineffective at reducing take and could introduce new and inconsistent work practices into PG&E’s operations. PG&E’s approach to construction has evolved based on the regulatory requirements (e.g., compliance with CPUC requirements) for public safety, efficiency, and environmental compliance. PG&E has a legal and public safety obligation to maintain its facilities, and through its established environmental screening process, it implements avoidance and minimization measures when planning and implementing O&M activities. Modifying activities to completely avoid impacts is also infeasible because O&M activities are needed to maintain, repair, or upgrade existing facilities to maintain public safety and comply with CPUC regulations. As an example, pipeline replacement and recoating are activities that are necessary to ensure that facilities continue to operate safely and efficiently.

Although O&M activities could result in impacts, modifying practices for implementing over a thousand activities (or even a portion of these activities) over a 30-year period is not expected to substantially reduce the overall loss of habitat, take of the covered species or other special-status species, or adversely impact waters of the state, including streams. However, because implementing changed practices would no longer be a continuation of existing practices and may not be part of baseline environmental conditions, changing practices could result in additional impacts.

PG&E’s environmental management group of land planners and biologists work closely with construction and project staff to coordinate construction activities to avoid and minimize impacts associated with all aspects of construction. Seasonally restricting O&M activities beyond what is already incorporated in PG&E’s standard practices and APMs (refer to Section 2.5) would be logistically and economically prohibitive because it would require that PG&E forgo maintenance when the maintenance activity is needed, which would compromise PG&E’s ability to make necessary inspections, repairs, and upgrades. This could lead to emergency repairs and unnecessary outages. Restricting O&M activities to only a few months per year, typically outside the rainy or wet times of year or outside nesting bird season, could limit PG&E’s ability to operate and maintain its infrastructure, leading to interruptions in service and reduced public safety.

Based on the above reasons, this alternative was rejected as infeasible and is not analyzed in detail in this EIR.

5.3.2 Fewer Covered Species Alternative

Under this alternative, PG&E would remove one of the covered species (Mojave desert tortoise or Mohave ground squirrel) from its ITP application. By covering one less species in the ITP application, PG&E's take request under the ITP would be reduced, as would PG&E's potential for take of species covered by the ITP. However, as discussed in Section 5.3.1, Changed Practices Alternative, O&M activities would continue to occur regardless of whether the ITP covers one species or two because these activities are still required in order to maintain, repair, or upgrade existing facilities to maintain public safety and comply with CPUC regulations. CPUC orders and standards require PG&E to perform these O&M activities. The same physical construction impacts would occur regardless of how many species are covered by the ITP, although with only one species covered, the potential benefits afforded by larger-scale mitigation would be reduced. The loss of benefits afforded by larger-scale mitigation would be even greater should the Mojave desert tortoise be the covered species removed, as the impacts to Mojave desert tortoise are expected to be greater than impacts to the Mohave ground squirrel; thus, the mitigation needed for Mojave desert tortoise impacts would result in a larger area of mitigation than the mitigation area for the Mohave ground squirrel.

PG&E would continue to screen its work (refer to Section 2.4), and if PG&E determines that take of a species not covered by the ITP could result, PG&E would need to apply for another activity-specific ITP. Processing multiple ITP applications for listed species on an activity-by-activity basis would not only delay O&M activities required for safety purposes, but could also result in a smaller-scale mitigation and conservation strategy for either of these species if one of them has to be covered by multiple separate ITPs. Therefore, this alternative was rejected as infeasible and is not analyzed in detail in this EIR.

5.3.3 Alternative Locations Alternative

CEQA requires that the discussion of alternatives focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project. The key question and first step in the analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen the significant effects of the project need be considered for inclusion in the EIR (14 CCR 15126.6[f][2]). Because the proposed project involves issuance of permits that will condition ongoing O&M activities involving the maintenance, repair, and upkeep of an existing 645-mile gas pipeline system and associated facilities, analysis of an alternative location to avoid or minimize resources covered by the permits would not be appropriate. Maintenance and repair of the gas pipeline system is mandated by CPUC, and O&M activities would continue to occur relative to the existing pipeline location, regardless of whether the permits are issued by CDFW. PG&E's gas pipeline system has been in place for more than 70 years, and O&M activities have been occurring since the time of its installation; therefore, it would not be possible to move the maintenance activities being covered by the permits away from the existing location of the pipeline system. As a result, this alternative was rejected as infeasible and is not analyzed in detail in this EIR.

5.4 No Project Alternative

Section 15126.6(e) of the CEQA Guidelines requires that an EIR evaluate and analyze the impacts of the "No Project" Alternative, which reflects the "circumstances under which the Project does not proceed." The No Project Alternative, in this case, assumes that PG&E would continue implementing O&M activities for the gas

pipeline and associated facilities in the Mojave Desert region. Under this alternative, PG&E would continue as it has been, with neither a long-term ITP nor one or more LSA Agreements from CDFW, and would continue to have to apply for separate permits for each individual activity as needed to carry out O&M activities that have the potential to result in the take of state-listed species, including the two species covered by the ITP, and the potential to impact waters of the state, including streams subject to CDFW's LSA Program.

Under this alternative, the permits would not be processed as described for the proposed project, and the need for consultation with CDFW would be determined on an activity-by-activity basis. O&M activities would continue to be implemented as they currently are, following PG&E's environmental programs and practices and in compliance with any permits necessary for implementation. All construction activities would be subject to additional evaluation and applicable permitting, as appropriate to comply with existing laws. The volume of activities implemented by PG&E makes activity-by-activity permitting, with associated CEQA reviews, by CDFW logistically challenging and difficult to implement for both CDFW and PG&E. O&M activities are outlined in Chapter 2, Project Description, and in Table 2-3, Construction Equipment and Surface Disturbance Details. Operations activities typically include inspecting, monitoring, testing, and operating valves, enclosures, switches, and other components at existing facilities and in existing ROWs. Maintenance activities include repairing and replacing facilities, structures, and access roads. This work also includes emergency repair. PG&E must continue to conduct these activities to comply with CPUC orders to ensure safety and to provide efficient natural gas services.

Under the No Project Alternative, the need for numerous separate permits, as compared to more comprehensive permitting, would be a potential impediment to the timely maintenance of PG&E facilities and system repairs necessary to ensure safety and compliance with CPUC mandates. In other words, the No Project Alternative would preclude the ability to capture the efficiencies of CDFW's required avoidance, minimization, and mitigation measures that, in combination, result in enhanced larger-scale conservation practices. Most activities, if assessed on an individual basis, would affect small areas (refer to Table 2-3, which lists surface area disturbance by O&M activity). Providing "patchwork and disconnected" mitigation a few small areas at a time, as compared to a coordinated larger-scale mitigation strategy, would be less likely to improve habitat conditions in a way that benefits the two species covered by the ITP, as well as benefitting other special-status species. Similarly, small-scale mitigation on an activity-by-activity basis for impacted waters of the state would be less beneficial to hydrologic systems, and the species and habitats that rely on them, as compared to larger-scale mitigation resulting from a more comprehensive waters permitting strategy and CDFW's required avoidance, minimization, and mitigation measures.

5.4.1 Comparison of Impacts under the No Project Alternative and the Proposed Project

Each alternative's environmental impacts—in this case, the No Project Alternative only—are compared to the impacts under the proposed project and determined to be environmentally superior, neutral, or inferior. However, only those impacts found significant and unavoidable are used in making the final determination of whether each alternative is environmentally superior, neutral, or inferior to the proposed project. None of the environmental impacts identified in the EIR were found to be significant and unavoidable.

Under the No Project Alternative, CDFW would not issue the requested permits. However, note that with or without CDFW's issuance of the permits, PG&E would be required to continue implementing its historic and ongoing O&M activities as it does under the existing conditions. As described in Chapter 1, Introduction/

Overview, of this EIR, PG&E is required to comply with CPUC orders to ensure safety and to provide efficient natural gas services. As such, under the No Project Alternative, the level of impacts relative to the resources discussed below would continue to be similar to existing conditions.

5.4.1.1 Aesthetics

As discussed in the Section 4.1 analysis of potential impacts to aesthetics resulting from the proposed project, the majority of O&M activities would continue to be temporary and would be experienced by viewers over a short duration. Visual effects associated with activities that could result in new surface disturbance, such as the installation of new aboveground facilities, would be addressed via PG&E's environmental screening process and through incorporation of APMs. In addition, under the No Project Alternative, ongoing O&M activities are required to comply with regulations governing light and glare. Because the proposed project would not result in a significant incremental change from existing conditions, the level of impacts from the proposed project relative to aesthetics would be similar when compared to the No Project Alternative.

5.4.1.2 Agriculture and Forestry Resources

As discussed in the Section 4.2 analysis of potential impacts to agriculture and forestry resources resulting from the proposed project, the study area does not cross any areas zoned for forest land, timberland, or timberland production zone lands; therefore, impacts to forest land would not occur from the proposed project, nor would they occur under the No Project Alternative. In addition, under the No Project Alternative scenario, in which historic and ongoing O&M activities would potentially result in the conversion of farmland to non-agricultural use, the conversion of farmland would continue to be minimal relative to its size considered against the total acreage of farmland within San Bernardino and Kern Counties. However, with PG&E's commitment to incorporating APMs into their ongoing O&M activities and implementing its environmental screening process, impacts to agricultural resources would continue to be avoided or minimized to the maximum extent feasible. Because the proposed project would not result in a significant incremental change from existing conditions, the level of impacts from the proposed project relative to agriculture and forestry resources would be similar when compared to the No Project Alternative.

5.4.1.3 Air Quality

As discussed in the Section 4.3 analysis of potential impacts to air quality resulting from the proposed project, PG&E has been conducting O&M activities in the study area for 70 years. Emissions associated with O&M activities have been included in each local air district's planning activities and would not differ significantly as compared to baseline conditions. Furthermore, emissions associated with O&M activities are addressed through PG&E's commitment to implementing standard practices and best management practices (BMPs), and through compliance with regulatory requirements. Because the proposed project would not result in a significant incremental change from existing conditions, the level of impacts from the proposed project relative to air quality would be similar when compared to the No Project Alternative.

5.4.1.4 Biological Resources

Under the No Project Alternative, CDFW would not issue a long-term ITP for the covered species or one or more LSA Agreements, and for the purposes of permitting, consultation with CDFW regarding the level of permitting would be determined on an O&M activity-by-activity basis. Under the No Project Alternative, PG&E would

continue to implement O&M activities as under existing conditions to comply with CPUC orders to provide safe and efficient natural gas services. PG&E would implement ongoing O&M activities in accordance with their environmental programs and practices and in compliance with any permits and required avoidance, minimization, and mitigation measures necessary for each separate O&M activity. Each future permit would include its own separate process, as well as triggering the need for additional CEQA review with documentation and processing, as applicable. Under the No Project Alternative, the need for numerous separate permits would be a potential impediment to the timely maintenance of PG&E facilities and system repairs necessary to ensure safety and compliance with CPUC mandates.

As described in Section 4.4, the proposed project includes a comprehensive approach to avoidance, minimization, and mitigation of impacts to special-status species—including but not limited to Mojave desert tortoise, Mohave ground squirrel, and, if applicable, western Joshua tree (*Yucca brevifolia*)—and waters of the state (refer to MM BIO-1 and BIO-2). Notably, PG&E will provide compensatory habitat in advance for Mojave desert tortoise, Mohave ground squirrel, and, if applicable, western Joshua tree for each defined compensatory mitigation period prior to start of O&M activities for that term, such that the total combined acreage of purchased species credits and habitat management lands total the amount of estimated compensatory habitat acreage required for each compensatory mitigation period. Alternatively, compensatory mitigation shall be provided within 18 months of initiating project-related O&M activities for each compensatory mitigation period if PG&E ensures funding approved by CDFW to complete the activities described above. For Mojave desert tortoise and Mohave ground squirrel, the estimated impacted acreage for the full 30-year ITP term subject to compensatory mitigation is 1,290 acres. If an ITP application for western Joshua tree is submitted and processed, the estimated impacted acreage for the full 30-year ITP term subject to compensatory mitigation is 784 acres. For waters of the state, PG&E O&M activities will impact up to 2 acres each year and shall impact no more than 30 acres over the 30-year term of the proposed incidental take permit (refer to MM BIO-3 and MM BIO-4). PG&E shall provide compensatory mitigation for these impacted waters at a minimum 3:1 ratio, which may be fulfilled by the compensatory mitigation lands acquired to fulfill MM BIO-2 to the extent that the mitigation lands provide adequate acres of rivers, streams, and/or lakes. Furthermore, the proposed project includes additional mitigation for other special-status species when impacts cannot be reduced to below a level of significance with implementation of the avoidance and minimization measures (refer to BIO MM-5 and MM BIO-6).

The No Project Alternative would preclude the ability to capture the efficiencies of CDFW's comprehensive avoidance, minimization, and mitigation measures that, in combination, would result in enhanced larger-scale mitigation and conservation practices. If assessed on an individual basis, most O&M activities would affect small areas (refer to Table 2-3 in Chapter 2); with the No Project Alternative, avoidance, minimization, and mitigation measures would be implemented, but on a smaller scale as compared to the broader measures proposed in this EIR (refer to Section 4.4.4.4). Providing "patchwork and disconnected" mitigation a few small areas at a time, as compared to a coordinated larger-scale mitigation strategy, would be less likely to improve habitat conditions in a way that benefits the two species covered by the ITP, as well as benefitting other special-status species. Similarly, small-scale mitigation on an activity-by-activity basis for impacted waters of the state would be less beneficial to hydrologic systems, and the species and habitats that rely on them, as compared to larger-scale mitigation and conservation resulting from a more comprehensive waters permitting strategy approved by CDFW.

Because the proposed project results in impacts to biological resources that can all be mitigated to less than significant levels, and approval of the proposed project would facilitate efficient permitting and mitigation on a larger, more comprehensive scale to benefit special-status species and their habitats and would facilitate

necessary and timely O&M activities, the No Project Alternative would be environmentally inferior when compared to the proposed project.

5.4.1.5 Cultural Resources

As discussed in the Section 4.5 analysis of potential impacts to cultural resources resulting from the proposed project, PG&E's ongoing O&M activities are anticipated to continue to have temporary and less-than-significant impacts to historic and archaeological resources and to human remains. PG&E's O&M activities are subject to applicable regulations and policies, and through incorporation of APMs and BMPs, would avoid or minimize impacts to cultural resources. Because the proposed project would not result in a significant incremental change from existing conditions, the level of impacts from the proposed project relative to cultural resources would be similar when compared to the No Project Alternative.

5.4.1.6 Energy

As discussed in the Section 4.6 analysis of potential impacts from the proposed project regarding energy, PG&E's O&M activities would continue to not result in a wasteful, inefficient, or unnecessary consumption of energy resources and would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As described for the proposed project, PG&E is committed to decreasing its greenhouse gas (GHG) emissions and energy use and has instituted several operational changes to decrease the organization's carbon footprint (e.g., committing to a 55% renewable energy target by the year 2031 and reducing GHG emissions from its vehicle fleet by deploying alternative-fuel vehicles). Furthermore, petroleum usage would be expected to become more efficient due to technological advances over time. Because the proposed project would not result in a significant incremental change from existing conditions, the level of impacts from the proposed project relative to energy would be similar when compared to the No Project Alternative.

5.4.1.7 Geology and Soils

As discussed in the Section 4.7 analysis of potential impacts to geology, soils, and paleontological resources resulting from the proposed project, PG&E has been conducting O&M activities in the study area for 70 years and would continue with similar ground-disturbing activities under the No Project Alternative. Under the No Project Alternative, PG&E would continue to implement applicable APMs and standard practices and would continue to comply with regulatory requirements, such as the California Building Code; CPUC General Order 112-F; the 2021 Gas Safety Plan; Department of Transportation requirements; and Title 49, Part 192 of the Code of Federal Regulations, as well as preparing a stormwater pollution prevention plan. Furthermore, as outlined in Section 4.7.4.2, Applicable Measures, PG&E would incorporate paleontological resources standard practices prior to conducting O&M activities that involve excavation, trenching, or boring activities. In areas of Potential Fossil Yield Classification of 3 or greater, PG&E's ongoing screening and protection measures include steps for an unanticipated discovery, a workers' environmental awareness training program, avoidance/work exclusion zones, monitoring, and if needed, fossil recovery. Because the proposed project would not result in a significant incremental change from existing conditions, the level of impacts from the proposed project relative to geology and soils would be similar when compared to the No Project Alternative.

5.4.1.8 Greenhouse Gas Emissions

As discussed in the Section 4.8 analysis of potential impacts relative to GHG emissions resulting from the proposed project, PG&E's O&M activities would continue to emit GHG emissions that would contribute to increased accumulation of GHGs in the atmosphere and thus may contribute to global climate change. However, GHG emissions associated with the ongoing O&M activities in the study area have been occurring for 70 years and would not differ under the No Project Alternative. Furthermore, GHG emissions associated with O&M activities are reduced through PG&E's commitment to implementing standard practices and BMPs and through complying with regulatory requirements. Because the proposed project would not result in a significant incremental change from existing conditions, the level of impacts from the proposed project relative to GHG emissions would be similar when compared to the No Project Alternative.

5.4.1.9 Hazards and Hazardous Materials

As discussed in the Section 4.9 analysis of potential impacts relative to hazards and hazardous materials resulting from the proposed project, typical materials used and transported during implementation of O&M activities include oils, lubricants, and vehicle fuels, and their use is temporary and sporadic. PG&E has been conducting O&M activities in the study area for 70 years and is required to comply with applicable federal, state, and local laws and regulations concerning the transport, use, and storage of hazardous materials such that exposure risks from routine use, upset and accident conditions, and school exposure are minimized. The identification and management of hazardous materials unexpectedly encountered, airport hazards, fire protection, and interference with emergency plans would also continue, and would not differ, under the No Project Alternative. Furthermore, as outlined in Section 4.9.4.2, Applicable Measures, PG&E would continue to incorporate applicable APMs and BMPs to avoid or minimize the potential for adverse impacts relating to hazards and hazardous materials. Because the proposed project would not result in a significant incremental change from existing conditions, the level of impacts from the proposed project relative to hazards and hazardous materials would be similar when compared to the No Project Alternative.

5.4.1.10 Hydrology and Water Quality

As discussed in the Section 4.10 analysis of potential impacts to hydrology and water quality, including to the downstream quality of waters, resulting from the proposed project, after completion of O&M activities, disturbed areas would be restored to pre-construction or pre-maintenance conditions. PG&E would also continue to comply with the requirements of the federal Clean Water Act, including preparation and implementation of stormwater pollution prevention plans, and would comply with all agency-required permits and associated conditions. PG&E would also continue to comply with the Statewide Natural Gas Utility Permit, which limits discharges to drainage systems and requires implementation of APMs and BMPs to protect water quality. In addition, PG&E's ongoing O&M activities have had a negligible effect on groundwater supplies. Because the proposed project would not result in a significant incremental change from existing conditions, the level of impacts from the proposed project relative to hydrology and water quality would be similar when compared to the No Project Alternative.

5.4.1.11 Land Use and Planning

As discussed in the Section 4.11 analysis of potential impacts relative to land use and planning resulting from the proposed project, O&M activities are required to be consistent with all local land use plans. Furthermore, as

part of its standard practice, PG&E would coordinate with the local jurisdiction(s) prior to implementation of O&M activities to avoid and/or minimize any potential impacts within the jurisdiction(s). Because the proposed project would not result in a significant incremental change from existing conditions, the level of impacts from the proposed project relative to land use and planning would be similar when compared to the No Project Alternative.

5.4.1.12 Noise

As discussed in the Section 4.12 analysis of potential noise impacts resulting from the proposed project, the ongoing O&M activities would continue to generate temporary noise increases during construction activities and performance of natural gas vent blowdowns. However, PG&E incorporates APMs and complies with regulatory requirements and standard practices regarding noise to address these impacts. Because the proposed project would not result in a significant incremental change from existing conditions, the level of impacts from the proposed project relative to noise would be similar when compared to the No Project Alternative.

5.4.1.13 Recreation

As discussed in the Section 4.13 analysis of potential recreation impacts resulting from the proposed project, the majority of ongoing O&M activities typically continue to affect only a small portion of the recreational areas in the study area. Temporary closures of recreational areas may occur as a result of O&M activities; however, as standard practice, PG&E coordinates with the affected land-management agencies prior to any temporary access restrictions to determine timing of potential planned recreational events and to plan the timing of the O&M work accordingly. Because the proposed project would not result in a significant incremental change from existing conditions, the level of impacts from the proposed project relative to recreation would be similar when compared to the No Project Alternative.

5.4.1.14 Transportation

As discussed in the Section 4.14 analysis of potential transportation impacts resulting from the proposed project, during some O&M activities there could be short-term, temporary impacts associated with construction activities within the public ROW. As standard practice, PG&E coordinates as necessary with the local jurisdictions and/or affected agencies/entities regarding any temporary road or lane closures and temporary access routes needed to accommodate construction. In addition, ongoing traffic generation during O&M activities is minimal. Although traffic generation is minimal, PG&E incorporates BMPs that restrict parking to existing ROWs and pre-approved staging areas and that also encourage carpooling. Because the proposed project would not result in a significant incremental change from existing conditions, the level of impacts from the proposed project relative to transportation would be similar when compared to the No Project Alternative.

5.4.1.15 Tribal Cultural Resources

As discussed in the Section 4.15 analysis of potential impacts to tribal cultural resources resulting from the proposed project, PG&E's O&M activities are subject to applicable regulations and policies, and through incorporation of APMs would avoid or minimize impacts to tribal cultural resources. Because the proposed project would not result in a significant incremental change from existing conditions, the level of impacts from the proposed project relative to tribal cultural resources would be similar when compared to the No Project Alternative.

5.4.1.16 Utilities and Service Systems

As discussed in the Section 4.16 analysis, potential impacts relative to utilities and service systems resulting from the ongoing O&M activities would not cause a substantial increase in the amount of wastewater generated, in the demand on the existing water supply, in the demand on the existing wastewater treatment provider, and/or in the amount of solid and/or hazardous waste generated, because O&M activities would be similar to existing conditions. In addition, PG&E incorporates BMPs from Section 4.3, Air Quality, and Section 4.10, Hydrology and Water Quality, into its ongoing O&M activities to avoid and substantially lessen impacts related to utilities and service systems. Because the proposed project would not result in a significant incremental change from existing conditions, the level of impacts from the proposed project relative to utilities and service systems would be similar when compared to the No Project Alternative.

5.4.1.17 Wildfire

As discussed in the Section 4.17 analysis of potential impacts relative to wildfire resulting from the proposed project, the vegetation in this region is low-growing and scarce, which reduces the potential risk of fire from ongoing O&M activities. PG&E is required to comply with federal, state, and local fire hazard policies and develop their own fire management plan. In addition, as outlined in Section 4.17.4.2, Applicable Measures, PG&E would continue to incorporate applicable biological resources APMs that avoid or minimize the potential for adverse wildfire impacts. Furthermore, in the event of evacuation due to a wildfire, roads would be opened for emergency evacuation, and PG&E would continue to comply with all evacuation orders provided by the jurisdictional agencies. Any road closures would be coordinated with the California Department of Transportation (Caltrans) and the jurisdictional agencies. Because the proposed project would not result in a significant incremental change from existing conditions, the level of impacts from the proposed project relative to wildfire would be similar when compared to the No Project Alternative.

5.4.2 Conclusion

PG&E's O&M activities have been implemented for more than 70 years within the study area, and there would be no substantial change in the O&M activities going forward from that which occurred between 2017 and September 2021 (which is considered the baseline period for the purposes of this EIR). With the exception of biological resources, the proposed project would result in no impacts or less-than-significant impacts without the need for mitigation. Therefore, the proposed project would be considered environmentally neutral for all resources, except biological resources, when compared to the No Project Alternative.

Under the No Project Alternative, O&M activities are ongoing and would continue to be implemented as they currently are, following PG&E's environmental programs and practices and in compliance with any permits necessary for implementation. CDFW would not issue a long-term ITP, nor would it issue one or more LSA Agreements, as analyzed in this EIR for the proposed project; therefore, all construction activities would be subject to additional CDFW review and permitting, and additional CEQA reviews and documentation, as applicable, to comply with existing regulations. The volume of activities implemented by PG&E makes activity-by-activity permitting by CDFW logistically challenging and difficult to implement for both CDFW and PG&E. Furthermore, PG&E has a legal and public safety obligation to maintain its facilities.

In addition, the proposed project includes a comprehensive approach to avoidance, minimization, and mitigation of impacts on special-status species—including but not limited to Mojave desert tortoise, Mohave ground squirrel, and western Joshua tree—and waters of the state subject to CDFW's LSA

Program. The No Project Alternative would preclude the ability to capture the efficiencies of CDFW's required avoidance, minimization, and mitigation measures that, in combination, result in enhanced larger-scale conservation practices. Therefore, relative to biological resources, the proposed project would be considered environmentally superior to the No Project Alternative.

5.5 Environmentally Superior Alternative

The CEQA Guidelines require the lead agency to identify an environmentally superior alternative, or the alternative that would least affect the environment while accomplishing project objectives (refer to Section 5.2.1). The environmentally superior alternative is identified by comparing the environmental impacts of the various alternatives analyzed in detail. Pursuant to the CEQA Guidelines, the range of potential alternatives of the project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects (14 CCR Section 15126.6[c]). The EIR should briefly describe the rationale for selecting the alternatives to be discussed. Three alternatives to the proposed project were considered. However, these alternatives were not further analyzed in this EIR for the reasons stated in Section 5.3, Alternatives Considered but Rejected. Because the pipeline system is existing, and the associated historic and ongoing O&M activities must and will occur with or without CDFW's issuance of the permits, there are no other reasonable or feasible alternatives to the proposed project that would also ensure the continued reliability, safety, and security of the Mojave Desert region natural gas pipeline system.

CEQA Guidelines Section 15126.6(e)(2) states that if the environmentally superior alternative is the No Project Alternative, then the EIR must also identify an environmentally superior alternative among the other alternatives. In this instance, the No Project Alternative is not the environmentally superior alternative because increased biological resources impacts would result under the No Project Alternative as compared to the proposed project, with its associated comprehensive mitigation strategy. As discussed in Section 5.4.1.4, the proposed project's comprehensive approach with issuance of the permits would provide greater avoidance, minimization, and mitigation for biological resources impacts on special-status species and waters of the state as compared to the No Project Alternative. In addition, the No Project Alternative would not meet the project objectives identified by PG&E and CDFW. Therefore, the proposed project (i.e., CDFW's issuance of the permits conditioning PG&E's ongoing O&M activities) is considered to be the environmentally superior alternative.

6 Other CEQA Considerations

This chapter includes discussions of various topics required by the California Environmental Quality Act (CEQA). These topics include Section 6.1, Effects Not Found to Be Significant; Section 6.2, Significant and Unavoidable Impacts; Section 6.3, Significant Irreversible Environmental Effects; and Section 6.4, Growth-Inducing Impacts.

The proposed project for purposes of the California Environmental Quality Act (CEQA) is the requested issuance of an Incidental Take Permit (ITP) that would authorize take of Mojave desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Xerospermophilus mohavensis*) incidental to the Pacific Gas and Electric Company's (PG&E's) continued operation and maintenance (O&M) activities for its Southern California desert gas pipelines. The proposed project also includes the expected issuance of one or more Lake and Streambed Alteration (LSA) Agreements to PG&E. The term "project" for the purposes of this impact analysis does not mean each separate approval by the California Department of Fish and Wildlife (CDFW) under the California Fish and Game Code (CFGF). The term "project" means the O&M activities that PG&E is proposing to continue to carry out as conditioned by the permits issued by CDFW.

6.1 Effects Not Found to Be Significant

Section 15128 of the CEQA Guidelines requires that an environmental impact report (EIR) briefly describe potential environmental effects from a proposed project that were determined not to be significant and therefore were not discussed in detail in the EIR. The environmental issues discussed in the following sections were determined not to be significant, and the reasons for the conclusion of non-significance are discussed in each section.

6.1.1 Mineral Resources

Many of the O&M activities in the O&M activities area ("study area") have involved and will continue to involve modifications and maintenance on the existing pipeline facilities within the existing right-of-way. These activities would most likely occur within previously disturbed areas that would not result in any loss of availability of any known or important mineral resources, if present. Some O&M activities have occurred and could continue to occur outside the existing right-of-way (e.g., installation of pig launcher/receiver facilities, access road repair, erosion control features, water diversion channels, telecommunication site maintenance, span painting and corrosion protection, below-grade pipe inspection, installation of anodes) or otherwise result in new disturbances. However, all of these activities would require relatively small footprints and would be scattered throughout the study area such that there would be no substantive loss of availability of any known or important mineral resources, if present. As a result, there would be no direct or indirect impacts to mineral resources from ongoing O&M activities conditioned by CDFW's ITP and LSA Agreements (collectively referred to as "the permits"), as informed by the analysis of the whole of the action for purposes of CEQA, and this topic is not discussed further in this EIR.

6.1.2 Population and Housing

The O&M activities will continue at a similar frequency as they did between 2017 and September 2021 (referred to as the "baseline period" in this EIR) and will result in the same or substantially similar levels of

disturbance within the existing PG&E pipeline system for the next 30 years (i.e., the life of the proposed ITP). The proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits) would not result in population growth in the study area because no new homes or businesses are proposed and no new infrastructure related to population growth is proposed. Therefore, O&M activities would not increase in duration, intensity, or frequency to create an increased demand for short and/or long-term employment opportunities and therefore would not result in a permanent increase to the local population. Because O&M activities would not result in an increase in the local population, there would be no new demand for housing. As a result, there would be no direct or indirect impacts to population and housing from ongoing O&M activities conditioned by the CDFW permits, as informed by the analysis of the whole of the action for purposes of CEQA, and this topic is not discussed further in this EIR.

6.1.3 Public Services

The proposed project would not result in population growth, because no new homes or businesses are proposed and no new infrastructure related to population growth is proposed. As described in Chapter 2, Project Description, the gas pipeline system has been in place for more than 70 years; therefore, PG&E's O&M activities are ongoing, and the need for these activities, as well as PG&E actually carrying out these activities, will continue regardless of whether CDFW issues the requested permits (i.e., approves the proposed project for purposes of CEQA). The activities and any resulting effects are therefore part of baseline environmental conditions. Therefore, no construction of new or physical alteration of existing fire, police, or school facilities or library or hospital services in the study area are required. As a result, there would be no direct or indirect impacts to public services from ongoing O&M activities conditioned by the CDFW permits, as informed by the analysis of the whole of the action for purposes of CEQA, and this topic is not discussed further in this EIR.

6.2 Significant and Unavoidable Impacts

CEQA Guidelines Section 15126.2(c) requires that an EIR identify significant environmental effects that cannot be avoided. Based on the analysis in Chapter 4, Environmental Analysis, no significant and unavoidable impacts would result from implementation of the proposed project (i.e., ongoing O&M activities conditioned by the CDFW permits).

6.3 Significant Irreversible Environmental Effects

CEQA Guidelines Section 15126.2(d) requires that an EIR identify significant irreversible environmental changes that would be caused by a proposed project. The ongoing O&M activities conducted by PG&E on their existing facilities have resulted and will continue to result in a minor irreversible commitment of fossil fuel resources during implementation of maintenance activities and avoidance, minimization, and mitigation measures. However, PG&E's O&M activities would also result in long-term benefits with regard to species habitat protection, as well as providing a safe and efficient natural gas service system in the Mojave Desert region pursuant to California Public Utilities Commission mandates. Overall, any negative impacts would be minimal and less than significant. Through PG&E's commitment to incorporate applicant proposed measures, best management practices, and regulatory requirements, as well as implementation of mitigation measures as required, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not result in significant irreversible environmental effects.

6.4 Growth-Inducing Impacts

CEQA Guidelines Section 15126.2(e) requires a discussion of ways in which a project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. For the purposes of CEQA, a project that accommodates growth (e.g., by removing an obstacle to growth) is considered growth inducing. Furthermore, Section 15126.2(e) states that it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Typically, the growth-inducing potential of a project would be considered adverse if it fosters growth or a concentration of population above what is assumed in local and regional land use plans, or in projections made by regional planning authorities. Adverse growth impacts could also occur if a project provides infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies.

Because PG&E's O&M activities are ongoing, these activities and any resulting effects are part of baseline environmental conditions. Therefore, the ongoing O&M activities conditioned by the CDFW permits would not result in population growth, because no new homes or businesses are proposed and no new infrastructure related to population growth is proposed. As discussed in Section 1.2 of this EIR, Background and Existing Regulations, maintenance and repair of the gas pipeline system is required by the California Public Utilities Commission for the safety and of the public and gas corporation employees. As stated in Section 1.3, PG&E O&M Activities – Objectives and Purpose, the purpose of PG&E's ongoing O&M activities is to maintain the safety of their gas pipeline facilities in the Mojave Desert region. CDFW's issuance of the ITP requested by PG&E, if approved, would condition how PG&E implements certain O&M activities in the future when those activities are subject to CDFW's related regulatory authority under the California Fish and Game Code. Therefore, CDFW's issuance of the permits, as informed by the analysis of the whole of the action for purposes of CEQA, would not induce growth within the study area.

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7 List of Preparers and Organizations Consulted

An Environmental Impact Report (EIR) is an interdisciplinary team effort. In addition, internal review of the document occurs throughout preparation at multiple levels. The California Department of Fish and Wildlife (CDFW) is the California Environmental Quality Act (CEQA) lead agency supported by their environmental contractor, Dudek, during the CEQA review process. Insignia Environmental, on behalf of the Pacific Gas and Electric Company (PG&E), prepared an Environmental Document for CDFW review, and provided technical assistance in the preparation of this document. The preparers and technical reviewers of this EIR are presented below, along with a list of organizations consulted.

7.1 List of Preparers

California Department of Fish and Wildlife, Inland Deserts Region

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Scott Wilson – Environmental Program Manager

Magdalena Rodriguez – Senior Environmental Scientist (Supervisor)

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Anne Marie McGraw – Project Management and Quality Assurance/Quality Control

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Stephanie Hansen, AICP – Senior Planner, Technical Reviewer

7.2 Organizations and Persons Consulted

The following contacts provided information during preparation of the Environmental Document for development of the cumulative project information.

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Cindy Semione – City of Needles

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John Oquendo – Senior Planner, San Bernardino County

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