Appendix J

COMMENTS AND RESPONSES TO COMMENTS

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Appendix J: Comments and Responses to Comments

J.1. INTRODUCTION TO COMMENTS AND RESPONSES APPENDIX

The Final Environmental Impact Report (EIR) includes the Moraga-Oakland X 115 Kilovolt (kV) Rebuild (MOX) Project Draft EIR (August 2025) as revised, comments received on the Draft EIR, and responses to those comments. The Final EIR has been prepared pursuant to CEQA, Public Resources Code section 21000 et seq., and in accordance with the Guidelines for the Implementation of CEQA, California Code of Regulations, tit. 14., section 15000 et seq.

According to State CEQA Guidelines Section 15132, a Final EIR shall consist of: (a) the Draft Environmental Impact Report (Draft EIR) or a revision of the Draft EIR; (b) comments and recommendations received on the Draft EIR, either verbatim or in summary; (c) a list of persons, organizations, and public agencies commenting on the Draft EIR; (d) the responses of the lead agency to significant environmental points raised in the review and consultation process; (e) any other information added by the lead agency.

Receiving and responding to comments on the Draft EIR is an essential part of the environmental review process, with comments and responses becoming part of the Final EIR. Pursuant to CEQA Guidelines Section 15088(a), the lead agency shall evaluate comments on environmental issues received from persons who reviewed the draft EIR and shall prepare a written response. Pursuant to CEQA Guidelines Section 15088(c):

> *The written response shall describe the disposition of significant environmental issues raised (e.g., revisions to the proposed project to mitigate anticipated impacts or objections). In particular, the major environmental issues raised when the Lead Agency's position is at variance with recommendations and objections raised in the comments must be addressed in detail giving reasons why specific comments and suggestions were not accepted. There must be good faith, reasoned analysis in response. Conclusory statements unsupported by factual information will not suffice. The level of detail contained in the response, however, may correspond to the level of detail provided in the comment (i.e., responses to general comments may be general). A general response may be appropriate when a comment does not contain or specifically refer to readily available information, or does not explain the relevance of evidence submitted with the comment.*

If responses to comments merit revisions to the Draft EIR, those revisions have been made in the text of the Draft EIR itself, as permitted by CEQA Guidelines Section 15088(d). In evaluating the comments and responses, the CPUC has considered whether any of the information added to the EIR would require recirculation of all or a portion of the Draft EIR because it is "significant" as that term is used in CEQA Guidelines Section 15088.5. Pursuant to CEQA Guidelines Section 15088.5(b), recirculation is not required where, as here, the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR.

The California Public Utilities Commission will determine whether to certify the Final EIR and approve the proposed Project or any of the evaluated Project alternatives.

J.1.1. Organization of this Appendix

This Appendix J is organized as follows:

- Section J.1, Introduction to Comments and Responses Appendix
- Section J.2, General Responses to Common Comments
- Section J.3, Comment Letters and Responses to Comments on the Draft EIR

J.1.2. Summary of Comments Received

This section presents responses to the comments received during the public review period for the MOX Project Draft EIR (August 12, 2025, to September 26, 2025). The CPUC received public comments from various State agencies, organizations, tribes, and the public. Consistent with CEQA Guidelines Section 15088.5(f)(2), the CPUC has responded to comments received during the circulation period.

Table J-1 lists all agencies, businesses/organizations, tribes, and persons that submitted written and oral comments on the Draft EIR. Each comment is numbered, and responses immediately follow the comments. It is important to note that only the substantive comments raised on the merits of the environmental analysis are identified, numbered, and responded to, while comments such as those related to the commenter's interest in or opinions about the project, or a summary of the project itself were noted but not included.

If revisions were made to the EIR in response to the comments, the revisions are summarized in the respective response to comment and are indicated in the text of this Final EIR with ~~strikeout~~ for deletions of text, and <u>underline</u> for new text to sections of the Draft EIR.

Table J-1. Comments Received on the MOX Draft EIR

COMMENTER	DATE	COMMENT SET
Agencies		
California Department of Transportation, District 4	9/16/2025	A01
East Bay Municipal Utility District	9/23/2025	A02
City of Orinda	9/24/2025	A03
East Bay Regional Park District	9/26/2025	A04
California Department of Fish and Wildlife	9/29/2025	A05
Organizations and Businesses		
Friends of Sausal Creek	9/12/2025	B01
Native American Tribes		
Wilton Rancheria Tribe	8/20/2025	C01
Individuals		
Kenneth Gibson	8/13/2025	D01
Denise Bostrom	8/19/2025	D02
Sara Rankin	8/21/2025	D03
Elizabeth Hansell	8/27/2025	D04
Pete Retondo	9/1/2025 and 9/5/2025	D05
Jonathan Goodwin	9/2/2025	D06
David Markman	9/2/2025	D07
Phil Gorman	9/3/2025	D08
Linda Walton	9/25/2025	D09
Jennifer Arnest	9/25/2025	D10
Matt Solomon	9/25/2025	D11
Cynthia Harrison Barbera	9/26/2025	D12
Susan Landon	9/26/2025	D13
Andrew Jeffries	9/26/2025	D14
Paul Kubicek	9/26/2025	D15
Brenda So	9/27/2025	D16

COMMENTER	DATE	COMMENT SET
Applicant		
Pacific Gas and Electric Company	9/25/2025	E01
Comments at Draft EIR Public Meetings		
Jonathan Goodwin	9/3/2025	F01
Andrew Jeffries	9/3/2025	F02
Pete Retondo	9/3/2025	F03
Ella Matsuda	9/3/2025	F04
Lauren Wilson	9/3/2025	F05
Erik Olafsson	9/3/2025	F06

Recipients of notice of publication of the Final EIR include the commenters listed in Table J-1.

The Final EIR is also posted at the State Clearinghouse (SCH) CEQAnet website[1] (SCH #2025-02-0944) and posted on the CPUC Project website at:

https://ia.cpuc.ca.gov/environment/info/aspen/moraga-oakland/moraga-oakland.htm

J.2. GENERAL RESPONSES TO COMMON COMMENTS

This section presents a comprehensive response to comments regarding consideration of underground alternatives that were made by multiple commenters.

J.2.1. General Response GR-1: Underground Alternatives

As required by CEQA and explained in EIR Section 4.1, an EIR must consider a reasonable range of alternatives that could avoid or substantially lessen at least one of the proposed Project's significant environmental effects. To be fully analyzed in the EIR, alternatives considered must meet most project objectives, avoid or reduce significant impacts of the project, and be feasible.

During scoping and the Draft EIR comment period, numerous comments were received requesting consideration of all underground alternatives due primarily to wildfire concerns. This General Response summarizes the underground alternatives developed and considered in the MOX Project EIR and explains why the EIR concludes that the proposed Project is the CEQA Environmentally Superior Alternative.

Proposed Project Underground Segment, West of Estates Drive. As part of the 5-mile MOX Project, PG&E proposes to underground all four circuits for approximately 1 mile in Park Boulevard and Park Boulevard Way between Estates Drive and Oakland X Substation. PG&E determined that undergrounding the replacement lines in this western portion of the Project would be feasible, because this area has fewer environmental constraints than the eastern portion of the Project alignment and underground power lines would reduce wildfire and aesthetic impacts during operations. Additionally, residences have been so densely constructed that rebuilding overhead in this area is infeasible (see EIR Section 4.4.1.3, PG&E Alternative D: All Overhead Rebuild in Existing Alignment). Therefore, PG&E proposed installation of an underground line in this portion of the Project alignment as part of the proposed Project.

Alternatives Considered and Eliminated. Table 4.1-1 (Alternatives Considered and Eliminated) lists the 17 alternatives that were considered and eliminated in the EIR analysis. These alternatives include all of the alternatives defined in PG&E's Proponent's Environmental Assessment (PEA) (including the PEA alternatives retained and eliminated), as well as other alternatives developed by the CPUC as potential options. Figure 4.4-6 in Appendix A of the Draft EIR depicts the route alternatives that were considered and eliminated

[1] For reference, the MOX Draft EIR is posted on CEQANet at: https://ceqanet.lci.ca.gov/2025020944.

during the CPUC's alternatives screening process. EIR Section 4.4 describes each alternative and explains the rationale for elimination for each.

Beneficial Impacts of Underground Alternatives. For the Project alignment east of Estates Drive, underground power line alternatives were evaluated by the CPUC in Section 4 (Alternatives) of the Draft EIR despite more intense construction activities and potential for blockage of evacuation routes.

Underground alternatives were considered in the Draft EIR for the following beneficial reasons (see EIR Section 4.5.3.1, Installing Power Lines Underground):

- Underground power lines reduce risk of power lines being an ignition source for wildfire.
- Underground lines create fewer constraints to fire fighting.
- Underground power lines are not exposed to potential vehicle or tree-fall accidents, vandalism, or failures due to weather conditions, such as high winds, that could result in a wildfire ignition.
- Visual impacts of overhead components are eliminated where lines are placed underground.
- Overhead lines in some locations are impractical because of the density of the built environment and lack of availability of an overhead right-of-way.

Figure 4.3-1 in EIR Appendix A shows the EIR alternatives retained for analysis.

Constraints of Underground Alternatives in Oakland Hills. As described in EIR Chapter 2 (Project Description), the MOX Project includes the rebuild of four circuits. Therefore, for any all-underground alternative, all four circuits would need to be installed underground in two sets of double-circuit duct banks. Due to the steep, narrow, and sharply winding roads in the Oakland Hills, it is not feasible to install all four circuits within a single roadway between Manzanita Drive and SR-13. As explained in EIR Section 4.3.1, PG&E's Proponent's Environmental Assessment (PEA) states that at least 22 feet of road width would be needed to fit both double-circuit duct banks within a roadway and many of the roadways in the area have existing utilities already installed, which would create additional constraints. Therefore, to address technical feasibility concerns, the EIR alternatives analysis assumes that each of the underground alternatives in this area would support two circuits in a single duct bank, so two underground alternatives would be required to be constructed in this segment to replace all four overhead circuits. One benefit of this arrangement is that in the event of an outage within one of the roadways, the other two circuits would not be affected.

In addition to the circuits themselves, each underground alternative segment would require both a transition pole (at one end of the underground segment) and a transition station (at the other end of the underground segment). These facilities connect with relaying equipment that protects the circuits in the event of an electrical fault. Transition stations include relaying equipment, so require more space than a transition pole. A transition station for two circuits would require at least 0.25 acres, and a station for four circuits would require approximately 0.5 acres. A transition station looks like a small substation, and requires a graded, flat area with a level and rocked surface area and perimeter fence.

Finally, even with implementation of the underground alternatives considered in the EIR, a number of overhead components would still be required (in addition to the transition station and transition poles). Overhead structures would be located east of Manzanita Drive where no feasible underground alternatives were identified (see explanation below), and at the crossing of the Hayward Fault, which closely follows SR-13 in the Project area. An underground crossing of SR-13 was considered and eliminated in EIR Section 4.4 due to topography and density of development in the area. The overhead crossing of SR-13 would require that the underground lines east of the highway transition to overhead in order to cross the fault.

Alternatives Retained for Analysis. Alternatives 2 through 5, which include the feasible underground alignment options are described in Draft EIR Section 4.3 and the analysis of the environmental impacts of these alternatives is included in Draft EIR Section 4.5. In Section 4.5.3, Impacts Common to All Alternatives

with Underground Components, the Draft EIR acknowledges that the underground lines reduce the risk of the lines being an ignition source for wildfire and creates few constraints to fire fighting. In addition, Section 4.5.3.5 under Impact WF-2 states that the construction of underground alternatives would eliminate wildfire risks associated with overhead structures by replacing aging structures with buried conductors.

While these underground alignment alternatives would eliminate wildfire risks associated with the power lines in the eastern portion of the Project alignment, as discussed in Section 4.5.3.2, the alternative underground alignments pose several environmental and logistical constraints, including the potential for geologic and soil instability that could damage cables and reduce service reliability, as well as requiring intensive construction activities in narrow, steep, and winding roadways.

Impacts of Underground Alternatives and Comparison of Alternatives. Overall, construction of underground alternatives in the narrow, winding roadways would occur for a longer duration and would result in much more disruptive and severe impacts than the proposed Project. The Draft EIR found that all *significant and unavoidable* impacts to Transportation and Wildfire that were identified for the proposed Project in EIR Sections 3.15 and 3.18, respectively, would be more severe for underground alternatives. Underground construction would last much longer, underground construction in roadways would obstruct traffic more severely due to trenching and vault installation, and underground construction would occur in many more locations along two different routes compared to construction occurring only at individual overhead structure sites. These factors would result in an overall greater evacuation risk in the event of a wildfire and more intense construction activity and disturbance to residents.

In addition, Section 4.5.6 of the Draft EIR identifies a new *significant and unavoidable* visual impact (Impact AES-3) during operations from the Manzanita Transition Station that would be required at the eastern end of Alternative 4, the Skyline-Ascot Alternative. Also, a new *significant and unavoidable* impact was identified for Geology and Soils (Impact GEO-3) during operation of all underground alternatives due to slope stability impacts and well-known instability of Oakland Hills.

Additionally, total air emissions of construction of multiple underground segments concurrently have the potential to exceed the Bay Area Air Quality Management District's regional emissions threshold for nitrogen oxides (NOx). Air Quality Mitigation Measure MM AQ-2a [Construction Activity Management Plan (for underground alternatives)] is not required for the proposed Project due to its shorter and less intense construction timeframe, but would be required for underground alternatives. The underground alternatives would be required to stagger construction activities over a longer period of time to ensure that emissions of NOx do not exceed thresholds.

A comparison of the impacts of the proposed Project and alternatives is included in EIR Section 4.8.

While the proposed Project would rebuild overhead structures, which creates a risk of starting a wildfire or inhibiting firefighting, this structure replacement would result in a substantial reduction in existing wildfire risk levels as compared with the existing system.

On the other hand, installing four circuits underground in the Oakland Hills in two separate roadways would create severe traffic and access constraints during construction for a much longer duration and would result in driving detours, bus stop relocations, and required alternate transit routes. Evacuation routes in an emergency would be impaired and service outages may be required to resolve conflicts with existing underground utilities in roadways.

Identification of the CEQA Environmentally Superior Alternative. Since the underground alternatives would not reduce any of the significant and unavoidable impacts of the proposed Project and would create new significant and unavoidable impacts, the proposed Project has been determined to be the Environmentally Superior Alternative, as discussed in EIR Section 4.9.

Additionally, the proposed Project is considered environmentally superior to the No Project Alternative. As stated in EIR Section 4.8.2.5, the No Project Alternative would not realize the beneficial impacts of the

Project relating to reduction of wildfire risk with new overhead replacement structures and the undergrounding of one mile of power line in the City of Oakland.

The alternatives analysis in EIR Chapter 4 provides CPUC, as the CEQA lead agency, with sufficient information to make an informed choice about the proposed Project and alternatives, balancing environmental impacts with the stated project objectives. The EIR does not make a recommendation regarding the approval or denial of the proposed Project or any alternative; it is purely informational and will be used by the CPUC decision-makers in considering whether to approve the proposed Project or an alternative analyzed in the Final EIR.

As explained in EIR Section 4.9, although this EIR identifies an environmentally superior alternative, it is possible that the CPUC decisionmakers could balance the importance of each impact area differently and reach different conclusions. Further, the CPUC decision-makers must consider feasibility factors other than environmental impacts, e.g., costs associated with each alternative, in reaching their final decision on the project. CEQA provides that projects may be approved in spite of one or more significant impacts if "specific economic, social, or other considerations make infeasible" project alternatives or mitigation measures. (Pub. Resources Code, § 21002.)

Consideration of Underground Alternatives East of Manzanita Drive

As shown in Figure 4.4-6 in EIR Appendix A, the CPUC considered three underground alternatives east of Manzanita Drive, but all were rejected from consideration. These underground alternatives east of Manzanita Drive, including those within the City of Orinda's jurisdiction, are discussed in Section 4.4.2.1 (PG&E Water Tank Underground Alternative), Section 4.4.2.2 (PG&E Pinehurst Underground Alternative), and Section 4.4.3.1 (Redwood Canyon Underground Alternative) of the Draft EIR.

The Water Tank and Pinehurst Underground Alternatives both traverse very steep and rugged terrain between Manzanita Drive and Moraga Substation. These would follow the only two roads connecting Manzanita Drive with the Moraga Substation (an unpaved road to a water tank and Pinehurst Road). Both roadways are too steep, narrow, and winding to allow installation of four circuits underground. The Water Tank Underground Alternative would follow unpaved roads and would require substantial road improvements within East Bay Regional Park lands. The Pinehurst Underground Alternative would require use of a very narrow and steep paved road, with several sharp turns. The installation of four circuits underground within Pinehurst Road is not considered to be feasible.

The Redwood Canyon Underground Alternative would follow paved roads and may be feasible to construct, but would require nearly 12 miles of installing four circuits underground to replace the 3.3 miles of overhead line between SR-13 and Moraga Substation. Much of the route would be located within Reinhard Redwood Regional Park. Also, 0.75 mile of this alternative would be parallel to and within the Hayward Fault zone, which would be at serious risk of damage or rupture in an earthquake. A discussion of concerns and reliability issues regarding underground construction in the Hayward Fault zone is included in Section 4.3.1.1 (Crossing the Hayward Fault) and Section 4.4.3.2 (Underground Crossing of SR-13 [Across the Hayward Fault] Alternative) of the Draft EIR.

In sum, no feasible underground alternatives were identified east of Manzanita Drive for consideration in the EIR. Therefore, if the CPUC approves the Project, approximately 1.6 miles of overhead structures in this segment (Structures RS/RN-1 through RS/RN-10) would be rebuilt and remain overhead.

J.3. COMMENT LETTERS AND RESPONSES TO COMMENTS ON DRAFT EIR

J.3.1. Comment Set A: Agencies

Comment Set A01 – California Department of Transportation, District 4

CALIFORNIA STATE TRANSPORTATION AGENCY GAVIN NEWSOM, GOVERNOR

California Department of Transportation
DISTRICT 4
OFFICE OF REGIONAL AND COMMUNITY PLANNING
P.O. BOX 23660, MS–10D | OAKLAND, CA 94623-0660
www.dot.ca.gov

September 16, 2025

SCH #: 2025020944
GTS #: 04-MULTIPLE-2025-00433
GTS ID: 35564
Co/Rt/Pm: VAR/VAR/VAR

Tharon Wright, Project Manager
California Public Utilities Commission (CPUC)
300 Capitol Mall, Suite 400
Sacramento, CA 95814

Re: Pacific Gas and Electric Company (PG&E) Moraga-Oakland X 115 Kilovolt Rebuild Project – Draft Environmental Impact Report (DEIR)

Dear Tharon Wright:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the PG&E Moraga-Oakland X 115 Kilovolt Rebuild Project. The Local Development Review (LDR) Program reviews land use projects and plans to ensure consistency with our mission and state planning priorities. The following comments are based on our review of the August 2025 DEIR. **A01-1**

Please note this correspondence does not indicate an official position or approval by Caltrans on this project and is for informational purposes only.

Project Understanding
The PG&E Moraga-Oakland X 115 Kilovolt Rebuild Project would involve upgrades to approximately five miles of four overhead PG&E power lines. The existing four overhead lines would be rebuilt into four hybrid lines with approximately four miles of overhead lines and one mile of underground lines between existing substations in Moraga and Oakland. The existing overhead lines that will be rebuilt in the same overhead configuration cross above State Route (SR) 13. Minor modifications would also occur within the existing substations. The existing Oakland X substation is located approximately 400 feet from Interstate 580.

Comment Set A01 – California Department of Transportation, District 4 (continued)

Tharon Wright, Project Manager
September 16, 2025
Page 2

Construction-Related Impacts **A01-1 (cont'd)**

Project work that requires movement of oversized or excessive load vehicles on State roadways requires a transportation permit that is issued by Caltrans. To apply, please visit Caltrans Transportation Permits (*link*).

Prior to construction, coordination may be required with Caltrans to develop a Transportation Management Plan (TMP) to reduce construction traffic impacts to the State Transportation Network (STN).

Additionally, please note the following upcoming Caltrans projects that are within the vicinity of the proposed project and may pose a construction conflict and require coordination between Caltrans and the CPUC:

- Project 04-3W230: Bridge seismic retrofit at the Park Boulevard Over Crossing and the Broadway Terrace Under Crossing (SR 13 Post Mile 7.4 to 9.07). Construction is expected in 2028.
- Project 04-0P890: Bridge seismic restoration at the Bruns Drive Pedestrian Over Crossing Bridge (SR 13 Post Mile 7.9). Construction is expected in 2029.

Equitable Access **A01-2**

If any Caltrans facilities are impacted by the project, those facilities must meet Americans with Disabilities Act (ADA) Standards after project completion. As well, the project must maintain bicycle and pedestrian access during construction. These access considerations support Caltrans' equity mission to provide a safe, sustainable, and equitable transportation network for all users.

Encroachment Permit **A01-3**

Please be advised that any temporary or permanent work including traffic control that encroaches in, under, or over any portion of the State highway Rights-of-Way (ROW) requires a Caltrans-issued encroachment permit.

The Office of Encroachment Permits requires 100% complete design plans and supporting documents to review and circulate the permit application package. The review and approval of encroachment projects is managed through the Encroachment Permits Office Process (EPOP) or the Project Delivery Quality Management Assessment Process (QMAP), depending on project scope, complexity, and completeness of the application. Please use the following resources to determine the appropriate review process:

- TR-0416 Applicant's Checklist (*link*)
- Caltrans Encroachment Projects Processes – Informational Video (*link*)

"Provide a safe and reliable transportation network that serves all people and respects the environment."

Comment Set A01 – California Department of Transportation, District 4 (continued)

- Flowchart, Figure 1.2 in Section 108, Overview of the Encroachment Review Process, of Chapter 100 – The Permit Function, Caltrans Encroachment Permit Manual (*link*)

A01-3 (cont'd)

The permit approval typically takes less than 60 days, but may take longer depending on the project scope, size, complexity, completeness, compliance with applicable laws, standards, policies, and quality of the permit package submitted. Projects requiring exceptions to design standards, exceptions to encroachment policies, or external agency approvals may need more time to process.

To obtain more information and download the permit application, please visit Caltrans Encroachment Permits (*link*).

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, please contact Mary McGee, Transportation Planner, via LDR-D4@dot.ca.gov. For future early coordination opportunities or project referrals, please visit Caltrans LDR website (*link*) or contact LDR-D4@dot.ca.gov.

Sincerely,

YUNSHENG LUO
Branch Chief, Local Development Review
Office of Regional and Community Planning

c: State Clearinghouse

Responses to Comment Set A01 – California Department of Transportation, District 4

A01-1 The comment introduces the comment agency (California Department of Transportation [Caltrans]), summarizes the proposed Project, and describes construction-related impacts. The comment notes that oversized or excessive load vehicles on State roads require a Caltrans permit; that coordination prior to construction may be required to develop a Transportation Management Plan; and that anticipated Caltrans projects within the Project vicinity may pose a construction conflict and require coordination.

The comment states that coordination with Caltrans may be required prior to construction to reduce construction traffic impacts on the State Transportation Network, which includes facilities that Caltrans owns and manages. As identified in Section 3.15 of the Draft EIR, two Caltrans-owned facilities, SR-13 and SR-24, would be affected during construction. SR-13 would be affected by the installation of guard structures on both sides of the road where conductors would cross over the roadway. Netting would be installed above SR-13 to prevent any falling components from reaching the ground. For the SR-13 crossing, the California Highway Patrol and Caltrans would be contacted to organize 5-minute rolling stops, when vehicle traffic along this roadway would be stopped to allow for installation of the temporary anchors, guy wires, and netting. SR-24 would be used to access the staging and helicopter landing zones east of Caldecott Tunnel approximately 2.5 miles east of Moraga Station.

To reduce impacts on these facilities within the State Transportation Network, the Applicant (PG&E) would implement APM TRA-1, which requires PG&E to obtain required transportation and encroachment permits from Caltrans, and Transportation Mitigation Measure (MM) T-1a, which requires PG&E to prepare and provide for review a Traffic Management Plan (TMP) at least 3 months prior to any construction using heavy vehicles and equipment on public roads or requiring full or partial road closures.

In response to this comment, the Caltrans projects mentioned in the letter, which include two bridge seismic retrofits over SR-13, have been added to Table 5-1 (Cumulative Projects in the Project Vicinity) in Section 5.2 of the Final EIR; and the cumulative analysis in Section 5.3.15 has also been updated to incorporate these projects. In addition, MM T-1a has been revised to include Caltrans in the list of agencies receiving the TMP for review. The TMP would entail coordination with Caltrans regarding haul routes, timing of heavy equipment deliveries, and potential street and lane closures to avoid conflicts with other Caltrans projects in the vicinity. Refer to Section 3.15 of the Final EIR for this minor revision. This comment does not identify any new or substantially more severe impacts or require additional or substantially modified mitigation measures to the EIR, and therefore, does not require further response.

A01-2 The comment advises that any Caltrans facilities that are affected must meet Americans with Disabilities Act (ADA) standards after project completion and that bicycle and pedestrian access must be maintained during construction.

As stated in Response to Comment A01-1, Caltrans-owned facilities that would be affected during construction are SR-13 and SR-24. The Traffic Management Plan to be completed under MM T-1a would be required to provide provisions for temporary access routes that comply with ADA standards. Impacts on these facilities would be temporary during the construction period, as these roadways would be restored to existing conditions following construction. Therefore, the proposed Project would not affect the compliance of SR-13 or SR-24 with ADA standards during operation.

Impact T-5 in Section 3.15 in the Draft EIR discusses impacts on pedestrians and bicyclists from the proposed Project. APMs TRA-1 and TRA-2, and FP-12 provided in Table 3.15-2 would be

implemented to reduce traffic impacts, ensure that soil would not slip onto roadways, and require the restoration of roads and sidewalks. However, APM TRA-1 does not require a TMP that would specify methods for minimizing construction effects on transportation facilities and services, or a minimum of 1-month advance coordination with local jurisdictions and agencies prior to construction. Potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations may not be avoided without adequate planning and notification regarding how to safely navigate around closures and find safe alternative access routes, resulting in significant impacts without mitigation. Therefore, MMs T-1a and N-1b would require PG&E to develop a TMP and provide at least 1-month advance notification to the public prior to construction to ensure potentially hazardous conditions are minimized related to safely navigating to alternative access routes. No further response is required.

A01-3 This comment provides information on the requirements of a Caltrans-issued encroachment permit and concludes the comment letter. The commenter states that encroachment permits are required for work in, under, or over any portion of a State highway ROW.

As stated in Response to Comment A01-1, above, and in Section 3.15 of the Draft EIR, required permits are specified in applicable regulations, which PG&E will carry out by implementing APM TRA-1. No further response is required.

Comment Set A02 – East Bay Municipal Utility District

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Navarro, Karina <karina.navarro@ebmud.com>
Sent: Tuesday, September 23, 2025 11:06 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: Rehnstrom, David; Mulhauser, Sandra; Thai, Ronald; Navarro, Karina
Subject: Notice of Availability of a Draft Environmental Impact Report for the PG&E Moraga-Oakland X 115 Kilovolt Rebuild Project (Moraga-Oakland X Project, A.24-11-005)
Attachments: wdpd25_152 PG&E Moraga-Oakland X115 Kilovolt Rebuilt Project.pdf

This message has been approved by the Manager of Water Distribution Planning - David J. Rehnstrom

Dear Mr. Wright:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Draft Environmental Impact Report for PG&E Moraga-Oakland X 115 Kilovolt Rebuild Project located in cities of Oakland, Moraga, and Piedmont. EBMUD commented on the Notice of Preparation of a Draft EIR for the Project on March 21, 2025. EBMUD's original comments still apply regarding water distribution pipelines, EBMUD's design standards and specifications, pipeline valve cover adjustments, water meter relocations and adjustments, hydrant relocations or adjustments, and pre-construction meeting. Please see attached document for EBMUD's original and additional comments. **A02-1**

If you have any questions concerning this response, please contact Sandra Mulhauser, Senior Civil Engineer, Major Facilities Planning Section at (510) 287-7032.

Sincerely,
David J. Rehnstrom
Manager of Water Distribution Planning

Comment Set A02 – East Bay Municipal Utility District (continued)

EAST BAY MUNICIPAL UTILITY DISTRICT

September 23, 2025

Tharon Wright, Public Utilities Regulatory Analyst IV
California Public Utilities Commission c/o Aspen Environmental Group
235 Montgomery Street, Suite 967
San Francisco, CA 94104-2920

Re: Notice of Availability of a Draft Environmental Impact Report for the PG&E Moraga-Oakland X 115 Kilovolt Rebuild Project

Dear Mr. Wright:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Draft Environmental Impact Report (EIR) for PG&E Moraga-Oakland X 115 Kilovolt Rebuild Project (Project) located in cities of Oakland, Moraga, and Piedmont. EBMUD commented on the Notice of Preparation of a Draft EIR for the Project on March 21, 2025. EBMUD's original comments (see Attachment A) still apply regarding water distribution pipelines, EBMUD's design standards and specifications, pipeline valve cover adjustments, water meter relocations and adjustments, hydrant relocations or adjustments, and pre-construction meeting. EBMUD has the following additional comments.

A02-1 (cont'd)

WATER DISTRIBUTION PIPELINES

EBMUD owns and operates water distribution and transmission pipelines throughout the Project site which provide continuous service to EBMUD's customers in the area (see Attachment B). Any proposed construction activity within the Project site would need to be coordinated with EBMUD so that the integrity of these water mains is maintained at all times. Pipelines within the roadways where the Project proposes 4 new underground 115 KV lines were included in the previous comment letter. Additional identified pipelines are listed in **Table 1**.

A02-2

Table 1 – Pipelines within Proposed 4 New Underground 115 KV Lines

Pipe Diameter	Road	EBMUD Distribution Map
6-inch	Hampel Street and Park Boulevard	**1500B480**
4-inch	Glenfield Avenue and Park Boulevard	**1500B480**
4-inch	Wellington Street and Park Boulevard	**1500B480 and 1503B480**

RIGHT-OF-WAY AND EASEMENTS

EBMUD owns and manages trails, roads, and watershed lands on EBMUD properties in the eastern section of the Project (APNs: 257-010-007 and 257-020-003). Any proposed

A02-3

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Comment Set A02 – East Bay Municipal Utility District (continued)

A02-3 (cont'd)

construction activity on EBMUD properties would be subject to the terms and conditions determined by EBMUD including relocation of the water mains and/or rights-of-way at the project sponsor's expense.

If you have any questions concerning this response, please contact Sandra Mulhauser, Senior Civil Engineer, Major Facilities Planning Section at (510) 287-7032.

Sincerely,

David J. Rehnstrom
Manager of Water Distribution Planning

DJR:RT:kn
wdpd25_152_PG&E Moraga-Oakland X115 Kilovolt Rebuilt Project.doc

Attachments: A – Previous Comment Letter (March 21, 2025)
B – Maps of EBMUD Distribution Mains

Comment Set A02 – East Bay Municipal Utility District (continued)

Attachment A

EAST BAY MUNICIPAL UTILITY DISTRICT

March 21, 2025

Tharon Wright, Public Utilities Regulatory Analyst IV
California Public Utilities Commission
300 Capitol Mall Suite 500
Sacramento, CA 95814

Re: Notice of Preparation of a Draft Environmental Impact Report for the PG&E Moraga-Oakland X 115 Kilovolt Rebuild Project

Dear Mr. Wright:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the PG&E Moraga-Oakland X 115 Kilovolt Rebuild Project (Project) located in the Cities of Oakland, Moraga, and Piedmont. EBMUD has the following comments. A02-4

WATER DISTRIBUTION PIPELINES

EBMUD owns and operates water distribution and transmission pipelines throughout the Project site which provide continuous service to EBMUD's customers in the area. Any proposed construction activity within the Project site would need to be coordinated with EBMUD so that the integrity of these water mains are maintained at all times. Pipelines within the roadways where the Project proposes 4 new underground 115 KV lines are listed in Table 1.

Table 1 – Pipelines within Proposed 4 New Underground 115 KV Lines

Pi e Diameter	Road	EBMUD Distribution Ma
6-inch	Excelsior Avenue	1497B478
6-inch	Alma Place and Excelsior Avenue	1497B478
6-inch	Grosvenor Place and Park Boulevard	1497B478
6-inch	Park Boulevard	1500B478
6-inch	Park Boulevard Way	1500B478
6-inch	Emerson Way and Park Boulevard	1500B478
6-inch	Emerson Street and Park Boulevard	1500B478
6-inch	Greenwood Avenue and Park Boulevard	1500B478
6-inch	13th Avenue and Park Boulevard	1500B478
6-inch	East 38th Street and Park Boulevard	1500B478
6-inch	Beaumont Avenue and Park Boulevard	1500B478
6-inch	Brighton Avenue and Park Boulevard	1500B478

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Comment Set A02 – East Bay Municipal Utility District (continued)

A02-4 (cont'd)

6-inch	Glen Park Road and Park Boulevard	**1500B480**
8-inch	Hampel Street and Park Boulevard	**1500B480**
6-inch	Glenfield Avenue and Park Boulevard	**1500B480**
8-inch, 16-inch, and 48-inch	Wellington Street and Park Boulevard	**1500B480**
6-inch	Edgewood Avenue and Park Boulevard	**1500B480**
4-inch and 6-inch	Everett Avenue and Park Boulevard	**1503B480**
6-inch	El Centro Avenue and Park Boulevard	**1503B480**
6-inch	Dolores Avenue and Park Boulevard	**1503B480**
6-inch	San Luis Avenue and Park Boulevard	**1503B480**
8-inch	Hollywood Avenue and Park Boulevard	**1503B482**
6-inch	Trestle Glen Road and Park Boulevard	**1503B482**
6-inch and 16-inch	Leimert Boulevard and Park Boulevard	**1503B482**
8-inch and 20-inch	Saint James Drive and Park Boulevard	**1503B482**
6-inch	Estates Drive and Park Boulevard	**1503B482**

A02-5

It is imperative to continue to coordinate with EBMUD during the development of the proposed Project, so reasonable time can be provided for planning, design, and construction if conflicts exist to avoid schedule impacts. PG&E and EBMUD will need to continue to work together as the scope of work is finalized for EBMUD infrastructure adjustments and relocations. EBMUD requires reasonable time to allocate resources and modify internal construction schedules. EBMUD recommends at least 18 months advance notification for upcoming street improvement projects to allow for a reasonable amount of time to perform water pipeline relocations. Table 2 provides a typical project schedule for EBMUD to design and relocate approximately 1,500 feet of 8-inch water pipeline. The required time may increase or decrease depending on the size, length and complexity of the water pipeline project; and if constructed by EBMUD crews or by Contractor.

Table 2 – Typical Project Schedule

Required Time	Schedule Task
1 month	Receive Street Improvement and Understand Impacts
1 month	Review Project and Planning Assessment
2 months	Collect Survey Data or Use Existing Survey from Requesting Agency
2 months	Draft Base Drawing for Water Main Relocation
3 months	Design Water Main Relocation
2 months	Develop Construction Bid Documents

Comment Set A02 – East Bay Municipal Utility District (continued)

3 months	Advertise and Award Water Main Relocation Project
4 months	Install New Water Main and Provide Temporary Paving
18 months	*Reasonable Notification Time (Typical Project: 1,500 feet of 8-inch pipe)*

A02-5 (cont'd)

EBMUD will not design piping or services until soil and groundwater quality data and remediation plans have been received and reviewed and will not start underground work until remediation has been carried out and documentation of the effectiveness of the remediation has been received and reviewed. If no soil or groundwater quality data exists, or the information supplied by the project sponsor is insufficient, EBMUD may require the project sponsor to perform sampling and analysis to characterize the soil and groundwater that may be encountered during excavation, or EBMUD may perform such sampling and analysis at the project sponsor's expense. If evidence of contamination is discovered during EBMUD work on the project site, work may be suspended until such contamination is adequately characterized and remediated to EBMUD standards.

A02-6

EBMUD's water distribution pipelines and valves must always be accessible to EBMUD staff in order to maintain high-quality domestic water and fire flow services and mitigate for planned and unplanned pipeline outages. PG&E is responsible for protecting in-place pipeline valves and ensuring that pipeline valves are accessible (i.e., not paved over) during and after Project construction. EBMUD recommends that PG&E review EBMUD as-built drawings and identify potential utility conflicts between Project improvements and existing EBMUD pipelines. Attached are EBMUD guidelines for requesting pipeline as-builts that include pipeline vertical data (see Attachment- EBMUD Map & Utility Information Request Form and Guidelines). EBMUD's process for requesting as-built drawings is a two steps process: 1) request EBMUD water distribution maps, and 2) submit to EBMUD marked-up EBMUD water distribution maps identifying which water pipeline as-builts are needed to evaluate water pipelines within street improvements. In some cases, EBMUD as-builts are not available and in those situations EBMUD recommends for local agencies to pothole and field locate utilities.

A02-7

EBMUD'S DESIGN STANDARDS AND SPECIFICATIONS

A02-8

When evaluating the need and method for relocating and adjusting EBMUD infrastructure (e.g., pipelines, meters, valves, and fire hydrants), please review EBMUD's Design Standards and Specifications for Mains 20-inches and Smaller, which are located on the following webpage under "Apply for Standard Water Service": https://www.ebmud.com/customers/new-meter-installation

Comment Set A02 – East Bay Municipal Utility District (continued)

PIPELINE VALVE COVER ADJUSTMENTS A02-9

For utility conflicts between the Project and existing EBMUD pipeline valve covers, PG&E must share with EBMUD conflict locations, and existing and final pavement grade elevations. EBMUD will support paving street improvement projects as follows:

- Grade change less than 0.5-inches - For street improvement projects with a grade change elevation less than 0.5-inches, EBMUD is not obligated to adjust pipeline valve covers to facilitate the construction of street improvements, pursuant to Streets & Highways Code Section 680, which states that EBMUD may not be required to relocate its facilities for a temporary purpose. However, EBMUD will provide valve cover rings, at no cost, to be used to make valve cover adjustments as needed. PG&E is responsible for protecting in-place EBMUD pipeline valve covers which will be inspected by EBMUD staff post project completion. Pipeline valves must remain accessible during and after project construction for water distribution operations (i.e., not paved over).

- Grade change greater than 0.5-inches - For street improvement projects with a grade change elevation greater than 0.5-inches, EBMUD will support the Project by adjusting pipelines valve covers (one time) to the final street grade. However, EBMUD is not obligated to adjust valves during construction to facilitate means and methods for completing street improvements, pursuant to Streets & Highways Code Section 680, which states that EBMUD may not be required to relocate its facilities for a temporary purpose. PG&E is responsible for protecting in-place EBMUD pipeline valve covers which will be inspected by EBMUD staff post project completion. Pipelines valves must remain accessible during and after project construction for water distribution operations (i.e., not paved over).

- Pipeline Valve Cover Upgrades - If PG&E determines a need to upgrade old pipeline valve covers to the new Christy G-05 Valve Box and Rise Installation, EBMUD will provide the valve boxes and covers, and will reimburse PG&E for the valve box upgrade at a reasonable cost. To upgrade pipeline valve covers and boxes, PG&E must enter into a Valve Box Agreement with EBMUD prior to start of pipeline valve cover upgrades. An EBMUD Union notification will be required to complete the work by the County's contractor.

WATER METER RELOCATIONS AND ADJUSTMENTS A02-10

When an agency like PG&E completes street improvements (e.g., replace sidewalks, street pavement, and storm drain pipelines) to improve both street safety and street aesthetics, EBMUD supports the agency by relocating water meters to meet Project objectives, current design standards (e.g., meters need to be placed at 1-foot off the face of curb), and mitigate utility conflicts. EBMUD relocates water meters to their new location once the area is staked and is ready for final meter placement (e.g., forms for new sidewalk and other features are in place). PG&E is then responsible for relocating the customer's private water service line to the new meter location. EBMUD is not financially liable for work beyond the water meter (i.e., private water line).

Comment Set A02 – East Bay Municipal Utility District (continued)

HYDRANT RELOCATIONS OR ADJUSTMENTS (SET-BACKS/SET- FORWARDS)

A02-11

When PG&E completes street improvements (e.g., replace sidewalks and curbs) to improve both street safety and street aesthetics, PG&E must ensure that there are no conflicts between existing EBMUD fire hydrants and new curb ramps and sidewalks. Fire hydrants must be located 5-feet from the edge of curb ramps and 20 to 24- inches from the face of street curbs. Hydrant relocations are horizontal offsets that require the installation of new hydrant service laterals; hydrant relocations require the County to submit Hydrant Relocation Application with EBMUD's New Business Office (510-287- 1010) or via EBMUD's online water service application at https://wsa.ebmud.com.

PRE-CONSTRUCTION MEETING

A02-12

PG&E shall invite EBMUD's Central Area Service Center Superintendent, Mario Soares (510-287-1104 or mario.soares@ebmud.com); Central Area Assistant Superintendent, Juan Serrano (510-453-7458); East Area Assistant Superintendent, Isaiah Hinton (510-287-7183 or isaiah.hinton@ebmud.com); and East Area Assistant Superintendent, Nicholas Farrell (510-287-7182 or nicholas.farrell@ebmud.com) to all pre-construction meetings.

If you have any questions concerning this response, please contact Sandra Mulhauser, Senior Civil Engineer, Major Facilities Planning Section at (510) 287-7032.

Sincerely,

David J. Rehnstrom
Manager of Water Distribution Planning

DJR:AIT:djr
wdpd25_038 PG&E Moraga-Oakland X115 Kilovolt Rebuild Project

Attachments: A – Maps of EBMUD Distribution Mains
B – EBMUD Map & Utility Information Request Form and Guidelines

Comment Set A02 – East Bay Municipal Utility District (continued)

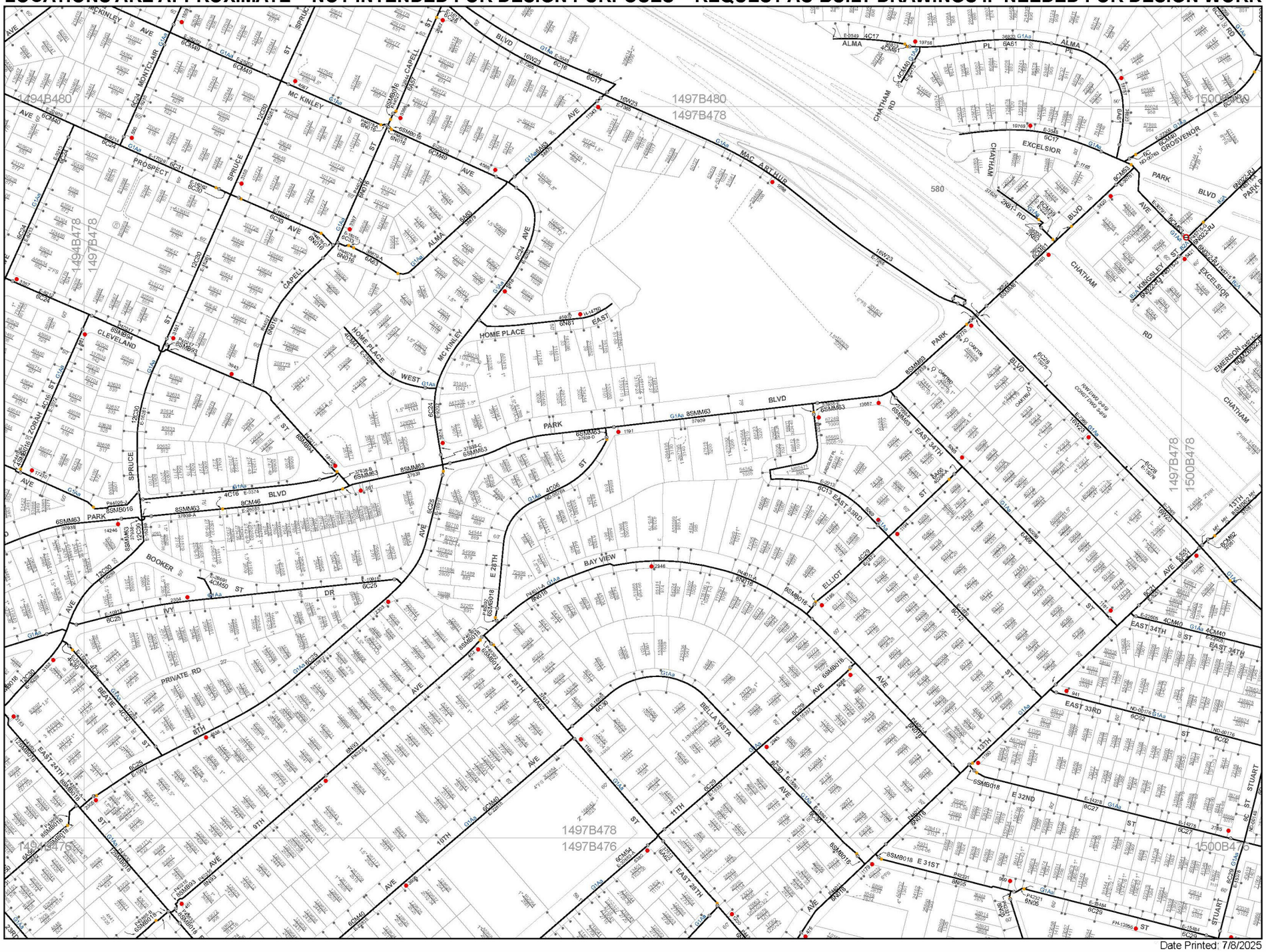
EAST BAY MUNICIPAL UTILITY DISTRICT

LOCATIONS ARE APPROXIMATE – NOT INTENDED FOR DESIGN PURPOSES – REQUEST AS-BUILT DRAWINGS IF NEEDED FOR DESIGN WORK

Potable Distribution System

- Potable Pipeline
- Service Lateral
- System Valve (*OL = Opens Left*)
- Check Valve
- Zone Valve
- Change of Pipe ID
- Rate Control Station
- Regulator
- Pressure Reducing Station
- Flow Meter
- Manhole
- Service Connection
- Hydrant
- Facility
- Pumping Plant

Attachment B



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1497B478

Date Printed: 7/8/2025

Comment Set A02 – East Bay Municipal Utility District (continued)

EAST BAY MUNICIPAL UTILITY DISTRICT

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- Pumping Plant

Landbase

- EBMUD Right of Way
- EBMUD Property

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Date Printed: 12/16/2024

Comment Set A02 – East Bay Municipal Utility District (continued)

EAST BAY MUNICIPAL UTILITY DISTRICT

LOCATIONS ARE APPROXIMATE – NOT INTENDED FOR DESIGN PURPOSES – REQUEST AS-BUILT DRAWINGS IF NEEDED FOR DESIGN WORK

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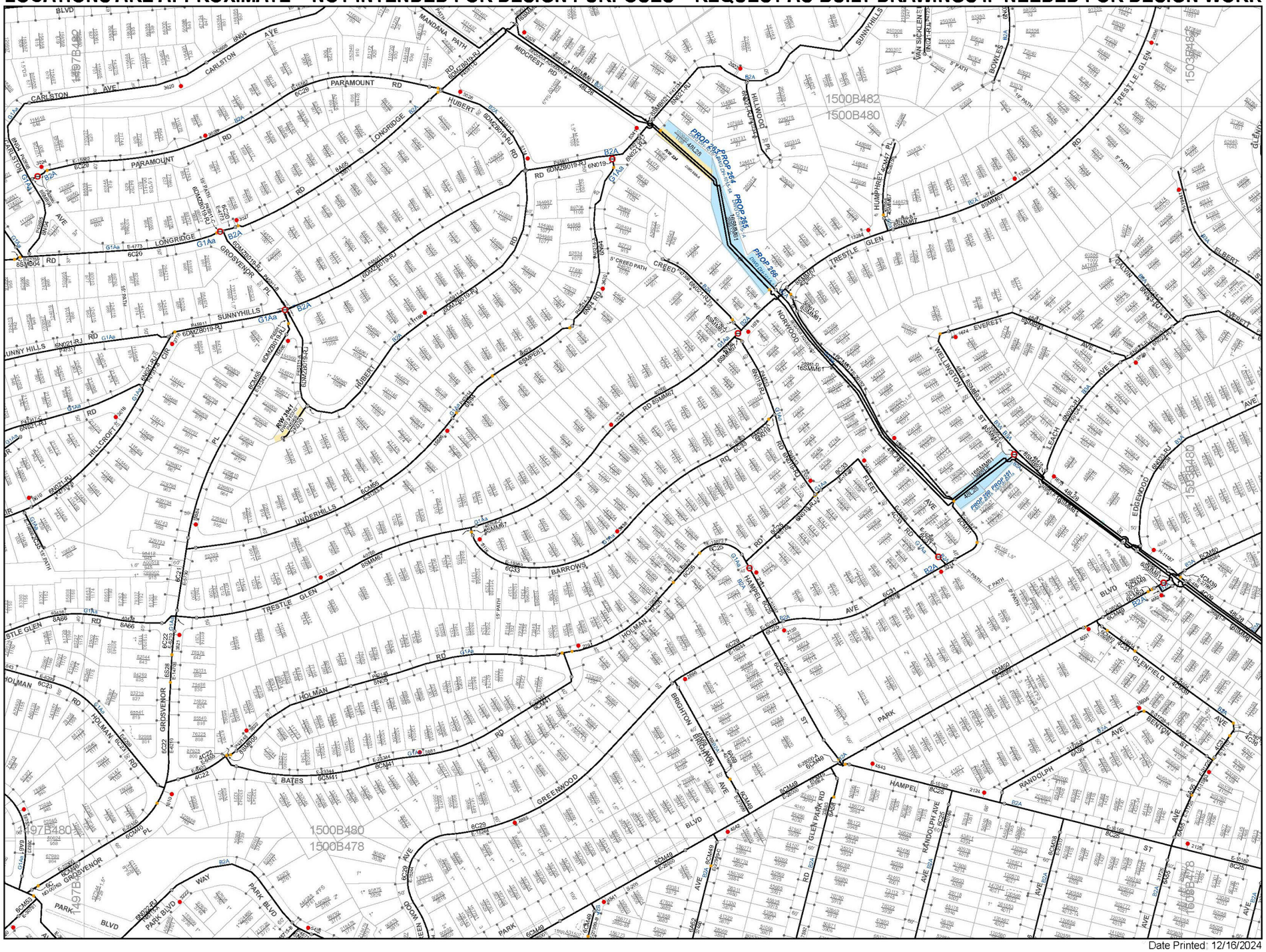
Landbase

- EBMUD Right of Way
- EBMUD Property



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Date Printed: 12/16/2024

Comment Set A02 – East Bay Municipal Utility District (continued)

EAST BAY MUNICIPAL UTILITY DISTRICT

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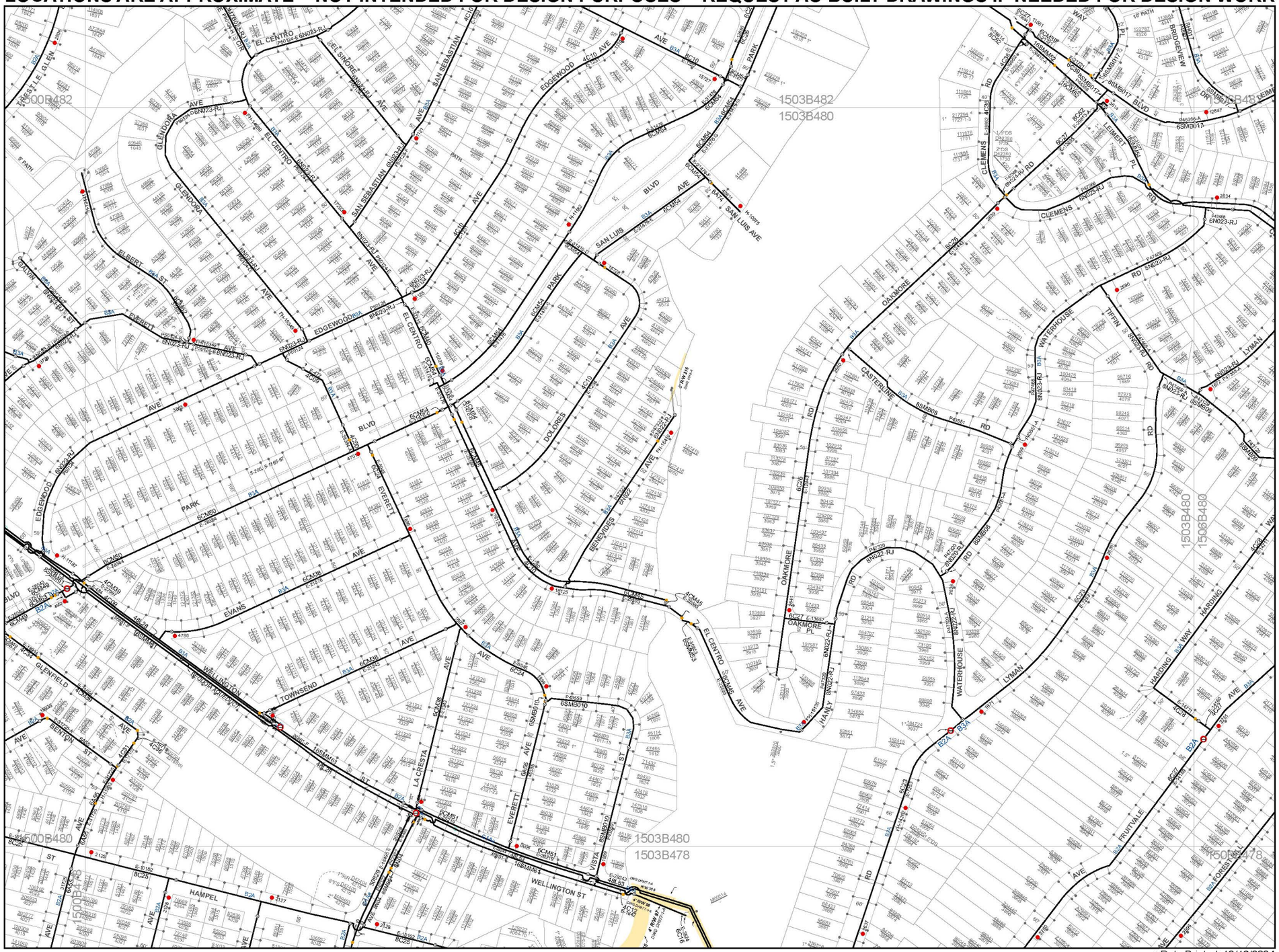
- EBMUD Right of Way



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Comment Set A02 – East Bay Municipal Utility District (continued)

EAST BAY MUNICIPAL UTILITY DISTRICT

LOCATIONS ARE APPROXIMATE – NOT INTENDED FOR DESIGN PURPOSES – REQUEST AS-BUILT DRAWINGS IF NEEDED FOR DESIGN WORK

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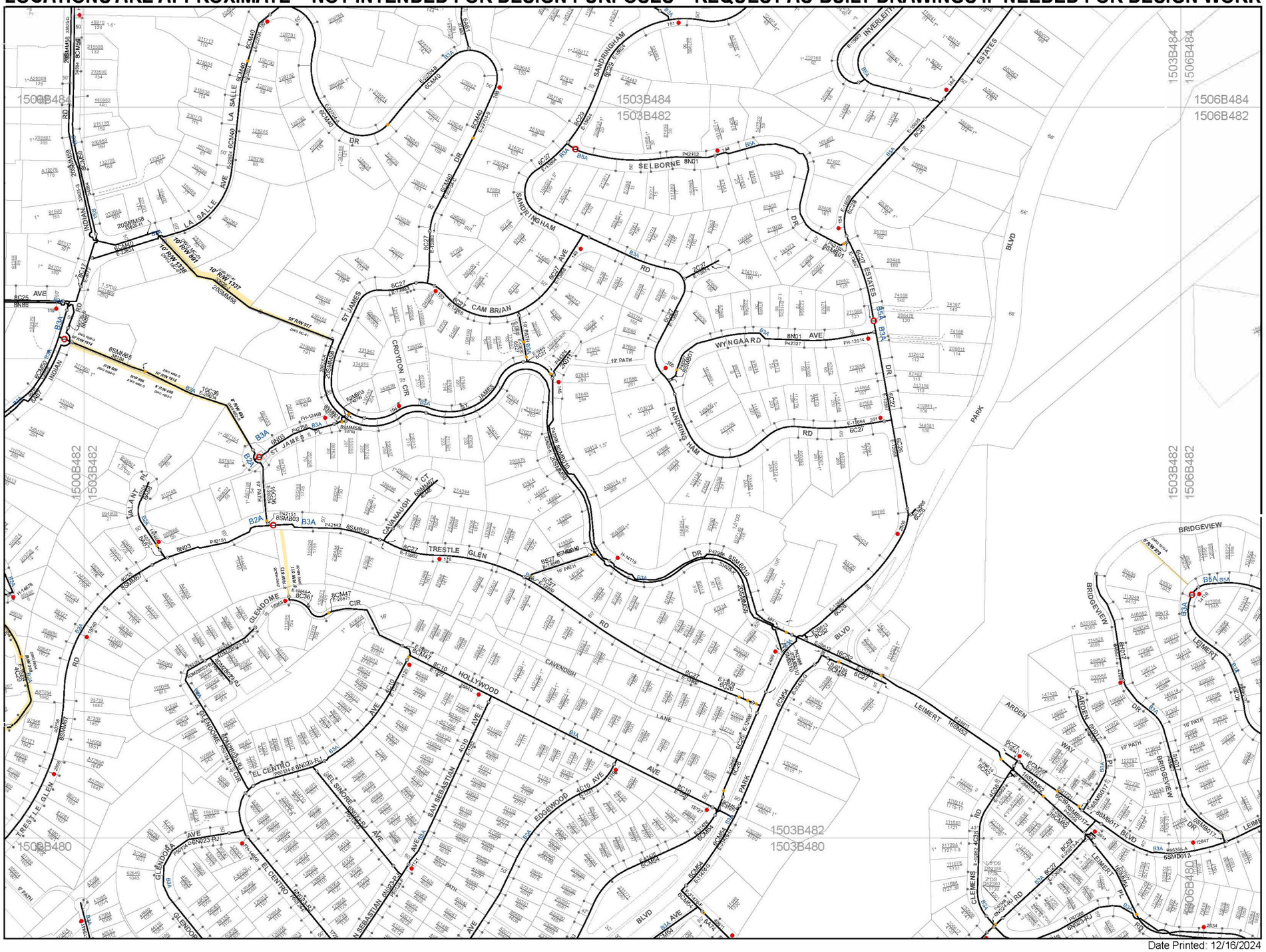

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1503B482

Date Printed: 12/16/2024

Responses to Comment Set A02 – East Bay Municipal Utility District

A02-1 The commenter states that its comments submitted during scoping still apply, and its scoping letter, dated March 21, 2025, has been attached as Attachment A.

The commenter's scoping letter and summary of East Bay Municipal Utility District (EBMUD)'s concerns are included in the Project's Scoping Report in Appendix C of the Draft EIR and its concerns are addressed in the Draft EIR. That is, potential impacts to existing utilities are addressed in Section 3.17.3.3 (Utilities and Service Systems, Impacts and Mitigation Measures; Impact US-1) of the Draft EIR. Specifically, the commenter's Attachment A is addressed in Responses A02-4 through A02-12. No further response is required.

A02-2 The commenter states that EBMUD owns and operates water distribution infrastructure throughout the Project site and that construction activity would need to be coordinated to ensure the integrity of EBMUD infrastructure. The commenter identifies three pipelines within roadways of the Project's underground portion and notes that these pipelines were also identified in the commenter's letter regarding the March 21, 2025, Notice of Preparation.

The Project's impacts to existing utility infrastructure are discussed in Section 3.17.3.3 of the Draft EIR. That section recommends implementation of Mitigation Measure (MM) N-1b (Construction Notification), which addresses the commenter's request by requiring that PG&E coordinate with utility service providers at least 18 months prior the start of construction regarding utilities that may require relocation (see Draft EIR Section 3.11.4; Noise, Mitigation Measures).

The three pipelines identified by the commenter were considered in the Draft EIR on Figure 3.17-1 (Sewer and Storm Drain Facilities, Map 2 of 3). This comment does not identify any new or substantially more severe impacts or require additional or substantially modified mitigation measures to the EIR.

A02-3 The commenter states that EBMUD manages lands in the eastern section of the Project and that PG&E would need to coordinate with EBMUD regarding any construction activity on EBMUD properties.

EBMUD property is shown on Figure 2.1-1a (Overview with Existing Line) in the Draft EIR. As stated in Section 2.4.4 of the Draft EIR, Construction Schedule, construction scheduling would be developed in keeping with landowner agreements and to minimize conflicts with existing land uses, such as those construction activities occurring in EBRPD and EBMUD properties. As discussed in Response A02-2, MM N-1b (Construction Notification) requires that PG&E shall coordinate at least 18 months prior the start of construction with utility service providers to evaluate whether any utilities may require relocation. No further response is required.

A02-4 See Response to Comment A02-2. The pipelines identified by the commenter were included in the Draft EIR on Figure 3.17-1 (Sewer and Storm Drain Facilities, Map 1 of 3, 2 of 3, and 3 of 3). No further response is required.

A02-5 The commenter recommends that PG&E provide at least 18 months advanced notification for street improvement projects to allow time for potential relocations. The commenter also provides a typical project schedule for the design and relocation of approximately 1,500 feet of 8-inch water pipeline.

The Project's impacts to existing utility infrastructure are discussed in Section 3.17.3.3 of the Draft EIR. As discussed in Response A02-2, the existing Mitigation Measure (MM) N-1b (Construction Notification), requires that PG&E coordinate with utility service providers at least 18 months prior the start of construction regarding utilities that may require relocation

(see Draft EIR, Section 3.11.4; Noise, Mitigation Measures), which is consistent with the commenter's scoping letter request. No further response is required.

A02-6 The commenter states that EBMUD will not design piping or relocation services until soil and groundwater quality data and remediation plans are submitted and reviewed by EBMUD. Furthermore, EBMUD may require the project sponsor to perform soil and groundwater sampling and analysis of contaminants that may be encountered. EBMUD may also suspend work until any contamination is remediated to EBMUD standards.

As discussed in Response A02-2, and provided in the Draft EIR, MM N-1b (Construction Notification) requires PG&E to coordinate with EBMUD at least 18 months prior the start of construction with utility service providers to evaluate whether any utilities may require relocation. Additionally, as required by APM HAZ-5 (Potentially Contaminated Soil or Groundwater), where there is known or suspected contaminated soil or groundwater, PG&E would conduct sampling in project areas prior to or upon commencement of construction (see Draft EIR Section 2.9, Applicant Proposed Measures).

Furthermore, the Draft EIR identifies MM HH-1a (Prepare and Implement a Soil Management Plan), which requires that PG&E prepare a plan and submit it to the CPUC for review 30 days prior to construction. This plan must identify procedures PG&E would undertake in the event anticipated contaminated soil is encountered (see Draft EIR Section 3.9.4; Hazards, Hazardous Materials, and Public Safety, Mitigation Measures). This comment does not identify any new or substantially more severe impacts that would require additional or substantially modified mitigation measures to the EIR. Thus, no further response is required.

A02-7 The commenter states that EBMUD water distribution pipelines and valves must always be accessible to EBMUD staff and recommends that PG&E request that EBMUD provide water distribution maps in order that PG&E can submit marked-up maps identifying which water pipelines as-built maps are needed in order to evaluate potential conflicts with the Project's street improvements.

As stated in Section 2.1.5.2 of the Draft EIR, the decision about whether and how to relocate utilities (including EBMUD pipelines, meters, vales, and fire hydrants) would be made during PG&E's final engineering. Existing utilities identified during final design and would either be avoided or be relocated in coordination with the utility owner. As stated in Section 2.3.4.1, construction methods would be adjusted as necessary to ensure that the integrity of existing utilities is not compromised. As stated in Section 2.3.6 of the Draft EIR, PG&E has performed subsurface utility surveys for the proposed Project and would continue to identify utilities prior to final design, based on the approved route. As discussed in Response A02-2, the Draft EIR identifies MM N-1b (Construction Notification), which requires that PG&E coordinate with utility service providers at least 18 months prior the start of construction regarding utilities that may require relocation (see Draft EIR Section 3.11.4; Noise, Mitigation Measures). This coordination would allow PG&E and utility providers to identify relocation and avoidance procedures well in advance of construction to avoid any potential service disruptions or conflicts. This comment does not identify any new or substantially more severe impacts that would require additional or substantially modified mitigation measures. No further response is required.

A02-8 The commenter recommends that PG&E review EBMUD's Design Standards and Specification for Mains 20-inches and Smaller to evaluate the need and method for relocating and adjusting EBMUD infrastructure.

See Response to Comment A02-7. This comment does not identify any new or substantially more severe impacts that would require additional or substantially modified mitigation measures. No further response is required.

A02-9 The commenter states that PG&E must share with EBMUD the locations of potential utility conflicts between the PG&E project and existing EBMUD pipeline valve covers. The commenter also defines the conditions for which EBMUD will support paving street improvement projects for grade changes less than 0.5 inches, greater 0.5-inches, and pipeline valve cover upgrades.

See Response to Comment A02-7. This comment does not identify any new or substantially more severe impacts that would require additional or substantially modified mitigation measures. No further response is required.

A02-10 The commenter states that EBMUD will support PG&E by relocating water meters to meet Project objectives, current design standards, and mitigate utility conflicts for street improvements. Additionally, the commenter states that PG&E is responsible for relocating the customer's private water service line to new meter locations and that EBMUD is not financially liable for work beyond the water meter.

See Response to Comment A02-7. This comment does not identify any new or substantially more severe impacts that would require additional or substantially modified mitigation measures. No further response is required.

A02-11 The commenter states that when PG&E completes street improvements, PG&E must ensure there are no conflicts between existing EBMUD fire hydrants and new curb ramps or sidewalks. Further, PG&E must request Hydrant Relocation Applications from EBMUD's New Business Office. The commenter states that fire hydrants must be located 5 feet from the edge of curb ramps and 20 to 24 inches from the face of street curbs.

See Response to Comment A02-7. This comment does not identify any new or substantially more severe impacts that would require additional or substantially modified mitigation measures. No further response is required.

A02-12 The listed contacts have been added to the CPUC's Project mailing list and PG&E has been provided copies of all public comment letters.

Should the Project be approved, the CPUC and its representative(s) will monitor PG&E's pre-construction compliance and implementation of mitigation measures, pursuant to the Mitigation Monitoring and Reporting Program (see Table 7-1 in EIR Section 7), to ensure that all required notifications would occur in accordance with MM N-1b (Construction Notification) (see Draft EIR Section 3.11.4; Noise, Mitigation Measures). No further response is required.

A02-13 The commenter provided maps of EBMUD Distribution Mains and EBMUD Map & Utility Information Request Form Guidelines.

Draft EIR Figure 3.17-1 (Sewer and Storm Drain Facilities, Maps 1 of 3, 2 of 3, and 3 of 3) show existing sewer and storm drain facilities within the project area. See Response to Comment A02-7. No further response is required.

Comment Set A03 – City of Orinda

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Richa Nanavati <rnanavati@cityoforinda.org>
Sent: Wednesday, September 24, 2025 11:58 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project; Aspen Main Email Account; public.advisor@cpuc.ca.gov
Cc: Lashun Cross
Subject: Comments on the DEIR for the Moraga-Oakland X Project, A.24-11-005
Attachments: Oakland x Moraga DEIR comments _final 9.24.25.pdf

Dear Tharon Wright,

Please see the attached letter for the City of Orinda's comments to the Draft EIR for the Moraga-Oakland X Project, A.24-11-005. Thank you for the opportunity to provide input on this project. **A03-1**

Further correspondence or notifications regarding this project may be sent to:

Lashun C. Cross
Director of Planning
22 Orinda Way, Orinda, CA 94563
925.253.4240
lcross@cityoforinda.org
www.cityoforinda.org

Please let us know if there is any issue with the attached file. Thank you for your coordination.

Respectfully,

Richa Nanavati
Planning Intern
(Richa's hours: Monday – Wednesday 9 AM-5 PM)
Tel: 925.253.4283
rnanavati@cityoforinda.org

City of Orinda
Planning Department
22 Orinda Way, Orinda, CA 94563
https://www.cityoforinda.org/153/Planning-Department

Comment Set A03 – City of Orinda (continued)

City of Orinda • 22 Orinda Way • Orinda • California • 94563

September 24, 2025

Tharon Wright, Project Manager
California Public Utilities Commission
c/o Aspen Environmental Group
235 Montgomery Street, Suite 967
San Francisco, CA 94104-2920

Topic: Comments to the Moraga-Oakland X Project, A.24-11-005 Draft EIR (DEIR)

Dear Tharon Wright,

The City of Orinda appreciates the opportunity to provide input on DEIR for the Moraga-Oakland X Project, A.24-11-005 (DEIR). The City submitted comments on March 27, 2025, during the scoping period for the proposed project. After reviewing the DEIR for response to the concerns and questions submitted during the scoping period, the City has additional follow-up questions. Thank you for your detailed attention to the concerns of the Orinda community regarding this project. **A03-1 (cont'd)**

Noise

1. Orinda and areas around the Moraga Substation were not included in noise monitoring according to **Figure 3.11-2** in the appendices. Please clarify why noise monitoring was not conducted in this area despite proposed construction and helicopter staging activity per **Figure 2.1-2 (Maps 1-9)**. How are noise impacts appropriately considered if baseline conditions were not identified near the sensitive receptors within 1000-2000 feet of the aforementioned extent of the proposed improvements? **A03-2**

2. Within 2000 feet of the Moraga Substation and associated project activities, there are residences, an elementary school, and San Pablo Creek. Nearby unincorporated open spaces could also be affected by noise impacts. On pages 3.11-24 and 3.11-25, noise impacts related to helicopters to City of Orinda residents are mentioned but only discussed for one residence within just 225 from the proposed landing area. How many residences will be affected by landing in this area, and how and when will they be noticed? **A03-3**

Figures and Document Accessibility **A03-4**

3. Please display City of Orinda boundaries on map to clearly reflect which project activities, locations, and staging may occur within or adjacent to City of Orinda jurisdiction. Right-of-way and activities in and around the City of Orinda are mentioned in project description but are not clearly depicted in **Figure 2.1-2 (Maps 1-9),** or others that may be applicable**.** While city boundaries do not describe a physical environmental impact, labeling the jurisdiction would help the City, neighbors and nearby sensitive receptors, and other affected persons quickly and easily identify the proximity of their projects to the proposed activities. Currently, it is unclear where/if staging and other

General Information	Administration	Planning	Parks & Recreation	Police	Public Works
(925) 253-4200 (ph)	(925) 253-4220 (ph)	(925) 253-4210 (ph)	(925) 254-2445 (ph)	(925) 254-6820 (ph)	(925) 253-4231 (ph)
(925) 254-9158 (fax)	(925) 254-2068 (fax)	(925) 253-7719 (fax)	(925) 253-7716 (fax)	(925) 254-9158 (fax)	(925) 253-7699 (fax)

Comment Set A03 – City of Orinda (continued)

activities will occur within or adjacent to City boundaries and sensitive receptors near those boundaries. **A03-4 (cont'd)**

Fire Risk Impacts from Construction **A03-5**

4. Fire risk is a major and active concern for the City of Orinda. The City would prefer that fire suppression tools and water or fire retardant be kept in all construction sites near Orinda and the surrounding open spaces as part of fire mitigation **"APM WFR-1 Construction Fire Prevention Plan**" or other mitigation measures as deemed appropriate.

Emergency Access, Transportation, and Public Notification **A03-6**

5. How far in advance will information about road closures affecting regular traffic and emergency operations (for example, from unavoidable impacts from crane obstructions) be available to emergency responders and residents (Page 3.18-30 through 3.18-31)?

6. Has traffic modeling been conducted to determine if all residents would be able to evacuate in case an emergency occurs? A traffic study, given the significant and unavoidable impacts to emergency access identified, would help the Orinda community fully understand how the project may impact nearby residents in the event evacuation is required. **A03-7**

7. Wilder Road between Dairy Creek Lane and Edgewood Court is shown as existing access road to the Moraga Substation, **Figure 2.1-2 (Maps 5 & 6).** This portion of Wilder Road is an Emergency Vehicle Access (EVA) only, Was the EVA taken into account when staging and access through this road was considered? A determination regarding the extent of projected use for this road and the ability to handle significant construction traffic must be analyzed. **A03-8**

8. Access to the Moraga Substation via paved public road is through Moraga Way and Valley View Drive. The City of Orinda is concerned that these two roads are not identified in Figure 2.1-2 as existing. Will there be construction traffic through these corridors? If there is no planned use of these streets, please identify as such in the report. See below if there is potential for construction access through Moraga Way. **A003-9**

9. Moraga Way is a principle arterial and a multimodal facility with transit, bike lanes and access to various schools. It is also a primary evacuation route for Orinda. Transportation Impact T-1. T-2, T-6, and T-7 have identified significant and unavoidable impacts during project construction. Please address the impacts to traffic circulation and safety on Moraga Way corridor as part of a traffic study. **A03-10**

Undergrounding and Operational Fire Hazards **A03-11**

10. The City of Orinda is concerned with operational fire risk posed with above ground utility lines. While constraints associated with "All Underground Alternatives" undergrounding are discussed in Sections 4.2.2 through 4.3.1, it is not clear how or if undergrounding of powerlines between the Moraga Substation and Skyline Boulevard was specifically considered, and how and why it might have been eliminated from further consideration. Please address if future undergrounding projects in the Orinda/Moraga hills are being considered for cumulative wildfire impact reduction.

Comment Set A03 – City of Orinda (continued)

Thank you for your detailed attention to the concerns of the Orinda community regarding this project. The City supports efforts to increase undergrounding of utility lines in our community as much as possible given the safety and land use constraints posed by utility easements throughout the City. We sincerely appreciate CPUC's collaboration on this impactful project, and the efforts taken so far to improve the safety and reliability of transmission lines.

A03-12

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22 Orinda Way, Orinda, CA 94563
925.253.4240
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Responses to Comment Set A03 – City of Orinda

A03-1 The commenter states that the City submitted comments during the scoping period for the proposed Project and has additional follow-up comments.

As requested, the listed contact has been added to the CPUC's Project mailing list.

The commenter's referenced scoping letter and summary of the City of Orinda's concerns are included in the Project's Scoping Report in Appendix C of the Draft EIR and addressed within the Draft EIR. Specifically, potential traffic and transportation impacts are discussed in Section 3.15 of the Draft EIR; staging areas are described in Section 2.3.2 (Staging Areas) and Figure 2.1-2 in EIR Appendix A; tree removal is described in Section 2.3.4.2 (Vegetation Clearing) and Section 3.4 (Biological Resources); noise impacts and compliance with the City's Noise Control Ordinance are discussed in Section 3.11 (Noise); and undergrounding the transmission lines within the City's jurisdiction is considered in Section 4.4.2.1 (PG&E Water Tank Underground Alternative), Section 4.4.2.2 (PG&E Pinehurst Underground Alternative), and Section 4.4.3.1 (Redwood Canyon Underground Alternative) of the Draft EIR.

The following Responses to Comments A03-2 through A03-12 address the additional follow-up comments on the Draft EIR. No further response is required.

A03-2 The comment concerns noise monitoring and the existing ambient noise levels for sensitive receptors in Orinda including areas surrounding the Moraga Substation. The comment asks for clarification regarding why the City of Orinda and the areas around the Moraga Substation were not included in noise monitoring in order to establish baseline conditions within 1,000 to 2,000 feet of substation construction and helicopter staging, pursuant to Draft EIR Figure 3.11-2.

The Draft EIR includes Table 3.11-2 to tabulate baseline sound levels for quiet residential areas as being primarily influenced by the lower density of existing land use conditions. (Draft EIR, pages 3.11-6 to 3.11-7.)

As explained in Section 3.11.1.4 of the Draft EIR:

> *Existing day and night sound levels can be estimated based on land use category. In lieu of a baseline ambient noise level survey, PG&E uses a methodology from the American National Standards Institute (ANSI) to divide land uses into six distinct categories (PG&E, 2024). Descriptions of these land use categories, along with the typical day and nighttime levels, are provided in Table 3.11-2. (Draft EIR, page 3.11-6.)*

The impact analysis considers this setting for the City of Orinda and compares the effects of proposed Project construction against the expected daytime baseline noise levels of 50 to 55 dBA, based on the land use types in Orinda. Near areas of light traffic, Orinda's land use is in Category 3, "Quiet Commercial, Industrial Areas, and Normal Urban and Noisy Suburban Residential Areas," representing, "Light traffic conditions where no mass transportation vehicles and relatively few automobiles and trucks pass, and where these vehicles generally travel at moderate speeds. Residential areas and commercial streets and intersections with little traffic comprise this category." Where distant from traffic, Orinda's land use is in Category 4, "Quiet Urban and Normal Suburban Residential Areas," representing "areas are similar to Category 3, but for this group the background is either distant traffic or is unidentifiable. Typically, the population density is one-third the density of Category 3." These baseline assumptions match the population density of the area, as specified in Table 3.11-2.

These daytime baseline noise levels of 50 to 55 dBA are lower than the levels indicated in the Noise Element of the City of Orinda General Plan, which includes 1985 noise contours for Orinda, which span 60-65 dBA background daytime levels (Orinda, 1987). Assuming a lower

background noise level in the EIR conservatively estimates impacts, as it compares the construction noise level to a lower baseline, which increases the stated change in noise level. The Noise Element baseline is established by noise contour maps informed by noise monitoring and modeling, as described:

> *Traffic is the primary source of continuous noise in Orinda. Noise contour maps (Figures 14 and 15) have been prepared for 1985 noise conditions and for projected 2005 noise levels. The 1985 contours were developed using a combination of noise modeling and measurement techniques. Three types of measurements were made: a continuous 24-hour measurement along Moraga Way to determine the typical daily variation in noise levels in Orinda; 15-minute measurements with traffic counts along Camino Pablo and Moraga Way; and a series of five-minute spot measurements throughout the Highway 24 corridor to evaluate the influence of terrain on the location of the noise contours in this area.*
>
> *The location of the noise measurements are shown on Figure 14, and the noise measurements are described in Table 4.1. The day/night average noise level (Ldn) describes 24-hour average noise level is measured in decibels (dBA) taking account of increased sensitivity to noise during nighttime hours. Sound levels between 10 p.m. and 7 a.m. are penalized 10 decibels (dB). The dB scale is logarithmic; a 3 dB difference is normally discernible and a 10 dB increase is subjectively heard as a doubling in loudness. (Orinda, 1987).*

In the low noise levels of this suburban context, the Draft EIR, Section 3.11.1.3, analyzes the Proposed Project against these baseline conditions and concludes that the sensitive receptors would experience a substantial difference in noise levels, such that impacts would be significant prior to mitigation. The Draft EIR identifies Mitigation Measures MM N-1a, which would require PG&E to employ standard noise-reducing construction practices including shielding stationary noise sources and staging areas from adjacent noise-sensitive receptors, and MM N-1b, which would provide written notice to nearby receptors at least 1 month prior to planned construction activities. The implementation of these mitigation measures would feasibly mitigate impacts to less than significant levels.

A03-3 The comment notes residences, an elementary school, and San Pablo Creek are within 2,000 feet of the existing Moraga Substation. The comment notes these receptors could be affected by noise impacts, and specifically questions the discussion of only one residence within 225 feet of the proposed helicopter landing area. The comment asks how many residences will be affected by the helicopter landing area and when those residences will be notified of the noise.

Helicopters would be used to support reconductoring, lift structures, and install OPGW in the eastern section of the proposed Project (east of Manzanita Drive). Six proposed helicopter landing zones were identified in the eastern section of the Project area (see Figure 2.1-2 in EIR Appendix A). One of six potential landing zones would be located near the southern extent of the Wilder community in the City of Orinda, approximately 225 feet from the closest residence. The other five potential landing zones are more than 2,000 feet from the closest residence in the City of Orinda, City of Oakland, or the community of Canyon. The nearest receptors would experience the highest noise impacts while receptors located farther away from the construction activity areas would experience lower impacts as noise attenuates exponentially with distance.

The Draft EIR focuses on the land uses within 1,000 feet of the Project (Section 3.11.1.3) as those likely to experience the greatest noise impacts. This radius is a commonly used screening distance for potential noise impacts, as the attenuation of typical construction noise over that distance generally falls below common residential thresholds. As noted in Draft EIR Section 3.11, the closest receptor is 225 feet from the staging area, and at this distance, it is anticipated

the Lmax for takeoff would be 80 dBA, and the Lmax for helicopter landing would be 83 dBA. At 1,000 feet, this attenuates to 70 dBA. These are short-term noise events that only occur for the brief period when the helicopter would land or take off at the staging area. Conservatively estimating the helicopter would be landing (the maximum noise event) for 3 hours per day, the Leq thus is estimated at 79 dBA at 225 feet, 66 dBA at 1,000 feet, and 60 dBA at 2,000 feet. The estimated duration of helicopter use of the landing zones in the eastern Project area is 22 to 23 nonconsecutive days. The Draft EIR identifies approximately 115 sensitive receptors located within 1,000 feet of Moraga Substation and approximately 71 residences within 1,000 feet of the eastern section of the 115 kV power lines and associated work areas (Draft EIR, p. 3.11-5). Receptors are as close as approximately 100 feet to the south of the Moraga Substation staging area.

Table 3.11-15 of the Draft EIR presents the maximum helicopter noise levels at reference distances of 100 feet, 250 feet, 500 feet, 1,000 feet, and 2,000 feet of the potential helicopter activity areas. Approximately 43 residences would be within 2,000 feet of the potential landing zone, but the noted nearest residence would experience the greatest impact.

It should be noted that the Draft EIR also identifies Mitigation Measure MM N-1b, which requires that residences within 1,000 feet of helicopter landing zones be notified at least one month prior to planned construction. Mitigation Measure MM N-1b also requires posted and written notices, which include a hotline telephone number that residents may use to call to inquire regarding scheduling and noise. On a monthly basis, PG&E would be required to document, investigate, evaluate, and attempt to resolve all project-related noise complaints and provide the CPUC with all the complaints and actions taken to resolve them.

This comment does not identify any new or substantially more severe impacts or require additional or substantially modified mitigation measures to the EIR. No further response is required.

A03-4 The commenter requests that the City of Orinda boundaries be added to Figure 2.1-2 (Proposed Project Detail) to clearly reflect which project activities, locations, and staging may occur within or adjacent to City of Orinda jurisdiction.

In response, Figure 2.1-2 (Maps 1-6) in Appendix A of the Final EIR have been revised to add the boundary of the City of Orinda.

This comment does not identify any new or substantially more severe impacts that would require additional or substantially modified mitigation measures to the EIR, and therefore does not require further response.

A03-5 The commenter requests that fire suppression tools and water or fire retardant be kept in all construction sites near Orinda and surrounding open spaces as part of APM WFR-1 (Construction Fire Prevention Plan) or other appropriate mitigation measures.

As identified in Table 2.9-1 (Applicant-Proposed Measures) of the Draft EIR, APM WFR-2 (Fire Prevention Practices) requires construction personnel to have fire suppression equipment on all equipment vehicles and water tanks and/or water trucks to be available at all active construction sites. APMs, including APM WFR-2, have been incorporated into the Mitigation Monitoring and Reporting Program to ensure implementation and compliance (see Table 7-1 in EIR Section 7). Thus, the proposed Project already includes the requested measure. No further response is required.

A03-6 The commenter requests details regarding the timing for advance notification to emergency responders and residents about road closures and obstructions.

As required by MM N-1b (Construction Notification) of the Draft EIR, written notice shall be provided to all affected jurisdictions, emergency service providers, public transit agencies, residences, and other affected parties at least one month prior to planned construction activities. Additionally, the Draft EIR also identifies MM T-1a (Traffic Management Plan and Safe Transport), which would require that PG&E prepare a Traffic Management Plan (TMP) that would include information on timing and method for notifying emergency service providers about full or partial public street closures, detours, and alternative routes. The TMP would be prepared at least 3 months prior to any construction activities requiring heavy vehicle and equipment traffic on public roadways or full or partial closure of public streets. No further response is required.

A03-7 The commenter asks if traffic modeling has been conducted to determine if all residents would be able to evacuate in an emergency and notes that a traffic study would help the community understand how the Project may affect evacuations.

As stated in Table 3.15-3 in Section 3.15 of the Draft EIR, no road closures would be required along designated evacuation routes in the City of Orinda. However, construction activities on other roadways would restrict local evacuation and emergency access. Because of the narrow streets and steep topography in this area, alternative routes may increase evacuation and emergency response times, which would be inconsistent with evacuation planning provided in the Orinda Fire Evacuation Guide directing the public to use certain routes that may be impaired by the proposed Project from the movement of construction vehicles and equipment. Therefore, while the Draft EIR identifies multiple mitigation measures to reduce impacts (specifically, MMs T-1a, N-1b, REC-3a, REC-5a, WF-1b, and WF-1c), the overhead power line rebuild would nonetheless still conflict with this guide.

Emergency evacuation is also analyzed in Section 3.18 (Wildfire) of the Draft EIR under Impact WF-1, which identifies MM WF-1a requiring PG&E to submit to the CPUC a Construction Coordination Emergency Evacuation Plan at least 90 days before the start of construction on affected roadways. The Construction Coordination Emergency Evacuation Plan would include documentation of coordination with each affected jurisdiction, including Orinda, and incorporation of the City's requirements. The Plan would also include identification and mapping of all designated evacuation routes defined by the City. MM WF-1a requires:

> *Evacuation route signage shall be installed at locations as specified by the affected jurisdictions and updated on a regular basis as construction activity moves. This signage would identify "critical" and "non-critical" evacuation routes. Critical evacuation routes are defined as evacuation routes that, if partially or entirely closed, would lead to an increase in evacuation times or blockage (dead-end). Noncritical evacuation routes are defined as short (less than 0.25 miles) evacuation routes that, if partially or entirely closed, would not affect evacuation times or road capacity. PG&E would be required to consult with a qualified transportation specialist to identify critical and non-critical evacuation routes and changes to evacuation times or road capacity.*

Designation of evacuation routes as "critical" and "non-critical" would thus involve evacuation modeling. For each location where a road would be blocked or impaired for any length of time, the Plan would define an alternate route to be used for emergency egress and signs would be posted to identify detours. Notices provided to all affected Orinda residents, which will be determined in coordination with the City based on the proximity of residents to affected evacuation routes, would include information on detours and schedule of road closures. The Construction Coordination Emergency Evacuation Plan would also provide information of closures to the affected jurisdictions to connect with Genasys Protect to provide real-time information on Project-related road closures to the public. These procedures would allow all

residents to evacuate in the event of an emergency and would minimize evacuation delays. However, despite the implementation of this mitigation measure, the construction of the overhead rebuild segment of the Project has the potential to substantially impair an adopted emergency response plan or emergency evacuation plan because an increase in ETE would still result during lane and road closures, as well as during the movement of construction vehicles and equipment along roadways, and impacts would remain significant and unavoidable.

"CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commentors. When responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR" (CEQA Guidelines, § 15204(a). As discussed, the EIR includes a comprehensive qualitative analysis of impacts to evacuation times, sufficiently analyzes the ways in which the related significant impact can be mitigated, and further imposes a suite of relevant mitigation measures to reduce the likelihood of substantially impairing an evacuation plan, or, in the alternative, to minimize any Project-related delays to evacuation of Orinda residents. For these reasons, a traffic study is not required to demonstrate a good faith effort at full disclosure. The evacuation analysis, as written, is adequate under CEQA. In response to this comment, the following language was added to MM WF-1:

> *The evacuation routes shall be based on net evacuation time for affected populations considering factors including, but not limited to, each jurisdiction's identified evacuation routes, which will be determined in coordination with each applicable jurisdiction. Affected populations will also be determined in coordination with each applicable jurisdiction based on the proximity of residents to affected evacuation routes.*

This language ensures that mitigation would be consistent with the City's identified evacuation routes, thereby improving the efficiency and effectiveness of any evacuation that may be required during proposed Project construction on Orinda roadways.

This comment does not identify any new or substantially more severe impacts that would require additional or substantially modified mitigation measures, and therefore does not require any further response.

A03-8 The commenter states that Wilder Road between Dairy Creek Lane and Edgewood Court is shown as an existing access road to the Moraga Substation in Figure 2.1-2 (Maps 5 & 6) and notes that this portion of Wilder Road is for Emergency Vehicle Access (EVA) only. The commenter asks if the EVA was taken into account when staging and access through this road was considered. The comment requests further information regarding the extent of the projected use of the road and its ability to handle significant construction traffic.

Wilder Road is described as a one-lane roadway in Section 3.15 of the Draft EIR. This roadway is designated as an evacuation route in the Orinda Fire Evacuation Guide (City of Orinda, 2024), and this designation has been added to Sections 3.15 and 3.18 of the Final EIR. The designation of Wilder Road for EVA only is not identified in the Orinda Fire Evacuation Guide, and therefore, this designation was not discussed in Sections 3.15 or 3.18 of the Draft EIR; however, this restricted access is noted as a potential construction constraint in the Final EIR that will require further coordination with the City during the encroachment permit process.

As shown in Figure 2.1-2 (Maps 5 & 6) under the proposed Project, Wilder Road is intended to provide access from Edgewood Court to a landing zone/staging area (LZ03). Section 2.3.1.3 of the Draft EIR states that landing zones would be used for staging and landing light- and medium-duty helicopters that would be required for conductor-stringing and to support construction survey staking; lifting or transporting of structure components; crew transport to

structures; and potentially lifting of equipment for installation of micropile foundations. If the landing zone is being used primarily for helicopter landing and staging, then Wilder Road may not require extensive vehicle use during the construction of the proposed Project. However, to minimize the potential for access constraints and conflicts, the extent of the projected use of Wilder Road for the proposed Project and the road's ability to handle significant construction traffic will require further coordination with the City during the encroachment permit process, as well as during the development of the TMP required under MM T-1a. This discussion has been added to Section 3.15 of the Final EIR.

Emergency access is addressed under Impact T-4 in Section 3.15 of the Draft EIR. The following APMs (see full text in Table 3.15-2) would support the Project's ability to maintain emergency access along roadways within the Project footprint, including Wilder Road:

- APM TRA-1 includes both notification to residents and emergency service providers of upcoming road closures, including emergency vehicle access routes, in the Project area at least one week in advance of construction.
- APM WFR-1 includes coordination of procedures with federal, state, and local fire officials and emergency responders, including notifications of temporary lane or road closures, as part of the Construction Fire Prevention Plan.
- APM WFR-2 includes suspending all planned work during an R5-Plus fire rating. PG&E defines R5-Plus fire rating as: The greatest level of fire danger where rapidly moving catastrophic wildfires are possible.

While these APMs would improve emergency access during construction, they would not provide the notification and planning that would be required to lessen the severity of impacts related to inadequate emergency access to less than significant levels. For example, APM TRA-1 does not require a TMP that would specify methods for minimizing construction effects on transportation facilities and services or require a minimum of 1-month advance coordination with the public, local jurisdictions, and agencies prior to construction. Emergency access may not be adequate without appropriate planning and notification, resulting in significant impacts without mitigation.

The Draft EIR also identifies MMs T-1a and N-1b, requiring PG&E to develop a TMP and providing at least 1-month advance notification to the public prior to construction, which would ensure that adequate emergency access is planned in consultation with applicable jurisdictions and agencies. Because of the narrow streets and steep topography within the overhead power line rebuild area, delays associated with rerouting traffic through alternative access routes may increase emergency response times. As a result, even with implementation of MMs T-1a and N-1b, construction of the overhead power line rebuild would result in inadequate emergency access because of the need for temporary road closures during construction. Therefore, impacts would be significant and unavoidable.

The impacts related to emergency access along area roadways, including Wilder Road, have been adequately addressed in the Draft EIR. No additional analysis is required.

A03-9 The commenter notes that access to the Moraga Substation is via two paved public roads, Moraga Way and Valley View Drive, and states that they are not identified in Figure 2.1-2 as existing roads. The commenter asks if there will be construction traffic through these corridors and if not to identify this as such.

Figure 2.1-2 in the Draft EIR is a multi-page figure. Map 1 of 25 (second page of the figure) shows Valley View Drive as an existing road. The gate into the substation is at the point where Lost Valley Road and Valley View Road meet. Construction traffic, meaning vehicles carrying

construction materials or employees related to the Project into and out of the substation, would use this access point. While some construction traffic would likely use Moraga Way enroute to the substation and substation vicinity, no construction or lane closures are planned in the vicinity of Moraga Way. Moraga Way is approximately 0.65 miles north of the substation and outside of the Project study area. As a result, Moraga Way is not shown on Figure 2.1-2 but is shown on Figure 2.1-1a (Overview with Existing Lines). No further response is required.

A03-10 The commenter requests that Moraga Way corridor be part of a traffic circulation and safety study as it is a principal arterial in the City of Orinda.

As mentioned in Response to Comment A03-9, no Project construction will occur at or near Moraga Way, which is approximately 0.65 mile north of Moraga Substation. Vehicles and equipment may transit the roadway enroute to the Moraga Substation and to the Project area south of the substation. However, the movement of vehicles and equipment is not expected to substantially impede traffic on Moraga Way because of the relatively short time period during which construction activities would be completed at Moraga Substation (over a 3-month time period from September to December 2029, as shown in Table 2.4-3 in Section 2.4.4 in the Draft EIR). In addition, Moraga Way is designated as a principal arterial in the City of Orinda General Plan, Land Use and Circulation Element (City of Orinda, 2023a), which is generally defined as a roadway that is designed for higher traffic volumes compared to more narrow, local roadways. As discussed in Response to Comment A03-7, the EIR's analysis of evacuation impacts adequately considers and mitigates the proposed Project's impacts to traffic circulation and safety. No further response is required.

A03-11 The commenter expresses concerns about the operational fire risk posed with above ground utility lines and states that it is not clear how or if undergrounding of power lines between the Moraga Substation and Skyline Boulevard was specifically considered, and how and why it might have been eliminated from further consideration.

Undergrounding of power lines between the Moraga Substation and Skyline Boulevard was considered by PG&E in Section 4.2.1.1 (Eastern Section) of its Proponent's Environmental Assessment (PEA) and by the CPUC in its alternatives evaluation. Specifically, the CPUC considered three underground alternatives east of Manzanita Drive in EIR Chapter 4, however, all three alternatives were eliminated from consideration due to much longer routes, technical feasibility concerns, and much greater environmental impacts.

See General Response GR-1, Underground Alternatives, for additional information on consideration of underground alternatives east of Manzanita Drive, including in the City's jurisdiction.

In addition, the commenter's suggested alternative is an alternative to an individual component of the proposed Project; an EIR must discuss alternatives to a project in its entirety but is not required to discuss alternatives to each particular component of a project. See *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal. App. 4th 957,993. Thus, the commenter's alternative need not be considered for addition to the EIR. Further, the comment provides no evidence that that the proposed alternatives would substantially lessen the proposed Project's significant impacts.

The commenter also asks whether future undergrounding projects in the Orinda/Moraga hills are being considered for cumulative wildfire impact reduction.

Undergrounding of power lines is continuing to occur as part of PG&E's Community Wildfire Safety Program (CWSP).[2] Work under PG&E's CWSP is independent of the proposed Project

[2] PG&E Community Wildfire Safety Program: https://www.pge.com/en/outages-and-safety/safety/community-wildfire-safety-program.html

and includes undergrounding powerlines; system hardening; enhancing powerline safety settings; reducing impacts from Public Safety Power Shutoffs; and managing trees and vegetation near powerlines.

According to PG&E's CWSP website, segments of undergrounding and system hardening have been completed in Contra Costa County, including the Oakland/Moraga hills, but no projects are currently forecasted in the City of Orinda.[3] PG&E states that forecast miles include areas that are in any stage of the planning process and projects are subject to change.

While no CWSP undergrounding or system hardening projects are currently forecasted in the MOX Project area, given the high modeled wildfire risk east of SR-13 to Moraga Substation, PG&E's CWSP, which shows completed and forecasted projects, has been added to the list of cumulative projects in Table 5-1 (Cumulative Projects in the Project Vicinity) of the Final EIR. The types of construction activities under PG&E's CWSP would be similar to those of the MOX Project and other PG&E projects in Table 5-1. As such, PG&E's CWSP has been analyzed in the cumulative impact analysis in Section 5.3 of the Final EIR in the event that future CWSP projects may be located in the MOX Project area and overlap during construction. The analysis and conclusions stated in Section 5.3 of the Draft EIR would not change and the Project's contribution to cumulative impacts would remain less than cumulatively considerable.

A03-12 The City's support for efforts to increase undergrounding of utility lines as much as possible is acknowledged.

[3] PG&E Undergrounding/System Upgrades (Hardening) Progress Map. https://vizmap.ss.pge.com/?layer=system-hardening-and-undergrounding-map. Accessed November 18, 2025.

Comment Set A04 – East Bay Regional Park District

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Kim Thai <kthai@ebparks.org>
Sent: Friday, September 26, 2025 10:13 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: East Bay Regional Park District Comments on PG&E's Moraga-Oakland X Project Draft EIR
Attachments: 2025 EBRPD Comments - PGE Moraga-Oakland X Project EIR.pdf

Hello,

Please see the attached comment letter on the Draft EIR for PG&E's Moraga-Oakland X Project. Please let me know if you have any questions.

Sincerely,
Kim

East Bay Regional Park District

Kim Thai
cting Principal Planner | Planning, Trails, Cultural Resources, and GIS
East Bay Regional Park District
2950 Peralta Oaks Court, Oakland, CA 94605
T: 510-544-2320
kthai@ebparks.org | www.ebparks.org
Participate in the District Plan – learn more here.

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Comment Set A04 – East Bay Regional Park District (continued)

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September 26, 2025

Tharon Wright, CPUC Project Manager
Moraga-Oakland X Project
Sent via: MOX@aspeneg.com

RE: East Bay Regional Park District Comments on PG&E's Moraga-Oakland X Project, A.24-11-005

Dear Ms. Tharon Wright,

The East Bay Regional Park District (Park District) appreciates the opportunity to provide comments on the Draft EIR for Pacific Gas & Electric Company's (PG&E's) proposed Moraga-Oakland X Rebuild Project (Project). The Project would upgrade existing overhead power lines and replace existing towers between the Moraga and Oakland X Substations. A portion of the project would go through the Park District's Robert Sibley Volcanic Regional Preserve (Sibley). **A04-1**

Since construction of this Project would affect park operations, the Park District would like to reiterate our comments made during the public scoping period for PG&E to notify the Park District on the project construction timeline and to notify and coordinate with the Park District prior to any access, staging, or needed road improvements to ensure the project minimizes impacts to the environment and to park operations.

Park District staff notes that the Draft EIR includes Mitigation Measures REC-3a for the coordination with Park and Open Space management regarding signage and temporary closures, and REC-5c for the coordination with recreation facility owners or managers to determine alternatives and address damage to recreation assets. The Park District supports these mitigation measures and would like to emphasize that coordination with and approval from the Park District is needed prior to any PG&E repairs of identified damages, even in the absence of agreements or permit conditions.

The Park District appreciates the opportunity to review and comment on the proposed project's Draft EIR. We request to receive notices of future referrals, environmental review, and public hearings for this project. If you have any questions or concerns, please contact me at (510) 544-2320, or by e-mail at kthai@ebparks.org.

Sincerely,

Kim Thai
Acting Principal Planner
East Bay Regional Park District

Board of Directors

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Sabrina B. Landreth, General Manager

Responses to Comment Set A04 – East Bay Regional Park District

A04-1 The commenter states that a portion of the Project would go through the Park District's Robert Sibley Volcanic Regional Preserve (Sibley) and reiterates the Park District's scoping comments and request coordination to ensure that the Project minimizes impacts to the environment and park operations. Furthermore, the commenter supports implementation of the Draft EIR Mitigation Measures (MM) REC-3a and REC-5c and emphasizes that the Park District's approval is needed prior to any PG&E repairs of identified damages to Park District assets, even in the absence of permit conditions.

The commenter's referenced scoping letter and summary of East Bay Regional Park District's concerns are included in the Project's Scoping Report in Appendix C of the Draft EIR and addressed within the Draft EIR. Specifically, potential recreation impacts are discussed in Section 3.14 (Recreation) of the Draft EIR.

PG&E will coordinate with the Park District to plan construction activities to minimize impacts, as required under the mitigation measures identified in the EIR for Recreation and in accordance with Draft EIR Mitigation Measure N-1b (Construction Notification) (see EIR Section 7, Mitigation Monitoring and Reporting Program). MM REC-5c states, as the comment emphasizes, that "[i]f property owner agreements or agency permits stipulate usage and how to address damage, the conditions specified in any agreement or permit condition shall be applied in lieu of this mitigation measure. In the absence of such agreements or permit conditions, PG&E will identify damages and make appropriate repairs or compensation." Additionally, MM REC-3a states that "coordination with and approval from the Park District is needed prior to any PG&E repairs of identified damages, even in the absence of agreements or permit conditions."

This comment does not identify any new or substantially more severe impacts that would require additional or substantially modified mitigation measures. No further response is required.

Comment Set A05 – California Department of Fish and Wildlife

Docusign Envelope ID: A1CE937A-47F4-4A4E-B470-EB103CBA8604

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 94534
(707) 428-2002
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GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

September 29, 2025

Tharon Wright, Public Utilities Regulatory Analyst IV
California Public Utilities Commission
300 Capitol Mall, Suite 500
Sacramento, CA 95814
Tharon.Wright@cpus.ca.gov

Subject: PG&E's Moraga-Oakland X 115 Kilovolt Rebuild Project, Draft Environmental Impact Report , SCH No. 2025020944, Alameda and Contra Costa Counties

Dear Tharon Wright:

The California Department of Fish and Wildlife (CDFW) received a Notice of Availability of a Draft Environmental Impact Report (EIR) from the California Public Utilities Commission for the PG&E's Moraga-Oakland X 115 Kilovolt Rebuild Project (Project) pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1] CDFW previously submitted comments in a letter dated March 24, 2025 in response to the Notice of Preparation of the Draft EIR. **A05-1**

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

Comment Set A05 – California Department of Fish and Wildlife (continued)

Docusign Envelope ID: A1CE937A-47F4-4A4E-B470-EB103CBA8604

need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the project proponent may seek related take authorization as provided by the Fish and Game Code.

A05-1 (cont'd)

PROJECT DESCRIPTION SUMMARY

Proponent: Pacific Gas and Electric Company (PG&E)

Objective: The objective of the Project is to rebuild the four-circuit power line path with new equipment, including replacing the existing conductor with one of a larger size to accommodate future energy demands and to ensure the lines are rebuilt with adequate line clearances between the ground or land use. Primary Project activities include rebuilding four overhead 115 kilovolt (kV) power lines circuits that span approximately five miles between PG&E's Moraga and Oakland X substations. The two existing parallel double-circuit lines would be rebuilt as hybrid power lines, meaning the two double-circuit lines between the two substations would have both overhead and underground portions. Existing towers, poles and conductors would be replaced either with overhead rebuild or underground components, and minor modifications would occur within the existing substations. Some recently replaced power line structures would be reused or reused with some modification. Single-circuit transition structures would support the connection between the overhead and underground portion of each circuit. Double-circuit transition structures would be used to connect the underground portion to existing overhead circuit terminals at Oakland X substation. Additionally, the Project would include the installation of a static ground wire and an optical ground wire connecting to each above ground structure with grounding and a telecommunication cable continuing with the underground portion. Vegetation trimming and removal would be done to accommodate Project activities.

Location: The Project is located within unincorporated Contra Costa and Alameda counties, and the cities of Orinda, Oakland, and Piedmont. The existing land uses within the Project area include utility in the City of Orinda, open space and parks in unincorporated Contra Costa County, and residential, commercial, parks, places of worship and schools within the cities of Oakland and Piedmont.

Timeframe: August 2028 – July 2031

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist the California Public Utilities Commission in adequately identifying and/or mitigating the Project's significant,

Comment Set A05 – California Department of Fish and Wildlife (continued)

Docusign Envelope ID: A1CE937A-47F4-4A4E-B470-EB103CBA8604

or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the document. Based on the Project's avoidance of significant impacts on biological resources with implementation of mitigation measures, including those CDFW recommends below, CDFW concludes that an Environmental Impact Report is appropriate for the Project. **A05-1 (cont'd)**

I. Mitigation Measure or Alternative and Related Impact Shortcoming

COMMENT 1:

Section: Section 2.3.4.2 (Vegetation Clearing) beginning on page 2-21 and Appendix B Table 2.3-5 (Estimated Vegetation Management including Tree Trimming or Removal) beginning on page B-8.

Issue: Section 2.3.4.2 in the draft EIR describes the species, size, and number of trees expected to be removed or trimmed by each city or county and how 'PG&E will work with the city to replace landscape-affected properties with vegetation that is compatible with the rebuilt PG&E facilities.' However, the DEIR does not provide specific mitigation measures for removed trees and deferred mitigation may not adequately reduce the Project's impacts on trees to less-than-significant.

Specific impact: Mitigation Measure BIO-5a (Tree Trimming and Removal Requirements) describes how tree trimming and removal will be conducted but does not describe specific mitigation. Appendix B Table 2.3-5 (Estimated Vegetation Management including Tree Trimming or Removal) shows that the Project will result in the removal of over 200 native and non-native trees. The removal of over 200 trees from the Project area with diameter at breast heights (DBH) ranging from 2 to 82 inches would be a permanent loss of woodland habitats, particularly oak (*Quercus* spp.) woodlands.

Why impact would occur: The Oak Woodland Conservation Act recognizes the economic, social, and ecological importance of oak woodlands in California and provides mechanisms that encourage the protection and conservation of these unique habitats (Fish and Game Code §§ 1360-1372). A permanent loss of oak and mixed woodlands, especially mature trees, resulting from Project activities could result in significant loss of nesting, foraging, denning, refuge and/or perching habitat for native fauna and loss or fragmentation of wildlife movement corridors.

Evidence impact would be significant: The Project is located within an area with oak and mixed woodlands. Oak woodlands are considered to be a CDFW-designated rare natural community (CDFW 2025). Rare natural communities have limited distribution and are often vulnerable to project impacts (CDFW 2018). Project-related impacts, as well as cumulative impacts resulting from other nearby **A05-2**

Comment Set A05 – California Department of Fish and Wildlife (continued)

Docusign Envelope ID: A1CE937A-47F4-4A4E-B470-EB103CBA8604

past, present, and future projects should be addressed in the draft EIR. If the California Public Utilities Commission determines that the Project will result in a significant impact to oak and mixed woodlands, the draft EIR should include mitigation as required by CEQA Section 21083.4 as part of the final CEQA document. **A05-2 (cont'd)**

Where avoidance and minimization measures are infeasible, the design of mitigation measures should consider the local, regional, and larger-scale environmental context in which the habitat loss or alteration is occurring. Mitigation required must be roughly proportional to level of impacts (including cumulative impacts) in accordance with the provisions of CEQA (Guidelines Sections 15126.4(a)(4)(B), 15064, 15065, and 15355). **A05-3**

Recommended Mitigation Measures: To reduce impacts to less-than-significant, CDFW recommends including the following mitigation measures in the EIR:

- Mitigation and Monitoring Plan. Adequate mitigation for the loss of oak and mixed woodlands should first include avoidance and minimization of Project impacts. Trees should be retained on-site to the maximum extent feasible. Access roads, utilities and building sites should be located or routed where they will require the minimum amount of disturbance to oak and mixed woodland habitats, including both to the tree and the root zone. If impacts to oak and mixed woodland habitats are unavoidable, the Project should first consider on-site restoration or enhancement of woodland habitat. If on-site mitigation is inadequate to minimize impacts or on-site planting of trees underneath or adjacent to powerlines is not feasible, the Project should develop off-site mitigation with a sufficient monitoring period to ensure success of the mitigation plantings.

  Any proposal for on- or off-site oak and mixed woodland enhancement should include the development of a Mitigation and Monitoring Plan (MMP). The development of a MMP should include an assessment of woodland habitat functions and values including: existing and proposed species composition; basal density and canopy cover; habitat connectivity; success criteria; maintenance activities; protection from human impacts; appropriate fire management; conservation easements or transfer in fee to an appropriate land management entity; long-term funding for management; and an appropriate monitoring program. Finally, CDFW recommends that the MMP describe corrective actions to be taken when success criteria are not met.

- Tree and Shrub Mitigation Ratios. At a minimum, CDFW recommends that individual trees be mitigated at the following ratios (number of trees replanted: **A05-4**

Comment Set A05 – California Department of Fish and Wildlife (continued)

Docusign Envelope ID: A1CE937A-47F4-4A4E-B470-EB103CBA8604

tree removed). All diameters should be measured at DBH which is 4.5 feet from the ground level. **A05-4 (cont'd)**

CDFW recommends that all removed oak trees that are equal to or greater than two inches DBH be replaced. Oak trees should be replanted at a minimum of the following ratios:

- Oaks 2 to 6 inches DBH – 3:1
- Oaks greater than 6 inches and up to 24 inches DBH – 6:1
- Oaks greater than 24 inches DBH – 10:1

CDFW suggests that all other slow-growing native trees also be replaced at ratios equal to or similar to those described above for oaks. Other native tree or shrub species like elderberry (*Sambucus* spp.), toyon (*Heteromeles arbutifolia*), coyote brush (*Baccharis pilularis*), or willows (*Salix* spp.) could be replaced at a 3:1 ratio. Finally, CDFW suggests that all non-native trees greater than three inches in DBH be replaced at a 1:1 ratio with a native tree species.

ENVIRONMENTAL DATA **A05-5**

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNDDB field survey form can be filled out and submitted online at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

ENVIRONMENTAL DOCUMENT FILING FEES **A05-6**

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

Comment Set A05 – California Department of Fish and Wildlife (continued)

Docusign Envelope ID: A1CE937A-47F4-4A4E-B470-EB103CBA8604

CONCLUSION

A05-6 (cont'd)

CDFW appreciates the opportunity to comment on the draft EIR to assist California Public Utilities Commission in identifying and mitigating Project impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Jennifer Hoey, Environmental Scientist, at (707) 815-9978 or Jennifer.Hoey@wildlife.ca.gov; or Brenda Blinn, Senior Environmental Scientist (Supervisory), at (707) 339-0334 or Brenda.Blinn@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Erin Chappell
B77E9A6211EF486...

Erin Chappell
Regional Manager
Bay Delta Region

ec: Office of Land Use and Climate Innovation (SCH No. 2025020944)
Melissa Farinha, CDFW Bay Delta Region - Melissa.Farinha@wildlife.ca.gov
Brenda Blinn, CDFW Bay Delta Region - Brenda.Blinn@wildlife.gov

REFERENCES

A05-7

California Department of Fish and Game (CDFG). 2025. List of Vegetation Alliances, Associations, and Special Standards. Vegetation Classification and Mapping Program, Sacramento, CA. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153398&inline

California Department of Fish and Wildlife (CDFW). 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline

California Fish and Game Code §§ 1360–1372. (2009). Oak Woodlands Conservation Act. Retrieved from https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=FGC&division=2.&title=&part=&chapter=4.&article=3.5

Responses to Comment Set A05 – California Department of Fish and Wildlife

A05-1 The comment references Section 2.3.4.2 (Vegetation Clearing) and EIR Appendix B, Table 2.3-5 (Estimated Vegetation Management including Tree Trimming or Removal), which provides information on trees to be removed or trimmed as a result of the proposed Project. The commenter states that the Draft EIR describes how tree trimming and removal will be conducted but does not provide specific mitigation measures for removed trees and states that this is deferred mitigation which may not reduce impacts to less-than-significant. The commenter argues that Mitigation Measure BIO-5a (Tree Trimming and Removal Requirements) does not provide mitigation for the loss of 200 native and non-native trees, and that the removal of 200 trees would result in a permanent loss of woodland habitat, particularly oak woodlands and mature trees, resulting in a significant loss of nesting, foraging, denning, refuge and/or perching habitat for native fauna and the loss or fragmentation of wildlife movement corridors. The commenter further states that oak woodlands are considered a CDFW-designated rare natural community and cites the California Department of Fish and Game (CDFG; also known as California Department of Fish and Wildlife, or CDFW) 2025 *List of Vegetation Alliances, Associations, and Special Standards* (also called the California Natural Community List).[4]

As described in Section 2.3.4.2 and Table 2.3-5 in Appendix B of the Draft EIR, the CPUC acknowledges there will be a loss of coast live oak trees and other vegetation. However, Coast Live Oak Woodland is common in the area and is not designated as a sensitive natural community by CDFW (see Appendix F, Section F.1.2 (Upland Herbaceous Vegetation Types). According to CDFW's 2025 *List*, Coast live oak woodland and forest (71.060.00) has a rarity ranking of G5 / S4, and *Quercus agrifolia* Alliance (71.060.02) has a rarity ranking of G5 / S5. A rank of G5 or S5 is defined as "secure" and a rank of S4 is defined as "apparently secure". Vegetation communities with ranks of Global (G) or Subnational (S) 1-3 are considered sensitive (critically imperiled, imperiled, and vulnerable, respectively). As such, Coast Live Oak Woodland was not included as a sensitive natural community in the Draft EIR (see Table 3.4-6).

The removal of the existing trees is also not expected to result in a significant loss of foraging habitat for wildlife. Coast Live Oak Woodland habitat is abundant in the region, and the removal of oak trees along a linear feature such as the proposed PG&E right-of-way (ROW) will not result in a significant loss of habitat. As shown in Table 3.4-5 (Impacts by Holland Vegetation Types),[5] the Project would result in up to 2.311 acres of temporary, and 0.006 acres of permanent, impacts to coast live oak woodland. As described in PEA Appendix 1B, of the 247-acre botanical survey area, approximately 67.5 acres [or 27.3%] are classified as Coast Live Oak Woodland. Permanent impacts of 0.006 acres, or less than 0.001%, and temporary impacts to 2.311-acres, or 3.4%, are considered a negligible loss of available oak woodland habitat.

Impacts to wildlife habitat, including nesting, foraging, denning, refuge and/or perching habitat for native fauna and loss or fragmentation of wildlife movement corridors, was discussed under Impact BIO-1.

As described in the Draft EIR, the Project area provides potential habitat for a variety of special status wildlife species including, Crotch's bumble bee, Monarch butterfly, foothill yellow-legged frog, California red-legged frog, northwestern pond turtle, Alameda whipsnake, bald

[4] CDFW (California Department of Fish and Wildlife). 2025. List of Vegetation Alliances, Associations, and Special Standards. Vegetation Classification and Mapping Program, Sacramento, CA. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153398&inline.

[5] Table 3.4-5 removed substations and access roads from the calculation of vegetation communities because substations and access roads are not vegetation communities and do not provide ecological habitat. As such, Table 3.4-5 is a more accurate representation of impacts to vegetation communities than Table 2.3-4, which subsumes substation and access roads in their overall community calculations.

and golden eagles, other protected bird species, special-status bat species, Northern California ringtail, and San Francisco dusky-footed woodrat. Although construction of the Project is expected to result in impacts to oak woodland habitat that could be used by these species, the loss is extremely limited and is not expected to result in the loss or displacement of species that use oak woodlands. In addition, many of these species also rely heavily on grassland and shrub habitats (Crotch's bumble bee, Monarch butterfly, Alameda whipsnake, protected bird species) or riparian habitat (foothill yellow-legged frog, California red-legged frog, north-western pond turtle, special-status bats, Northern California ringtail). Despite the loss of oak woodland habitat, the DEIR determined that the Applicant Proposed Measures (APMs) reduced those impacts to less than significant levels and would comport with California Endangered Species Act (CESA) and Federal Endangered Species Act (FESA) requirements.

These measures include AMM Plant-01 through Plant-04 and Plant-08; O&M ITP-5.12, -5.13, -5.14; and ITP FEIR APM BIO-3 and BIO-4, which would limit vehicle and human disturbance, designate access routes, avoid sensitive areas, require delineation and avoidance of sensitive habitat features and require revegetation for disturbance. Implementation of APMs BAHCP FP-18, ITP FEIR APM BIO-6, and MOX APM BIO-5 would avoid or minimize impacts to nesting birds, including eagles, by implement Species Specific Buffers for PG&E Activities (PG&E's Nesting Bird Management Plan, PEA Appendix B6), including vertical buffers (i.e., buffers above nests) to minimize impacts from helicopter and drone noise during the nesting bird season. These measures also require avoidance of nests with eggs or chicks, conducting preconstruction surveys for nesting birds, establishing buffers, and monitoring if nests are found. Measures incorporated for the protection of aquatic habitat (discussed under Impact BIO-3) would also protect ringtails, bat species, and their habitat, including BAHCP FP-15 and FP-16; AMM Wetland-2; and O&M ITP 7.1, which prohibit refueling within the vicinity of aquatic resources and maintaining buffers around aquatic habitat and riparian features. APM ITP FEIR APM BIO-7 is specific to special-status bat species, requiring activities directly affecting bat roosting habitat to be conducted outside of the bat breeding/pupping season, or if not feasible, having a qualified biologist evaluate known breeding/roosting sites or conduct surveys for bat roosts in suitable breeding/roosting sites, and establishing additional protection measures if suitable breeding/roosting sites are found. MOX APM BIO-6 would require reporting if woodrats are found, allow the animals to leave the work area, and require the implementation of East Bay Regional Park District's *San Francisco Dusky-Footed Woodrat Relocation Plan* (PEA Attachment D of Appendix B3) if dismantling/relocation of middens is needed.

Given the limited size of the work area relative to the surrounding expanse of adjacent suitable habitat, and that work would be conducted along the same alignment as existing infrastructure for the overhead portion, the loss or conversion of oak woodland habitat is not expected to adversely affect special-status or protected wildlife species with the implementation of proposed APMs and project-specific mitigation measures. As such, the EIR's analysis of impacts to oak woodlands is adequate under CEQA and commensurate with the degree of vulnerability to Project impacts. No additional mitigation is required, and as such, the mitigation is not considered deferred.

The commenter references that individual trees should be mitigated at prescribed ratios. As described in CPUC GO 95, the CPUC sets the minimum allowable distance between vegetation and the conductors to avoid vegetation making tree to line contact with the conductors and initiating an outage or a wildfire. These distances vary be region and fire risk. Vegetation within these areas is to be removed or managed by the utility. Furthermore, as discussed in Impact BIO-5, CPUC General Order 131-D, Section XIV.B states that "local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution

lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction." As a public utility project that is subject to the jurisdiction of the CPUC, the proposed Project is exempt from local regulation and discretionary permits, including local tree ordinances and replacement requirements. However, as stated in Impact BIO-5 and PG&E's PEA, and PG&E's Responses to CPUC Data Request #6 – Part A (dated April 21, 2025), PG&E has committed to work with the city to replace landscape-affected properties with vegetation that is compatible with the rebuilt PG&E facilities.

The commenter references the Oak Woodland Conservation Act (Fish and Game Code §§ 1360-1372) as the mechanism to encourage the protection and conservation of oak woodlands. As stated in § 1362, the intent of the legislature is to "support and encourage voluntary, long-term private stewardship and conservation of California's oak woodlands by offering landowners financial incentives to protect and promote biologically functional oak woodlands over time." The code also "Encourages local land use planning that is consistent with preservation of oak woodlands." As such, the Oak Woodland Conservation Act is a voluntary conservation process that provides grant funding to encourage participation. Accordingly, the Oak Woodland Conservation Act is not, as the comment suggests, "why [the] impact would occur."

Importantly, MM BIO-5a is not designed to address significant impacts to sensitive species due to habitat loss because the removal of trees would not result in significant impacts from habitat loss. The purpose of MM BIO-5a is to ensure that all tree trimming and removal is conducted in accordance with International Society of Arboriculture standards to promote professional practice and safety. In addition, guidelines to protect trees that would be retained and determine which trees should be removed in accordance with tree care and CPUC standards.

A05-2 The commenter states the Project is located within an area with oak and mixed woodlands, and that oak woodlands are considered to be a CDFW-designated rare natural community, citing the California Department of Fish and Game (CDFG; also known as California Department of Fish and Wildlife, or CDFW) 2025 *List of Vegetation Alliances, Associations, and Special Standards* (also called the California Natural Community List). As discussed in A05-1, coast live oak woodland is common in the region and is considered "secure" and "apparently secure". As such, Coast Live Oak Woodland was not included as a sensitive natural community in Table 3.4-6. No additional analysis is required.

The commenter states that rare natural communities have limited distribution and are often vulnerable to project impacts and cites CDFW's 2018 *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*. CDFW's 2018 Protocols describes a systematic approach to botanical field surveys and assessments of special status plants and sensitive natural communities to meet CEQA requirements for adequate disclosure of potential impacts. As described in Appendix B1 of the Project PEA, botanical surveys were conducted in accordance with the *CNPS Botanical Survey Guidelines* (CNPS 2001a), *CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018), and the U*SFWS's Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 2000). As shown in Appendix J, Table F-1 (Vegetation Communities Present in the Botanical Study and Survey Area), Table F-2 (Vegetation Communities Classification/ Mapping Comparison), and Table F-3 (CLN Vegetation Communities Present in the BSA) of the Draft EIR, coast live oak woodland (*Quercus agrifolia* Woodland Alliance 71.060.00) is the only oak woodland community that occurs within the BSA. As such, the baseline information and resulting analysis was conducted in accordance with CDFW's 2018 Protocols. No additional analysis is required.

Cumulative impacts to biological resources resulting from other nearby projects, including past, present, and reasonably foreseeable projects, were addressed in Section 5.3.4 of the Draft EIR. Section 5.3.4 Biological Resources, Cumulative Analysis, discloses that cumulative impacts could result in impacts to biological resources, including tree removal. Most nearby projects are in previously disturbed or developed areas and only minor impacts are expected to occur to biological resources from these activities. Though construction activities may temporarily degrade habitat within the immediate vicinity of the work locations, implementation of the APMs described in Section 3.4 of the EIR would reduce cumulative adverse effects. These include BAHCP FP-01 through FP-18; AMM Wetland-02; AMM Plant-01 through Plant-08; O&M ITP-5.3 through -5.18, -6.1, -6.4, -6.8, -6.10, -7.1 through -7.9, -7.17 through -7.24; ITP FEIR APM BIO-1 through BIO-7; and MOX APM BIO-1 through BIO-6. The APMs protect plants, animals, species habitats, vegetation communities, and aquatic resources. The severity of the proposed Projects potential adverse effects to biological resources would be further reduced through the implementation of project specific mitigation measures BIO-1a, BIO-1b, BIO-1c, and BIO-1d. As such, the incremental contribution of the proposed Project was determined to be less than cumulatively considerable. No additional analysis is required.

A05-3 As discussed in the Response to Comment A05-1 and A05-2, Coast Live Oak Woodland is the only oak woodland community in the Project area. It is also the most common vegetation community in the area and is not considered a sensitive natural community. Impacts to wildlife and habitat were evaluated in the EIR and determined to be less than significant with the application of Applicant Proposed Measures (APMs), or less than significant with mitigation for plants, Crotch's bumble bee, Monarch butterfly, and northwestern pond turtle. Though some of the oak woodland habitat would be removed, portions of these habitats would be converted to grassland and shrub habitats after completion of the Project, which are also important habitats in the region. In addition, the removal of habitat along a linear ROW is not expected to result in the loss of large contiguous blocks of habitat. Given that the MOX Project is surrounded by large tracts of suitable habitat, the removal of vegetation along the existing alignment is not expected to adversely affect special-status or protected wildlife species with the implementation of APMs and EIR mitigation measures. Furthermore, GO 95 requires vegetation clearance to minimize wildfire risk, and GO 131-D exempts local jurisdictions from local regulations and discretionary permits, including local tree ordinances and replacement requirements. As such, the EIR's analysis of biological resource impacts related to oak woodlands is adequate under CEQA and commensurate with the degree of vulnerability to Project impacts. No additional mitigation is required.

This comment does not identify any new or substantially more severe impacts that would require additional or substantially modified mitigation measures and therefore does not require further response.

A05-4 Please see Response to Comment A05-3.

A05-5 The commenter notes that CEQA requires information developed in EIRs and Negative Declarations to be incorporated into a database, and accordingly, requests that any special-status species and natural communities detected during Project surveys be reported to the California Natural Diversity Database (CNDDB). The link to access the survey form and information to be reported is provided.

CNDDB Field Forms submitted for special-status species observed during surveys for the proposed Project are provided in Appendix C of Appendix B1 of PG&E's Proponent's Environmental Assessment. In addition, any additional special-status species observed during construction or operations and maintenance activities will be submitted to CDFW's CNDDB within 60 calendar days in accordance with BAHCP O&M ITP 6.8. The environmental document already

complies with the requirement to report any special-status species or sensitive natural communities into CNDDB. No further response is required.

A05-6 The CPUC acknowledges CDFW's environmental document filing fees that are required when filing the Notice of Determination, should the MOX Project be approved.

As requested, the listed contacts have been added to the CPUC's Project mailing list.

A05-7 The CPUC acknowledges the references cited in CDFW's comment letter for Comments A05-01 and A05-2. No further response is required.

J.3.2. Comment Set B: Businesses and Organizations

Comment Set B01 – Friends of Sausal Creek

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Noé Romo Loera <noe@sausalcreek.org>
Sent: Friday, September 12, 2025 2:13 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Comment for Moraga-Oakland X Project, A.24-11-005

Good Afternoon,

My name is Noé Romo Loera, I am the Restoration Ecologist/ Manager for Friends of Sausal Creek (FOSC) out of Oakland, California. I am writing to submit my comment regarding the EIR for the Moraga-Oakland X Project. **B01-1**

After reading the scope of work it is clear that the species avoidance procedures and minimization measures are well thought out and informed. However, with regards to biological and natural resources within the area of the project, I just wanted to highlight the importance of working with an abundance of caution in areas with protected/ special status species. Specifically the Pallid Manzanita which is the primary species of concern within the bounds of FOSC's project areas. The introduction of any phytophthora species can be equally as detrimental as trampling over species itself.

The project overall proposes a net positive while minimizing harm to wildlife and natural resources in the urban and suburban areas.

Thank you.

Noé Romo Loera (he/ they)
Restoration Manager
Friends of Sausal Creek (FOSC)
Noe@sausalcreek.org
(510) 250-2577

Friends of Sausal Creek

Responses to Comment Set B01 – Friends of Sausal Creek

B01-1 The commenter states the species avoidance procedures and minimization measures are well thought out and informed. However, the commenter wants to highlight the importance of working with caution in areas with protected or special status species. Pallid manzanita is the primary species of concern within the Friends of Sausal Creek (FOSC) project area.

The CPUC appreciates the comments from the FOSC and acknowledges that pallid manzanita is a sensitive species that is both federally and state listed. Pallid manzanita is one of three special status plant species observed in the Project's Biological Study Area. The MOX Project falls entirely within the coverage area for the Bay Area HCP, approved by USFWS, and addresses Pallid manzanita. PG&E's Bay Area HCP has identified Map Book Zones (MBZ) for pallid manzanita, requiring species-specific AMMs to minimize impact. As discussed under the Draft EIR Impact BIO-1 for Plants, implementation of measures from the Bay Area HCP, Bay Area O&M ITP, and Bay Area O&M ITP FEIR would avoid and minimize impacts to special-status plant species, including pallid manzanita. In addition, as identified in the Draft EIR, the Project will implement Mitigation Measure Bio-1a (Special Status Plant Avoidance), which would require plant surveys by a qualified botanist during appropriate blooming periods prior to vegetation removal; and implementation of measures if special-status plant species are found.

The commenter also expressed concern over the introduction of phytophthora species. CPUC acknowledges that the spread of phytophthora is detrimental to native plants. PG&E's Bay Area HCP discusses control of *Phytophthora cinnamomi* as a management recommendation in the USFWS 2010 Draft Recovery Plan for Pallid Manzanita. Bay Area HCP AMM Plant-08 specifically addresses *Phytophthora cinnamomi*, including avoiding working when soils are moist to reduce the likelihood of spread. AMM Plant-08 also requires implementation of vehicle, equipment, and personnel hygiene protocols; and procedures for conducting activities in infected areas. In addition, ITP FEIR APM BIO-3a minimizes the spread of invasive plants and plant pathogens by staging work in non-infested areas, quarantine of infested areas, clothing, or equipment, and monitoring of revegetation activities.

Language discussing potential impacts from *Phytophthora* have been added to the Final EIR. However, APMs were already included to address the potential spread of *Phytophthora*, including Bay Area HCP AMM Plant-08 and ITP FEIR APM BIO-3a as discussed above, and the conclusion that impacts to pallid manzanita would be less than significant with mitigation remains the same. The pallid manzanita impact analysis provided in the EIR complies with the requirements of CEQA and the CEQA Guidelines, and no additional mitigation measures are required.

J.3.3. Comment Set C: Native American Tribes

Comment Set C01 – Wilton Rancheria Tribe

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Cultural Preservation Department Inbox <cpd@wiltonrancheria-nsn.gov>
Sent: Wednesday, August 20, 2025 4:11 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Moraga-Oakland X 115 Kilovolt Rebuild Project

Categories: Cultural

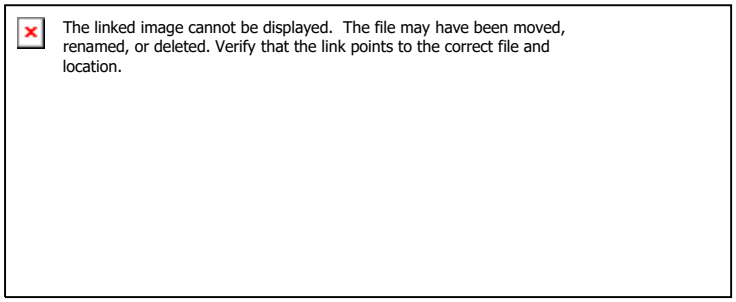
Greetings,

Thank you for your letter dated August 12, 2025, regarding the proposed project. Wilton Rancheria ("Tribe") is a federally recognized Tribe as listed in the Federal Register, Vol. 74, No. 132, p. 33468-33469, as "Wilton Rancheria of Wilton, California". The Tribe's Service Delivery Area ("SDA") as listed in the Federal Register, Vol. 78, No. 176, p. 55731, is Sacramento County. The Tribe's Trust Lands are in Sacramento County however, the Tribe's ancestral territory spans from Sacramento County to portions of the surrounding Counties. **C01-1**

Although your project is within the ancestral territory of the Wilton Rancheria, we do not have any comments and do not wish to open consultation at this time. We appreciate your continued outreach and/ or consultation for future projects and respectfully request that you contact us if there are any project updates or changes. **C01-2**

Thank you,

Koshoua



Responses to Comment Set C01 – Wilton Rancheria Tribe

C01-1 The commenter states that Wilton Rancheria ("Tribe) is a federally recognized tribe with Trust Lands in Sacramento County, although the Tribe's ancestral territory spans from Sacramento County to portions of the surrounding Counties.

As discussed in Draft EIR Section 3.16, Tribal Cultural Resources, in December 2024, the Native American Heritage Commission provided contact information for the Tribe among a list of 18 tribes for Alameda and Contra Costa Counties. The Tribe was included in Native American outreach efforts conducted by the Applicant in January 2024 (see Table 3.16-1). No response was received by the Tribe during those outreach efforts.

C01-2 The commenter states that although the proposed Project is within the ancestral territory of the Tribe, the Tribe does not have any comments and does not wish to participate in consultation at this time. The Tribe requests to be contacted regarding any Project updates or changes.

The Tribe's response to decline consultation and request any future updates or changes is acknowledged. Any changes or updates to the proposed Project will be shared with the Tribe via email or posted to the CPUC's Project website, which is updated during the CEQA process, pre-construction compliance, and throughout mitigation monitoring during construction, should the Project be approved.

No further response is required.

J.3.4. Comment Set D: Individuals

Comment Set D01 – Kenneth Gibson

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Kenneth Gibson <kennethtgibson@gmail.com>
Sent: Wednesday, August 13, 2025 10:59 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project;
Subject: Moraga-Oakland X Project

The entire high voltage line from Oakland through forested and public spaces to Moraga should be replaced as a high voltage direct current system. HVDC offers tremendous benefits in transmission efficiency and direction of flow flexibility. This will require more substantial investment in the line and at the existing substations. **D01-1**

This kind of "experimental" investment by PG&E could lead to a direction of substantial long term investments by the company and long-term returns for its share-holders while actually accomplishing something beneficial to the community and the planet. A nationwide super grid of HVDC transmission lines offers the long term potential to shut down coal mines in Virginia, uranium mines in New Mexico and Wyoming and oil and gas wells in California and Texas. Let California join in leading the way to a safer energy future. PG&E should be honored to pursue such an opportunity while also providing better support for roof-top solar on both sides of the hills surrounding foggy San Francisco Bay. **D01-2**

Kenneth Gibson, RG (Regular Voter)
Oakland CA 94602

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Responses to Comment Set D01 – Kenneth Gibson

D01-1 The commenter states that the entire proposed Project alignment needs to be replaced with a high voltage direct current (HVDC) system, which would provide benefits related to transmission efficiency and direction of flow flexibility. The commenter acknowledges that substantial investments in the lines and the existing substation would be required to construct the HVDC system.

Section 4.4.3.4 of the Final EIR has been revised to include an analysis of an HVDC Alternative, which details the advantages and constraints of a HVDC system. The Final EIR eliminates the HVDC Alternative from further analysis due to its construction impacts compared to the proposed Project, its reduced operational flexibility, high cost, and the lack of space nearby to the Oakland X Substation for a converter station, making construction of this alternative technically infeasible. This comment does not identify any new impacts or substantially more severe impacts that would require additional or substantially modified mitigation measures to the EIR. No further response is required.

D01-2 The commenter states that PG&E's investment in a nationwide HVDC system could lead to long-term returns for shareholders while at the same time provide community and environmental benefits, including eliminating the need for nationwide fossil fuel production facilities and supporting rooftop solar on both sides of the hills surrounding the San Francsico Bay.

Section 4.4.3.4 of the Final EIR discusses the advantages and constraints of implementing HDVC technology as an alternative to the proposed Project. Because of the reasons stated in Response to Comment D01-1, including a cost-benefit comparison, construction impacts, and the technical infeasibility of constructing this alternative, the HDVC Alternative was eliminated from further analysis in the EIR. No further response is required.

Comment Set D02 – Denise Bostrom

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Denise Bostrom <denise.bostrom@gmail.com>
Sent: Monday, August 18, 2025 10:03 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Moraga-Oakland X Project

Dear Tharon Wright, CPUC

With regard to the Rebuilding the existing Moraga-Oakland X 115kV Line Overhead -- that's above Highway 13: Why can't this line be undergrounded as well as the other Rebuild of an Existing Moraga-Oakland X 115 kVLine -- that's below Highway 13? **D02-1**

Thanks,

Denise Bostrom
510-508-8149

--
Family Stories & Memoir Writing - Sat. AM Class (9/13 - 10/4) Piedmont Adult School: 760 Magnolia Ave. 94611

Responses to Comment Set D02 – Denise Bostrom

D02-1 The commenter asks why the portions of the overhead power line rebuild alignment above and below State Route 13 cannot be undergrounded.

The commenter's support for an underground alignment above and below State Route 13 is acknowledged and will be shared with the CPUC's decision-makers for their consideration. Additional information about the consideration of underground alignment options is provided in General Response GR-1. No further response is required.

Comment Set D03 – Sara Rankin

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Sara Rankin <sara@almaacupuncture.com>
Sent: Wednesday, August 20, 2025 6:39 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Moraga-Oakland Power line rebuild

Hello,

I am concerned about the health consequences of increasing to a larger size conductor for residents who live along this corridor. Can you please provide information regarding this concern? **D03-1**

Best,

Sara Rankin

Responses to Comment Set D03 – Sara Rankin

D03-1 The commenter requests additional information to address their concern regarding the health consequences to living along the power line corridor from increasing to a larger size conductor.

The commenter does not specify a particular type of health issue of concern. The following CEQA topics require an analysis of human health impacts and are addressed in various sections of the Draft EIR:

- Hazardous and hazardous materials, including contaminated sites, hazardous materials handling, and proximity to sensitive receptors (see Draft EIR Section 3.9);
- Air quality, including toxic air contaminants and criteria air pollutants (see Draft EIR Section 3.3);
- Noise, including hearing damage and community annoyance (see Draft EIR Section 3.11);
- Wildfire, including smoke exposure and evacuation safety (see Draft EIR Section 3.18); and
- Hydrology and water quality, including contaminated water that could affect human health (see Draft EIR Section 3.10).

Specifically related to conductors, the Draft EIR addresses corona effects in Draft EIR Section 3.11, Noise. As stated in that section, corona noise in power lines results from discharge when the electric field around high-voltage conductors ionizes the surrounding air.

Draft EIR Section 3.9, Hazards and Hazardous Materials and Public Safety, addresses the exposure of workers or the public to excessive shock hazards, which is a public safety issue that is also related to conductors. Additional information about the proposed Project's impacts related to shock hazards can be found in Section 3.9.3.3 under Impact HH-7.

Finally, another concern related to conductors is exposure to electric and magnetic fields (EMF). However, EMF is not an environmental impact to be analyzed in the context of CEQA because (1) there is no agreement among scientists that EMF creates a potential health risk, and (2) there are no defined or adopted CEQA standards for defining health risk from EMF. Nevertheless, recognizing that there is public interest and concern regarding potential health effects from exposure to EMF from power lines, the EIR provides some general background information in EIR Appendix G [Exhibit D: Preliminary EMF Field Management Plan, included in PG&E's PTC application] regarding EMF. EIR Appendix G also includes PG&E's Field Management Plan for the proposed Project, which provides more information about no-cost and low-cost EMF measures that will be installed as part of the final engineering design for the proposed Project. No further response is required.

Comment Set D04 – Elizabeth Hansell

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Elizabeth Hansell <joey.hansell@gmail.com>
Sent: Wednesday, August 27, 2025 8:58 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: We live on Scout Rd

Hi
We live on Scout Rd and would be willing to put up with the " inconvenience of undergrounding. D04-1
The towers are an eyesore in our neighborhood.
Elizabeth Hansell
2420 Scout Rd , Oakland, CA 94611

Responses to Comment Set D04 – Elizabeth Hansell

D04-1 The commenter expresses support for undergrounding the lines near their residence because of visual impacts from the existing towers.

The commenter's support of underground alignments due to the reduction of existing visual impacts is acknowledged and will be shared with the CPUC's decision-makers for their consideration. Additional information about the consideration of underground alignment options is provided in General Response GR-1.

Under CEQA, projects must be analyzed for their effects on the existing physical environment. The central requirement is to establish an environmental baseline, or the physical conditions that exist at the time the environmental review begins. A project's potential environmental impacts are then determined by comparing post-project conditions against this baseline. The existing overhead towers are included in the environmental baseline for visual impacts, as discussed in Draft EIR Section 3.2, Aesthetics. As analyzed in EIR Section 3.2, the proposed Project was found to result in less than significant aesthetic impacts.

Comment Set D05 – Pete Retondo

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Pete Retondo <peteretondo@gmail.com>
Sent: Monday, September 1, 2025 6:37 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: Gryler, Stella; officeofthemayor@oaklandca.gov; district4@oaklandca.gov; Phil Gorman
Subject: Comments on draft EIR for PG&E transmission line rebuild Moraga - Oakland (Park Blvd.) Oakland X Substation

Dear Tharon Wright,

I am writing to express my disagreement and profound disappointment in the basic scientific integrity of the Draft EIR ("Paci□c Gas and Electric Company Moraga-Oakland X 115 Kilovolt Rebuild Project (A.24-11-005)," to be presented for consideration by the California Public Utilities Commission. **D05-1**

The process and inadequately-supported conclusions of this report are in direct conflict with CPUC determinations regarding wildfire mitigation through the undergrounding of transmission lines. Specifically, in CPUC's Decision 23-11-069 (November 16, 2023) PG&E was authorized to construct 1230 miles of undergrounded lines in the next four years (through 2027). Why, then, are the 4 most critical miles of this 5-mile project to remain overhead transmission lines over wooded and dry terrain extremely vulnerable to the sparking of a catastrophe firestorm in Oakland? Where else in the State of California can you find a more vulnerable and critical wildfire hazard?

Not only does this draft EIR fail to consider that a large wildfire is by far THE most significant environmental impact of this project, it accepts a preliminary assessment eliminating the most sensitive portion of the project from consideration for undergrounding, and fails to properly evaluate that decision.

I find that the assessment of retired Moraga-Orinda Fire Chief Dave Winnacker, expressed in a letter to our neighbor, provides a concise and authoritative roadmap to this issue:

> "Undergrounding of distribution lines reduces the risk of a fire start in the community. In foothill and rural areas, there is a very real risk such a fire start could rapidly grow to become a destructive fire. In dense urban and suburban areas, a distribution line start is extraordinarily unlikely to cause a significant fire for three reasons:
>
> 1. Ignitions within the community are observed and the fire department puts them out.
>
> 2. The firefighter density in an urban or suburban area is high. In Moraga fire fighting response times are under 4 minutes as opposed to the 30+ minute response time common in rural areas.
>
> 3. In an urban or suburban setting, there is not enough vegetative continuity to rapidly carry fire from a spot ignition."

Comment Set D05 – Pete Retondo (continued)

The proposed project gets this exactly backwards. The project is divided into three segments: **D05-1 (cont'd)**

1. East portion: Moraga substation to crest of Oakland hills (described in the EIR as "primarily hilly open space and park land owned by East Bay Regional Park District (EBRPD) and East Bay Municipal Utility District (EBMUD)")
2. Middle portion: from crest of Oakland hills down to intersection of Park and Estates, hilly low-density residential
3. West portion: from Park at Estates down to Substation X at Park and I-580, urban, higher density residential and commercial

It is only portion 3, the LEAST likely to risk wildfire ignition, that is to be undergrounded. Portion 2 is considered in the EIR for alternate undergrounding (though not through the most obvious route following Park Blvd. in the lower portion) - but the report recommends against that alternate primarily because it DOWNPLAYS THE IMPORTANCE of environmental impacts resulting from the devastation of a large wildfire. Portion 1 is not seriously evaluated for undergrounding, through disqualification by way of a summary preliminary evaluation.

It is in these roughly two miles of portion 1 that a catastrophic wildfire is most likely to be sparked. The land is not accessible by developed roads to fire equipment. Fires there must be fought by the same methods used in remote areas. Surveillance, allowing a rapid response, does not exist or is very limited. There are no fire hydrants or readily-available water supplies. During an easterly high wind in the dry fall, this is exactly the setting for a scenario like that already faced by Santa Rosa, Paradise, and Altadena / Pacific Palisades.

What are we thinking? The hazard is so obvious it boggles the mind to contemplate what is going through the minds of officials and the authors of this report.

These power lines were originally constructed in 1908 and 1930. If we are something like 100 years between major reconstructions, failing to take the opportunity to underground these lines now will mean the hazard will not be addressed in anyone's lifetime. Failing to do the right thing now surely, through the law of averages, risks a disaster and major recrimination and regret within those very lifetimes. The regret suffered by my family, and my neighbors on Trafalgar Place in Oakland, who would be in the direct path of the potential wildfire, will be possibly more profound.

Section 3.18 of the EIR addresses the long-term wildfire risk, and makes for chilling reading. The most succinct summary of the issue before us is expressed as follows: "While undergrounding lines nearly eliminates ignition risk, it is very expensive . . ." (3.18-6). It is worth noting that the most significant fire in Oakland history (1991 Tunnel Fire), described in this section, was caused by fireworks activity in a vacant field during a Diablo wind event. The fire was accessible to the OFD, but nevertheless became uncontrolled, burning over 2000 homes to the ground. (The report authors seem ignorant of some commonly-known facts surrounding this event). How much more likely is it for a fire sparked in the hills between Moraga and Oakland to gain momentum? The report does not even consider that question. Of the 53 odd pages devoted to this topic, out of 800 pages overall, most address the impacts associated with construction activities, not the long-term operation of the overhead lines. **D05-2**

Comment Set D05 – Pete Retondo (continued)

Section 4 of the EIR evaluates alternatives to underground lines through portion 2. Unaccountably, the study concludes that it is impossible to accommodate two 4' wide conduit routes through a single roadway, thereby doubling the impacts and costs of the evaluated alternative. I doubt that a 30' or more city right of way cannot be found to make room for all 4 circuits under one route. **D05-3**

Most significantly, the EIR dismisses undergrounding proposals for the easterly portion 1 of the project primarily because "increased construction activities in EBMUD and EBRDP land would result in more ground disturbance within sensitive habitats and severe visual land scars due to construction clearing." This is where the report crucially fails in its primary task. Does this envisioned disturbance present greater, or less, environmental damage than complete destruction of thousands of acres by wildfire? Question not even posed. The report also cites "extremely disruptive" temporary traffic impacts during construction. I would propose that a poll of residents, asking if they would accept a few weeks of traffic disruption as against having their homes destroyed by fire at some time in the future, would put that objection to rest.

By the way, the report states without evidence that the abandoned railroad tunnel from upper Shepherd's Canyon across to Pinehurst has been "filled in." Delving into the history of that tunnel, that appears not to be the case. In fact, in the early 1950s a house built over the first couple hundred feet of the tunnel was destroyed when the portal partially collapsed. **D05-4**

Overall, the EIR does not adequately evaluate the undergrounding alternate options. It appears to me to go out of its way to emphasize incompletely documented objections, or objections which do not withstand the test of logical analysis.

Does the proposed project reduce the risk of fire? That is what PG&E claims, and apparently some risk reduction is the main consideration of this report and perhaps of the CPUC. The larger question: is it worth $300 million or more to execute a project that does not diminish fire threat from the transmission lines to near zero, when spending more on this once-in-a-hundred-years upgrade could accomplish that goal? I believe the citizens of California, and certainly those who live under threat of PG&E electrically-sparked fires, expect a higher standard of our elected and appointed officials than "better than nothing." **D05-5**

Sincerely,

Pete Retondo, AIA

--
Pete Retondo
510-589-0789
www.retondoarchitecture.com

Comment Set D05 – Pete Retondo (continued)

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Pete Retondo <peteretondo@gmail.com>
Sent: Friday, September 5, 2025 2:18 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: officeofthemayor@oaklandca.gov; district4@oaklandca.gov
Subject: Moraga-Oakland X Project

Dear Tharon Wright,

The Chronicle just reported that a major homeowners' insurance company is dropping coverage for another 37,000 California homeowners, undoubtedly in response to the estimates of over $50 billion in destruction due to the recent wildfires in L.A. **D05-6**

If anyone thinks we are not in a new era when it comes to power line responsibilities and standards, they need only review headlines from the last 10 or so years. A video of the Southern California Edison power line spark that started the Eaton fire in Altadena is also worth viewing. Everyone, and especially the CPUC and the utilities it regulates, is playing catch up. The old rules, the old standards, the old way of doing things are out of touch with today's realities.

It is commonly accepted today that in wooded or brushy areas with difficult firefighting access, under-grounding transmission conductors reduces the risk of fire induced by electrical sparks to zero or nearly zero. In 1908 and 1930, when these overhead transmission lines on towers were originally built, no such understanding of the risk was prevalent. What was once perhaps unimagined is now the new reality.

The new understanding of reality demands that we treat this replacement, with expanded ampacity, be treated in many respects as new project rather than just a repair. In that light, we should be concerned not merely with the activities of construction, we must consider the long term environmental impact. The erro-neously cavalier assumptions of 100 years ago need some mechanism of correction as we move into the next century. We must incorporate our clearer understanding of the risks associated with overhead trans-mission lines into our review of project proposals, and this the Draft EIR fails to do, despite the fact that in a strictly technical sense the expanded ampacity of the proposed new lines constitutes a new project. **D05-7**

Does the CEQA process allow for such a more enlightened view of a project such as this? CEQA language certainly suggests it should:

> CCR 14 section 15358 Effects: “Effects” and “impacts” as used in these guidelines are synonymous.
>
> (a) Effects include:
>
> (1) Direct or primary effects which are caused by the project and occur at the same time and place.
>
> (2) Indirect or secondary effects which are *caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable*. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems. [emphasis added]

The indirect impacts of overhead transmission lines are omitted from consideration in the Draft EIR's conclusions at several points, and this constitutes the major inadequacy of the report. Although the risk of a catastrophic wildfire (an indirect effect) is discussed, it is not actually incorporated at key points into the technical determinations made. Instead, the primary effects of the actual construction components and of the construction process, are the sole factors upon which its key recommendations are based. It is on this basis that the undergrounding of the easterly third of the project is deemed unworthy of consideration, and that the negative impacts of increased construction time and activity outweighs the benefits of undergrounding the middle portion of the project.

1

Comment Set D05 – Pete Retondo (continued)

To be a complete and good-faith assessment, the report must weigh the long-term indirect impacts of a plan that presents the strong possibility of a massive wildfire against alternates that would prevent such a catastrophe. It seems to me inconceivable that we would then be able to conclude that undergrounding is an environmentally inferior solution. We could then move on to the economic factors, which it seems to me have all along been driving this process. In my view it is ethically unacceptable for the EIR to subvert the decision-making process and to offer a false environmental rationale for making a judgement that is really economic.

D05-7 (cont'd)

To be adequate, the report must evaluate alternate plans fairly and professionally. From a technical point of view, the alternates with which the authors spend so much time finding fault, are sketchy and full of potentially crucial errors. If I were in a position of authority, I would demand to see schematic level plans for undergrounding both the easterly and middle portions of the project, prepared by qualified independent engineers. Relying on sketchy assertions from PG&E and basically speculative assumptions is not sufficient.

The Shephard Canyon Road / Shephard Canyon path city-owned right of ways are clearly generous enough to accommodate all 4 circuits underground, and adjacent city-owned properties and street intersections afford ample opportunity to site required splice vaults. No one who takes a look at the readily-available maps showing the extent of these rights-of-way could possibly assert, as the report does, that it does not provide a single route for all the undergrounding needed. This is an error so glaring that it suggests, at the least, a lack of competence that a legitimate engineering plan would correct. The report further states, without citing evidence, that the nearly mile-long tunnel used until the 1950s by the Sacramento Northern Railway has been "filled in." Local knowledge, and, frankly, engineering savvy, make that a highly suspect claim. Please have them supply documentation supporting the statement.

D05-8

With those two substantial chunks of available routing, we would then be left with the relatively less complicated traversal of the final mile and a half or so from the tunnel portal near Canyon to the Moraga substation. I would submit that this alternate has been inadequately considered and discarded with flawed reasoning.

There is one other important point to bring into the discussion, and that is the report's claim that the improved replacement transmission lines represent a "90% reduction" in fire risk. That claim is not backed up by any evidence, and as a quantitative assertion it is meaningless. We know that overhead lines of this character have sparked numerous destructive fires, and to claim that any engineering improvement, which has not had a similar test of time, would produce any desired result is purely speculative. I would therefore take with a large grain of salt any argument that undergrounding would improve our chances by only 10%, and better trust both common sense and the overwhelming consensus of experts.

D05-9

I hope that these comments have been worth your time in reading them, and that the CPUC commissioners will find them useful.

Best regards,

Pete Retondo, AIA

--
Pete Retondo
510-589-0789
retondoarchitecture.com

Responses to Comment Set D05 – Pete Retondo

D05-1 The commenter states that the EIR contains inadequately supported conclusions that conflict with CPUC's determinations regarding wildfire mitigation through the undergrounding of transmission lines, specifically CPUC Decision 23-11-069, which authorized PG&E to construct 1,230 miles of undergrounded lines in the next 4 years. The commenter questions why the western portion of the Project area was chosen for an underground alignment, whereas the eastern portion, which is most vulnerable to wildfire hazards, was eliminated from consideration for an underground alignment. The commenter provides a quote from retired Moraga-Orinda Fire Chief Dave Winnacker expressing support for undergrounding power lines to reduce the risk of a fire start, especially in foothill and rural areas, since urban and suburban areas have a lower risk of fire start becoming a significant fire. The commenter states that the EIR fails to consider that wildfires are a significant environmental impact from the proposed Project, and the document downplays the importance of wildfire impacts in the alternatives analysis. The commenter also expresses concern that the proposed Project provides a limited opportunity to underground the power lines, given that the power lines were constructed in 1908 and 1930 and another reconstruction would not likely take place for another 100 years. The commenter is also concerned about the potential that a wildfire could personally affect them or their neighbors if undergrounding the lines is not done now to address wildfire risks.

The support for undergrounding the power lines to eliminate wildfire hazards associated with the lines is acknowledged. Additional information about the consideration of underground alignment options is provided in General Response GR-1. As summarized in General Response GR-1 and analyzed in detail in the Draft EIR, the underground alternatives would: involve physical limitations including narrow, steep, and windy roads with sharp turns that render the construction of undergrounded power lines infeasible; result in other catastrophic hazards such as close proximity to an active fault (Hayward Fault Zone); or require the construction of more than three times the length of the proposed power line.

The Draft EIR was completed in compliance with CEQA (Public Resources Code 21000–21189) and the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000–15387). Under CEQA, projects must be analyzed for their effects on the existing physical environment. The central requirement is to establish an environmental baseline, or the physical conditions that exist at the time the environmental review begins. A project's potential environmental impacts are then determined by comparing post-project conditions against this baseline.

Draft EIR Section 3.18, Wildfire, discloses the existing wildfire hazards in the Project area as the environmental baseline, including the history of wildfires within and surrounding the Project area. In compliance with CEQA and the CEQA Guidelines, Section 3.18.3.3 under Impact WF-2 discusses whether the proposed Project would exacerbate these existing wildfire hazards. As stated in the section, the overhead power line rebuild includes replacing older power line infrastructure with stronger, safer, more fire-resistant structures and conductors that would be designed in compliance with more stringent and current regulations. The new structures would be more reliable as they would be in new condition, would be made of steel, and be on new foundations. Therefore, the proposed Project would result in beneficial impacts related to reducing wildfire risks compared to existing conditions. This analysis complies with the requirements of CEQA and the CEQA Guidelines, and no additional analysis is required.

D05-2 The commenter acknowledges that Draft EIR Section 3.18 describes the long-term wildfire risks in the Project area, as evidenced by a discussion of the 1991 Tunnel Fire in that section, but the commenter points out some discrepancies in the details of that fire. The commenter

also states that the Draft EIR does not consider how likely it would be for another fire sparked in the hills to gain momentum, and the document lacks sufficient analysis of the long-term operation of the overhead lines.

The information related to the 1991 Tunnel Fire that is provided in Draft EIR Section 3.18 is based on publicly available information from established sources about the fire, which did not include the specific details outlined by the commenter. As stated in Response D05-1, Draft EIR Section 3.18 discloses the existing wildfire hazards in the Project area as the environmental baseline. Draft EIR Section 3.18.3.3 under Impact WF-2 provides information about the beneficial impacts of the proposed Project related to reducing wildfire risks during the long-term operation of the proposed Project, as compared to the environmental baseline. This analysis complies with the requirements of CEQA and the CEQA Guidelines, and no additional analysis is required.

D05-3 The commenter questions the description in the Draft EIR about the logistical constraints of the underground alignment alternatives beneath roadways, as well as the additional environmental constraints associated with constructing the underground alignment options. The commenter states that construction impacts from the underground alternatives have not been compared to the environmental damage caused by a wildfire, and that residents would likely prefer temporary construction impacts over having their homes destroyed during a future wildfire event.

Regarding the logistical constraints of constructing beneath roadways for the underground alignment options, PG&E's PEA states that "a minimum road width of at least 22 feet is needed to fit both duct banks, not inclusive of other utility obstructions. However, utilities, including sewer and water, natural gas distribution, and telecommunication lines, are expected to be present in the roadways in unknown locations and may present additional constraints if they cannot be relocated to provide enough room for the duct banks." Based on a thorough analysis of roadway widths and the feasibility of underground alignments, it was determined that placing all four overhead 115 kV lines underground in one road may not be feasible due to the width and separation required for two separate double-circuit duct banks. As a result, Alternatives 2, 3, and 4 assume that only two circuits would be installed in each road. Therefore, two of the three Oakland Hills alternatives (Alternatives 2 & 3, Alternative 2 & 4, or Alternatives 3 & 4) would be required to be constructed in order to accommodate the four Project circuits, as discussed in Draft EIR Section 4.3.1, Issues Associated with All Underground Alternatives.

As summarized in General Response GR-1 and analyzed in detail in the Draft EIR, the underground alternatives would: involve physical limitations including narrow, steep, and windy roads with sharp turns that render the construction of undergrounded power lines infeasible; result in other catastrophic hazards such as close proximity to an active fault (Hayward Fault Zone); or require the construction of more than three times the length of the power line

Response to Comment D05-1 explains the requirements under CEQA and the CEQA Guidelines to analyze the proposed Project's impacts on the environmental baseline. An analysis of the environmental baseline itself, which would be the impacts from existing wildfire hazards, is not required to be included in the CEQA analysis for the proposed Project. Draft EIR Section 3.18.3.3 under Impact WF-2 provides information about the beneficial impacts of the proposed Project related to reducing wildfire risks during the long-term operation of the proposed Project, as compared to the environmental baseline. This analysis complies with the requirements of CEQA and the CEQA Guidelines, and no additional analysis is required.

D05-4 The commenter states that the Draft EIR incorrectly claims that the abandoned railroad tunnel from upper Shepherd's Canyon across to Pinehurst has been "filled in," and overall, the document includes illogical objections to underground alignments.

The support for underground alignments is acknowledged and will be shared with the CPUC's decision-makers for their consideration. See Response to Data Request D05-8 and additional information about the consideration of underground alignment options is provided in General Response GR-1.

The alternatives analysis in Section 4.5 complies with CEQA Guidelines Section 15126.6(a), which states that an EIR shall describe a reasonable range of alternatives to a project, or to the location of a 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. The CEQA Guidelines state that the discussion of alternatives shall focus on alternatives capable of eliminating or reducing significant adverse environmental effects of a project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

The CEQA Guidelines (Section 15364) define feasible as "...capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." According to CEQA Guidelines Section 15126.6(f)(1), among the factors that may be considered when addressing the potential feasibility of alternatives include site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or other regulatory limitations, jurisdictional boundaries, and the project proponent's control over alternative sites.

The PG&E Redwood Peak Tunnel Alternative, specifically, was considered and eliminated from further review, as discussed in Draft EIR Section 4.4.2.4, due to increased safety risks because of the unknown structural condition of the tunnel and the potential for collapse; as a result, this alternative would not feasibly attain the basic objectives of the Project related to reliability and safety requirements. The reference to the tunnel being "filled in" was intended to further illustrate concerns about the structural instability of the area, since over time, landslide debris and natural erosion have obscured the entrance to the tunnel by several feet of sediment. In addition, there is limited space at either end of the tunnel for the construction that would be required to rebuild the tunnel for power line use, creating a significant engineering challenge. Therefore, this alternative was eliminated from further consideration based on safety concerns and infeasibility. This analysis complies with the requirements of CEQA and the CEQA Guidelines, and no additional analysis is required.

D05-5 The commenter questions whether an investment of $300 million in the proposed Project is justified, when the Project would not diminish the fire threat from the transmission lines to near zero. The commenter states that spending more funds to underground the lines now would alleviate long-term concerns about electrically-sparked fires, which is worth the additional expenditures and would better meet the public's expectations from elected and appointed officials.

The support for undergrounding the power lines to eliminate wildfire hazards associated with the lines is acknowledged and will be shared with the CPUC's decision-makers for their consideration. Pursuant to CEQA, the focus of the EIR's analysis shall be on physical changes to the environment, and economic or social effects of a project shall not be treated as significant effects on the environment. (CEQA Guidelines, §15131.) Additional information about the consideration of underground alignment options is provided in General Response GR-1.

D05-6 The commenter states that wildfire hazards, especially those caused by power lines, have become a major concern in light of the recent wildfires in Los Angeles, including the Eaton Fire in Altadena that was caused by sparks along a Southern California Edison power line. Wildfire hazards in wooded or brushy areas with difficult firefighting access were not considered when the power lines within the Project alignment were originally constructed. The undergrounding of the power lines would eliminate the risk of fire induced by electrical sparks.

The support for undergrounding the power lines to eliminate wildfire hazards associated with the lines is acknowledged and will be shared with the CPUC's decision-makers for their consideration. Additional information about the consideration of underground alignment options is provided in General Response GR-1.

D05-7 The commenter states that due to the expanded ampacity of the new power lines, the Draft EIR must treat the power line replacement as a new project, and the analysis must address the risks of the new power line and their long-term environmental impacts. The commenter states that CEQA requires an analysis of direct effects, which are caused by a project at the same time and place as the project; and indirect or secondary effects that are caused by a project at a later time or are farther removed in distance but are still reasonably foreseeable. The commenter states that the alternatives analysis in the Draft EIR does not incorporate the proposed Project's long-term indirect effect of causing the risk of a catastrophic wildfire and, as a result, unfairly dismisses underground alignment alternatives based on construction impacts. The commenter asserts that economic factors must be driving the decision-making process, but this has been hidden behind a false environmental rationale. Finally, the commenter states that a review of schematic level plans for undergrounding the eastern and middle portions of the Project alignment would provide concrete evidence of the feasibility of undergrounding the overhead power lines in these areas, rather than relying on PG&E's evaluation of feasibility.

The support for undergrounding the power lines to eliminate wildfire hazards associated with the lines is acknowledged and will be shared with the CPUC's decision-makers for their consideration. Additional information about the consideration of underground alignment options is provided in General Response GR-1.

The Draft EIR was completed in compliance with CEQA (Public Resources Code 21000–21189) and the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000–15387). Under CEQA, projects must be analyzed for their effects on the existing physical environment. The central requirement is to establish an environmental baseline, or the physical conditions that exist at the time the environmental review begins. A project's potential environmental impacts are then determined by comparing post-project conditions against this baseline.

Draft EIR Section 3.18, Wildfire, discloses the existing wildfire hazards in the Project area as the environmental baseline, including the history of wildfires within and surrounding the Project area. In compliance with CEQA and the CEQA Guidelines, Section 3.18.3.3 under Impact WF-2 discusses whether the proposed Project would exacerbate these existing wildfire hazards. As stated in that section, the overhead power line rebuild includes replacing older power line infrastructure with stronger, safer, more fire-resistant structures and conductors that would be designed in compliance with more stringent and current regulations. The new structures would be more reliable as they would be in new condition, would be made of steel, and be on new foundations. Therefore, the long-term operation of the proposed Project would result in beneficial impacts related to reducing wildfire risks compared to existing conditions. This analysis complies with the requirements of CEQA and the CEQA Guidelines, and no additional analysis is required.

The alternatives analysis in Section 4.5 complies with CEQA Guidelines Section 15126.6(a), which states that an EIR shall describe a reasonable range of alternatives to a project, or to the location of a 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. The CEQA Guidelines state that the discussion of alternatives shall focus on alternatives capable of eliminating or reducing significant adverse environmental effects of a project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

The CEQA Guidelines (Section 15364) define feasible as "...capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." According to CEQA Guidelines Section 15126.6(f)(1), among the factors that may be considered when addressing the potential feasibility of alternatives include site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or other regulatory limitations, jurisdictional boundaries, and the project proponent's control over alternative sites. The assessment of the feasibility of the alternatives to the proposed Project has been completed in compliance with the CEQA Guidelines, and no additional analysis is required.

D05-8 The commenter states that the Shepherd Canyon Road/Shepherd Canyon path city-owned rights-of-ways, as well as adjacent properties, can clearly accommodate all 4 circuits underground and the required splice vaults. The commenter asserts that the Draft EIR is in error by claiming that the underground alignment cannot be implemented within a single route, and requests an engineering plan to provide evidence to correct this error. The commenter states that the Draft EIR incorrectly claims that the abandoned railroad tunnel from upper Shepherd's Canyon across to Pinehurst has been "filled in." The commenter also states that the Shepherd Canyon Underground Alternative has been inadequately considered and discarded with flawed reasoning.

The support for the Shepherd Canyon Underground Alternative is acknowledged and will be shared with the CPUC's decision-makers for their consideration.

Regarding the logistical constraints of constructing beneath roadways for the underground alignment options, PG&E's PEA states that "a minimum road width of at least 22 feet is needed to fit both duct banks, not inclusive of other utility obstructions. However, utilities, including sewer and water, natural gas distribution, and telecommunication lines, are expected to be present in the roadways in unknown locations and may present additional constraints if they cannot be relocated to provide enough room for the duct banks." Based on a thorough analysis of roadway widths and the feasibility of underground alignments, it was determined that placing all four overhead 115 kV lines underground in one road may not be feasible due to the width and separation required for two separate double-circuit duct banks. As a result, Alternatives 2, 3, and 4 assume that only two circuits would be installed in each road. Therefore, two of the three Oakland Hills alternatives (Alternatives 2 & 3, Alternative 2 & 4, or Alternatives 3 & 4) would be required to be constructed in order to accommodate the four Project circuits, as discussed in Draft EIR Section 4.3.1, Issues Associated with All Underground Alternatives.

See Response to Comment D05-4 and additional information about the consideration of underground alignment options is provided in General Response GR-1.

D05-9 The commenter questions the claim in the Draft EIR regarding the 90% reduction in fire risk from the proposed Project. The commenter states that this claim is speculative without any evidence that the proposed improvements would stand the test of time. The commenter

states that the increased benefits of undergrounding the power lines compared to overhead lines are based on common sense and an overwhelming consensus of experts.

The support for undergrounding the power lines to eliminate wildfire hazards associated with the lines is acknowledged and will be shared with the CPUC's decision-makers for their consideration. Additional information about the consideration of underground alignment options is provided in General Response GR-1.

The 90% reduction in wildfire risk from the proposed Project was estimated using the PG&E Wildfire Transmission Risk Model (WTRM). The WTRM is described in Draft EIR Section 3.18.1.5, PG&E's Wildfire Mitigation Plan. As discussed in that section, the WTRM assesses risk based on probability of equipment or asset failure, which, for the purposes of this Project, is the probability of failure of power line structures (i.e., damage that can ignite a fire). WTRM uses weather data to generate the probability of failure and incorporates vegetation as one of the drivers of wildfire risk. Information on topography is incorporated through wildfire consequence modeling to generate the final wildfire risk value. This comment does not identify any new or substantially more severe impacts that would require additional or substantially modified mitigation measures, and therefore, does not require further response.

Comment Set D06 – Jonathan Goodwin

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: jonathan@sojourningsoul.net
Sent: Tuesday, September 2, 2025 9:55 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: MORAGA-OAKLAND X 115 KV REBUILD PROJECT

Re: MORAGA-OAKLAND X 115 KV REBUILD PROJECT and the Sacramento Northern Railway Tunnel Connecting Pinehurst Road at Fire Road 41-16 with Shepherd Canyon Road at Paso Robles Drive https://localwiki.org/oakland/Redwood_Peak_Tunnel

To: Tharon Wright, CPUC Project Manager

Mr. Wright, I perused your well written DEIR for this project but was struck by the absence of any consideration of usage of the Sacramento Northern Railway's old Redwood Peak Tunnel to run your wires underground instead of traversing that ridge. If you are unaware of this potential resource, you should consider expanding the scope of your project to consider it. If you are, indeed, aware of it, then you should explain why the usage of it has been dismissed without mention. **E06-1**

Because it was an electric railway requiring electricity at both ends, it closely follows the alignment of your infrastructure. For the area it spans, it would save you your worst wildfire concerns and your aviation concerns. It should be comparatively very cheap to bolster and use an existing bore, rather than pour cement from helicopters, etc., and potentially could save an enormous amount of money. Naturally, it would also raise questions peculiar to itself which would have to be weighed against potential benefits.

If you have questions into which local knowledge might have insight, please feel free to ask.

Jonathan Goodwin
80 Redwood View Road
Canyon, Calif.

Comment Set D06 – Jonathan Goodwin (continued)

E06-1 (cont'd)

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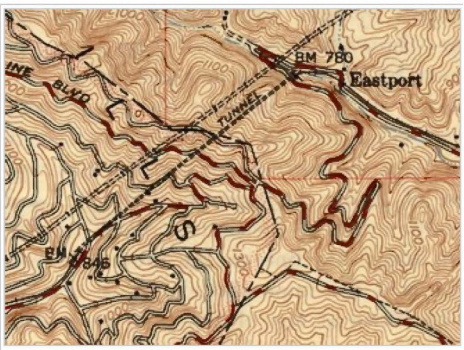


Excerpt from 1949 Oakland East 7.5-minute Quadrangle topo map (in public domain, from UC Berkeley's Historic Topographic Maps of California – San Francisco Bay Area)

The 3700-foot long **Redwood Peak Tunnel** (c.1910–1957) was a railroad tunnel used by the Sacramento Northern Railway (SNR) to go under the Oakland Hills between upper Montclair (SNR's Havens Station) and its Eastport station in Contra Costa County. The tunnel's west portal emerged near the intersection of Saroni Drive and Shepherd Canyon Road (then part of Park Boulevard), and its east portal was adjacent to Pinehurst Road outside Canyon.

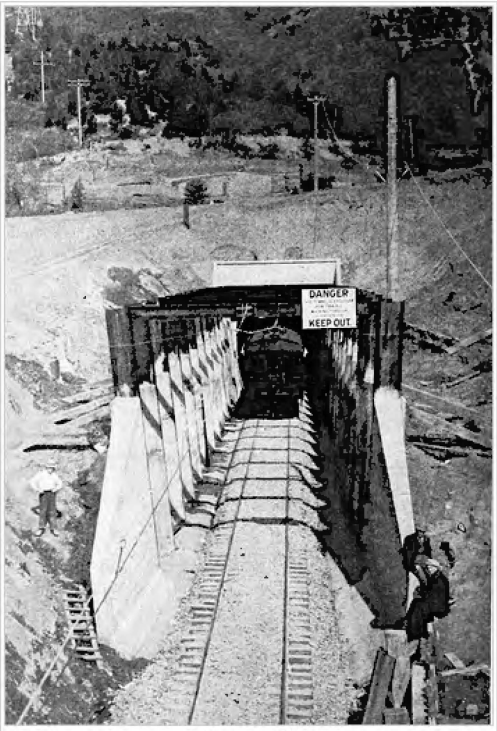
The tunnel was dug 1910–13 by the Oakland and Antioch Railway (OAR), predecessor to the Oakland, Antioch and Eastern Railway, which later merged with the SNR. The work was done by contracting company E. B. and A. L. Stone Company, run by Egbert B. Stone and his brother.

Comment Set D06 – Jonathan Goodwin (continued)

E06-1 (cont'd)

Last used in 1957, the tunnel has since been sealed at both ends. In 1982, a house built over its Oakland side was destroyed when the tunnel below it caved in. It's worth reading the court opinion that ended the litigation over this home's destruction, if only for the history of the original easement. Note the references to the Mahogany Eucalyptus and Land Company and People's Water Company. Also note that the plaintiff in the case bought the property from Caltrans, who had purchased it as part of the right-of-way for the proposed Highway 77 (aka the "Park Boulevard Freeway"–details on the Unbuilt Oakland page).

East Portal near Eastport Station [1]



West Portal [3]

Links and References

1. Sacramento Northern at Daniel Levy's OB&E website
2. Platts v. Sacramento Northern Ry. (1988)
3. Oakland History Group on Facebook May 3, 2022 [looking for original source material]

Comment Set D06 – Jonathan Goodwin (continued)

history montclair Montclair Railroad Trail railroad history transportation history tunnel

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Responses to Comment Set D06 – Jonathan Goodwin

D06-1 The commenter requests consideration of the Sacramento Northern Railway's old Redwood Peak Tunnel to run the power lines underground instead of traversing the ridge. The commenter states that the tunnel closely follows the alignment of the existing power lines and would address both wildfire and aviation concerns, as well as provide cost savings due to the possibility of using an existing bore and avoiding the use of helicopters to pour cement. The commenter also provides an attachment showing additional information about the tunnel.

The PG&E Redwood Peak Tunnel Alternative is discussed in Draft EIR Section 4.4.2.4 and would include installation of an underground power line that would run through the tunnel. This alternative would be approximately 5 miles long in total, including 2 miles overhead and 3 miles underground. The Sacramento Northern Railway used an approximately 3,700-foot-long tunnel under the Oakland Hills between Montclair (approximately at Saroni Drive and Shepherd Canyon Road) and Eastport on Pinehurst Road near EBRPD's Eastport Staging Area where the Pinehurst Underground Route (see EIR Section 4.4.2.2) transitions to Pinehurst Road.

The PG&E Redwood Peak Tunnel Alternative was determined to be infeasible to construct and would not feasibly attain the basic objectives of the Project related to reliability and safety requirements (see Draft EIR Section 4.4.2.4). The tunnel is of unknown structural condition and may collapse, thereby posing an increased safety risk. In addition, there is limited space at either end of the tunnel to support the construction activities that would be required to rebuild the tunnel for power line use, creating a significant engineering challenge. Therefore, this alternative was eliminated from further consideration in the Draft EIR based on safety concerns and infeasibility.

Additional information on the Redwood Peak Tunnel is provided in Response to Comment F06-1. This comment does not identify any new or substantially more severe impacts that would require additional or substantially modified mitigation measures, and therefore, does not require further response.

Comment Set D07 – David Markman

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: David Markman <markmandp@gmail.com>
Sent: Tuesday, September 2, 2025 10:10 AM
To: Pete Retondo
Cc: PG&E Moraga-Oakland X 115 kV Rebuild Project; Gryler, Stella; officeofthemayor@oaklandca.gov; district4@oaklandca.gov; Phil Gorman
Subject: Re: Comments on draft EIR for PG&E transmission line rebuild Moraga - Oakland (Park Blvd.) Oakland X Substation

Dear Tharon Wright,

As a fellow neighbor of Mr. Retondo, I also live on Trafalgar Place. Our Family and Home are relatively lucky, in that we have close access to Highway 13, so that we can escape a wildfire. My neighbors that live across the freeway and to the top of the Oakland Hills do not have that luxury. **D07-1**

Mr. Retondo has succinctly summarized our feelings on the project and we would ask that you strongly reconsider the EIR and request that PG7E reevaluate the portion of the project that should be undergrounded.

Thank you,

David Markman, P.E. Civil (CA)

On Mon, Sep 1, 2025 at 6:36 PM Pete Retondo <peteretondo@gmail.com> wrote:

Dear Tharon Wright,

I am writing to express my disagreement and profound disappointment in the basic scientific integrity of the Draft EIR ("Paci□c Gas and Electric Company Moraga-Oakland X 115 Kilovolt Rebuild Project (A.24-11-005)," to be presented for consideration by the California Public Utilities Commission.

The process and inadequately-supported conclusions of this report are in direct conflict with CPUC determinations regarding wildfire mitigation through the undergrounding of transmission lines. Specifically, in CPUC's Decision 23-11-069 (November 16, 2023) PG&E was authorized to construct 1230 miles of undergrounded lines in the next four years (through 2027). Why, then, are the 4 most critical miles of this 5-mile project to remain overhead transmission lines over wooded and dry terrain extremely vulnerable to the sparking of a catastrophe firestorm in Oakland? Where else in the State of California can you find a more vulnerable and critical wildfire hazard?

Not only does this draft EIR fail to consider that a large wildfire is by far THE most significant environmental impact of this project, it accepts a preliminary assessment eliminating the most sensitive portion of the project from consideration for undergrounding, and fails to properly evaluate that decision.

I find that the assessment of retired Moraga-Orinda Fire Chief Dave Winnacker, expressed in a letter to our neighbor, provides a concise and authoritative roadmap to this issue:

> "Undergrounding of distribution lines reduces the risk of a fire start in the community. In foothill and rural areas, there is a very real risk such a fire start could rapidly grow to become a

Comment Set D07 – David Markman (continued)

D07-1 (cont'd)

destructive fire. In dense urban and suburban areas, a distribution line start is extraordinarily unlikely to cause a significant fire for three reasons:

1. Ignitions within the community are observed and the fire department puts them out.

2. The firefighter density in an urban or suburban area is high. In Moraga fire fighting response times are under 4 minutes as opposed to the 30+ minute response time common in rural areas.

3. In an urban or suburban setting, there is not enough vegetative continuity to rapidly carry fire from a spot ignition."

The proposed project gets this exactly backwards. The project is divided into three segments:

1. East portion: Moraga substation to crest of Oakland hills (described in the EIR as "primarily hilly open space and park land owned by East Bay Regional Park District (EBRPD) and East Bay Municipal Utility District (EBMUD)")
2. Middle portion: from crest of Oakland hills down to intersection of Park and Estates, hilly low-density residential
3. West portion: from Park at Estates down to Substation X at Park and I-580, urban, higher density residential and commercial

It is only portion 3, the LEAST likely to risk wildfire ignition, that is to be undergrounded. Portion 2 is considered in the EIR for alternate undergrounding (though not through the most obvious route following Park Blvd. in the lower portion) - but the report recommends against that alternate primarily because it DOWNPLAYS THE IMPORTANCE of environmental impacts resulting from the devastation of a large wildfire. Portion 1 is not seriously evaluated for undergrounding, through disqualification by way of a summary preliminary evaluation.

It is in these roughly two miles of portion 1 that a catastrophic wildfire is most likely to be sparked. The land is not accessible by developed roads to fire equipment. Fires there must be fought by the same methods used in remote areas. Surveillance, allowing a rapid response, does not exist or is very limited. There are no fire hydrants or readily-available water supplies. During an easterly high wind in the dry fall, this is exactly the setting for a scenario like that already faced by Santa Rosa, Paradise, and Altadena / Pacific Palisades.

What are we thinking? The hazard is so obvious it boggles the mind to contemplate what is going through the minds of officials and the authors of this report.

These power lines were originally constructed in 1908 and 1930. If we are something like 100 years between major reconstructions, failing to take the opportunity to underground these lines now will mean the hazard will not be addressed in anyone's lifetime. Failing to do the right thing now surely, through the law of averages, risks a disaster and major recrimination and regret within those very lifetimes. The regret suffered by my family, and my neighbors on Trafalgar Place in Oakland, who would be in the direct path of the potential wildfire, will be possibly more profound.

Section 3.18 of the EIR addresses the long-term wildfire risk, and makes for chilling reading. The most succinct summary of the issue before us is expressed as follows: "While undergrounding lines nearly eliminates ignition risk, it is very expensive . . ." (3.18-6). It is worth noting that the most significant fire in Oakland history (1991 Tunnel Fire), described in this section, was caused by fireworks activity in a vacant field during a Diablo wind event. The fire was accessible to the OFD, but nevertheless became uncontrolled, burning over 2000 homes to the ground. (The report authors seem ignorant of some commonly-known facts surrounding this event). How much more likely is it for a fire sparked in the hills between Moraga and Oakland to gain momentum? The report does not even consider that question.

2

Comment Set D07 – David Markman (continued)

D07-1 (cont'd)

Of the 53 odd pages devoted to this topic, out of 800 pages overall, most address the impacts associated with construction activities, not the long-term operation of the overhead lines.

Section 4 of the EIR evaluates alternatives to underground lines through portion 2. Unaccountably, the study concludes that it is impossible to accommodate two 4' wide conduit routes through a single roadway, thereby doubling the impacts and costs of the evaluated alternative. I doubt that a 30' or more city right of way cannot be found to make room for all 4 circuits under one route.

Most significantly, the EIR dismisses undergrounding proposals for the easterly portion 1 of the project primarily because "increased construction activities in EBMUD and EBRDP land would result in more ground disturbance within sensitive habitats and severe visual land scars due to construction clearing." This is where the report crucially fails in its primary task. Does this envisioned disturbance present greater, or less, environmental damage than complete destruction of thousands of acres by wildfire? Question not even posed. The report also cites "extremely disruptive" temporary traffic impacts during construction. I would propose that a poll of residents, asking if they would accept a few weeks of traffic disruption as against having their homes destroyed by fire at some time in the future, would put that objection to rest.

By the way, the report states without evidence that the abandoned railroad tunnel from upper Shepherd's Canyon across to Pinehurst has been "filled in." Delving into the history of that tunnel, that appears not to be the case. In fact, in the early 1950s a house built over the first couple hundred feet of the tunnel was destroyed when the portal partially collapsed.

Overall, the EIR does not adequately evaluate the undergrounding alternate options. It appears to me to go out of its way to emphasize incompletely documented objections, or objections which do not withstand the test of logical analysis.

Does the proposed project reduce the risk of fire? That is what PG&E claims, and apparently some risk reduction is the main consideration of this report and perhaps of the CPUC. The larger question: is it worth $300 million or more to execute a project that does not diminish fire threat from the transmission lines to near zero, when spending more on this once-in-a-hundred-years upgrade could accomplish that goal? I believe the citizens of California, and certainly those who live under threat of PG&E electrically-sparked fires, expect a higher standard of our elected and appointed officials than "better than nothing."

Sincerely,

Pete Retondo, AIA

--
Pete Retondo
510-589-0789
www.retondoarchitecture.com

Responses to Comment Set D07 – David Markman

D07-1 The commenter states that they are a neighbor of Mr. Retondo, who submitted Comment Set D05 (see above). The commenter expresses concerns about wildfire hazards and the ability for residents to escape from these hazards, especially those that live across Highway 13 and at the top of the Oakland Hills. The commenter includes a copy of Mr. Retondo's comments and requests a reevaluation of undergrounding the power lines.

The support for undergrounding the power lines to eliminate wildfire hazards associated with the lines is acknowledged and will be shared with the CPUC's decision-makers for their consideration. Additional information about the consideration of underground alignment options is provided in General Response GR-1. Responses to Mr. Retondo's comments are provided above under Comment Set D05.

Comment Set D08 – Phil Gorman

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Phil Gorman <phil_gorman@msn.com>
Sent: Wednesday, September 3, 2025 8:00 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project; district4@oaklandca.gov; officeofthemayor@oaklandca.gov; Gryler, Stella
Cc: Pete Retondo; David Markman
Subject: Urgent: Once-in-a-Century Opportunity to Prevent Wildfire Catastrophe

Dear Mr. Wright, Mayor Lee, and Council Representatives,

I am writing to add my voice to my neighbors' deep concerns about the Draft EIR for the "Moraga–Oakland X 115 kV Rebuild Project." **D08-1**

This transmission line rebuild is a **rare opportunity** to address the greatest wildfire hazard Oakland faces. If we miss the chance now to underground the high-risk wildland corridor, we will likely not get another opportunity.

After reviewing the Draft EIR, I consulted several fire professionals who confirmed that *zones 1 and 2* should be undergrounded. Mr. Retondo already quoted the response I received from a former fire chief and Brigadier General who oversaw wildfire mitigation efforts in our region, but it is worth reiterating: "Undergrounding of distribution lines reduces the risk of a fire start in the community. In foothill and rural areas, there is a very real risk such a fire start could rapidly grow to become a destructive fire."

The current plan appears to have its priorities inverted: it undergrounds lines where a wildfire would be less catastrophic (zone 3), while leaving them overhead where a spark could set off devastation on a regional scale (zones 1 and 2). Given our shared understanding of climate change, we know that hotter temperatures, prolonged droughts, and shifting wind patterns have transformed wildfires into fast-moving urban disasters. I remember the 1991 Oakland Fire well. It's mindboggling to think that we were *lucky* that only 25 people died, only 150 were injured, and only 3500 structures were burned. But when a single spark from one of those overhead PG&E lines ignites the next big Oakland fire...we will be saying just that, if we survive to tell the tale. Once-rare tragedies, we've seen urban wildfires repeatedly recently. Embers leap miles ahead of a blaze, overwhelming even the most prepared cities. Oakland's wildland–urban interface, aging infrastructure, and limited evacuation routes create a perfect storm that insurance companies already recognize—and that residents and public officials cannot afford to ignore.

Think of Maui. The Marshall fire near Denver. And here in CA: Kincade, Saddleridge, Bobcat, Dixie Fires...all started by power line sparks. And of course, LA earlier this year. Urban wildfires like the Palisades and Eaton Fires obliterated thousands of homes, claimed lives, and triggered insured losses estimated in the tens of billions of dollars. **We should not allow our own infrastructure *UPGRADE* to become the spark for such a catastrophe.**

We understand that undergrounding is expensive, *but the cost of inaction*—measured in lost lives, homes, and billions in damages—*is far higher*. This is our chance to make a generational investment in safety, one that will protect Oakland for decades to come.

I urge PG&E, the CPUC, and the City of Oakland to revisit this plan and prioritize undergrounding the most dangerous segments of these lines. The Draft EIR fails to fully recognize that a catastrophic wildfire is a major environmental impact—please ensure the environmental review reflects this reality. Use this moment to lead boldly and safeguard our city's future.

Thank you for your time and attention.

Sincerely,

Phil Gorman
2229 Trafalgar Place, Oakland, 94611

Comment Set D08 – Phil Gorman (continued)

D08-1 (cont'd)

From: David Markman <markmandp@gmail.com>
Sent: Tuesday, September 2, 2025 10:10 AM
To: Pete Retondo <peteretondo@gmail.com>
Cc: MOX@aspeneg.com <MOX@aspeneg.com>; Gryler, Stella <Stella.Gryler@asm.ca.gov>; officeofthemayor@oaklandca.gov <officeofthemayor@oaklandca.gov>; district4@oaklandca.gov <district4@oaklandca.gov>; Phil Gorman <phil_gorman@msn.com>
Subject: Re: Comments on draft EIR for PG&E transmission line rebuild Moraga - Oakland (Park Blvd.) Oakland X Substation

Dear Tharon Wright,
As a fellow neighbor of Mr. Retondo, I also live on Trafalgar Place. Our Family and Home are relatively lucky, in that we have close access to Highway 13, so that we can escape a wildfire. My neighbors that live across the freeway and to the top of the Oakland Hills do not have that luxury.

Mr. Retondo has succinctly summarized our feelings on the project and we would ask that you strongly reconsider the EIR and request that PG7E reevaluate the portion of the project that should be undergrounded.

Thank you,

David Markman, P.E. Civil (CA)

On Mon, Sep 1, 2025 at 6:36 PM Pete Retondo <peteretondo@gmail.com> wrote:
Dear Tharon Wright,
I am writing to express my disagreement and profound disappointment in the basic scientific integrity of the Draft EIR ("Paci c Gas and Electric Company Moraga-Oakland X 115 Kilovolt Rebuild Project (A.24-11-005)," to be presented for consideration by the California Public Utilities Commission.
The process and inadequately-supported conclusions of this report are in direct conflict with CPUC determinations regarding wildfire mitigation through the undergrounding of transmission lines. Specifically, in CPUC's Decision 23-11-069 (November 16, 2023) PG&E was authorized to construct 1230 miles of undergrounded lines in the next four years (through 2027). Why, then, are the 4 most critical miles of this 5-mile project to remain overhead transmission lines over wooded and dry terrain extremely vulnerable to the sparking of a catastrophe firestorm in Oakland? Where else in the State of California can you find a more vulnerable and critical wildfire hazard?
Not only does this draft EIR fail to consider that a large wildfire is by far THE most significant environmental impact of this project, it accepts a preliminary assessment eliminating the most sensitive portion of the project from consideration for undergrounding, and fails to properly evaluate that decision. I find that the assessment of retired Moraga-Orinda Fire Chief Dave Winnacker, expressed in a letter to our neighbor, provides a concise and authoritative roadmap to this issue:

> "Undergrounding of distribution lines reduces the risk of a fire start in the community. In foothill and rural areas, there is a very real risk such a fire start could rapidly grow to become a destructive fire. In dense urban and suburban areas, a distribution line start is extraordinarily unlikely to cause a significant fire for three reasons:
> 1. Ignitions within the community are observed and the fire department puts them out.
> 2. The firefighter density in an urban or suburban area is high. In Moraga fire fighting response times are under 4 minutes as opposed to the 30+ minute response time common in rural areas.
> 3. In an urban or suburban setting, there is not enough vegetative continuity to rapidly carry fire from a spot ignition."

The proposed project gets this exactly backwards. The project is divided into three segments:

1. East portion: Moraga substation to crest of Oakland hills (described in the EIR as "primarily hilly open space and park land owned by East Bay Regional Park District (EBRPD) and East Bay Municipal Utility District (EBMUD)")

Comment Set D08 – Phil Gorman (continued)

D08-1 (cont'd)

2. Middle portion: from crest of Oakland hills down to intersection of Park and Estates, hilly low-density residential
3. West portion: from Park at Estates down to Substation X at Park and I-580, urban, higher density residential and commercial

It is only portion 3, the LEAST likely to risk wildfire ignition, that is to be undergrounded. Portion 2 is considered in the EIR for alternate undergrounding (though not through the most obvious route following Park Blvd. in the lower portion) - but the report recommends against that alternate primarily because it DOWNPLAYS THE IMPORTANCE of environmental impacts resulting from the devastation of a large wildfire. Portion 1 is not seriously evaluated for undergrounding, through disqualification by way of a summary preliminary evaluation.

It is in these roughly two miles of portion 1 that a catastrophic wildfire is most likely to be sparked. The land is not accessible by developed roads to fire equipment. Fires there must be fought by the same methods used in remote areas. Surveillance, allowing a rapid response, does not exist or is very limited. There are no fire hydrants or readily-available water supplies. During an easterly high wind in the dry fall, this is exactly the setting for a scenario like that already faced by Santa Rosa, Paradise, and Altadena / Pacific Palisades.

What are we thinking? The hazard is so obvious it boggles the mind to contemplate what is going through the minds of officials and the authors of this report.

These power lines were originally constructed in 1908 and 1930. If we are something like 100 years between major reconstructions, failing to take the opportunity to underground these lines now will mean the hazard will not be addressed in anyone's lifetime. Failing to do the right thing now surely, through the law of averages, risks a disaster and major recrimination and regret within those very lifetimes. The regret suffered by my family, and my neighbors on Trafalgar Place in Oakland, who would be in the direct path of the potential wildfire, will be possibly more profound.

Section 3.18 of the EIR addresses the long-term wildfire risk, and makes for chilling reading. The most succinct summary of the issue before us is expressed as follows: "While undergrounding lines nearly eliminates ignition risk, it is very expensive . . ." (3.18-6). It is worth noting that the most significant fire in Oakland history (1991 Tunnel Fire), described in this section, was caused by fireworks activity in a vacant field during a Diablo wind event. The fire was accessible to the OFD, but nevertheless became uncontrolled, burning over 2000 homes to the ground. (The report authors seem ignorant of some commonly-known facts surrounding this event). How much more likely is it for a fire sparked in the hills between Moraga and Oakland to gain momentum? The report does not even consider that question. Of the 53 odd pages devoted to this topic, out of 800 pages overall, most address the impacts associated with construction activities, not the long-term operation of the overhead lines.

Section 4 of the EIR evaluates alternatives to underground lines through portion 2. Unaccountably, the study concludes that it is impossible to accommodate two 4' wide conduit routes through a single roadway, thereby doubling the impacts and costs of the evaluated alternative. I doubt that a 30' or more city right of way cannot be found to make room for all 4 circuits under one route.

Most significantly, the EIR dismisses undergrounding proposals for the easterly portion 1 of the project primarily because "increased construction activities in EBMUD and EBRDP land would result in more ground disturbance within sensitive habitats and severe visual land scars due to construction clearing." This is where the report crucially fails in its primary task. Does this envisioned disturbance present greater, or less, environmental damage than complete destruction of thousands of acres by wildfire? Question not even posed. The report also cites "extremely disruptive" temporary traffic impacts during construction. I would propose that a poll of residents, asking if they would accept a few weeks of traffic disruption as against having their homes destroyed by fire at some time in the future, would put that objection to rest.

By the way, the report states without evidence that the abandoned railroad tunnel from upper Shepherd's Canyon across to Pinehurst has been "filled in." Delving into the history of that tunnel, that appears not to be the case. In fact, in the early 1950s a house built over the first couple hundred feet of the tunnel was destroyed when the portal partially collapsed.

3

Comment Set D08 – Phil Gorman (continued)

D08-1 (cont'd)

Overall, the EIR does not adequately evaluate the undergrounding alternate options. It appears to me to go out of its way to emphasize incompletely documented objections, or objections which do not withstand the test of logical analysis.
Does the proposed project reduce the risk of fire? That is what PG&E claims, and apparently some risk reduction is the main consideration of this report and perhaps of the CPUC. The larger question: is it worth $300 million or more to execute a project that does not diminish fire threat from the transmission lines to near zero, when spending more on this once-in-a-hundred-years upgrade could accomplish that goal? I believe the citizens of California, and certainly those who live under threat of PG&E electrically-sparked fires, expect a higher standard of our elected and appointed officials than "better than nothing."
Sincerely,
Pete Retondo, AIA
--
Pete Retondo
510-589-0789
www.retondoarchitecture.com

Responses to Comment Set D08 – Phil Gorman

D08-1 The commenter states that they are adding to their neighbors' concerns about the proposed Project. The commenter is a neighbor of Mr. Retondo, who submitted Comment Set D05, and Mr. Markham, who submitted Comment Set D07 (see above). The commenter includes a copy of Mr. Retondo's and Mr. Markham's comments, which are addressed in the respective Responses to Comments. The commenter states that the proposed Project is a rare opportunity to address wildfire hazards by investing in undergrounding the power lines through a high-risk wildland corridor, which would be worth the cost in order to prevent deaths, injuries, and damage caused by wildfires, citing previous fires in Oakland, Los Angeles, and other states. The commenter provides a quote from a former fire chief and Brigadier General stating that undergrounding power lines reduces the risk of a fire start that could become destructive in foothill and rural areas. The commenter states that the Oakland area is highly susceptible to wildfires due to climate change, aging infrastructure, and limited evacuation routes. The commenter urges PG&E, CPUC, and the City of Oakland to prioritize undergrounding the most fire-prone segments of the Project alignment in the eastern portion of the Project area. Finally, the commenter states that the Draft EIR does not fully address catastrophic wildfire as a major environmental impact.

The support for undergrounding the power lines to eliminate wildfire hazards associated with the lines is acknowledged. Additional information about the consideration of underground alignment options is provided in General Response GR-1.

Responses to Mr. Retondo's and Mr. Markham's comments are provided above under Response to Comment Sets D05 and D07, respectively, and are incorporated by reference herein.

The Draft EIR was completed in compliance with CEQA (Public Resources Code 21000–21189) and the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000–15387). Under CEQA, projects must be analyzed for their effects on the existing physical environment. The central requirement is to establish an environmental baseline, or the physical conditions that exist at the time the environmental review begins. A project's potential environmental impacts are then determined by comparing post-project conditions against this baseline.

Draft EIR Section 3.18, Wildfire, discloses the existing wildfire hazards in the Project area as the environmental baseline, including the history of wildfires within and surrounding the Project area. In compliance with CEQA and the CEQA Guidelines, Section 3.18.3.3 under Impact WF-2 discusses whether the proposed Project would exacerbate these existing wildfire hazards. As stated in that section, the overhead power line rebuild includes replacing older power line infrastructure with stronger, safer, more fire-resistant structures and conductors that would be designed in compliance with more stringent and current regulations. The new structures would be more reliable as they would be in new condition, would be made of steel, would be on new foundations, and would be designed with higher standards for fire prevention safety. Therefore, the proposed Project would result in beneficial impacts related to reducing wildfire risks compared to existing conditions. This analysis complies with the requirements of CEQA and the CEQA Guidelines, and no additional analysis is required.

Comment Set D09 – Linda Walton

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Linda Walton <lcdannin@gmail.com>
Sent: Thursday, September 25, 2025 11:56 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Montclair undergrounding--scared resident

Hello, As a long term resident of the Montclair area of Oakland (1975 move in date)I am writing to urge you to advance the UNDERGROUNDING of all wires, cables, etc in my beautiful, tree filled neighborhood. I was here for the 1991 enormous fire, which is one neighborhood away from Montclair and also the not well-known fire on the Zinn fire trail (across from my home on Drake Drive) in 1995. **Please look that one up**. The latter was due to a PGE problem, which they admitted. It was a smaller fire that could have easily spread due to the dry, hot winds that day, and our Fire Dept. put it out and monitored the area post-fire. The fire engine and the Red Cross were parked in front of my home. I am not well versed in the all of the details about towers in Shepard Canyon,etc, but what I do know is that residents in Montclair are well aware of the enormous fire danger in our area because we are only one street over from the 1991 conflagration that decimated neighborhoods and **killed many residents and their pets**. There are so many viable reasons our area should be undergrounded and any other plan is not negotiable. We are in the same kind of neighborhood as the 1991 neighborhood--- lots of trees, narrow roads, minimal amount of egress and ingress for residents, same weather patterns, ie; winds from the canyon and homes on the wind-prone ridges. To be designated as HIGH RISK DANGER ZONE should be **enough** for any decisions to be made by the appropriate governing bodies. Any other plan is just a bandaid and should be scrapped. DON'T WAIT UNTIL ANOTHER FIRE LIKE IN 1991 HAPPENS AND THEN UNDERGROUNDING IS THE ANSWER. IT'S THE ANSWER NOW AND YOU SHOULD ALL AGREE ON THAT AND MAKE IT HAPPEN!!!!! Imagine if you or your loved ones lived in Montclair--what would your recommendation be ????????

D09-1

Responses to Comment Set D09 – Linda Walton

D09-1 The commenter is a long-term resident of the Montclair area of Oakland and is urging the underground of all wires, cables, etc., in the neighborhood. The commenter also describes the not well-known fire on the Zinn fire trail in 1995 that the commenter stated was due to a PG&E problem and that was extinguished. The commenter further states to be one street from the 1991 conflagration that took the lives of residents and their pets and that any other plan than underground is non-negotiable. The commenter also states that the neighborhood has similar conditions as the neighborhood affected by the 1991 fire, including vegetation, narrow roads, limited egress and ingress, and similar weather patterns.

The commenter's concerns about wildfire and support for undergrounding of all wires and cables in the Montclair area of Oakland are noted and will be shared with the CPUC's decision-makers for their consideration. As summarized in General Response GR-1 and analyzed in detail in the Draft EIR, the underground alternatives would: involve physical limitations including narrow, steep, and windy roads with sharp turns that render the construction of undergrounded power lines infeasible; result in other catastrophic hazards such as close proximity to an active fault (Hayward Fault Zone); or require the construction of more than three times the length of the proposed power line.

Please refer to General Response GR-1 for further details regarding the CPUC's consideration of underground alternatives. This comment does not identify any new impacts or substantially more severe environmental impacts that would require additional or substantially modified mitigation measures.

Comment Set D10 – Jennifer Arnest

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Jennifer Arnest <jmarnest@gmail.com>
Sent: Thursday, September 25, 2025 8:12 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project; assemblymember.wicks@assembly.ca.gov
Subject: Moraga-Oakland X (MOX) Project.

To Whom I hope This Concerns,

We are exhausted by the empty double speak and run around regarding this project. We've been speaking up and writing detailed letters for more than a year now, including to our local assembly member Buffy Wicks, in the hopes of lifting up more concern and care. There just is no good excuse for running wires on towers above ground in the wooded residential area where we all live. It is so short sighted. Scout Rd and these wooded hills need a different solution and better leadership for the imminent threats that fire and towers present, so clearly. **D10-1**

Jennifer Arnest

Responses to Comment Set D10 – Jennifer Arnest

D10-1 The commenter expresses concern regarding the empty double speak and run around regarding the proposed Project and notes the opportunities the commenter has taken to speak up, write letters, and contact the local assembly member. The commenter's concerns about wildfire risk of overhead power lines and support for underground alternatives are noted.

Please refer to General Response GR-1 regarding the CPUC's consideration of underground alternatives. This comment does not identify any new impacts or substantially more severe environmental impacts that require additional or substantially modified mitigation measures.

Comment Set D11 – Matt Solomon

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Matt Solomon <mattsol@gmail.com>
Sent: Thursday, September 25, 2025 11:22 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Comments on the Draft EIR
Attachments: PGE CEQA comment letter Sept 2025.docx

Please find attached my comments to the Draft EIR for PG&E Moraga-Oakland X 115 kV Rebuild Project (A.24-11-005).

Please confirm receipt of this email and public comment.

Matt Solomon

1

Comment Set D11 – Matt Solomon (continued)

September 25, 2025

CEQA Comment Letter

Re: Draft EIR for PG&E Moraga-Oakland X 115 kV Rebuild Project (A.24-11-005)

To Whom It May Concern:

I am writing to provide public comment on the Draft Environmental Impact Report for the PG&E Moraga-Oakland X 115 kV Rebuild Project. I strongly urge the CPUC to require undergrounding of the transmission circuit through the Montclair Hills and other densely populated, high-fire-risk portions of the alignment. **D11-1**

The Draft EIR asserts that rebuilding overhead towers will reduce wildfire risk by more than 90%. This is not credible given recent history: catastrophic fires such as Paradise and Altadena originated from transmission equipment that had been "upgraded" or considered "hardened." Overhead infrastructure in heavily wooded, wind-prone canyons will always carry unacceptable residual fire risk. Only undergrounding can truly eliminate this danger to residents, first responders, and the surrounding environment.

This is a once-in-a-century opportunity to correct legacy siting decisions that placed major transmission towers directly through a densely residential neighborhood. The Montclair Hills are designated as Very High Fire Hazard Severity Zones, with narrow, evacuation-limited roadways and high population density. Re-installing overhead lattice towers here effectively guarantees future risk, while undergrounding would permanently resolve it.

In addition to fire danger, the proposed replacement of overhead towers would severely degrade community aesthetics. PG&E's plan to install large, galvanized steel lattice towers—essentially the same industrial design used for the last century—is incompatible with the character of the East Bay Hills. At a minimum, if overhead structures are pursued, they should be designed to blend into the environment, as many telecommunication towers are today (e.g., disguised as trees, painted in earth tones). Simply replicating outdated lattice structures is unacceptable. **D11-2**

For these reasons, I respectfully request that the CPUC identify a full undergrounding option that achieves an environmentally superior alternative (including tower removal as one option). The health, safety, and aesthetics of this high-risk community must take precedence over the convenience of perpetuating PG&E's legacy infrastructure. **D11-3**

1

Comment Set D11 – Matt Solomon (continued)

Specific Weaknesses of the PGE plan and CEQA Response and Recommended Revisions D11-4

The Draft EIR's conclusion that the overhead rebuild is "environmentally superior" pivots on **temporary construction-phase evacuation** concerns while accepting a **permanent overhead ignition risk** in one of California's most vulnerable urban-wildland canyons.

First, the "~90% risk-reduction" claim rests on PG&E's WTRM with **unchanged wind/weather, outage, and fragility inputs—**a modeling shortcut that does not reflect worsening extremes or out-of-ROW tree strikes. The same analysis shows **-100% risk** where structures are removed, confirming that **undergrounding/removal uniquely eliminates** overhead ignition.

Second, PG&E's own filings state undergrounding **reduces ignition ~98%**, while overhead hardening reduces risk by about **67%**. In practice, overhead transmission continues to drive catastrophic tails (e.g., the **115 kV** equipment that ignited the 2018 Camp Fire; ongoing scrutiny after the 2025 Altadena/Eaton fires). The Draft EIR under-weights this tail risk in a VHFHSZ. AP News+5PG&E+5PG&E Corporation Investors+5 D11-5

Third, policy points toward undergrounding: Oakland's Safety policies direct coordination to **underground lines in WUI/VHFHSZ areas**, and statewide **SB 884** underscores that eliminating ignition sources is the durable solution in high-risk communities. D11-6

Finally, **feasible underground alternatives** already exist in the EIR. Pairing two underground segments can carry all four circuits and **remove overhead through Montclair**, with construction sequencing to maintain evacuation routes. The Appendices even include an **underground Hayward Fault crossing profile**, confirming technical viability. D11-7

Request:

1. Identify a **paired underground alternative** (e.g., Alternatives 2+3 or 2+4) as the **environmentally superior** choice for the Oakland Hills; or, at minimum, **require PG&E to re-run WTRM** with updated extreme-wind/climate and out-of-ROW vegetation risk before relying on a "90%" figure. D11-8
2. Treat construction evacuation impacts as **temporary and mitigable** via phasing, detours, and traffic control; treat **residual overhead ignition** in VHFHSZ as a **permanent, high-consequence** impact.
3. If any overhead remains, adopt **binding design conditions** (context colors, profile minimization, screening)**—**the current "dull galvanizing/Corten" measure is inadequate for scenic canyons. D11-9

2

Comment Set D11 – Matt Solomon (continued)

This is a **once-in-a-century** chance to remove a known ignition source from a dense, evacuation-constrained VHFHSZ. Please choose elimination of risk over mitigation of consequences. **D11-10**

Sincerely,
Matt Solomon, MD, PhD

2400 Scout Rd

Oakland CA 94611

Appendix: **D11-11**

1) The EIR's "~90% risk reduction" rests on modeling shortcuts; undergrounding removes the tail risk

- The Draft EIR's 90% wildfire-risk reduction comes from PG&E's Wildfire Threat Risk Model (WTRM). But for the rebuild scenario the analysis **kept key parameters unchanged** (wind/weather, historical outages, base fragility), assuming location invariance and "same materials" as existing towers (or equal/better fire resistance). That means the result is largely an **input assumption**, not a field-validated change in ignition mechanisms (e.g., windborne contact, arcing, out-of-ROW tree strikes).
- The same table that drives the 90% figure also shows **-100% risk** where structures are removed—i.e., undergrounding/removal **eliminates** overhead ignition at those locations. That is the only way to zero out the catastrophic tail.
- PG&E itself publicly states undergrounding **cuts ignition risk ~98%**, far above the ~67% they ascribe to overhead "hardening" measures. That aligns with common-sense physics: buried conductors don't blow into vegetation and don't shed hot particles in wind events. PG&E+2PG&E Corporation Investors+2
- Catastrophic history shows why "residual" overhead risk is intolerable in canyons: the **2018 Camp Fire** was ignited by a **115 kV transmission** asset—exactly the voltage class at issue here. "Hardened" or not, overhead transmission still carries fat-tail risk. HTV Prod Media **D11-12**
- Recent tragedies (the **2025 Eaton/Altadena fires**) underscore that overhead equipment remains a plausible ignition source under extreme winds—investigations are ongoing, but regulators and press are already scrutinizing transmission corridors in the foothills. Reuters+1 **D11-13**

3

Comment Set D11 – Matt Solomon (continued)

Ask: Require the CPUC to identify an **undergrounding alternative as environmentally superior** for the Oakland Hills segment, or at minimum require PG&E to **re-run WTRM** with (a) worst-case wind/heat projections, (b) explicit out-of-ROW tree failure risk, and (c) independent validation—not just carry-over parameters—before adopting any "90%" conclusion. D11-14

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2) CEQA balancing puts too much weight on temporary construction-phase evacuation impacts—and not enough on permanent life-safety risk D11-15

- The EIR labels the **proposed overhead rebuild** (with ~1 mile of undergrounding near Park Blvd) as the **Environmentally Superior Alternative**, primarily because underground options could constrain evacuation and bike/ped access during **construction** (e.g., Montclair Railroad Trail closures and hilly detours). That's a short-term traffic/evacuation issue, not a long-term hazard profile.
- CEQA allows decision-makers to balance factors, but it **doesn't require** selecting the EIR's "environmentally superior" option—especially if a **feasible** alternative avoids a **significant** long-term impact (wildfire ignition in a VHFHSZ) without creating equal or worse impacts. Construction mobility limits can be phased, detoured, or scheduled; **wildfire fatalities and mass evacuations cannot be mitigated after the fact**.
- The EIR itself concedes that the **No Project** is not superior *because it misses the risk-reduction benefit*. That logic, applied consistently, favors **maximal risk elimination**—i.e., undergrounding/removal—over hardening.

Ask: Direct staff to **re-weigh CEQA tradeoffs**: treat construction-phase evacuation management as **mitigable and temporary**; treat **residual overhead ignition** as a **permanent, high-consequence** impact in a VHFHSZ.

---

3) Policy consistency favors undergrounding in the Oakland Hills (VHFHSZ/WUI) D11-16

- Local safety policy explicitly says: **"Continue to coordinate with PG&E to underground power lines throughout the community, especially in the wildland-urban interface and fire hazard severity zone areas where wildfire risk is greatest."** That is exactly Montclair.
- Oakland's Safety Element identifies wildfire as the primary hazard and requires enhanced evacuation and mitigation in the VHFHSZ. That aligns with eliminating ignition sources, not perpetuating them overhead.

4

Comment Set D11 – Matt Solomon (continued)

- Statewide, the CPUC/Energy Safety have created the **SB 884** framework to expedite undergrounding in high-risk areas—clear policy direction that **tail-risk elimination** is preferred where feasible. (SB 884 is focused on distribution, but its underlying safety rationale applies here.) California Public Utilities Commission+1
- The project corridor crosses CPUC-designated **High Fire-Threat Districts** (HFTD). Overhead lines in HFTD carry disproportionate ignition share (vegetation contact is the top driver). Undergrounding attacks the root cause. ArcGIS+1

D11-17

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4) Undergrounding is feasible here—and the EIR already maps alternatives that meet objectives while removing overhead through the hills

D11-18

- The EIR evaluates multiple **underground alternatives** (Skyline-Colton-Snake; Shepherd Canyon; Skyline-Ascot; Estates) and explains how **two paired underground segments can carry all four circuits**, after which the **overhead structures are removed** between the transition points—exactly what the community seeks.
- The Appendices even include an **underground Hayward Fault crossing profile**, underscoring that geotechnical challenges are **design problems, not show-stoppers**.

Ask: Direct adoption of a **paired underground alternative** that removes overhead through Montclair (e.g., Alternatives 2+3 or 2+4), with a construction traffic/evacuation plan that sequences work to maintain lifeline access.

---

5) Aesthetics: the EIR's "mitigation" is minimal; require real design standards if any overhead remains

D11-19

- Current "Applicant Proposed Measures" are basically **dull galvanizing/Corten finishes** and **non-specular conductors**; they don't address massing, skyline intrusion, or canyon views. If any overhead survives, require **context-sensitive design** (earth-tone coatings, slimmer monopoles where feasible, lower profile/crest avoidance, vegetative screening, similar to how cellular towers are often "masked" by being designed as artificial trees in wooded areas).

Comment Set D11 – Matt Solomon (continued)

D11-20

BUTTE COUNTY DISTRICT ATTORNEY

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THE CAMP FIRE PUBLIC REPORT

A SUMMARY OF THE CAMP FIRE INVESTIGATION

June 16, 2020

"To do Justice, as no one is above the Law, nor beneath its protection"
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Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

PREFACE

During the early morning hours of Thursday, November 8, 2018, the Cal Fire Captain in charge of the Jarbo Gap station in the Feather River Canyon could hear the "Jarbo Winds" as they were known locally begin to howl as he got up to fix breakfast for his crew. As he fixed that breakfast he started to hear what he thought was rain begin to hit the roof and sides of the fire station. He started to look outside when the wind took the door from his hand. He discovered it wasn't rain he was hearing, but pine needles from the surrounding forest forcibly pelting the outside of the station. He went back inside to continue fixing breakfast, but was interrupted as the station's dispatch radio feed went off alerting him to a possible fire in the Canyon.

The Cal Fire crew immediately rolled out of the station up Highway 70 and the Canyon, past the small enclave of Pulga and up river to the Poe Dam. Arriving above PG&E's Poe Dam just before sunrise, the Captain and crew saw the beginnings of a conflagration under the PG&E high voltage power line on the ridge top across the river from them. The sight sent a chill through the Captain and crew because they could see the fire was already exploding toward the south and west riding the Jarbo Winds, which were so high the Captain struggled to remain upright. The Captain radioed into his headquarters with urgency in his voice – his crew would never be able to get in front of this fire to control it and in a prophetic understatement he told dispatchers: "This has the potential of a major incident."

In less than an hour, the fire had torn through Pulga and the mountain hamlet of Concow and reached the eastern outskirts of Paradise – throwing softball-sized embers ahead to the north into Magalia and over the town into the Butte Creek Canyon on the west side. Paradise and its residents were hit from three side by massive walls of fire. Chaos and confusion reigned. Thousands of homes and businesses were lost in the matter of a couple of hours. A town of some 26,000 people was utterly destroyed.

Eight-four souls were lost in the most horrific way imaginable – burned to death.

Within a few hours of the fire, Cal Fire arson investigators began to make their way to where the responding Captain had seen the start of the fire. Traveling up Camp Creek Road (from which the Camp Fire took its quirky name), the investigators came to what appeared to be the fire's beginning. The ground under what was PG&E's transmission tower #27/222 showed clear signs of the fire's beginning and a burnt path toward the southwest. Looking up, the investigators saw a detached line hanging down into the steel superstructure of the high-voltage transmission tower.

Something had broken - and sent the live 115 kilovolt (kV) power line (also known as a conductor) to arc against the steel tower and shower molten steel and aluminum metal onto the grass and brush below. A painstakingly detailed arson investigation began.

Within a few hours, the Cal Fire investigators had begun to reach their preliminary conclusions that the Camp Fire was started by the failure of a suspension hook holding up an insulator string which in turn held up the highly energized line. The investigators had found the broken iron

2

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

hook, also known as a "C hook", and it appeared to have not just broken, but had worn through after a great deal of time hanging in the windy environs of the Feather River Canyon.

The investigators reached out to the Butte County District Attorney's Office on November 9, 2020 and discussed their initial findings with the office – including their concern that a PG&E helicopter had been seen hovering above the suspect tower.

The Butte County District Attorney's Office had had past dealings with PG&E and its criminal violations of failing to clear vegetation from its lines which sparked fires. The office also knew PG&E was a federal felon for its criminal actions leading to the San Bruno gas line explosion.

A directive was given the Cal Fire arson investigators that the DA's office was opening a joint investigation with them and to treat the fire origin site as a crime scene and to prevent anyone, including PG&E, from entering. (The Cal Fire investigators had already started the process of securing the scene with private security.)

And so began the Camp Fire Investigation. . .

The next week Cal Fire arson investigators directed PG&E linemen under their close scrutiny to begin the dismantling of tower 27/222 and seized relevant portions for evidence. Later, Butte County District Attorney investigators teamed with Cal Fire arson investigators to examine other power lines in the vicinity of the suspect tower. Evidence from those surrounding towers was seized with the assistance of experienced linemen from PG&E under the close scrutiny of a loaned Federal Bureau of Investigation (FBI) Evidence Team.

Prosecutors were taken from normal day-to-day business in the office and assigned to oversee the investigation. Thus began the arduous task of gathering information from PG&E and others to determine the who, what, how and why of the Camp Fire.

Early into the investigation it became clear that as we began to collect terabytes of data from a facially cooperative PG&E that more broad based and intrusive subpoenas would be needed to dig out data from the extensive PG&E files including its vendor files. Additionally as PG&E witnesses, past and present, were being contacted for interviews, we found PG&E has hired attorneys to represent them and encourage silence.

We partnered with the California Attorney General who assigned experienced prosecutors to assist in the investigation and it was decided a special investigative criminal grand jury should be sworn to subpoena evidence and examine reluctant witnesses under oath. This grand jury was in addition to the regular "watchdog grand jury" that is sworn in every June in Butte County. This special grand jury of 19 ordinary Butte County citizens was selected from 100 summoned potential jurors and sworn in on March 25, 2019.

As an investigatory grand jury, it was the duty of the jurors to sift through all the evidence, hear the witnesses and keep an open mind as to whether there truly was any criminal liability on the part of anyone for causing the Camp Fire. This dedicated group of citizens then meet in secrecy for the next year and heard nearly 100 witnesses, reviewed approximately 1600 exhibits, and produced some 6000 pages of transcript. It cannot be overemphasized the patience and sacrifice

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

of these citizens, meeting once to twice a week for almost a year. And since they were sworn to secrecy, they were not even able to tell their employers, friends and family what they were so diligently working on. Even more amazing was their dedication to their important work to seek justice. Such was their dedication that only three grand jurors were unable to finish their term.

The remaining 16, after their months of hard work and review of all matters, returned an Indictment finding sufficient evidence to charge the Pacific Gas and Electric Company with 85 felony counts – one count of unlawfully and recklessly causing the Camp Fire as a result of its gross negligence in maintaining its power line, and 84 individual counts of involuntary manslaughter naming each of the persons directly killed in the Camp Fire by PG&E's criminal negligence. The Indictment also included three special allegations for PG&E's causing great bodily injury to a firefighter; causing great bodily injury to more than one surviving victim; and causing multiple structures to burn (listed as approximately 18,804 structures). (See attached Indictment.)

PG&E, who had been represented by criminal defense attorneys during the investigation and Grand Jury proceedings, was informed of the Indictment and decided to plead guilty "as charged" to all counts – thereby agreeing the evidence of its criminal negligence has been established beyond a reasonable doubt.

The following Camp Fire Public Report is a summary of the massive undertaking to determine if there was sufficient evidence to convict PG&E of its criminal behavior which lead to the Camp Fire and the awful destruction that followed. The Report also forms the core of legal documents filed with the Butte County Superior Court today to establish the Factual Basis for the pleas by PG&E to the Indictment and the People's Statement in Aggravation for the sentencing of the defendant corporation.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

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Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

INTRODUCTION

On November 8, 2018, a fire started underneath a PG&E transmission tower near Camp Creek Road, not far from the town of Pulga in Butte County, California. The fire quickly raged out of control, travelled to the town of Concow within an hour, and to Paradise – seven miles from the point of ignition – in less than 1.5 hours. Seventeen days later, on November 25, 2018, what had become known as the Camp Fire was finally declared 100% contained. It had burned 153,336 acres and destroyed approximately 18, 800 structures.[1] Some 589 structures were damaged.[2] A total of 84 lives were lost as a direct result of the fire and at least two civilians and one firefighter suffered great bodily injury. {Attachment – Camp Fire Presentation}

I. INITIAL TIME LINE

On November 8, 2018 at 6:15 a.m., the PG&E Grid Control Center (GCC)[3] in Vacaville documented an "interruption" on the energized Caribou-Palermo 115kV transmission line in the Feather River Canyon.

At approximately 6:20 a.m. on November 8, 2018, a PG&E Hydro Division employee[4] driving eastbound on Highway 70 observed a "bright light" above a ridgeline as he approached the Pulga Bridge. Initially the employee believed the bright light to be the sun rising behind the ridgeline; however, as he continued driving, he realized the source of the bright light was a fire underneath the PG&E transmission lines on a ridge on the north side of the Feather River. The employee noted the fire appeared to be at the base of a transmission tower. In that area of the Feather River Canyon cell phone service is not available. The employee used his PG&E radio to contact PG&E employees at the Rock Creek Powerhouse and reported the fire. These employees then called 911 and were transferred to the Cal Fire Emergency Communications Center (ECC) in Oroville. The 911 call from the Rock Creek Switching Station was received by Cal Fire ECC at 6:25:19 a.m.

At approximately 6:30 a.m., an employee of the California Department of Transportation (Cal Trans) arrived at the Cal Trans Pulga Station for work. While in the parking lot of the Pulga Station he observed a fire under a PG&E transmission tower northeast of the Pulga Station and took a photograph of it. The photograph {Attachment 001} showed a fire emanating out from

[1] 13,696 single family residences, 276 multi-family residences, 528 commercial structures, and 4,293 other structures were destroyed according to Cal Fire.
[2] 462 single family residences, 25 multi-family residences, and 102 commercial structures were damaged according to Cal Fire.

[3] The GCC is the consolidated hub for all transmission operations for PG&E. GCC monitors the Supervisor Control and Data Acquisition (SCADA) for all transmission lines at all times. Any problem on any PG&E transmission line triggers an immediate alert in the GCC.
[4] Throughout this report the names of local current/ former PG&E employees are not used. The Butte County District Attorney's Office believes, based upon anger and frustration within the community, that disclosure of the identity of involved PG&E personnel living and/or working in the area may expose those personnel to harassment, threats or violence.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

under transmission Tower :027/222[5] (Tower 27/222) of the Caribou-Palermo 115kV transmission line (Caribou-Palermo line).

At 6:29:55 a.m., the initial Cal Fire notification went out to Captain Matt McKenzie at the Concow/Jarbo Gap Station. By 6:35 a.m., two Cal Fire engines from the Concow/Jarbo Gap Station were on Highway 70 headed eastbound toward Pulga. Captain McKenzie and his firefighters first observed the fire just before reaching the Pulga Bridge. The two engines continued on Highway 70 to the Poe Dam to assess the fire and formulate a plan of attack. From above the Poe Dam on the south side of the Feather River, at 6:44 a.m., Captain McKenzie observed that the fire was burning under the electric transmission lines on the ridge on the north side of the Feather River. Based upon the location of the fire {Google Earth map of 27/222 area and Pulga.}as well as the high wind speed and direction, Captain McKenzie concluded there was no available route to attack the fire. Captain McKenzie immediately realized that the community of Pulga was in danger and dispatched his second engine to evacuate the residents of that community. From his position on Highway 70, Captain McKenzie took measure of the fire (and a photograph {Attachment 002})) and requested additional resources be deployed to the west to stop the fire at Concow Road. During his initial report to the ECC, based upon his observations of the fire, the topography, and the wind, Captain McKenzie warned, "this has the potential of a major incident." (An hour later, at 7:44 a.m., the fire reached the Town of Paradise, a distance of approximately seven miles.)

At approximately 6:38 a.m., PG&E employees at the Rock Creek Powerhouse informed the GCC of the fire burning near the Poe Dam in the vicinity of the transmission lines. At approximately 6:40 a.m., the GCC notified the Transmission Line Supervisor for the Table Mountain District[6] of the fire. The Transmission Line Supervisor dispatched a troubleman to immediately perform an emergency air patrol of the Caribou-Palermo line. The troubleman located and documented damage on Caribou-Palermo line Tower 27/222 at 12:00 p.m. on November 8, 2018.[7]

At approximately 6:48 a.m. fire watch cameras on Flea Mountain and Bloomer Hill {Attachment – Google Earth map} recorded a plume of smoke east of Concow and west of Pulga. {Fire

[5] According to PG&E naming convention, a transmission line name is based upon the starting point and ending point of the line. The Caribou-Palermo line starts at the Caribou Powerhouse and ends at the Palermo substation. Tower numbers are determined by the distance from the start of the line in miles and the sequential number of towers. The Caribou-Palermo line is divided into two segments; Caribou-Big Bend and Palermo-Big Bend. The inclusion of a colon (:) before the tower number denotes the Caribou-Big Bend segment. On the Caribou-Big Bend segment the tower numbering starts at the first tower coming out of the Caribou Powerhouse (:000/001) and ends with the last tower before the Big Bend Substation (:037/303). Tower 27/222 is located in the 27th mile away from the Caribou Powerhouse and is the 222nd structure in the line. On the Palermo-Big Bend segment the tower numbers begin with the last tower before the Palermo Substation (000/001) and ends with the first tower after the Big Bend Substation (016/130). {Attachment – Google Earth Map of C-P}

[6] PG&E's electrical transmission grid is divided into geographic districts. Each district is supervised by a Transmission Line Supervisor. The transmission lines in the Feather River Canyon are within the Table Mountain District.

[7] At 12:01 p.m. a Cal Fire investigator spotted and photographed a helicopter from a local charter helicopter firm hovering above tower 27/222. Based upon the tail number of the helicopter it was confirmed this was the helicopter performing the emergency inspection of the Caribou-Palermo line.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

Watch Camera Bloomer, Fire Watch Camera Flea} Cal Fire monitors initially attributed the plume of smoke to the Camp Fire. Later Cal Fire monitors and investigators determined the smoke plume was not associated with the Camp Fire and was caused by a separate and unrelated fire. Utilizing mapping tools Cal Fire investigators determined the plume of smoke had arisen from an area near the intersection of Concow Road and Rim Road in eastern Concow. The fire was named the Camp B Fire.

II. ORIGIN AND CAUSE INVESTIGATIONS

Cal Fire assigned a team of highly trained and experienced "Origin and Cause" investigators from around California to assist the local Butte Unit investigators. Cal Fire also retained and assigned subject matter experts to assist with the investigation. The investigators were divided into two teams. One team was assigned to investigate the Camp Fire. The second team was assigned to investigate the Camp B Fire.

Cal Fire investigators determined the origin of the Camp Fire was the dry brush below Tower 27/222 of the Caribou-Palermo line, an electrical transmission line owned and operated by PG&E. Tower 27/222 was determined to be a "Transposition" tower[8] {Attachment – Krelle 3D model download and open with Adobe Acrobat Pro}. With the assistance of a licensed electrical engineer, Cal Fire investigators determined the cause of the Camp Fire was electrical arcing between an energized "jumper" conductor (power line) and the steel tower structure. {Attachment - Framework of transposition tower} Investigators determined a "C hook" that linked an insulator string connected to the jumper conductor to the transposition arm of the tower failed, allowing the energized jumper conductor to make contact with the steel tower structure. {Attachment 004} The ensuing electrical arcing between the jumper conductor and steel tower structure caused the aluminum strands of the conductor to melt as well as a portion of the steel tower structure.[9] The molten aluminum and steel fell to the brush covered ground at the base of the steel tower structure. {Attachment 005} This molten metal ignited the dry brush.

Cal Fire investigators determined the Camp B Fire originated to the west of Concow Road south of the intersection of Concow Road and Rim Road in a geographical bowl. The area of origin was under the right of way of the Big Bend 1101 12kV distribution line. The area of origin was approximately 2.6 miles west of the origin of the Camp Fire. At the area of origin investigators located a broken conductor from the Big Bend 1101 12kV distribution line and a fallen Ponderosa pine tree. Burn patterns on the Ponderosa pine indicated the tree had contacted a live electrical line. {Attachment 006} PG&E records show a documented outage on the Big Bend 1101 12kV circuit at 6:45 a.m. on November 8, 2018. Investigators determined the Camp B Fire was ignited when the Ponderosa pine tree toppled over onto and broke the energized Big Bend 1101 12kV distribution line. The Ponderosa pine and its stump were examined and analyzed by a certified arborist[10] retained by Cal Fire. The arborist determined that the Ponderosa pine was

[8] A transposition tower is a transmission tower that changes the relative positions of the conductors (power lines) to each other to maintain electrical balance. Transposition towers are placed at intervals along the transmission line.
[9] Aluminum melts at approximately 1200 degrees Fahrenheit, steel melts at approximately 2700 degrees Fahrenheit. The electrical engineer estimated the temperature of the electrical arc between the conductor and the steel structure between 5,000 and 10,000 degrees Fahrenheit.
[10] International Society of Arboriculture Board Certified Master Arborist.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

diseased and dying prior to November 8, 2018.[11] However, the arborist determined the disease was internal and likely would not have been visible to PG&E tree inspectors during their vegetation management inspections. According to the arborist the disease likely only would have been discoverable by an advanced inspection.[12]

Before the Camp B Fire grew large enough to escape its geographical bowl, it was passed over and consumed by the Camp Fire. Based upon fire indicators and patterns within the Camp B Fire and recordings from the fire watch cameras, Cal Fire investigators determined that the Camp B Fire had little, or no, effect on the Camp Fire.

III. INJURIES AND LOST LIVES

In support of the great bodily injury enhancements, evidence was presented of two civilians and one fire fighter who were severely burned during the Camp Fire.

Victim 1, an adult female, was located in Concow by a Cal Fire crew in the area trying to locate another reportedly trapped victim. As the engine was trying to leave the area, visibility was near or at zero, when suddenly the smoke cleared briefly. In that moment, the Captain of the fire crew saw an arm appear from between two vehicles. The Captain and his crew stopped and located the badly burned female victim. Lying beside the female victim was a deceased male. The deceased male was later identified as the female victim's roommate. The Captain described how he and his crew repeatedly checked the male roommate futilely hoping to find signs of life. The Cal Fire crew rescued the female victim. According to the Captain, when Victim 1 was lifted into the engine, her skin sloughed off due to the severity of her severe burns. She was taken to a medical evacuation area for transport to a hospital.

Victim 2, an adult female, was located in Paradise with her husband. Victim 2 and her husband had been trying to flee the fire but were overtaken. Victim 2 and her husband took shelter behind a boulder but both were severely burned. Victim 2 and her husband were rescued by Cal Fire and taken to a medical evacuation area for transport to a hospital. According to the Cal Fire Captain, who supervised that rescue and evacuation, Victim 2 also had skin sloughing off as she was taken from an engine and placed into an ambulance. Both Victim 2 and her husband were transported to the UC Davis Medical Center Burn Unit. Victim 2's husband ultimately succumbed to his burn injuries.

Victim 3, an adult male, was a Cal Fire Captain. The Captain described that as he and his crew were preparing to do a back fire operation to create a fire break east of Clark Road and south of Rattlesnake Flats Road, northeast of Butte College, the fire changed direction and, fueled by high winds, "exploded." As the fire came rushing towards them, the Captain held strands of barbed wire up to allow his crew to quickly escape into the safety of a clearing. After his crew was safely through the fence, the Captain attempted to go through the fence. As he was going

[11] The arborist also consulted with a professor of Dendrochronology at the Indiana State University Dendro Lab.
[12] An advanced inspection would entail use of diagnostic tools such as a mallet, a resistograph or a sonic tomogram and generally only occurs when anomalies or outward signs of disease or decay are observed during the visual inspection.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

through the fence the Captain's gear caught on the barbed wire. As a result, the fire overran his position and the Captain was severely burned. The Captain was medically evacuated to UC Davis Medical Center Burn Unit. All members of his crew survived with only minor injuries.

The Camp Fire also directly[13] caused the deaths of the following 84 persons: {Attachment – Camp Fire Victim Locations download and open with Google Earth Pro}

Joyce Acheson – Ms. Acheson, who was 78 years old, was found deceased in her home at 1250 Elliot Road, Unit 17, in the Town of Paradise. Ms. Acheson was of limited mobility, and lived in an area that was closed off to public access, thereby preventing any caregiver from getting to her.

Herbert Alderman – Mr. Alderman was 80 years old and was found deceased inside his home at 5775 Deanna Way in the Town of Paradise. A severely sprained ankle prevented his mobility at the time of the fire, and he made several phone calls to friends seeking rescue before he perished.

Teresa Ammons – Ms. Ammons was 82 years old. She was found deceased outside her home at 6674 Pentz Road, Unit 112, in the Town of Paradise. The evidence indicated Ms. Ammons died while attempting to flee the fire as she was found just outside her trailer with her purse nearby.

Rafaela Andrade – Ms. Andrade was 84 years old and was found deceased inside her home at 6664 Moore Road in the Town of Paradise. She could not walk without the assistance of a walker, and did not have the ability to evacuate on her own.

Carol Arrington – Ms. Arrington was 88 years old. Ms. Arrington was found deceased inside her home at 1866 Stark Lane in the Town of Paradise.

Julian Binstock – Mr. Binstock was 88 years old. The remains of Mr. Binstock and his dog were located in the shower of his residence at 5900 Canyon View Drive in the Town of Paradise.

David Bradburd – Mr. Bradburd was 70 years old. Mr. Bradburd was found near 6028 Dubarry Lane, in the Town of Paradise. Mr. Bradburd was found within 400 feet of his residence on Pentz Road, near a power line knocked down by the fire. Based upon the evidence, Mr. Bradburd was fleeing the fire when he died.

Cheryl Brown – Ms. Brown was 75 years old. Ms. Brown was found deceased in her home at 1387 N-B Lane in the Town of Paradise. Ms. Brown was found seated in a recliner next to her husband, Larry Brown.

Larry Brown – Mr. Brown was 72 years old. Mr. Brown was found deceased in his home at 1387 N-B Lane in the Town of Paradise. Mr. Brown was found seated in a recliner next to his wife, Cheryl Brown.

[13] Only persons who died within the Camp Fire footprint on November 8, 2018 from fire-related injuries; or who were medically evacuated from within the Camp Fire footprint on November 8, 2018 to medical facilities and subsequently died as a result of fire-related injuries were counted as direct victims.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

Richard Brown – Mr. Brown was 74 years old. Mr. Brown was found deceased under his pickup truck outside his residence at 13377 Eleran Lane in the community of Concow. Based upon the physical evidence, Mr. Brown tried to hide from the fire under his truck.

Andrew Burt – Mr. Burt was 36 years old. Mr. Burt was found deceased just outside of the front passenger side door of a minivan. The minivan was located facing north in the 5000 Block of Edgewood Road, approximately .3 miles south of Mr. Burt's residence at 5236 Edgewood Lane in the Town of Paradise. The remains of Mr. Burt's dog were found next to Mr. Burt. Based upon the evidence, Mr. Burt had been in the minivan attempting to escape the fire when the minivan was overcome by the fire. There were three other vehicles containing the remains of four other victims near the minivan.

Joanne Caddy – Ms. Caddy was 75 years old. Ms. Caddy was found deceased inside her home at 13812 West Park Drive in the community of Magalia.

Barbara Carlson – Ms. Carlson was 71 years old. Ms. Carlson was found deceased in her residence at 5577 Heavenly Place in the Town of Paradise. Ms. Carlson's remains were comingled with those of her sister, Shirley Haley.

Vincent Carota – Mr. Carota was 65 years old and found deceased inside his residence at 5471 South Libby Road in the Town of Paradise. Mr. Carota was a partial leg amputee without a vehicle.

Dennis Clark, Jr. – Mr. Clark was 49 years old. Mr. Clark was found deceased in the passenger seat of a car with his mother Joy Porter deceased in the driver's seat. Their vehicle was in a line of three other vehicles found facing north in the 5000 block of Edgewood Lane in the Town of Paradise. The vehicle was located approximately .3 miles south of Mr. Clark and Ms. Porter's residence on Sunny Acres Road, off of Edgewood Lane.

Evelyn Cline – Ms. Cline was 81 years old. Ms. Cline was found deceased in her residence at 578 Roberts Drive in the Town of Paradise. She was physically immobile and unable to leave her home without assistance.

John Digby – Mr. Digby was 78 years old and found deceased inside his residence at 6920 Clark Road, Unit #3, in the Town of Paradise.

Gordon Dise – Mr. Dise was 66 years old and was found deceased inside his home at 2735 Eskin Maidu Trail in Chico (Butte Creek Canyon.). According to his daughter, who fled the house with her father, he went back in their home for something and never made it back out.

Paula Dodge – Ms. Dodge was 70 years old. Ms. Dodge was found deceased between two cars in the carport of her residence at 5152 Pentz Road in the Town of Paradise. Ms. Dodge's husband, Randall Dodge, was found deceased next to her. Based upon the evidence, Mr. and Ms. Dodge were attempting to flee the fire.

Randall Dodge – Mr. Dodge was 66 years old. Mr. Dodge was found deceased between two cars in the driveway of his residence at 5152 Pentz Road in the Town of Paradise. Mr. Dodge's

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

wife, Paula Dodge, was found deceased next to him. Based upon the evidence, Mr. and Ms. Dodge were attempting to flee the fire.

Andrew Downer – Mr. Downer was 54 years old. Mr. Downer was found deceased outside the front door of his residence at 8030 Skyway, Unit A, in the Town of Paradise. Based upon the evidence, it appears Mr. Downer died while attempting to flee the fire. He was a wheelchair bound amputee and was unable to drive.

Robert Duvall – Mr. Duvall was 76 years old. Mr. Duvall was found deceased in the passenger seat of his truck. No one else was located in the truck. The truck was in a line of three vehicles found facing north in the 5000 block of Edgewood Lane in the Town of Paradise. The vehicle was located approximately .3 mile north of Mr. Duvall's residence on Sunny Acres Road, off of Edgewood Lane. A second vehicle registered to Mr. Duvall and containing the remains of Mr. Duvall's girlfriend, Beverly Powers, was located nearby.

Paul Ernest – Mr. Ernest was 72 years old. Mr. Ernest and his wife attempted to escape the fire by driving quads[14] off road through a canyon. When their escape route was blocked by a rock formation, Mr. Ernest and his wife were overtaken by the fire. Both were severely burned, and airlifted to UC Davis Medical Center Burn Unit in Sacramento. Mr. Ernest passed away from his injuries on August 5, 2019, nearly 9 months after the fire. He never left the extended care medical facility in Sacramento, after being transferred there from the UC Davis Burn Unit.

Rose Farrell – Ms. Farrell was 99 years old. Ms. Farrell was found deceased on the front porch of her residence at 1378 Herman Way in the Town of Paradise. Her wheelchair was found near Ms. Farrell.

Jesus Fernandez – Mr. Fernandez was 48 years old. Mr. Fernandez was found on the ground between two vehicles on Broken Glass Circle near Vista Ridge Road in Concow. Mr. Fernandez was the roommate of burn Victim 1 (above). Victim 1 believed Mr. Fernandez died shortly before her rescue.

Jean Forsman – Ms. Forsman was 83 years old and found deceased inside her residence at 13747 Andover Drive in the community of Magalia.

Ernest Foss, Jr. – Mr. Foss was 63 years old. Mr. Foss was found deceased outside of his residence at 5236 Edgewood Lane in the Town of Paradise. Mr. Foss was found with his oxygen tank. The evidence indicates Mr. Foss, who had limited mobility, was attempting to flee the fire at the time of his death.

Elizabeth Gaal – Ms. Gaal was 80 years old and found deceased inside her residence at 5393 Sawmill Road, Unit # 27 in the Town of Paradise.

Sally Gamboa – Ms. Gamboa was 69 years old. Ms. Gamboa was located deceased in a field/clearing behind her residence at 1560 Sunny Acres Road in the Town of Paradise. Based upon the evidence, Ms. Gamboa died while attempting to flee the oncoming flames.

[14] All terrain sport utility vehicles

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

James Garner – Mr. Garner was 63 years old. Mr. Garner was found deceased inside his residence at 6284 Woodbury Drive in the community of Magalia. Earlier on the morning of November 8, 2018, Mr. Garner had engaged in multiple telephone calls with his sister and nephew.

Richard Garrett – Mr. Garrett was 58 years old. Mr. Garrett was found deceased among trees not far from a residence at 4238 Schwyhart Lane in the community of Concow. Based upon the physical evidence Mr. Garrett was actively running from the fire when he was overtaken and killed by the flames.

William Godbout – Mr. Godbout was 79 years old and found deceased inside his residence at 3831 Camelot Lane in the community of Concow.

Shirley Haley – Ms. Haley was 67 years old. Ms. Haley was found deceased at 5577 Heavenly Place in the Town of Paradise. Ms. Haley's remains were found comingled with the remains of her sister, Barbara Carlson.

Dennis Hanko – Mr. Hanko was 56 years old and found deceased inside his residence at 5081 Wilderness Way, Unit 3A, in the Town of Paradise.

Anna Hastings – Ms. Hastings was 67 years old. Ms. Hastings was found deceased in her residence at 8391 Montna Drive in the Town of Paradise. She was disabled, with severe scoliosis, and unable to drive.

Jennifer Hayes – Ms. Hayes was 53 years old. Ms. Hayes was found deceased in her residence at 5683 Scotty Lake Drive, in the Town of Paradise.

Christina Heffern, Ishka Heffern and Matilde Heffern – Christina Heffern was 40 years old. Ishka Heffern, the daughter of Christina, was 20 years old. Matilde Heffern, the mother of Christina Heffern, was 68 years old. All three were located in their residence at 1865 Norwood Drive in the Town of Paradise. Their remains were located commingled in the bathtub of their residence. The Hefferns placed a 911 call as the fire approached their home. Somehow the phone line remained open as the house, and the three women, burned as helpless Cal Fire ECC dispatchers listened to their screams.

Louis Herrera – Mr. Herrera was 86 years old and found deceased inside of his home at 2376 Clearview Drive in the Town of Paradise. The remains of Mr. Herrera's wife, Dorothy Lee-Herrera, were also found in the residence.

Evva Holt – Ms. Holt was 85 years old and was found deceased in a burned vehicle near the intersection of Pearson Road and Stearns Road in the Town of Paradise, approximately 1.8 miles from Ms. Holt's residence.

TK Huff – Mr. Huff was 71 years old. Mr. Huff was located deceased outside of his residence at 13471 Green Forest Lane in the community of Concow. Mr. Huff only had one leg and generally used a wheelchair. Mr. Huff's wheelchair was found approximately 10 feet away from Mr. Huff. The physical evidence indicated Mr. Huff tried to escape the flames by dragging himself along the ground.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

Gary Hunter – Mr. Hunter was 67 years old. Mr. Hunter was located deceased inside of his residence at 13554 Andover Drive in the community of Magalia. He had limited mobility, due to a stroke, and could not walk without assistance.

James Kinner – Mr. Kinner was 83 years old. Mr. Kinner was located deceased inside his residence at 5237 Black Olive Drive in the Town of Paradise.

Dorothy Lee-Herrera – Ms. Lee-Herrera was 93 years old. Ms. Lee-Herrera was found deceased in her residence at 2376 Clearview Drive in the Town of Paradise. The remains of Ms. Lee-Herrera's husband, Louis Herrera, were also found in the residence.

Warren Lessard – Mr. Lessard was 68 years old. Mr. Lessard was found deceased on the front porch of his residence at Athens Way and South Park Drive in the community of Magalia.

Dorothy Mack – Ms. Mack was 88 years old and found deceased inside her residence at 6674 Pentz Road, Unit 19, in the Town of Paradise.

Sara Magnuson – Ms. Magnuson was 75 years old. Ms. Magnuson was found deceased inside her residence at 1812 Drendel Circle in the Town of Paradise. Based upon the physical evidence it appears Ms. Magnuson wrapped herself in a wet carpet and sheltered in the bathtub in an attempt to save herself.

Dolores Joanne Malarkey – Ms. Malarkey was 90 years old. Ms. Malarkey was found deceased in her residence at 432 Plantation Drive in the Town of Paradise. The remains of Ms. Malarkey's husband, John Malarkey, were also found in the residence.

John Malarkey – Mr. Malarkey was 89 years old and was found deceased in his residence at 432 Plantation Drive in the Town of Paradise. The remains of Mr. Malarkey's wife, Joanne Malarkey, were also found in the residence.

Christopher Maltby – Mr. Maltby was 69 years old. Mr. Maltby was found deceased in his residence at 1040 Buschmann Road in the Town of Paradise.

David Marbury – Mr. Marbury was 66 years old. Mr. Marbury was found deceased inside his residence at 1481 Sun Manor, Unit A, in the Town of Paradise.

Deborah Morningstar - Ms. Morningstar was 65 years old and found deceased inside of her residence at 5848 Black Olive Drive, Unit 3, in the Town of Paradise. She was unable to drive, which prevented her from being able to flee.

Helen Pace – Ms. Pace was 84 years old. Ms. Pace was found deceased inside her residence at 6674 Pentz Road in the Town of Paradise. She had medical issues, which limited her ability to leave her home.

Joy Porter – Ms. Porter was 72 years old. Ms. Porter was found deceased in the driver's seat of her car with her son, Dennis Clark Jr., in the passenger seat. Their vehicle was in a line of three other vehicles found facing north in the 5000 block of Edgewood Lane in the Town of Paradise. The vehicle was located approximately .3 miles south of Mr. Clark and Ms. Porter's residence on Sunny Acres Road, off of Edgewood Lane.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

Beverly Powers – Ms. Powers was 64 years old. Ms. Powers was found deceased in the driver's seat of a pickup truck registered to her boyfriend, Robert Duvall. The vehicle was in a line of three other vehicles found facing north in the 5000 block of Edgewood Lane, approximately .3 miles south of Mr. Duvall and Ms. Powers residence on Sunny Acres Road. One of the other two vehicles contained the remains of Mr. Duvall.

Robert Quinn – Mr. Quinn was 74 years old and found deceased in his residence at 5684 Clara Lane in the Town of Paradise.

Joseph Rabetoy – Mr. Rabetoy was 39 years old and found deceased in his residence at 5580 Angel Drive in the Town of Paradise. He had no means of escape as he didn't have a vehicle.

Forrest Rea - Mr. Rea was 89 years old and found deceased in his residence at 1909 Dean Road in the Town of Paradise.

Vernice Regan – Ms. Regan was 95 years old. Ms. Regan was found deceased outside of her home at 102 Magnolia Drive in the Town of Paradise.

Ethel Riggs – Ms. Riggs was 96 years old. Ms. Riggs was located deceased inside of her residence at 220 Berry Creek Drive in the Town of Paradise. Ms. Riggs spoke with her grandson via phone at least twice on the day of the fire and told him because the power was out she was unable to get her car out of the garage. Ms. Riggs told the grandson she could not reach the manual release for the garage door, and even if she could, she was not strong enough to raise the door.

Lolene Rios – Ms. Rios was 56 years old. Ms. Rios was found deceased in the basement of her home at 750 Meyers Lane in the Town of Paradise, along with the remains of her four dogs and two cats.

Gerald Rodrigues – Mr. Rodrigues was 74 years old and found deceased inside of his residence at 5436 Clark Road, Unit 14, in the Town of Paradise.

Frederick Salazar, Jr. – Mr. Salazar was 76 years old. Mr. Salazar was found deceased in his residence at 5303 Sawmill Road in the Town of Paradise. The remains of Mr. Salazar's wife, Phyllis Salazar, were also found in the residence.

Phyllis Salazar – Ms. Salazar was 72 years old. Ms. Salazar was found deceased in her residence at 5303 Sawmill Road in the Town of Paradise. The remains of Ms. Salazar's husband, Frederick Salazar, Jr., were also found in the residence.

Sheila Santos – Ms. Santos was 64 years old and found deceased in her home at 5471 S. Libby Road, Unit 34, in the Town of Paradise.

Ronald Schenk – Mr. Schenk was 74 years old. Mr. Schenk was found deceased in his home at 5471 S. Libby Road, Unit 33, in the Town of Paradise.

Berniece Schmidt – Ms. Schmidt was 93 years old. Ms. Schmidt was found deceased inside of her residence at 14175 Citadel Way in the community of Magalia with the remains of her cat and a kitten.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

John Sedwick – Mr. Sedwick was 82 years old. Mr. Sedwick was found deceased on the front porch of his residence at 13816 Glover Lane in the community of Magalia.

Don Shores - Mr. Shores was 70 years old. Mr. Shores was found deceased in a recliner in his residence at 6778 Ishi Drive in the community of Magalia. The remains of Mr. Shores' wife, Kathy Shores, were found in an adjacent recliner. Also located with Mr. and Ms. Shores were the remains of two dogs and two cats.

Kathy Shores – Ms. Shores was 65 years old. Ms. Shores was found deceased seated in a recliner in her residence at 6778 Ishi Drive in the community of Magalia. The remains of Ms. Shores' husband, Don Shores, were found in an adjacent recliner. Also located with Mr. and Ms. Shores were the remains of two dogs and two cats.

Judith Sipher – Ms. Sipher was 68 years old. Ms. Sipher was found deceased in her residence at 1005 Village Parkway in the Town of Paradise.

Larry Smith – Mr. Smith was found severely burned in the driveway of his home at 6428 Rocky Lane in the Town of Paradise. Mr. Smith was rescued and transported to the UC Davis Medical Burn Center. Mr. Smith succumbed to his injuries while still in the hospital 17 days later. Mr. Smith was 80 years old.

Russell Stewart – Mr. Stewart was 63 years old and found deceased inside of his home at 6884 Pentz Road in the Town of Paradise.

Victoria Taft – Ms. Taft was 67 years old and found deceased inside of her home at 5883 Copeland Road in the Town of Paradise.

Shirlee Teays - Ms. Teays was 90 years old. Ms. Teays was found deceased inside of her residence at 9289 Skyway Road, Unit 15, in the Town of Paradise. She appears to have been holding or hugging a framed photograph.

Joan Tracy – Ms. Tracy was 82 years old. Ms. Tracy was found deceased inside of her home at 5326 Sawmill Road in the Town of Paradise.

Unknown – The remains of this unknown victim were found comingled with the remains of another victim in Concow. Attempts at identification are still being made.

Ellen Walker – Ms. Walker was 72 years old and found deceased inside of her home at 4220 Schwyhart Lane in the community of Concow.

Donna Ware – Ms. Ware was 86 years old and found deceased inside her home at 5783 Waco Lane in the Town of Paradise.

Isabel Webb – Ms. Webb was 68 years old. Ms. Webb was found deceased inside her home at 1449 Sleepy Hollow Lane in the Town of Paradise.

Marie Wehe – Ms. Wehe was 78 years old. Ms. Wehe was found deceased inside a burned truck on the side of Windermere Lane in the community of Concow approximately .3 mile east of Ms. Wehe's residence on Windermere Lane.

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Comment Set D11 – Matt Solomon (continued)

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Kimber Wehr – Ms. Wehr was 53 years old and found deceased inside her residence at 5908 Del Mar Avenue in the Town of Paradise. She was unable to drive due to a neurological disability, and was unable to flee the fire on her own.

David Young – Mr. Young was 69 years old. Mr. Young was found deceased with two unidentified animals inside his mini-van. The mini-van was found crashed into a tree near the intersection of Hoffman Road and Jordan Hill Road in the community of Concow. The vehicle was located approximately 1.5 miles west of Mr. Young's residence on Hog Ranch Road in the community of Concow. Based upon the evidence, Mr. Young crashed while fleeing the oncoming fire. Mr. Young and the two animals were found in the cargo area of the mini-van. The autopsy determined Mr. Young survived the crash, but was killed by the fire.

IV. BACKGROUND OF THE FAILED COMPONENT

a. History of the Caribou-Palermo 115kV Transmission Line

According to historical reports[15] provided by PG&E, the section of the Caribou-Palermo line that runs in the Feather River Canyon from the Caribou Powerhouse to the Big Bend Substation, was built between 1919 and 1921 by the Great Western Power Company. What is now known as the Caribou-Palermo line was originally part of a 165kV transmission line that carried electricity from the Caribou Powerhouse to the Valona Substation in Contra Costa County.[16] PG&E acquired the Caribou Powerhouse and the entire Caribou-Valona 165kV transmission line (Caribou-Valona line) when it purchased Great Western Power Company in 1930. According to the reports, sometime during the 1960s the Caribou-Palermo line was converted to 115kV. According to the reports, there were eleven segments[17], including the Caribou-Big Bend segment, of the original Caribou-Valona transmission line still in service in 2018.

Despite the fact that PG&E has owned the Caribou-Big Bend portion of the Caribou-Palermo line since 1930, the evidence established PG&E did not catalogue or replace the original

[15] In April 2017 cultural resources specialists from PG&E produced a document entitled "National Register of Historic Places Inventory and Evaluation of Eleven Transmission Lines Associated with the Historic Alignment of the Caribou-Valona Transmission Corridor (NRHP Inventory and Evaluation). The NRHP Inventory and Evaluation was updated in October, 2018 by Cardno Inc. The NRHP Inventory and Evaluation includes a 2018 report entitled "DPR 523 Form" produced by the California Department of Parks and Recreation (DPR Report).

[16] Using a current map, the original Caribou-Valona line ran parallel to the Feather River from Caribou-Road through the Feather River Canyon, passing to the east of Oroville to Palermo. South of Palermo the line ran parallel to State Route 70 thru Sacramento. From south of Sacramento the line ran parallel to Interstate 80 to Vallejo. The line crossed the bay from Vallejo to Valona parallel to the current Carquinez Bridge on Interstate 80. The total length of the line was 1368 steel towers and 186 miles.

[17] As the electrical transmission grid has grown and substations were added the original Caribou-Valona line was divided into segments (sometimes referred to as circuits in PG&E historical documents) corresponding to the substations. The eleven segments still in use in 2018 were the Caribou-Palermo line, Paradise-Table Mountain, Palermo Pease, Pease-Rio Oso, Rio Oso-West Sacramento, Brighton-Davis, Brighton-Davis (idle), Vaca-Suison-Jamison, Ignacio-Mare Island #1, Oleum-G #1 and Oleum-G #2.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

conductors,[18] insulators or attachment hardware[19] on many of the towers in the original Caribou-Big Bend section of the transmission line.

Many components on Tower 27/222 were identified by PG&E as original Great Western Power components because they matched components included in the original Great Western Power Company schematic drawings for construction of the transmission line. Among those components were the insulators hung from C hooks[20]. The records provided by PG&E clearly established the insulator string hanging from the C hook that broke on November 8, 2018 was an original 1921 insulator. Other components, such as the C hooks and the conductor, either did not completely match the original records[21] or PG&E did not possess original records.[22]

Evidence established that, with the exception of add-on hanger brackets which were added to the ends of the transposition arms to replace worn hanger holes, the transposition components on Tower 27/222, including the transposition arms, C hooks, insulator strings and jumper conductor, were original components in service since 1921. The evidence further established that despite owning Tower 27/222 since 1930, PG&E had little or no information about the 97-year-old conductor and the hooks, original hanger holes and bolted-on hanger hole plates supporting that conductor.

b. C Hook and Hanger Hole Wear

The broken C hook{Attachment 7} and the transposition arm {Attachment 8}on which it had been hung were collected as evidence by Cal Fire investigators[23]. The transposition arm was identified as the left "phase" arm of Tower 27/222 {Attachment – 3D model w/ left phase highlighted}. This left phase arm had a bolted-on hanger hole plate which showed substantial wear where the broken hook had hung.

Cal Fire investigators also collected as evidence the right phase transposition arm and its still-connected (hung) C hook from Tower 27/222. .{Attachment 9} While examining the right phase C hook, Cal Fire investigators observed a "channel" had been worn into that hook where it hung from the bolted-on hanger plate hole of that transposition arm. {Attachment 10} The wear channel was similar to the channel cut into the broken left phase C hook. Similarly the right

[18] In layman's terms, a "conductor" is known as a power line or wire.
[19] Hot end attachment hardware attaches the insulators to the conductor. Cold end attachment hardware attaches the insulators to the tower/structure/pole. {Attachment – illustrative photo}
[20] Also known as "Suspension hooks." C hooks are part of the cold end attachment hardware.
[21] The plans for the original Great Western Power transposition towers included a schematic, dated October 11, 1912, of an Ohio Brass suspension hook with a raised B on the right face of the hook. The relevant hook from Tower 27/222 matched the schematic except the raised B was on the left face of the hook.
[22] PG&E responded to questions about the make, model and manufacturer of the conductor on Tower 27/222 by referring to an April 1922 article written by W. A. Scott in Engineering World entitled "Great Western Power Co.'s 165,000-Volt Transmission Line".
[23] The front portion of the C hook that broke off was never recovered. Cal Fire personnel spent several days meticulously searching the area below Tower 27/222 and could not locate that broken piece. It was noted however that area was on a steep rocky slope which ran off toward the Feather River Canyon.

Comment Set D11 – Matt Solomon (continued)

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phase hanger hole showed substantial wear where the hole and hook connected. {Attachment 11}

Investigators also noted there were original hanger holes on both the left and right transposition arms that showed extensive wear. It was obvious the bolted-on hanger plates with their holes were replacements for these original hanger holes indicating that PG&E was aware that the hooks and holes were rubbing on each other causing wear. The wear patterns observed on the hanger holes is described as "keyholing."

As a result of the observations of the Cal Fire investigators, an inspection of other transposition towers[24] on the Caribou-Palermo line was initiated by the Butte County District Attorney. Based upon the historical records and the C hooks and hanger holes from Tower 27/222, investigators from Cal Fire and the Butte County District Attorney's Office concluded that any more than 3/16" space between top of the C hook and top of the hole indicated wear to either the C hook or the hanger hole, or both[25]. In January 2019, investigators from the Butte County District Attorney's Office flew the Caribou-Palermo line in a county helicopter and documented transposition towers on which the gap between the top of the C hook and the top of the hanger hole were substantially larger than 3/16."

From the helicopter, investigators located wear to C hooks and hanger holes on three other transposition towers on the Caribou-Palermo line between the Caribou Powerhouse and the Big Bend Substation. The towers were identified as tower numbers 20/160, {attachment – 20/160 wear}24/199 {Attachment – 24/199 wear} and 35/281. {Attachment – 35/281 wear} This wear was similar to that found on the C hooks and hanger holes on Tower 27/222. Subsequently, Butte County District Attorney investigators and Cal Fire investigators, along with Jon McGormley - an engineer and failure analysis expert,[26] further inspected each of these three towers. Investigators and Mr. McGormley also identified a fourth transposition tower, tower number 32/260, {attachment – 32/260 wear} on which there appeared to be very little wear between the C hooks and hanger holes. Tower numbers 20/160, 24/199, 27/222 and 35/281 were all located on ridgelines and exposed to the wind. Tower 32/260 was located in a valley where it was protected from the wind.

During the inspection of one of the four towers - Tower 24/199 - investigators noted that, similar to Tower 27/222, bolted-on hanger plate holes had been added to the transposition arms and the C hooks were hanging from those hanger holes instead of the original hanger holes of the transposition arm. This again indicates that PG&E was aware of the wear on C hooks and

[24] Because transposition towers have unique physical characteristics, investigators focused only on transposition towers. Transposition towers on the Caribou-Big Bend section are distinguished from other towers by the T mast atop the tower and the transposition arms on the source side of the tower. Towers 20/160, 24/199, 32/260 and 35/281 were transposition towers identical to Tower 27/222.

[25] According to the original schematics of the transposition towers the C hooks were 15/16" thick at the point of contact and the hanger holes were 1 1/8" in diameter. The hooks were intended to fit snugly into the holes.

[26] Jon McGormley was retained by Cal Fire and is an engineer and failure analysis expert with Wiss, Janney, Elstner Associates (WJE). WJE is a global firm of engineers, architects and materials scientists with a division focused on failure analysis.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

hanger holes. It appeared to investigators that, at some previous time, the jumper conductor on Tower 24/199 {Attachment – 24/199 jumper} had been shortened and spliced together using a parallel groove connector. PG&E has no records of when or why this work was done. Investigators further observed the right phase[27] insulator string appeared to be less aged than the left phase insulator string and, as a result of the shorter jumper conductor, was not hanging plumb. From the ground, investigators also observed black marks on the tower leg nearest the right phase insulator string. This was indicative of arcing due to faulty or broken equipment. On the ground below Tower 24/199, investigators found an old insulator string.[28]

With the assistance of PG&E[29], investigators seized C hooks and transposition arms from two of the three towers[30] with obvious wear and the tower without obvious wear. Seizure of all of the C hooks and transposition arms was catalogued and documented by a Federal Bureau of Investigation (FBI) Evidence team. Of the four towers, Tower 24/199 was found to be the most similar to Tower 27/222 in terms of topography, meteorology and wear. The right phase C hook from Tower 24/199 was the most worn C hook found on any of the towers.

The C hooks, transposition arms, and hanger plate holes from Towers 27/222 and 24/199 were sent to the Metallurgy Unit of the FBI Laboratory at Quantico, Virginia for metallurgical analysis by their recognized metallurgical experts. The C hooks were examined for defects. No defects were found. The broken left phase C hook from Tower 27/222 and the most worn right phase C hook from Tower 24/199 were determined to be malleable cast iron. The least worn C hooks from Towers 27/222 and 24/199 were determined to be forged, plain carbon steel. The broken C hook from Tower 27/222, the most worn hook from Tower 24/199, and a less worn hook were tested for hardness.[31] The testing determined there was a significant difference in hardness between the most worn malleable cast iron hooks, and the least worn forged plain carbon steel hook. The transposition arms were also examined and analyzed, and all four transposition arms and the bolted on hanger brackets were found to be made of galvanized plain carbon steel.[32]

The FBI Lab scanned all of the hooks and transposition arms. The scans were used to build 3D models of each of the components. {Attachment – 3D models}

[27] The term phase relates to the connection between the tower structure and the conductors. The Caribou-Big Bend section has three conductors and three phases; left, center and right.
[28] This was not unusual. Under numerous towers on the Caribou-Palermo line investigators found discarded insulator strings, insulator bells, conductor line and steel members.
[29] Any work on an electrical transmission tower requires special training and equipment. Investigators were unable to identify any qualified persons to perform the work. As a result, investigators had to rely on PG&E personnel to remove the relevant components from Tower 27/222 in November, 2018 and Towers 20/160, 24/199 and 32/260 in March, 2019.
[30] The C hooks and transposition arms from the fourth tower, 35/281, were replaced by PG&E in February, 2019. Those C hooks and transposition arms were seized by Cal Fire and BCDA investigators from a PG&E evidence storage facility.
[31] The Superficial Rockwell HR30TW hardness test was used to determine hardness.
[32] All of the transposition arms and hanger brackets were tested for hardness utilizing the Rockwell HRBW hardness test.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

The metallurgist at the FBI Lab also analyzed the wear patterns on the C hooks and hanger holes (both original holes and the added brackets). The metallurgist determined that as a result of rotational body on body wear, the edge of the hanger holes had cut a channel into the C hooks and the C hooks had worn away the bottom of the hanger holes elongating the holes[33]. {Attachment – Camp Fire Presentation 3:29-3:46} On the broken C hook from Tower 27/222 it was determined the channel had cut approximately 14/16" {Attachment – FBI lab photo of break} into the hook before the remaining metal broke under the weight of the insulator string and jumper conductor.[34] On the most worn C hook from Tower 24/199 it was determined that the channel had cut approximately 12/16" channel into the hook.

Under microscopic analysis, the FBI Metallurgist also observed the channeling of the right phase C hook from Tower 24/199 showed a distinct change in angle. The metallurgist testified it was her opinion the distinct change in angle could have been caused by shortening of the jumper conductor which changed the position and angle of the insulator string attached to the C hook.

The FBI data, along with LIDAR scans[35] of Towers 27/222 and 24/199, was forwarded to Jon McGormley. Using this information, Mr. McGormley was able to build a computer model of Tower 27/222. The model took into account the differing hardness of the C hooks and hanger holes.[36] Working with meteorologist Kris Kuyper[37], Mr. McGormley and his team created a wind load model of the Feather River canyon, enabling them to calculate that the wear on the broken C hook from Tower 27/222, as well as the most worn C hook from Tower 24/199, was consistent with approximately **97 years of rotational body on body wear**. [38] {Attachment – Camp Fire Presentation 3:52-3:54}

V. INSPECTION AND PATROL POLICIES

State and federal regulatory requirements dictate PG&E must establish and follow set guidelines for patrol, inspection and maintenance of its overhead electric transmission lines. The 2012 Quanta Technology "Transmission Line Inspection Procedures Final Report"[39] outlined the

[33] Known as keyhole wear or "keyholing."
[34] According to PG&E written response to CPUC data request SED-007 question 2 each suspension hook supports approximately 142.8 pounds.
[35] Lidar scans were performed by the Cal Fire Lidar Team.
[36] The hardness of the individual metals involved plays a significant role in body on body wear. Metallurgical data from the FBI Laboratory was provided and fed into the model. The Superficial Rockwell HR30TW results for the C hooks and the Rockwell HRBW results for the transposition arms were converted using ASTM E140 for comparison purposes. On the Vickers Kg/mm2 the broken hook from 27/222 scored 114 for hardness, the most worn hook from 24/199 scored 119 for hardness and the least worn hook scored 222, the transposition arm and bracket from 27/222 scored 134 and 152 for hardness, the transposition arm and bracket associated to the most worn hook on 24/199 scored 120 and 138 for hardness and the transposition arm and bracket associated to the least worn hook scored 118 and 152 for hardness.
[37] Kris Kuyper is the former Chief Meteorologist for Action News in Chico. Kuyper was retained as an expert by the Butte County DA.
[38] The transposition arms metal (around the original hanger holes) was less hard than the bolted-on hanger plate hole metal. The original hanger holes showed significantly more keyhole wear than the bracket holes.
[39] Quanta Technologies is a multi-national electrical utility consulting company. Quanta Technologies was retained by PG&E in 2011 to review the ETPM. This report was commissioned by, and paid for by, PG&E.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

various regulatory requirements. Among these requirements is CPUC General Order (GO) 165. Section IV of this General Order states "[e]ach utility shall prepare and follow procedures for conducting inspections and maintenance activities for transmission lines."[40]

Since 2005, PG&E electric transmission inspection, patrol, and maintenance policies have been set forth in the "Electric Transmission Preventative Maintenance Manual" (ETPM). According to the ETPM: "Inspection and patrol procedures are a key element of the preventive maintenance program. The actions recommended in this manual reduce the potential for component failure and facility damage and facilitate a proactive approach to repairing or replacing identified, abnormal components."

a. 1987 Inspection and Patrol Bulletin

Prior to the implementation of the ETPM in 2005, inspection and patrol policies were documented in "bulletins". The oldest bulletin provided by PG&E was dated November 1, 1987[41], and entitled "Routine Patrolling and Inspection of Transmission Lines." This bulletin stated patrols are performed "to ensure that the transmission facilities are in good repair in order to maintain a high standard of service, reliability, and safety, and the patrol policy is consistent with GO95.[42]" In this 1987 bulletin, the terms "patrol" and "inspection" were used interchangeably.

The 1987 policy divided PG&E's electrical transmission system into 4 parts: Class A circuits, Class B circuits, Class C circuits, and Underground. For overhead circuits,[43] the patrol or inspection cycles were determined by the class designation of the circuit. A PG&E troubleman,[44] who worked in the Feather River Canyon between 1987 and 1995, established the Caribou-Palermo line was considered a "Class B Circuit." As such, under the 1987 policy the Caribou-Palermo line was required to be patrolled three times each year: one ground patrol and two aerial patrols. In addition, the 1987 policy required climbing inspections of five percent of the tower structures per year; and an infrared patrol[45] every five years. According to the 1987 policy bulletin, all patrols of transmission lines were to be completed by a "Transmission Troubleman." This policy ensured that every overhead transmission structure would be climbed at least once every 20 years. Because PG&E inspection/patrol records prior to 2000 are not available, it is unknown if Tower 27/222 was one of the towers subjected to a climbing inspection between 1987 and 1994.

Appendix A to the 1987 policy bulletin contained a checklist of "Conditions to be noted when patrolling lines." One of the conditions to be noted was "Worn hardware and connectors."

[40] The California Independent System Operator (CAISO) "Transmission Control Agreement" and Western Electricity Coordinating Council (WECC) standard FAC-501 also require PG&E to have and follow written policies for inspection and maintenance of electrical transmission lines.
[41] The 1987 bulletin was the sixth revision of an existing policy bulletin and replaced the fifth revision which was published December 1, 1984 according to the face page of the 1987 bulletin. Based upon interviews with PG&E linemen from the 1970s and 1980s it is believed that the original policy bulletin was published 1972-75.
[42] GO95 is General Order of the CPUC number 95. GO95 establishes building, maintenance and replacement regulations for electrical transmission.
[43] A circuit is the path electrical current flows. In the 1980s PG&E referred to transmission lines as circuits. Distribution lines are still referred to as circuits. Transmission lines are now referred to as lines.
[44] See Section VII "Troublemen and Training" below for the definition of the position of Troubleman.
[45] An infrared patrol uses infrared, thermal cameras to identify hot spots on the line. Hot spots may indicate a defect or weakness on the line.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

Through interviews with transmission lineman, troublemen, and engineers, it was established the C hooks were technically part of the "cold end attachment hardware."

Former PG&E Transmission Line Supervisors from 1987 noted the checklist inclusion of "worn hardware" was a result of a 1987 PG&E Laboratory Test Report[46] documenting a worn C hook and hanger hole from a Bay Area transmission tower[47]. Photos of the worn C hooks and holes were distributed to troublemen in all of the PG&E regions for training purposes, and inspection of C hooks and hanger holes was made a specific priority during inspections/ patrol.

b. 1995 Inspection and Patrol Policy

The 1987 policy remained in effect until it was replaced by the "ES Guideline" in 1995. The 1995 ES Guideline made substantial changes, specifically separating out patrols from inspections. Inspection frequency was determined by a transmission line score on an "Inspection Frequency Checklist" and drastically reduced the frequency and thoroughness of inspections. The Caribou-Palermo line was reduced from three patrol/inspections (one ground/two aerial) per year to one ground inspection every 24 months and one aerial inspection every 24 months. Required routine climbing inspections were eliminated. Climbing inspections would only occur if "triggered" by one or more specific findings listed as triggers.

c. 2005 ETPM Inspection and Patrol Procedures

The 1995 policies remained in effect until they were replaced by the ETPM in 2005. According to the ETPM section entitled General Inspection and Patrol Procedures, "[t]hese inspection and patrol procedures were developed as a key element of the preventative maintenance program. The recommended actions were selected to reduce the potential for component failures and facility damage and to facilitate a proactive approach to repairing or replacing identified, abnormal components."

The ETPM differentiated between inspections and patrols, and established definitions for each. According to the 2005 ETPM in the Detailed Overhead (OH) Inspections section:

> "A detailed ground, aerial or climbing inspection of the asset[48] looks for abnormalities or circumstances that will negatively impact safety, reliability, or asset life. Individual elements and components are carefully examined through visual and/or routine diagnostic tests and the abnormal conditions of each are graded and/or recorded.
>
> Overhead line facilities are to be inspected in accordance with the provisions in Section 2.0 of this manual. The inspections are to include detailed visual observations, operational readings, and component testing to identify abnormalities or circumstances that will negatively impact safety, reliability or asset life."

The 2005 ETPM **Patrols** of overhead transmission assets section states that:

> "The QCR's[49] primary responsibility in an overhead electric facility is to visually observe the electric facilities, looking for obvious structural problems or hazards without the use

[46] The Laboratory Test Report was published approximately nine months before the Inspection and Patrol Bulletin. This Laboratory Test Report is described more fully in Section XVII "Knowledge of Risk/Consequence."
[47] Based upon historical records it is believed that the tower was part of the original Caribou-Valona line built 1918-1921.
[48] An asset is a structure, pole or tower.
[49] QCR is Qualified Company Representative. See section VII-"Troublemen and Training" for more information.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

> of measuring devices, tools, or diagnostic tests, and to record that the facilities have been patrolled."[50]

The ETPM adopted verbatim the 1995 policy on climbing inspections and triggers. According to section 3.4:

> "A climbing inspection is a detailed, supporting structure based observation of the facilities installed to determine if there are any abnormal or hazardous conditions that adversely impact safety, service reliability or asset life, and to evaluate when each identified abnormal condition warrants maintenance."
>
> Climbing inspections may also be required for specific structures or components to properly assess a condition found during a ground or aerial inspection or patrol that could not be adequately assessed during the inspection of patrol."

As of the 2005 ETPM, the Caribou-Palermo line was reduced to only being inspected once every five years and patrolled once per year in non-inspection years. (This reduction again is from the three patrol/inspections per year prior to 1995.)

The 2006 revision of the ETPM appears identical to section 2 of the 2005 ETPM and identifies the "Best View Position" for individual components on a transmission structure.[51] According to Table 2.3-1 the best position to view insulators and hardware is aerial inspection (not patrol), ground inspection above 10', and climbing inspection. The terms "aerial inspection" and "ground inspections above 10'" were not specifically defined in the ETPM. According to former PG&E personnel, an "aerial inspection" is significantly more detailed than an "aerial patrol" and requires a helicopter to fly 360 degrees around each structure at an altitude and speed which allows for detailed inspection of the structure components. A ground inspection above 10' involves the use of a bucket truck to lift the QCR to allow for close inspection of the top part of the structure.

d. Patrol and Inspections Subsequent to the 2005 ETPM

Since 2005 the ETPM has been revised on multiple occasions[52]. The revisions have not changed the inspection or patrol cycles or the requirements for inspections and patrols. At the time of the Camp Fire, the third revision of the ETPM, issued May 12, 2016 was in use. Shortly after the Camp Fire, on November 20, 2018, the 4th revision of the ETPM[53] was published. Among other changes, the fourth revision of the ETPM incorporated new requirements for the prioritization and correction of safety hazards in Tier 2 and Tier 3 high fire threat areas identified in the 2018 CPUC Fire Threat Map.[54] These changes were required by amendments to GO95 by the CPUC, which took effect in January 2018.[55]

[50] See Section VII "Troublemen and Training" below for the definition of the position of QCR.
[51] Copies of the 2005 ETPM provided by PG&E were missing page 2-4.
[52] Revised editions of the ETPM were published in October 2006, April 2009, January 2011, December 2014, May 2015, May 2016 and November 2018
[53] Although the May 2016 revision was the sixth revision of the ETPM, PG&E did not start numbering revisions until the December 2014 edition, which was designated revision one.
[54] On January 19, 2018, the CPUC adopted and published the CPUC Fire-Threat Map. The Fire-Threat Map identified elevated (Tier 2) and extreme (Tier 3) fire threat areas in the State of California.
[55] In conjunction with the Fire-Threat Map, the CPUC amended GO 95 to add regulations to enhance fire safety in Tier 2 and Tier 3 fire threat areas.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

e. The 2012 Quanta Report

The 2012 Quanta Technologies "Transmission Line Inspection Procedures Final Report" was a "comprehensive review of Pacific Gas and Electric's (PG&E) current standards and practices used for ground patrol inspection of overhead transmission lines."[56] According to the report, the ETPM was "found to be a comprehensive, well written document that adhered to its purpose to "ensure uniform and consistent required procedures for patrols, inspections, equipment testing, and condition assessment of electric transmission line facilities." Quanta did not, and the report did not, evaluate the actual use, or non-use, of the ETPM by PG&E.

The evidence clearly established that PG&E did not, in fact, follow the procedures and requirements established in the ETPM. Based upon the evidence, it is reasonable to conclude that sections of the ETPM relating to inspections and patrols of overhead electric transmission lines were simply a façade created to meet the requirements of the regulators and the CAISO[57].

VI. REDUCTION OF UNIT COSTS FOR INSPECTIONS AND PATROLS

Although there were no changes to the frequency of inspections and patrols between the 2005 and 2018 ETPMs, the evidence established PG&E considered further reducing the frequency of inspections and patrols. According to 2013 internal PG&E PowerPoint, a committee was formed to explore opportunities to reduce costs by reducing the frequency of inspections and patrols and examine said "unit costs." According to the "Problem Statement:"

> "Tline[58] patrols/inspection have not been modified in approximately 10 years relative to frequency and work methods. There may be opportunities to reduce costs by 1) changing frequency of patrols/inspections or 2) finding more efficient work practices. Benchmarking PG&E's practices against other utilities may identify potential opportunities for efficiency savings."

Under the heading "Business Objectives:"

> Define improvements in our frequency, tools or processes to find efficiencies in the patrols/inspections.
> Perform benchmarking and analysis to measure current practices
> Determine frequency of patrols/inspections (are we doing more than industry standard)
> Analyze current patrols/inspections work methods (i.e. crew size)

[57] California Independent System Operator Corporation. CA ISO is a private, non-profit corporation that manages the high voltage power grid and the wholesale energy market for most of California. CA ISO was created in 1997 as part of an effort to restructure the wholesale electric industry in California. CA ISO is not a regulator. CA ISO's power over electric transmission utilities derives from the Transmission Control Agreement entered into between CA ISO and the utilities. In the Transmission Control Agreement the utilities agree to, among other things, properly maintain electric transmission lines, provide CA ISO with all current maintenance policies (referred to as a Transmission Owner Maintenance Practices (TOMP)). Failure to comply with the terms of the Transmission Control Agreement could be a breach of contract.

[58] PG&E abbreviation for Transmission line

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

Under the heading "Scope"

Patrols and Inspections for Transmission Lines
Frequency of patrols/inspections
Work methods/practices (tools, crew size, processes)
Unit costs measurement

Emails obtained from PG&E established committee members subsequently met with other electrical utilities for the purpose of benchmarking inspection and patrol practices of those utilities and submitted to a national electrical utilities association a patrol and inspection survey to be distributed to and completed by its members. This was done despite the fact the 2010 Quanta Technologies "Structures" Report[59] included data on patrol and inspection frequency gathered from a survey of 104 electrical utilities worldwide conducted in 2003 by the International Council on Large Electrical Systems, also known as Cigre'[60]. According to the Cigre' study 74% of the companies utilized "Walking" inspections, 63% utilized "Climbing" inspections and 66% utilized "Helicopter" inspections. The average inspection period for each type of inspection was 1.4 years for walking, 1.5 years for helicopter and 4.2 years for climbing.

The lack of change in inspection and patrol frequency in subsequent revisions of the ETPM indicates that reduction of inspection and patrol frequency was not approved. The committee was also exploring opportunities to reduce costs by finding more efficient work practices. A key component of this inquiry was "Unit cost measurement." The evidence indicates that PG&E reduced costs by reducing the unit cost for each inspection and patrol. The evidence shows that this was accomplished by reducing the thoroughness of the inspections and patrols.

Review of internal PG&E documents, including emails, and interviews with PG&E personnel determined that the unit cost for inspection and patrol is calculated based upon the time that a troubleman spends inspecting an individual structure. Based upon interviews it was established that each year PG&E determines an average unit cost for each type of inspection or patrol. The unit cost would be translated into time and multiplied by the total number of structures on an individual line. The result would be the time allotted for the inspection or patrol of that transmission line. Prior to the start of each calendar year each transmission region headquarters was provided a list of inspections and patrols, including the allotted time, scheduled for the following year. The inspection and patrol budgets for each transmission region headquarters was based upon the total allotted time for all scheduled inspections and patrols. The evidence established that the Business Finance Department of the Electric Transmission Division sent monthly budget reports tracking spending, both monthly and year to date, for inspection and patrol against budget allocations. The reports were color-coded - red for over budget and green for under budget. The evidence also established that salary incentives (bonuses) of Transmission Line Supervisors and Transmission Superintendents was, at least partially, based upon compliance with the inspection and patrol budget.

Based upon the evidence, PG&E reduced costs of inspection and patrol by reducing the amount of time budgeted for the inspections and patrols. As expected, the result of these reductions was less thorough and less complete inspections and patrols.

[59] In 2009 PG&E hired Quanta to evaluate its electrical transmission system. In 2010 Quanta submitted to PG&E the Transmission Line Component Management Report which included the Structures Report.
[60] Cigre is an international association of electrical transmission companies located in Paris, France. Cigre was established in 1921 and claims 1250 member organizations from 90 countries.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

VII. TROUBLEMEN AND TRAINING

a. Creation of the Troubleman Program

The evidence established the inspection and patrol of the transmission lines is done by the "Troublemen." Similar to the inspection and patrol policy, the position of Troubleman has evolved and changed. Based upon interviews with former PG&E employees from the 1980s, the evidence established the position of Transmission Troubleman was created in the mid-1980s. The earliest reference to troublemen in documents provided by PG&E is found in the 1987 "Routine Patrolling and Inspection of Transmission Lines" policy bulletin.

According to the original Transmission Line Supervisors interviewed, the Transmission Troubleman position was initially intended to be a qualified and experienced transmission line expert. According to one of the original Transmission Lines Supervisors the "intent here was to have people that knew exactly what to look for, how to establish priorities on repairs, and would, would keep it operating." In addition to the physical demands and climbing requirements of the position, the Troublemen were also expected to take ownership of individual transmission lines and be accountable for the continued safe and reliable operation of that line.

b. Troubleman Training

The 1987 "Routine Patrolling and Inspection of Transmission Lines" policy memo established training requirements for the new Transmission Troublemen[61]. In the late 1980s, training for Transmission Troublemen included periodic meetings of all of the Transmission Line Supervisors and Troublemen. At these meetings issues and problems were shared and discussed. According to one of the original Transmission Line Supervisors, a supervisor was designated to document and/or collect all of the examples presented at the meetings in order to compile a training manual for future Transmission Troublemen. According to several of the original Transmission Line Supervisors and Troublemen, an inspection checklist was developed based in part on the information being shared at these meetings. Appendix A to the 1987 "Routine Patrolling and Inspection of Transmission Lines" policy memo appears to be the earliest form of the checklist.

In addition to eliminating routine climbing inspections, reducing the frequency of inspections, and creating an Inspection Frequency Checklist, the 1995 ES Guideline eliminated the training requirement for troublemen. Notwithstanding that, the training requirement was dropped from the ES Guideline, the evidence does show that PG&E had created a Troubleman training program. According to one of the former PG&E employees involved in the creation of the 1995

[61] "It is the responsibility of each Region to ensure proper training of personnel conducting line patrols. This is to be accomplished through use of periodic training classes for all transmission troublemen and any other personnel who may be called upon to patrol. The training should include a review of this bulletin, other T&D bulletins as appropriate, patrol safety, Engineering Drawing 022168, and G.O. 95 requirements. The use of available videotapes (spacer damage, infrared patrolling, etc.) is encouraged. Particular attention should be given to the specific items listed on the code sheet that is provided with this bulletin. The Transmission and Distribution Department will assist the Regions in setting up and conducting the training classes."

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

ES Guideline, one of his duties from 1995 until 2005, was to provide direct annual training on inspection and patrol policies and requirements to all Troublemen. According to this former employee, a decision was made in 2005 to eliminate direct training of Troublemen. Instead, the Transmission Line Supervisors were provided training and expected to train the Troublemen under their supervision.

In December 1997, PG&E filed its first "Transmission Owner Maintenance Practice (TOMP) with the CA ISO[62]. In the TOMP the term "Troubleman" was replaced with the term "Inspector". According to the definition of terms, an Inspector is a "PG&E employed inspector commonly referred to as "troubleman."

In the 2002 "Transmission Owner Maintenance Practice" (TOMP) the term Inspector was replaced with "Qualified Company Representative (QCR). According to the Definition of Terms, a QCR is "a person, who by reason of training and work experience is able to complete an accurate assessment of the electric transmission facilities that he/she is asked to inspect." The required training and work experience necessary to be considered a QCR was never defined.

In the first version of the ETPM (2005), the term Troubleman does not appear. Instead, the ETPM continues the use of the term QCR. The 2005 ETPM definition of a QCR differed from the definition in the TOMP – "A Company representative who, by knowledge, required training, and/or work experience, is able to prepare an accurate and complete assessment of electric transmission facilities." The definition of a QCR continued to evolve through each revision of the ETPM. According to the 2018 ETPM a QCR is "A company representative, who, by knowledge, required training and/or work experience, is able and allowed to perform a specific job. For the purposes of this manual, QCR refers to an employee qualified to prepare an accurate and complete assessment of electrical transmission facilities." The ETPM does not define the knowledge, training of work experience required of a QCR.

Every QCR who has inspected or patrolled the Caribou-Palermo line since the publication of the ETPM in 2005 was interviewed. All of the QCRs denied having receiving any formal training on how to perform an inspection or patrol. According to all of the QCRs, any inspection and patrol training was limited to filling out reporting forms and notifications for any issues identified during an inspection or patrol. All of the QCRs asserted that the only training on how to perform an inspection or patrol was via informal mentoring by other, more experienced, Troublemen.

[62] California Independent System Operator Corporation. CA ISO is a private corporation that operates the high voltage grid in California. CA ISO monitors the flow of power in transmission lines that providers use, operate wholesale electricity markets for energy and ancillary services, and maintain transmission maintenance standards. Transmission owners (TO's) mutually agree to contract with them. CA ISO was created by the State of California in 1997 in an effort to restructure the wholesale electric industry in California.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

The evidence also established that some of the QCRs performing inspections and patrols of the transmission lines in the Feather River Canyon had little or no transmission line experience before becoming a Troubleman.[63]

Although PG&E documents and management personnel assert that troublemen receive training on the requirements of the position, the troublemen themselves unanimously denied having received any formal training on conducting inspections and patrols and assessing wear. The troublemen also denied being provided with any records (for example tower schematics) specific to the transmission lines being inspected. The lack of specific training and records was especially significant for troublemen inspecting the Caribou-Palermo line. The hanger holes, according to the original schematics, were 1 1/8" in diameter and the C hooks were 15/16" thick at the contact point. On other Feather River Canyon transmission lines the C hooks were the same size but the hanger holes were significantly larger. The evidence established that the Troublemen's lack of knowledge of the different sized hanger holes contributed greatly to the failure of PG&E to recognize the degree of wear on the C hook on Tower 27/222.

The evidence established that, despite the lofty goals of the originators of the troubleman position, and the designation of QCR by PG&E, by 2007 the inspections and patrols of the Caribou-Palermo line were being conducted by inexperienced, untrained and unqualified troublemen. Both of the "Detailed Ground Inspections (2009 and 2014) and seven of the ten Annual Air Patrols on the Caribou Palermo were completed by troubleman who had little or no prior transmission experience, and no formal training on performing inspections and patrols. This is contrary to the third Revision of the ETPM which requires that the "QCRs must be thoroughly familiar with all of the facilities, equipment, safety rules and procedures associated with the facilities and equipment." Under the ETPM the QCRs are supposed to be looking at components and estimating wear by percentage of material lost. In order to judge material loss a troubleman would have to know what a component looked like at 100%. The majority of the troubleman sent to inspect and patrol the Caribou-Palermo line had no idea what the C hooks and hanger holes were supposed to look like. Because of their lack of knowledge, experience, and training, the troubleman could not have been expected to identify the wear. The overwhelming evidence clearly established that troublemen and linemen inspecting and patrolling the Caribou-Palermo line did not meet the standards established in the ETPM.

[63] One former troubleman assigned to the Caribou-Palermo line admitted that although he was a journeyman lineman, he worked in distribution (almost 30 years) and had never worked as a transmission lineman prior to becoming a transmission troubleman. Another troubleman assigned to the Caribou-Palermo line was also a distribution lineman prior to becoming a transmission troubleman and admitted his only experience with transmission lines above 60kV was during his apprenticeship. According to a former Table Mountain HQ Transmission Line Supervisor, this Troubleman had so little experience with transmission lines that he was assigned to work with the transmission lineman until the Supervisor was forced by the union to allow the troubleman to conduct inspections and patrols. Another former troubleman assigned to the Caribou-Palermo line had worked on transmission lines as a journeyman lineman until PG&E split distribution and transmission in the mid-80s. The former troubleman worked in distribution exclusively for over twenty years before becoming a transmission troubleman.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

VIII. FAILURES IN MAINTENANCE, REPAIR AND REPLACEMENT RECORD KEEPING ON THE CARIBOU-PALERMO LINE

As part of the Camp Fire Investigation, all maintenance/repair/replacement records for the Caribou-Palermo line were requested and obtained from PG&E. Any and all records received from PG&E pertaining to Towers 27/222 and 24/199 were reviewed in depth. The only records of any maintenance/repair/replacement located for these towers related to the replacement of parallel groove connectors[64] {Attachment – parallel groove connector} on each tower in 2016.

a. Hanger Brackets

During the investigation it was observed that "hanger brackets" (bolted add-on brackets for hanger plates for the hole that the C hooks hung from) {Attachment – add-on hanger bracket} had been added to the transposition arms of towers 27/222 and 24/199. Similar hanger brackets were not found on other transposition towers and the brackets were not shown on the original plans for the transposition arms. After being removed from the towers, the transposition arms were examined. Some of the original hanger holes displayed significant "keyhole" wear. {Attachment – significant keyhole wear} PG&E was unable to produce any records of when, why, and by whom the hanger brackets had been added. Based upon the keyhole wear observed on the original hanger holes, the only reasonable conclusion to be drawn was someone at PG&E at some time in the past had noticed the keyhole wear and was concerned enough to take action.

b. Parallel Groove Connectors

As previously mentioned, during the inspection of Tower 24/199 investigators noticed a parallel groove connector on the jumper conductor. {Attachment – parallel groove connector on 24/199 jumper} It appeared to investigators that, at some previous time the jumper conductor had been shortened and spliced together using the parallel groove connector. Investigators also observed that the right phase insulator string appeared to be less aged than the left phase insulator and, as a result of the shorter jumper conductor, was not hanging plumb. From the ground, investigators also observed black marks on the tower leg nearest the right phase insulator string. On the ground below Tower 24/199, investigators found an old insulator string. The old insulator string was complete except for the C hook.

PG&E was unable to produce any records of when, why, and by whom the parallel groove connector had been added to the jumper. No explanation was provided as to why the parallel groove connector on the jumper conductor was not replaced when all of the other parallel groove connectors in the tower were replaced in 2016. PG&E was also unable to produce any records as to the replacement of the insulator. Based upon the observations of investigators, the only reasonable conclusion that could be drawn is that at some time in the past the jumper conductor made contact with the tower leg, causing the blackening observed on the tower leg. This damaged the jumper conductor, necessitating the removal of a portion and replacement of the insulator. It was also clear, based upon the change in the wear pattern on the C hook observed by the FBI metallurgist, the C hook was not replaced when the jumper conductor was shortened and the insulator changed.[65]

[64] Parallel groove connectors are used to connect two parallel pieces of power line (conductor).

[65] According to PG&E and all transmission lineman interviewed, it was standard practice to replace the used C hook when replacing an insulator string. While inspecting the Caribou-Palermo line in February and March 2019

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

Although no records were found to explain why, the evidence established that as part of a scheduled Detailed Ground Inspection in 2009, the troubleman assigned to complete the inspection of the Caribou-Palermo line was instructed to document all towers with parallel groove connectors and create work orders for replacement of the parallel groove connectors. In total, the "Transmission Line Inspection Datasheet" completed by the troubleman as part of the report of the 2009 Detailed Ground Inspection, lists 85 towers for "Rpl Connectors." For each tower, a notification number was assigned and a "Corrective Work Form" was generated. Copies of these Corrective Work Forms for towers 24/199 and 27/222 were obtained during the investigation. Replacement of the parallel groove connectors was designated, according to the Corrective Work Forms as "Priority F – Schd Compl Yr 1+."[66] At the time the Corrective Work Forms were created, the April 2009 revision of the ETPM was in effect. The priority code F did not exist in the 2009 ETPM. The priority codes listed in the 2009 ETPM were A, C, G and P. Prior to the April 2009 revision of the ETPM, numerical (as opposed to letter) priority codes were used. The priority code F did not come into existence until the 2011 revision of the ETPM. According to the 2011 version of the ETPM, Priority Code F is defined as "Corrective action is recommended within 24 months from the date the condition is identified, except for nominations notifications or system wide initiatives identified by Asset Strategy (e.g., bridge bonding, shunt splicing), which can have due dates beyond 24 months."

According to the Corrective Work Forms for Towers 27/222 and 24/199, the parallel groove connectors were re-assessed during the 2011 Annual Air Patrol. A note dated August 16, 2011, states "per (troubleman) on 8/1/11 during patrol OK to move out 2 yrs." On November 10, 2009,[67] PG&E Applied Technology Services (ATS)[68] published a Lab Test Report entitled "Analysis of bolted aluminum transmission connectors from various PG&E sites." Based upon the ATS Lab Test Report the problems identified were internal to the connector. There is nothing in the report documenting any outward signs of the interior wear. The question of how a troubleman flying in a helicopter could assess the wear inside the bolted connectors was never answered[69].

A note on both Corrective Work Forms dated January 10, 2012, states "move required end date to 11/30/2015." No explanation is given as to why the required end date was moved back three years. PG&E addressed this issue in a Data Response to CPUC. According to PG&E's written explanation, the Corrective Work Forms were initially assigned priority code G – required repair/replacement within 12 months. On October 4, 2009, the priority code was changed to Priority B – required repair/replacement within three months in the PG&E SAP system. According to PG&E, the priority code was changed again on October 27, 2009, to Priority F.

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investigators noted another tower in which the insulator strings had recently (post Camp Fire) been changed but the C hooks were re-used.

[66] In a written response to a CPUC data request PG&E wrote "Between 10:41 a.m. and 10:42 a.m. on October 4, 2009, all 85 notifications were changed from Priority Code G to Priority Code B conditions by {name redacted}, the same PG&E contractor who changed the Priority Code on LC Notification 103995542. Between 5:38 p.m. and 5:39 p.m. on October 27, 2009, all 85 notifications were changed from Priority Code B to Priority Code F conditions by {name redacted}."

[67] Approximately three months after the completion of the 2009 Detailed Ground Inspection of the Caribou-Palermo line.

[68] Applied Technology Services is PG&E's internal engineering and scientific research lab. ATS was previously known as the PG&E Department of Engineering Research.

[69] Interior wear on parallel groove connectors may cause the connector to show excessive heat in an infrared inspection. None of the Annual Air Patrols included infrared inspections.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

Also according to PG&E's written response to the CPUC, because the replacement of the connectors was a Priority F and was "for nominations[,] notifications[,] or systemwide initiatives identified by Asset Strategy (e.g., bridge bonding, shunt splicing), which can have due dates beyond 24 months" no documentation or reason was required for re-assessment. The quoted language is from the 2011 version of the ETPM. The 2009 version of the ETPM stated "Any reassessment must have sound business or technical supporting reasons and documentation on file and recorded in SAP." No explanation was ever provided as to how and why a priority code and exception which did not come into existence until January 2011, was being applied in October 2009.

This raised serious questions as to the accuracy of the few maintenance/repair/replace records PG&E was able to locate. The final note on the Corrective Work Form is dated June 29, 2016, and reads that the connectors were replaced on June 18, 2016. There is no record as to why the parallel groove connector on the jumper conductor of Tower 24/199 was not replaced.

In total, almost seven years elapsed between the identification of the defective parallel groove connectors on the Caribou-Palermo line and the replacement of those connectors. At least ten years elapsed from the time replacement of parallel groove connectors were identified as a fire[70] mitigation. No valid explanation for the extended amount of time was ever provided.

c. The "Deteriorated Transmission Equipment Replacement Program."

In 2007, PG&E introduced the "Deteriorated Transmission Equipment Replacement Program." According to internal documents, the Deteriorated Transmission Equipment Replacement Program was included in PG&E's capital spending five-year plan and was funded through 2015.

PG&E was unable to produce any documentation as to the budget or eligibility requirements for the Deteriorated Transmission Equipment Replacement Program. Although the name of the program implied that the program was established to replace deteriorated equipment, no records of funding or eligibility requirements for the program were found. During interviews and testimony of PG&E employees familiar with the program, it was simply a "bucket" of money available to fund capital improvements on transmission lines regardless of the condition of the line or its components. Based upon the evidence the name Deteriorated Transmission Equipment Replacement Program did not accurately depict the true nature of the program.

d. The Caribou-Palermo 7/55-8/64 Replacement Towers project

A portion of the Caribou-Palermo line was nominated for replacement through this program by the Maintenance and Construction Engineer[71] (M&C Engineer) assigned to the North Area[72]. According to a PG&E internal budget document "Request for Advance Authorization of Expenditures in Accordance with Capital Expenditures Policy," $800,000 was initially requested

[70] Parallel groove connectors were identified as a fire risk in the October 2006 Risk Analysis of Urban Wild Land Fires. See section XVII – "Knowledge of Risk/Consequence" for details re: the 2006 Risk Analysis.
[71] Although the job title was Engineer this person was not an engineer and had no engineering education or experience. This person described his position as "You're kind of a liason between the field crews and both civil and electrical engineers."
[72] Includes Sacramento District, Table Mountain District, Eureka District and Lakeville District

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

"for preliminary engineering and purchase of long lead-time material to replace conductor and tower structures on a section of the Caribou-Palermo line between structures 7/55 and 8/64.[73]" {Attachment – Google Earth Map showing 7/55-8/64} The initial Advance Authorization specifically stated:

> "There have been multiple conductor failures on this line due to conductor being annealed[74] and parting.[75] Since 2002 there have been 8 event reports created on this line. 5 of which was equipment related failures."
>
> "It is very time consuming and costly to correct any failures that occur in this dilapidated line section, especially during the winter months when failures are more likely."
>
> "The probability of that failure is imminent due to the age of both the towers and the conductor."
>
> "The intent of this project is to be pro-active and replace this deteriorated line section in a controlled and planned manner instead of under emergency conditions."

The initial Advance Authorization for $800,000 was not approved by PG&E's Electric Asset Strategy Division, and instead, upon re-writing and re-submission, was reduced to $200,000 by the then Director of the Electric Asset Strategy Division. The second Advance Authorization did not include the descriptor "dilapidated" or the prediction of imminent failure but did state: "Replace deteriorated structures, conductor, insulators, and hardware between structures 7/55 and 8/64." The second Advanced Authorization was approved. The project was named the "Caribou-Palermo 7/55-8/64 RPL Towers" project.

A "Project Manager"[76] was assigned to this project. According to internal PG&E documents, between 2007 and 2009 the Project Manager spent almost $800,000 conducting engineering studies of the proposed new tower sites and preparatory work, including building a road to allow access to the proposed new tower sites. In 2009, the project was canceled as, according to internal emails, "this project fell below the cut line for 2010 approved projects." According to a 2014 email from a member of PG&E's Capital Accounting Department the project "was canceled due to Asset Management's reprioritization and is not expected to be resumed." During an email chain, starting on November 2, 2009 and ending on January 22, 2010, the Project Manager made the following arguments for continuing and completing the Caribou-Palermo 7/55-8/64 RPL Towers project to the Program Manager[77] assigned to that major work category:

> "If it is not funded for permitting etc., we could be picking up these towers out of the Feather River Canyon when they fall over."

[73] On the southside of the Feather River between Caribou Road and Beldon.
[74] According to the M&C Engineer "annealed usually means a little more brittle."
[75] The M&C Engineer also identified the conductor as copper and not aluminum because "we wouldn't put shunts on aluminum."
[76] A project manager is a person assigned to supervise a specific project.
[77] PG&E divides electrical transmission work (repair/replace/maintain/improve) into "major work categories" (also referred to by PG&E personnel as budgetary "buckets"). The program manager oversees all projects within a major work category.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

> "We have already notified FERC[78] of the project and it will not look good if towers we have identified as deteriorated fall over in the canyon because we did not perform the work due to funding."

Despite the representations of the Project Manager the project was not reinstated by the Program Manager.

During interviews with investigators and testimony, the author of the Advance Authorizations[79] and the Project Manager separately asserted they had no factual basis for the statements about the condition of the Caribou-Palermo line towers and downplayed the statements as exaggerations made while advocating for a project.

e. The Rock Fire

A Corrective Work form[80] was located for replacement of a failed connector on Tower 11/87 in September of 2008. The Corrective Work Form was generated based upon a non-routine patrol of the Caribou-Palermo line generated by a power interruption on the line on September 30, 2008.

On September 30, 2008, at approximately 2:30 p.m., the Plumas National Forest Headquarters received a report of a fire near the Rock Creek Dam. {Attachment – Google Earth map of Rock Creek Dam} The fire was named the Rock Fire. This fire burned approximately five acres in the Plumas National Forest. Origin and Cause investigators from the United States Forest Service (USFS) investigated the fire and determined the origin to be directly below Tower 11/87 of the Caribou-Palermo line. The Rock Fire was determined to have been caused by an equipment failure, specifically the failure of a connector on a jumper line, on Tower 11/87. PG&E records obtained by the USFS investigators showed PG&E experienced an interruption on the Caribou-Palermo line at approximately 2:02 p.m. on September 30, 2008. No records of a root cause investigation of the failure of the connector were found. Consistent with PG&E's practice, as supported by the evidence, PG&E did not conduct climbing or aerial inspections on other Caribou-Palermo line towers with similar connectors.

f. Tower Collapse

On December 21, 2012, a catastrophic failure occurred on the Caribou-Palermo line that generated six corrective work forms. Five towers, 22/187 through 23/191, collapsed and a sixth tower, 23/192, {Attachment – Google Earth map of towers} was badly damaged to the extent that it needed to be replaced.

A PG&E Civil Engineer investigated the incident and did not author a report, but did communicate his conclusions in an email. He determined Tower 22/188 initially collapsed causing a domino effect that pulled down towers 22/187, 22/189, 23/190 and 23/191. He concluded the collapse of Tower 22/188 was caused by the failure of the "stub angles"[81] possibly due to strong wind and/or icing wet ground conditions. No formal "Root Cause Analysis" was

[78] It appears that this is a reference to a Federal Energy Regulatory Commission (FERC) rate case. In support of requests for rate increases PG&E files a rate case with FERC. To justify the proposed rate increase in the rate case PG&E lists planned capital projects with cost projection. Projects are generally forecasted five years in the future.
[79] A former Maintenance and Construction (M&C) engineer.
[80] A PG&E form generated by field personnel to document and describe problems, defects, wear or other conditions on transmission assets requiring maintenance/repair/replacement.
[81] The stub angles connect the foundation to the base of the tower.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

conducted. Although he concluded his analysis by stating "Due to this failure phenomenon, it would be advisable to inspect towers with similar line angle on this line to ensure no other foundations had experienced similar uplift during same wind storm." The evidence established none of the other Caribou-Palermo line tower foundations were inspected. Again, this is consistent with PG&E's practice of not following up on clearly established potential safety and/or maintenance issues.

The six towers were temporarily replaced by a "Shoe Fly," consisting of fifteen wooden poles, constructed along Camp Creek road. {Attachment – Google Earth map of Shoe Fly} The Shoe Fly was completed by January 30, 2013. The Shoe Fly remained in service until the six towers were permanently replaced. The six towers were eventually, permanently, replaced by modern H-Frame tubular steel pole structures in 2016.

g. Center Phase Conductor on Tower 24/200

On January 10, 2014, a PG&E employee doing "crew work" documented a problem on the center phase conductor on Tower 24/200. Pictures attached to the Corrective Work Form appear to show a damaged conductor. In addition, the photos appear to show damage to the corona shield[82] (part of the hot end attachment hardware) and melting on the conductor below the corona shield. Another photograph appeared to show a piece missing from another section of the conductor and blackening on the conductor a few inches from that missing piece. The Corrective Work Form stated the conductor was repaired on 5/1/2014, but did not indicate that either the hot end attachment hardware generally, or the corona shield specifically, were replaced. No records were found indicating a root cause analysis was ever done to determine the cause of the damage to the conductor and corona shield.

h. Broken J Hook

On October 19, 2016, a J hook in Tower 11/99 broke when a member of a PG&E contractor painting crew attempted to use a cross brace attached to the J hook for support. According to the PG&E report on the incident "I[]t appears as though about 20% of the thickness of the bolt had been compromised through corrosion." Although the incident was reported to and investigated by PG&E, nonetheless true to the company's practice, the failure of the J hook did not cause inspections of J hooks in other similar towers.

IX. INSPECTION AND PATROL OF THE CARIBOU-PALERMO LINE

Based upon PG&E records and flight records obtained from their contracted helicopter company, the evidence established inspections and patrols of the Caribou-Palermo line did not comply with the standards set forth in the ETPM and did not meet the requirements of the law or the regulatory agencies.

Routine inspection and patrol records for the Caribou-Palermo line were obtained back to 2001. According to PG&E, no inspection or patrol records prior to 2001 could be located. Based upon the inspection and patrol records the evidence established that the Caribou-Palermo line was subjected to "Detailed Ground Inspections" in 2001, 2003, 2005, 2009 and 2014. Based upon

[82] Corona discharge is the leakage of electric current into the air around high voltage conductors. A corona shield is a disc of conductive material designed to absorb the destructive corona discharge and protect the attachment hardware.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

the inspection and patrol records the evidence established the Caribou-Palermo line was subjected to "Annual Aerial Patrols" in 2001, 2002, 2004, 2006-2008, 2010-2013, 2015-2018. There is no record of any climbing inspections, detailed ground inspections above 10' or aerial inspections conducted on the Caribou-Big Bend section of the transmission line. All of the inspection and patrol records were reviewed and all of the troublemen/linemen who conducted the inspections and patrols were interviewed.

Because it was the last "Detailed Ground Inspection" of the Caribou-Palermo line prior to the Camp Fire, the 2014 Detailed Ground Inspection became a focus of the investigation. The 2014 Detailed Ground Inspection was memorialized in a 60-page "Report" which included an "Operational Control Ticket," a "Transmission Line Data Inspection Sheet," a "Priors" list[83] and a "Transmission Object List."[84] According to the report, the detailed ground inspection was completed between August 5, 2014 and August 13, 2014 by a troubleman and a lineman. Four issues that necessitated the creation of a Corrective Work Form were documented in the report: flashed insulator bells were found on tower numbers 21/180A, 26/215 and 16/129 and a broken insulator bell was observed on tower number 27/226. The report was signed by both the troubleman and the lineman on August 28, 2014 and the Transmission Line Supervisor on September 3, 2014. The evidence established that the lineman was assigned to "assist" with the inspection because the troubleman, who was nearing retirement, was no longer physically able to hike/climb to many of the towers on the Caribou-Big Bend section of the line. The evidence also established that the troubleman and lineman were also assigned to take line clearance measurements (which included date, time and air temperature) at pre-determined intervals along the transmission line to determine compliance with new NERC clearance guidelines.

The 2014 Detailed Ground Inspection Report was subjected to intense scrutiny. PG&E records, including troubleman and lineman daily timecards, were obtained for comparison against the report. The evidence established the following:

1) The detailed ground inspection started on July 24, 2014 and ended on August 27, 2014. Although the report states that the physical inspection of the Caribou-Palermo occurred on August 5, 6, 7, 13, and 14; emails, records and interviews established that an unknown, and undocumented number of towers was inspected on August 27.

2) In addition to the troubleman and lineman, four linemen whose names do not appear in the report assisted with the inspections on August 27, 2014. According to emails and helicopter records, prior to August 27, 2014, the Transmission Line Supervisor scheduled a helicopter to fly the lineman to difficult to reach towers. Four additional lineman were assigned to assist with inspections on August 27, 2014. No records

[83] A list of previously documented issues pending an open corrective work form.
[84] The Transmission Object List lists every structure on the transmission line. In 2014 each structure was identified by its tower number, a SAP equipment ID number, a physical description of the structure and the GPS coordinates for the structure. For each structure the list has an Inspection Result section in which the QCR checks the applicable box and a notes section for the QCR to write any notes about the structure or record any problems/issues/defects observed.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

indicate which towers were inspected on August 27, 2014 and which lineman inspected which tower.

3) The allotted time[85] for the 2014 Caribou-Palermo Detailed Ground Inspection was 89.5 hours. Based upon time cards, 121 hours were initially billed to the Caribou-Palermo Detailed Ground Inspection. After the inspection was complete, a secretary changed billing records to re-assign hours billed to the inspection of the Caribou-Palermo line to lower the total hours billed to the Caribou-Palermo Detailed Ground Inspection to 91 hours.

4) The lineman assigned to assist with the 2014 Detailed Ground Inspection of the Caribou-Palermo line had previously completed some troubleman training but focused mainly on "Switching." The lineman did not recall receiving any training on performing inspections and patrols other than informal training by troublemen. No evidence was found to establish the four other linemen who performed inspections had previously completed any training on inspection and patrol. Additionally, the evidence established the lineman did not complete his inspections under the supervision of the troubleman. The evidence established that the troubleman divided the Caribou-Palermo line between himself and the lineman, and each conducted an independent inspection of the towers in the assigned section. The lineman was assigned to inspect the Caribou-Big Bend section of the line.

5) Recall the six steel towers numbered 22/187 through 23/192 ceased to exist in December 2012 due to the catastrophic failure and were replaced by a "Shoe Fly" consisting of 15 wood poles in January 2013 until the towers were permanently replaced in 2016. However, according to this 2014 report, those missing towers were physically inspected in August 2014, including a previously documented issue on tower 22/188. The previously documented issue on Tower 22/188 was the replacement of the parallel groove connectors identified during the 2009 Detailed Ground Inspection.

6) The lineman assigned to assist with the 2014 Detailed Ground Inspection of the Caribou-Palermo line was not trained to complete the ground clearance measurements. According to PG&E policy, clearance measurements must include the measurement, and the date, time and air temperature when the measurement was taken. Although the report shows the clearance measurements were done concurrently with the inspection, the evidence established they were not. The lineman said he was not initially instructed to perform the clearance measurements and did not do so during his initial inspection. He went on to say it was not until after he had completed his inspection of the Caribou-Big Bend section of the line and submitted his report that he was told to perform clearance measurements. He stated he was ordered[86] to return to the field and perform the clearance measurements. He

[85] The amount of time budgeted for each inspection/patrol. See section VI – "Reduction of Unit Costs for Inspections and Patrols" and subsection A – Expense Budget of section XI – "Budgetary Considerations"
[86] The lineman was not clear about who ordered him.

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D11-20 (cont'd)

> stated he was not initially told he needed to record the time of each measurement. According to the lineman, he returned to the Caribou-Big Bend Section of the line with the "Transmission Object List" and obtained the measurements. He stated he then added the measurements and air temperature to the already completed "Transmission Objects List." He then submitted his report a second time and was informed of the requirement to record the time of each measurement. He said that he then estimated the time he had taken the measurements and added those time estimates to his report. The result was the dates and times of the clearance measurements documented in his reports were not accurate.

Written documents clearly establish the Table Mountain Transmission Line Supervisor knew the dates inspected on the Transmission Object List were wrong. Written documents also clearly established that he knew that for some of the towers the name of the inspector conducting the inspection was wrong. The evidence also establishes he knew the line clearance measurements did not occur on the dates listed on the Transmission Object List. Despite specific knowledge the report was not accurate; the Transmission Line Supervisor approved and signed the report.

Although the investigative team did not scrutinize other patrols and inspections of the Caribou-Palermo line to the extent devoted to the 2014 Detailed Ground Inspection, similar issues were found in other inspection and patrol reports. The 2009 Detailed Ground Inspection of the Caribou-Palermo line was conducted by the same troubleman who conducted the 2014 Detailed Ground Inspection. There is evidence that a lineman, who was not mentioned or listed in the 2009 report, assisted with that inspection also.

The 2012 Annual Air Patrol Report was also found to be inaccurate. In 2012, another troubleman, was assigned to complete the patrol. According to the date-inspected line on the report, this troubleman started his patrol on August 6, 2012. The patrol was interrupted at Tower 16/130 due to "fire." The remainder of the patrol was completed by yet another troubleman. However, the report only lists the assigned troubleman and lists the "Date Inspection Completed" as August 6, 2012. In an email dated August 13, 2012 from the assigned troubleman to the Transmission Line Supervisor, the troubleman stated he would be going out on medical leave and had updated the subsequent troubleman on the "caribou-palermo partially flown on 8-6…not complt'd do to the fire in the canyon." According to the assigned troubleman, he was unable to complete the patrol prior to going out of medical leave and the another troubleman completed the patrol sometime after August 21, 2012.

One former troubleman admitted he did not like flying the Feather River Canyon transmission lines and, whenever possible, assigned an available lineman to complete the routine air patrols. According to the former troubleman, after the lineman completed the air patrol the troubleman would use the lineman's notes to complete the patrol report and submit the report as if the former troubleman had personally completed the patrol.

The evidence also established during the 2013 and 2015 Annual Aerial Patrols of the Caribou-Palermo line, which were completed by different troublemen, towers 22/187 through 23/192,

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D11-20 (cont'd)

which ceased to exist in December 2012, were "inspected" and the pre-existing condition (parallel groove connectors) on Tower 22/188 was checked.

The inspection and patrol records clearly established that between 2001 and 2018 aerial patrol by helicopter was the primary method of inspection and patrol for the Caribou-Palermo line. As such, the thoroughness of aerial patrols of the Caribou-Palermo line was examined closely. The evidence established the thoroughness of the aerial patrols declined through the years.

Troublemen assigned to inspect the Caribou-Palermo line from 1987 through 2018 were interviewed regarding the thoroughness of air patrols. A former troubleman who conducted air patrols prior to 2001, described helicopter patrols of the Caribou-Palermo line as taking one to one and half days. One former troubleman explained his protocol for aerial patrols included instructing the pilot to fly low enough and slow enough that the troubleman could step out onto a tower if necessary. On a report of the 2001 Annual Air Patrol was a handwritten note "10 hrs." According to the former troubleman who performed the 2001 air patrol, 10 hours was the approximate flight time for the patrol of the Caribou-Palermo line.

During the investigation, helicopter flight records from 2011 through 2018 for Caribou-Palermo line aerial patrols were obtained from a local helicopter company contracted by PG&E to assist with aerial patrols. According to that company, flight records and billing records prior to 2011 no longer existed.

In 2011, flight records document 3.2 hours for the aerial patrol of the Caribou-Palermo line. In 2012, the aerial patrol of the Caribou-Palermo line was interrupted by fire and complete records for the patrol were not located.[87] In 2013, a troubleman completed aerial patrols of the Caribou-Palermo line, Caribou-Westwood and Palermo-Pease transmission lines (990 total structures) in 7.6 hours. In 2015, a troubleman completed the aerial patrols of the Caribou-Palermo line, Cresta-Rio Oso, Oroville-Thermalito-Table Mt #1, Oroville-Thermalito-Table Mt #3, Oroville-Table Mt (CDWR), Hamilton Branch-Chester, Collins Pine Tap and Palermo-Pease transmission lines (1,430 total structures) in 6.1 hours. In 2016, a troubleman completed the aerial patrols of the Caribou-Palermo line, Grizzly Tap, Cresta-Rio Oso, Butte Valley-Caribou and Plumas Sierra Tap transmission lines (1050 total structures) in 6.8 hours. In 2017, a troubleman completed the aerial patrols of the Caribou-Palermo line, Butt Valley-Caribou and Hamilton Branch-Chester transmission lines (813 total structures) in 4.9 hours. In 2018, a troubleman completed the aerial patrols of the Caribou-Palermo line, Grizzly Tap, Grizzly Tap SVP, Plumas-Sierra Tap, Butt Valley-Caribou and Caribou #2 transmission lines (1708 total structures) in 5.7 hours.

A retired PG&E employee, who spent over 30 years in the Electrical Transmission Division reviewed the flight records. This former employee had been involved in the drafting of the 1995 inspection policy memo and the ETPM and the troublemen training program from 1995 to 2005. This former employee stated the flight records reflected the aerial patrols are "fly bys" not patrols or inspections. One recently retired troubleman admitted when doing aerial patrols he was only confirming the structures and components were "standing upright".

All of the troublemen who performed aerial patrols on the Caribou-Palermo line since 2012 and the current Transmission Line Supervisor assigned to Table Mt. Headquarters, were shown

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photographs, both the January 31, 2019 BCDA photographs and PG&E WSIP[88] photographs, of worn C hooks and hanger holes. All of the troublemen consistently denied it was possible to see and assess the wear on the C-hooks and hanger holes during aerial patrols.[89] The Transmission Line Supervisor asserted that, based upon wind and topography, it was not safe for the helicopters to fly low enough and slow enough to enable the troublemen to see and assess the C-hooks and hanger holes. The troublemen also denied it was possible to assess the wear on the C hooks and hanger holes during a detailed ground inspection. The ETPM corroborates the troublemen on both. According to Table 2 in section 1 of the ETPM the best view positions for assessing insulators and hardware do not include ground inspections nor aerial patrols. Only climbing inspections or lifted bucket inspections above 10 feet in the air would give the appropriate best view for assessment of insulators and their connectors.

Since the enactment of the ES Guideline E-TSL-G013 in 1995, **climbing inspections have only occurred "as triggered."** The specific language regarding triggers has changed very little since 1995. Appropriate "triggers" for climbing inspections were covered in section 2.1.3 of the ETPM (emphasis added):

> **Triggers** are **specific conditions** that **require** follow-up inspections and/or maintenance scheduled by the supervisor, independent of the routine schedule.
>
> The following triggers can be applied to one unit of inspection or many units, either grouped or spread over a line section/area:
>
> - **Component defects identified by inspection**
> - **Component failure (including failure in like components)**
> - **Components proven defective by testing**
> - **Wire/structure strike**
> - **Burned area or high fire hazard**
> - **Failures caused by natural disaster or storm**
> - Third-party observations and complaints
> - Marginal capability components of a re-rated line section
> - Known, recurring conditions that jeopardize line integrity
> - Suspected vegetation clearances less than required or less than legal vegetation clearances, or concerns about fast growth of vegetation

Despite the facially mandatory language, "specific conditions that **require,**" many PG&E employees who were interviewed, including electric transmission troublemen, linemen and support personnel expressed an understanding that an occurrence or discovery of a specific condition did not necessarily trigger climbing inspections. The evidence clearly established that on the Caribou-Palermo line, PG&E interpreted the mandate of "require" as discretionary. The maintenance/repair/replacement records established that since 2007 many of the "required"

[88] Wildfire Safety Inspection Program – an "enhanced" post Camp Fire inspection of all PG&E electric transmission structures. See section X – Comparison of Caribou-Palermo With Other Transmission Lines for details on the WSIP and analysis of WSIP results.

[89] All of the troublemen also denied knowing the sizes of the hanger holes and C hooks. Therefore, even if the troublemen had looked at the C hooks and hanger holes, without knowledge as to their respective sizes, the troublemen would not have been able to assess wear.

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D11-20 (cont'd)

triggers occurred. Some of the triggers (e.g. failures caused by storm, fires under the transmission line) have occurred multiple times. The evidence established the following triggers documented in PG&E records between 2007 and 2018:

- 2008 Lightning Complex fires (burned under and around transmission line)
- 2008 Rock Fire (started by failure of connector on Caribou-Palermo line Tower 11/87)
- 10/17/08 - failure to underarm jumper
- 2009 identification of parallel groove connectors on 83 towers (defective components)
- 2009 ATS Lab Test Report identifying defects in installation of parallel groove connectors
- 2012 fire which caused delay of 2012 Annual Air Patrol
- 2012 tower collapse (defective component)
- 1/10/14 - Unknown Failure/Locked Out causing interruption, no cause determined
- 2/7/15 – storm damage
- 12/10/15 Sustained outage. Found center phase guy wire tie down broken. North phase top insulator unpinned @ structure 23/194.
- 10/19/16 failure of a J hook in structure 11/99.
- 1/9/17 Storm related emergency due to (6) lockouts on the Caribou Palermo line. Non-routine air due to line locked out, crew found problem of floating center phase conductor at tower 24/200.
- 1/10/17 storm damage, conductor repaired.
- 2/1/17 storm related interruptions. "Non-routine airs due to momentary outages, fault location 10/79, found hold insulator hold down parted at structures 8/67 and 11/89, will create notifications for repairs."
- 2/21/17 "Non-routine air patrol due to strom related momentarys [sic]. After several relays GCC placed non-test on line and line went to lock-out." "Per [Troubleman] on 2/21/17 during storm damage: Air patroled [sic]fault area and found hardware loose on tower 3/28 but not sure if this was part of the problem, re-energized line and held."
- 3/2/18 "Investigate relay that occurred on 3/1/18 @11:43. Found damaged insulator on structure 37/301. Created notification to replace insulators."

Between January 1, 2017 and February 21, 2017 there were at least nine documented storm related interruptions on the Caribou-Palermo line and at least six equipment failures. Based upon the evidence neither the individual events nor the cumulative events were deemed sufficient to trigger climbing inspections on the Caribou-Palermo line.

Although several PG&E transmission line employees referred to the ETPM as "The Bible" and asserted strict compliance with the standards and policies of the ETPM, the totality of the evidence shows that on the Caribou-Palermo line, the ETPM was not followed. Because PG&E had inexperienced, untrained and uninformed personnel conducting inspections and patrols under unrealistic time constraints, the inspections and patrols did not spot defects and wear.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

On June 26, 2018, a PG&E work order requiring climbing inspections of all Caribou-Palermo line structures was issued by a PG&E Tower Department supervisor. The supervisor was interviewed. The supervisor could not provide any reason or rationale for the work order. Specifically, the supervisor stated that the work order was requested by someone else and his job was simply to compile the information into a template report and forward the template report to the appropriate work group.

PG&E was unable to provide any further information. "PG&E's inspection records do not identify the factors that led to the selection of the Caribou Palermo 115 kV Transmission Line as one of the lines selected for climbing inspections as part of this effort. PG&E understands that the age of lines was a factor that was considered in their selection."[90]

Beginning in September 2018 climbing crews from the PG&E Tower Department climbed and inspected 80 towers on the Caribou-Palermo line. The vast majority of the towers climbed and inspected were on the Palermo-Big Bend section of the Caribou-Palermo line. "PG&E understands that the reason these approximately 80 towers were selected first and the order in which they were inspected was determined by the Tower Department based on various considerations, including weather conditions and crew availability."[91]

All of the towers climbed in September and October 2018 were subjected to WSIP enhanced inspection starting in December 2018. The WSIP enhanced inspections documented problems and defects on numerous towers that were not discovered/detected/documented during the September 2018 climbing inspections.

The fact that PG&E has no explanation for how or why or by whom the decision to conduct climbing inspections was made is disturbing but not unusual. Numerous decisions and policies were investigated. As to many decisions and policies, PG&E was unable to provide any documentation as to who made the decision, how the decision was made and upon what the decision was based. This inability to determine who made decisions and upon what those decisions were based, frustrated efforts to identify individuals potentially personally liable for policies that lead to the conditions which caused the Camp Fire.

X. COMPARISON OF CARIBOU-PALERMO WITH OTHER TRANSMISSION LINES

Although the undetected problems on the Caribou-Palermo line were bad, the evidence established that the Caribou-Palermo line was only marginally worse than other comparison transmission lines. Records from post-Camp Fire enhanced inspections of other, similar lines clearly established PG&E's problems were systemic as opposed to local.

The evidence established by early afternoon on November 8, 2018, a PG&E troubleman on an emergency air patrol of the Caribou-Palermo line had identified and photographed the equipment failure on Tower 27/222. Within six days PG&E initiated climbing inspections of the Caribou-Palermo line and other similar transmission lines. The initial inspections were named the "Nine

[90] PG&E written response to CPUC Data Request 008, Question 1.
[91] PG&E written response to CPUC Data Request 008, Question 1.

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D11-20 (cont'd)

Lines Inspections.[92]" PG&E records established that by November 14, 2018 the inspections were underway. The evidence showed the inspectors were specifically focused on C hook and hanger hole wear. By early December the Nine Lines Inspection program was superseded by the Wildfire Safety Inspection Program (WSIP). The WSIP involved enhanced (climbing and drone) inspections of all electrical transmission lines within higher wildfire risk areas. The WSIP inspections "identified thousands of conditions requiring repairs on PG&E's system that had not been previously identified."[93]

As a result of the WSIP, and at the request of the CPUC, an independent engineering company named Exponent was retained to review the data from the WSIP. According to its website "Exponent is a multi-disciplinary engineering and scientific consulting firm that brings together more than 90 different disciplines to solve engineering, science, regulatory and business issues facing our clients." Based upon historical records, Exponent has a longstanding relationship with the CPUC and has conducted failure analysis investigations of previous PG&E incidents.

According to interviews with Dr. Brad James, PhD in Metallurgical Engineering and Failure Analysis expert at Exponent, Exponent was tasked to confirm whether the Caribou-Palermo line had significantly more repair tags when compared to other lines and to discover the reasons behind the high volume of high priority repair tags.

Exponent published its final report, entitled "PG&E Caribou-Palermo Asset Condition Investigation" to PG&E and the CPUC on November 1, 2019. A copy of the report was obtained via Grand Jury Subpoena.

According to the Exponent report the comparison lines were chosen from a list of transmission lines based on four criteria:

- 115 or 230kV lines only
- Elevations greater than 1,000 feet
- Single circuit steel lattice towers
- Tier 2 or Tier 3 fire zones

Other criteria that were also applied included mountainous terrain and wind exposure. Based upon the criteria only transmission lines in running through low population, rural areas were chosen. There were no transmission lines from the Bay Area, Central Valley or central coast chosen for comparison.

Among the conclusions reached by Exponent are the following:

[92] The nine lines were identified as the Caribou-Palermo line, the Drum-Rio Oso #1 line, the Pitt #1-Cottonwood line, the Caribou #2 line, the Caribou-Plumas Jct line, the Colgate-Alleghany line, the Fulton-Hopland line, the Hat Creek #1-Westwood line and the Keswick-Trinity line.
[93] CPUC Data Request: SED-007, Response to Question 6.

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- The Caribou-Palermo line was confirmed to have greater post–Camp Fire high-priority ("A" + "B") repair tag[94] counts than all selected comparison lines, as well as an increased per-structure high-priority tag rate when normalized[95] for the number of steel lattice towers.
- Other lines adjacent to Caribou-Palermo line such as Bucks Creek–Rock Creek–Cresta (BCRC), Cresta–Rio Oso (CRO), and Paradise–Table Mountain (PTM) had the second, fourth, and fifth highest post–Camp Fire high-priority tag counts, respectively, when normalized for steel lattice towers. Pit #4 Tap (P4T) had the third highest normalized high-priority tag count. It is not near Caribou-Palermo line.
- Wear was the most commonly observed post–Camp Fire damage mechanism for Caribou-Palermo line "A" tags and second most commonly observed damage mechanism for "B" tags. Nearly all Caribou-Palermo line wear-related tags were associated with cold-end hardware. Cold-end hardware wear issues were likely caused by repeated conductor and insulator movement over time.
- Caribou-Palermo line, BCRC, and CRO lines, each located within the North Fork Feather River Canyon, exhibited high-priority cold-end hardware wear tag counts more than three times higher than the next highest comparison line when normalized for steel lattice towers.
- Caribou-Palermo North experiences higher annual average wind speeds than non-adjacent comparison lines. Lines analyzed within the North Fork Feather River Canyon may have increased wear tag rates associated with longer-duration high-wind conditions. No apparent correlation between wear tags and temperature, precipitation, or peak wind speed (50-year return) was observed.
- From 2001 to November 2018, the Caribou-Palermo line was subjected to similar ground inspection and patrol frequencies as comparison lines. These inspections and patrols yielded comparable normalized high-priority tag counts between Caribou-Palermo line and comparison lines.
- The Caribou-Palermo line had more normalized equipment-based outages between 2007 and 2018 than approximately 80 percent of the other WSIP transmission lines.
- Caribou-Palermo line and other North Fork Feather River Canyon lines appear to have a unique set of factors that contributed to increased rates of high-priority cold-end hardware tags relative to other comparison lines. Factors such as design (link connectors and a relatively large number of non-tensioned insulated conductors), long-duration exposure to higher winds, age, and historical

[94] A report that documents a problem found, assigns a priority code to that problem and requests repair/replacement. PG&E Corrective Work Forms (CWF) are commonly referred to as tags. CWFs/tags are also referred to as notifications, especially in Transmission Asset Management.

[95] Normalization is a statistical analysis used for comparison purposes. Exponent divided the number of tags on a transmission line by the number of towers in the transmission line in order to compare transmission lines with disparate numbers of towers.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

> inspection methodologies likely all contributed to these cold-end hardware wear issues.

Although Exponent did not complete a forensic root cause analysis of the C hook that failed on Tower 27/222, when questioned Dr. James stated "That said, things like wear, things like fatigue do have a time component because the more times you rub that metal against each other, the more chance you have to – create wear. The more times you cyclically load the spring in your garage door, the longer you do that, the more chance you are going to initiate a fatigue crack and eventually grow it."

The Exponent report analyzed historical (2001-2018) high priority tags[96]. Consistent with the statements of the troublemen and linemen who have completed all inspections and patrols on the Caribou-Palermo line, Exponent found no high priority tags for cold end attachment hardware wear. Exponent also examined historical (2001-2018) inspection and patrol records for all of the comparison transmission lines. Exponent did not find any high priority tags for cold end attachment hardware on any of the comparison lines. This evidence established that the local Table Mountain District troublemen and linemen were not doing less than the troublemen and linemen assigned to other districts involved in the study.

Although the primary focus was cold end attachment hardware wear, the Exponent report also analyzed all Priority A and B "tags" generated by the WSIP. Priority A and B tags were "binned"[97] by component type and damage mode.

Organized by component type, on the Caribou-Palermo line there were actually more tags (all Priority B) generated for "Foundation" issues than "Cold End Hardware." There were also tags generated for steel frame issues, insulator issues and conductor issues.

Organized by damage mode, there were more tags generated on the Caribou-Palermo line for soil movement (associated with foundation) than wear (exclusively associated with cold end attachment hardware). The other damage mode tags included bent, loose, missing, broken and corrosion.

The fact the troublemen and linemen missed that tower foundations were buried and portions of the steel structures were bent, loose, broken or missing contradicted the assertions of PG&E employees that inspections and patrols were being conducted pursuant to the requirements of the ETPM.

Tower 27/221 best illustrates this lack of attention and thoroughness. On September 11, 2018, during the Annual Air Patrol of the Caribou-Palermo line, the troubleman noticed that a "hold down insulator anchor" on Tower 27/221 had failed. The troubleman noted the problem on his report and created a Corrective Work Form for repair of the hold down insulator anchor. On November 11, 2018, during the Camp Fire origin and cause investigation, the electrical engineer retained by Cal Fire noted and photographed the failed hold down insulator anchor on Tower 27/221. The electrical engineer also noted the arm of the transmission tower to which the hold

[96] Issues that would be considered A or B priority under the current version of the ETPM
[97] In layman's terms the tags were separated, sorted and organized by category.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

down insulator anchor should have been attached was bent and two of the steel members of the arm were buckled. No corrective work form for the arm was located. The troubleman **only** created a corrective work form for the hold down insulator anchor. According to PG&E policy, as explained by multiple transmission troublemen, supervisors and specialists, corrective work forms are problem specific and if there are multiple problems in a tower each problem gets a separate corrective work form.

The Exponent report also compared the number of post-Camp Fire A and B tags with the comparison lines. Except for tags related to foundation issues, Exponent did not separate and organize the tags from the comparison lines. According to the Exponent report there were previously undocumented issues on all of the comparison lines. The only reasonable conclusion to be drawn from this data is that inspections and patrols on other lines are only marginally more thorough than those done on the Caribou-Palermo line. This conclusion was corroborated by Exponent's comparison of A and B tags across maintenance districts. According to the Exponent report the post Camp Fire normalized A and B tags for comparison lines in the Table Mountain maintenance district (referred to as Table Mountain Headquarters by PG&E personnel) were not inconsistent with those of comparison lines in the Sacramento and Lakeville maintenance districts.

Based upon the totality of the evidence regarding the ETPM and inspections and patrols the only reasonable conclusion to be drawn was the Caribou-Palermo line specifically and the Table Mountain District in general are not outliers. The evidence established the lack of thorough inspections and patrols on the Caribou-Palermo line was a systemic problem not a local problem. Based upon the evidence the only reasonable conclusion was that in low population density mountainous areas, the PG&E Electrical Transmission Division was not following the standards and procedures established by the ETPM. As a result in those areas PG&E was not complying with the standards and procedures submitted to the regulatory agencies and required by regulation.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

XI. BUDGETARY CONSIDERATIONS

Financial records from 2007 through 2018 obtained from PG&E, the CPUC and FERC clearly established PG&E had consistently increased its budget for maintenance, repair and replacement of transmission assets[98]. The central issue in the FERC litigation over PG&E's 2018 Transmission Owner's Rate Case request was how that money was being spent. In the "Summary of the Prepared Rebuttal Testimony of {Vice President of Electrical Asset Management}"[99] then PG&E Vice President of Electrical Asset Management states: "PG&E makes these investments to address deteriorating electric system infrastructure and to address equipment that has reached the end of its useful life and system designs that no longer meet operational requirements." The PG&E Senior Director, Transmission Asset Management at the time, also provided testimony in the FERC litigation. In the "Rebuttal Testimony of {Senior Director, Transmission Asset Management}"[100] it was stated:

> "PG&E must repair or replace assets that are approaching the end of their service lives, that are deteriorating, or that have failed. Replacement and repair of PG&E's assets are essential to maintaining and improving PG&E's transmission service to its customers. PG&E expects that replacement-related capital work will continue to grow as PG&E's assets continue to age. A significant part of PG&E's transmission infrastructure was constructed in the years following World War II, with some assets being even older. In addition, PG&E has one of the largest investor-owned fleet of hydroelectric facilities in the Country. By and large, these facilities are located remotely from PG&E's load centers. Many of these facilities—and their related transmission assets—were constructed in the early 1900s. Due to an increasingly large number of these assets nearing the end of their useful service lives, capital investment will shift significantly, from capacity increase-related projects, to lifecycle replacement projects."

However, the evidence gathered during the Camp Fire Investigation contradicted the FERC testimony of both Vice President of Electrical Asset Management and Senior Director, Transmission Asset Management. PG&E was **not** using the money to replace the oldest and most deteriorated transmission assets.

Because of limited available resources, the investigation was unable to fully analyze PG&E's financial records and assumed all figures were correct. The investigation instead focused on how, where and why the money was being spent. The evidence established the maintenance/repair/replace budget was primarily based upon "reliability metrics[101]."

[98] During litigation relating to PG&E's 2018 Transmission Owner Tariff (TO18) rate case, PG&E represented that from 2007 ($405,739,000) through 2016 ($1,124,457,000) electrical capital expenditures increased every year except 2013 (decreased app. $20,000,000 from 2012) and 2016 (decreased app. $7,000,000 from 2015). In total, spending increased $734,812,000 between 2007 and 2015 (the high spending mark), or an average of $81,645,777 per year.

[99] Exhibit PGE-0037, FERC Docket No. ER16-2320-002.

[100] Exhibit PGE-0038

[101] Reliability metrics measure how often a power line is out of operation, how long it is out of operation and how many customers are affected by that outage. SAIDI, SAIFI, CAIDI, ACOF and ACOD were the performance metrics used.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

The evidence established PG&E electrical transmission expenditures were divided into two budget categories: 1) capital and 2) expense. The capital budget for the electric transmission division of PG&E was funded through customer rates which were determined by FERC "rate cases.[102]" The expense budget was funded by the company. Any money spent on the expense budget potentially reduced the amount of profit of the company. In general, inspection, patrol and maintenance of electrical transmission assets were paid from the expense budget. Replacement of electrical transmission assets was paid from the capital budget. FERC rate cases, and PG&E's future capital budgets, were based upon PG&E's projections of capital projects. The evidence established that, for budget purposes, all components of the electrical transmission system were considered "assets."

A. Expense Budget

Based upon PG&E internal records and interviews of electrical transmission employees, including a former employee of the PG&E Business Finance Department, it was established the budget for inspection and patrol of the transmission lines was controlled by the Business Finance Department. Each year the Business Finance Department set an inspection and patrol budget for each of the PG&E transmission maintenance divisions. That budget was based upon the allotted time for all of the inspections and patrols scheduled for that year. The allotted time for each inspection and patrol was based upon the specific time allotted for a troubleman to spend on a single structure (e.g. tower or pole). To compute the time allotment for a transmission line, the single-structure time-allotment was multiplied by the number of structures in the transmission line.

The time allotted to be spent on a single structure was a system-wide constant and did not take into account the physical location of any specific structure or the amount of time necessary to travel from structure to structure. For example, the time allotment assumed the inspection of a tower on the Caribou-Palermo line, parts of which could be accessed only by hiking a steep trail, would take the same amount of time as inspecting a tower in the Central Valley, located directly adjacent to a public roadway.

When questioned about the time allotments for inspections and patrols, a former employee of the Business Finance Department who was intimately involved in the allotment process, admitted he had no knowledge or experience with inspections and patrols, and based the allotments solely on dividing up the overall electric transmission expense budget. This former employee also asserted the Transmission Line Supervisors and Superintendents were consulted regarding the proposed allotments. The Transmission Line Supervisors and Superintendents interviewed denied having any input or control over the time allotted for inspections and patrols.

Although denied by the involved employees, emails between the Table Mountain Headquarters secretary and several troublemen indicated the troublemen were not able to complete some

[102] A rate case is the utility's explanation and justification for a rate increase. In layman's terms, the utility lists all of the capital projects the utility deems necessary and their projected costs. If the total cost of all of the projects is higher than the projected amount to be collected from customers, the utility requests a rate increase and files a rate case. The rate increase is based upon the difference between projected costs and projected collections from customers. The rates which PG&E is allowed to charge customers includes a profit margin defined by FERC.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

inspections in the time allotted. For example, the 2014 Detailed Ground Inspection of the Caribou-Palermo line was allotted 89.5 hours. PG&E records showed, before the secretary re-assigned hours billed by the troubleman to other projects, that the troubleman and five linemen actually spent 121 hours completing the inspection. When asked, a former Transmission Line supervisor asserted that because of the artificially constrained budget, his district was constantly under pressure to limit the hours necessary to complete thorough inspections and patrols of transmission lines.

During this same time period internal PG&E emails indicate the expense budget for electrical transmission was being reduced. An October 2015 email noted: "For the overhead tower inspections, I don't think we would be able to do any repairs and incur land costs shown in item three and four in 2015." The email includes a chart of projects with the 2015 and proposed 2016 budgets. Item three in the chart is "Severe deterioration repair (tower department)."

In an August 2016 email regarding a transmission expense budget meeting from a manager in Business Finance to a Senior Director of Transmission Lines, it was stated: "The purpose of the meeting is to obtain Leadership guidance on *which* items to pursue and *when.* This input is important given the Expense reduction pressures being pushed down on Transmission Operations for 2017." One of the people involved invited to this meeting was the former Business Finance employee assigned to track unit costs for the transmission inspection and patrol budgets. When questioned by investigators, the former Business Finance employee conceded one way to reduce budget for inspections and patrols is to reduce the unit cost. According to the employee, the unit cost is reduced by reducing the time allotted for inspection/patrol of each transmission asset.

During this same time period, internal PG&E documents establish the "T Lines Patrols and Inspection Continuous Improvement Charter" was formed. The T Lines Patrols and Inspection Continuous Improvement Charter was a committee made up of PG&E personnel from the transmission line division, asset management, asset strategy and business finance. One of the specific mandates of the committee was evaluation of the feasibility of reducing costs by changing the frequency of inspections and patrols or finding more efficient work practices.

Based upon the totality of the evidence, specifically the reductions in times allotted for patrol and inspection, the internal emails indicating budget reductions and the formation of a committee to investigate reducing patrol and inspection costs, the only reasonable conclusion was that PG&E achieved expense budget cost savings by reducing the thoroughness of inspections and patrols.

PG&E also reduced its expense budget by charging expense projects to the capital budget. Moving projects from the expense budget benefits PG&E in two ways. First, every expense budget dollar saved was an additional dollar of potential profit. Second, the customers (ratepayers) pay over 100% of each dollar spent on capital improvements that brings in additional profit. Based upon internal emails and interviews with engineers involved in the planning and management of transmission projects, it was common for PG&E to look for ways to bootstrap expense budget projects on to capital budgets projects. Hypothetically, for example, instead of paying $1000 from the expense budget to fix a component, PG&E would pay $10,000

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

from the capital budget to replace the component. The $1,000 saved from the expense budget becomes profit and the company charges the customers $10,500[103] for capital improvement of the component.

The evidence established that PG&E personnel were consistently looking for ways charge expense budget projects to the capital budget. In a 2018 email from a PG&E civil engineer to a supervisor in the Transmission Line Asset Strategy Department of Transmission Asset Management, the civil engineer wrote:

> "I understand Asset Strategy has been working on a new way to define unit of capital to make it easier to capitalize a partial replacement on tower sections (e.g. footing, crossarm, etc…). We are replacing the top part of a distorted tower under emergency and was wondering if that could be considered a unit of capital and capitalize the project for corporate accounting purposes."

Based upon interviews with various PG&E personnel it was established that PG&E, as is common with large companies, had developed company accounting rules. Application of these rules determines if a project is charged to the expense budget or the capital budget. In general the rules hold that maintenance and repair are paid from the expense budget and replacement is paid from the capital budget. The above email indicates a move within PG&E to blur the lines between repair and replace to allow some repairs to be charged to the capital budget.

Another example occurred after the cancellation of the 2007 project to relocate ten deteriorating towers on the Caribou-Palermo line. The original Advance Authorization (AA) requested $800,000. Only $200,000 was approved. Once the project moved forward, the $200,000 budget was quickly surpassed. By the time the project was cancelled in 2009 almost $800,000 had been spent. A portion of that money was spent constructing an access road along the proposed new route of the ten new towers. According to internal emails obtained, the money spent to construct the new access road was charged as a capital improvement on another, adjacent transmission line. According to the former PG&E Director of Electric Asset Strategy who approved the 2007 AA, the rest of the money spent on the canceled project should have been charged to the expense budget. Internal emails establish that PG&E made an effort to find ways to charge the remainder of the money spent on the canceled project to the capital budget. A 2013 email from the former Maintenance and Construction Engineer (M&C) Engineer in charge of the project stated:

> "Looks like we will be forced into trying to Capture the $650K+/- that has been spent on the now canceled project for relocating Towers 6/53 to 7/65 from the non-accessible River side to Hwy side that (Project Manager) was managing.
>
> In order to not have to Expense the dollars spent we will be required to perform the following work."

[103] The extra $500 added to the $10,000 is the FERC allowed profit margin that PG&E would charge on capital improvements.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

The email goes on to list the proposed work which mainly consisted of replacing insulators on the towers that Maintenance and Construction Engineer had previously described in the Advance Authorization as deteriorated. The work did not include replacement of the deteriorated conductor (annealed and parting) or any of the deteriorated hardware.

In a subsequent, 2014 email regarding the canceled project, the former M&C Engineer stated:

> "In order to try and capture the $900K that was spent for nothing, Asset Management decided that we would just replace the Insulators and Hardware on the section of towers that were initially going to be relocated."

In a 2016 email regarding the canceled project the former M&C Engineer stated:

> "This work was deemed by *{the Sr. Director of Transmission Asset Management}*in order not to end up expensing $800,000 that was spent by *{Project Manager}* on an original job started by *{former Table Mountain TLine Supervisor}* to relocate this section of towers."

When asked about these emails, the former M&C Engineer denied he was instructed to find ways to capitalize the money already spent and asserted that he was lying in the emails in order to get necessary work done quickly. As to the 2013 and 2014 emails, he stated the recipient of the emails, the Transmission Line Supervisor at Table Mountain Headquarters, distrusted engineers, so he lied and put blame on Asset Management in order to avoid argument. When asked about the 2016 email, which was directed to an engineer in Asset Management, the former M&C Engineer replied that the Sr. Director of Transmission Asset Management was not involved in the project and he invoked the name of the Sr. Director of Transmission Asset Management to speed up the process. This person is the same former M&C Engineer who wrote the original AA and the approved AA and now claims that his description of the condition of the relevant Caribou-Palermo line structures and conductor was unsupported and exaggerated for the purpose of securing funding for the project. In a 2016 email to the Transmission Line Asset Strategist, who canceled the 2007 project, the former M&C Engineer stated:

> "The only thing that after reading the below that came to my mind would be to also add life expectancies on some of our older lines that we purchased from other utilities. Caribou-Palermo (old Caribou-Golden Gate) for example…Built roughly in 1907. This line is in a very remote area. Access is extremely limited. Conductor was deemed annealed several years back. Line has tons of splices in it. Some spans have 5 splices within said span. Most of the upper line section is subject to rockslides that have taken this line out in the past. Restoration time is lengthy..
>
> Just one example, but I feel we should identify lines or line sections that meet this type of criteria and add them to our mitigation plan or part of future complete structure replacements…"

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

B. Capital Budget and Comparative Risk Analysis (RIBA)

For the capital budget, the evidence established PG&E employed "comparative risk analysis" to determine the budgetary priority of potential capital projects. Based upon interviews with several current and former PG&E employees who were involved in risk analysis, it was established PG&E has traditionally used some form of comparative risk analysis. Comparative Risk Analysis balances the probability of risk against the probability of consequence; and depends upon accurate projections and analysis of both. One of the former employees interviewed was the former Senior Vice President of PG&E. According to the former Senior Vice President of PG&E when he arrived at PG&E in 2007 the company was using comparative risk analysis, which he disapproved because of its subjective nature[104]. The former Senior Vice President of PG&E tried to install an objective risk model focused solely on the probability of failure. The former Senior Vice President of PG&E left PG&E in 2011.

The evidence established in 2014 PG&E again began using comparative risk analysis for capital funding. Since 2014 PG&E has used the Risk Informed Budget Allocation (RIBA). Based upon internal documents and interviews, the evidence established that under RIBA, capital projects were evaluated for funding based upon safety, environmental and reliability impacts that were scored based upon a complex matrix. According to a Manager in Transmission Asset Management, and one of the persons actively involved in the RIBA scoring process in 2014, reliability is "more about the customer impacts. So number of customers, the duration of outages, large cities, metropolitan areas. It's what we call critical locations. This can be anywhere from towns to cities."

For each category (safety, reliability, environment), a project would score between 1 and 10,000. The scores for the three categories were combined with the result being a project score between 3 and 30,000. The final score, according to the Manager in Transmission Asset Management, represents the "consequence if we don't complete the project." Once all of the proposed projects are scored the projects are ranked high to low by total score. RIBA scoring determined whether a project that is not mandated by a regulator was funded for the coming year, RIBA scoring and ranking was independent from and occurred after a project had been included in a FERC rate case.

Based upon the evidence, projects were used in FERC rate cases to justify rate increases and then, later, not funded because of a low RIBA score.

As examples, in 2014 three proposed projects on the Caribou-Big Bend section of the Caribou-Palermo line were scored under RIBA; the TL[105] Relocate 10 Towers project, the Replace 5 Damaged Towers project, and the 115kV NERC Alert. Through internal documents and witnesses it was determined that the TL Relocate 10 Towers project was the 2007 project to replace and relocate the ten deteriorating towers that had been canceled in 2009. By 2014 the only portion of the project active was the replacement of insulators so that the money spent on the project prior to cancellation could be charged to the Capital Budget. Based upon internal

[104] Relative risk analysis is a form of comparative risk analysis.
[105] TL is abbreviation for Transmission Line.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

documents and witnesses, it was established that the Replace 5 Damaged Towers project referred to the replacement of the five towers that collapsed in December of 2012. Based upon internal documents and witnesses it was established that the 115kV NERC Alert project referred to the 2013 Caribou-Big Bend NERC project.

According to the "Risk scoring for baselined projects" the Replace 5 Damaged Towers total risk score was 180. The total risk score for the Replace 5 Damaged Towers project was explained in a February 2014 email from a RIBA team member[106] to the Senior Director of Transmission Asset Management in 2014. According to the RIBA team member:

> "<200 score because there is no likely large environmental event (if structures fail, it will be likely due to heavy rain and no wildfires are possible then). Also no likely public safety issue with live wires down because it is in a remote area. Reliability score is not that high because although the likelihood of failed structures happening is high, the affected customers are likely in the order of >1K."

According to the RIBA scoring sheet for the Replace 5 Damaged Towers project the person(s) scoring the project felt that the failure of the Shoe Fly "Probably could happen this next season." On the "Frequency/time-to-impact taxonomy" the project scored 6 out of 7 possible points.

In 2014 the Manager in Transmission Asset Management took part in the RIBA scoring. In addition she was the "Program Manager" for the Replace 5 Damaged Towers project. Based upon the 2014 RIBA scoring records the Manager in Transmission Asset Management stated that the Replace 5 Damaged Towers project scored the lowest possible scores of 1 for safety and environmental and scored 178 for reliability. According to the Manager in Transmission Asset Management the safety score was justified because the "worst reasonable direct impact," (WRDI) "basically in the particular case, would a structure fall down and hit somebody" was negligible because of the "remote" location of the Shoe Fly poles. According to the Manager in Transmission Asset Management, despite the written statements from 2014 documenting concern for the long term reliability of the Shoe Fly, the Shoe Fly was "temporary permanent" and it was not felt to be a danger to collapse. A former Transmission Specialist for PG&E and the person who was in charge of the construction of the Shoe Fly, was also asked about the Shoe Fly. According to the former Transmission Specialist, the Shoe Fly was only designed to be in place for a few months with the expectation that permanent replacement towers would be erected the following summer of 2013. Notes in the RIBA scoring sheet under the category reliability category of "Frequency[107]" corroborate the former Transmission Specialist. The former Transmission Specialist was also corroborated by an October 2013 email from the former M&C Engineer to multiple people. In the email the former M&C Engineer states "I do not believe there was a PO[108] created under MWC 70[109] yet for that replacement project that is now sitting

[106] The position/job title of the RIBA team member was never determined.
[107] The "Frequency" category measures how often a problem is expected to occur.
[108] In layman's terms, a project proposal.
[109] MWC is an abbreviation of Major Work Category. Each major work category is identified by a number. In this case the proposed project falls with major work category number 70. All PG&E electric transmission work projects are assigned to a major work category for accounting purposes.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

on Wood poles and was not intended for long term reliability." The project was assigned a frequency score of 6 out of 7 possible with the note "Probably could happen this next season."

No records were ever located to support The RIBA team member's conclusion that the Shoe Fly poles would most likely fail due to heavy rain. According to the Manager in Transmission Asset Management, The RIBA team member was an expert on the RIBA process who was assigned to assist "the engineer walk through the process." Based upon the records the Manager in Transmission Asset Management identified the engineer as the engineer most familiar with the overall project and assigned to do the RIBA scoring for the project. According to an undated PG&E Org Chart, the engineer assigned to score the project was a Senior Engineer assigned to Transmission Asset Development and reported directly to the Manager in Transmission Asset Management. According to the notes on the scoring sheet, as interpreted by the Manager of Transmission Asset Development, "the concern here is the note says that the structures would go down during rainy and wet storm. And what's not shown here is that the wildfire is not likely, because on the wet ground not likely to have wildfire." No records in support of Senior Engineer's conclusion were ever located.

On the other hand, the TL Relocate 10 Towers project scored 581. According to the scoring sheet, the Senior Engineer was also the engineer assigned to score this project. Despite the fact that by 2014 the scope of the project was limited to the replacement of insulators so that money spent on the project prior to cancellation could be charged to the Capital Budget, the project scored 18 points out of 10,000 possible points for safety[110]. Despite the fact that the project involves the same Caribou-Palermo line the Reliability Risk Score is 562. 434 of those points are justified because "WRDI is possible contact with public leading or to other facilities causing potential injuries to few employees" according to the notes on the scoring sheet.

The 2014 RIBA scoring is used to highlight the subjective nature of the comparative risk analysis. Because they are subjective the risk scores are easily manipulated. PG&E was highly motivated to complete the TL Relocate 10 Towers project in order to be able to charge the budget overruns, money already spent, to the capital budget. By 2014 the Replace 5 Damaged Towers project was about future spending. The best example of the manipulation is the WRDI justifications. One of the oft-stated justifications for the TL Relocate 10 Towers Project was the fact that the ten towers were located in a remote, inaccessible location. The towers were so inaccessible that PG&E had to use helicopters to fly personnel to the towers. Also, there was no evidence that any of the ten towers was on the verge of collapse according to the 2009 email from the manager who cancelled the project in 2009. On the other hand, the Shoe Fly was built on Camp Creek Road and any, or all of those poles, could reasonably be expected to fall down within a year.

Another example of manipulation of facts in the 2014 RIBA was the RIBA team member's conclusion, apparently based upon the Senior Engineer's scoring note that "structures would go down only if it is rainy and wet"; and restated several times by the Manager in Transmission Asset Management that the wood Shoe Fly poles would probably only collapse during heavy rain

[110] 18 times the safety score for the Replace 5 Damaged Towers project

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

thereby minimizing the chance of a wildfire. This statement was made in 2014, in the middle of a historic drought.

PG&E's own records clearly establish wind has long been classified as one of the top causes of structure failure on both transmission and distribution lines. PG&E's own records also establish the Feather River Canyon is known for high and sometimes extreme winds. Based upon PG&E wind records, the Exponent Report stated "Maximum (or peak) wind speeds in the areas of the chosen lines are generally found to vary between 60 to 100 mph, as measured and reported in "Extreme Wind Speed Estimates Along PG&E Transmission Line Corridors" across one-minute time intervals and at an elevation of 33 feet above ground level, over a 50-year return period." According to data pulled from the Jarbo Gap RAWS[111] by Meteorologist Kris Kuyper the highest number of high wind events occur in the month of October.

The inherent weakness of comparative risk analysis is its subjective nature. Data can be manipulated to achieve a desired result. Based upon the evidence the 2014 RIBA process exposes the manipulation of comparative risk analysis by PG&E personnel.

C. <u>Transmission Asset Management</u>

The examination of the 2014 RIBA scoring also highlighted the central role of Transmission Asset Management (TAM) in the development and execution of the capital budget. The former Senior Director was replaced as Senior Director of Transmission Asset Management in 2017. The Senior Director of Transmission Asset Management who assumed the position in 2017 explained the role of Transmission Asset Management:

> "My team's responsibility for managing those assets would be to track performance of the operation of the assets and ultimately make recommendations for enhanced -- future enhancements for those assets, investments that would occur over the next five to ten years both to replace aging infrastructure, enhance existing infrastructure for greater operational flexibility as well as increased capacity to meet NERC reliability plan and standards."
>
> "My job is to identify future work, future planned capital work. Our process has a bias towards identifying work approximately six years out.

In 2017, shortly after the new Senior Director of Transmission Asset Manager took over, TAM published the Electric Transmission Overhead Steel Structure Strategy Overview (2017 Strategy Overview). The document was written by a Senior Engineer assigned to Transmission Asset Strategy (TAS) within TAM. According to the Senior Engineer, the function of TAS is to review conditions reported from the field, study performance of the assets, apply criteria and develop a strategy for replacement or repair. According to the Senior Engineer the "conditions reported from the field" are the notifications/tags generated by the troublemen, linemen and towermen[112]. The "criteria" listed by the Senior Engineer include the age of the asset, environmental risk, safety risk, reliability risk.

[111] Remote Automated Weather Station. See section XVI "Drought and Wind"
[112] Towermen work only on the steel structure of the tower.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

According to the Senior Engineer, prior to the 2017 Strategy Overview neither a comprehensive plan for tower risk nor a tower risk database existed at PG&E. The Senior Engineer's statement was corroborated by internal emails obtained from PG&E. A June 10, 2016 email from a Manager in Transmission Line and Substation Asset Strategy[113], to a group of PG&E employees including the Senior Engineer, appears to be the genesis of the 2017 Strategy Overview. This email regarded a "Comprehensive Plan for Towers." According to the text the email was follow-up to a meeting held earlier in the day. The stated goal of the meeting was "Develop a Comprehension Plan for Tower Risk with emphasis on steel corrosion risks. Plans should include maintenance plans, detail inspection specifications, repair vs. replace criteria, capital and expense cost estimates, risk database, update Standards." Based upon the evidence, the only reasonable conclusion to be drawn is that, despite the fact that PG&E decisions were allegedly based upon risk analysis, until 2017 PG&E had no consistent and comprehensive risk database or policy for evaluating risk.

According to the 2017 Strategy Overview "The Transmission Line Steel Structure strategy will manage the asset life cycle (e.g. Create, Utilize, Maintain, Renew (replace), and Dispose) based on risk. The renew asset life cycle is based on proactive cost replacements for high-risk assets. For medium risk assets, it is based on reactive replacements following asset failures." The "high risk," "medium risk" theme continues throughout the 2017 Strategy Overview. Although not mentioned in the quoted sentence, there is also a "low risk" category. The appendix to the 2017 Strategy Overview includes an "Asset One Page Summary T-Line Strategy From A PAS 55 Framework." The summary consisted of five different charts. Although she is the author of the 2017 Strategy Overview, the Senior Engineer asserted that she was not familiar with the charts and was unable to explain the charts or their significance. According to the Senior Engineer the One Page Summary was prepared by her supervisor and attached to her work. The final chart, which has no title, appeared to summarize PG&E TAM risk strategy. According to the chart, for low risk assets the strategy was "run to failure" with "minimal patrol to continuously assess risk," "no maintenance," and "only replacement no repairs." For high risk assets the strategy was "condition base and cause evaluation," "extensive patrol with more frequency," "minimum req[114] maintenance" and "replace/repair."

During interviews and testimony, TAM personnel stated that the high, medium and low risk categories applied to components of the transmission lines and not the entire lines. Insulators were identified as an example of a low risk component. All current TAM personnel disavowed the term "run to failure" during interviews and testimony.

Shortly after publication of the 2017 Strategy Overview PG&E published the 2018 TD-8101 – Transmission Line Overhead Asset Management Plan (2018 AMP). According to the Senior Engineer the 2018 AMP was written by multiple engineers, including herself. The "Document Owner" listed on the 2018 AMP is the Senior Director of Transmission Asset Management.

[113] At the time The Senior Engineer's direct supervisor
[114] abbreviation of required.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

The 2018 AMP included a modified version of the TAM Risk Strategy chart found in the Appendix of the 2017 Strategy Overview. According to the preface to the chart:

> "The characteristics and condition of each transmission line overhead asset inform the risk and approach to replacement and operation, as well as patrol and maintenance frequency, as shown in" the charts

For low risk assets the strategy is "run to maintenance," with "low degree or patrol with minimal frequency to continuously assess risk," and "corrective maintenance." For high-risk assets, the strategy is "preventative maintenance and cause evaluation," with "high degree of patrol with more frequency," and "preventative maintenance." The 2018 AMP also includes a table entitled "Risk and Replacement Strategy per Asset." The Risk and Replacement Strategy per Asset table identifies individual components of the, identifies the risk for each component and defines the replacement strategy for each component. Overhead conductor is listed as a "high to medium" risk with the replacement strategy "preventative maintenance for high risk" "run to maintenance for medium risk." Steel structures are listed as high risk with the replacement strategy "preventative maintenance."

The most relevant difference between the chart in the 2017 Strategy Overview and the chart in the 2018 AMP is the replacement of "Run to Failure" with "Run to Maintenance." When asked about "Run to Failure" TAM employees tended to distance themselves from the phrase and criticize the phrase as being undefined although the term "Run to Failure" appears to be an industry standard and was discussed as an appropriate strategy for some components of the electrical transmission system in the 2010 Quanta studies. When asked to define "Run to Maintenance" most TAM employees identified failure as the trigger to maintenance. Based upon the evidence it appears that the change from failure to maintenance was semantical only.

As Senior Director of Transmission Asset Management the witness was responsible for overseeing the organization within PG&E responsible for managing assets of transmission and substation infrastructure and overseeing risk management within electrical transmission. As the manager of transmission assets, he played a sponsor role for new capital projects to replace to replace infrastructure. Transmission infrastructure was defined as transmission structures, conductor, insulators, circuit breakers, substation busses and transformers.

According to the Senior Director of Transmission Asset Management, information from the field, in the form of notifications/tags generated as a result of inspections and patrols, play a role in identifying potential projects to be included in the five year plan. According to the 2018 AMP "Transmission line overhead asset performance is primarily tracked through two factors: historical line outages and maintenance and inspection found notifications." The Senior Director of Transmission Asset Management conceded the quality of the input received from the field has an impact on the overall asset strategy. The Senior Director of Transmission Asset Management also conceded problems not identified by field representatives would never be brought to the attention of TAM. As a result projects to repair or replace those problems would never be

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

planned. The Senior Director of Transmission Asset Management also conceded that as of 2018, other than the NERC Project there were no projects planned through 2022 on the Caribou-Big Bend section of the Caribou-Palermo line.

Although PG&E policy, as defined in documents like the 2017 Strategy Overview and the 2018 AMP and explained by TAM personnel, represented that decisions were made based upon a combination of performance information and patrol and inspection findings, the evidence indicated that performance information played an oversized role and patrol and inspection findings were insignificant. As a result of years of reductions of frequency and thoroughness of patrols and inspections, problems were not being identified. Based upon the WSIP and the Exponent report it was clear that on the Caribou-Palermo line and comparable lines, PG&E troublemen were not identifying problems.

The evidence established decisions regarding repair or replacement of transmission assets could not have been based upon non-existent patrol and inspection notifications. As such, then the decisions were being made solely on asset performance information. Performance information consisted of a complex series of reliability metrics (SAIDI, SAIFI, CAIDI, ACOD, ACOF). The evidence established these reliability metrics were a statistical analysis of outage data. This information was required to be tracked and reported yearly to CPUC, CA ISO, WECC, NERC and FERC. In general, all of the reliability metrics measured either the number or the effect, or both, of power outages per year. Effect is measured by either the number of customers who lose power as a result of the outage or the duration of the outage or both. The evidence established that the Caribou-Palermo line had only one dedicated customer (a powerhouse) who could be effected by an outage.

Information regarding transmission asset conditions was based upon information received from the field. This includes notifications/tags generated by troublemen, linemen and towermen during inspections and patrols, both routine and non-routine). According to the Senior Director of Transmission Asset Management, TAM relied upon notifications/tags to identify potential preventative maintenance projects. After substantial discussion the Senior Director of Transmission Asset Management conceded that the fact that if troublemen, linemen and towermen did not inspect specific components of the transmission assets, it would affect the reliability of the information upon which TAM was making decisions. Specifically he conceded that because nobody was looking for wear on cold end attachment hardware and therefor, no notifications/tags were being generated for replacement of cold end attachment hardware there were, as of November 8, 2018, no projects in the foreseeable future for the replacement of cold end attachment hardware.

Although there were no specific plans to replace cold end attachment hardware the Senior Director of Transmission Asset Management asserted that plans were being made to perform preventative maintenance on the Caribou-Palermo line. According to the Senior Director of Transmission Asset Management, the NERC Project included non-NERC required preventative maintenance on the Caribou-Palermo line. When confronted with the Project Scope document for the NERC Project the Senior Director of Transmission Asset Management was unable to identify any non-required work. According to the Senior Director of Transmission Asset

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

Management the non-required preventative maintenance was not included in the Project Scope document but that plans were being made to perform the preventative maintenance. However, no records or plans for any preventative maintenance projects on the Caribou-Palermo line were located through 2022.

Another concept, which came up repeatedly in interviews and testimony of TAM personnel was "bundling." Based upon the evidence, for PG&E, bundling meant doing multiple projects on a transmission asset or line at the same time. According to the Senior Director of Transmission Asset Management TAM decisions were, in part, "informed by the most cost-effective approach for our customers." Having crews do multiple projects at once is much more cost effective than having multiple crews make multiple visits to the asset or line. An example of bundling occurred in 2018 on the Parkway-Moraga 230kV transmission line. The line had been de-energized so that the tower department[115] could fix a tower. While the line was de-energized the line department[116] performed preventative maintenance by replacing insulators.

Bundling often involved the intertwining of capital budget and expense budget projects. Based upon internal PG&E emails and interviews with PG&E personnel, it appeared PG&E bundled expense budget projects with capital budget projects in order to charge the expense budget costs to the capital budget project.

Despite their preference for bundling projects there is no evidence of any intent to bundle any preventative maintenance projects to the 2013 NERC Alert Project.

The only reasonable conclusion to be drawn from the totality of the evidence is that PG&E was employing a run to failure strategy on the entirety of the Caribou-Big Bend section of the Caribou-Palermo line. Pursuant to the run to failure strategy, PG&E only applied a low degree or patrol with minimal frequency to continuously assess risk, and only performed corrective maintenance.

XII. SAFETY, RELIABILITY AND ENVIROMENT

The phrase "Safety, Reliability, Environment" appears consistently in PG&E documents, regulatory filings and public pronouncements. Members of the Electric Transmission Asset Management interviewed said safety, reliability and environment are the criteria by which all project decisions are judged. The Senior Director of Transmission Asset Management testified:

> "In terms of how PG&E quantifies consequences, we usually categorize it in a number of areas focused on safety, impact reliability, impact to the environment are some examples."
>
> "An analysis starts with defining a risk event, and that's really defining what is that event that we believe could have exposure from a public safety reliability environmental standpoint, and then quantifying the potential drivers for that event, and the associated consequences for that event."

[115] The tower department deals solely with the steel transmission structures. Employees are called Towermen.
[116] The line department deals with energized components (conductor, insulators, hot and cold attachment hardware) of the transmission system. Employee are called Linemen.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

All members of TAM were asked which of the three criteria was considered the most important. They unanimously replied safety. The evidence, however, contradicted that assertion. The evidence showed disparate treatment of transmission assets based upon the reliability metrics.

The most basic example of disparate treatment based upon reliability metrics was the 500kV transmission lines. According to PG&E personnel the 500kV lines are the backbone of the electrical transmission system and an outage on a 500kV can potentially affect millions of customers. According to the ETPM, all 500kV structures were subjected to detailed ground inspections every three years. "Critical" 500 kV structures were subjected to climbing inspections every three years and as triggered. "Non-Critical" 500 kV structures were subjected to climbing inspections every twelve years and as triggered. All 500 kV structures were also subjected to yearly patrols. In contrast, 115 kV structures were subjected to detailed ground inspections every five years, air patrols in non-detailed ground inspection years and are never subjected to climbing inspections.

Another example of disparate treatment based upon reliability metrics established by evidence developed during this investigation was the Bay Waters power towers. Since 2005, the Bay Waters towers had their own classification in the ETPM. Although the ETPM refers to the Bay Waters Foundation Inspection, numerous PG&E documents and TAM personnel established the special treatment extended to the entire tower. Some documents limited the Bay Waters towers to only towers that were actually in the water but other documents and information from some TAM personnel indicated the Bay Waters towers included all towers in the Bay Area. The justification given by TAM personnel for the special treatment of the Bay Waters towers is the highly corrosive effect of salt on steel structures. When asked why special treatment was afforded to Bay Area steel towers but not steel towers along the Sonoma, Mendocino, Humboldt, Monterrey and San Luis Obispo coasts, TAM personnel were unable to explain the difference.

The final example of disparate treatment based upon reliability metrics established by the evidence arose out of a 2018 PG&E Lab Report on the hanger plates from the Parkway-Moraga 230 kV transmission line. According to the Lab Report, the hanger plates were submitted by the Supervisor, T-Line Construction, T-Line M&C Central-Bay Maintenance. When questioned, the supervisor stated wear was observed on the hanger plates while replacing insulators on the Parkway-Moraga line in the spring of 2018. There was no mention made of the C hooks and none were preserved. According to the supervisor a tower on the Parkway-Moraga was damaged in a mudslide and needed to be repaired. In order to repair the tower the line had to be de-energized. While the line was de-energized, a decision was made to proactively replace all of the "old" insulators and hardware. The Parkway-Moraga line was built after World War II in 1946. The insulators and hardware were assumed, because PG&E has no definitive records, to be 72 years old. In contrast, the Caribou-Palermo line was 91 years old when it was de-energized for over a month in December 2012 and January 2013 as a result of tower collapse. There is no record of PG&E doing any preventative or proactive maintenance on the Caribou-Palermo line while it was de-energized. According to PG&E, the reason no preventative or proactive maintenance was done was that the winter weather was not conducive to working in the Feather River Canyon.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

A former PG&E Transmission Line Supervisor who, during his career in transmission lines, worked in almost all of the transmission line maintenance districts was asked if he had noticed a difference in the way transmission lines were inspected and maintained based upon a local population base. The former supervisor responded "We're kind of out-of-sight, out of mind up there," "We're always fighting the political battle," "But if something flips the screen down there [the Bay Area] they get a lot of attention."

XIII. RISK MANAGEMENT

Prior to the Camp Fire, risk management for electric transmission was supervised by TAM. During his testimony the Senior Director of Transmission Asset Management at the time of the Camp Fire, stated that the formulation of strategies by TAM relied, in part, on the assessment of risk. He defined "Risk" as "the probability and consequence of an event occurring." He defined probability as the "likelihood of something happening" and consequence as "the impact of that event occurring." He defined consequence as the result of an event occurring measured by impact on safety, impact on reliability and impact on the environment.

The Camp Fire investigation focused on two types of risk; risk of equipment failure and risk of fire.

A. Risk of Equipment Failure

The recommendations of the 2010 Quanta reports focused on ways to minimize the risk of equipment failure. In summary, the Quanta reports stated wear is a product of age and failure is a product of wear. All of the complex statistical analysis in the Quanta reports boiled down to the fact a large percentage of PG&E's transmission assets were very old and needed extra attention. Despite hiring Quanta to assess and analyze its transmission assets and make recommendations, PG&E ignored those recommendations. According to internal PG&E documents, in 2010 a committee was assigned to review and comment on the Quanta reports. Numerous current and former TAM personnel who were part of that committee were interviewed. None of the former committee members could recall who made the decision to disregard the recommendations of Quanta or why. The Senior Director of Transmission Asset Management, who was not on the committee and was not assigned to TAM in 2010 testified regarding the Quanta reports:

> "The Quanta study did not look at asset data from those utilities but rather business practices from those utilities. The only age information and corresponding failure data that was used in that study was associated with the subset of assets that failed in a two-year period within PG&E and made some assumptions that made the statistical analysis incorrect. So it wasn't sufficient for us to justify significant amounts of investments in the future, and we needed to do additional analysis in order to build the case for our regulators to be able to justify requesting authorization to be able to make additional investments in the infrastructure based on the results of that bullet point at a later date."

Although the Senior Director of Transmission Asset Management was dissatisfied with the Quanta reports, information from the Quanta reports was used and cited in numerous subsequent TAM documents, including documents produced by himself.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

PG&E internal documents and reports and a report filed with the CPUC clearly established PG&E was aware of the risk of equipment failure. In an undated internal PG&E draft report entitled "Transmission Overhead Conductors[117]" it was stated, "The major root cause of conductor failures is Equipment Failure (35%)." The report also stated inspections and maintenance performed according to the ETPM "are not preventing equipment failure due to wear, corrosion and other factors on conductors and associated equipment (splices)." The report also addressed the use of infrared inspections on transmission conductor: "In most cases, Infrared Inspections identify faults with components just prior to failure. Ariel (sic) inspections are conducted annually. This proactive approach yields little results." No final copy of this report was located and it is unknown why this report was drafted and to whom this report was distributed.

In another undated, unattributed internal report entitled "EO[118] Transmission OH[119] White Paper[120]" the effects of equipment failure was again discussed. Whereas the Transmission Overhead Conductors was focused on conductor failure and how to mitigate/reduce the number of conductor failures, the EO Transmission OH White Paper focused on outages and how to reduce outages to improve reliability metrics. According to the OH White Paper, at the time of writing, conductors 105 years old were still in service. According to the OH White Paper, "The root causes of about 85% of the outages due to conductors from 2007 to 2012 can be attributed to trees, hardware, conductor, wind and snow…" Under the heading "Existing Conductor Strategy" the report reflects the strategy "is primarily Run to Failure (RTF), supplemented by" "periodic condition assessment and maintenance" and "program of targeted reliability improvements focusing on poorly performing lines which contribute the most to SAIFI."

In November, 2017 PG&E filed the 2017 Risk Assessment and Mitigation Phase Report (RAMP)[121] with CPUC. Chapter 10 of the RAMP was dedicated to, non-wildfire risks of the electric transmission overhead system. The RAMP looked at the known risks (identified as risk drivers) to the electric transmission system and explains how PG&E is mitigating those risks. The RAMP identified "Equipment Failure – Connectors/Hardware" as a significant risk. "Deterioration of connectors, splices or other connecting hardware that results in wire down events. This driver was associated with 28 out of 279 (10.0 percent) wire down events from 2012-2016, or an average of 5.7 events per year." Efforts to mitigate the risk of Equipment Failure – Connectors/Hardware are divided into past (2016), present (2017-2019) and future

[117] The author of the report is not identified and was not identified during the investigation. Based upon content it appears the report was written in 2013
[118] EO is the PG&E abbreviation for Electric Operations.
[119] OH is the PG&E abbreviation for Overhead.
[120] The author of the report is not identified and was not identified during the investigation. Based upon content it appears the report was written in 2014

[121] Although not specific to equipment failure, the RAMP stated "Much of PG&E's transmission infrastructure was constructed in the years following WWII. As such, many assets are nearing "end of useful life". As these of assets near the end of their expected useful lives, PG&E will need to increase its level of asset replacements to avoid degradation in overall customer reliability and system performance." Construction of the Caribou-Palermo line began in the months (six months) following WW1.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

(2020-2022). The mitigations listed are "Inspection and Maintenance," "Overhead Conductor Replacement" and "Insulator Replacement."

The 2018 AMP also addressed equipment failure. The 2018 AMP used and defined the term "Risk Driver." The definition includes reference to equipment failure:

> "A risk driver is defined as an element which alone or in combination with other drivers has the intrinsic potential to give rise to risk (which can be a single risk or multiple risks). There are 83 risk drivers related to transmission overhead line assets. Though there are many risk drivers, common drivers for transmission line overhead assets include equipment failure, vegetation, natural hazards (wind, snow, earthquakes, etc.) and third-party contact. These risk drivers enable PG&E to evaluate the controls that are in place and to strategically allocate resources to programs that strengthen these controls or create new controls to mitigate these risks."

According to the 2018 AMP "Conductor or connector/hardware failures account for 37% of all wire down events." The AMP also stated 25% (26 of 103) of wire down events 2013-2017 were caused by failure of "connector/hardware and 42% (44 0f 103) of wire down events 2013-2017 were caused by conductor failures.

The documents prove beyond any doubt that PG&E was aware of the risk of equipment failure causing conductor failure or "wire down events." The undated draft Transmission Overhead Conductors established that at least one person within PG&E TAM was aware that inspections and patrols being done pursuant to the ETPM were doing very little to identify and prevent equipment failures.

B. <u>Risk of Fire</u>

Since, at least 2007, fire has been identified as the number one risk for PG&E. Chapter 11 of the 2017 RAMP stated:

> "PG&E defines wildfire risk as: PG&E assets may initiate a wildland fire that endangers: the public, private property, sensitive lands, and/or leads to long-duration service outages.
>
> PG&E has designated wildfire as an enterprise risk (in addition to being a top safety risk) since 2006. This risk is reviewed annually by the Safety, Nuclear and Operations, Committee of PG&E's Board of Directors. PG&E's exposure to wildfire risks continues to escalate despite increasing investment in compliance and public safety programs given various environmental and human factors. The most notable investments are the T&D routine VM work and the CEMA VM work related to the drought and the ongoing tree mortality state of emergency.
>
> The CEMA work investment alone amounts to $190 million in 2016 and$208 million in 2017.14 Environmental variations, such as drought conditions or periods of wet weather that drive additional vegetation growth and wildfire fuel increases, can influence both the likelihood and severity of a wildfire event.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

Although vegetation management is rightfully a focus of PG&E's fire mitigation efforts, equipment failure was also identified as a significant fire risk. According to PG&E statistics included in the RAMP, 33% of fires initiated by PG&E assets were caused by equipment failure. Vegetation management caused 37% of fires initiated by PG&E assets. The RAMP breaks equipment failure into three categories: 1) conductor; 2) connector/hardware; and, 3) other. Equipment failure – connector/hardware is defined in the RAMP as "Failure of connectors, splices, or other connecting hardware resulting in wire down and fire ignition." Equipment Failure – Connector/Hardware risk driver accounts for 6 percent of 243 ignitions, or 15.5 per year.

Similar to Chapter 10 discussed above, Chapter 11 of the RAMP identified fire mitigation efforts as past (2016), present (2017-2019) and future (2020-2022). Although the RAMP listed extensive fire mitigation efforts done, being done, or planned to be done, none directly addresses the risk of connecting hardware failure.

The 2017 RAMP was not the first PG&E document that connected equipment failure – connectors/hardware to fire. The draft Transmission Overhead Conductors cited fire risk in a discussion of the "Bolted Connector Program." The Bolted Connector Program was apparently[122] a name given to the replacement of bolted, parallel groove connectors, which began prior to 2009. As to the Bolted Connector Program the report sets forth: "M&C[123] only replacing bolted connectors during routine or emergency work with to those components identified during infra-red inspection or in areas identified as high fire risk."

PG&E records also document a previous equipment failure – connector/hardware on the Caribou-Palermo line. The 2007 Rock Fire was caused by the failure of a connector on a Caribou-Palermo line.

The evidence clearly establishes, beyond a doubt, PG&E was aware of the causal relationship between fire and equipment failure on transmission towers. The vast majority of PG&E initiated fires were caused by something (a tree, an animal, a person, the ground, or a steel structure) coming into contact with an energized conductor. The entire purpose of the electric transmission system is to move electricity from point A to point B through the conductor. The entire purpose of all of the components of the overhead transmission system, except the conductor, is to keep the conductor safely hanging in the air. Essential to keeping the conductor hanging in the air is the hardware that connects the conductor to the structure. PG&E knows that if that hardware breaks the result is a wire down event. Despite all of this knowledge PG&E did absolutely nothing to identify and replace the worn hardware essential to keeping the conductor safely in the air.

[122] This is the only reference to the Bolted Connector Program found in records provided by PG&E. Based upon the description of the program it refers to the replacement of bolted, parallel groove connectors.
[123] Maintenance and Construction

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

XIV. San Bruno

Early in the Camp Fire Investigation, San Mateo County District Attorney Stephen M. Wagstaffe generously and graciously assigned Senior Inspector James Haggarty to assist in this investigation. Senior Inspector Haggarty was the lead investigator on the San Bruno explosion and an expert on investigating PG&E. Senior Inspector Haggarty immediately began seeing parallels between PG&E Gas Transmission operations prior to the San Bruno explosion and PG&E Electric Transmission operations prior to the Camp Fire.

On September 9, 2010, a PG&E gas transmission line buried beneath a residential neighborhood in the City of San Bruno ruptured and exploded. The explosion and ensuing fire killed eight people, destroyed 35 structures and damaged many more. In 2014, after three years of investigation by city, county, state and federal law enforcement PG&E was federally indicted for multiple federal felony counts. PG&E was later found guilty of five felony counts by a federal jury in the Northern District of California. A transcript of the jury trial testimony and copies of all admitted exhibits were obtained from the Federal District Court in San Francisco. During that trial, testimony established two relevant factual issues: 1) PG&E record keeping was flawed; and, 2) PG&E inspection policies for the gas transmission lines were budget dependent.

During the San Bruno investigation and subsequent trial, the flaws in PG&E's historical records were exposed. Evidence established that for many of the older gas transmission lines PG&E had few records. Many of those gas transmission lines had been acquired from other gas companies and PG&E never made an effort to examine, evaluate and catalogue the components of those lines. Instead, PG&E used "assumed values" instead of inspecting the actual line to determine true values.

Similarly, during the Camp Fire investigation the evidence established that the Caribou-Palermo line was purchased from Great Western Power in 1930, and PG&E never made any effort to examine, evaluate and catalogue the line components. [124]

The San Bruno investigation also established that PG&E was making inspection policy decisions based on budget. Testimony and documents presented during the Federal jury trial clearly established in the years prior to the San Bruno explosion, PG&E used the least expensive inspection method to inspect older gas transmission lines, including the San Bruno line that ruptured and exploded. The chosen inspection method was less expensive in two ways: 1) it was less expensive to execute; and, 2) it was not designed to actually detect pipe integrity flaws that would require immediate and costly repair or replacement. Prior to the Camp Fire, for the Caribou-Palermo line PG&E utilized the least expensive inspection method (air patrols) in a

[124] In a written response to a CPUC data request PG&E states "PG&E has not historically maintained an inventory of suspension hooks or their manufacturers, age or material composition. As a result, PG&E does not have an inventory of all transmission and distribution facilities in the entire PG&E service territory organized by location and the presence of suspension hooks similar to the Incident Location 1 suspension hook. Suspension hooks are common hardware on transmission structures and occasionally are used on distribution structures. In PG&E's service territory, there are in excess of 50,000 steel transmission structures, most of which have multiple suspension hooks of some type supporting insulators and other equipment. There are also suspension hooks on many of the nearly 100,000 non-steel transmission structures in PG&E's service territory. There are more than two million distribution poles in PG&E's service territory."

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

manner guaranteed not to detect any problems that would require immediate and costly repairs. Because troublemen were not finding safety problems requiring repairs, PG&E was able to devote capital budget funds to projects focused on improving reliability metrics.

The evidence uncovered during the investigation and presented during trial clearly established the San Bruno explosion was the direct result of the fact that, because of faulty record keeping, PG&E was unaware of the potential threat/defect in the San Bruno pipe. Because PG&E intentionally used an inspection method that could not detect the potential threat/defect, the threat/defect was not found.

XV. THE BUTTE FIRE

On September 9, 2015, a pine tree fell onto an energized PG&E distribution line in Amador County sparking the Butte Fire. The Butte Fire burned over 70,000 acres in Amador and Calaveras Counties, killed two people and destroyed hundreds of structures. Cal Fire conducted an investigation of the origin and cause of the Butte Fire. PG&E was not criminally prosecuted for the Butte Fire. A civil suit was brought against PG&E by the victims of the Butte Fire in the Sacramento County Superior Court. Early in the Camp Fire Investigation, records from the Butte Fire civil suit, including investigative reports and deposition transcripts, were obtained and reviewed.

The investigation into the Butte Fire focused on the PG&E vegetation management practices in the Stockton Division. Similar to the ETPM in the transmission division, PG&E had written policies for distribution vegetation management. Much like the Camp Fire investigation, the evidence uncovered during the Butte Fire investigation established as a result of reductions of the vegetation management budget, the written vegetation management policies were not being followed; vegetation management inspections and patrols were being conducted by unqualified, untrained, inexperienced personnel;[125] and PG&E was instructing those tree inspectors to ignore all but the most dangerous conditions. Additionally the evidence established PG&E had no quality assurance programs to monitor and evaluate the vegetation management program. As with the transmission inspection and patrol policies in effect at the time of the Camp Fire, PG&E relied solely on the observations of unqualified, untrained and inexperienced inspectors to identify dangerous conditions.

XVI. DROUGHT AND WIND

Since at least 2013, PG&E was aware of increased risk of catastrophic wildfires. Chapter 11 of the 2017 RAMP begins:

> "Extreme weather, extended drought and shifting climate patterns have intensified the challenges associated with wildfire management in California. Environmental extremes, such as drought conditions followed by periods of wet weather, can drive additional

[125] The vegetation management program was conducted by hired contractors.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

> vegetation growth (fuel) and influence both the likelihood and severity of extraordinary wildfire events.
>
> Over the past five years, as we have seen across California, inconsistent and extreme precipitation, coupled with more hot summer days, have increased the wildfire risk and made it increasingly more difficult to manage.
>
> The risk posed by wildfires has increased in PG&E's service area as a result of an extended period of drought, bark beetle infestations in the California forest and wildfire fuel increases resulting from record rainfall following the drought, among other environmental factors. Other contributing factors include local land use policies and historical forestry management practices. The combined effects of extreme weather and climate change also impact this risk."

According to the United States Geological Survey[126] three of the five worst droughts[127] in California history have occurred since 2001. The three droughts listed are 2001-2002, 2007-2009 and 2012-2016. According to the U.S Drought Monitor[128] in 2012 the Feather River Canyon was classified as "Abnormally dry." By 2013 the Feather River Canyon was classified as "Severe Drought." By 2014, and through 2015, the Feather River Canyon was given the highest drought classification: "Exceptional Drought"

According to an internal PG&E presentation from late 2013 entitled "Wild Fire –Enterprise Risk", PG&E was already aware of the heightened fire risk. "Wild Fire risk in California is increasing due to weather conditions and resulting record low fuel moisture content. Fire activity has seen a significant increase in 2013 as compared to 2012 with PG&E responding to 36% more fires YTD. Acreage impact as compared to 2012 is almost doubled."

According to the presentation PG&E created "administrative zones for areas at highest risk of a major wildland fire and proactively addresses these areas through operational and asset management standards. Current administrative wildland fire boundaries encompass geographies which exhibit a combination of active fire history, fire prone vegetation, terrain that promotes rapid fire spread, and/or locations specified by existing regulations for special treatment." The presentation includes a map of "Wildfire Administrative Areas at PG&E." The Feather River Canyon, from approximately Beldon to Lake Oroville appears to fall within a Wildfire Administrative Area. Under the title "Lessons Learned: Previously-Approved Mitigation Activities" bolted connector inspection/replacement is listed with the note "Wild Fire zones are now a consideration for program rollout prioritization."

Also in 2013 PG&E published the "Wild Fire Administrative Zones in PG&E's Service Area" map. According to this map the Feather River Canyon is falls within an "Other Wildfire Area." In 2014 PG&E Transmission Asset Strategy compiled a list of all transmission structures located within the boundaries of a designated wild fire area. Approximately 85 towers on the Caribou-Palermo line between the Butte-Plumas County line and the Big Bend Substation were included

[126] ca.water.usgs.gov
[127] measured by precipitation and runoff
[128] https://droughtmonitor.unl.edu

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

on the list. Tower 27/222 for some unknown reason was not on the list, but Towers 22/187 through 23/192 (which did not exist in 2014 because they had collapsed in 2012) were listed.

According to PG&E documents, including publicly available reports, PG&E has its own meteorological department and continuously monitors data from both its own weather stations and government weather stations. The closest weather station to Tower 27/222 is the Jarbo Gap RAWS[129]. Meteorologist Kris Kuyper analyzed data from the Jarbo Gap RAWS, as well as other government sources including the National Oceanic and Atmospheric Administration and the U.S. Drought Monitor and PG&E. According to Kuyper's analysis, although the winter of 2016-17 was very wet and broke the 2012-16 drought, the winter of 2017-18 was dry "abnormally dry." Although the season as a whole was abnormally dry, March and April were wet. As a result of spring rains, native grasses grew in abundance. In May the rain disappeared.[130] From June 1, 2018 through November 8, 2018, there was no measurable rain in Paradise.[131]

Because of the lack of rain, by November 8, 2018 the EDDI[132] listed the Feather River Canyon in the ED3 or ED2 drought categories[133]. Based upon the lack of rain and the EDDI statistics, Kuyper opined that the dry air was "taking moisture from the plants, draining the plants of their moisture, making them even drier than they should have been." As a result, on November 8, 2018 the Feather River Canyon was approaching "record dry levels of fuel (trees, shrubs, bushes, grasses).[134]

According to data from the Jarbo Gap RAWS station from 9:13pm on November 7, 2018 until 5:13am on November 8, sustained winds were between 24 mph and 32 mph with gusts between 41 mph and 52 mph. According to Kuyper this wind pattern was not unusual for Jarbo Gap. Based upon analyzing six years of wind data from the Jarbo Gap RAWS Kuyper determined that Jarbo Gap experiences this wind pattern approximately 20 times per year,[135] the majority of which occur from October through February.[136]

According to Kuyper, the Jarbo Gap winds occur as the result of a difference in atmospheric pressure between east of the Sierra Nevada and west of the Sierra Nevada. Higher pressure over the Great Basin in Nevada forces air west, towards lower pressure on the west side of the Sierra Nevada. The Sierra Nevada blocks this, except through gaps and passes such as the Feather River Canyon. The air is then channeled through the gaps and passes, which accelerates the flow of air. Cold air flowing downhill also causes acceleration.

[129] Remote Automated Weather Station
[130] Average rainfall in Paradise area in May is approximately. 5". May, 2018 rainfall for Paradise was .14".
[131] Average rainfall in Paradise area in October is approximately 3".
[132] Environmental Demand Drought Index, esrl.noaa.gov
[133] On a scale of 0 – 4. 0 being normal, ED2 is defined as "Severe Drought." ED3 is defined as "Extreme Drought." 4 being "Exceptional Drought."
[134] https://gacc.nifc/oncc/fuelsFireDanger.php
[135] From 2013-2019, 118 individual events with wind gusts over 45mph, 66 individual events with wind gusts over 50 mph.
[136] October averages more than 5 events per month, November averages under 2.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

Internal PG&E records established PG&E has known since the mid-1980s that high winds constitute a serious threat to its electric transmission assets. In 1990, PG&E Research and Development published the "Extreme Wind Speed Estimates Along the PG&E Transmission Line Corridors" report. The report was the result of a five year study, recommended by the CPUC, "to assess the adequacy of PG&E's power wind loading design criteria" after five separate incidents in which transmission line assets were toppled during wind storms in 1982 and 1983. The report mainly focused on the 500kV transmission line corridors. According to the report "Electric transmission lines in the PG&E service area were originally designed to withstand wind loadings associated with 1-minute average gusts to 57 miles per hour (mph). The report concludes the original PG&E wind loading criteria for transmission lines was inadequate at some locations and needed upgrade. According to the reports, from November 1984 through November 1985 PG&E had wind meters installed at the Cresta Reservoir and the Rock Creek Reservoir in the Feather River Canyon. Both locations recorded gusts in excess of 50 mph hour in November, 1984 (54.6 mph) and February, 1985 (70.9 mph).

In 1999, PG&E Technical and Ecological Services published an updated "Extreme Wind Speed Estimates Along the PG&E Transmission Line Corridors." The report stated "Electric transmission lines throughout the PG&E service area were originally designed to withstand wind loadings of 70 miles per hour." No explanation was given as to why the original wind loading design increased from 57 miles per hour (as stated in the 1990 report) to 70 miles per hour between 1990 and 1999. Although not stated as a justification for the update, the report did note that severe storms in January, March and December of 1995 caused approximately $100 million damage to electrical transmission and distribution systems. The report mainly focused on the 500kV transmission line corridors and Bay Area, while noting a lack of wind data from the Sierra Nevada and northeastern areas. The report did include the 1984-85 wind speed data from the Rock Creek and Cresta reservoirs.

The 1999 report included a section entitled "Santa Ana Type Winds." According to the report Santa Ana type winds occur because "High pressure frequently forms in the Great Basin area of the Rockies in the vicinity of Utah and Nevada during winter months. When pressure builds beyond a critical point, air spills through the mountain gaps, gaining momentum as it flows to lower elevations." The report recognized although mainly thought to be a Southern California phenomenon, Santa Ana type winds do occur in Northern California, mainly in the Tehachapi region near Bakersfield.

In 2015, PG&E Applied Technology Services published the "Extreme Wind Speed Estimates Across the PG&E Service Territory" report. This report updated and built upon the previous wind reports. According to the report "major wind storms" occurred in December, 2005, January, 2008, October, 2009 and January 2010. The report did not mention the December, 2012 wind event that toppled five Caribou-Palermo line towers.[137]

The 2015 wind report refers to "Offshore/Northerly Wind Events." According to the report:

[137] According to historical wind data for RAWS available at https://wrcc.dri.edu the maximum wind gust speed recorded by Jarbo Gap RAWS on December 21, 2012 was 30 miles per hour.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

> These events occur when surface high pressure develops north or east of the territory, which sometimes occurs as storm systems bypass California to the north and drop southeast of the territory generally east of the Sierra Nevada. This pattern produces a northerly to easterly pressure gradient and offshore winds. When flowing downhill these winds are known as 'katabatic' winds and are also named by geographic location in some instances (e.g. Diablo, Mono).

The wind report does not recognize the Feather River Canyon/Jarbo Gap winds. The wind report does conclude:

> "The quality and precision of the data is proportional to the density of weather stations in the analysis and is generally higher in the Bay Area and Central Valley where station coverage is robust and lower in the Sierra Nevada and Coastal Ranges. Since wind speeds were produced from the RAWS in the more remote terrain in the Sierra Nevada and north and south Coast Ranges and since RAWS are more often located in more exposed terrain, the isotachs[138] … typically represent ridge top winds."

According to the report the "most notable offshore wind event in recent history occurred on November 30 to December 1, 2011, which produced katabatic winds across the Sierra Nevada and the elevated terrain of the Bay Area and Central Coast. Wind gusts from 40-60 mph were observed across the central and southern Sierra Nevada foothills…" According to historical wind data from the National Oceanic and Atmospheric Administration gusts of 66 mph were recorded at Jarbo Gap on November 30, 2011.

The report also concluded "Offshore or Northerly wind events are typically associated with extreme fire danger and can be strong enough to produce widespread damage to distribution and transmission infrastructure."

This natural phenomenon has been occurring for many years. Exponent also analyzed the wind in the Feather River Canyon. According to the Exponent Report, the Caribou-Big Bend section of the line experienced the highest average wind speed, the highest average time at high wind conditions and the highest percentage of towers that experience more than 605 hours of high wind conditions per year of the comparison transmission lines.

During its investigation, the CPUC asked PG&E if PG&E had "ever done a wind loading study" on Tower 27/222. In its written response[139] PG&E stated "A wind loading study was completed as part of the initial installation of the transmission line between 1919 and 1921" and "PG&E's understanding based on its records is that no additional wind loading studies were performed on the two towers (27/222 and 27/221) since the installation of the transmission line between 1919 and 1921. PG&E's transmission line design criteria do not require analysis on structures for which no significant work is proposed." According to the design criteria listed in PG&E's written response, the towers were designed to withstand winds of approximately 56 miles per hour. During the short period of time that wind meters were installed at the Cresta Reservoir and

[138] An isotachs is a line on a map connecting points of equal wind speed.
[139] CPUC Data Request SED-002, Question 27.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

the Rock Creek Reservoir in the Feather River Canyon, PG&E recorded wind gusts over 70 miles per hour. From 2013 to 2019 the Jarbo Gap RAWS station recorded wind gusts over 50 miles per hour over 60 times. Despite the fact the towers of the Caribou-Palermo line were routinely subjected to winds at or near their design criteria, PG&E never inspected or tested any of the towers or components for wind damage.

Based upon the meteorological data, PG&E knew that the Feather River Canyon was a drought ravaged tinderbox. Based on their own reports, PG&E also either knew or should have known the Feather River Canyon experiences katabatic winds during the fall when the fire danger is highest. Despite its own meteorological data, PG&E chose not to replace the aged and deteriorating conductor and components on the Caribou-Palermo line.

XVII. PUBLIC SAFETY POWER SHUT-OFF

On November 6, 2018, PG&E issued a Public Safety Power Shut-Off (PSPS) notice to approximately 70,000 PG&E customers in nine California counties, including Butte. The PSPS notified customers of potential de-energization of power lines on November 8, 2018, based upon meteorological forecasts. On November 6 and November 7 PG&E went to great lengths to notify customers in the nine counties of the potential de-energization[140] on November 8, 2018. On November 8, 2018 PG&E decided not to de-energize power lines.

An initial focus of the Camp Fire Investigation was the decision by PG&E not to de-energize power lines in the Feather River Canyon prior to ignition of the Camp Fire on November 8, 2018.

The PG&E PSPS Policy was enacted in September, 2018. A PSPS guide was published on the PG&E website {Attachment - Public-Safety-Power-Shutoff-Policies-and-Procedures-September-2018}in September 2018. PG&E's PSPS Policy was enacted based upon a CPUC decision in July, 2018[141] to allow electrical utilities to pro-actively de-energize[142] at-risk power lines during wind events. The PSPS guide publicly available on the PG&E website broadly described the meteorological conditions necessary for de-energization. The publicly available PSPS guide used the term "power lines" and did not differentiate between distribution and transmission lines or by voltage or area.

Based upon the meteorological data, {Attachment - Jarbo Gap Weather Station Readings} the conditions in the Feather River Canyon in the hours prior to the failure of the C hook on Tower 27/222 exceeded the wind conditions necessary for de-energization under the publicly posted PSPS guidelines.

However, the Butte County DA obtained copies of the PSPS policy filed by PG&E with the CPUC. The actual PSPS policy was much more detailed and specific than the guide published

[140] In layman's terms shutting off the power.
[141] CPUC Resolution ESRB-8.
[142] In layman's terms shutting off the power during high wind events to avoid fires caused by contact between energized power lines and objects such as vegetation.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

on PG&E's public website. As opposed to the publicly posted PSPS guide, the official PG&E PSPS policy differentiated between transmission and distribution lines. The actual policy specifically and explicitly exempted all 115kV, 230kV and 500kV transmission lines from the PSPS. After comparing the PSPS guide published on the website with the actual PSPS policy, it appears the authors of the public PSPS guide, in an effort to make the guide understandable to the average PG&E customer, simplified the policy to an extent that became misleading.

Additionally, the transmission and distribution lines in the Feather River Canyon were not within the area of PSPS program. According to internal PG&E documents, inclusion of 115kV transmission lines in the new PSPS program was initially considered. The committee drafting the PSPS policy explored three transmission line options: 1) all 70kV and below; 2) all 115kV and below; 3) all 70kV and below and some 115kV depending upon factors such as location within high fire threat areas. Ultimately the committee settled on all 70kV transmission lines and below and exempted all 115kV transmission lines from the PSPS program. PG&E did not provide any written documents explaining or justifying this decision. However, based upon all the documents provided, there was no evidence the decision to exempt all 115kV transmission lines and above was reckless or criminally negligent. Based upon the 2018 PG&E PSPS policy, the Caribou-Palermo line was not subject to de-energization prior to the ignition of the Camp Fire and was therefore not included in any PSPS. However if PG&E had included 115 kV lines, the Caribou-Palermo line should have been included based on the extreme wind conditions in the Feather River Canyon.

XVIII. KNOWLEDGE OF RISK/CONSEQUENCE

Internal PG&E documents show that by 2006 PG&E was aware that equipment failure (risk) causes fires. According to the October 2006 Risk Analysis of Urban Wild land Fires, written by the PG&E Enterprise Risk Management Committee, in 2005 PG&E electrical equipment failures caused 20 fires. That same document defined the Urban Wild Land Interface area as the "geographical area where structures and other human development meets or intermingles with wild land or vegetative fuels" and lists aging infrastructure as a potential "gap" in PG&E's fire mitigation efforts. Another potential gap identified by PG&E is "our asset strategy to address urban wildland fires is limited." To mitigate this potential gap the report included the following "Proposed Solutions:"

Identify urban wildfire geographic area
Identify quick result items such as:
- Perform patrols/inspections just before fire season
- Replace parallel groove (PG) connectors
- Inspect equipment that could be high risk.

The 2009 Enterprise Risk Management Urban Wildland Fire Risk Review report written for the Executive Management Committee specifically listed as fire risk drivers:

Failure to perform quality inspections or workmanship
Inadequate procedures relating to fire danger
Failure to consider local conditions in design standards

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

Improperly maintained equipment
Failure to replace aging equipment.

Under "Current Mitigation Activities," the report specifically listed "Equipment maintenance and replacement programs, including patrols and inspections."

These themes were repeated in Enterprise Risk Management (ERM) reports for several years.

"EMC: Electric T&D Asset Road Map," an internal PG&E document believed to have been published within the company in 2010, stated:

> "For more than twenty years, PG&E's asset management practices have focused on maximizing the utilization of T&D[143] assets and reducing capital investments to the greatest extent possible. Only recently has the Company utilized an alternate approach that places a higher value on reliability and operational flexibility of the electric T&D system. It is recommended that PG&E continue this current approach to pursue a combination of measures designed to upgrade and modernize its aging electric T&D assets."

In the section of the document entitled "Aging Assets" it is stated:

> "While much has been done in the last several years to improve the design, maintenance and operations of the system, the Company's electric T&D assets comprise an aging system that it operated close to its design capacity limits. Many of our electric T&D facilities were installed in the 1950s and planned lifetime design for these facilities is 40 years. Continuing to rely on aging facilities has increased the Utility's risk of equipment failure and extended service interruptions. Additionally, the repair time and costs for failed equipment is much higher than planned replacement."

In December 2018, in response to questions from the Honorable William Alsup, Judge of the United States District Court, Northern District of California, PG&E submitted to the Federal District Court a list of all fires caused by PG&E 2014-2017. 2017 {Attachment – PGE caused fire 2014-17}. According to the list there were eighteen fires caused by equipment failures on transmission lines.

The list submitted to the Federal District Court did not include the 2008 Rock Fire and the 2018 Murphy Fire,[144] both of which occurred in the Feather River Canyon and both of which were caused by equipment failures on transmission lines. The Rock Fire was caused by the failure of a connector on a tower on the Caribou-Palermo line. The Murphy Fire was caused by the failure of a connector on a tower on the Caribou-Table Mountain 230kV transmission line. In both fires the failure of a connector allowed an energized jumper conductor to make contact with the steel tower structure and sent a shower of molten metal onto dry vegetation at the base of the tower.

In the 2017 RAMP, PG&E clearly identified equipment failure as a known cause of fire. According to section C of Chapter 11, Drivers and Associated Frequency, there were an average of 243 fires per year during 2015-16 causes by PG&E. Of those 243, on average 82.5 (33%)

[143] PG&E abbreviation for Transmission and Distribution
[144] The Murphy Fire occurred on August 6, 2018. The origin of the fire was directly below a PG&E transmission tower – not the Caribou-Palermo line – just west of Belden in the Feather River Canyon. The fire was caused by equipment failure – specifically failure of a connector – which allowed an energized 230kV conductor to come into contact with steel tower structure.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

were caused by equipment failure. Equipment failure caused fires are broken down into Conductor (29.5 per year), Connector/Hardware (15.5 per year) and Other (37.5 per year).

The evidence clearly established PG&E has been aware of the risk/consequence connection between equipment failure and fire since at least 2005. Similarly, the evidence also clearly establishes that PG&E was aware of the risk/consequence connection between aging infrastructure and equipment failure.

In 2009 PG&E retained Quanta Technologies to review, assess and critique the electrical transmission system. In 2010 Quanta submitted to PG&E the Transmission Line Component Management Report. The report was divided into a series of individual reports. Each report focused on a component of the electrical transmission system. Not all of the reports were relevant to the risk of equipment failure on transmission towers.

Relevant individual reports and information in those reports was summarized:

Transmission Line Component Management Executive Summary

> "As part of a comprehensive effort to manage its infrastructure PG&E Transmission Asset Management has begun study of all components of transmission line infrastructure, both overhead and underground, to develop an understanding of the component behavior over its installed service life. The intent of this effort is to ultimately develop an understanding of what the expected service life of line components should be, given normal operating and maintenance practices of the service life. This understanding also drives decisions of what the "normal" operating and maintenance practices should be to allow a component to survive to an "end of service life" condition, barring external events that cause sudden or catastrophic failure of a component (e.g. severe weather event, vehicular impact)."
>
> "Certain aspects of a utility maintenance program can be characterized as following a "run to failure" philosophy. The practice of allowing equipment to fail often applies to utility equipment that is large in total population but low in overall impact to the system and/or customer reliability."
>
> "Run to failure as a maintenance philosophy has a place in the overall maintenance program of a utility. The equipment managed under this philosophy, however, is generally high volume, low risk facilities. Operational risk, technical effectiveness, and financial considerations drive the determination."

Conductor and Fittings

> "Based on PG&E conductor inventory data, the average age of 115 kV copper conductor on the PG&E system is 75 years. Conductor other than copper at 115 kV averages 36 years of age.[145]"
>
> "The overall age of conductor is a concern to most utility asset managers and the concern is based primarily in lack of knowledge of what is to be expected from aging conductor."

[145] The conductor on Tower 27/222 was aluminum.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

"Greatest risk of failure in transmission conductors is thought to be with the oldest steel reinforced conductors[146]."

Insulators

"…the failure rate of porcelain increases at a faster rate as they age beyond 50 or so years. Nonetheless, even with increasing failure rate, porcelain is only projected to a rate of 0.06 failures per at age 60."

"Industry has come to expect a service life for porcelain and glass insulators beyond 50 years. The service life is contingent of course on the original quality and proper application of the units."

"…lack of data consistency and accuracy result in the need for many assumptions to address data voids. Accurate information on insulator type (porcelain, glass, poly), vintage, manufacture, date of installation, and location is critical to building a dataset that will facilitate meaningful statistical analysis over the service life of the material."

Structures

63% of the 104 electrical utilities surveyed utilized routine climbing inspections as part of inspection policy. The average inspection period for climbing inspections was 4.2 years.

44.4% of PG&E 115kV structures were installed prior to 1931.

Component service life was calculated based upon condition and environment. Environment was further divided by "Mild," "Avg." and "Severe." For "Twr attachments : Susp/Jumper." for the condition "Wear" and environment "Wind run" the component life in years is Mild – 80 years, Avg – 57 years, and Severe – 35 years.

"With recognition of the issues associated with aging infrastructure, more attention is expected to be given to steel tower condition throughout the industry."

"Inspection, repair, and refurbishment of steel structures and associated components (guys, anchors, foundations, etc.) are a critical part of the ongoing maintenance and management of the transmission infrastructure. Normal aging and deterioration, coupled with years of inadequate inspection and maintenance, put many structure at a point of less that desired structural integrity."

"A comprehensive maintenance and inspection program for an aging structure population should include a diagnostic testing component, particularly when structures reach and age threshold that is appropriate. That threshold varies by many factors: geographic location and associated environmental conditions, age of infrastructure, proximity to other infrastructure, historical performance of similar vintage structures in the company, etc."

[146] Steel reinforced conductor has a solid steel core to increase the strength of the conductor. The conductor on Tower 27/222 was steel reinforced.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

> "An effective strategy for structure and foundation management would include elements such as:
>
> > Routine visual inspections by ground patrol and aerial patrol as part of general line inspection process,
> >
> > Comprehensive climbing inspection at 3-5 year intervals,
> >
> > ….
> >
> > Laboratory testing of components removed from service as part of repair or replacement work to determine overall condition and remaining strength of material."
>
> "For a population of structures and foundations such as exists at PG&E, the leading criterion for determining inspection and testing targets, would initially be age. With a structure population age span of over 100 years (according to inventory records), a programmed sampling of the population over 80 years of age to test structure and foundation integrity would be an appropriate beginning."
>
> According to Figure 9.1[147] the only structures still in use at the time of the report that were built prior to 1923 (87 years of age at time of report) were 115kV structures. According to a footnote to Figure 9.1 and subsequent figures in section 9, there are 6908 115kV structures for which PG&E has no age data. According to other PG&E reports there are 18,800 115kV structures in the PG&E inventory.

The evidence developed during this investigation clearly establishes that PG&E essentially ignored the recommendations of the Quanta Reports. PG&E did not adopt any new policies or procedures for inspection of the oldest transmission assets. There is no evidence of a programmed sampling of the oldest structures and foundations. Even the collapse of five Caribou-Palermo line structures in 2012 did not cause PG&E to take a closer look at one of their oldest transmission assets. In 2010 the TLine Structures Committee met to review the Quanta Reports. Neither The Senior Engineer nor the former Transmission Specialist, members of the TLine Structures Committee and "Required Attendees" of the 2010 meeting, had any recollection of the alleged meeting or any recommendations regarding the Quanta Reports made by the committee. Neither was able to shed any light on the question as to why the recommendations of the Quanta Reports were not adopted. According to the Senior Director of Transmission Asset Management, who was not involved in the TLine Structure Committee at the time of Quanta Reports, the recommendations of the Quanta Reports were ignored because "we could not rely on the information in the Quanta study." The Senior Director explained:

> "The Quanta study did not look at asset data from those utilities but rather business practices from those utilities. The only age information and corresponding failure data that was used in that study was associated with the subset of assets that failed in a two-year period within PG&E and made some assumptions that made the statistical analysis incorrect. So it wasn't sufficient for us to justify significant amounts of investments in the

[147] A line graph displaying the age distribution of PG&E transmission structures.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

> future, and we needed to do additional analysis in order to build the case for our regulators to be able to justify requesting authorization to be able to make additional investments in the infrastructure based on the results of that bullet point at a later date."

The Senior Director of Transmission Asset Management also stated "I didn't have high confidence in the Quanta study so we intended to do additional benchmarking and collaboration in the industry in order to come up with more robust information."

In addition to general knowledge of the problems of wear and failure in aging infrastructure, PG&E had specific knowledge that C hooks and hanger holes suffer rotational body on body wear as far back as 1987.

According to internal PG&E documents, in 1987 a transmission line crew noticed concerning wear patterns on both the C hooks and the hanger holes on the Oleum-G transmission line[148]. The transmission line supervisor removed the C hooks and hanger holes from the tower structure and sent them to the PG&E Lab for analysis. The PG&E lab evaluated the C hooks (referred to as J hooks in the report) and hanger holes (referred to as attaching plates) and issued a Laboratory Test Report on February 9, 1987. According to the report "Both of the J-Hooks and their attaching plates had grooves worn in them and there was concern that they may not be able to hold the weight of insulator strings that are suspended from them." The lab report included photographs of the C hooks and the hanger holes. Figure 1 of the report is a picture of one of the C hooks. According to the caption to Figure 1 "As shown in the Figure above a wear pattern was formed in the bowl-saddle of the J-hook. This was possibly caused by the insulator string swinging in the wind over a period of time." Figure 2 of the report is a photograph of one of the hanger holes. According to the caption to Figure 2 "This figure shows the key-hole wear in the plate eye caused by the J-hook while in service."

In 2011, PG&E transmission line crews working in the South Bay, observed similar wear on hanger holes on the Jefferson-Hillsdale transmission line. Photographs were taken of the wear and sent to PG&E engineers. After reviewing the photographs a Supervising Engineer responded via email "Looking at the photo of the hanger plate. I would recommend changing it to a new plate. It appears that there is a groove cutting into the plate probably caused by years of rubbing between the c-hook and the plate."

In March of 2018, PG&E transmission line crews working on a transmission line in the East Bay observed similar wear on hanger holes. The transmission line supervisor, removed the hanger plates from service and sent them to the PG&E Lab for review and analysis. On June 20, 2018, the PG&E Lab issued a report entitled "Metallurgical Evaluation of Insulator Suspension Plates from the Parkway-Moraga 230 kV line at structure 020/115. The report found that "the wear was attributed to wind-driven swinging of the insulators (wind-sway)." The report opined a wear rate of .007" per year and a useful life of the hanger plates of 97-100 years based upon the wear rate and the expected strength of the remaining metal.

The evidence establishes that PG&E is aware that wear increases with age, the possibility of equipment failure increases relative to the amount of wear, and, ignition of a fire is a definite

[148] The Oleum-G transmission line is located in Contra Costa County, just south of the Carquinez Bridge and near the community of Valona. The Oleum-G line is one of the segments of the original Caribou-Valona line still in service. It is believed, but not confirmed that the tower from which the C hooks and hanger holes were removed was an original, 1921 Caribou-Valona tower and the worn C hooks were vintage 1921.

Comment Set D11 – Matt Solomon (continued)

D11-20 (cont'd)

possible consequence of equipment failure. It is clear, based upon the internal PG&E documents that PG&E has clearly understood, at least since 2006, the correlation between aging infrastructure and fire.

The Quanta Reports and internal PG&E reports clearly established a connection between wear and inspection/patrol. From the October 2006 Risk Analysis of Urban Wild land Fires through the 2017 RAMP inspection and patrol are specifically listed mitigation to fire threat. Since 2005 PG&E electric transmission inspection, patrol and maintenance policies are set out in the Electric Transmission Preventative Maintenance Manual (ETPM). According to section 1.2 of the ETPM "Inspection and patrol procedures are a key element of the preventive maintenance program. The actions recommended in this manual reduce the potential for component failure and facility damage and facilitate a proactive approach to repairing or replacing identified, abnormal components."

XIX. PERSONAL LIABILITY FOR PG&E EXECUTIVES

During the course of the Camp Fire investigation, many witnesses from PG&E were interviewed and examined under oath by the Grand Jury. Many, many internal discussions were had as to whether there was sufficient evidence to indict any individual PG&E personnel or executives. It was finally determined based on the current state of the law in California and the facts discovered during the investigation that there was insufficient evidence to proceed against individuals.

A. The Law:

Many people have heard of or understand the concept of "Respondeat superior" (Latin for "Let the Master answer") in which an organization's top executives are held **vicariously liable** for the actions/omissions of their subordinates regardless of the executive's personal participation or knowledge. However this is a **civil concept** that does not apply in **criminal** cases. The leading California case in the area of **corporate officer criminal liability** is *Sea Horse Ranch, Inc. v. Superior Court* (1994) 24 Cal. App. 4th 446, which states: "[A]n officer of a corporation is not criminally answerable for any act of a corporation in which he [or she] is not personally a participant. In the context of negligent homicide such an officer would be said not to be liable unless he or she was personally aware of the omissions or other behavior that gives rise to the criminal negligence. The decisions involving criminal liability of corporate officers, either expressly or impliedly, focus either on the officer's direct participation in illegal conduct, or his or her knowledge and control of the illegal behavior. **The mere fact of the officer's position at the apex of the corporate hierarchy does not automatically bestow [criminal] liability**."

B. The Facts:

Based upon the forensic analysis of the failed "C" hook from the suspect tower, it was the opinion of the experts consulted that the wear which caused the hook to break occurred gradually over almost 100 years. It is our belief the wear had been visible for at least 50 years. Over the past 50 years scores of PG&E employees should have been in a position to observe the wear. However, none of the employees documented the wear. Since nobody apparently noticed the wear, it would be impossible to prove any single person was negligent. Additionally PG&E

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culture made decision-making "by committee" a standard, virtually eliminating individual responsibility. A "silo mentality" also pervaded the company in which departments and management groups did not share information, goals, tools, priorities and processes with each other. (E.g. The PG&E Tower Division took responsibility for maintenance of the steel tower structures. The PG&E Line Division took responsibility for the maintenance of the power lines. The "C" hooks seemed to fall between their two responsibilities – i.e. neither took responsibility for the hooks, assuming the other division was responsible, which left the hooks as orphan equipment.)

C. Conclusion:

Many of the decisions that ultimately lead to the Camp Fire were made in the 1980s, 1990s and 2000s. It would be almost impossible to prove a person making decisions in 1995 knew the decision was creating the risk of a catastrophic fire over 20 years later and either disregarded or ignored that risk. **But the corporation as an entity is tasked with that knowledge and reckless behavior and was so indicted.**

XX. ELEMENTS OF THE OFFENSES

Unlawfully Causing a Fire to a Structure/Forest land (Pen Code § 452(c))

a. PG&E set fire to, or burned, or caused the burning of a structure or forest land or property;
b. PG&E did so **recklessly**;
c. The fire burned an inhabited structure or the fire caused great bodily injury to another person.

Definition of Recklessly

A corporation acts recklessly when:

a. It is aware that its actions present a substantial and unjustifiable risk of causing a fire.
b. It ignores that risk
c. Ignoring the risk is a gross deviation from what a reasonable person would have done in the same situation.

Involuntary Manslaughter (Pen. Code §192(b))

a. PG&E had a legal duty to the decedents
b. PG&E failed to perform that legal duty;
c. PG&E's failure was **criminally negligent**;
d. PG&E's failure caused the death of decedents

Definition of Criminal Negligence

a. Criminal negligence involves more than ordinary carelessness, inattention, or mistake in judgment. A corporation acts with criminal negligence when:

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i. It acts in a reckless way that creates a high risk of death or great bodily injury;
ii. A reasonable person would have known that acting in that way would create such a risk.

b. In other words, a corporation acts with criminal negligence when the way it acts is so different from how an ordinarily careful person would act in the same situation that its act amounts to disregard for human life or indifference to the consequences of that act.

XXI. DUTY

On September 24, 2016, the Governor signed 2016 Cal SB 1028. SB 1028 added Chapter 6 to division 4.1 of the California Public Utilities Code. One of the newly created sections was 8386, which took effect on January 1, 2017. Section 8386 created a statutory duty on electrical utility companies. Section 8386(a) states "Each electrical corporation shall construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfire posed by those electrical lines and equipment."

California Public Utilities Code section 451, enacted in 1951 and amended in 1977, states "Every public utility shall furnish and maintain such adequate, efficient, just, and reasonable service, instrumentalities, equipment, and facilities, including telephone facilities, as defined in Section 54.1 of the Civil Code, as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public."

The California Public Utilities Commission promulgates regulations known as General Orders (GO). GO 165 section IV states "Each utility shall prepare and follow procedures for conducting inspections and maintenance activities for transmission lines."

GO 95 includes multiple rules that apply to electrical transmission line safety, including:

1) Rule 31.1
   Electrical supply and communication systems shall be designed, constructed, and maintained for their intended use, regard being given to the conditions under which they are to be operated, to enable the furnishing of safe, proper, and adequate service. For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice for the given local conditions known at the time by those responsible for the design, construction, or maintenance of communication or supply lines and equipment.
2) Rule 31.2
   Lines shall be inspected frequently and thoroughly for the purpose of ensuring that they are in good condition so as to conform with these rules. Lines temporarily out of service shall be inspected and maintained in such condition as not to create a hazard.
3) Rule 18
   Each company (including electric utilities and communications companies) is responsible for taking appropriate corrective action to remedy potential violations of GO 95 and Safety Hazards posed by its facilities.

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4) Rule 44.3
Lines or parts thereof shall be replaced or reinforced before safety factors have been reduced (due to factors such as deterioration and/or installation of additional facilities) in Grades "A" and "B" construction to less than two-thirds of the safety factors specified in Rule 44.1 and in Grade "C" construction to less than one-half of the safety factors specified in Rule 44.1. Poles in Grade "C" construction that only support communication lines shall also conform to the requirements of Rule 81.3A. In no case shall the application of this rule be held to permit the use of structures or any member of any structure with a safety factor less than one.

XXII. CONCLUSION

The evidence developed during this investigation clearly established that the reckless actions of PG&E created the risk of a catastrophic fire in the Feather River Canyon, that PG&E knew of that risk and PG&E ignored the risk by not taking any action to mitigate the risk.

The C hook that broke was at least 97 years old. The exact age of the C hook is unknown because PG&E has no record of the hook. Ninety-seven (97) years is assumed because the Caribou-Valona transmission line, of which the Caribou-Palermo line is a segment, went into service in 1921. The records from the Great Western Power Company establish the entire line was built between 1918 and 1921. There are no records of when each tower was built. It is possible Tower 27/222 was built in 1918 and the C hook had been hanging for 100 years as of November 8, 2018. The same is true of the insulator string and the jumper conductor hanging from the C hook.

PG&E also has no records, and no idea, by whom the C hook was made, and more importantly, of what type of metal and how the C hook was made. The type of metal and the process of manufacture are what determines the hardness of metal. The transposition towers were designed to allow for movement of the conductor and insulator. The fact the C hook was constantly rubbing back forth against the hanger hole was known. The concept of body-on-body wear from constant rubbing together of two metals is a long established and well known phenomenon. Also long established and well known is the fact the various hardness of the metals rubbing together plays a key role in the body-on-body wear. The fact that PG&E relied on a 97-100 year old C hook it knew nothing about to hold an energized 115kV conductor is, by itself, negligent and reckless.

It is also disturbing that PG&E's only information of the composition of the conductor running through Tower 27/222 comes from a 1922 article in an engineering journal. A conductor is the wire that carries electricity from Point A to Point B. A conductor is the most important component of the transmission system. Everything else in the transmission system is designed around the conductor. PG&E has owned the Caribou-Palermo line since 1930. Based upon the lack of records PG&E has never made any attempt to inventory and catalogue the conductor. The fact that PG&E was using a 97-100 year old conductor for which they knew almost nothing is evidence of absolute indifference on the part of PG&E.

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Perhaps even more disturbing is the fact the conductor was aluminum reinforced with a steel core. 452.3 kcmil Aluminum Conductor Steel Reinforced to be exact. According to the Quanta report the average age of non-copper conductor was 36 years and the "greatest risk of failure in transmission conductors is thought to be with the oldest steel reinforced conductors" Although PG&E knew almost nothing about the conductor they did know it was at least 97 years old and made of steel reinforced aluminum. Despite this knowledge, PG&E did nothing and made no plans to replace that conductor. Even though because of updated NERC guidelines, PG&E was forced to replace conductor on some segments of the Caribou-Big Bend section, they elected to leave in place the 97-year-old aluminum steel reinforced conductor in other areas. The fact that the Senior Director of Transmission Asset Management preached the cost effective value of bundling projects but had no plans through 2022 to replace the 97-year-old aluminum, steel-reinforced conductor speaks volumes. What it says is that PG&E fully intended to run that conductor to failure. A reasonable person doesn't need an electrical engineer or Quanta Technologies to tell him that failure of an energized 115kV is extremely dangerous. PG&E's decision to leave the 97-year-old aluminum, steel-reinforced conductor in service was extraordinarily reckless.

In addition to basic engineering principles and common sense, PG&E had actual knowledge that both the C hooks and the hanger holes suffer wear and would eventually break if not replaced. At some unknown point between 1921 and 2018 somebody added the hanger plate brackets to Tower 27/222. Although there are no records of when or why the hanger plate brackets were added the only reasonable conclusion, based upon the wear observed on the original hanger holes, is somebody noticed the wear and was concerned enough to take action.

In 1987 PG&E had absolute knowledge of the wear to both the C hooks and hanger holes. The photographs in the 1987 Laboratory Report document channeling on the C hooks and key holing on the hanger holes similar to what was found on the Caribou-Palermo line. The similarities are not surprising because the transmission line on which the C hooks and hanger holes were found, the Oleum G line, was also part of the original Caribou-Valona line. The fact PG&E chose to only perform tensile strength testing in 1987 and did not subject the hooks and hanger plates to metallurgical analysis tends to show PG&E was not concerned with the wear or the expected useful life of the hooks and holes. Although in 1987 the evidence indicated at least some action was taken based upon the observed wear on the C hooks and hanger holes, when similar wear was found on hanger holes on the Jefferson-Hillsdale transmission line in 2011 the only action taken was the replacement of the hanger plates. According to the email string a PG&E Engineer correctly surmised that this wear was "probably caused by years of rubbing between the c-hook and the plate." Based upon the reaction, or lack thereof, to the photographs of the wear it appears that the wear was neither a surprise nor was it considered a major issue by PG&E engineers.

In 2018 the discovery of keyhole wear on hanger plates on the par transmission line caused enough concern that the Transmission Line Supervisor sent the plates to the PG&E lab for analysis and evaluation. Unlike in 1987, in 2018 the lab actually did a metallurgical evaluation. A PG&E lab scientist, with a PhD in Material Science and Engineering, used the available data

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to opine the keyhole wear was occurring at a rate of .007 inches per year. Based upon the average wear rate, the PG&E lab scientist determined the useful life of those hanger plates to be between 97 and 100 years. PG&E now had scientific confirmation of the body-on-body wear caused by the constant movement of the C hooks within the hanger holes and had an estimate of average wear per year. Nothing was done. The report was not distributed through the company and no targeted inspections of older C hooks and hanger holes were ordered. Based upon this report, a reasonable person, knowing they had C hooks which were 90+ years old hanging in hanger holes that were 90+ years old would have taken immediate action to determine the condition of those hooks and holes. The fact PG&E did nothing is evidence of complete and absolute indifference to the inherent danger of a C hook or hanger hole breaking.

Knowledge of the danger inherent in a C hook or hanger hole breaking is firmly established in PG&E documents. Since at least 2006, PG&E has recognized bad things, especially fire, happen when equipment failures occur on transmission lines. Everything in the overhead electric transmission system is designed to keep the conductor hanging in the air and away from persons or objects it could harm. Despite this knowledge PG&E put almost no effort into ensuring the components that keep the extremely dangerous overhead transmission lines hanging safely in the air were safe. Based upon the assertions of the PG&E personnel assigned to inspect and patrol the Caribou-Palermo line, it was not possible to assess the condition of the C hooks and hanger holes from either the ground or a helicopter flying 30 to 40 miles per hour a couple hundred feet above the line. Although claims it was impossible to assess the condition of the C hooks and hanger holes from a helicopter were completely discredited by BCDA investigators, the results of the post Camp Fire "enhanced" inspections and the Exponent Report clearly establish this was not solely a Caribou-Palermo line or Table Mountain Headquarters problem. This was a systemic PG&E problem.

During the post Camp Fire inspections, worn C hooks and worn hanger holes were found throughout the PG&E Overhead Transmission System. Despite the knowledge C hooks and hanger holes wear over time and despite the knowledge of the danger inherent in the failure of a C hook or hanger hole, the evidence clearly established nobody in PG&E was inspecting C hooks and hanger holes.

Despite the efforts of PG&E personnel to distance the company from the "Run to Failure" model, the evidence clearly establishes quite the opposite. PG&E had knowledge of the potential consequences of failure of the nearly 100-year-old C hooks, yet PG&E continued its policy of "Run to Failure."

Because nobody was looking at and assessing the C hooks and hanger holes, there were very few, if any, notifications/tags generated for worn C hooks or hanger holes. As a result, the need for replacement of C hooks and hanger holes never came to the attention of Transmission Asset Management. The lack of verified records for many of the older, acquired transmission lines made the problem worse. In large population areas PG&E was staffed by experts, trained and qualified engineers and specialists having decades of experience. In less populated areas, Transmission Line Management was almost completely dependent upon less qualified Troublemen, Linemen and Towermen and other personnel. For approximately ten years the

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M&C engineer assigned to the rural northern area was not an actual engineer and had no engineering education, training or background.

Very little effort was made to audit the lack of findings of line personnel. Equipment failure related outages were repaired as they occurred and no effort was made to investigate the root cause of the failure. Transmission Asset Management essentially employed a strategy of either intentional or incompetent ignorance.

In essence, in 1930 PG&E blindly bought a used car. PG&E drove that car until it fell apart. The average reasonable person understands the basic proposition that older equipment needs more attention. A reasonable person doesn't buy a used car blindly and without at least a test drive. A reasonable person doesn't drive that used car for 200,000 miles without, at the very least, changing the oil and rotating the tires. A reasonable person has the common sense to know that service and maintenance become more important as the car ages and the miles accumulate.

This is, in essence what PG&E did. PG&E bought a used transmission line in 1930. PG&E knew next to nothing about the transmission line and made no attempt to learn about the line. PG&E ran the line for 88 years with minimal maintenance and repair. But for the Camp Fire, PG&E would have continued using the line with minimal maintenance and repair. Catastrophic failure of the Caribou-Palermo line was not an "if" question; it was a "when" question.

Although Quanta Technologies is well known and well respected in electrical utilities circles, the conclusions and recommendations of the 2010 Quanta Reports were essentially common sense findings. The basic findings of Quanta were that PG&E's infrastructure was aging and continued use required increased inspections and maintenance. According to the Senior Director of Transmission Asset Management, the Quanta Reports were discredited because of issues with tower failure data. The PG&E criticisms of the Quanta Reports may have been well founded, but the areas criticized have very little relevance to the ultimate conclusion that the transmission assets were old and needed more attention and care. PG&E obviously didn't take issue with the Quanta conclusions about the age of the transmission infrastructure. Transmission Asset Management continued to cite the Quanta age data and conclusions in subsequent internal and regulatory documents for the next seven years.

The evidence established that despite common sense and the Quanta Report, PG&E went the opposite direction. PG&E internal emails and documents established that by 2007 PG&E was aware of the aging electric transmission infrastructure problem. Former employees of the predecessor departments to the current Transmission Asset Management established PG&E was aware of its aging electric transmission infrastructure problem by the early 1990s.

Despite its knowledge that many of its assets were built prior to World War 2 and despite its lack of knowledge of the components of acquired electric transmission lines, PG&E had consistently reduced the frequency and thoroughness of inspections and patrols on those lines. In other, more populated areas, PG&E routinely used the fact that transmission lines were built after World War 2 to justify repair and replacement.

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The 2014 RIBA process demonstrated how PG&E manipulated data to achieve desired results. It is beyond reasonable comprehension that a project to replace temporary poles not expected to stand through the winter scored lower for safety than an unnecessary project proposed solely to allow PG&E to transfer money spent from the expense budget to the capital budget. The fact that PG&E minimized and, ultimately, ignored a serious safety issue is reckless and negligent. The fact that they did so in the middle of a historic drought in an area known for consistent, extreme winds, is criminally negligent.

Despite its knowledge that its transmission assets were nearing the end of useful life and deteriorating PG&E decreased the expertise of the persons doing the inspections. This pattern continued after and in spite of the Quanta Reports. This is the exact opposite of how a reasonable person would have been expected to respond. The evidence clearly demonstrated PG&E understood the relationships between age of components and wear, wear and equipment failure and equipment failure and fire, but unlike a reasonable person, devoted less time and qualified personnel to inspecting the oldest assets.

This trend continued even in the face of the devastating effects of climate change. According to data from the US Geological Survey three of the four worst droughts in the recorded history of California have occurred since 2001. PG&E risk analysis reports, both internal and regulatory have consistently identified wildfire as the number one enterprise risk since 2006. The evidence clearly established PG&E was aware of the drought and the danger of catastrophic fire by 2013. Internal PG&E documents established that in 2013 PG&E identified the Feather River Canyon as a high fire danger area. Despite its knowledge of the increasing risk, the evidence established PG&E not only did nothing to mitigate the fire risk in the Feather River Canyon, it ignored known fire dangers for years.

Prior to 2006 PG&E had identified parallel groove connectors as a fire danger. In PG&E's 2006 "Risk Analysis of Urban Wild land Fires", the replacement of the parallel groove connectors is listed as a proposed mitigation. Unfortunately the proposal was only applied to Urban-Wildland Interface areas, which PG&E limited to the Bay Area. In the Feather River Canyon hundreds of known fire threats were left in transmission towers until 2016. Although the parallel groove connectors were ultimately replaced before causing a known fire, the fact those connectors remained in use for ten years, through two historic droughts, shows the complete disregard and indifference to the potential consequences by PG&E.

PG&E electrical transmission policies and records prior to the Camp Fire mirrored PG&E gas transmission policies prior to the San Bruno catastrophe. The investigation of the San Bruno catastrophe established that prior to the explosion, PG&E gas transmission had made very little effort to investigate and catalogue the components of the acquired gas transmission assets. Instead PG&E relied on assumed values. The San Bruno investigation also established PG&E intentionally was using the least expensive method of inspection in the least expensive manner. The chosen inspection method also saved money because problems that are not found do not need to be repaired. The investigation also established records relating to inspections, both justifying methods of inspection and the inspection reports, were fraudulent.

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Somehow, the lessons of San Bruno were not learned on the electric transmission side. The evidence established that despite the lessons of San Bruno on the electrical transmission side, since 2010 PG&E has continued to rely on assumed values, the least expensive method of inspection and done nothing to ensure the veracity of inspection reports. The tragedy of San Bruno somehow had no effect on the electric transmission division. The five felonies for which PG&E was convicted changed nothing on the electric transmission side.

The philosopher George Santayana is credited with saying "Those who cannot remember the past are condemned to repeat it." By ignoring the lessons of San Bruno PG&E condemned itself to another catastrophe. Based upon its own history PG&E knew it was creating a high risk of causing a catastrophic fire but, unlike a reasonable person, chose to ignore that risk.

Because of PG&E's reckless and negligent decisions to unreasonably ignore risk, 18,804 structures, including almost 14,000 residential structures were destroyed – and 84 Butte County citizens needlessly lost their lives.

XXIII. SENTENCING

The court's sentencing options are limited. As a corporation PG&E cannot be incarcerated and PG&E has indicated that it will decline probation. The only punishment available to the court is to fine PG&E. The maximum fine for a violation of Penal Code section 192(b) is $10,000. The maximum fine for a violation of Penal Code section 452 is $50,000. Based upon the foregoing the People urge the court to impose the maximum possible fines.

A. RESTITUTION

The People request that the court reserve jurisdiction over restitution and set a hearing in six months to review restitution in light of PG&E's bankruptcy proceedings. In the wake of the Camp Fire many civil suits were filed against PG&E by the victims of the Camp Fire. Subsequently PG&E filed for bankruptcy in the Federal Bankruptcy Court in San Francisco. All Camp Fire civil suits and claims have been transferred to the Federal Bankruptcy Court. As of December 31, 2019, it is estimated that over 90% of the eligible Camp Fire victims have filed claims in the Federal Bankruptcy Court. PG&E has entered into a settlement agreement with all claimants in the Federal Bankruptcy Court.

Based upon consultation with bankruptcy experts in the California Attorney General's Office, the People believe any restitution order issued by this court would be discharged in the bankruptcy proceedings. PG&E filed for bankruptcy under Chapter 11. A Chapter 11 reorganization produces a plan detailing how much various debts will be reduced. (11 U.S.C. § 1123(a)(3).) The plan applies to all debts that "arose before the date" of the confirmation of the plan by the bankruptcy court. (11 U.S.C. § 1141(d)(1)(A).) A debt arises at the time of the "conduct giving rise to the debt." (4 Collier Bankruptcy Practice Guide (2018) § 76.03A.)

The Supreme Court has ruled that criminal restitution qualifies as a debt for bankruptcy purposes. (See *Pennsylvania Dept. of Public Welfare v. Davenport* (1990) 495 U.S. 552, 564.) Thus, restitution may be reduced or discharged in a Chapter 11 plan unless an exception applies. An exception exists for criminal fines and restitution. (11 U.S.C. § 523(a)(7); *Kelly v. Robinson* (1986) 479 U.S. 36, 53.) But the exception applies only to "individual" debtors. (11

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U.S.C. § 1141(d)(2).) And exceptions for individual debtors do not apply to corporate debtors. (See *Garrie v. James L. Gray, Inc.* (5th Cir. 1990) 912 F.2d 808; *In re Spring Valley Farms* (11th Cir. 1989) 863 F.2d 832, 834; *Yamaha Motor Corp. v. Shadco* (8th Cir. 1975) 762 F.2d 668, 670.) As one bankruptcy court put it, "It is almost undebateable and universally held that a corporate Chapter 11 debtor is not subject to the" exceptions that apply to individual Chapter 11 debtors. (*In re Push & Pull Enterprises, Inc.* (N.D.Ind. 1988) 84 B.R. 546, 548 (N.D.Ind. 1988).)

Of the exceptions that apply to corporations, none includes criminal restitution. The closest exception deals with debts owed on money or property obtained by fraud. (11 U.S.C. § 1141(d)(6).) In short, criminal restitution owed by a corporation for a crime committed before the bankruptcy petition is filed is a debt that may be reduced or discharged as part of a Chapter 11 reorganization. The one court to have considered this issue reached the same conclusion. (See *In re Wisconsin Barge Lines, Inc.* (E.D. Mo. 1988) 91 B.R. 65, 67-68.)

Thus, any restitution owed by PG&E to persons harmed by the Camp Fire will be subject to reduction or discharge in a Chapter 11 reorganization. Any restitution order by this court is limited in fact, if not in law, to the final order of the Federal Bankruptcy Court and this court should await the outcome of the pending Bankruptcy proceedings.

B. Factors In Aggravation

California Rule of Court 4.421 defines factors the court may consider in making a sentencing determination. Under Rule 4.421 the court may consider the following relevant factors:

(a) Factors relating to the crime

(1) The crime involved great violence, great bodily harm, threat of great bodily harm, or other acts disclosing a high degree of cruelty, viciousness, or callousness;

PG&E is pleading to 84 felony counts of Involuntary Manslaughter in violation of Penal Code section 192(b) and one count of Unlawfully Causing a Fire in violation of Penal Code section 452. PG&E is also admitting Special Allegations involving Great Bodily Injury to a firefighter and two civilian victims.

The facts establish a callous disregard for the safety and property of the citizens of Butte County.

(3) The victim was particularly vulnerable;

There are almost 50,000 victims of the Camp Fire. All of those people relied upon PG&E to provide safe electric power. Despite years of extreme drought, consistently high down canyon winds and the knowledge equipment failure on high voltage transmission lines can

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cause fires, PG&E ignored warning signs and did the absolute minimum to mitigate the fire danger.

The most vulnerable population were the mobility challenged and the elderly. People like Rafaela Andrade, Andrew Downer, Rose Farrell, Helen Pace, Ethel Riggs and Kimber Wehr had no ability to escape the fire. Those and other lives depended upon PG&E doing its statutory and moral duty.

> **(4)** The defendant induced others to participate in the commission of the crime or occupied a position of leadership or dominance of other participants in its commission;

PG&E, although an inchoate entity, nonetheless operates only through the actions of its employees. Through a corporate culture of elevating profits over safety by taking shortcuts in the safe delivery of an extremely dangerous product – high-voltage electricity – PG&E certainly lead otherwise good people down an ultimately destructive path.

> **(9)** The crime involved an attempted or actual taking or damage of great monetary value;

By saving money on needed maintenance, repairs, replacements was able to generate profits in the billions of dollars.

> **(11)** The defendant took advantage of a position of trust or confidence to commit the offense.

PG&E was entrusted by the People of the State of California to provide safe and reliable electricity. PG&E took advantage of that position of trust and was able to generate billions of dollars in profit.

(b) Factors relating to the defendant

> **(2)** The defendant's prior convictions as an adult or sustained petitions in juvenile delinquency proceedings are numerous or of increasing seriousness;

In 2016 PG&E was convicted of multiple federal felonies as a result of the 2010 explosion of a PG&E gas transmission pipe in the City of San Bruno. The San Bruno explosion killed eight people, destroyed 35 residential structures and damaged many additional residential and commercial structures. The felonies for which PG&E was convicted related to inspection policies, procedures and record keeping. Eight years later, as a result of similar reckless and criminal inspection policies, procedures and record keeping PG&E stands convicted of 84 counts of manslaughter.

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(4) The defendant was on probation, mandatory supervision, post release community supervision, or parole when the crime was committed;

PG&E was on federal probation on November 8, 2018. On January 26, 2017, PG&E was granted five years' probation in United States District Court, Northern District of California case number 0971 3:14CR00175-001 TEH.

(5) The defendant's prior performance on probation, mandatory supervision, post release community supervision, or parole was unsatisfactory.

Special condition of probation number 1 states "While on probation, PG&E shall not commit another Federal, State, or local crime." While on probation, as a result of policies similar to those for which PG&E was convicted, PG&E has continued to cause disasters, including the 2015 Butte Fire, the 2017 Wine Counties Fire, the 2017 Honey Fire, the Camp Fire and, most recently, the Kincaide Fire in 2019.

C. <u>Factors in Mitigation</u>

a) Factors relating to the crime Factors relating to the crime include that:

(1) The defendant was a passive participant or played a minor role in the crime;

Not applicable

(2) The victim was an initiator of, willing participant in, or aggressor or provoker of the incident;

Not applicable

(3) The crime was committed because of an unusual circumstance, such as great provocation, that is unlikely to recur;

Not applicable

(4) The defendant participated in the crime under circumstances of coercion or duress, or the criminal conduct was partially excusable for some other reason not amounting to a defense;

Not applicable

(5) The defendant, with no apparent predisposition to do so, was induced by others to participate in the crime;

Not applicable

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(6) The defendant exercised caution to avoid harm to persons or damage to property, or the amounts of money or property taken were deliberately small, or no harm was done or threatened against the victim;

Not applicable

(7) The defendant believed that he or she had a claim or right to the property taken, or for other reasons mistakenly believed that the conduct was legal;

Not applicable

(8) The defendant was motivated by a desire to provide necessities for his or her family or self; and

Not applicable

(9) The defendant suffered from repeated or continuous physical, sexual, or psychological abuse inflicted by the victim of the crime, and the victim of the crime, who inflicted the abuse, was the defendant's spouse, intimate cohabitant, or parent of the defendant's child; and the abuse does not amount to a defense.

Not applicable

(b)Factors relating to the defendant Factors relating to the defendant include that:

(1) The defendant has no prior record, or has an insignificant record of criminal conduct, considering the recency and frequency of prior crimes;

Not applicable

(2) The defendant was suffering from a mental or physical condition that significantly reduced culpability for the crime;

Not applicable

(3) The defendant voluntarily acknowledged wrongdoing before arrest or at an early stage of the criminal process;

PG&E plead guilty as charged to the Indictment at arraignment.

(4) The defendant is ineligible for probation and but for that ineligibility would have been granted probation;

Not applicable

(5) The defendant made restitution to the victim; and

PG&E has agreed to restitution to victims of the Camp Fire as part of a civil settlement in the Federal Bankruptcy Court.

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(6) The defendant's prior performance on probation, mandatory supervision, postrelease community supervision, or parole was satisfactory.

Not applicable

(c) Any other factors statutorily declared to be circumstances in mitigation or which reasonably relate to the defendant or the circumstances under which the crime was committed.

Not Applicable

D. Conclusion

The factors in aggravation greatly outweigh the factors in mitigation. For this reason the court should impose the greatest sentence allowed under the law – the maximum fines of $10,000 for each of the 84 counts of manslaughter and the maximum fine of $50,000 for the count of Unlawfully Causing a fire.

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PG&E Reaches Significant Undergrounding Milestone, Burying More Than 800 Miles of Lines in High Wildfire-Risk Areas

Date: November 15, 2024 **Author:** Matt Nauman
Tags: Safety

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PG&E has announced that it has constructed and energized more than 800 miles of underground powerlines since launching its wildfire safety undergrounding effort in 2021.

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Comment Set D11 – Matt Solomon (continued)

PG&E Reaches Significant Undergrounding Milestone, Burying More Than 800 Miles of Lines in High Wildfire-Risk Areas | PG&E

D11-21 (cont'd)

This comes on the heels of PG&E completing more than 360 miles of undergrounding in 2023, representing the most undergrounding completed in a single year by the company. Customers in 27 counties are now being served by these buried lines, permanently reducing 98% of wildfire risk in those locations and also bringing significant reliability improvements.

"Undergrounding powerlines is a key layer of protection in our strategy to reduce wildfire risk and improve reliability for our customers," said Matt Pender, PG&E's vice president of Undergrounding and System Hardening. "Reaching this milestone is a testament to our commitment to our hometowns and our continued focus on delivering safe and reliable electricity."

PG&E remains committed to undergrounding powerlines in high-risk areas as part of its wildfire mitigation efforts because moving powerlines underground is the most effective solution to permanently reduce wildfire risk, improve reliability and reduce operating costs over the long term.

Undergrounding Progress and Long-Term Plans

As of this week, PG&E has completed more than 187 miles of work toward the company's target of undergrounding 250 miles in 2024. In recent weeks, customers in the Spring Valley area (Lake County), Vacaville (Solano County) and the Pine Grove area (Amador County) are among those now being served by underground powerlines.

PG&E plans to complete an additional 330 miles of undergrounding in 2025 and another 440 miles in 2026. This work will be targeted in the highest wildfire-risk portions of the company's service area and will bring PG&E to a total of more than 1,600 total miles of undergrounding completed across 30 counties in Northern and Central California by the end of 2026.

Updates on the company's undergrounding progress are shared monthly on pge.com/undergrounding. Customers and stakeholders also can view an interactive map highlighting where all PG&E wildfire safety work, including completed and forecasted undergrounding, is happening by visiting pge.com/progressmap.

To determine the highest-risk lines for undergrounding, PG&E uses machine-learning-based risk modeling. That includes advanced fire-propagation technology, developed by a company named Technosylva and also used by CAL FIRE, the U.S. Forest Service and other utilities.

For undergrounding workplans in 2027 and beyond, PG&E will analyze additional projects in high fire-risk areas. Priority is given to the highest-risk circuits. Details on long-term plans will be shared in PG&E's 10-Year Electrical Undergrounding Plan to be filed in 2025.

PG&E's layers of protection, including undergrounding, have significantly reduced wildfire risk across its service area, resulting in no catastrophic fires from company equipment in 2023 and a significant reduction in wildfire risk since 2018.

Additional layers of wildfire protection include:

- Strengthening the electric system with strong poles and covered powerlines in and near high fire-risk areas.
- Deploying Enhanced Powerline Safety Settings (EPSS) to decrease ignitions and provide wildfire protection to 44,000 line miles and all 1.8 million customers living in high fire-risk areas. In 2023, there was a 72% reduction in CPUC-reportable ignitions

https://www.pge.com/en/newsroom/currents/safety/pg-e-reaches-significant-undergrounding-milestone---burying-more.html?utm_source=chatgpt.com[10/1/2025 8:15:06 AM]

Comment Set D11 – Matt Solomon (continued)

D11-21 (cont'd)

on EPSS-enabled lines in High Fire-Threat Districts (compared to the 2018-2020 average).

- Continuing to reduce the impact of Public Safety Power Shutoffs, which remains a top focus for the company.
- Managing trees and other vegetation located near powerlines that could cause a power outage and/or ignition.
- Leveraging a network of over 1,500 weather stations, or one station every 18 line-miles, to better predict and respond to severe weather threats.
- Using 600 high-definition cameras, which provide the ability to see more than 90% of the high fire-risk areas.
- Investing in advanced tools and technologies like artificial intelligence and drones that help automate fire detection and response.

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Comment Set D11 – Matt Solomon (continued)

D11-22

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Southern California Edison probing possible link to Los Angeles fires

By **Reuters**

February 6, 2025 7:56 AM PST · Updated February 6, 2025

A palm tree burns at Sunset Beach during a wildfire in the Pacific Palisades neighborhood of west Los Angeles, California, January 7, 2025. REUTERS/Mike Blake/File Photo Purchase Licensing Rights

Feedback

Comment Set D11 – Matt Solomon (continued)

D11-22 (cont'd)

Feb 6 (Reuters) - Southern California Edison (SCE), a subsidiary of Edison International (EIX.N), said on Thursday that it was probing whether its equipment was associated with the ignition of two Los Angeles-area wildfires this year.

In what is expected to be the most expensive natural disaster in U.S. history, several wildfires tore across Los Angeles starting on January 7, leading to dozens of deaths and destroying thousands of homes.

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The Eaton Fire was among the most destructive of the blazes, and burned in areas served by SCE power infrastructure, which has been a focus in ongoing investigations into the cause of that wildfire.

"Information and data have come to light, such as videos from external parties of the fire's early stages, suggesting a possible link to SCE's equipment, which the company takes seriously," SCE said in a statement.

"SCE has not identified typical or obvious indications that would support this association, such as broken conductors, fresh arc marks in the preliminary origin area, or evidence of faults on the energized lines running through that area."

SCE is planning to lower transmission lines in the Altadena area to be physically inspected for any possible link to the Eaton Fire's start. The company said it expects its investigation to last several months.

Feedback

SCE also provided an update on its probe into the smaller Hurst Fire.

The company has a transmission tower, Tower 6, located north of Saddle Ridge Road, where the Hurst Fire reportedly originated, SCE said in a statement.

"The damage to SCE facilities has not yet been tabulated," the company said. "The cause of the fire remains under investigation, and SCE will continue to cooperate with fire investigators," the company said in a separate statement.

The fire, which was reported on January 7, was contained by January 16, after burning about 799 acres (323.34 hectares).

SCE, among other electric utilities, has come under increasing scrutiny after multiple wildfires consumed tens of thousands of acres across Los Angeles, in what is expected to be the most costly natural disaster in U.S. history.

Comment Set D11 – Matt Solomon (continued)

D11-22 (cont'd)

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Comment Set D11 – Matt Solomon (continued)

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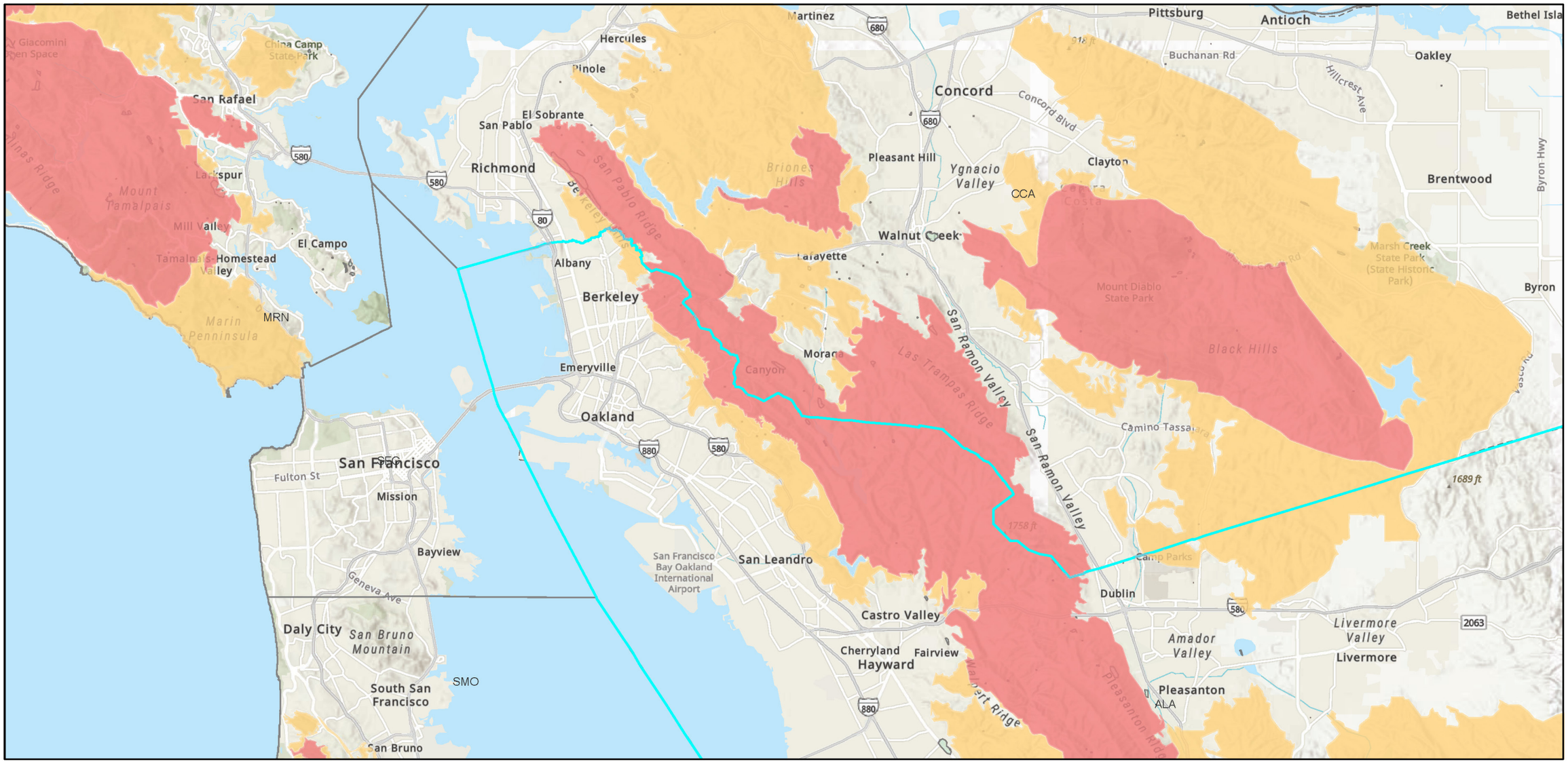

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D11-24

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Electric Undergrounding Expediting Program – SB 884

Background

Senate Bill No. 884 (SB 884), which became law on Jan. 1, 2023, requires the Commission to establish a program for expediting the undergrounding of a utility's electric distribution infrastructure. Only those electrical corporations with 250,000 or more customer accounts within the state (i.e., the large electric corporations Pacific Gas and Electric, Southern California Edison, and San Diego Gas and Electric) may participate in the program.

To participate in the program, the large electrical corporation must submit a 10-year distribution infrastructure undergrounding plan (hereafter, "Plan"), including, among other requirements, the undergrounding projects that it will construct as part of the Plan, to the Office of Energy Infrastructure Safety (Energy Safety). Energy Safety is required to review and approve or deny the Plan within nine months of submission. Before approving the Plan, Energy Safety may require the large electrical corporation to modify the Plan. Energy Safety may only approve the Plan if it finds that the electrical corporation's Plan will achieve, at the least, both of the following:

1. Substantially increase reliability by reducing use of public safety power shutoffs, enhanced powerline safety settings, de-energization events, and other outage programs.
2. Substantially reduce wildfire risk.

If Energy Safety approves the large electrical corporation's Plan, the large electrical corporation must submit to the Commission, within 60 days of Energy Safety's approval, a copy of the Plan and an application requesting review and conditional approval of the plan's costs (hereafter, "Application"). The Commission must approve or deny the Application within nine months of submission. The Commission may, however, require the large electrical corporation to modify or modify and resubmit the Application prior to approval.

Public Engagement Efforts

Send an email request to SB884@cpuc.ca.gov to be added to the SB-884 Notification List. SB 884 Notification List (updated on 9/8/25)

Technical Working Groups on Potential Updates to the SB 884 Project List Data Requirements

Technical Working Group (TWG) meeting #3 was held on June 24, 2025, to discuss the Interruption Cost Estimator Calculator 2.0 (ICE 2.0).

Agenda (published June 17, 2025)

Master Slide Presentation (presented June 24, 2025)

TWG # Recording (presented June 24, 2025)

Technical Working Group (TWG) meetings #1 and #2 were held on June 3 and June 10, 2025, to discuss revising the SB 884 Project List Data Requirements.

Agenda (published May 27, 2025)

Master Slide Presentation (presented June 3, 2025)

Master Slide Presentation (presented June 10, 2025)

TWG #1 Recording (presented June 3, 2025)

TWG #2 Recording (presented June 10, 2025)

Comment Set D11 – Matt Solomon (continued)

D11-24 (cont'd)

Staff Report on SB-884 Project List Data Requirements Guideline (published May 20, 2025)

Potential CPUC Guideline Updates Workshop

Following the adoption of Energy Safety's 10-Year Electrical Undergrounding Plan Guidelines on February 20, 2025, the CPUC hosted public workshop on April 8, 2025, to discuss and solicit input from stakeholders on potential updates to the CPUC Guidelines for the program.

Agenda (published April 1, 2025)

Master Slide Presentation (presented April 8, 2025)

Workshop Recording (presented April 8, 2025)

Post-Workshop Questions (published April 11, 2025)

Informal Responses to Post-Workshop Questions (received April 25, 2025)

Initial Workshop

As a starting point, the two responsible State entities, Energy Safety and the CPUC, jointly sponsored a first public workshop on February 24, 2023.

Workshop #1 - CPUC and Energy Safety Joint SB-884 Pre-Rulemaking Workshop, February 24, 2023

Agenda (published February 9, 2023)

Background and Scoping Issues (published February 9, 2023)

Master Slide Presentation (presented February 24, 2023)

Workshop Recording (presented February 24, 2023)

Informal Comments (received March 10, 2023)

Implementation

Reply Comments on Draft Resolution SPD-37 (Published September 9, 2025)

Opening Comments on Draft Resolution SPD-37 (Published September 4, 2025)

Draft Resolution SPD-37 (Published August 15, 2025)

Draft Resolution SPD-37 Cover Letter and Certificate of Service (Published August 15, 2025)

SB 884 Project List Data Requirements Guidelines (Published July 24, 2025)

SB 884 Project List Data Template Clean Version (Published July 24, 2025)

Informal Responses to Questions (received November 12, 2024)

Final Resolution SPD-15 (published March 8, 2024)

CPUC Guidelines for SB 884 Program (formerly titled Staff Proposal) (published March 8, 2024)

Reply Comments on Draft Resolution SPD-15 (received January 11, 2024)

Opening Comments on Draft Resolution SPD-15 (received December 28, 2023)

Final Staff Proposal for SB 884 Program (published November 9, 2023)

Draft Resolution SPD-15 (published November 9, 2023)

SPD-15 Comment Letter and Certificate of Service (published November 9, 2023)

Draft Staff Proposal for SB 884 Program (published September 13, 2023)

Informal Comments for Draft Staff Proposal

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Responses to Comment Set D11 – Matt Solomon

D11-1 The commenter urges for the undergrounding of transmission lines through the Montclair Hills and other densely populated, high-fire-risk portions of the Project alignment, and expresses incredulity regarding the proposed Project's modeled wildfire risk reduction of 90% presented in Section 3.18.1.5 of the Draft EIR. The commenter asserts that the undergrounding of transmission lines is the only way to eliminate fire danger, and states that re-installing overhead lattice towers does not eliminate future fire risk.

Pursuant to State CEQA Guidelines Section 15126.2, an EIR must identify and focus on the significant environmental effects associated with the proposed Project. The lead agency is generally expected to restrict its evaluation to modifications in the existing physical conditions present within the affected area at the time the Notice of Preparation is issued. Additionally, Section 15125 requires that the EIR should provide a comprehensive description of the physical environmental conditions surrounding the project site, which ordinarily serve as the baseline for determining the significance of any impacts.

The Draft EIR Section 3.18.1 (Environmental Setting) includes a comprehensive description of the physical environment of the proposed Project, including fire risk mapping, fire history, power line ignition risk, physical factors that affect fire risk, and other conditions that serve as the baseline condition for the EIR analysis. As detailed in the Draft EIR, PG&E developed a wildfire mitigation plan and model that entails annual reporting to the CPUC. The plan includes modeling wildfire risk by considering factors including wildfire and ignition probability, climate (including localized wind and weather conditions), climate change, including rising temperatures, historic outages, fragility, etc. Results of the modeling support the reported fact-based findings that the Project would result in approximately 90% reduction in wildfire risk. The analysis in EIR Section 3.18.3.3 (Impacts and Mitigation Measures) focuses on whether the proposed Project's impacts would exacerbate existing wildfire risk. This comment does not identify any new impacts or substantially new additional analysis or require additional or substantially modified mitigation measures to the EIR.

Please refer to General Response GR-1 for additional discussion.

D11-2 The commenter states that the installation of large, galvanized steel, lattice towers as replacements for the existing structures is incompatible with the existing landscape character, and the design should better blend into the environment. The analyses in Draft EIR Section 3.18.3.3 (Impacts and Mitigation Measures) note that most of the replacement structures would be either tubular steel poles (TSPs) or lattice steel poles (LSPs), which have a narrower structural profile compared to the existing lattice steel structures that are being replaced. Also as noted in the Draft EIR discussions, the proposed mix of replacement TSPs and LSPs, though generally taller than the existing structures, would result in low structural form and line contrast and similar industrial character compared to the existing structures. Collectively, these incremental visual changes would not measurably alter the existing landscape character along much of the route, which is substantially influenced by the existing power lines. It is for these reasons that the Draft EIR concluded that the project would be compatible with the existing landscape character and would not result in significant aesthetics impacts. This comment does not identify any new impacts or substantially more severe environmental impacts that require additional or substantially modified mitigation measures.

D11-3 The commenter's request for development of a full undergrounding option that would be the environmentally superior alternative (including tower removal as one option) is noted. Please refer to General Response GR-1 as well as Section 4 of the Draft EIR regarding the CPUC's consideration of underground alternatives.

The commenter also expresses concerns regarding health, safety, and aesthetics.

Please see Responses to Comments D11-1 and D11-2, as well as Response to Comment D03-1 regarding health and safety impacts of the Project. This comment does not identify any more severe environmental impacts that require additional or substantially modified mitigation measures.

D11-4 The commenter asserts that the EIR concludes that the environmentally superior alterative relies on greater temporary construction impacts while accepting permanent overhead ignition risk during operations.

As analyzed in EIR Sections 3.18 (Wildfire), 3.15 (Transportation), and 4.8.2.4 (Step 4: Define the CEQA Environmentally Superior Alternative), the EIR evaluates both construction and operations impacts of the proposed Project. Due to the challenging physical environment of the various Project components, consisting of narrow roads, steep terrain, and proximity to residential areas, construction impacts, involving multiple road closures or obstructions, would result in impacts to emergency access and evacuation routes. Conversely, during Project operations, the risk of ignition would be reduced compared to existing baseline conditions, as aged infrastructure would be replaced with new structures and conductors, and approximately 1 mile of the western section of the Project would be rebuilt in an underground alignment. Also, as discussed in EIR Section 4.8.2 (Alternatives Comparison), the underground alternatives (Alternatives 2, 3, and 4) would have greater environmental impacts due to increased excavation, road closures and obstructions, longer duration of construction, and closer proximity to additional residences and schools.

The commenter states that PG&E's Wildfire Transmission Risk Model (WTRM) does not account for changing weather, outage, and fragility inputs, and in fact shows that undergrounding has a 100% reduction of ignition risk.

In fact, Draft EIR Section 3.18.1.5 (PGE's Wildfire Mitigation Plan) specifically states that the WTRM incorporates climate impacts, including climate, historic outages, fragility, and other pertinent factors. Section 6.3.1 (Design Basis Scenarios) of the 2023-2025 Wildfire Mitigation Plan identifies extreme-event and high-uncertainty scenarios such as increased wind speeds, higher temperatures, lower humidity, more frequent droughts, and vegetation loads over existing, short-term, and long-term timeframes. This comment does not identify any new impacts or substantially more severe environmental impacts that require additional or substantially modified mitigation measures.

D11-5 The commenter summarizes PG&E's findings that undergrounding transmission lines reduces risk of ignition by approximately 98%, while overhead hardening reduces risk by about 67%. The commenter cites a PG&E article ("PG&E Reaches Significant Undergrounding Milestone, Burying More Than 800 Miles of Lines in High Wildfire-Risk Areas"). The commenter asserts that the EIR "under-weights" the "tail risk" (i.e., risk of rare but extreme event) of overhead transmission line ignition in a Very High Fire Hazard Severity Zone (VHFHSZ). The commenter does not explain how the EIR underestimates ignition risk of overhead transmission lines in a VHFHSZ. As discussed in Draft EIR Section 3.18.3.3 (Impacts and Mitigation Measures), Impact WF-2, the proposed Project provides necessary maintenance to replace older power line equipment that has reached the end of its useful life. The proposed Project would install stronger, safer, and more fire-resistant structures and conductors designed in compliance with more stringent and current regulations, which would reduce overall ignition risk compared to existing baseline conditions. Additionally, as described in EIR Section 2.6 (Operations and Maintenance), the newer structures would continue to have Enhanced Powerline Safety Settings, allowing power lines to shut off within one-tenth of a second when a fault is detected,

further reducing potential ignitions within the Project area. This comment does not identify any new impacts or substantially more severe environmental impacts that require additional or substantially modified mitigation measures.

D11-6 The commenter points to Oakland's safety policy to direct coordination to underground lines in wildland-urban interface and VHFHSZ areas, and states that Senate Bill (SB) 884 identifies eliminating ignition sources for high-risk communities. It is unclear which specific policy the commenter is referring to. Draft EIR Section 3.18.2 (Applicable Regulations, Policies, and Standards) identifies a goal and several policies related to wildfire risk and safety in the City of Oakland's General Plan Safety Element. None of the policies require the undergrounding of lines but rather encourage prioritization of assessing all wildfire risk factors, incorporating appropriate fire mitigation measures, and proactively preventing wildfire exposure through a variety of strategies. SB 884 requires CPUC to establish a program to expedite the undergrounding of large utilities' electrical distribution infrastructure. PG&E is actively complying with SB 884 by preparing its 10-year Electrical Undergrounding Plan. The comment regarding SB 884 is outside of the scope of the EIR, as the purpose of the EIR is to evaluate the proposed Project's impacts on the physical environment, and is not intended to identify projects to expedite the undergrounding of electrical infrastructure.

D11-7 The commenter states that feasible underground alternatives are included in the EIR and construction sequencing would maintain evacuation routes. Please see General Response GR-1 regarding underground alternatives considered in EIR Chapter 4 (Alternatives).

The commenter states that the EIR appendices include an underground Hayward Fault crossing profile, confirming technical viability.

An underground crossing of SR-13 is considered and eliminated in Section 4.4.3.2 [Underground Crossing of SR-13 (Across the Hayward Fault) Alternative] of the Draft EIR and shown in Figure 4.4-7 in EIR Appendix A. As described in Draft EIR Section 4.4.3.2, an underground crossing of SR-13 would not be feasible to build and would not feasibly attain the basic objectives of the Project related to reliability and safety requirements and minimizing environmental and community impacts. This comment does not identify any new impacts or substantially more severe environmental impacts that require additional or substantially modified mitigation measures.

D11-8 The commenter requests identification of a paired underground alternative (e.g., Alternatives 2 and 3 or 2 and 4) as the environmentally superior alternative for Oakland Hills, and requests PG&E to re-run WTRM with updated extreme-wind/climate and out-of-ROW vegetation risk before relying on a "90%" reduction in wildfire risk.

Draft EIR Chapter 4 (Alternatives), Table 4.5-1 (Alternatives Analyzed: Features and Components) summarizes key components of these alternatives, including underground miles and vaults, slope steepness of construction sites, number of residential homes affected by underground construction, and public facilities that would experience the most severe construction impacts. Draft EIR Section 4.5.3 (Impacts Common to All Alternatives with Underground Components) describes the additional environmental impacts of underground power line installation, including geologic stability and safety during both construction and operation; physical limitations of narrow road widths; environmental impacts from construction of new transition facilities; and access limitations from extensive underground work and volume of construction vehicles and equipment. Please refer to Response to Comment D11-4 regarding the WTRM. This comment does not identify any new impacts or substantially more severe environmental impacts that require additional or substantially modified mitigation measures.

D11-9 The commenter states that design conditions should be adopted to ensure contextual (earth-tone) structure colors, profile minimization, and structure screening for any overhead facilities,

and that the proposed use of dulled galvanized finish or Corten Steel for replacement structures would be inadequate for scenic canyons.

As noted EIR Section 3.18.3.3 (Impacts and Mitigation Measures), 10 of the 15 representative key observation points (KOPs) would experience less-than-significant aesthetics impacts, and the remaining 5 KOPs would experience beneficial aesthetics impacts. In the absence of significant visual impacts, no mitigation measures were deemed necessary beyond the Applicant's Proposed Measure (APM) to utilize non-specular conductors and dulled galvanized finishes or Corten Steel on replacement structures to reduce the potential for a new source of glare and visual contrast. It should also be noted that most of the structures (existing and replacement) are substantially backdropped by open sky. The light- to medium-gray of the galvanized finishes would blend better with a lighter background sky than would a darker, earth-tone structure, thus minimizing color contrast. Therefore, the proposed measures are considered adequate and would ensure consistency with the structural characteristics already established in the existing landscape.

D11-10 The commenter's support for undergrounding and removal of the overhead power lines in dense, evacuation-constrained VHFHSZ is noted and will be shared with the CPUC's decision-makers.

D11-11 The commenter asserts that PG&E's WTRM does not account for outside factors such as wind, weather, or historical outages. The commenter points out that the WTRM in fact shows a 100% risk reduction in underground structures and cites PG&E's acknowledgement that undergrounding reduces ignition risk, referring to the PG&E article "PG&E Reaches Significant Undergrounding Milestone, Burying More Than 800 Miles of Lines in High Wildfire-Risk Areas."

As discussed in Response to Comment D11-4, the WTRM incorporates outside factors such as climate impacts and extreme-event and high-uncertainty scenarios. The comment regarding the ignition risk reduction due to undergrounding is noted.

D11-12 The commenter states that any ignition risk from transmission systems is unacceptable and refers to the Camp Fire that was ignited by a 115 kV transmission asset. The commenter asserts that even hardened overhead transmission lines still carry an ignition risk. The comment cites *Camp Fire Public Report – A Summary of the Camp Fire Investigation* by Butte County District Attorney. The report provides a detailed account of the investigation into the Camp Fire that occurred in Butte County in November 2018. The investigation determined that the fire was caused by a failure on a PG&E transmission line – specifically, a worn-out iron hook on Tower #27/222 of the Caribou-Palermo 115 kV line broke, allowing a high-voltage conductor to contact the steel tower and ignite dry vegetation below (see "C Hook and Hanger Hole Wear" in the *Camp Fire Public Report*). This component had been in service for decades and had deteriorated due to lack of inspection and maintenance, indicating that necessary infrastructure hardening and vegetation maintenance had not occurred.

As discussed in EIR Section 3.18.3.3, the proposed Project would have a beneficial impact on reducing overall wildfire risk during operations. The proposed Project is a necessary maintenance project needed to replace older existing 115 kV power line equipment with stronger, safer, more fire-resistant structures and conductors designed in compliance with more stringent and current regulations. Wildfire risk would be reduced from the current condition.

D11-13 The commenter refers to the Eaton Fire that occurred in 2025, stating that overhead equipment is a plausible ignition source. The commenter cites the Reuters article "Southern California Edison probing possible link to Los Angeles Fires." According to the article, SCE reported to the CPUC that its equipment was active in the area around the time the fires began. Investigations and coordination with state investigators are ongoing as of the time the article was published.

As discussed in EIR Section 3.18.3.3, Impact WF-2, the proposed Project would have a beneficial impact on reducing overall wildfire risk during operations. The proposed Project is a necessary maintenance project needed to replace older existing 115 kV power line equipment with stronger, safer, more fire-resistant structures and conductors designed in compliance with more stringent and current regulations. Wildfire risk would be reduced from the current condition.

D11-14 The commenter requests that the CPUC identify an undergrounding alternative as environmentally superior for the Oakland Hills segment, or at minimum require PG&E to re-run WTRM with (a) worst-case wind/heat projections, (b) explicit out-of-ROW tree failure risk, and (c) independent validation—not just carry-over parameters—before adopting any "90%" conclusion.

Please refer to General Response GR-1 (Underground Alternatives) regarding consideration of underground power line alternatives. See Response to Comment D11-4 regarding PG&E's WTRM modeling.

D11-15 The commenter opines that the CEQA balancing puts too much weight on temporary construction-phase evacuation impacts and not enough on permanent life-safety risk due to wildfire. The CPUC should treat construction-phase evacuation management as mitigable and temporary and treat residual overhead ignition as a permanent, high-consequence impact in a VHFHSZ.

Potential impacts related to wildfire during construction and operation are discussed in Section 3.18 (Wildfire) of the Draft EIR. The EIR acknowledges that construction related impacts would be temporary and recommends the implementation of Mitigation Measures (MM) WF-1a (Prepare Emergency Evacuation Plan), MM WF-1b (Limit Construction Requiring Full Road Closures), MM T-1a (Traffic Management Plan and Safe Transport), and MM N-1b (Construction Notification) to minimize temporary impacts to evacuation routes.

The analysis of operational impacts under Impact WF-2 in EIR Section 3.18.3.3 explains that the proposed Project is a maintenance project needed to replace older existing 115 kV power line equipment that has reached the end of its useful life. Upon completion of construction, the aging structures currently in place would be replaced with stronger, safer, more fire-resistant structures and conductors that would be designed in compliance with more stringent and current regulations. In areas where the power line is replaced overhead, wildfire risk from the proposed Project would be reduced from the current condition.

Under CEQA, projects must be analyzed for their effects on the existing physical environment. The central requirement is to establish an environmental baseline, or the physical conditions that exist at the time the environmental review begins. A project's potential environmental impacts are then determined by comparing post-project conditions against this baseline. While a level of wildfire risk would remain with overhead power line components, from a CEQA perspective, the operation of new power lines and structures would reduce the risk of wildfire compared to existing conditions.

As stated in EIR Section 4.9 (Environmentally Superior Alternative), the commenter is correct that although the EIR identifies the proposed Project as the CEQA Environmentally Superior Alternative, it is possible that the CPUC decision-makers could balance the importance of each impact area differently and reach different conclusions.

The commenter is correct that the EIR concludes that the proposed Project is considered environmentally superior to the No Project Alternative. As stated in EIR Section 4.8.2.5, the No Project Alternative would not realize the beneficial impacts of the Project relating to reduction of wildfire risk with new overhead replacement structures and the undergrounding of one mile of power line in the City of Oakland.

Please see General Response GR-1 for a summary of the environmental impacts of underground alternatives and the CPUC's identification of the CEQA Environmentally Superior Alternative.

D11-16 The commenter identifies local goals and policies supporting undergrounding of power lines. The commenter refers to the City of Orinda's General Plan Safety Element Policy S-41, which encourages coordination with PG&E to underground power lines in the wildland-urban interface and FHSZ areas, and the City of Oakland's Safety Element, which identifies wildfire as a primary hazard requiring enhanced evacuation and mitigation in a VHFHSZ. The commenter asserts that the Safety Element supports eliminating ignition sources, not perpetuating them with overhead power lines.

While general plan goals and policies are not regulations, they serve as guidance for future decision-making and are implemented through regulatory tools such as ordinances, and subdivision regulations. The proposed Project would improve the safety and reliability of the Moraga-Oakland X 115 kV power line by replacing aged components and undergrounding a portion of the line, enhancing wildfire safety and evacuation during operations. EIR section 3.15 (Transportation) Impact T-4 evaluates the Project's impacts to emergency access and evacuation. MMs T-1a, N-1b, and WF-1c would be required to address emergency access impacts during construction.

D11-17 The commenter mentions Senate Bill 884 and its intent to expedite undergrounding of power lines in high-fire risk areas. The commenter highlights that the Project crosses CPUC-designated High Fire-Threat Districts (HFTD), causing overhead lines in this area to carry a disproportionate risk of ignition and states that undergrounding addresses this issue. The High Fire-Threat District map is attached.

Please refer to Response to Comment D11-6. EIR Section 3.18.1.1 (High Fire Risk Areas and Responsibility Areas) acknowledges and identifies portions of the project that are within High Fire-Threat Districts—approximately 3 miles of the Project is within Tier 3- Extreme High Fire Threat Districts, and approximately 1 mile is within Tier 2-Elevated Threat Districts. The westernmost approximately 1 mile of the alignment is not in a CPUC HFTD (see Figure 3.18-2).

D11-18 The CPUC notes the commenter's support for underground alternatives in the Project area, including consideration of an underground crossing of the Hayward Fault and a construction traffic/evacuation plan that sequences work to maintain lifeline access.

Please see Response to Comment D11-7, which addresses similar concerns.

D11-19 The commenter states that the current Applicant Proposed Measures do not address massing, skyline intrusion, or canyon views, and that earth-tone coatings, slimmer monopoles, lower profile/crest avoidance, and vegetative screening (similar to how cellular towers are often "masked" by being designed as artificial trees in wooded areas) should be required.

The use of earth-tone coatings and color contrast has been addressed in the Response to Comment D11-9, above. With regard to structural massing and the use of monopoles, as addressed in the Response to Comment D11-2, the analyses in EIR Section 3.18.3.3 (Impacts and Mitigation Measures) note that the majority of the replacement structures would be either tubular steel poles (TSPs) or lattice steel poles (LSPs), which have a narrower structural profile (reduced massing) compared to the existing lattice steel structures that are being replaced. Also, as noted in the EIR discussions, the proposed mix of replacement TSPs and LSPs, though generally taller than the existing structures, would result in low structural form and line contrast. The use of vegetative screening or the masking of the structures as artificial trees (as proposed in the comment) would likely result in increased structure visibility and greater structural contrast because most of the structures would be silhouetted against the sky.

Therefore, the EIR appropriately concluded that the project design, as proposed, would be compatible with the existing landscape character and would not result in significant aesthetics impacts.

D11-20 The comment letter attaches the *Camp Fire Public Report – A Summary of the Camp Fire Investigation* by Butte County District Attorney.

Please see Response to Comment D11-12.

D11-21 The comment letter attaches the PG&E article "PG&E Reaches Significant Undergrounding Milestone, Burying More Than 800 Miles of Lines in High Wildfire-Risk Areas."

Please see Response to Comment D11-11.

D11-22 The comment letter attaches the Reuters article "Southern California Edison probing possible link to Los Angeles fires."

Please see Response to Comment D11-13.

D11-23 The comment letter attaches the CPUC's High Fire-Threat District map showing the Project area.

Please refer to Response to Comment D11-17.

D11-24 The comment letter attaches the CPUC webpage for SB 884 (Electric Undergrounding Expediting Program).

Please refer to Response to Comment D11-6.

Comment Set D12 – Cynthia Barbera

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Cynthia Barbera <cynbarbera@gmail.com>
Sent: Friday, September 26, 2025 7:03 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Response to proposed MOX Project - Strongly Opposed to plan. Please underground these lines for fire safety

September 26, 2025

Tharon Wright, CPUC
Moraga-Oakland X Project

Tharon Wright, CPUC,

This is to convey my strongest disapproval for any overhead re-building of the proposed MOX Project to include approximately 5-miles of four overhead 115 kV power lines between Moraga and Oakland X substations. **D12-1**

Given the extreme fire risk throughout the entire area covered by the project, the extraordinary high winds that rush up the Shepherd Canyon, the excessive brush and highly-flammable eucalyptus trees, and the close proximity to thousands of residents, the proposed rebuild of the overhead Transmission lines is a recipe for disaster with an extremely high potential for substantial and tragic loss of property and human life.

This project should therefore <u>not be approved as proposed</u>, and must be undergrounded.

<u>A few points:</u> **D12-2**

- The area in question falls within a “Very High Fire Risk Area” (VHFRA) neighborhood as designated by the City of Oakland. This is the highest fire risk designation possible, and extra caution must be exercised accordingly.
- Our area already sustained one of the worst firestorms in the history of the US in 1991, with 3400 homes destroyed, damages estimated at $3 billion in today’s dollars, and 25 lives lost. We do not want to repeat this.
- The transmission Towers that run through Shepherd Canyon are located in the middle of densely populated areas with thousands of residents nearby and hundreds of homes within only ¼ mile of the towers. Of all the 6 east bay transmission lines, only Shepherd Canyon has homes literally as close as 25 feet. **D12-3**

Comment Set D12 – Cynthia Barbera (continued)

- To clearcut all vegetation on the hillsides as a remedy for fire risk causes other issues, including dangerous landslide risk in rainy season and reoccurring sediment washes into Shepherd canyon roads and streams. **D12-4**

- The Shepherd Canyon area has extremely limited egress and ingress. Should a fire occur in Shepherd Canyon, it will be extremely difficult to evacuate all residents in a timely fashion down the single main road to safety (Shepherd Canyon Road), and equally difficult for fire fighters to enter the area. **D12-5**

- Shepherd Canyon is a natural wind tunnel that can experience very high winds, especially during dry weather conditions, which can be exacerbated during a fire event which creates its own winds;

I therefore urge all of the overhead 115 kV lines be removed and installed underground. **D12-6**

There are multiple alternative routing options for underground installation of the 115 kV lines east of Estates Drive as outlined in the EIR, and these should now be the only options under consideration.

My family has resided in the Montclair Hills for over 70 years. We witnessed first-hand the tragic 1991 Oakland Hills Firestorm. We also witnessed the1995 fire on the slope of Shepherd Canyon only a block from our home below Asilomar Drive which destroyed several homes, and which PG&E admitted fault and accepted liability.

Let us not knowingly repeat the mistakes of Edison and the ensuing tragedies of the Eaton Fire which is being sued by Los Angeles County for “deliberately prioritized profits over safety” despite knowing of the “extreme fire risk” its equipment posed.

Thank you,

Cynthia Harrison Barbera
5961 Zinn Drive, Oakland
415-235-7804
cynbarbera@gmail.com
(Montclair Resident)

Responses to Comment Set D12 – Cynthia Harrison Barbera

D12-1 The commenter expresses concerns about loss of property and human lives, given the extreme fire risk, high winds, excessive brush and eucalyptus trees, and proximity and density of residences in the Project area.

The commenter's opposition to the proposed Project and support for underground alternatives are noted and will be shared with the CPUC decision-makers for their consideration. See Responses to Comments D12-2 through D12-6, as well as EIR Section 3.18, which describes the environmental setting and potential impacts of the proposed Project related to wildfire.

D12-2 The commenter states that a portion of the Project is in a Very High Fire Hazard Zone and expresses concern that the area has historically experienced severe fires with fatalities. The Draft EIR addresses these issues in Section 3.18 (Wildfire).

D12-3 The commenter states that the existing power lines in Shepherd Canyon are located in the middle of densely populated areas with homes as close as 25 feet.

The high density of residences is described throughout the Draft EIR and depicted on the aerial photographic imagery in Figure 2.1-2 (Proposed Project Detailed Maps) in EIR Appendix A. Specifically, the communities in the Project area are discussed related to wildfire in the subsection "Values at Risk" in Section 3.18.1.4 (Fire Risk) of the Draft EIR.

D12-4 The commenter states that clearcutting all vegetation on hillsides to address fire risk causes other indirect risks such as landslides and sediment washes during the rainy season.

The CPUC agrees that clearcutting all vegetation on hillsides would cause additional environmental impacts to biological resources, geology and soils, and hydrology and water quality. However, PG&E is not proposing to clearcut all vegetation on hillsides as part of the MOX Project. As discussed in EIR Section 2 (Project Description) and Section 3.18 (Wildfire), PG&E would implement a vegetation management program during operations that would clear vegetation only around structures and would maintain vegetation from the power line as dictated by CPUC General Order 95.

D12-5 The commenter notes the limited egress and ingress along Shepherd Canyon, difficulty evacuating during an emergency, and difficulty for firefighters to access the area. EIR Section 3.18 (Wildfire) Impact WF-1 discusses in detail the Project's impacts to emergency evacuation routes during overhead power line rebuild, overhead power line removal, installation of the underground power line, and operations and maintenance. Impact WF-1 discusses temporary significant and unavoidable impacts along portions of the overhead power line rebuild segment due to temporary road or lane closures and the presence of large equipment that may obstruct emergency access during construction. APMs WFR-1 (Construction Fire Prevention Plan) would address fire preparedness training and procedures for fire reporting, response, and prevention; WFR-2 (Fire Prevention Practices) would be implemented to reduce the risk of construction-related ignitions; and TRA-1 (Temporary Traffic Controls) would facilitate early notification and access information for emergency responders. In addition, MMs WF-1a (Prepare Emergency Evacuation plan), WF-1b (Limit Construction Requiring Full Road Closures), WF-1c (School Session Construction Timing Restriction) T-1a (Traffic Management Plan and Safe Transport), and N-1b (Construction Notification) would be implemented to further reduce evacuation impacts.

EIR Section 3.15 (Transportation) Impact T-4 discusses the Project's impacts to emergency access during construction and operations. Impact T-4 identifies significant and unavoidable impacts to emergency access during overhead power line rebuild due to the narrow roads in the Oakland Hills. The presence of construction vehicles and equipment could cause delays to

emergency access. APMs TRA-1, WFR-1, and WFR-2 would be incorporated to support emergency response, and MMs T-1a, N-1b, and WF-1c would be implemented to further reduce impacts to emergency access during construction.

D12-6 The commenter's opposition to the proposed Project and support for underground alternatives are noted and will be shared with the CPUC decision-makers for their consideration.

EIR Section 3.18 (Wildfire) describes the environmental setting and potential impacts of the proposed Project related to wildfire. Specifically, fire history in the Project vicinity is described in Section 3.18.1.2 (Fire Occurrence).

Please refer to General Response GR-1 for a discussion of underground alternatives considered in the EIR.

Comment Set D13 – Susan Landon

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: SusanLandon <susanlandon@aol.com>
Sent: Friday, September 26, 2025 7:10 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Rebuild project

There is no good reason to run wires above ground in a residential area, especially one so close to the 1991 Oakland fire where the neighborhood learned how difficult it is to outrun a hill fire. Construction inconvenience is nothing compared to losing your house or life in a fire. **D13-1**

This is the 21st century, just rebuilt this correctly, aesthetically and safely.

Sent from my iPhone

Responses to Comment Set D13 – Susan Landon

D13-1 The commenter expresses concerns about loss of property and life due to wildfire and cites the 1991 Oakland fire in the Project vicinity.

The commenter's opposition to the proposed Project and support for underground alternatives for aesthetic and safety reasons are noted and will be shared with the CPUC decision-makers for their consideration.

EIR Section 3.18 (Wildfire) describes the environmental setting and potential impacts of the proposed Project related to wildfire. Specifically, fire history in the Project vicinity is described in Section 3.18.1.2 (Fire Occurrence) and includes a discussion of the 1991 Tunnel Fire in the Oakland Hills.

Under CEQA, projects must be analyzed for their effects on the existing physical environment. The central requirement is to establish an environmental baseline, or the physical conditions that exist at the time the environmental review begins. A project's potential environmental impacts are then determined by comparing post-project conditions against this baseline. The existing overhead towers are included in the environmental baseline for visual impacts, as discussed in Draft EIR Section 3.2, Aesthetics. Likewise, while a level of wildfire risk would remain with overhead power line components, from a CEQA perspective, the operation of new power lines and structures would reduce the risk of wildfire compared to existing conditions.

Please refer to General Response GR-1 for a discussion of underground alternatives considered in the EIR.

Comment Set D14 – Andrew and Patricia Jeffries

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: andrewjeffries@comcast.net
Sent: Friday, September 26, 2025 4:13 PM
To: Wright, Tharon; PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: 'Patty Jeffries'
Subject: Comments and requests on MOX Project and related.

Andrew and Patricia Jeffries
Owners of home at 7075 Sayre Drive (AKA 52 Saroni Ct), Oakland CA
Towers EN 15 and ES 17 directly adjacent to house.
Parcel 48E-7330-83-2

Andrew Jeffries
adjeffries@comcast.net
510-684-5040

Dear Mr Wright,

D14-1

We own a house, designed and built by my father in 1980, and awarded the PGE Energy Efficiency prize for that year.
There are two towers in our front parking area, very closely adjacent to our house.
Driveway access to our houses is directly by the towers. It's difficult to see how replacement construction won't block the driveways for extended periods of time.

We have been following the progress of the MOX planning and attending the video conferences and reading the posted materials.
From the MOX webpage we had understood construction on the project was to start around August 2028 and had made plans subject to that.

Very recently, we received a call and letter from PGE informing us that our specific towers would be replaced about September 2026, approximately one year from now.
This has come as a significant surprise. We have been told our specific towers are end-of-life now.

At a recent site meeting with the PGE team, I was encouraged about the possibility of moving new smaller and taller cylindrical tapered poles to the east side of the driveway and approximately 65 feet east from the current towers, as per the initial site engineering recommendation, and this would make a tremendous positive difference to all of us, our good neighbor Brenna Galvin included.

Removing the large old towers benefits all. A second acceptable site would be just north of Sayre Drive, below our garden fence. Placing them in our garden area directly or in front of our deck creates unacceptable views.

Comment Set D14 – Andrew and Patricia Jeffries (continued)

D14-2

I feel I have a basic understanding of how this replacement project would proceed in terms of the steps.

I'm less clear about the schedule and the time heavy equipment will block access to the two houses.

To further complicate the situation, I have new interim tenants moving into the house this Oct 1 with an 18-month lease. I had assured them, in the lease, the construction would not start until Aug 2028, as stated on the MOX home page website. This makes the new situation somewhat awkward, and we need to have a clear statement to them about the new timing and access, and ways to mitigate their inconvenience.

Here is my project understanding; please correct any misunderstanding:

1) PG&E engineering will review the site and contact us. We would likely approve the eastern position. Engineering would generate drawings and specification. And have the project approved/ permitted.

2) The footing foundation contractor will come and drill deep piers, fill with concrete, and top with steel mounting plate.
When might this happen and how long would it take? Would equipment be moved out each day?

3) At a later date, the circuits would be deenergized, a tall crane will come in and place tubular sections to the full height necessary including the top pieces to hold the wires.

4) At approximately the same time as above, the crane will disassemble and remove the old towers including the concrete footings. And the old wires will be moved to the new towers. What can we say about the schedule here and the time to complete these tasks and access to the houses?

5) At some time later, probably in 2028, new larger gage wire will be pulled to replace the old wire as a part of the MOX project.

Please quickly help get me a more detailed local project 2025-2027 plan I can share with my new tenants to give needed assurance on minimizing their inconvenience.

Regards,
Andrew and Patricia Jeffries

Responses to Comment Set D14 – Patricia and Andrew Jeffries

D14-1 The commenter explains the proximity of existing towers to his residence and driveway and expresses concerns about driveway access during construction. The commenter states that he has been in meetings with PG&E regarding the possibility of changes to the proposed placement and type of replacement structures that would be beneficial to the commenter and his neighbor.

In PG&E's Responses to CPUC Data Request #12 (dated October 16, 2025), PG&E stated that it was in the preliminary engineering phase for these tower replacements. PG&E has discussed Structures EN15 and ES17 with the Jeffries and will continue to coordinate with the Jefferies and the CPUC as engineering and planning progresses, and as part of the CPUC's review and approval of the work.

The commenter also requests clarification of the construction start date for the replacement of the structures adjacent to his residence.

In PG&E's Responses to CPUC Data Request #12, PG&E states that structure replacements are expected to occur within an ideal seasonal line clearance window, typically in the October/ November through March/April timeframe.

PG&E anticipates replacing the southern Structure ES17 before the overall MOX Project is approved by the CPUC and anticipates seeking independent approval for replacement of Structure ES17 from the CPUC. PG&E anticipates replacing the northern Structure EN15 with the overall MOX Project construction timeframe.

The earlier replacement of Structure EN17 is part of PG&E's ongoing inspections and maintenance program to ensure safe line operation (PG&E PEA Section 3.8.3, Inspections Program). This program is occurring outside of the proposed MOX Project.

Should the CPUC decision makers approve the MOX Project, construction is anticipated to begin in August 2028, as stated on the CPUC's Project website and in Table 2.4-3 (Preliminary Proposed Construction Schedule) in Section 2.4.4 (Construction Section) of the Draft EIR.

To clarify the necessity of earlier structure replacement, separate from the proposed MOX Project, in some locations to ensure safe operation, Section 2.1.6 (Potentially Required Facilities, Expansions, and Equipment Lifespans) in the Final EIR has been revised to add that ongoing inspections of the existing overhead structures and lines will continue while the proposed Project is being considered by the CPUC. If ongoing inspections find issues that are best remedied by replacing or eliminating existing structures, PG&E will follow the appropriate process to address those issues to enable continued safe line operation.

See also Responses to Comment Set F02.

D14-2 The commenter lists his understanding of PG&E's engineering and construction process and schedule, as explained by PG&E, stated on the CPUC's Project website, and included in the Draft EIR. The following includes the commenter's statement followed by PG&E's Response to CPUC Data Request #12 (dated October 16, 2025):

1) *PG&E engineering will review the site and contact us. We would likely approve the eastern position. Engineering would generate drawings and specification. And have the project approved/permitted.*

   PG&E Response: PG&E is in the preliminary engineering phase for these tower replacements. PG&E will continue to coordinate with the Jefferies and the CPUC as engineering and planning progresses, and as part of the CPUC's review and approval of the work.

2) *The footing foundation contractor will come and drill deep piers, fill with concrete, and top with steel mounting plate. When might this happen and how long would it take? Would equipment be moved out each day?*

   PG&E Response: Structure foundation construction activities and will typically occur over several days. Outside of work hours, equipment would be positioned to allow access to residences.

3) *At a later date, the circuits would be deenergized, a tall crane will come in and place tubular sections to the full height necessary including the top pieces to hold the wires.*

   PG&E Response: Yes, structure installation occurs during a line clearance, when the circuits are deenergized.

4) *At approximately the same time as above, the crane will disassemble and remove the old towers including the concrete footings. And the old wires will be moved to the new towers. What can we say about the schedule here and the time to complete these tasks and access to the houses?*

   PG&E Response: Existing structure removal typically occurs over several days during a line clearance. Outside of work hours, equipment would be positioned to allow access to residences.

5) *At some time later, probably in 2028, new larger gage wire will be pulled to replace the old wire as a part of the MOX project."*

   PG&E Response: The reconductoring is planned to occur as part of the MOX Project, therefore the reconductoring timeline depends on if and when the MOX Project is approved.

The commenter requests clarification of the construction start date for the structures adjacent to his residence, which is address in Response to Comment D14-1.

Comment Set D15 – Paul Kubicek

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Paul Kubicek <pfkub@yahoo.com>
Sent: Friday, September 26, 2025 4:21 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Moraga-Oakland X Project

Tharon Wright, CPUC:

I have reviewed the Draft Environmental Impact Report (EIR) for the Moraga-Oakland X (MOX) 115 Kilovolt Power Line Rebuild Project and am submitting these comments for consideration by the CPUC. I have lived in the Shepherd Canyon area of Oakland in sight of the existing transmission line for over 40 years. My comments are based on my knowledge of the proposed project learned through the EIR process, as well as my familiarity with the existing transmission line and surrounding area. **D15-1**

In my opinion, the following items have not been addressed in sufficient detail within the EIR.

Erosion and Sedimentation in the Sausal Creek Watershed, with Potential Impact on Aquatic Resources, Most Notably Native Rainbow Trout.
The western portion of the project extending from the ridge top separating Alameda and Contra Costa counties southwestward to the Oakland X Substation exists within the Sausal Creek watershed, which includes such streams as Shephard Creek, Cobbledick Creek, Palo Seco Creek, and Sausal Creek. A small native rainbow trout population inhabits portions of the watershed. Land disturbance associated with the proposed project could cause erosion, leading to sedimentation of streams that could impact rainbow trout through degradation of habitat, particularly for spawning, rearing, and food production. Note that this potential effect exists for rainbow trout that may be located far downstream of the disturbance area, as the eroded material may be washed and deposited miles downstream.

Thus, extensive erosion control measures, including revegetation, need to be employed at the construction sites (i.e., new and exiting tower locations and access roads). Then, monitoring of these sites, as well as any needed corrective actions, should be conducted over a sufficient timeframe to ensure that the erosion is fully under control. Note that several existing tower sites and portions of the right-of-way under the existing lines currently have erosion issues. The rebuild project should include assessment of erosion issues at the existing towers and within the right-of-way, followed by corrective actions. **D15-2**

Raptor Interations with the Transmission Line, with Potential for Raptor Injury or Mortality.
Many species of raptors inhabit the project area, including red tailed hawk, red shoulder hawk, and Cooper's hawk in the Shepherd Canyon area. Note that I recently observed an immature bald eagle soaring over the transmission line at the ridge top separating Alameda and Contra Costa counties. Because transmission lines pose potential electrocution and collision hazards for raptors, all necessary measures to minimize these hazards should be included in the design of the rebuilt towers. Additionally, if any of the existing towers will be left unchanged as part of the finished project, all such towers should be assessed and any needed actions taken to ensure that the latest raptor protection measures are being implemented. **D15-3**

Comment Set D15 – Paul Kubicek (continued)

Control of Access to Transmission Line Towers and Right-Of-Way Following Construction During the construction project, numerous temporary roads will no doubt need to be constructed to access new and existing tower locations and laydown areas. To avoid uncontrolled vehicular access to these sites following construction, the roadways will need to be removed and the disturbed areas returned to natural conditions in association with the erosion control work discussed above. If any of the construction access roads are to remain for long-term maintenance purposes, secure locked gates and fencing should be used to prevent public access. **D15-4**

Maintenance of Project Area Sites Following Construction **D15-5**

Many of the existing tower sites are accessible to the public by way of public roads and trails. Some of the more frequented sites have experienced trash disposal and painting of graffiti. A good example of this is the set of towers that sits on a knoll between the City of Oakland Maintenance Yard on Shepherd Canyon Road and the old Railroad Right-Of-Way Trail above it. A long-term maintenance element of this project should be a program of regular inspection and clean-up at these sites.

Thank you for the opportunity to provide these comments for consideration.
Paul Kubicek
Resident of Shepherd Canyon

Responses to Comment Set D15 – Paul Kubicek

D15-1 The commenter is concerned with erosion and sedimentation in the Sausal Creek Watershed, and the potential impacts to rainbow trout downstream. Though rainbow trout does not have a special-status specie designation, impacts to Sausal Creek, other creeks in the region, and native fish species due to sedimentation would be considered a significant impact under the thresholds of significance analyzed in Section 3.4 (Biological Resources) of the Draft EIR. Sedimentation and soil erosion are disclosed as a potential impact in several sections under the Draft EIR's analysis of "Impact BIO-1," including potential impacts to plants, amphibians, aquatic reptiles; and in "Impact BIO-3" regarding potential impacts to water quality and aquatic resources. Special status fish species are discussed in Section 3.4.1.6 (Special-status Wildlife Species). The analysis there determined the proposed Project is outside the range of, or inaccessible to, listed steelhead species.

Though rainbow trout is not a special-status species and not specifically mentioned in the Draft EIR, PG&E has committed to several Applicant Proposed Measures (APMs) that would reduce impacts from erosion and sedimentation into local creeks and thus reduce potential impact to rainbow trout. These APMs, such as BAHCP Field Protocol (FP-) 11, FP-12, and FP-14, O&M ITP-5.9 and 5.10, include utilizing standard erosion and sediment control BMPs to prevent construction site runoff into waterways, establishing and covering stockpile areas so they do not enter water systems, revegetation for disturbed areas, maintaining buffers around the edge of riparian areas, pruning vegetation in a manner that promotes regrowth, and implementation of erosion control measures.

In addition, potential impacts from sedimentation and erosion were discussed in the Draft EIR's analysis of Hydrology and Water Quality in Section 3.10.3.3 under Impact HW-1. As described in detail there, PG&E would prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) to reduce potential impacts from erosion and increased runoff and sedimentation. Additionally, as discussed in the Draft EIR's analysis of Hazards, Hazardous Materials, and Public Safety (Section 3.9) the CPUC would require implementation of Mitigation Measure MM HH-1a, Prepare and Implement a Soil Management Plan, which provides the procedures PG&E shall undertake if contaminated soil is encountered. The measures will require PG&E to take appropriate measures to reduce the potential for sedimentation and erosion.

D15-2 The commenter states that erosion control measures, such as re-vegetation, are needed at all construction sites, including new and existing tower locations and access roads. The commenter recommends long-term monitoring and corrective actions to ensure effective management of erosion control. The commenter also notes that existing erosion issues are present at the current tower sites and along the right-of-way and recommends that the Project should include assessment and remediation of these areas.

As described in EIR Section 2.5.1 (Demobilization and Site Restoration), Best Management Practices (BMPs) would be implemented, inspected, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP) to stabilize disturbed soils. Vegetation and landscaping would be restored as needed to return the site to pre-project conditions or as specified in landowner agreements. Re-vegetation would be conducted in compliance with several APMs, including FP-14 and ITP FEIR APM BIO-3a. Also, avoidance and minimization measure AMM Plant-08 from PG&E's Bay Area Habitat Conservation Plan (BAHCP) requires pruning shrubs in a manner that promotes resprouting. These APMs and AMMs have been incorporated into the proposed Project and would sufficiently address potential erosion issues

within the Project footprint, including at existing tower sites and along areas along the right-of-way. No additional analysis is required.

D15-3 The commenter is concerned with raptor interactions with transmissions lines, and the potential for raptor injury or mortality from electrocution and collision hazards. Due to these hazards, collision and electrocution risks should be addressed in the design rebuilding of the towers.

CPUC acknowledges that collision and electrocution risks from transmission lines are potential impacts to bird species, particularly raptors. In Draft EIR Section 3.4, Impact BIO-7 specifically addresses collision and electrocution risks to avian species. The Avian Powerline Interaction Committee (APLIC) establishes guidelines and resources for addressing avian impacts to utility infrastructure, which were discussed and cited in the Draft EIR. In Response to Comment E01-70, and at the request of the Applicant, an expanded description of the design elements to protect raptors has been added to the Project Description in EIR Chapter 2. As stated by PG&E in Comment E01-70, implementation of the APLIC design standards is not optional, thus, would be required to be implemented as part of the proposed Project.

As such, EIR Section 2.1.5.1 (Overhead Upgrades) in the Final EIR has been revised to state that PG&E, as part of its proposed Project would implement avian-safe design measures, following suggested practices outlined by the APLIC. The EIR analysis regarding raptor impacts complies with the requirements of CEQA and the CEQA Guidelines, and no additional analysis is required.

D15-4 The commenter states that new temporary roads would need to be constructed to implement the project and is concerned about uncontrolled vehicular access to these sites following construction, restoring temporarily disturbed areas, and installing locked gates or fencing to prevent public access.

As described in EIR Section 2.5.1 (Demobilization and Site Restoration), no overland access routes are proposed for construction. Aside from improvements to existing access roads, no new access roads are proposed for construction, and no associated temporary or permanent gates for access roads are needed. As part of the final construction activities, PG&E would restore disturbed areas, repave removed or damaged paved surfaces, restore landscaping or vegetation as necessary, and clean up the job site. The SWPPP would also include Best Management Practices (BMPs), which would be specific actions, controls, and strategies outlined in the plan to reduce or eliminate pollution and stabilize disturbed soils.

D15-5 The commenter requests maintenance of the Project area sites following construction and states that some of the more frequented sites have experienced trash disposal and graffiti (e.g., the towers that sit on a knoll between the City of Oakland Maintenance Yard on Shepherd Canyon Road and the old Railroad Right-Of-Way Trail). The commenter concludes that a long-term maintenance element of the MOX Project should be a program of regular inspection and clean-up at these sites.

Restoration following Project construction is described in EIR Section 2.5.1 (Demobilization and Site Restoration). As work is completed at each work site, the surplus materials, equipment, and construction debris located at the site would be collected and removed. As part of the final construction activities, PG&E would restore disturbed areas, repave removed or damaged paved surfaces, restore landscaping or vegetation as necessary, and clean up the job site.

Following construction of the Project, operation and maintenance activities are described in EIR Section 2.6 and would consist of routine inspection, repair, and maintenance activities, which would be conducted as they are under existing conditions for existing facilities modified

as part of this Project. Emergency repair operations for damage from storms, floods, vandalism, or accidents would involve the prompt deployment of crews and necessary equipment to repair and replace damaged facilities.

In PG&E's Responses to Data Request #13 (dated October 22, 2025), PG&E stated that it implements the following procedure for trash abatement or vandalism on PG&E properties:

- PG&E first receives notification of an issue from the public, an agency or PG&E inspection.
- PG&E's Land Department reviews the request and a PG&E land agent verifies the issue is on PG&E property.
- Once the issue is verified on PG&E property, a PG&E environmental field specialist will assess the trash for any hazardous materials.
- If hazardous materials are identified, a specialized cleanup contractor will properly clean up the materials and dispose of them at a licensed facility.
- If no hazardous materials are identified, PG&E will implement a resolution plan to clean up the trash.
- If vandalism occurs on PG&E property, such as graffiti, PG&E's painting and coatings department will lead the cleanup.
- After cleanup is completed, PG&E will complete photo documentation and close the case.

The public may also submit a request under the topic "Reporting Issues" on PG&E-owned property at the following link: https://www.pge.com/en/about/land-use-and-sales/easement-and-property-requests.html

Comment Set D16 – Brenda So

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Undergrounding Montclair <undergrounding.montclair@gmail.com>
Sent: Friday, September 26, 2025 5:01 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Comments in MOX Rebuild Project in Shepherd Canyon

Dear Tharon Wright, CPUC,

D16-1

We are a group of residents residing in the Oakland Hills area adjacent to the Shepherd Canyon. We strongly oppose the rebuilding the MOX transmission line overhead above the Shepard Canyon.

As further discussed below, Shepard Canyon is a very high risk wildfire zone. Overhead powerlines above Shepard Canyon exacerbate the wildfire risk of the entire Oakland Hills region. The MOX overhead transmission should be removed from Shepherd Canyon or undergrounded. Rebuilding the MOX transmission line overhead in the same location in Shepherd Canyon is losing a great opportunity to significantly reduce the wildfire risk of the area for decades to come.

D16-2

Shepherd Canyon is situated within the Very High Fire Hazard Severity Zone designated by the City of Oakland. On June 18, 2025, Oakland Fire Chief Covington stated in the Oakland City Council meeting, and the Council agreed, that the Oakalnd Hills area should be designated as the V HFHSZ according to the requirements Government Code Section 51182.

Shepherd Canyon high fire risks include-

-rugged terrain
-dense and dry vegetation throughout the canyon
-strong canyon wind, especially during the dry seasons
-dense population in close proximity to the canyon
-lack of sufficient ingress/egress route for fire fighting and evacuation.

Please remove and underground the overhead powerlines above Shepherd Canyon and reduce the wildfire risks for our neighborhood

Thank you!

Brenda So
2000-2100 blocks on Drake Drive, Oakland.

Responses to Comment Set D16 – Brenda So

D16-1 The commenter states that she represents a group of residents residing in the Oakland Hills area adjacent to the Shepherd Canyon, which is a very high-risk wildfire zone. The commenter also states that overhead power lines above Shepard Canyon exacerbate the wildfire risk of the entire Oakland Hills region for decades to come.

The commenter's opposition to the proposed Project and support for underground alternatives due to wildfire risk concerns are noted and will be shared with the CPUC's decision-makers for their consideration.

EIR Section 3.18 (Wildfire) describes the environmental setting and potential impacts of the proposed Project related to wildfire. Please refer to Response to Comment D11-15, which addresses concerns about the Project's permanent life-safety risk due to wildfire. See also General Response GR-1 for a discussion of underground alternatives considered in the EIR.

D16-2 The commenter states that Shepherd Canyon is located within a VHFHSZ designated by the City of Oakland and states that the Oakland City Council determined that the Oakland Hills area should also be designated as VHFHSZ. The commenter cites Government Code Section 51182. The commenter identifies fire hazard factors in Shepherd Canyon and urges for the overhead powerlines in Shepherd Canyon to be relocated underground. EIR Sections 3.15 (Transportation) and 3.18 (Wildfire) identify Shepherd Canyon Road as an important transportation corridor and recreational resource that would be impacted by lane closures and interruptions to public transportation during Project construction. Impact T-7 discusses how impacts would be reduced through APM TRA-1 (Temporary Traffic Controls) and MMs T-1a (Traffic Management Plan and Safe Transport), and N-1b (Construction Notification). Figure 3.18-1 identifies Shepherd Canyon Road in a VHFHSZ. Please refer to Response to Comment GR-1 regarding relocation of overhead powerlines underground.

J.3.5. Comment Set E: Applicant

Comment Set E01 – Pacific Gas and Electric Company

Email: PG&E'S Moraga-Oakland X 115 kV Rebuild Project

From: Schlemer, Erica (LAW) <EJSX@pge.com>
Sent: Friday, September 26, 2025 4:03 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: Liddell, Brandon; Taylor, Colleen
Subject: PG&E's Comments on Moraga Oakland X 115 kV Rebuild Project Draft EIR
Attachments: PGE Moraga-Oakland X - Comments on DEIR FINAL_.pdf

Classification: Public

Hello,

Please find PG&E's comments on the Draft EIR prepared for the Moraga Oakland X 115 kV Rebuild Project attached.

Attachment 2, the Infraterra Landslide Study, is too large to send over email. It will be sent separately via a File Transfer Tool link from Jacobs.

Thank you and if you have any questions, please let me know.

Erica Schlemer
Counsel
Pacific Gas & Electric Company

You can read about PG&E's data privacy practices at PGE.com/privacy.

Comment Set E01 – Pacific Gas and Electric Company (continued)

Erica Schlemer
Counsel

Pacific Gas & Electric Company
Attn: Law Department

300 Lakeside Drive
Oakland, California 94612

(415) 722-1851
Email: Erica.Schlemer@pge.com

September 26, 2025

Tharon Wright, CPUC Project Manager
California Public Utilities Commission
c/o Aspen Environmental Group
235 Montgomery Street, Suite 967
San Francisco, CA 94104-2920
MOX@aspeneg.com

Re: Comments on Draft Environmental Impact Report for the Pacific Gas and Electric Company Moraga-Oakland X 115 Kilovolt Rebuild Project (A.24-11-005), State Clearinghouse #2025-02-0944

Dear Ms. Wright,

Pacific Gas and Electric Company ("PG&E") provides these comments on the Draft Environmental Impact Report for the PG&E Moraga-Oakland X 115 Kilovolt (kV) Rebuild Project ("Proposed Project" or "Project") (A.24-11-005), State Clearinghouse #2025-02-0944, published by the California Public Utilities Commission ("CPUC") on August 12, 2025 ("DEIR").

I. INTRODUCTION AND SUMMARY

E01-1

The DEIR provides a thorough, comprehensive analysis prepared in accordance with the requirements of the California Environmental Quality Act ("CEQA"). PG&E appreciates the substantial time and effort by the CPUC and its consultants in evaluating the Proposed Project and preparing the DEIR.

The Proposed Project will rebuild the existing Moraga-Oakland X 115 kV power line by replacing approximately four miles of two overhead parallel double circuit 115 kV power lines in place, from Moraga Substation to the intersection of Estates Drive and Park Boulevard, and placing underground approximately one mile of two parallel double circuit 115 kV power lines from the intersection of Estates Drive and Park Boulevard to Oakland X Substation. The Proposed Project includes critical life cycle maintenance and provides important system reliability and wildfire safety improvements to better serve the Oakland area. The Proposed Project will replace structures that are approximately 100 years old with modern equipment that meets reliability and safety requirements with overhead and underground portions. Replacing the existing conductor will provide capacity to accommodate the region's reasonably foreseeable future energy demands.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-2

In preparing these comments, PG&E focused on the four issues for which evidence or comment can be provided only in the CEQA environmental review process, as specified in the Assigned Commissioner's Scoping Memo and Ruling issued March 11, 2025 ("Scoping Ruling"), and the Administrative Law Judge's Ruling Setting Prehearing Conference issued September 5, 2025 ("ALJ Ruling"). Those four issues are: Issue 1 ("What are the significant environmental impacts of the Proposed Project, if any"); Issue 2 ("Are there potentially feasible mitigation measures that will avoid or lessen the identified significant environmental impacts"); Issue 3 ("Between the Proposed Project and the project alternatives, which is environmentally superior?"); and Issue 4 ("Are the mitigation measures or environmentally superior project alternatives infeasible for economic, social, legal, technological or other considerations?").[1] PG&E's comments in Sections II, III and IV below explain the following.

Section II. While the DEIR correctly selects the Proposed Project (in the configuration proposed by PG&E) as environmentally superior, evidence demonstrates that the alternatives considered in the DEIR for undergrounding portions of the Project in the Oakland Hills (i) present more difficult engineering challenges that may cause the alternatives to be infeasible, and (ii) would result in greater impacts (including to neighboring properties and in the areas of transportation and wildfire risk), than the DEIR recognizes (Issues 3 and 4). In particular:

- The undergrounding alternatives present substantial construction challenges as recognized in the DEIR;
- Alternative 3 (Shepherd Canyon Underground Alternative) involves particularly significant landslide risk, including deep and moderate landslides that pose a risk of deformation of the underground duct bank and elongation of the line beyond its maximum two-inch tolerance, and may be infeasible;
- Alternative 2 (Skyline-Colton-Snake Underground Alternative) also involves significant landslide risk due to the steep canyon that raises feasibility concerns;
- Alternative 4 (Skyline-Ascot Underground Alternative) requires a new Manzanita Transition Station and potentially an overhead line along Scout Road that raise feasibility concerns;
- The DEIR does not fully recognize the construction impacts of an undergrounding route in the Oakland Hills, as any route would result in the

[1] Scoping Ruling at 3-5 (specifying on page 5 that: "Any person or party who wishes to present evidence or comment to be considered on these Issue Nos. 1- 4 must do so through participation in the CEQA review process, i.e., public review and comment on the draft environmental document"; and "We will not take evidence regarding those CEQA issues outside of the final environmental document."). *See also* ALJ Ruling at 3 ("The Draft Environmental Impact Report was issued on August 12, 2025 with a public comment due date of September 26, 2025. As indicated in the Scoping Memo, any person or party who wished to present evidence or comment to be considered on Issues 1 to 4 had to do so through participation in the CEQA review process.").

Comment Set E01 – Pacific Gas and Electric Company (continued)

combined construction impacts of two alternatives, plus transition facilities and removal of existing towers and lines; and

- Undergrounding in the Oakland Hills would result in more significant transportation and air quality impacts than the DEIR recognizes due to the nature and extended duration of construction.

E01-2 (cont'd)

Section III: The DEIR imposes mitigation measures that are stricter than necessary to mitigate impacts and raise feasibility concerns for construction (Issue 4). In particular:

E01-3

- Wildfire Mitigation Measure WF-1a should be revised to use the specific evacuation routes determined by local jurisdictions; and
- Wildfire Mitigation Measure WF-1b should be modified to expand the months when full road closures are allowed so that they align with months when fire risk is low.

Section IV: The DEIR overstates the Proposed Project's impacts in the areas of Biological Resources, Transportation, Wildfire Risk, and Noise (Issue 1). In particular:

E01-4

- The DEIR's assessment of Biological Resources speculatively finds that the Proposed Project would have significant impacts on species that have not yet been identified as present in the Proposed Project area and imposes unnecessary mitigation measures;

E01-5

- The DEIR's assessment of Impact T-1 incorrectly finds that the Proposed Project would be inconsistent with a number of local transportation programs and policies;
- The DEIR's assessment of Impact T-4 incorrectly finds that the Overhead Power Line Rebuild would result in significant and unavoidable impacts to emergency access;
- The DEIR's assessment of Impacts T-5 and T-6 incorrectly finds that the Overhead Power Line Rebuild would have significant and unavoidable impacts to pedestrian and bicycle safety and accessibility;
- The DEIR's assessment of Impact T-7 incorrectly finds that impacts to public transit would be significant and unavoidable;
- The DEIR's assessment of Impact WF-1 incorrectly finds that the Proposed Project would result in a significant and unavoidable wildfire risk; and
- The DEIR's assessment of Impact N-2 incorrectly finds that the Proposed Project would expose persons to or generate excessive ground borne vibration.

These points are explained in detail below.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-6

PG&E's comments also include and incorporate by reference the following Attachments, which include selected evidence from PG&E's Proponent's Environmental Assessment filed with the application ("PEA") and PG&E's responses to CPUC data requests.

Attachment 1: Text Revisions and Requests for Clarification.

Attachment 1 is a table showing "fine-grained" comments on mitigation measures and identifying the specific text revisions that PG&E is requesting, including minor text revisions for accuracy or consistency.

Attachment 2: InfraTerra Landslide Study (PEA Appendix E4)

Attachment 3: PG&E Response to CPUC Data Request 6, Part B

Attachment 4: PEA Chapters 4 and 6

Attachment 5: PG&E Response to CPUC Data Request 9

Attachment 6: Recent Historic Fire Risk by Month

PG&E's comments are intended to ensure that the Final Environmental Impact Report ("Final EIR") for the Project will be accurate, complete, and consistent with CEQA, and to ensure that the Final EIR provides a full record on Issues 1-4 in the Scoping Ruling. PG&E respectfully requests that the CPUC incorporate the information and proposed revisions to the DEIR presented in this letter and Attachment 1 into the Final EIR. PG&E reserves the right to supplement its comments on the DEIR at a later date.

E01-7

II. THE DEIR CORRECTLY SELECTS THE PROPOSED PROJECT AS ENVIRONMENTALLY SUPERIOR BUT EVIDENCE SHOWS THAT THE UNDERGROUNDING ALTERNATIVES PRESENT MORE DIFFICULT ENGINEERING CHALLENGES AND WOULD HAVE GREATER IMPACTS THAN THE DEIR RECOGNIZES.

A. The DEIR correctly selects the Proposed Project as the environmentally superior alternative.

The DEIR concludes that the Proposed Project in the configuration proposed by PG&E is the environmentally superior alternative.[2] CEQA requires a lead agency to evaluate alternatives "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."[3] The DEIR analyzes the environmental impacts of the Proposed Project and four alternatives to portions of the Proposed Project that would (i) remove the existing 115 kV overhead line, (ii) install new lines underground, and (iii) build new transition stations for the underground segments. The alternatives to the Proposed Project's central section—Alternatives 2, 3, and 4—would each only accommodate two of the four circuits,

[2] DEIR at 4-64.

[3] CEQA Guidelines, Cal. Code Regs., tit. 14, § 15126.6(c).

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-7 (cont'd)

which means that two of those three underground alternatives must be constructed to meet the Proposed Project objectives.[4] The DEIR concludes that Alternative 4 would have the most significant impacts of the three alternatives. The DEIR therefore concludes that the combination of Alternatives 2 and 3 would minimize the impacts of underground alternatives and compares Alternatives 2 and 3 to the Proposed Project's central section. The DEIR also compares Alternative 5 to the Proposed Project's overhead segment west of State Route 13 to the Estates Drive and Park Boulevard intersection where the Proposed Project's underground segment begins.

The DEIR concludes that the Proposed Project is the environmentally superior alternative because it "would result in substantially less disruptive construction impacts compared to underground construction of four 115 kV circuits in steep, narrow, and/or winding roadways. The analysis in the DEIR also demonstrates that no significant and unavoidable impacts of the Proposed Project would be eliminated by the underground alternatives and that the Proposed Project offers a major improvement over the existing setting by reducing the wildfire risk associated with the older existing 115 kV lines."[5]

The DEIR concludes that the alternatives would create new significant and unavoidable impacts not presented by the Proposed Project. The DEIR finds that Alternatives 2 and 3 "would create new significant and unavoidable impacts related to Transportation (Impact T-7) and Geology and Soils (Impact GEO-3)," and "would have more severe and a longer duration of construction impacts across a larger geographic area."[6] The DEIR concludes that Alternative 5 would create new significant and unavoidable impacts to Geology and Soils, and would have more severe transportation impacts on Sims and Somerset Drives, which are dead-end streets, because residents and emergency vehicles would be unable to reach those residences during construction activity, and evacuation would be severely hampered due to the narrow streets.[7]

The DEIR's conclusions regarding the significant and unavoidable impacts of the Proposed Project's central section and each alternative to the central section are summarized the table below. The DEIR's finding of a significant and unavoidable impact is indicated in the table as "SU". Impacts marked as "**SU**+" indicate that although the DEIR found that the Proposed Project's central section would have a significant and unavoidable impact in that area, the DEIR found that the alternative would have a more severe significant and unavoidable impact in the same area. Because the alternatives would replace only the Proposed Project's central section, the table shows the significant and unavoidable impacts that the DEIR identified for the central section. For example, the Proposed Project's central section does not result in the T-7 significant and unavoidable transportation impact identified for other Project sections.[8]

[Table appears on the following page]

[4] DEIR at 4-3.

[5] DEIR at ES-1 to ES-2; *id*. at 4-64.

[6] DEIR at 4-62.

[7] DEIR at 4-64.

[8] *See* Section IV.E below.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-7 (cont'd)

Significant and Unavoidable Impacts in the DEIR					
Identified Impact	**Proposed Project (Central Section)**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5[9]**
T-1	SU	**SU+**	**SU+**	**SU+**	**SU+**
T-4	SU	**SU+**	**SU+**	**SU+**	**SU+**
T-5	SU	**SU+**	**SU+**	**SU+**	**SU+**
T-6	SU	**SU+**	**SU+**	**SU+**	**SU+**
T-7	-	SU	-	-	SU
WF-1	SU	SU	SU	SU	SU
GEO-3	-	SU	SU	SU	SU
AES-3	-	-	-	SU	-

The table above shows that the alternatives would not avoid the Proposed Project's significant and unavoidable impacts, and instead would exacerbate those impacts and result in additional significant and unavoidable impacts. The DEIR correctly determined that the Proposed Project is the environmentally superior alternative.

E01-8

B. The undergrounding alternatives present additional feasibility issues not discussed in the DEIR.

1. The undergrounding alternatives present substantial construction challenges as recognized in the DEIR.

The DEIR recognizes that "[b]ecause of the narrow, steep, and winding roads between SR-13 and Manzanita Drive (see Figure 4.3-1), any underground route between SR-13 and Manzanita Drive would have to overcome several substantial construction challenges. Some of these challenges may be determined to be so severe that a segment of the alternative route is found to be infeasible."[10] These construction challenges include:

- Landslides: More than half of the Oakland Hills contain defined landslide zones. The DEIR recognizes that "more extensive studies would be required to design the specific protective measures for any selected underground segment east of Mountain Boulevard."[11] PG&E's PEA included a landslide study, which is attached hereto as Attachment 2 (InfraTerra Landslide Study (PEA Appendix E4)) and the CPUC completed a preliminary screening for landslide risk based on available data.[12] The DEIR concluded that the underground alternatives would have an

[9] Note that the impacts of Alternative 5 are compared to the impacts of the Proposed Project from SR13 to Estates Drive.

[10] DEIR at 4-4.

[11] DEIR at 4-6.

[12] DEIR at 4-6.

Comment Set E01 – Pacific Gas and Electric Company (continued)

additional significant and unavoidable impact to geology during operations (Impact GEO-3) because the underground alternatives would "[b]e 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."[13] **E01-8 (cont'd)**

- Vault Installation: Undergrounding would require installation of 10 to 30 large vaults for each of the alternatives where sections of the underground cable are pulled through the duct banks and spliced together.[14] The cumulative horizontal curvature of the line between vaults determines how far apart the vaults may be because "[w]hen the conduit is not straight, the cable will push against the sidewall as it moves around a bend. Tighter bends create more sidewall pressure." In roads with more bends, vaults need to be closer together to splice the line more frequently and relieve the sidewall pressure. More splices also often are less reliable during operation.[15] As noted in the PEA, "Alternative B would have up to approximately 25 to 30 vaults minimum with a maximum spacing at approximately 1,000 feet per line to address the friction created in the cable."[16] The narrow and winding roads are also space-constrained. Construction activities to install vaults may require additional space beyond the minimum road to accommodate the duct banks and vaults. This additional space would be needed to safely operate construction equipment, or to shore the sides of the excavation by pile driving adjacent to the vault. This could result in additional vegetation removal or impacts to private property. An underground alternative may be infeasible if such space is not available.[17] Furthermore, as noted in the PEA, straight road segments of approximately 165 feet are needed to install precast vaults.[18] **E01-9**

- Crossing Hayward Fault: This is not feasible for an underground line, so all alternatives include transitions to overhead lines for crossing the fault.[19] Transition stations increase the potential for adverse environmental impacts, as they require more ground disturbance, increasing the likelihood of disturbing habitat or cultural resources.[20] **E01-10**

- Construction-Driven Road Closures: Because roads in the Oakland Hills are narrow, construction of an underground line would block stretches of each roadway **E01-11**

[13] DEIR at ES-20.

[14] DEIR at 4-5.

[15] Attachment 3 (PG&E Response to CPUC Data Request 6, Part B), Question ALT-1, at 1-2.

[16] Attachment 4 (PEA Chapters 4 and 6), PEA at 4-16.

[17] Attachment 3 (PG&E Response to Data Request 6, Part B), Question ALT-1, at 2-3.

[18] Attachment 4 (PEA Chapters 4 and 6), PEA at 6-14.

[19] DEIR at 4-4.

[20] DEIR at 4-30.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-11 (cont'd)

requiring residents to use alternate routes. Additionally, construction on steep slopes would be slower, extending closures. Numerous construction vehicles would have to traverse these roads every day, including back-hoes, dump trucks with soil and backfill material, worker vehicles, etc. This traffic would add to the existing commuting and school access traffic during the construction period.[21]

- Conflicts with existing underground utilities: All roads in the Proposed Project area have existing underground utilities. Due to the narrowness of the roads, it is likely that existing utilities would need to be relocated within the road. The Proposed Project's 115 kV lines could be installed at greater depth in some instances below existing utilities, requiring extended construction timeframes and longer road closures.[22]

E01-12

Landslide risk presents a particularly difficult challenge. The Oakland Hills area contains multiple existing landslides and areas of extremely elevated landslide susceptibility. These areas can continue to move for reasons that include rainfall, earthquakes, and destabilization from construction activities.[23] Movement of these slides is common, although unpredictable, and can be observed in the area.[24] See Attachment 4 (PEA Chapters 4 and 6) (Fig. 4.2-9 from PEA) for an example of a slide in Novato, California, an area with similar soils and geology, showing that "deep-seated landslides may extend below a valley floor and may uplift soil near the base of the slope."[25]

Earth movement due to a landslide or earthquake that causes the cable to elongate or move more than the cable's maximum allowable elongation likely would damage the cable beyond use. PG&E presented evidence that the maximum allowable elongation of the cable is approximately two inches, based on cable manufacturer guidance.[26] Repair of the underground power lines would require demolition of the duct bank and cable, resulting in a long-term outage of the power line on the order of six months or greater. This estimate does not include other ground stabilizing construction that would need to be performed following a landslide to stabilize the slope and road prior to repairing the power line facilities.[27]

As the DEIR recognizes, the potential for landslides, slope creep, or earthquakes would increase the risk of underground line damage during the Project's operational life, and may warrant construction of additional infrastructure.[28] This would include engineering solutions to prevent

[21] DEIR at 4-5.

[22] DEIR at 4-5.

[23] Attachment 4 (PEA Chapters 4 and 6), PEA at 4-14.

[24] Attachment 4 (PEA Chapters 4 and 6), PEA at 4-14.

[25] Attachment 4 (PEA Chapters 4 and 6), PEA at 4-14.

[26] Attachment 4 (PEA Chapters 4 and 6), PEA at 4-14.

[27] Attachment 4 (PEA Chapters 4 and 6), PEA at 4-14.

[28] DEIR at 4-30.

Comment Set E01 – Pacific Gas and Electric Company (continued)

damage to the underground lines by stabilizing the roadways and surrounding slopes. Engineering solutions would likely require thicker duct banks or retaining walls.[29] However, these engineering solutions cannot be defined until intrusive geotechnical investigations are completed. The DEIR also recognizes that "further investigation would be required before its feasibility could be confirmed and a design developed."[30] Any protective design measures identified in geotechnical investigations could create offsite impacts to private property or adjacent residences or extend the construction timeframe by many months.[31]

E01-12 (cont'd)

Specific geological challenges of landslide risk in individual underground alternatives are further detailed in Sections II.B.2 through 4 below.

2. Alternative 3 (Shepherd Canyon Underground Alternative) involves particularly significant landslide risk and may be infeasible.

E01-13

Alternative 3 would remove two existing circuits and install new circuits underground, beginning with a transition pole just east of Saroni Drive, with the underground circuits installed in Saroni Drive, to Shepherd Canyon Road, to the Fire Station Transition Station. Alternative 3 would follow the same route as a portion of PG&E's Alternative C analyzed in the PEA.[32] The DEIR finds a significant and unavoidable impact from Alternative 3 due to the "widespread unstable slopes in the Oakland Hills and uncertainty about engineering requirements to ensure stable duct banks."[33] The DEIR notes that PG&E presented a landslide study prepared by an expert consultant.[34] This report demonstrates that retaining walls or other civil infrastructure along the north side of Shepherd Canyon Road would be required to protect the underground duct banks in Alternative 3, and that installing such protective measures could require removing existing residences.[35] The DEIR states that geologists from the CPUC consultant team disagreed with PG&E's assessment and concluded that Alternative 3 "would be feasible and likely constructible without engineering requirements that would affect private property…"[36] However, the DEIR's conclusion is contrary to the evidence provided by PG&E, which is described and further supported below.

[29] DEIR at 4-62.

[30] DEIR at ES-8.

[31] DEIR at 4-37.

[32] DEIR at 4-9.

[33] DEIR at 4-46.

[34] Attachment 2 (InfraTerra Landslide Study (PEA Appendix E4).

[35] DEIR at 4-47.

[36] DEIR at 4-47.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-13 (cont'd)

a. Evidence shows that several mapped landslides along Shepherd Canyon Road are deep or moderate, posing an unacceptable risk without engineered protective measures.

Mapping by the California Geological Survey[37] identifies several mapped landslides in Shepherd Canyon that contradict the DEIR's statement that "shallow failures are considered more likely to occur than deep failures." Notably, this mapping shows a landslide on the north side of Shepherd Canyon Road approximately 1,800 feet wide by 1,900 feet long, affecting approximately 70 acres, with an estimated thickness classified as "deep - >50 ft," while others are "moderate - 10 to 50 ft." This is generally consistent with the InfraTerra Landslide Study provided by PG&E, which reports landslide deposits in the same area exceeding 15 feet in thickness.[38]

The dimensions, scale, and thickness of this feature strongly suggest that it is a deep-seated rotational slide, which commonly causes deformation at the base of the slide, also known as the toe area. Shepherd Canyon Road is in the likely toe area of this deep-seated rotational slide. While shallow failures may occur, the conditions shown in the California Geological Survey mapping tool clearly demonstrate that deep-seated failures are plausible and documented in this setting. The presence of a 70-acre feature with thicknesses exceeding 50 feet contradicts the assumption that only shallow failures are of concern. Rainfall induced landslides are likely to occur more frequently and result in predominantly shallow slides, but the Project must include consideration of continued safe operation following a seismic event which includes deep-seated landslides.

E01-14

b. A visual assessment of the roadway is insufficient to reach the determination that undergrounding in Shepherd Canyon Road is feasible.

In disagreeing with PG&E's assessment of landslide risk and the need for engineered protection for the duct banks, the DEIR states:

> Geologists from the CPUC consultant team evaluated the InfraTerra report and the statements in the PEA. There is no visible damage to the roadway in the area identified by InfraTerra. The slopes adjacent to Shepherd Canyon are steep, so shallow failures are considered more likely to occur than deep failures. However, these shallow failures may not affect the roadway or utilities buried under the road, especially with a robust concrete duct bank.[39]

The statement appears to be based solely on a visual inspection of the roadways and adjacent slopes without further analysis or evidence, including the CGS mapping discussed above showing the potential for deep and medium thickness slides. A visual assessment of road damage

[37] California Department of Conservation, California Geological Survey, Landslide Inventory, available at: https://maps.conservation.ca.gov/cgs/lsi/.

[38] Attachment 2 (InfraTerra Landslide Study (PEA Appendix E4)) at Figures 3 - 12.

[39] DEIR at 4-47.

Comment Set E01 – Pacific Gas and Electric Company (continued)

is not sufficient to determine landslide risks. At a minimum, the pavement may have been recently repaired, obscuring the effects of a landslide.

E01-14 (cont'd)

As described in the PEA, PG&E's assessment of landslide risk was based on a field visit by PG&E Geosciences staff in 2024 to a large landslide area along Shepherd Canyon Road, west of Paso Robles Drive, where staff made field observations at numerous locations, include at the ground surface and road cuts, assessing the type of rock, estimates of the strength of the blocks of rock, and how fractured and weathered the rock is.[40] These observations were incorporated into two strength models to estimate the mechanical behavior of typical rock masses and evaluate the probability of geotechnical conditions, including slope stability and landslide deformation.[41] Based on these predictive landslide models, the Alternative C underground segment in Shepherd Canyon Road likely would be subject to deformation of 23 to 27 inches, far greater than the two-inch elongation that the cables can withstand.[42] Because of this risk of severe deformation, exploratory geotechnical data would be needed from each landslide area shown in Attachment 4 (PEA Chapters 4 and 6) (Figure 4.2-4b in PEA). This would involve extensive sampling, heavy construction equipment, and potentially grading and vegetation removal.

E01-15

The standard duct bank is not designed to accommodate significant changes in loading while maintaining the required less than two inches of elongation. While a reinforced duct bank may be used in some circumstances, without detailed geotechnical information, the need for retaining walls cannot be ruled out. Further, the anticipated ground movements along Shepherd Canyon Road are far beyond those for which the duct bank may be feasibly designed and will require additional mitigation to reduce the loading on the duct bank. The required engineered protection would need to be designed after a detailed – and impactful – geotechnical investigation.

The feasibility of reinforced engineered protection to protect the underground lines from instability can only be determined with substantial in-situ geotechnical information. Exploratory data from geotechnical investigations would be needed throughout each landslide shown on Attachment 4 (PEA Chapters 4 and 6) (Fig. 4.2-3c in PEA). Such investigation would include extensive soil boring sampling using a track-mounted drill rig to collect samples every 50 to 100 feet along a transect from a duct bank location to the top of the landslide as well as one boring above the landslide. These sampling transects would need to be completed approximately every 200 feet. This requires the use of heavy construction equipment, including drilling rigs, on residential properties. Because of the steep slopes in this area, sampling locations may need to be graded to provide vehicle access, which would require removing trees and shrubs in the area of sampling and could affect much of the existing vegetation on each property. After establishing access and a safe working area, sampling would take approximately two days. If working from a roadway, a single lane closure would be required. This exploratory soil boring data would confirm whether engineered protection is needed at each slide location and, if so, the size or type needed.

Options to protect underground lines include reinforced duct banks and retaining walls. A reinforced duct bank is a duct bank with much thicker concrete walls, reinforced with rebar.

[40] Attachment 4 (PEA Chapters 4 and 6), PEA at 4-18.

[41] Attachment 4 (PEA Chapters 4 and 6), PEA at 4-18.

[42] Attachment 4 (PEA Chapters 4 and 6), PEA at 4-18.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-15 (cont'd)

Reinforced duct banks require greater road width, and existing narrow road widths present a construction constraint. Reinforced duct banks also would take longer to construct and require more lengthy road closures. The amount of duct bank reinforcement that can feasibly be installed in a location is also limited by practical considerations including duct bank geometry, reinforcement detailing, and the required construction means and methods. If reinforced duct banks are not feasible or do not present sufficient protection, retaining walls would likely be constructed.[43] The length of the wall would extend the length of the landslide. The wall design would depend on the depth of the landslide. Shallower landslides may only need a simple retaining wall and a duct bank itself could be designed to be a headwall to deflect soil movement. Moderate landslides may need a retaining wall that is 15 to 30 feet high, which would be visible to surrounding areas. Large landslides may require a much more robust wall, for example with tiebacks or rock anchors. Construction of each retaining wall would require removal of vegetation and excavation into the hillside. Installation of a retaining wall can vary from approximately three weeks to several months depending on the wall type, which can include construction activities such as pile driving. Based on current data, it is assumed that a retaining wall of unknown size would be needed along all landslides shown on Attachment 4 (PEA Chapters 4 and 6) (Fig. 4.2-3c in PEA) to prevent elongation of more than two inches.[44] If a retaining wall was built to protect an underground line, land use restrictions would need to be applied to upslope properties to avoid excess loading of the retaining walls or other load-bearing components that could impact the underground line installation. Such land use restrictions may include requirements that the property may not change buildings or plant new trees.[45]

As noted above, additional engineered protective measures to protect an underground power line in Shepherd Canyon Road would need to be designed based on detailed geotechnical investigations that would themselves have impacts that were not assessed in the DEIR. Yet, without these impactful geotechnical investigations and resulting data, there is nothing to support the assertion that "engineering requirements that would affect private property" are not needed or that an undergrounded powerline would be protected by a "robust" duct bank.

E01-16

c. PG&E's evidence does not support a conclusion that Shepherd Canyon's shape would protect against unacceptable deformation of the duct bank in the event of a deep or moderate landslide.

In its assessment of the feasibility of Alternative 3, the DEIR states that:

> The CPUC team concluded that this alternative would be feasible and likely constructible without engineering requirements that would affect private property, because the predicted landslide is located on both sides of Shepherd Canyon. The canyon's shape results in the road being effectively buttressed against movement

[43] Attachment 4 (PEA Chapters 4 and 6), PEA at 4-15.

[44] Attachment 4 (PEA Chapters 4 and 6), PEA at 4-15.

[45] Attachment 4 (PEA Chapters 4 and 6), PEA at 4-15.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-16 (cont'd)

on the opposite side, so it is less likely that a duct bank buried in Shepherd Canyon Road would be damaged.[46]

While the InfraTerra Landslide Study does show predicted landslide on both sides of Shepherd Canyon Road in many locations, these are separately mapped landslides. Each of these predicted landslides must be evaluated independently. The DEIR asserts that the shape of the canyon itself would act to "buttress against movement" at the base of the canyon. There is no evidence provided in the DEIR to support that conclusion. PG&E's evidence shows that such damage is highly likely. The roadway and canyon floor are relatively flat compared to the steep adjacent slopes, creating a cross-sectional profile more similar to an inverted trapezoid than a V-shape. This geometry allows the toe of deep-seated rotational slides to extend laterally beyond the slope base and into the canyon floor. Shepherd Canyon Road is located on the canyon floor, where it is likely that the toe of a deep-seated rotation slide would extend. A comparable case occurred in Vasquez Canyon in 2015, where a slide occurred within a canyon with an inverted trapezoid shape. Despite the shape of the canyon, the slope failure propagated beyond the slope base and displaced the roadway. Photos of this slope failure are shown in the photographs in Figures 1 through 3 below. As shown in these photographs, the deep failures extend into the flat roadway and are constrained by the slope on the other side of the roadway. The resulting ground deformation under the roadway is significant and greater than the two-inch threshold for the duct bank.

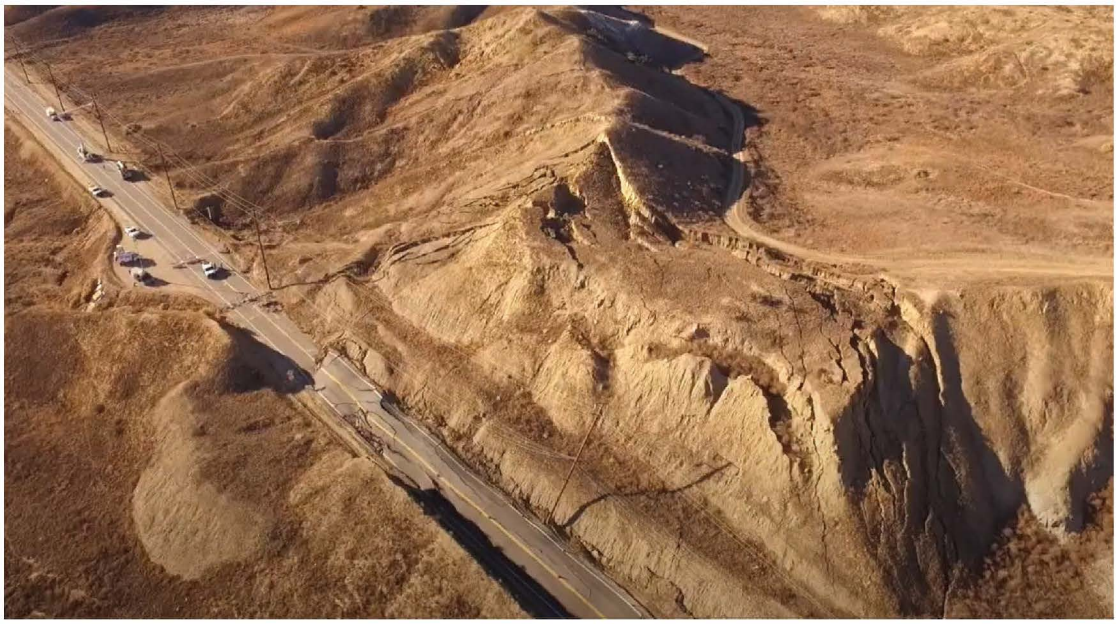
Figures 1 through 4, Vasquez Canyon Slope Failure (2015)

Vasquez Canyon Road Landslide Failure Plane and Roadway Uplift. November, 20, 2015. Source: https://youtu.be/Ef4e6eybLmk

[46] DEIR at 4-47.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-16 (cont'd)



Vasquez Canyon Road Landslide Failure Plane and Roadway Uplift. November, 20, 2015. Source: https://youtu.be/Ef4e6eybLmk

KTLA reporter Mark Mester stands next to Vasquez Canyon Road, which continued to buckle on Nov. 20, 2015. (Credit: KTLA)

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-16 (cont'd)

Los Angeles County Engineering Geologists climb on top of the buckled road where Vasquez Canyon Road has lifted up due to soil movement closing the road between Saugus and Canyon Country. Photo taken in November 2015 by Dan Watson, The Signal.

3. Alternative 2 (Skyline-Colton-Snake Underground Alternative) also involves significant landslide risk that raises feasibility concerns. E01-17

The DEIR notes the "widespread unstable slopes in the Oakland Hills and uncertainty about engineering requirements to ensure stable duct banks,"[47] but the DEIR appears to base its assessment of landslide risk solely on visual observations of the roads along the Alternative 2 route and whether landslide activity appears to be present.[48] PG&E presented geotechnical investigations which demonstrate significant landslide risk along Alternative 2 that should be recognized in the Final EIR as discussed below.

Alternative 2 would remove two existing 115 kV circuits and install new circuits underground within Skyline Boulevard, Colton Boulevard, Heartwood Drive, Snake Road, and Shepherd Canyon Road. As noted in the DEIR, Alternative 2 would require approximately one-half mile of construction within Skyline Boulevard. PG&E did not consider an underground route along Skyline Boulevard due to greater landslide potential than along Manzanita Drive.[49]

[47] DEIR at 4-44.

[48] DEIR at 4-44.

[49] DEIR at 4-44.

Comment Set E01 – Pacific Gas and Electric Company (continued)

Otherwise, the underground alternative comprised by Alternative 2 in the DEIR is similar in route to Alternative B that PG&E analyzed in the PEA.[50]

E01-17 (cont'd)

PG&E noted in the PEA that the area Alternative 2 crosses contains steep slopes, where seismic activity can cause new slides. PG&E used a proprietary regional landslide model and USGS data to identify locations with a greater than 50 percent probability of landslides that would exceed the two-inch threshold of elongation of a duct bank and cause a failure of the line. Attachment 4 (PEA Chapters 4 and 6) (Fig. 4.2-3c in PEA) shows these landslides mapped along Alternative 2.[51] These landslides could impact the duct banks containing the underground power lines by several feet, which would exceed the two-inch elongation tolerance of the cable. As discussed above, this would require reconstruction of the underground line duct bank and could affect power delivery to large portions of the East Bay for six months or more.[52] This risk of landslides presents an unacceptable risk to reliability of the underground lines without engineered protection and additional construction.[53]

As discussed above in Section II.B.2.b above, the feasibility of safely constructing and operating underground lines along Alternative 2 entirely depends on conducting detailed geotechnical investigations to understand where and what type of engineered protective measures are required. Construction of these additional protective measures will result in numerous environmental impacts, such as removal of vegetation, aesthetic impacts, and extended construction and associated traffic impacts that are not discussed in the DEIR. The Final EIR should recognize the evidence of landslide risk on this route and the impacts of conducting necessary geotechnical studies and installing engineered solutions to protect the underground lines from failure due to landslides and seismic activity.

E01-18

In addition to the impacts to Geology and Soils, Alternative 2 would also require construction of the Fire Station Transition Station and associated transition pole, which would have additional potential impacts that are not recognized in the DEIR. The Fire Station Transition Station would be located in a Municipal Service Yard parking area owned by the City of Oakland, which has a "non-standard" shape, and excavation into the hill to the north may be required to fit required equipment. Vegetation removal may be required to provide a setback around the transition station to be consistent with PG&E's Wildfire Program. Both activities could result in potential biological and aesthetic impacts. Construction of a new City of Oakland Municipal Service Yard also may be required, which would have additional impacts. The Municipal Service Yard parking area is used as parking by recreational visitors accessing the MRRT and Shepherd Canyon Park, and loss of that informal access and parking area may result in recreational impacts.

[50] DEIR at 4-8.

[51] Attachment 4 (PEA Chapters 4 and 6), PEA at 4-14.

[52] Attachment 4 (PEA Chapters 4 and 6), PEA at 4-14.

[53] Attachment 4 (PEA Chapters 4 and 6), PEA at 4-15.

Comment Set E01 – Pacific Gas and Electric Company (continued)

4. Alternative 4 (Skyline-Ascot Underground Alternative) requires a new Manzanita Transition Station and potentially an overhead line along Scout Road that raise feasibility concerns. E01-19

Alternative 4 would require the construction of the Manzanita Transition Station. The DEIR describes a Manzanita Transition Station as being "located adjacent to the east side of Manzanita Drive at the intersection with the Project right-of-way."[54] This would require construction of the Manzanita Transition Station directly under the existing power lines, which cannot be done while the lines are in service. Power line clearances, which can be taken only from November to March, remove lines from service so that construction activities can be safely done. However, only two lines (one double-circuit line) can be cleared at a time, so the Manzanita Transition Station could not be constructed directly under the existing alignment unless the lines were moved. It may be possible to avoid the existing overhead lines by installing a temporary shoofly on either side of the existing power lines to which the power lines can be moved during construction. This would allow for construction under the existing lines, but it would require substantial vegetation removal under the temporary lines moved to the shoofly, thereby resulting in biological and potential aesthetics impacts not assessed in the DEIR. A northern shoofly would be on East Bay Regional Park District property and would require approval from East Bay Regional Park District.

The Manzanita Transition Station location cannot be moved to the north because the terrain drops steeply just east of Manzanita Road. The Manzanita Transition Station location could be moved to the south; however, this would require elimination of a substantial portion of the parking lot for The Hills Swim & Tennis Club. It also would require extensive vegetation removal, both at the Manzanita Transition Station itself and along the new easement angling from the existing alignment to the new Manzanita Transition Station. For any Manzanita Transition Station, regardless of location, substantial earthwork and structural supports (potentially visible from KOP 3b) on the downhill side likely would be required given the elevated landslide potential on the eastern-facing slope.

Alternative 4 also includes two potential options to connect the underground portion to the remainder of the route to the west. Option 1 would construct an overhead line along Scout Road from Ascot Drive to the existing alignment, as shown in DEIR Figure 4.3-7B. This Figure shows a transition pole and Scout Poles 1 to 6 along Scout Road, but there likely is not sufficient space to physically accommodate all six Scout Poles. The required clearance also likely would require substantial vegetation removal. The DEIR also proposes that the existing distribution lines would be underbuilt on the new transmission poles. Underbuilding the distribution lines on the same structures as the transmission line is not recommended due to this configuration of distribution and power line circuits on a single structure introduces the non-standard single-point-of-failure issue. Therefore, Option 1 in Alternative 4 may not be feasible. E01-20

[54] DEIR at 4-31.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-21

C. The DEIR does not fully recognize the construction impacts of an undergrounding route in the Oakland Hills, as any route would result in the combined construction impacts of two alternatives, plus transition facilities and removal of existing towers and lines.

Because Alternatives 2, 3, and 4 each accommodate two of the Project's four circuits, two of those three alternatives would need to be constructed to meet the Proposed Project objectives,[55] which means that the impact analysis must consider the combined impacts of installing two underground alternatives to replace one overhead segment of the Proposed Project. Additionally, no matter which two alternative routes are selected, a transition station and a transition pole must also be constructed. Therefore, the combined impacts of the two alternatives selected must be considered in combination with impacts from transition facilities. It also appears that the DEIR does not consider the impacts of removing the existing overhead power line facilities where the alignment would be rebuilt underground by an alternative. The Final EIR should indicate the extent of construction that would be required to adopt the underground alternatives as compared to the Proposed Project.

For example, the DEIR notes that Alternative 2 would require approximately 2.2 miles of underground double-circuit duct bank and would replace approximately 1.3 miles of the overhead Proposed Project route.[56] But a second underground alternative would also be required to underground the other two circuits. Including Alternative 3 would add 1.1 miles of underground trenching in public roadways, for a total of 3.3 miles of underground construction to replace 1.3 miles of the overhead Proposed Project route.[57] Additionally, there would be construction impacts similar to the Proposed Project associated with the removal of the existing overhead electric towers and lines.

When comparing the Proposed Project to the combination of Alternatives 2 and 3, the DEIR combines each of the significant and unavoidable impacts of Alternative 2 and Alternative 3 and presents them as a single impact, when in fact each impact is doubled. For instance, transportation impacts would occur on both the Alternative 2 (Skyline-Colton-Snake) and Alternative 3 (Shepherd Canyon) routes. The total number of receptors affected by underground power line construction would be the sum of the underground portion of the Proposed Project, plus receptors affected by Alternatives 2 and 3, which equates to approximately 339 homes, Oakland Fire Station No. 6, Shepherd Canyon Park, and Oakland Fire Station No. 24.[58] If Alternative 5 was also selected, impacts from that underground alternative would also need to be included, and the total number of receptors affected would be 419 individual homes, plus the Academia de mi

[55] DEIR at 4-3 ("Due to the steep, narrow, and sharply winding roads in the Oakland Hills, placing all four overhead 115 kV lines underground in one road may not be feasible due to the width and separation required for two separate double-circuit duct banks (PG&E, 2025a). As a result, Alternatives 2, 3, and 4 assume that only two circuits would be installed in each road, requiring two of those three alternatives to be selected.").

[56] DEIR at 4-9.

[57] DEIR at 4-25 (Table 4.5-1).

[58] DEIR at 4-61 (Table 4.8-1).

Comment Set E01 – Pacific Gas and Electric Company (continued)

Abuela and Corpus Christi School. The Final EIR should indicate that selecting the alternatives would result in the combined impacts from two of Alternatives 2 and 3, as well as Alternative 5, and also recognize the impacts associated with removal of the overhead lines. **E01-21 (cont'd)**

D. Undergrounding in the Oakland Hills would result in more significant impacts than the DEIR recognizes. **E01-22**

The DEIR acknowledges numerous impacts that would result from constructing and operating underground power lines and transition stations or poles in the Oakland Hills, including:

- disruptive construction activity near a large number of residents for long periods of time;
- a substantial level and duration of local traffic disruption due to road closures or access limitations;
- a substantial volume of truck and equipment traffic;
- extensive trenching in public roadways of unknown depth, depending on the presence of existing utilities, and the potential relocation or disruption of existing utilities;
- re-paving after the work is complete that will require additional temporary road closures; and
- high visibility of the transition stations or poles.[59]

Despite recognizing these impacts, the DEIR does not describe other adverse impacts from undergrounding in the areas of transportation and air quality, as explained below.

1. Undergrounding in the Oakland Hills would result in more significant transportation impacts than the DEIR recognizes. **E01-23**

Undergrounding would have particularly significant transportation impacts. The DEIR is clear that the underground alternatives would have more severe transportation impacts than the Proposed Project, which the DEIR found to have significant and unavoidable transportation impacts. This is demonstrated in the following findings.

- Impact T-1: "**This impact would be more severe for underground alternatives**, because construction would last much longer, would obstruct traffic more directly (due to trenching and vault installation), and in many more locations. These impacts result from temporary road closures, degradation of road conditions due to temporary steel plates being installed, and temporary obstruction of evacuation routes by construction vehicles."[60]

- Impact T-4: "**The impact would be more severe for underground alternatives**, because construction would last much longer, would obstruct traffic more directly

[59] DEIR at 4-29.

[60] DEIR at 4-38 (emphasis added).

Comment Set E01 – Pacific Gas and Electric Company (continued)

(due to trenching and vault installation), and would occur in many more locations."[61]

- Impact T-5: "**The impact would be more severe for underground alternatives** than for the proposed Project, because construction would be more intense, would last much longer and would occur in many more locations along roadways."[62]

- Impact T-6: "**The impact would be more severe for underground alternatives**, because construction would last much longer, would present more obstructions to walking and biking (due to trenching and vault installation), and would occur in many more locations."[63]

E01-23 (cont'd)

In addition to these severe transportation impacts, evidence shows that undergrounding the Project in the Oakland Hills would have even more significant transportation impacts than the DEIR recognizes. First, as explained in PG&E's responses to data requests, construction along the underground alternatives would move more slowly than undergrounding proposed on Park Boulevard because (i) more vaults would be required in roads with more curves, (ii) the winding, narrow, and steep streets present more construction challenges, and (iii) the smaller residential roadways may have more limited construction working hours.[64] The narrow and winding roads may limit access for large trucks required to deliver precast vaults. For sites where delivery trucks or cranes (to lift vaults into place) cannot access the work site, the vaults must be cast in place. The excavation, installation, and concrete curing of the vault would likely require road closures of three to four weeks per vault, as compared to the assumed two weeks of road closures to install a precast vault.

E01-24

Second, undergrounding would require more complete road closures because of workspace needs. The minimum road width to construct a duct bank with two power line circuits and associated vaults while maintaining a 10-foot traffic lane is 34 feet, subject to certain underlying assumptions.[65] If any portion of a block is less than 34 feet wide, it is assumed the entire block would require a complete road closure. On Skyline Boulevard, Colton Boulevard, Heartwood Drive, Snake Road, Shepherd Canyon Road (west of Saroni Drive), and Ascot Drive between Manzanita Drive and SR-13, and for Sims Drive, Somerset Drive, and Estates Drive (west of Somerset Drive), most blocks are less than 34 feet wide for most of the block length and would require a complete road closure.[66] Additional detail is provided in PG&E's response to CPUC Data Request 9, provided as Attachment 5.

[61] DEIR at 4-39 (emphasis added).

[62] DEIR at 4-39 (emphasis added).

[63] DEIR at 4-40 (emphasis added).

[64] Attachment 5 (PG&E Response to CPUC Data Request 9), Question ALT-7 at 3.

[65] Attachment 5 (PG&E Response to CPUC Data Request 9), Question ALT-6 at 2.

[66] Attachment 5 (PG&E Response to CPUC Data Request 9), Question ALT-6 at 2-3.

Comment Set E01 – Pacific Gas and Electric Company (continued)

Third, on these narrow roadways where the underground alternatives are located, it may not be possible to reopen a road or lane closure at the end of the workday for safety reasons and space limitations.[67]

E01-24 (cont'd)

2. Undergrounding in the Oakland Hills would result in more significant air quality impacts than the DEIR recognizes.

E01-25

All four underground alternatives (but not the Proposed Project) would require additional mitigation to reduce air quality impacts because of the lengthier construction period.[68] Impact AQ-2 is a "cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard."[69] This air quality impact would be caused by emissions from construction vehicles and equipment and the "much more intense construction activity required for installation of underground alternatives."[70] The construction activity emissions have the potential to exceed the regional Bay Area Air District ("Air District") emissions threshold for nitrogen oxides ("NOx") emissions on a daily basis averaged over each year of construction.[71]

The DEIR classifies this impact as less than significant with mitigation, because the DEIR imposes Mitigation Measure AQ-2a in the event any underground alternative is approved. MM AQ-2a would require PG&E to ensure that project construction is scheduled such that emissions do not exceed Air District emission thresholds. The impact of this mitigation measure is that construction activities would occur over a longer period of time in order to avoid exceeding daily NOx emission limits.

While MM AQ-2a would cause construction emissions to avoid exceeding the Air District's daily NOx emission limit, it does so by extending the time period in which the construction-related NOx emissions are occurring. Extending the construction period would not reduce cumulative NOx emissions. The total quantity of NOx and other pollutant emissions would be substantially greater for the underground alternatives than for the central section of the Proposed Project. Alternative 2 and Alternative 3 are approximately three times the length of the Park Boulevard underground section, and, therefore, would have at least three times the total pollutant emissions of Park Boulevard construction, in addition to the overhead rebuild emissions expected to occur with any alternative. Note that this estimate does not account for emissions from other construction activities that may need to occur specifically for the underground alternatives, such as retaining walls and utility line moves, that would likely further increase construction emissions. The increase in total emissions, with more construction equipment used over a longer duration, would likely result in greater pollutant exposure and higher health risks, especially from diesel particulate matter. Extending the construction schedule under MM AQ-2 also would delay the wildfire benefits of removing the existing structures by up to several years (it is possible that Park

[67] Attachment 5 (PG&E Response to CPUC Data Request 9), Question ALT-7 at 4.

[68] DEIR at ES-11.

[69] DEIR at 4-36.

[70] DEIR at 4-36.

[71] DEIR at 4-36.

Comment Set E01 – Pacific Gas and Electric Company (continued)

Boulevard underground, Alternative 2, and Alternative 3 would need to be constructed consecutively and not concurrently to avoid exceeding NOx limits), while portions of the lines are being installed underground.

E01-25 (cont'd)

III. THE DEIR IMPOSES MITIGATION MEASURES THAT ARE STRICTER THAN NECESSARY TO MITIGATE IMPACTS AND RAISE FEASIBILITY CONCERNS FOR CONSTRUCTION.

E01-26

A. Wildfire Mitigation Measure WF-1a should be revised to use the specific evacuation routes determined by local jurisdictions.

Mitigation Measure WF-1a requires PG&E to submit an Evacuation Plan to the CPUC at least 90 days before the start of construction on affected roadways. The Evacuation Plan must include identification and mapping of "critical" and "non-critical" evacuation routes in the event of an emergency. Mitigation Measure WF-1a states that the "critical" and "non-critical" evacuation routes would be determined by PG&E based on whether closure of such route would lead to an increase in evacuation times or create a dead-end. But whether closure of a certain route will lead to an increase in evacuation times is variable—it will depend on time of day, day of the week, and the location of the wildfire, among other factors. This binary determination of "critical" or "non-critical" evacuation routes cannot be made in advance and hard coded into the Evacuation Plan.

Further, the designation of "critical" and "non-critical" evacuation routes is unclear as these are not terms used in other municipal planning documents. The City of Oakland has designated "primary" and "secondary" evacuation routes in the area of the Proposed Project, as shown in DEIR Figure 3.18-7. Communications to the public during an evacuation event via Genasys Protect would communicate evacuation routes based on jurisdictional-identified evacuation routes and may conflict with a PG&E Evacuation Plan utilizing different terminology. This could cause confusion during a time when clarity on how to evacuate safely is paramount.

PG&E has proposed text edits to MM WF-1a that would ensure consistency in evacuation planning with local jurisdictions and minimize the risk of confusion to local residents in the event of an emergency. These proposed edits are included in Attachment 1. PG&E respectfully requests that these edits are adopted in the FEIR.

B. Wildfire Mitigation Measure WF-1b should be modified to expand the months when full road closures are allowed so that they align with months when fire risk is low.

E01-27

The second wildfire Mitigation Measure, WF-1b, requires that full road closures on designated evacuation routes may only occur between December 15 and February 28, "when the risk of fire is generally the lowest."[72] This range is unreasonably short and allows for construction only during winter months when rains are likely. Imposing this restriction without expansion could render construction of certain structures much more difficult.

[72] DEIR, MM WF-1b.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-27 (cont'd)

MM WF-1b's statement that December 15 to February 28 is when "the risk of fire is generally the lowest" is not supported by any evidence in the record. It is contrary to the DEIR which states that low-fire risk weather is "typically between December and April."[73] Additionally, the DEIR states that based on Oakland weather data, the highest risk of fire would likely occur between June and October,[74] meaning that the period *without* a heightened risk spans November to May. The unreasonably short window of December 15 to February 28 in MM WF-1b is thus inconsistent with these statements in the DEIR.

PG&E has evaluated the predicted risk of fire in the Proposed Project area using PG&E's internal forecasts of the risk of fire. Each day PG&E's internal meteorology department forecasts fire risk in Project areas using a scale from "R1," indicating the lowest risk of fire, to "R5+," indicating the highest risk of fire. Historical fire risk for 2020 to 2025, shows that low-fire risk weather, as indicate by a fire risk of R1, typically occurs and is the dominant risk category from December to May, as shown in Attachment 6 (Recent Historic Fire Risk by Month). Based on this data analysis, and the DEIR's statements regarding periods of low fire risk detailed above, PG&E requests that the period during which road closures on certain routes is allowed be designated as December 1 through May 31. PG&E agrees with the mitigation measure's language that full road closures would be prohibited during that period if there is a National Weather Service Red Flag Warning, Fire Weather Watch, or a PG&E forecasted fire risk of R3 or greater. Proposed edits to MM WF-1b consistent with these comments are detailed in Attachment 1.

Modifying the date range during which full road closures are permissible is important because, as currently proposed, MM WF-1b could significantly extend the construction duration. If construction on designated evacuation routes may only occur from December 15 to February 28, certain work areas would be difficult to access during that time. These are areas with steep slopes with vegetation and wet soils during the winter period of December 15 to February 28. It would not be feasible to do foundation work in these areas in this limited, winter timeframe. Attempting to access non-paved work areas in these wet weather conditions would present substantial safety hazards to construction workers and would damage vegetation and soils. Without the foundation work, setting the structures and all subsequent conductor work cannot take place. This narrow time restriction is likely to substantially extend the Proposed Project's construction schedule, possibly extending the duration by a year or more. At the restricted work areas, if any work that requires a road closure due to the type of work or equipment necessary is not completed by February 28, PG&E may not complete that work until over nine months later beginning on the following December 15.

PG&E respectfully requests that the dates MM WF-1b when full road closures are permissible be changed to December 1 through May 31.

[73] DEIR at 5-25.

[74] DEIR at 3.18-3.

Comment Set E01 – Pacific Gas and Electric Company (continued)

IV. THE DEIR OVERSTATES THE PROPOSED PROJECT'S IMPACTS IN THE AREAS OF BIOLOGICAL RESOURCES, TRANSPORTATION, WILDFIRE RISK, AND NOISE.

A. The DEIR's assessment of Biological Resources speculatively finds that the Proposed Project would have significant impacts on species that have not yet been identified as present in the Proposed Project area and imposes unnecessary mitigation measures.

E01-28

For a number of plant and animal species, despite the application of APMs approved by the resource agencies in the Bay Area Habitat Conservation Plan ("HCP"), Incidental Take Permits ("ITP") - Final ITP EIR and HCP Final Environmental Assessment ("EA") and Finding of No Significant Effect ("FONSI"), the DEIR concludes that the Proposed Project's impacts on such species "would be significant." It is speculative and inaccurate to find that impacts to a given species would be significant for as-yet unknown populations because significance depends on whether the species is present, where it is present, if the area is avoidable, and the timing and nature of construction activities proposed to occur in or near that area. Thus, even if a given species is determined in the future to be present in the Proposed Project area, impacts to that species may not be significant given implementation of measures already outlined in the HCP, ITP, ITP FEIR and HCP EA-FONSI, and PG&E's PEA.

The DEIR includes additional mitigation measures beyond the APMs and the mitigation measures that PG&E is already required to comply with under the relevant HCP, ITP, and ITP FEIR that are applicable to the Project and have been approved by the resource agencies. Some of the DEIR's proposed Mitigation Measures include measures that are not necessary to provide additional protection to biological resources beyond the APMs and mitigation measures in the approved HCP, ITP, and ITP FEIR that apply to these species, yet would add to ratepayer costs associated with the Project.

The DEIR provides no support for the conclusion that operation and maintenance ("O&M") activities would have significant impacts given that PG&E's O&M activities will be essentially unchanged as a result of the Proposed Project, and the continuation of an existing maintenance program is not a Project impact. Moreover, CDFW reviewed PG&E's O&M activities and minor new construction project within the Bay Area O&M ITP FEIR.[75] The O&M activities evaluated in that ITP FEIR are the same O&M activities evaluated in the DEIR. The ITP FEIR is a final, certified, and non-appealable CEQA document that concluded all impacts are less than significant with the mitigation that has been incorporated here. The CPUC is bound by the conclusions of the ITP FEIR, as PG&E's future O&M on Project facilities will not involve any substantial change to the O&M activities reviewed in the ITP FEIR, nor are there any new significant impacts or substantial increases in the severity of previously-identified significant impacts related thereto (see CEQA Guidelines Sections 15162, 15163.)

In Attachment 1, PG&E provides detailed proposed revisions to the DEIR's discussion of Biological Resources and associated Mitigation Measures to more accurately reflect the potential impacts of the Proposed Project and provide mitigation measures that acknowledge the existing

[75] ITP Final EIR, at 1-1

Comment Set E01 – Pacific Gas and Electric Company (continued)

measures, acknowledge necessary coordination with resource agencies, and/or provide for more feasible and effective protection of resources. PG&E respectfully requests that these revisions are accepted and adopted in the FEIR. **E01-28 (cont'd)**

B. The DEIR's assessment of Impact T-1 incorrectly finds that the Proposed Project would be inconsistent with a number of local transportation programs and policies. **E01-29**

The DEIR's findings overstate the Proposed Project's transportation impacts. The Overhead Line Rebuild portion of the Proposed Project is consistent with local programs, plans, ordinances, and policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities as well as emergency evacuation plans and emergency response plans. In some cases, the DEIR mischaracterizes the impacts of the Proposed Project, and no conflicts would occur. For example, the Proposed Project would not require lane or road closures in the City of Orinda (therefore not conflicting with the *Orinda Fire Evacuation Guide* or the *City of Orinda General Plan, Land Use and Circulation Element* and *Safety Element*) or in unincorporated Contra Costa County (therefore not conflicting with *Contra Costa General Plan, Transportation Element*). In other cases, the plan or policy does not apply to the Proposed Project. For example, none of the Project is located in unincorporated Alameda County, and therefore the *Alameda County General Plan Mobility Element* does not apply to the Project. Very few evacuation routes designated in local plans and policies would be affected by Project construction. In addition, the effectiveness of Mitigation Measure T-1a is understated; the mitigation would include implementation of measures to maintain operation of the circulation system during construction in a manner consistent with applicable plans and policies.

While the DEIR states that the Proposed Project will have significant and unavoidable impacts on transportation because it would be inconsistent with certain local plans and policies,[76] the evidence presented in Attachment 1 and summarized above is clear that the Proposed Project is not inconsistent with these plans and policies. PG&E respectfully requests that Impact T-1 should be reclassified as "less than significant with mitigation."

C. The DEIR's assessment of Impact T-4 incorrectly finds that the Overhead Power Line Rebuild would result in significant and unavoidable impacts to emergency access. **E01-30**

The DEIR finds a significant and unavoidable impact based on the assessment that the Proposed Project would result in inadequate emergency access. This is not accurate. The DEIR's finding is contrary to findings in the Draft EIR for the City of Oakland's General Plan 2045, which evaluates how construction of development projects could impair adopted emergency response plans or emergency evacuation plans. The General Plan Draft EIR notes (page 4.18-18)[77] that

[76] DEIR at 3.15-23 to -24.

[77] City of Oakland, Phase I Oakland 2045 General Plan Update Draft Environmental Impact Report, March 2023: https://files.ceqanet.lci.ca.gov/277566-3/attachment/40cIBfQ1ctMug38oNNu6DqhQRPwCXbfEK9_DQYryfO50_9UY5QU963D6kN0um_DYnSU1AjQ7LIWPQ9kU0.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-30 (cont'd)

"construction of future development under the Proposed Project [the General Plan] would include the transportation and movement of equipment, materials, and construction workers. If located along evacuation routes or in areas subjected to limited or constrained access, these construction activities could impair or interfere with adopted emergency response plans or emergency evacuation plans, which could be potentially significant." The analysis notes that obstruction permits are required when construction obstructs public rights-of-way, for example for staging, construction, or traffic control purposes. The analysis also notes that preparation and implementation of a construction Traffic Control Plan would be required to set comprehensive traffic control measures for auto, transit, bicycle, and pedestrian accommodations or detours. This includes designating access routes for construction activity.

During the obstruction permit and Traffic Control Plan review process, a proposed project's potential impacts to key evacuation routes would be identified and addressed through compliance with the City's proposed 2045 Safety Element. The City will review the Traffic Control Plan for compliance with applicable measures from the General Plan Safety Element, including policies SAF-8.5 (Cohesive Evacuation Routes Network), SAF-8.15 (Traffic Signaling), and SAF-8.18 (Priority Route Coordination). The policies and associated actions address maintaining evacuation routes via interconnected routes, traffic signaling, and roadway improvements. Additional Safety Element policies reviewed for compliance include Policy SAF-8.7 to promote compliance with the Local Hazard Mitigation Plan. For these reasons, the General Plan Draft EIR concludes that impacts to adopted emergency response plans or emergency evacuation plans from construction work would be less than significant. The Final EIR reflected the same conclusion.[78]

As stated previously, the Proposed Project will not require temporary road closures or otherwise obstruct roads in unincorporated Contra Costa County, unincorporated Alameda County, or the City of Orinda. For the roads in the cities of Piedmont and Oakland that will have temporary road closures, PG&E will be preparing a Traffic Management Plan (TMP) (as outlined in APM TRA-1 and MM T-1a) as part of procuring encroachment permits for each jurisdiction. To minimize disruption and ensure safe and efficient traffic flow, the TMP will address a wide variety of issues, including: minimizing construction effects on roadways, transit services, pedestrian facilities, and bicycle facilities; staging and parking areas, haul routes, equipment use and timing; street or lane closures, detours, signing and traffic control device placement; and temporary relocation or closure of bus stops. The TMP will be reviewed by local jurisdictions and agencies prior to construction with the approval process expected to occur through issuance of road encroachment permits. The issuance of encroachment permitting by the City of Oakland will be consistent with its analysis in the Oakland General Plan 2045 Draft EIR.

Alternate routes are available for all work areas, with four exceptions in the Overhead Power Line Rebuild, as shown in DEIR Table 2.3-6. The four locations without secondary access are at the end of dead-end roads such as courts. Closure at these locations will affect approximately 1 to 2 residences each of the four locations. As noted in APM TRA-1 and MM T-1a, safe transport

[78] City of Oakland, Phase I Oakland 2045 General Plan Update Final Environmental Impact Report, July 2023: https://www.oaklandca.gov/files/assets/city/v/1/planning-amp-building/documents/dp/ceqa/2011-present/oakland-phase-i-2045-gpu-feir_july-2023.pdf.

Comment Set E01 – Pacific Gas and Electric Company (continued)

will be provided for these residences. Road closure for crane use will occur only during construction work hours. **E01-30 (cont'd)**

Emergency access for vehicles from Oakland Fire Stations 6 and 24 will not be obstructed. The nearest temporary road closure to Fire Station 6 is on Skyline Boulevard, approximately 0.5 mile away. Several alternate routes are available to this neighborhood, including Manzanita Drive. The single closure on Shepherd Canyon Road, on which Fire Station 24 is located, is one lane for up to one day to install guard poles, and access will be maintained. Oakland Fire Department will be participating in the review of the TMP described in APM TRA-1 and MM T-1a.

Manzanita Drive will not be closed currently with Skyline Boulevard. The two crews that will work on Overhead Power Line Rebuild will not be at adjacent work areas in roadways where they would make a nearby detour route for one of the work areas unavailable.

For these reasons, the conclusion that construction impacts of the project's Overhead Power Line Rebuild to emergency access would be significant and unavoidable is not supported by the evidence in the record. PG&E respectfully requests that the conclusion be changed to less than significant with mitigation in the Final EIR.

D. The DEIR's assessment of Impacts T-5 and T-6 incorrectly finds that the Overhead Power Line Rebuild would have significant and unavoidable impacts to pedestrian and bicycle safety and accessibility.

The DEIR states that "closure and rerouting of pedestrian and bicycle travel routes could still cause unsafe conditions if the alternative routes are longer or are not suitable for walking or biking because of more steep or narrow roadways, such as the residential areas along Balboa Drive and Sayre Drive that may lose their direct connections to the Montclair Railroad Trail and to the Montclair Village."[79] This is not a significant impact for the following reasons: **E01-31**

- No roads in the vicinity of the Overhead Power Line Rebuild have sidewalks except Mountain Boulevard. As noted in Attachment 1, the sidewalk closure is where the sidewalk ends such that it will not impact pedestrians.
- Pedestrians and cyclists in areas such as Balboa Drive and Sayre Drive are accustomed to walking and cycling on steep and narrow roadways and can continue to do so.
- The MRRT is a recreational trail, not a commute route.
- The brief one-lane closures for guard structures will not obstruct pedestrians and cyclists.
- The TMP will provide at least 30 days advanced notice of closures, which are short term, and will include measures such as detours, adequate signage, and flaggers to protect pedestrians and cyclists. Pedestrians and cyclists will be able to plan ahead which will mitigate any potential impacts.

For these reasons, the conclusion that construction impacts of the project's Overhead Power Line Rebuild on pedestrian and bicyclist safety and accessibility would be significant and

[79] DEIR at 3.15-48.

Comment Set E01 – Pacific Gas and Electric Company (continued)

unavoidable is not supported by the evidence in the record, and PG&E respectfully requests that Impacts T-5 and T-6 be reclassified as "less than significant." **E01-31 (cont'd)**

E. The DEIR's assessment of Impact T-7 incorrectly finds that impacts to public transit would be significant and unavoidable. **E01-32**

The DEIR notes three AC Transit bus lines that may be affected by the Proposed Project. Each of these is discussed below, demonstrating that the conclusion of a significant and unavoidable impact to transit is not supported by the evidence in the record and should be revised to less than significant in the Final EIR.

AC Transit Line V is a Transbay commute bus that runs along Park Boulevard and has limited hours in the morning and late afternoon, some of which may occur outside regular construction hours. One lane will remain open each way on Park Boulevard during active construction, and trenches will be plated to allow use of both lanes each way during non-construction hours. Temporary bus stops within several hundred feet (approximately 0.1 mile) will be set up in coordination with AC Transit if stops adjacent to the construction area cannot be safely accessed during construction. The schedule for lane closures and location of any temporary bus stops will be included in the TMP per APM TRA-1 and MM T-1a, with coordination and approval by AC Transit. Per MM N-1b, written notice of construction activities at least 30 days in advance will be provided to transit agencies and residences within 500 feet of construction areas, which will provide adequate time for preparation for the temporary closures and any transit stop relocations.

AC Transit Line 33 is no longer active, per AC Transit's website.[80] Therefore, there cannot be any impacts to this transit route.

The route for AC Transit Line 642 intersects the Proposed Project site in only one location, on Monterey Boulevard. At this location, a lane will be closed for up to one day for guard pole installation. The buses will not be obstructed on this route, and no bus stop for this line is located in the Proposed Project footprint.

The scope and scale of transit impacts of the Proposed Project can be compared to that of the Egbert Switching Station Project, which has approximately four miles of underground transmission lines. The Egbert Project's Draft EIR notes that the project could affect bus transit and bus stops (Impact TRA-1).[81] Implementation of an APM that includes methods for minimizing construction effects on transit service by maintaining access to such facilities along the project construction area or by providing an alternate route if one is needed, as well as procedures for notifying affected agencies in advance of construction activities, would result in project impacts that are less than significant. **E01-33**

[80] AC Transit: https://www.actransit.org/bus-lines-schedules/33

[81] Draft Environmental Impact Report - Pacific Gas & Electric Company Egbert Switching Station (Martin Substation Extension) Project SCH No. 2018112046 (CPUC): https://ia.cpuc.ca.gov/environment/info/dudek/egbert/Egbert_DEIR_Sept2019.pdf

Comment Set E01 – Pacific Gas and Electric Company (continued)

PG&E respectfully requests that Impact T-7 be reclassified as less than significant.

E01-33 (cont'd)

F. The DEIR's assessment of Impact WF-1 incorrectly finds that the Proposed Project would result in a significant and unavoidable wildfire risk.

E01-34

The DEIR's assessment of Impact WF-1 finds that the Proposed Project would "[s]ubstantially impair an adopted emergency response plan or emergency evacuation plan (construction, overhead power line rebuild)." As discussed above with respect to Transportation Impacts T-1 and T-4, the Proposed Project will not interfere with emergency evacuation plans or emergency response plans. Impacts will be less than significant with PG&E's use of APMs and mitigation measures. Statements in the DEIR that "many of the alternate routes require detours that could substantially increase evacuation time,"[82] and that "the required use of alternate routes would increase the [Evacuation Time Estimates] for persons living or working near the closure sites due to the longer and less direct drive times"[83] are not supported by evidence.

In addition, the DEIR incorrectly states that "[[i]n a wildfire event requiring emergency evacuation, construction vehicles may be blocking multiple roadways in the Oakland Hills."[84] As PG&E has stated, only two crews will be working at a time on the Overhead Power Line Rebuild.[85] Each crew would be working at one location. Based on the evidence in the record, at any time only zero to two roadways, evacuation routes or otherwise, would be temporarily blocked during regular construction hours. The only designated evacuation routes in the Overhead Power Line Rebuild that would have temporary full closure are Skyline Boulevard and Park Boulevard. The closure locations are over two miles apart and the roads serve different parts of the City of Oakland. As noted in DEIR Table 2.3-6, alternate evacuation routes will be available at each temporary closure location. For the four work areas at the end of cul-de-sacs, safe transport will be provided for affected residents. Emergency access and evacuation will be addressed as part of the Traffic Management Plan (per MM T-1a), which will be approved by local agencies. As noted above with respect to Impact T-4, the City of Oakland General Plan 2045 Draft EIR concludes that impacts to adopted emergency response plans or emergency evacuation plans from construction work on roads would be less than significant with approval and implementation of a Traffic Control Plan.[86]

Based on the evidence in the record, PG&E respectfully requests that the Final EIR reflect that this impact is less than significant with mitigation.

[82] DEIR at 3.18-28.

[83] DEIR at 3.18-29.

[84] DEIR at 3.18-29.

[85] DEIR at 3.15-19.

[86] https://www.oaklandca.gov/Planning-Building/General-Plan-Neighborhood-Plans/City-of-Oakland-Current-General-Plan-Elements/Land-Use-and-Transportation-Element-LUTE

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-35

G. The DEIR's assessment of Impact N-2 incorrectly finds that the Proposed Project would expose persons to or generate excessive ground borne vibration.

The FTA Groundborne Vibration Impact Criterion referenced in the DEIR's analysis is for FTA Land Use Category II: Residences and buildings where people normally sleep. Construction equipment, including pile drivers, will be used during regular construction (daytime) hours. Therefore, the vibration impacts from the pile driving (or other construction equipment) would not occur during the night when residents are sleeping. This conclusion is supported, for example, in the City of Oakland's EIR for the California College of the Arts Oakland Campus Redevelopment Project. Specifically, that EIR concludes:[87]

> Because the locations of grading, soil compaction, and other construction activities that would require the use of construction equipment with the potential to exceed the disturbance threshold (75 VdB for residences) would vary over time across the site, the impacts of these activities on the residences at the 225 Clifton Street apartment building would not be expected to last more than a few days at a time. In addition, SCA-NOI-1: Construction Days/Hours (#67) limits construction activities to the hours between 7:00 a.m. and 7:00 p.m. Monday through Friday, and limits construction with the potential to generate extreme noise (which is generally correlated with the potential to generate high vibration) to the hours between 8:00 a.m. and 4:00 p.m. Therefore, severe vibration would be restricted to normal daytime hours, thereby reducing the likelihood of disturbing residents by interfering with sleep.

Therefore, MM N-2a Vibration Assessment and Control is not necessary to reduce vibration impacts to persons to a less than significant level. PG&E recommends this mitigation measure be revised as shown in Attachment 1.

[87] https://files.ceqanet.lci.ca.gov/252748-3/attachment/H4lSUn75yJlyMb0NX_Ul3b1mA4mVZqtnUsgFiejcbNEn-Yk_I7BTNEvAeckp_ySPEiqJC77kYLjd6wC10 at 463.

Comment Set E01 – Pacific Gas and Electric Company (continued)

V. CONCLUSION

PG&E appreciates the opportunity to present these comments on the DEIR. PG&E respectfully requests that the CPUC incorporate the information and proposed revisions to the DEIR presented in this letter and Attachment 1 into the Final EIR.

* * * * *

Thank you for considering PG&E's comments. Please do not hesitate to contact me with any questions.

Very truly yours,

/s/ Erica Schlemer

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Comment Set E01 – Pacific Gas and Electric Company (continued)

Attachment 1
Text Revisions and Requests for Clarification

Comment Set E01 – Pacific Gas and Electric Company (continued)

Moraga-Oakland X 115 Kilovolt Rebuild Project
PG&E Comments on Draft Environmental Impact Report
Attachment 1: Text Revisions and Requests for Clarification

Page	DEIR Language	Comments	
Executive Summary			
ES-1	As described briefly in Section ES.8 of this Executive Summary and in detail in Section 4 of the EIR, the DEIR evaluates four alternatives that would remove existing segments of the 115 kV lines east of Estates Drive and install them underground.	The four DEIR alternatives (DEIR at 4-3) are located between Estates Drive and Manzanita Drive, and do not extend east of Manzanita Drive. *Suggested clarification*: As described briefly in Section ES.8 of this Executive Summary and in detail in Section 4 of the EIR, the DEIR evaluates four alternatives that would remove existing segments of the 115 kV lines ~~east of Estates Drive~~ and install them underground between Manzanita Drive and Estates Drive.	E01-36
ES-2	The existing land uses in the Project area include a utility facility in the city of Orinda, open space and parks in unincorporated Contra Costa County, and residential, commercial, parks, places of worship and schools within the cities of Oakland and Piedmont.	Suggest updating the description of existing land uses in city of Orinda to include recreational use and a school. Refer to DEIR Figure 3.14-1, Map 1.	E01-37
ES-8	Numerous public and agency scoping comments requested that all of the overhead 115 kV lines be removed and installed underground.	PG&E has not identified any agency scoping comments that request that all of the overhead 115 kV lines be removed and installed underground. One general comment about undergrounding is provided in the bullet list under "March 11, 2025: Oakland Fire Department" that states "In favor of undergrounding power lines." Refer to DEIR at page 5 of Appendix C Scoping Report, Section 3.4 Other Public Outreach. *Suggested clarification*: Numerous public ~~and agency~~ scoping comments requested that all of the overhead 115 kV lines be removed and installed underground.	E01-38
ES-8	Due to the steep, narrow, and sharply winding roads in the Oakland Hills, placing all four circuits underground in one road may not be feasible due to the width required for two separate duct banks.	Clarify that the two separate duct banks would be double-circuit duct banks. *Suggested clarification*: Due to the steep, narrow, and sharply winding roads in the Oakland Hills, placing all four circuits underground in one road may not be feasible due to the width required for two separate double-circuit duct banks.	E01-39
Chapter 1 - Introduction			
1-4	PG&E plans to submit as-built information on the MOX Project to CAISO after receiving project approval and a Permit to Construct from the CPUC (PG&E, 2025c).	As stated in PG&E's response to Data Request #11, PG&E would inform CAISO of CPUC MOX Project approval. As-built information would not be available until project construction is completed. *Suggested correction*: PG&E plans ~~to submit as-built information on the MOX Project~~ to inform CAISO after receiving project approval and a Permit to Construct from the CPUC (PG&E, 2025c).	E01-40

Comment Set E01 – Pacific Gas and Electric Company (continued)

Moraga-Oakland X 115 Kilovolt Rebuild Project
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Page	DEIR Language	Comments	
Chapter 2 –Description of the Proposed Project			
2-2	….approximately 15 existing parallel double-circuit structures no longer being needed. These would be removed after the lines are installed underground and put into service.	Clarify that conductors would be removed as well. *Suggested clarification*: These existing structures and overhead lines would be removed after the lines are installed underground and put into service.	E01-41
2-4	There is no difference between the existing system and the proposed system in terms of capacity, distribution substations, and customers served.	As noted in DEIR at page 2-4: The conductor on the rebuilt lines would accommodate a summer coastal emergency rating of approximately 1,212 amps compared to the existing conductor with a summer emergency rating of approximately 406 amps. *Suggested clarification*: There is no difference between the existing system and the proposed system in terms of ~~capacity,~~ distribution substations~~,~~ and customers served.	E01-42
2-12	The permanent fenced areas of Moraga and Oakland X substations, approximately 1.31 acres and approximately 15.80 acres, respectively, would not change as part of the Project.	The acreage amounts are inverted. *Suggested clarification*: The permanent fenced areas of Moraga and Oakland X substations, approximately ~~1.31~~ 15.80 acres and approximately ~~15.80~~ 1.31 acres, respectively, would not change as part of the Project.	E01-43
2-26	**Telecommunications**. The OPGW would be installed in the top conductor position of Circuits 1 and 2 on the northern line and would transition underground at the same location as the power lines.	The OPGW and SW (static wire) are located in the top positions on each line. *Suggested clarification*: The OPGW and SW would be installed in the top conductor positions of ~~Circuits 1 and 2 on the northern~~ each line and would transition underground at the same location as the power lines.	E01-44
2-37	Soil removed during excavations, having been pre-characterized, would be placed directly into trucks, removed from the area, and disposed of offsite at an appropriate landfill, or it would be used for backfill if clean.	*Suggested clarification* to align with discussion on DEIR at page 2-38 and other locations: Soil removed during excavations, if it has ~~having~~ been pre-characterized, would be placed directly into trucks, removed from the area, and disposed of offsite at an appropriate landfill, or it would be used for backfill if clean.	E01-45
Chapter 3 –Environmental Impacts and Mitigation Measures			
Aesthetics			
3.2-1	The Project alignment is approximately 5 miles in length and originates in a suburban setting approximately 2 miles southwest of the City of Orinda.	The project originates at Moraga Substation in the City of Orinda. *Suggested clarification*: The Project alignment is approximately 5 miles in length and originates in a suburban setting ~~approximately 2 miles southwest of~~ in the City of Orinda.	E01-46
3.2-1	3.2.1 Environmental Setting	While the environmental setting includes discussion of the project where it is located within the City of Piedmont, the city itself is not mentioned. Please insert mention of the City of Piedmont in the environmental setting discussion where appropriate.	E01-47

Comment Set E01 – Pacific Gas and Electric Company (continued)

Moraga-Oakland X 115 Kilovolt Rebuild Project
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Page	DEIR Language	Comments	
3.2-7	KOP 3a. This viewpoint is also at the site of a planned group campground.	The viewpoint is from a recreational trail and it has a partial view of a planned group campground. *Suggested clarification*: This viewpoint ~~is~~ also has views of ~~at~~ the site of a planned group campground.	E01-48
3.2-16 and 3.2-23	Alameda County General Plan Open Space Element (1994 as amended)	This regulation is not applicable, and all description and reference should be removed because the project is not located in unincorporated Alameda County. Within Alameda County, the project is located in the jurisdictions of City of Oakland or the City of Piedmont.	E01-49
3.2-23	Project construction would require minimal grading, and while some permanent removal of existing vegetation would be necessary, this would be limited for the most part to vegetation that encroaches on existing access and spur roads, stringing sites, construction laydown and work areas, staging yards, and helicopter landing zones to permit the safe operation of construction equipment.	Suggest replacing use of "stringing sites" with "tension pull sites" to align with commonly used proposed Project component terminology.	E01-50
3.2-29	The relocation of a 1.2-mile segment of the Project alignment underground would result in the permanent removal of 16 power line structures along the existing ROW between Estates Drive and Oakland X Substation.	There are 17 existing structures between Estates Drive and Oakland X Substation. Fifteen of the existing structures would be removed after this length of the alignment is rebuilt underground; two existing structures immediately west of Estates Drive are proposed to be replaced with transition structures to connect with the underground portion. *Suggested clarification*: The relocation of a 1.2-mile segment of the Project alignment underground would result in the permanent removal of ~~16~~ 15 power line structures along the existing ROW between Estates Drive and Oakland X Substation.	E01-51
3.2-32	Table 3.2-4 Consistency with Applicable Regulations | Local | Alameda County General Plan, Open Space Element	The project is not located in unincorporated Alameda County and the county's General Plan, Open Space Element is not applicable. It does not cross a "very limited amount" of county jurisdiction. Therefore, its discussion should be removed from Table 3.2-4.	E01-52
3.2-37 and 7-6	**MM AES-3a Screen construction activities from view.**	PG&E recommends revisions to MM AES-3a. Requiring staging areas to be screened that may also be used by helicopters would introduce a substantial safety hazard and is not feasible to implement. The exemption statement included in the measure does not allow exceptions for safety, only visibility. *Suggested revisions*: Construction yards, staging areas, and material and equipment storage areas shall be visually screened using temporary screening fencing. Fencing shall be of an appropriate structure, material, and color for each specific location, as determined in coordination with the appropriate local (County or City) authority. This requirement shall not apply if PG&E can demonstrate that installing temporary fencing will introduce a safety hazard or that construction yards are located away from	E01-53

Comment Set E01 – Pacific Gas and Electric Company (continued)

Moraga-Oakland X 115 Kilovolt Rebuild Project
PG&E Comments on Draft Environmental Impact Report
Attachment 1: Text Revisions and Requests for Clarification

Page	DEIR Language	Comments	
		areas of high public visibility including public roads, residential areas, and public recreational facilities. For any site that PG&E proposes to exempt from the screening requirement, PG&E shall define the site on a detailed map demonstrating its visibility from nearby roads, residences, or recreational facilities submitted to the CPUC for review and approval at least 60 days prior to the start of construction at, or use of, that site.	E01-53 (cont'd)
Biological Resources			
3.4-24	**Section 3.4.4 Impact Analysis and Mitigation Measures,** PLANTS Bullet list at bottom of page	We believe the intent was to list FP-14 not FP-17. FP-14 applies also to the lists for the bumble bee and monarch and its inclusion would make this section consistent with Section 7, MMRP. *Suggested correction*: "BAHCP FP-01 through FP-04, FP-07, FP-10 through FP-12, FP-14~~17~~"	E01-54
3.4-25	**Section 3.4.4 Impact Analysis and Mitigation Measures,** PLANTS First paragraph	The DEIR analysis concludes that impacts to possible unknown future populations would be significant. Although it is possible new plant populations could become established prior to construction, creating as yet-unknown impacts, it is speculative and inaccurate to indicate that project impacts to these as-yet unknown and possibly non-existent populations **would** be significant. The size of population, species, extent of any impact, and whether such impact would be avoidable are all important factors that cannot be ascertained now. Please revise language to indicate the impact potentially could be significant in the absence of mitigation. *Suggested clarification*: However, even with application of the APMs, potential Project impacts to as-yet unknown future populations of special-status plant species potentially could ~~would~~ be significant. Plant populations are known to migrate or have persistent seed banks that germinate during specific environmental conditions. Additional populations of known special-status plants may establish prior to or during construction. With the implementation of Mitigation Measure (**MM) BIO-1a, Special-Status Plants Avoidance and Impact Minimization** (full text is presented in Section 3.4.5), impacts to special-status plant species would be less than significant. This mitigation measure would require plant surveys by a qualified botanist, conducted during appropriate blooming periods, prior to vegetation removal or ground disturbing activities. If special-status plant species are found, the Project would be required to implement measures from the BAHCP, ITP, and ITP FEIR to avoid and minimize impacts to those species. **MM BIO-1a** would also protect special-status plant species that were determined to have a low potential to occur because of marginal habitat.	E01-55
3.4-26	**Section 3.4.4 Impact Analysis and Mitigation Measures,** Crotch's bumble bee Last full paragraph	The DEIR correctly summarizes PG&E's relevant proposed measures from the HCP, ITP, and also from the CDFW-authored ITP FEIR which specifically addresses Crotch's bumble bee and where CDFW concludes that with implementation of these measures, impacts would not be significant. However, the MOX DEIR analysis then continues by stating that project impacts would be significant because the APMs do not define suitable habitat and do not define the steps to take if an	E01-56

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		active nest is found. A lack of specific definition of habitat in the documents quoted does not justify the overall conclusion that project impacts would be significant, given the bee may not be present or areas may be avoidable if present, and where present, CDFW has concluded that impacts are not significant. The language should be modified to indicate that Proposed Project impacts potentially could be significant, not that they would be significant. In order to complete the work in Crotch's bumble bee habitat, PG&E will obtain a Memorandum of Understanding (MOU) as part of the CDFW 2081(a) process (MOU/ITP), which includes submittal of a survey plan to CDFW outlining survey methodology and level of effort. Results of the surveys will be provided to CDFW, and appropriate avoidance and minimization measures will then be determined as part of the 2081(a) MOU/ITP. The detailed survey and other measures in MM BIO-1b should instead reference the ITP/MOU process and defer to coordination with CDFW to define the appropriate survey methodology. The impact analysis should be revised to describe the ITP/MOU process and coordination with CDFW. MM BIO-1b should be modified as discussed below. With implementation of the HCP, ITP, and ITP FEIR measures, and PG&E MOX APM BIO-2, using habitat evaluation and bee survey methods to be developed in the MOU with CDFW, and implementation of avoidance and minimization measures, impacts would be less than significant, which is consistent with the ITP FEIR conclusions. This discussion could be incorporated into the impacts analysis since no further mitigation should be required as stated by CDFW. MM BIO-1b should reflect CDFW's authority to determine mitigation methods in the MOU process. *Suggested clarification*: ~~However, even with the application of APMs, Project impacts on Crotch's bumble bee would be significant. The APMs do not define suitable habitat for Crotch's bumble bee and they do not define the steps to be taken if an active nest is found.~~ **~~MM BIO-1b, Crotch's Bumble Bee Avoidance, i~~**Impacts to Crotch's bumble bee would be less than significant. CDFW has concluded in the ITP FEIR that with inclusion of these APMs, impacts to Crotch's bumble bee would be less than significant. Further, PG&E will develop a Memorandum of Understanding (MOU) with CDFW as part of the CDFW 2081(a) process that specifies bee habitat evaluation and survey methodologies as applied to the project, and survey findings will then be provided to CDFW. ~~This~~ CDFW ~~mitigation measure~~ would require a qualified biologist conduct a survey for bumble bee habitat and individuals and potential nest sites within the limits of disturbance per the agreed upon methods that will be specified in the MOU. If bumble bee species are found, the Project would be required to implement measures from the BAHCP, ITP, and ITP FEIR to avoid sensitive areas and exclude construction activities, or as otherwise specified in the MOU. If take is unavoidable, a 2081(a) MOU will be developed with CDFW. Mitigation Measure Bio-

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		1b outlines the process further. ~~The measure does not allow destruction or "take" of a Crotch's bumble bee nest.~~ Refer to row with DEIR at 3.4-67 to -69 for suggestions to clarify MM BIO-1b, if retained.	E01-56 (cont'd)
3.4-27	**Section 3.4.4 Impact Analysis and Mitigation Measures,** Monarch 2nd paragraph	Please correct language to match the PEA (Pg 5.4-22). It is grassland near the substation that could support the milkweed; the substation itself does not support suitable habitat. *Suggested clarification*: Individuals could migrate through the BSA during the migration and breeding season (February through fall) and utilize floral resources present in the grassland and shrub habitat of the Project area; or utilize or establish an unknown overwintering site during the winter in the woodland or forest habitat. Though no milkweed plants were observed during the botanical surveys, there is grassland habitat that could support milkweed and floral foraging, and grassland near the Moraga Substation could support native narrow leaf milkweed based on Calflora habitat prediction models for the species.	E01-57
3.4-27	**Section 3.4.4 Impact Analysis and Mitigation Measures,** Monarch Last full paragraph	It is speculative to say impacts to monarchs would be significant since there may not be any milkweed or wintering sites. Please modify wording to indicate that these impacts potentially could be significant if these resources are found during surveys, not that it is known that they would be significant. *Suggested clarification*: However, even with the application of APMs, Project impacts on monarchs potentially could ~~would~~ be significant if milkweed or wintering sites are found during surveys in potentially affected areas. The APMs do not discuss protection of milkweed plants, if found, and they do not define the steps to be taken if larva or an unknown wintering site is found. With the implementation of **MM BIO-1c, Monarch Avoidance,** impacts to monarchs would be less than significant. This mitigation measure would require a survey for milkweed species and monarch overwintering sites prior to vegetation removal or ground-disturbing activities. If milkweed species are found, they would be flagged for avoidance. If overwintering sites are found, the Project would be required to implement measures from the BAHCP, ITP, and ITP FEIR to avoid sensitive areas and ensure species protection.	E01-58
3.4-34	**Section 3.4.4 Impact Analysis and Mitigation Measures,** Northwestern Pond Turtle 3rd full paragraph	As noted in the PEA, the CDFW-authored ITP FEIR addresses impacts to the pond turtle and concludes that with incorporation of the specified measures, including surveys conducted by PG&E biologists prior to construction, impacts on special-status reptiles including pond turtle are considered less than significant and no further mitigation is required (CDFW 2022a). The extended setback to 400 feet can be accommodated but should be dependent on the habitat within that buffer area as determined by the qualified biologist: not all habitat within 400 feet is likely to be potential nesting habitat depending on substrate and other site-specific factors. The PG&E turtle specialist,	E01-59

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		approved by the CPUC, will identify likely habitat and survey requirements within that habitat. *Suggested clarification*: However, even with the application of these APMs, impacts to northwestern pond turtle could ~~would~~ still be significant if turtles are present. The APMs only require a 100-foot setback to streams and therefore do not reduce the risk of damage to inconspicuous nesting sites if northern pond turtles are found. With the implementation of MM BIO-1d, Northwestern Pond Turtle Avoidance, impacts to northwestern pond turtle will be less than significant. This mitigation measure would require a survey for northwestern pond turtle prior to any ground-disturbing or vegetation removal within 400 feet of any perennial waterbody, to the extent the CPUC-approved PG&E biologist identifies potential nesting habitat within such 400 feet area. If pond turtles are found, construction monitoring would be required, including monitoring turtles for nesting behavior, and establishment of buffers if nesting behavior is suspected. ~~Activities within potential nesting habitat would only be confined to periods outside of the nesting, development, and hatching for northwestern pond turtle.~~	**E01-59 (cont'd)**
3.4-36 and 3.4-48	**Section 3.4.4 Impact Analysis and Mitigation Measures,** Bald and Golden Eagles 3rd full paragraph	On page 3.4-36, the impact to eagles is characterized correctly as LESS THAN SIGNIFICANT, but on page 3.4-38 changes the conclusion to say it would be significant. As commented for other species, there is no evidence to support a conclusion that even with implementation of APMs, impacts to as yet unknown resources would be significant and this language should be modified as shown below. Further, the discussion states: "Surveys limited to the work area would be insufficient to cover nesting eagles that may be disturbed by the Project." PG&E agrees with this statement, and has developed APMs that require surveys within the standard buffers established for eagles (1/2 mile). The DEIR statement appears to reflect an erroneous assumption that PG&E only surveys within work areas, whereas PG&E's APMs and existing ITP FEIR measures require surveys within standard buffer areas, which for the eagle is ½ mile as is stated in Appendix B6 of the PEA and Appendix D Nesting Bird Management Plan in the ITP FEIR, and is referenced in **ITP FEIR APM BIO-6.** The **ITP FEIR APM BIO-6** has been incorporated into the PEA and the DEIR including use of Appendix B6: Nesting Birds: Species-specific Buffers for PG&E activities. Please correct the measure to acknowledge that the surveys will be conducted within those appropriate buffers. The CPUC-proposed Mitigation Measure for eagles summarizes the measures provided in the PEA, **ITP FEIR APM BIO-6** and PG&E's Species-specific buffers in Appendix B6, and does not define new measures. The Mitigation Measure should either be removed or the language clarified to indicate it is summarizing already existing measures. *Suggested clarification, Page 3.4-38 last 2 paragraphs within the eagle discussion:*	**E01-60**

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		~~However, even with the application of APMs,~~ Potential impacts to eagles if present could be significant. Given the sensitivity of the species, specific-specific surveys are required to identify location of eagle nests and implement a half-mile no disturbance buffer as described in PG&E's Species Specific Buffers (PEA Appendix B6) and PG&Es ITP, referenced in **ITP FEIR APM BIO-6.** With these measures, impacts would be less than significant. ~~Surveys limited to the work area would be insufficient to cover nesting eagles that may be disturbed by Project activities.~~ MM BIO-1e, Eagle Avoidance (see full text in Section 3.4.5) ~~is required in order~~ summarizes these measures to ensure that impacts to golden eagle would be less than significant. This measure requires protocol-level surveys for bald and golden eagles during the breeding season, identification of nest locations, and routine inspections as required under **ITP FEIR APM BIO-6**, ITP Appendix D, and PEA Appendix B6. If active eagle nests are identified within one-half mile of Project activities, avoidance buffers will be implemented and inspections will be conducted to verify no Project-related disturbances are occurring, as is standard protocol under **ITP FEIR APM BIO-6** and PEA Appendix B6.	**E01-60 (cont'd)**
3.4-46	**Section 3.4.4, Impact Bio-1 Overhead Power Line Removal.** 2nd full paragraph	Please see previous comments on impact discussions and new mitigation to modify the language in this discussion to reflect revised mitigation measures as outlined in individual species discussions. *Suggested revision*: With the implementation of APMs and BAHCP habitat mitigation requirements, the impact to special-status species from overhead power line removal remains potentially significant because the Project could impact unknown future populations of special-status plant species, ~~the APMs do not define suitable habitat for~~ Crotch's bumble bee ~~or step to be taken if an active nest is found, there is no protection of milkweed plants or steps taken if monarch larva or an unknown~~ monarch ~~wintering site is found~~, and ~~the stream setback does not reduce damage to inconspicuous nesting sites of northwestern pond turtle, and surveys limited to the work are would be insufficient to cover nesting~~ eagles, if present.	**E01-61**
3.4-47 through 3.4-48	**Section 3.4.4, Impact Bio-1 Operations and Maintenance.** 3rd full paragraph	The conclusion on page 3.4-47 that Operations and Maintenance impacts are "LESS THAN SIGNIFICANT WITH MITIGATION" should be changed to "LESS THAN SIGNIFICANT". The existing lines are already subject to O&M activities that would remain essentially unchanged if the Project is constructed; continuing these existing O&M operations is not an impact of the Project. There is no justification for a finding of significance when the Project does not result in changed O&M practices, and these activities are covered under the HCP, HCP EA-FONSI, the ITP, and ITP FEIR. It is also speculative and inaccurate to state that the impact to special-status species and resources would be significant because new populations may be found in the future; the HCP, ITP, and ITP FEIR measures adequately address O&M activities present and future and no new mitigation is needed.	**E01-62**

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		Should new species be listed and potential take anticipated, those would be addressed by PG&E obtaining resources agency authorization under existing or new permits, as needed. *Suggested revision*: ~~"With the implementation of APMs and BAHCP habitat mitigation requirements, the impact to special-status species from O&M activities remains significant because the Project could impact unknown future populations of special-status plant species, the APMs do not define suitable habitat for Crotch's bumble bee or step to be taken if an active nest is found, there is no protection of milkweed plants or steps taken if monarch larva or an unknown monarch wintering site is found, the stream setback does not reduce damage to inconspicuous nesting sites of northwestern pond turtle, and surveys limited to the work are would be insufficient to cover nesting eagles that may be disturbed by Project activities. Implementation of MMs BIO-1a, BIO-1b, BIO-1c, BIO-1d, and BIO-1e would reduce impacts to special-status species to a less than significant level. MM BIO-1a would require plant surveys by a qualified botanist, conducted during the appropriate blooming period, prior to vegetation removal; and require implementation of APMs from the BAHCP, ITP, and ITP FEIR to avoid and minimize impacts to those species. MM BIO-1b would require a qualified biologist to conduct a survey for Crotch's bumble bees and potential nest sites, and if nests are found, avoid sensitive areas and exclude construction activities. MM BIO-1c would require a survey for milkweed species and monarch overwintering sites prior to vegetation removal or ground disturbing activities; and avoid areas where milkweed or overwintering sites are found. MM BIO-1d would require a survey for northwestern pond turtle prior to any ground-disturbing activities or vegetation removal within 400 feet of perennial streams, monitoring for nesting behavior if turtles are found, and establishing buffers around potential nesting habitat. Finally, MM BIO-1e would require protocol-level surveys for eagles and avoidance buffers if nesting eagles are found within one-half mile of Project activities.~~ ~~Mitigation Measures for Impact BIO-1 MM BIO-1a Special-Status Plants Avoidance. See full text in Section 3.4.5 (Mitigation Measures). MM BIO-1b Crotch's Bumble Bee Avoidance. See full text in Section 3.4.5 (Mitigation Measures). MM BIO-1c Monarch Avoidance. See full text in Section 3.4.5 (Mitigation Measures). MM BIO-1d Northwestern Pond Turtle Avoidance. See full text in Section 3.4.5 (Mitigation Measures.) MM BIO-1e Eagle Avoidance. See full text in Section 3.4.5 (Mitigation Measures)."~~ Given that O&M activities such as inspections and maintenance programs are essentially unchanged from the current existing measures, these activities are part of the existing condition and there is no Project change to existing practices or impact due to changed O&M activities. Maintenance activities will be less in the first 5 years than existing conditions, resulting in a reduction of any O&M impacts. Current ongoing vegetation management programs are sufficient for the powerlines, substations, and access roads, and no additional activities would be required under the Proposed Project.

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		Implementation of the HCP, ITP, and ITP FEIR measures have been deemed appropriate avoidance and mitigation by resource agencies for the existing current activities and for future covered PG&E activities such as the activities on the rebuilt lines, and no mitigation is required for continuation of those activities beyond those already approved measures.	E01-62 (cont'd)
3.4-67 and 7-37	**MM BIO-1a Special-Status Plants Avoidance**	PG&E will refresh plant surveys prior to ground disturbance; however, the requirement to perform these surveys within 2 weeks of vegetation removal or ground disturbing activities is in conflict with the need to perform the surveys when the plants are present and identifiable and with language allowing surveys to be completed up to 3 years ahead of vegetation removal/ground disturbance. Please see proposed revised language. Any new species or populations will be covered under the HCP and ITP measures as described. *Suggested revision*: **"MM BIO-1a Special-Status Plants Avoidance.** ~~Within two weeks prior to any vegetation removal or ground-disturbing activities that will occur within the blooming period of special-status plant species with a moderate or higher potential to occur in the region, a~~ A qualified botanist(s) approved by CPUC that is knowledgeable of the plant species in the region shall conduct surveys for special-status plants within the limits of the disturbance area prior to vegetation removal or ground disturbance. The survey shall include a 250-foot-wide buffer unless otherwise prohibited due to legal access or safety concerns. Surveys may be adjusted to reflect proposed work schedules and locations and need not be performed all at one time. The surveys shall be conducted during the appropriate blooming period(s) according to protocols established by CDFW and CNPS (CDFW, 2018) or more recent protocols, if available. All special-status plant species, including listed threatened or endangered, and those ranked CRPR 1A, 1B, 2, 3, and 4, that are located shall be documented during surveys using a precision GPS unit. Results of surveys shall be valid for a period of three years if conducted during a period of average rainfall; however, the Project shall not be delayed during a drought year and would rely on baseline or previously collected data. If vegetation removal does not occur in a previously surveyed area within three years, the surveys shall be repeated provided there is adequate rainfall to support germination. If special-status plant species are found, special-status plants shall be avoided where feasible in accordance with **ITP FEIR APM BIO-3, BIO-4**, and **BIO-5**. If vegetation removal or ground disturbing activities would have a direct impact on special-status plant species, PG&E shall implement **AMM Plant-04, -05, -06, -07, and -08,** as applicable. Observations will be submitted to CNDDB in accordance with **O&M ITP-6.8**."	E01-63
3.4-67 to -69	3.4.5 Mitigation Measures, Crotch's Bumble Bee Avoidance **MM BIO-1b, Crotch's Bumble Bee Avoidance**	The language in the current DEIR MM BIO-1b should be revised to indicate that PG&E will prepare an MOU with CDFW as part of the ITP process that outlines the appropriate methodologies for habitat assessments and bee surveys methodology and reporting. There is no standard accepted methodology for overwintering surveys described in the DEIR, nor are these typical, and the	E01-64

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		overwintering season surveys described in the DEIR would be highly disruptive to the bees if present. A thorough search to "look for potential [bees]" would temporarily move litter or debris in which bees may be overwintering, could increase the risk of crushing bees by survey foot traffic, and could affect overwintering success. Such an activity would in fact pose a greater risk to bees than is necessary and is not likely to be effective. Appropriate measures for overwintering habitat and other surveys will be discussed with CDFW, described in the MOU, and implemented. Potential overwintering habitat will be identified and avoided where possible, with other measures already determined by CDFW to be sufficient for the impact to be less than significant. Other proposed changes below reflect the authority of CDFW on methods and measures as these will be determined in the MOU. PG&E recognizes that take as defined under CESA can only be authorized by CDFW. *Suggested revision*: **MM BIO-1b Crotch's Bumble Bee Avoidance and Minimization.** Within one year prior to any vegetation removal or ground-disturbing activities a qualified biologist(s) approved by CPUC that is knowledgeable of Crotch's bumble bee species identification and habitat shall conduct a habitat assessment evaluating the likelihood of bumble bees occurring within and adjacent to the clearance survey of area identified as potential foraging, nesting, and/or overwintering habitat within the limits of disturbance. The survey will also include a 100-foot-wide buffer unless otherwise prohibited due to legal access or safety concerns or as otherwise determined with CDFW. Surveys may be adjusted to reflect proposed work schedules, activities, and locations and need not be performed all at one time. Bumble bee identification shall include visual identification and non-lethal photo vouchers, or other methods as outlined in a 2081(a) Memorandum of Understanding (MOU) with CDFW for bumble bee survey and handling. Nest sites can be determined through following bees from blooms to their nests and looking for concentrated bee activity in suitable nest habitat. PG&E will develop a survey plan and obtain an MOU from CDFW, which includes submittal of the survey plan outlining survey methodologies for habitat assessments including foraging and colony habitats and overwintering habitat and will identify reporting requirements. Results of the surveys will be provided to CDFW, and any additional appropriate avoidance and minimization measures beyond those already accepted will be determined. If take is unavoidable, a 2081(a) MOU/ITP will be developed. ~~*Overwintering Season Surveys:* If ground disturbing or vegetation management activities in any given work area occurs during the overwintering season (November 1 through January 31), and the work area has been identified as potential foraging or overwintering habitat, the qualified biologist shall conduct overwintering season surveys within areas of suitable habitat (i.e., where vegetation and floral resources occur) in each area planned for Project activities within two weeks in advance of vegetation removal or ground disturbance in that area.~~

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		~~Overwintering season surveys shall look for potential Crotch's bumble bee overwintering queens and hibernacula such as leaf litter, logs, and rodent burrows. If overwintering queens or other Crotch's bumble bee are found utilizing hibernacula during surveys, all ground disturbing activities and vegetation removal shall stop within 50 feet of the queen and/or hibernaculum and all workers will be notified not to enter the environmentally sensitive area. The qualified biologist shall record the queen's location with a GPS (including datum and horizontal accuracy in feet) and include photographs and a map of the queen's location.~~ *Colony Active Period Season Surveys*: If ground disturbing or vegetation management activities in any given work area occurs during the Colony Active Period (February 1 – September 30), and the work area has been identified as potential foraging or nesting habitat, the qualified biologist shall search for Crotch's bumble bee throughout the area planned for Project activities in advance of vegetation removal or ground disturbance in that area. Survey efforts for each area will be laid out in the MOU between PG&E and CDFW, including measures such as ~~shall include at least two~~ visual surveys consisting of meandering transects occurring no more than 10 days prior to the start of ground and vegetation disturbing activities in that area or as otherwise determined in the MOU. ~~The qualified biologist shall conduct the sur- veys at least four days apart, with the second survey occurring within two days prior to starting ground and/or vegetation removal activities in that area.~~ The survey duration shall be appropriate to the size of the area covered in the MOU and would include one person-hour per 3 acres of suitable habitat for areas planned for Project activities plus a 100-foot-wide buffer (unless otherwise prohibited due to legal access or safety concerns) or as otherwise determined in the MOU ~~based on the metric of a minimum of one person-hour of searching per three acres of suitable habitat~~. The qualified biologist shall conduct surveys between 7:00 AM and 6:00 PM (Pacific Time) on sunny days between 55-and 95-degrees Fahrenheit with sustained wind speeds measuring less than 10 miles per hour or as otherwise outlined in the MOU. ~~If ground disturbing activities are halted for longer than three days within a work area supporting suitable habitat during the Colony Active Period defined as the Queen Flight Season (February 1 through March 31), the qualified biologist shall perform a minimum of one additional survey in the work area in accordance with the prior to reinitiating Project activities in the work area.~~ If a Crotch's bumble bee nest is identified during ~~Colony Active Period Season focused~~ surveys or during ground disturbance of vegetation removal activities, PG&E shall establish a 50-foot no disturbance buffer around each nest. The size and configuration of the no disturbance buffer will be based on the best professional judgement of the bee specialist or as otherwise determined in the MOU. Buffers shall remain in place until the nest has senesced or project activities are complete. To determine if a nest has senesced, the qualified biologist shall monitor the nest for senescence in late summer and fall. Nest senescence can typically be denoted after the presence of reproductives (gynes and males) are observed. ~~Nests shall be monitored for a minimum of one hour per day for three~~

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		~~consecutive days during optimal weather conditions (i.e., from 7:00 AM–6:00 PM, low wind, and low cloud cover conditions, etc.).~~ If there has been no nest activity after the above conditions are met, the no disturbance buffer may be removed, or as otherwise determined in the MOU. If Crotch's bumble bees, overwintering site, or nest sites are detected, **ITP FEIR APM BIO-2** shall be implemented, which requires protection of special status wildlife species encountered. Should an active nest or overwintering site be discovered, PG&E shall implement **ITP FEIR APM BIO-3** to avoid sensitive areas and **ITP FEIR APM BIO-5** to exclude construction activities to ensure species protection. The qualified biologist(s) will remain onsite throughout the duration of activities to ensure that impacts are avoided in accordance with **O&M ITP-6.4**. Documentation and reporting of Crotch's bumble bee habitat assessments, bee observations, overwintering sites, and/or nesting sites shall be conducted in accordance with **O&M ITP-6.8, -6.10,** and **ITP FEIR APM BIO-2**. Observations will be submitted to CNDDB in accordance with O&M ITP 6-8. Other measures as outlined in the MOU will be implemented as determined in the ITP. ~~Destruction of a Crotch's bumble bee nest site is defined as take under CESA and is not authorized under this measure.~~	**E01-64 (cont'd)**
3.4-67 to -69 and 7-40	3.4.5 Mitigation Measures, Monarch Avoidance **MM BIO-1c Monarch Avoidance**	This measure can also be clarified similar to the plant surveys in MM BIO-1a: milkweed surveys and overwintering surveys should not be restricted to within 2 weeks of ground disturbance when milkweed, larvae, and adults may not be present, but should be conducted, as is noted later in the measure, at the appropriate season. PG&E acknowledges that take authority can only be granted by the appropriate wildlife agency. *Suggested revisions*: **MM BIO-1c Monarch Avoidance.** ~~Within two weeks prior to any vegetation removal or ground-disturbing activities,~~ A qualified biologist approved by CPUC that is knowledgeable of milk-weed species in the region and monarch overwintering sites shall conduct surveys ~~for~~ within the limits of the disturbance area. The survey shall include a 250-foot-wide buffer unless otherwise prohibited due to legal access or safety concerns. ~~Injury or mortality of monarch butterfly is not authorized under this measure.~~ Documentation and reporting of monarch overwintering sites and milkweed species shall be conducted in accordance with O&M ITP-6.8, -6.10, and ITP FEIR APM BIO-2. Monarch observations will be submitted to CNDDB in accordance with O&M ITP-6.8. *Overwintering sites*: Surveys for overwintering sites will be conducted from October 1 through March 31 and will include wind-protected blue gum eucalyptus, pine, fir, cypress, and oak trees, particularly in canyons or drainages near water sources and southwest facing slopes. Overwintering sites will be determined by the presence of monarchs clustered together in large numbers. If monarch overwintering sites are observed or suspected, PG&E shall implement ITP FEIR APM BIO-3 to avoid sensitive areas, and ITP FEIR APM BIO-5 to exclude construction activities to ensure species protection.	**E01-65**

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		Milkweed Plants: Surveys for milkweed plants will be conducted from March 31 through October 1 and will include any native milkweed species known from the region. ~~Transects for milkweed species will be spaced 20 meters apart or less given the terrain and visual barriers. If milkweed species are observed,~~ Specific survey methods will be determined by the qualified project biologist, similar to rare plant survey protocols. AMM Plant-01, which prohibits herbicide use, AMM Plant-04, which requires barriers to minimize disturbance, and O&M ITP-5.12, which requires delineation and avoidance of sensitive habitat features, will be implemented. If milkweed species cannot be avoided, the plants will be inspected for signs of eggs (undersides of leaves), larva, signs of herbivory, and presence of frass. If evidence of eggs, larva, or larval use is found, ITP FEIR APM BIO-2 shall be implemented, which requires protection of special status wildlife species encountered, and the plant will be avoided until October 1. If no evidence of eggs, larva, or larval use is found, AMM Plant-05, -06, and -07 will be implemented.	**E01-65 (cont'd)**
3.4-69 to -70 and 7-41	3.4.5 Mitigation Measures, NWPT Avoidance **MM BIO-1d Northwestern Pond Turtle Avoidance**	Per our comments above, the HCP/ITP/FEIR measures listed were determined by CDFW in their FEIR to be adequate mitigation for potential impacts to pond turtles of these activities. Species surveys and habitat evaluation areas and methodology will be determined by the CPUC-approved PG&E biologist implementing resource agency-standard survey protocols. The CPUC-approved PG&E biologist may modify buffers and seasonal restrictions depending on site-specific factors such as intervening barriers, or specific activities (non-ground-disturbing activities on existing roads, for instance) can continue with appropriate monitoring as determined by the biologist. This could include work in the nesting season within buffers in certain conditions, such as if work does not involve ground disturbance or movement of heavy equipment off established access roads; this determination would be made by the qualified biologist and work monitored. PG&E requests deletion of MM BIO-1d or modification as follows: **MM BIO-1d Northwestern Pond Turtle Avoidance.** Prior to any ground-disturbing or mechanical vegetation removal activities within 400 feet of any perennial waterbody (e.g., lake, pond, river, stream, wet meadow, seep, spring) that has the potential to support northwestern pond turtle as determined by the qualified biologist, a qualified biologist(s) approved by CPUC will conduct a survey within the limits of disturbance no more than 24 hours prior to commencing activities to search for the presence of northwestern pond turtle individuals. If adult or juvenile northwestern pond turtles are present, the qualified biologist(s) will remain onsite throughout the duration of activities to ensure that impacts are avoided in accordance with **O&M ITP-6.4**. Any northwestern pond turtle adults or juveniles that are present will be allowed to leave the area on their own volition. If it is not possible to allow the animal to leave the work area on its own, the qualified biologist(s) will relocate it to the nearest suitable habitat out of harm's way. If	**E01-66**

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		northwestern pond turtle is formally listed as federally threatened or endangered, any take or handling would only be authorized under the context of the appropriate permits from USFWS. If northwestern pond turtle is present, and project activities are scheduled to occur April 1 through August 31 (when females are searching for suitable nest sites), the qualified activities biologist will monitor turtle overland for nesting behavior and the presence of nesting sites. If nesting behavior is suspected, a buffer of 300 feet will be implemented around any overland activities conducted by the turtle(s). The buffer may be modified by the qualified biologist if appropriate due to factors such as fencing and intervening barriers. The biological monitor will have authority to stop work and implement appropriate buffers in accordance with **O&M ITP-5.3 and -5.12**. The qualified biologist will implement the buffer based on their observations, habitat presence, and known life history of the species, to protect nesting behavior and potential nesting sites. This buffer shall be maintained, and no work shall be allowed, from the onset of observed nesting behavior to spring of the following year, to allow eggs to develop and young to hatch. If some work is necessary within that appropriate buffer, the qualified biologist will determine whether the specific work activities can safely be conducted, and if so, will monitor the work. If the biologist determines, through surveys and monitoring, that the nest has hatched or has been predated, work may proceed in the area. If mechanized vegetation removal must be conducted in potential nesting site habitat during the nesting season, CDFW will be contacted for further guidance if the species has not been federally listed; and USFWS will be contacted for further guidance if the species has been federally listed. Documentation, reporting, and submittal to CNDDB of northwestern pond turtle observations and potential nesting sites shall be conducted in accordance with **O&M ITP-6.8, -6.10,** and **ITP FEIR APM BIO-2**. Potential nesting habitat will be avoided during future activities in accordance with **ITP FEIR APM BIO-3**.	**E01-66 (cont'd)**
3.4-70	3.4.5 Mitigation Measures, Eagle Avoidance **MM BIO-1e Eagle Avoidance**	As explained above, MM BIO-1e summarizes already existing measures ITP FEIR APM BIO-6 and the commitments in Appendix B6 of the PEA and Appendix D of the ITP FEIR. *Suggested revision*: **MM BIO-1e Eagle Avoidance.** Within 30 days prior to any ground-disturbing or vegetation removal activities that would occur during the breeding season for eagles (January 15 through August 31), a qualified biologist(s) approved by CPUC shall conduct USFWS and/or CDFW protocol-level surveys for bald and golden eagles in suitable breeding habitat within the area of disturbance, following the requirements of ITP FEIR APM BIO-6, PG&Es Nesting Management Plan (ITP Appendix D), and PEA Appendix B6, Species Specific Buffers for PG&E Activities. ~~The survey area will include a half-mile buffer, unless otherwise prohibited due to legal access or safety issues.~~ Surveys shall follow the most recent USFWS and/or CDFW guidelines unless alternative methods are otherwise approved	**E01-67**

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		by the resource agencies. All eagle observations, including individual eagles, active nests ~~or territories~~, and roosting sites shall be recorded using a precision GPS unit and included on Project maps. If an active eagle nest is identified or is known to be active through coordination with USFWS, CDFW, or other conservation land managers, a one-half mile (2640-foot) avoidance buffer shall be established in accordance with the Species Specific Buffers for PG&E Activities (PEA Appendix B6) and ITP Appendix D. Helicopter and drone use shall be prohibited within the one-half mile avoidance buffer unless topographical conditions provide adequate visual and audible screening and the flight path within the avoidance buffer would not come in direct line-of-sight of the nest. The avoidance buffer may be adjusted based on topography, local site conditions, line-of-sight between the nest and work areas, status of the nest, tolerance of the birds to human disturbance, and proposed work activities. The buffer shall only be reduced through coordination with the USFWS, CDFW, and the applicable conservation land managers. The qualified avian biologist(s) shall perform routine inspections of the nest to determine that status and ensure that the avoidance buffer is being properly implemented. The biologist shall have the authority to halt work if the birds are exhibiting increased levels of distress as required in PEA Appendix B6. Any take of bald or golden eagle would be prohibited. Documentation, reporting, and submittal to CNDDB eagle observations and survey results shall be conducted in accordance with **O&M ITP-6.8, -6.10**, and **ITP FEIR APM BIO-2** and **BIO-6**.	**E01-67 (cont'd)**
3.4-71 and 7-43	**MM BIO-5a Tree Trimming and Removal Requirements.**	PG&E requests clarification that tree removal may also occur in support of project construction work area or access safety: **MM BIO-5a Tree Trimming and Removal Requirements.** Trimming and removal of trees shall be conducted in accordance with the International Society of Arboriculture (ISA) American National Standards Institute (ANSI) A300 Tree Care Standards and ISA's Pruning Best Management Practices and overseen by an ISA Certified Arborist. The ISA Certified Arborist will evaluate trees that may be impacted by the Project and determine which trees can be retained and which trees shall be removed. Trees would only be proposed for removal if they would interfere with construction work areas or access safety, utility structures, trimming of the tree branches or roots would be severe enough to impact tree health and result in tree decline, trees are considered a safety hazard to structures or personnel, or retention of the tree would not be in compliance with CPUC General Order 95 for vegetation clearance around powerlines.	**E01-68**

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3.4-71 and 7-43	**MM BIO-3a Ephemeral Channel Protection and Restoration**	PG&E proposes minor changes to the wording of MM BIO-3a, to clarify reasonably feasible implementation. *Suggested revisions*: **MM BIO-3a Ephemeral Channel Protection and Restoration.** Construction activities that require temporary disturbances to ephemeral channels shall be conducted during the dry season when the bed and bank are dry, and no rain is anticipated until the channel has been fully restored. Restoration of ephemeral channels include restoration of bed and bank to as close to pre-Project conditions as feasible. Vegetation removed shall be restored in compliance with BAHCP FP-14, AMM Plant-04, and ITP FEIR APM BIO-2. Erosion control APMs BAHCP FP-11, FP-12, O&M ITP-5.9, and -5.10 shall be implemented to stabilize the area until vegetation has been restored. Permanent impacts to aquatic resources are prohibited. PG&E shall obtain all required aquatic resource permits for ~~temporary~~ impacts, as applicable, prior to disturbance to ephemeral channels. All permit conditions shall be implemented.
3.4-71 and 7-43	**MM BIO-7a Bird and Bat Collision Reduction**	Mitigation Measure BIO-7a, Bird and Bat Collison Reduction is unnecessary because reduction of impacts is already incorporated into PG&E's Proposed Project design standards and requirements, as described in the PEA. PG&E's PEA Project Description states that project design includes collision reduction measures: "The new structures will meet current raptor safety requirements" (PEA at 3-14). PG&E's intention to include this design element is reiterated and expanded in the impact analysis in PEA Section 5.4.4.4: *PG&E will minimize the potential for electrocution or accidental line collision by rebuilding the electrical lines in accordance with avian-safe construction standards and will implement the processes and procedures outlined in the PG&E Avian Protection Plan [APP].* *Conductors and ground wires will be spaced sufficiently apart so that raptors will not be electrocuted and all power line and substation facilities for the project will be designed to be avian safe, as appropriate and feasible, following the intent of Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006, 2012)* Impact BIO-7 (Create a substantial collision or electrocution risk for birds or bats) repeats the PEA impact discussion text (DEIR 3.4-66), and the contents of the DEIR Project Description (DEIR at 2-9) repeats PG&E's intent to implement the safety requirement. However, Impact BIO-7 makes the conclusion that because a design standard was not repeated in an APM, it has to be in a mitigation measure so the requirement will be implemented. A design standard is not optional and does not need to be repeated as an APM. If an expanded description of the design element needs to be in the

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		Proposed Project description to reflect that APP, copy the quoted statements to an appropriate part of the project description and remove the unnecessary MM BIO-7a.	E01-70 (cont'd)
Geology and Soils			
3.7-24	In addition, within this area, duct banks would be encased in 1.5-foot-thick thermal concrete located a minimum of 3 feet below the road surface, which would ensure that the duct banks would not be susceptible to damage from expansion and contraction of shallow soils.	A portion of the installed duct bank would include thermal concrete surrounding the conduits. The entire duct bank is not encased in thermal concrete at that dimension. Refer to PEA Figure 3.3-6, Underground Duct Bank Cross Sections, Item 9, Thermal Concrete. *Suggested clarifications*: In addition, ~~within this area~~, conduits within the duct banks would be encased in 1.5-foot-thick thermal concrete located a minimum of 3 feet below the road surface, which would ensure that the duct banks would not be susceptible to damage from expansion and contraction of shallow soils.	E01-71
Noise			
3.11-34	**MM N-2a Vibration Assessment and Control**.	The Federal Transit Administration (FTA) Groundborne Vibration Impact Criterion referenced in the analysis is for FTA Land Use Category II: Residences and buildings where people normally sleep. Construction equipment, including pile drivers, will be used during regular construction (daytime) hours. Therefore, the vibration impacts from the pile driving (or other construction equipment) would not occur during the night when residents are sleeping, and the Category II distance of 150 feet and the 80 VdB annoyance threshold are not applicable to the project. This conclusion is supported, for example, in the City of Oakland's EIR for the California College of the Arts Oakland Campus Redevelopment Project (https://files.ceqanet.lci.ca.gov/252748-3/attachment/H4lSUn75yJlyMb0NX_Ul3b1mA4mVZqtnUsgFiejcbNEn-Yk_I7BTNEvAeckp_ySPEiqJC77kYLjd6wC10). Specifically, that EIR concludes: *Because the locations of grading, soil compaction, and other construction activities that would require the use of construction equipment with the potential to exceed the disturbance threshold (75 VdB for residences) would vary over time across the site, the impacts of these activities on the residences at the 225 Clifton Street apartment building would not be expected to last more than a few days at a time. In addition, SCA-NOI-1: Construction Days/Hours (#67) limits construction activities to the hours between 7:00 a.m. and 7:00 p.m. Monday through Friday, and limits construction with the potential to generate extreme noise (which is generally correlated with the potential to generate high vibration) to the hours between 8:00 a.m. and 4:00 p.m. Therefore, severe vibration would be restricted to normal daytime hours, thereby reducing the likelihood of disturbing residents by interfering with sleep.* Therefore, MM N-2a Vibration Assessment and Control is not necessary to reduce vibration impacts to persons to a less than significant level, and PG&E recommends the following edits to MM N-2a:	E01-72

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		Where ~~pile driving may be required within 150 feet of residential or commercial structures,~~ sonic pile drivers may be required within 40 feet of a historic structure or impact pile drivers within 115 feet of a historic structure, or if an impact pile driver is used within 60 feet of an occupied structure, PG&E shall prepare a Vibration Control Plan prior to the commencement of construction activities, meeting the following requirements: • The Vibration Control Plan shall be prepared by a licensed structural engineer and shall include all reasonable methods required to minimize vibration such that monitored vibration levels do not exceed 0.5 inches per second Peak Particle Velocity ~~or the annoyance threshold of 80 VdB at residential structures~~. These methods may include limiting the extent of pile driving activity near ~~occupied~~ structures and using alternative installation methods for piles. Final design efforts and construction methods will consider soils and hammer type and use when assessing potential for vibration. • Site-specific minimization measures such as pre-drilling pilot holes to reduce resistance, modifying the type of hammer, reducing hammer energy, modifying hammer frequency, or using vibratory pile driving will be implemented as necessary to reduce the potential effects of off-site vibration. • Vibration monitoring will be conducted during pile driving activities, or in response to a complaint, to confirm that monitored vibration levels do not exceed 0.5 inches per second Peak Particle Velocity ~~or the annoyance threshold of 80 VdB at residential structures~~. • If threshold levels are exceeded, vibration monitoring reports shall document the site-specific minimization measures implemented to reduce or limit the duration and level of the impact and shall document actions taken to adjust construction activities in response to field conditions. • The Vibration Control Plan shall also establish baseline conditions at potentially affected structures, provide shoring design to protect buildings and structures from damage, document damage at the conclusion of vibration generating activities, and include recommendations for repair if necessary. • Monitoring for vibration may be reduced or eliminated when it has been established that these measures, if required, are effective for the site conditions.	**E01-72 (cont'd)**
Recreation			
3.14-12	Impact REC-3, Operations and Maintenance	The DEIR concludes that O&M activities on the power line in parks and open spaces would be the same (or less) as current activities, so there would be no change from the baseline. This analysis supports PG&E's request to revise the conclusion for Impact REC-3 from "LESS THAN SIGNIFICANT" to "NO IMPACT."	**E01-73**

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3.14-14	Impact REC-5, Operations and Maintenance	The DEIR concludes that O&M activities on the power line in parks and open spaces would be the same (or less) as current activities, so there would be no change from the baseline. This analysis supports PG&E's request to revise the conclusion for Impact REC-5 from "LESS THAN SIGNIFICANT" to "NO IMPACT."	E01-74
Transportation			
3.15-5	The average 2020 vehicle miles traveled (VMT) in the study area is estimated to be higher than 25 VMT per capita just north of SR-13, and between 20 and 25 VMT per capita just south of SR-13.	The measure of VMT should be clarified as follows: The average 2020 <u>daily</u> vehicle miles traveled (VMT) in the study area is estimated to be higher than 25 VMT per capita just north of SR-13, and between 20 and 25 VMT per capita just south of SR-13.	E01-75
3.15-15	Table 3.15-2 | FP-12	Table 3.15-2 lists FP-12 as a measure to reduce transportation impacts. However, FP-12 is a measure from PG&E's Bay Area Operations and Maintenance Habitat Conservation Plan to address protection of water bodies from soil stockpiles. FP-12 is not relevant to roadways or transportation impacts from the project. APM TRA-2 includes restoration of roadways following construction, which would include removing any soil left on the roadway. Please delete all discussion of FP-12 in the transportation chapter.	E01-76
3.15-18	Subsection *Temporary Road Closures for Crane Operation*	This section incorrectly lists Park Boulevard Way and Estates Drive as roadways that will have temporary closures for crane operation. No cranes will be used on these roadways, which are located in the underground portion of the project. PG&E requests that Park Boulevard Way and Estates Drive are deleted from this bullet list. In addition, temporary road closures for cranes will occur on Glendora Avenue; this road should be added to the bullet list. Refer to DEIR Figure 2.1-2.	E01-77
3.15-19	Subsection *Temporary Guard Structures and Netting*	Temporary road closures for guard structure installation will occur on Saroni Court and Paso Robles Drive; these roads should be added to the bullet list. Refer to DEIR Figure 2.1-2.	E01-78
3.15-19	However, the following four locations would have no secondary vehicle access during road closures.	These four locations have no secondary access because they are at the end of dead-end roads. Note that closure at these four locations will affect approximately 1 to 2 residences each. As noted in APM TRA-1, safe transport will be provided for these residences. *Suggested clarification*: "However, the following four locations would have no secondary vehicle access during road closures <u>because they are located at the end of a roadway, such as a court</u>:"	E01-79
3.15-22	"…several roadways, which include Saint James Drive, Hollywood Avenue…"	No construction activity will occur on Hollywood Avenue. The temporary road closure for guard pole installation at this location is on Glendome Circle. Replace "Hollywood Avenue" with "Glendome Circle" in this sentence.	E01-80

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3.15-22	The construction for the overhead power line removal would occur over 18 months (from June 2029 through November 2030).	As shown in PEA Table 3.6-3 and DEIR Table 2.4-3, the removal of the overhead line west of Estates Drive is planned for January 2031 through July 2031. The schedule of June 2029 to November 2030 applies to the rebuild of the overhead line east of Estates Drive. *Suggested correction*: The construction for the overhead power line removal would occur over 7~~18~~ months (from January 2031 ~~June 2029~~ through July 2031 ~~November 2030~~).	E01-81
3.15-22	"…and the sidewalks along local streets south of SR-13" in subsection *Construction of the Overhead Power Line Removal*	The overhead power line removal will be done between Estates Drive/Park Boulevard intersection (not SR 13) and Oakland X Substation. *Suggested revision*: "…and the sidewalks along local streets ~~south of SR-13~~between the Estates Drive/Park Boulevard intersection and Oakland X Substation"	E01-82
3.15-22	Construction work areas would include excavation followed by installation of vaults (2 weeks for each vault), duct banks (6 days for a 240-foot length), cable pulling (12 days for each vault), cable splicing (20 days for each vault), and repaving and lane striping (2 days for each vault) for the underground portion of the Project.	This sentence does not accurately summarize construction activities. *Suggested correction*: "Durations for specific construction activities include 2 weeks for excavation and installation of each vault; 40 to 100 feet/day per crew for duct bank trenching and conduit installation; and 6 days to pull cable between adjacent vaults; 20 days for splicing at each vault."	E01-83
3.15-22	Two crews would be working in a linear fashion along the underground line route during trenching work.	Minor correction should be made to the sentence, per Part A Response to CPUC Data Request #6. *Suggested correction*: Two to three crews would be working in a linear fashion along the underground line route during trenching work.	E01-84
3.15-23	…and the sidewalks along Park Boulevard and local streets south of SR-13 (first full paragraph on page)	Underground power line construction will not include areas between Estates Drive/Park Boulevard and SR 13. Sidewalks for underground power line construction may affect sidewalk access only on Park Boulevard, Estates Drive, and Park Boulevard Way. *Suggested revision*: …and the sidewalks along Park Boulevard, Estates Drive, and Park Boulevard Way. ~~and local streets south of SR-13~~	E01-85
3.15-26	Table 3.15-3. Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System | *Orinda Fire Evacuation*	The Project is not inconsistent with the Orinda Fire Evacuation Guide. No temporary roadway closures will occur in the City of Orinda. Several roads in Orinda will be used for construction access. Lost Valley Road will be used to access Moraga Substation, Edgewood Drive, and Dolores	E01-86

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	Guide | Because of the narrow streets and steep topography in this area, alternative routes may increase evacuation and emergency response times, which would be inconsistent with evacuation planning provided in the Orinda Fire Evacuation Guide directing the public to use certain routes that may be blocked by the proposed Project.	Way. No construction vehicles will block or obstruct Lost Valley Road. Construction vehicles will not park on these roadways and no temporary road closures will occur. Finally, none of the planned temporary road closures will impede access to any of the evacuation routes shown in the *Orinda Fire Evacuation Guide*. Therefore, no impacts will occur to emergency response and evacuation in the City of Orinda, including the designated evacuation routes listed in Table 3.15-3, and the project is consistent with the *Orinda Fire Evacuation Guide*. PG&E requests that the "Consistency" column be revised to delete "Inconsistent" and replace it with "Consistent."	**E01-86 (cont'd)**
3.15-26	Table 3.15-3. Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System | *City of Orinda General Plan, Land Use and Circulation Element |Construction activities on roadways would restrict local roadway, bicycle, pedestrian, evacuation, and emergency access, which would be inconsistent with the roadway connections provided in the City of Orinda General Plan, Land Use and Circulation Element; and the directive under Safety Element, Policy S-11 to ensure adequate capacity, safety, and viability of evacuation routes*.	As discussed previously for the Orinda Fire Evacuation Guide, no temporary road closures will occur in the City of Orinda, and no roads will be blocked or otherwise obstructed. The project will not affect the capacity, safety, or viability of any evacuation route in Orinda. The project is consistent with the City of Orinda General Plan Land Use and Circulation Element or Safety Element Policy S-11. PG&E requests that the "Consistency" column be revised to delete "Inconsistent" and replace it with "Consistent."	**E01-87**
3.15-26	Table 3.15-3. Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System | *Contra Costa County General Plan Transportation Element | Closures and construction activities on roadways would restrict local roadway, bicycle, pedestrian, evacuation, and emergency access, which would be inconsistent with the overarching goals of the Contra Costa General Plan, Transportation Element of improving safety and enhancing mobility and connectivity for all roadway users; and the directive under Health and Safety Element, Policy HS-P7.3 of ensuring construction equipment or activities do not block roadways or interfere with evacuation plans during the construction period*.	The Contra Costa County General Plan applies only to unincorporated areas of the county. For the project, the County's General Plan applies to the portion approximately between structures RN4/RS4 and the county boundary near Manzanita Drive, including construction access on Old Tunnel Road via SR 24. None of the designated evacuation routes for Contra Costa County listed in DEIR Table 3.15-3 would be blocked or otherwise obstructed by the project. Therefore, the project is consistent with Contra Costa County General Plan Transportation Element. PG&E requests that the "Consistency" column be revised to delete "Inconsistent" and replace it with "Consistent."	**E01-88**
3.15-27	Table 3.15-3. Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing	This plan is about effective management of emergency operations within Contra Costa County. It addresses processes, roles and responsibilities, and similar topics; it does not address evacuation or	**E01-89**

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	the Circulation System | *Contra Costa Operational Area Emergency Operations Plan | Because of the narrow streets and steep topography in this area, alternative routes may increase evacuation and emergency response times, which would be inconsistent with the intent of the Contra Costa Operational Area Emergency Operations Plan to prepare for and respond to emergencies*.	evacuation routes. The project does not affect the procedural topics addressed in this plan and therefore is consistent with the plan. PG&E requests that the "Consistency" column be revised to delete "Inconsistent" and replace it with "Consistent."	**E01-89 (cont'd)**
3.15-27	Table 3.15-3. Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System | *Alameda County General Plan, Mobility Element | Closures and construction activities on roadways would restrict local roadway, bicycle, pedestrian, evacuation, and emergency access, which would be inconsistent with the general goal of the Alameda County General Plan, Mobility Element to provide a safe, multi-modal transportation system*.	The Alameda County General Plan applies only to unincorporated areas of the county. None of the project is located in unincorporated Alameda County. Therefore, the general plan goals and policies do not apply to the project. In addition, none of the roads listed as evacuation routes for Alameda County in Table 3.15-3 will be blocked or otherwise obstructed by the project. No impact and no plan inconsistencies will occur with regards to the Alameda County General Plan Mobility Element. PG&E requests that the "Consistency" column be revised to delete "Inconsistent" and replace it with "Consistent."	**E01-90**
3.15-28	Table 3.15-3. Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System | *City of Oakland General Plan, Safety Element | Road and lane closures would be required on designated evacuation routes, which would be inconsistent with the directives under the City of Oakland General Plan, Safety Element, Policies SAF-8.5 and 8.18 to ensure that the evacuation routes network is interconnected with adequate capacity and to protect critical evacuation routes*.	The City of Oakland General Plan Safety Element shows primary and secondary local evacuation routes (refer to General Plan Figure SAF-13a). Of the evacuation routes shown, only two roads may have temporary road closures due to crane use during construction: Skyline Boulevard and Park Boulevard. Alternate routes for these roads are listed in DEIR Table 2.3-6, and egress is available on either side of the road closures. Note that Manzanita Drive is not a designated evacuation route in the City of Oakland General Plan Safety Element, and only a small portion of Snake Road (between Mountain Boulevard and Shepherd Canyon Road and between Thornhill Drive and Skyline Boulevard) is a designated evacuation route. In addition, for the SR-13 crossing, the California Highway Patrol and Caltrans will be contacted to organize 5-minute rolling stops, and emergency evacuation on SR-13 will not be obstructed. As noted in APM TRA-1, if required for local encroachment permits, PG&E will prepare a Traffic Management Plan (TMP) in coordination with the City of Oakland to address evacuation routes, detours, signage, and other traffic controls. For all these reasons, PG&E requests that the "Consistency" column be revised to delete "Inconsistent" and replace it with "Consistent."	**E01-91**
3.15-28	Table 3.15-3. Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System | *City of Oakland Pedestrian Master Plan | Road closures and other construction*	The City of Oakland Pedestrian Master Plan addresses the construction and maintenance of infrastructure to support pedestrian access, such as upgraded signals and improved lighting to increase pedestrian safety (Outcome 1); sidewalk repair, curb ramps, and art to create places that promote walking (Outcome 2); and improving sidewalk connections and wayfinding signage to	**E01-92**

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	activities would restrict pedestrian access, which would be inconsistent with the intent of Outcomes 1, 2, and 3 in the City of Oakland Pedestrian Master Plan related to increasing pedestrian safety, promoting walking, and improving walkability.	improve walkability to key destinations (Outcome 3). Any obstructions of pedestrian access during project construction are temporary, and per APM TRA-1 and MM T-1a, PG&E will provide appropriate traffic controls during the temporary closures to maintain pedestrian safety and access, including along Park Boulevard. Per APM TRA-2, any sidewalks or pedestrian infrastructure damaged during construction will be restored. The project is consistent with the City of Oakland Pedestrian Master Plan. PG&E requests that the "Consistency" column be revised to delete "Inconsistent" and replace it with "Consistent."	**E01-92 (cont'd)**
3.15-29	Table 3.15-3. Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System | *The City of Oakland Bicycle Master Plan* | *Road closures and other construction activities would restrict bicycle access, which would be inconsistent with the goals of the City of Oakland Bicycle Master Plan related to supporting increased neighborhood access and providing a network of safe and comfortable bikeways*.	The City of Oakland Bicycle Master Plan addresses new projects and programs to enhance existing communities and their mobility needs through actions such as increasing the supply of bicycle parking; designing bikeways that provide first and last mile connections to transit; and providing fix-it and hydration stations. The master plan does not address temporary bicycle facility closures due to construction. Any obstructions of bicycle access during project construction are temporary, and per APM TRA-1 and MM T-1a, PG&E will provide appropriate traffic controls during the temporary closures to protect bicycle access and safety. Per APM TRA-2, any road or bicycle infrastructure damaged during construction will be restored. The project is consistent with the City of Oakland Bicycle Master Plan. PG&E requests that the "Consistency" column be revised to delete "Inconsistent" and replace it with "Consistent."	**E01-93**
3.15-29	Table 3.15-3. Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System | *City of Oakland Complete Streets Policy* | *Road closures and other construction activities would restrict transit, bicycle, and pedestrian access, which would conflict with the purpose of the City of Oakland Complete Streets Policy of ensuring all streets can safely accommodate all users, including pedestrians, bicyclists, transit riders, and drivers, regardless of age or ability*.	The City of Oakland Complete Streets Policy addresses design, construction, and maintenance of a comprehensive transportation network that addresses the needs of all categories of users, including pedestrians and bicyclists. The policy does not address effects of temporary construction activities on access. APM TRA-1 and MM T-1a include appropriate traffic controls during the temporary road closures to provide for ongoing access, and APM TRA-2 includes restoration of any road or related infrastructure damaged during construction. The project is consistent with the City of Oakland Complete Streets Policy. PG&E requests that the "Consistency" column be revised to delete "Inconsistent" and replace it with "Consistent."	**E01-94**
3.15-29	Table 3.15-3. Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System | *Policy 19.20 of the City of Piedmont General Plan Environmental Hazards Element* | *Road and lane closures would be required on designated evacuation routes. In addition, road closures and other construction activities would restrict transit, roadway, bicycle, pedestrian, and emergency access, which would be inconsistent with*	Policy 19.20 of the City of Piedmont General Plan Environmental Hazards Element is intended to ensure that design of development projects provides access for the Piedmont Fire Department, for example, entry into gated communities and adequate roads to critical infrastructure. It does not address temporary construction activities. Policy 19.30, however, does address temporary construction activities and calls for a Transportation Construction Plan to be approved by the City of Piedmont. APM TRA-1 and MM T-1a include preparation of a Traffic Management Plan, with local agency approval, to address the items such as provision of traffic controls listed in Policy 19.30.	**E01-95**

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	the directives of the City of Piedmont General Plan, Environmental Hazards Element, Policies 19.20 and 19.30, and Transportation Element, Policy 10.4 of ensuring that the Piedmont Fire Department has complete access to all locations in the City; ensuring that emergency access and evacuation routes are not inhibited; and accommodating bicycles and improving connectivity.	Piedmont's Hazards Element lists complete routes, rather than individual roads, for evacuation. The project will include temporary lane closure on only one of Piedmont's major evacuation routes (Hampton Road to Estates Avenue to Park Boulevard). To evacuate residents in this area if and when a lane is temporarily closed for guard pole installation on Estates Avenue or Park Boulevard, or when Park Boulevard is temporarily closed for crane use, multiple alternate roads are available. For example, Hampton Road connects to other evacuation routes, such as Crocker Avenue to Mandana Avenue and LaSalle Avenue to Mountain Boulevard. Because two or more evacuation routes will be available during a temporary road closure at Estates Drive/Park Boulevard, and APM TRA-1 and MM T-1a will include a TMP consistent with Policy 19.30, the project is consistent with the City of Piedmont General Plan Environmental Hazards Element Policies 19.20 and 19.30. Policy 10.4 of the Transportation Element calls for accommodating bikes on Piedmont roads where feasible to improve connectivity with bike routes in other cities but does not address temporary construction activities; that is addressed in Policy 19.30 in the Environmental Hazards Element. Therefore, the project is consistent with the City of Piedmont Transportation Element Policy 10.4. For all these reasons, PG&E requests that the "Consistency" column be revised to delete "Inconsistent" and replace it with "Consistent."	E01-95
3.15-28	Table 3.15-3	Manzanita Drive is not designated as evacuation route in the City of Oakland General Plan Transportation Element (refer to Figure SAF-13a). PG&E requests that Manzanita Drive is deleted from the list of designated evacuation routes for the City of Oakland on p. 3.15-28.	E01-96
3.15-38	Paragraph starting "Project construction would not alter the road geometry…"	No road closure for crane use is planned for Park Boulevard Way. PG&E requests that Park Boulevard Way is deleted from the list of temporary road closures for crane use. In addition, temporary closure for crane use is expected for Glendora Avenue, which should be added to the list in the last sentence of this paragraph.	E01-97
3.15-38	Paragraph starting "To reduce hazards from incompatible uses…"	Guard structures will be used on Saroni Court and Paso Robles Drive. In the last sentence of this paragraph, PG&E requests that Saroni Court and Paso Robles Drive are added to the list of roadways spanned by temporary guard structures.	E01-98
3.15-46	Table 2.3-6 in Section 2.3.8.2 of the Project Description identifies six road segments where no secondary vehicle access is available because construction would occur on dead-end streets.	Table 2.3-6 lists four such roads with no secondary vehicle access. *Suggested correction*: Table 2.3-6 in Section 2.3.8.2 of the Project Description identifies <u>four</u> ~~six~~ road segments where no secondary vehicle access is available because construction would occur on dead-end streets.	E01-99
3.15-54	**MM T-1a Traffic Management Plan and Safe Transport.**	Local jurisdictions and agencies may not have a method to approve a TMP outside of issuing an encroachment or traffic control permit. To enable PG&E's communication to CPUC of TMP preparation and review before construction, clarification on coordination is suggested.	E01-100

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		Some of the agencies listed in MM T-1a are not expected to issue encroachment permits, including Alameda County (none of the project is in unincorporated Alameda County). Edits are suggested below to note that coordination with all listed agencies is not required. Additionally, obtaining approval of the TMP from local jurisdictions and agencies at least 1 month prior to construction is unlikely to align with typical processes of permits. The review often occurs during a road encroachment permit process. The permit may be issued right before construction is planned. Clarification on timing also is suggested. MM T-1a also states that the "TMP shall include measures for directing delivery and haul trucks away from sensitive receptor locations (e.g., residential neighborhoods, schools) and congested intersections during construction." Because many of the work areas are by necessity located in residential neighborhoods and near schools, it will not be reasonably feasible to avoid some locations and intersections. The TMP can identify routes that minimize driving of delivery and haul trucks through sensitive receptor locations as feasible. *Suggested revisions*: **MM T-1a. Traffic Management Plan and Safe Transport.** PG&E shall prepare a Traffic Management Plan (TMP) for review ~~approval~~ by local jurisdictions and agencies within the Project area at least 3 months prior to any construction activities requiring heavy vehicle and equipment traffic on public roadways or full or partial closure of public streets. Documentation of coordination with local jurisdictions and agencies issuing encroachment or traffic control permits will be provided to the CPUC prior to construction associated with the permit. Local jurisdictions and agencies may include ~~but are not limited to~~ Contra Costa County, Alameda County, City of Orinda, City of Piedmont, City of Oakland, EBMUD, EBRPD, ~~and~~ AC Transit, or others where appropriate. The TMP must be reviewed ~~approved~~ by local jurisdictions and agencies ~~at least 1 month~~ prior to construction, ~~with~~ which may occur separately from the approval process ~~expected to occur through~~ associated with the issuance of road encroachment or traffic control permits prior to construction. The TMP shall establish methods for minimizing construction effects on roadways, transit services, pedestrian facilities, and bicycle facilities; and address staging areas, haul routes, types of equipment anticipated to be used, timing of heavy equipment and material deliveries, workers and equipment parking, potential street or lane closures, alternative routes and detours, signing, lighting, temporary relocation or closure of bus stops, and traffic control device placement to minimize disruption and ensure safe and efficient traffic flow. The TMP shall include measures for directing delivery and haul trucks away from sensitive receptor locations (e.g., residential neighborhoods, schools) and congested intersections during construction, where reasonably feasible. The TMP shall also establish the timing and method for notifying emergency service providers regarding Project activities and

E01-100 (cont'd)

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		notifying the public, including wayfinding signage, regarding full or partial closure of public streets, detours, and alternative routes for various travel modes including relocated or closed bus stops. The Traffic Management Plan shall include a separate section entitled "Safe Transport." This section shall define the following components: • A list of all residences (by street address) that could have access blocked by construction equipment or activities and that have no alternate or secondary routes for entry or egress (see EIR Table 2.3-6). • A defined outreach effort (stating the frequency, method, and intended audience for outreach, such as the general public or a targeted community) that identifies one or more contacts within each household to define likely transport needs during the construction timeline, including consideration of family size and age (and whether car seats or pet carriers are needed), disability or special needs, and timing of typical daily ingress and egress needs. Based on the result of the outreach efforts, PG&E shall prepare transport plan and provide all requested transport during the construction activity. • A written communication plan to be provided to each affected household prior to the start of each week's construction that describes the anticipated daily construction activities, the specific location and type of activity, and the resulting constraints on household vehicle use.	**E01-100 (cont'd)**
3.15-55	References	Add a reference for the *Contra Costa Operational Area Emergency Operations Plan*. The Plan can be located at https://www.contracosta.ca.gov/DocumentCenter/View/7352/Emergency-Operations-Plan-2010-11?bidId=.	**E01-101**
Tribal Cultural Resources			
3.16-8	**MM TCR-2a. Native American Monitoring**	PG&E looks forward to retaining a Confederated Villages of Lisjan Nation (CVLN) Tribal monitor(s) to support protection of Tribal Cultural Resources. PG&E will invite the CVLN Tribal monitor(s) to monitor ground-disturbance activities in areas with high sensitivity for buried Tribal Cultural Resources. PG&E will support CVLN discretion, in consultation with the CPUC, to reduce or discontinue monitoring based on field conditions observed. Tribal Cultural Resources monitoring distances typically are described being within 100 feet from areas with high sensitivity for buried Tribal Cultural Resources. For example, this distance is included in CPUC's Estrella Substation and Paso Robles Area Reinforcement Project Final Environmental Impact Report, Mitigation Measure TCR-1: Tribal Monitoring and Treatment of Tribal Cultural Resources. *Prior to the commencement of any ground disturbing activity, the Proposed Project Applicants (HWT and PG&E) shall retain a monitor from the Xolon-Salinan tribe, who consulted on this project pursuant to AB 52. The Xolon monitor will work in tandem with the archaeological monitor. The Xolon monitor will be present during construction phases that involve*	**E01-102**

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		ground-disturbing activities to depths of 6 feet that may occur within 100 feet of Dry Creek, Huer Huero Creek, the Salinas River, and the Estrella River, all of which have been identified as culturally sensitive, or within 50 feet of all known Native American archaeological sites. Monitoring of ground disturbance would also occur in the vicinity of Santa Ysabel Ranch, which was identified as culturally sensitive for buried archaeological resources that could be TCRs by the tribe. Ground-disturbing activities are defined as activities that may include, but are not limited to boring, grading, grubbing, excavation, drilling, and trenching, within the project areas. The tribal monitor will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, and any cultural materials identified. Upon discovery of any TCRs, construction activities shall cease in the immediate vicinity of the find (not less than the surrounding 50 feet) until the find can be assessed. As such, PG&E proposes similar language for consideration in MOX DEIR MM TCR-2a below. If a field assessment finds the resource may qualify for listing, PG&E will likely avoid before evaluating. Evaluation usually happens only if avoidance is not reasonably feasible. As such, PG&E suggests clarification to replace the "NRHP/CRHR evaluation of inadvertent discoveries" with "an in-field assessment of potential significance by a qualified archaeologist." This clarification enables consistency with other APMs and MMs relating to inadvertent discoveries and doesn't assume evaluation is needed before assessment and avoidance where reasonably feasible. To avoid confusion with the Tribal monitor's authority to halt or redirect work, it is suggested that "halted" as in, *Monitoring may be reduced or "halted",* be replaced with "discontinued". *Suggested revisions to MM TCR-2a based on the above comments are as follows*: **MM TCR-2a. Native American Monitoring.** Prior to ground disturbing activities, a Confederated Villages of Lisjan Nation (CVLN) Tribal monitor(s) shall be retained to monitor all ground disturbing construction activity within 100 ~~500~~-feet of a current or historic creek channel. Confederated Villages of Lisjan Tribal monitor(s) will have the authority to halt and redirect work should any archeological or tribal cultural resources be identified during monitoring. If archeological or Tribal cultural resources are encountered during ground disturbing activities, work within 100 feet of the find must halt so that an assessment of its potential significance can be undertaken by a qualified archaeologist ~~and the find must be evaluated for listing in the CRHR and NRHP~~. Monitoring may be reduced or ~~halted~~ discontinued at the discretion of the CVLN monitor, in consultation with the lead agency, as warranted by soil conditions such as encountering bedrock, sediments being excavated are fill, or negative findings during the first 50 percent of the entire area of ground disturbance. If monitoring is reduced to spot checking, spot checking shall occur when ground disturbing activities moves to a new location

E01-102 (cont'd)

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		within the Project site and/or when ground disturbance will extend to depths not previously reached (unless those depths are within bedrock).	E01-102 (cont'd)
Wildfire			
3.18-4	Page numbering	After page DEIR 3.18-4, the page numbering starts again at DEIR 3.18-1. Please correct. (References to page numbers in this table use the numbering shown in the DEIR).	E01-103
3.18-10	One lane would be maintained open on Park Boulevard between Leimert Boulevard and Estates Drive during installation of the transition structures (TS27A/TS27B), so these structures are not included in Table 2.3-6.	The text should be clarified to state that one lane in each direction will remain open on Park Boulevard, as suggested below. *Suggested clarification*: One lane <u>in each direction</u> would be maintained open on Park Boulevard between Leimert Boulevard and Estates Drive during installation of the transition structures (TS27A/TS27B), so these structures are not included in Table 2.3-6.	E01-104
3.18-12	Manzanita Drive – A two-lane road that connects Pinehurst Road from the southeast to Skyline Boulevard, Snake Road, and Colton Boulevard to the northwest.	Manzanita Drive is not a designated primary or secondary evacuation route in the City of Oakland's General Plan Safety Element and should be deleted from the list of primary evacuation routes and text at the bottom of page 3.18-12. *Suggested clarification*: ~~Manzanita Drive – A two-lane road that connects Pinehurst Road from the southeast to Skyline Boulevard, Snake Road, and Colton Boulevard to the northwest.~~ Work areas or guard structures would be located along several evacuation routes, which include ~~Manzanita Drive,~~ Skyline Boulevard, Shepherd Canyon Road, Mountain Boulevard, SR-13, <u>and</u> Park Boulevard, under the proposed Project. <u>Guard pole installation will not require full road closure.</u>	E01-105
3.18-12	Snake Road – A two-lane road that runs east/west connecting Shepherd Canyon Road from the east to Mountain Boulevard to the west. This road also runs north/south connecting to Skyline Boulevard to the north.	The bullet should be clarified to note that Snake Boulevard is a designated evacuation route only between Mountain Boulevard and Shepherd Canyon Road and between Thornhill Drive and Skyline Boulevard. *Suggested clarification*: Snake Road – A two-lane road that runs east/west connecting Shepherd Canyon Road from the east to Mountain Boulevard to the west. This road also runs north/south connecting to Skyline Boulevard to the north. <u>Snake Boulevard is a designated evacuation route between Mountain Boulevard and Shepherd Canyon Road and between Thornhill Drive and Skyline Boulevard.</u>	E01-106
3.18-13	Work areas or guard structures would be located along evacuation routes, which include Mountain	Estates Drive is designated by the City of Piedmont as an evacuation route, and it should be added to the list of work areas located along evacuation routes. *Suggested revision*:	E01-107

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	Boulevard, SR-13, and Park Boulevard, under the proposed Project.	Work areas or guard structures would be located along evacuation routes, which include Mountain Boulevard, SR-13, Estates Drive, and Park Boulevard, under the proposed Project.	E01-107 (cont'd)
3.18-25	APM WFR-1 Construction Fire Prevention Plan	There is a mistake in the sub-bullets under *Procedures for fire reporting, response, and prevention that include*: The following are not sub-bullets and should be edited to be first-tier bullet points: • Coordination procedures with federal, state, and local fire officials and emergency responders, including notifications of temporary lane or road closures • Crew training, including the construction fire prevention practices described in APM WFR-2 • Method(s) for verifying that all plan protocols and requirements are being followed	E01-108
3.18-27	As discussed in Section 3.18.1.6, several work areas and guard structures would be located on identified evacuation routes, including Park Boulevard, Manzanita Drive, and Skyline Boulevard.	Manzanita Drive is not a designated primary or secondary evacuation route in the City of Oakland's General Plan Safety Element. *Suggested revision*: As discussed in Section 3.18.1.6, several work areas and guard structures would be located on identified evacuation routes, including Park Boulevard, ~~Manzanita Drive,~~ and Skyline Boulevard.	E01-109
3-18-39	**MM WF-1a Prepare Emergency Evacuation Plan**	PG&E requests the following revisions to MM WF-1a, as discussed in further detail in PG&E's comment letter. **MM WF-1a Prepare Construction Coordination Emergency Evacuation Plan.** At least 90 days before the start of construction on affected roadways, PG&E shall submit to the California Public Utilities Commission (CPUC) for review and approval a~~n~~ Construction Coordination Emergency Evacuation Plan that defines the following information: ▪ Documentation of coordination with each affected jurisdiction, and incorporation of each jurisdiction's requirements. ▪ Identification and mapping of all designated evacuation routes defined by jurisdictions in the Project area. Identification of an alternate route to be used for emergency egress for each temporary road closure proposed to a jurisdiction. Evacuation route signage shall be installed and updated on a regular basis as construction activity moves. The identification of alternate routes and the wording and placement of signage shall be based on each jurisdiction's identified evacuation routes and will be determined in coordination with the applicable jurisdiction. ~~This signage would identify "critical" and "non-critical" evacuation routes.~~	E01-110

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		~~Critical evacuation routes are defined as evacuation routes that, if partially or entirely closed, would lead to an increase in evacuation times or blockage (dead-end). Non-critical evacuation routes are defined as short (less than 0.25 miles) evacuation routes that, if partially or entirely closed, would not affect evacuation times or road capacity.~~ ▪ Identification of all roads that will support any type of construction activity (including definition of construction vehicle access routes to all work areas). Maps and descriptions shall define the activity that would occur on each affected road (e.g., access only, parking, crane set-up, guard structure installation) and map the specific extent of each activity at an appropriate level of detail, including identification of all residential driveways. ▪ ~~For each location where a road would be blocked or impaired for any length of time, define an alternate route to be used for emergency egress. Detours shall be signed in the field.~~ ▪ Provide for CPUC review of draft notification letters, which, pursuant to MM N-1b, will be provided to all affected residents a least one month prior to the start of construction, including all residents, emergency service responders, and other affected local agencies that would use affected roads in an evacuation situation. Notification shall include information on detours and schedule of road closures and shall be coordinated with requirements of other mitigation measures (including MM N-1b). ▪ PG&E shall provide information of closures to the City of Oakland and the City of Piedmont to connect with Genasys Protect to provide real-time information on Project-related road closures to the public.	**E01-110 (cont'd)**
3.18-39	**MM WF-1b. Limit Construction Requiring Full Road Closures**	PG&E requests the following revisions to MM WF-1b, as discussed in further detail in PG&E's comment letter. **MM WF-1b. Limit Construction Requiring Full Road Closures.** In work areas requiring full road closures on ~~critical~~ jurisdiction-identified evacuation routes (identified in the construction coordination emergency evacuation plan prepared under MM WF-1a) of any length of time, ~~construction activities and~~ full closures shall occur between December 1~~5~~ and May 31~~February 28~~, when the risk of fire is generally the lowest. During National Weather Service Red-Flag Warnings, Fire Weather Watch events, and PG&E Fire Potential Ratings of R4, R5, or R5-Plus, full road closures of designated evacuation routes shall be prohibited until the warning or event has been lifted or expires.	**E01-111**

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		When construction is occurring on designated ~~critical~~ evacuation routes and partial road closures are required, at least one lane shall always remain open. ~~The lane(s) to remain open shall be the shortest route to the closest evacuation route, arterial road, or other major roadway.~~ Work is permitted year round on partial road closure segments. ~~On non-critical evacuation routes~~ Work is permitted year-round on roads that are not designated evacuation routes (identified in the emergency evacuation plan prepared under MM WF-1a) with full closures~~, work is permitted year round~~. Detours for these road closures shall have signage, and first responders shall be notified, in accordance with the emergency evacuation plan.	E01-111 (cont'd)
3.18-40 and 7-70	**MM WF-1c. School Session Construction Timing Restriction**	**Revisions to MM WF-1c School Session Construction Timing Restriction.** The schools in the vicinity of the project have widely varying operating hours. In addition, it is not standard to have measures specific to an alternative included in a project mitigation measure. Instead, the analysis of the alternative's impacts should discuss how the project mitigation measure could be applied. *Therefore, the following edits are recommended*. At least 30 days prior to planned construction of the underground rebuild segment of the Project, PG&E shall coordinate with all schools within 0.25 miles of underground power line installation to determine restricted hours of construction to avoid peak school traffic hours on weekday school days during the school year. Restricted hours shall generally avoid the one-hour period for morning drop-off and one hour period for afternoon pick-up ~~be between 7:30 a.m. and 8:30 a.m. and between 3:30 p.m. and 4:30 p.m.~~ or as otherwise determined by each school. ~~If Alternative 4 (Skyline-Ascot Underground Alternative) is selected, the construction of the underground segment along Ascot Drive between Scout Road and Mountain Boulevard shall not be constructed while school is in session at either Montera Middle School or Joaquin Miller Elementary School.~~	E01-112
Chapter 4 – Alternatives			
4-9	This alternative cannot be installed entirely underground, because the easternmost segment of PG&E's Alternative C in Shepherd Canyon Drive is expected to be too steep, narrow, and sharply winding to allow installation of an underground line. This alternative would retain about 0.4 miles of overhead double-circuit line, in lieu of the 0.9 miles of PG&E's Alternative C potential undergrounding along Shepherd Canyon Drive east of Saroni Drive.	This statement does not accurately describe PG&E's Alternative C; that alternative does not extend east of Saroni Drive. Perhaps this discussion is meant to reference DEIR Shepherd Canyon Underground East of Saroni Drive Alternative (see DEIR Section 4.4.3.3). *If so, the following clarifying edits are suggested*: This alternative cannot be installed entirely underground, because the easternmost segment of ~~PG&E's Alternative C in~~ Shepherd Canyon ~~Drive~~ Road is expected to be too steep, narrow, and sharply winding to allow installation of an underground line. This alternative would retain about 0.4 miles of overhead double-circuit line, in lieu of the 0.9 miles of DEIR Shepherd Canyon Underground East of Saroni	E01-113

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		Drive Alternative ~~PG&E's Alternative C potential undergrounding~~ along Shepherd Canyon Drive east of Saroni Drive.	E01-113 (cont'd)
4-10	From the transition station on Manzanita Drive, the conductors would be installed underground in Manzanita Drive for approximately 0.25 miles southeast to the Shepherd Saddle. From the Shepherd Saddle, the underground alignment alternative would turn south and follow Skyline Boulevard for approximately 1.3 miles, where it would turn southwest into Ascot Drive.	Consider using a term other than "Shepherd Saddle" to describe road intersection of Shepherd Canyon Road, Skyline Boulevard, Manzanita Drive, and Pinehurst Road. *Please consider this clarifying edit*: From the transition station on Manzanita Drive, the conductors would be installed underground in Manzanita Drive for approximately 0.25 miles southeast to its intersection with Skyline Boulevard, Shepherd Canyon Road, and Pinehurst Road ~~the Shepherd Saddle~~. From this intersection ~~the Shepherd Saddle~~, the underground alignment alternative would turn south and follow Skyline Boulevard for approximately 1.3 miles, where it would turn southwest into Ascot Drive.	E01-114
4-13	PG&E defined this alternative as differing from the proposed Project by removing one of the four existing circuits and taking that circuit to the Claremont Substation.	PG&E proposes clarifying edits on the scope of the PG&E alternative as follows: PG&E defined this alternative as differing from the proposed Project by removing one of the four existing circuits and also reconductoring the approximately 3-mile Moraga–Claremont Circuits 1 and 2 115 kV lines ~~taking that circuit~~ to ~~the~~ Claremont Substation.	E01-115
4-28	**Alternative 4: Skyline-Colton-Snake Underground Alternative** would require the Manzanita Transition Station and *either* the Scout or Ascot Transition Poles.	The alternative name contains a minor error. *Suggested correction*: **Alternative 4: Skyline-~~Colton-Snake~~ Ascot Underground Alternative** would require the Manzanita Transition Station and *either* the Scout or Ascot Transition Poles.	E01-116
4-37	PG&E has committed to implementation of APM GEO-3 (Site Specific Landslide Assessment). With this APM, PG&E would identify and implement appropriate design measures if specific the underground power line routes were found to result in the potential for on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	The Site Specific Landslide Assessment is APM GEO-2, not APM GEO-3. In addition, APM GEO-2 applies only to two overhead alignment poles. It would not address issues with slope stability and underground power line routes. As discussed in the DEIR (page 4-27), exploratory data from geotechnical investigations, including extensive boring samples, would be needed from each landslide along the alternative routes. This is far beyond the scope of APM GEO-2. PG&E requests that this paragraph is deleted.	E01-117
4-44	While Skyline Boulevard north of the Skyline Transition Pole does show evidence of slope movement both above (northeast of) and below (southwest of) the roadway, the roadway itself is in good condition, showing little evidence of slope movement. There are 15-20 homes on the downslope side of the road. Geotechnical studies would be required, but with the trench installed on the upslope (northeast) side of the road, the road is considered to be safe for an underground system. Based on this	Visual inspection is not sufficient data to determine potential for slope movement and design needed to meet safety requirements. Soil boring data and additional design could show that underground installation is not feasible in this location without retaining walls or other structural support. In addition, existing utilities and soil conditions may preclude installation in a specific part of the road. Without data from geotechnical studies the conclusion that "the road is considered to be safe for an underground system" is not supported. PG&E requests that the three sentences quoted here are deleted.	E01-118

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	assessment, the operation of this alternative would have a less than significant impact.		E01-118 (cont'd)
4-48	The Skyline Gates Staging Area,[49,50] also called the Sibley Volcanic Regional Preserve Staging Area, is a large parking lot adjacent to Skyline Boulevard at about 8490 Skyline Boulevard in Oakland. This popular staging area provides access to a number of well-used trails in the East Bay Regional Parks (EBRP) system via the East Bay Skyline National Recreation Trail (Wildcat to Lake Chabot).	*Suggested clarification on EBRPD names and locations*: The Redwood Regional Park Skyline Gate~~s~~ Staging Area,[49,50] ~~also called the Sibley Volcanic Regional Preserve Staging Area,~~ is a large parking lot adjacent to Skyline Boulevard at ~~about~~ 8490 Skyline Boulevard in Oakland. This popular staging area provides access to a number of well-used trails in the East Bay Regional Park~~s~~ District (EBRPD) system via the East Bay Skyline National Recreation Trail (Wildcat to Lake Chabot).	E01-119
4-62	As illustrated in Figures 4.3-5 and 4.3-6, Alternatives 2 and 3 would replace proposed Project Structures RS13/RN13 through RS19/RN19.	*Suggested revision*: As illustrated in Figure~~s~~ 4.3-5 ~~and 4.3-6~~, Alternative~~s~~ 2 ~~and 3~~ would replace proposed Project Structures ~~RS13/RN13~~ RS11/RN11 through RS19/RN19, with new transition poles at Fire Station Transition Station connecting with the underground alternative segment. As illustrated in Figure~~s 4.3-5 and~~ 4.3-6, Alternative~~s 2 and~~ 3 would replace proposed Project Structures RS13/RN13 through RS19/RN19, with new transition poles at Fire Station Transition Station connecting with the underground alternative segment.	E01-120
Chapter 7 – Mitigation Monitoring and Reporting Plan			
7-5	Procedures to be followed by construction companies engaged to do the work would be written into their contracts with PG&E. Procedures to be followed by construction crews would be written into a separate agreement that all construction personnel would be asked to sign, denoting consent to the procedures.	Individual affirmation of procedures by all involved in the project construction is infeasible to implement. *Suggested revisions*: Procedures to be followed by construction companies engaged to do the work would be written into their contracts with PG&E. ~~Procedures to be followed by construction crews would be written into a separate agreement that all construction personnel would be asked to sign, denoting consent to the procedures.~~	E01-121
7-5	These monitors provide daily reports/surveys that are entered into PG&E's field record environmental database (FRED) system. It is assumed that FRED or a similar database would be employed on this project.	FRED is SCE's system. *Suggested revision*: These monitors provide daily reports/surveys that are entered into PG&E's field record environmental database ~~(FRED)~~ system. ~~It is assumed that FRED or a similar database would be employed on this project.~~	E01-122
7-22	Monitoring/Reporting Action: PG&E to stop construction activity upon discovery of AWS until relocation	Stopping construction activity should be limited to the work area with the AWS. *Suggested revision*: Monitoring/Reporting Action: PG&E to stop construction activity in work area upon discovery of AWS until relocation from work area	E01-123

Comment Set E01 – Pacific Gas and Electric Company (continued)

Moraga-Oakland X 115 Kilovolt Rebuild Project
PG&E Comments on Draft Environmental Impact Report
Attachment 1: Text Revisions and Requests for Clarification

Page	DEIR Language	Comments	
7-58	APM PAL-1 Effectiveness Criteria: Paleontological Principal Investigator is present during construction activities	Modify the Effectiveness Criteria to align with the APM. *Suggested revision*: Paleontological Principal Investigator is ~~present~~ retained during construction activities	E01-124
7-59	APM PAL-4 Monitoring/Reporting Action: PG&E to implement discovery produces	Correct typo in Monitoring/Reporting Action: PG&E to implement discovery ~~produces~~ procedures	E01-125
7-62	MM T-1a Location: All construction and O&M areas requiring heavy vehicle and equipment traffic on public roadways	The mitigation measure is a construction Traffic Management Plan and does not include O&M. *Suggested revision*: Location: All construction ~~and O&M~~ areas requiring heavy vehicle and equipment traffic on public roadways.	E01-126
7-64	MM TCR-2a Location	*Suggested revision:* All ground disturbing construction activity within 100 ~~500~~ feet of a current or historic creek channel.	E01-127
7-64	MM TCR-2a Effectiveness Criteria	*Suggested revision*: CVLN monitor onsite at their discretion	E01-128
7-64	MM TCR-2a Timing	*Suggested revision*: Prior to and during construction ground disturbing activities	E01-129
7-70	MM WF-1c, Alternative 4 implementation. If Alternative 4 (Skyline-Ascot Underground Alternative) is selected, the construction of the underground segment along Ascot Drive between Scout Road and Mountain Boulevard shall not be constructed while school is in session at either Montera Middle School or Joaquin Miller Elementary School.	Restricting construction to times when the schools are not in session would effectively limit construction in this area to weekends or school breaks. This restriction would likely increase the overall length of intermittent construction in this length of roadway. PG&E requests this sentence is deleted.	E01-130

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131

Attachment 2
InfraTerra Landslide Study (PEA Appendix E4)

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

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Attachment 2 is 680 MB and provided separately.

Attachment is available publically at https://ia.cpuc.ca.gov/environment/info/aspen/moraga-oakland/pea/Appx_E4_PEA_MOX_Landslide_Report.pdf

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

Appendix E4. Landslide Evaluation

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

MORAGA-OAKLAND X

Landslide Hazard Evaluation

InfraTerra, Inc

July 22, 2024

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

EXECUTIVE SUMMARY

This report summarizes results of mapping of landslide and associated erosion hazards for existing and proposed replacement structures along existing electrical power lines that connect Moraga Substation with Oakland X Substation. The corridor evaluated for this study extends northeast approximately 5 miles from Oakland to Moraga, Alameda and Contra Costa Counties.

Results of this desktop study include a digital inventory of landslides and potentially related surface erosion features for evaluation of proposed alignments and related structures for the underground and aboveground portions. Desktop interpretation of lidar and aerial imagery for this project, validated by field reconnaissance, confirms the presence of numerous landslides along the central and eastern sections of the project corridor. Field reconnaissance documented the absence of active slope failure extending beneath existing and proposed aboveground structure locations.

No active or potentially landslides are identified extending beneath the existing or proposed towers. The towers are located on intact ground with no evidence of recent undercutting or encroachment from slides lower on the slope. However, several proposed tower locations are located uphill of active or pre-historic/older slides. These locations are not considered to be exposed to significant long-term hazard from uphill migration of these slides towards the towers but additional characterization may be warranted.

The proposed underground portion along Park Boulevard southwest of Leimert Boulevard does not cross any mapped slides. A landslide inferred by CGS at the intersection of Park Boulevard with Estates Drive, near proposed transition structure for Circuit 1 and crossed by the underground portion of the northern line, appears to either not be expressed in the current topography or have been repaired as part of construction of the Park Boulevard roadway. Additional site-specific evaluation may be necessary to confirm the absence of a long-term hazard.

Thirty-six (36) erosion sites in the vicinity of the towers and along the proposed underground portion were identified and mapped based on interpretation of available lidar and aerial imagery, confirmed where accessible during the field reconnaissance. These potential erosion sites generally consist of hillside gullies, incised slope erosion, and creek or drainage crossings. These generally have minimal potential for immediate impact to the existing or proposed towers.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

Moraga-Oakland X Landslide Hazard Evalu

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1.0 INTRODUCTION

This report presents maps of landslide and erosion hazards for existing and proposed structures along existing electrical power lines and proposed replacement that connect Moraga Substation with Oakland X Substation (Figure 1). The corridor evaluated for this study extends northeast approximately 5 miles from Oakland to Moraga in Alameda and Contra Costa Counties. The proposed project traverses complex bedrock geology within rugged terrain of the Oakland hills including faulted bedrock along the Hayward fault located adjacent to Highway 13 (Figure 1).

Purpose

The purpose of this desktop study is to evaluate landslide hazards along existing electrical power lines and proposed replacement connecting Moraga Substation with Oakland X Substation. Results of this desktop study identify landslide and potentially surface erosion features to help in the evaluation the hazards for both the underground and aboveground replacement portions.

Scope of Work

This evaluation performed by Christopher Hitchcock, Certified Engineering Geologist (C.E.G. 2017), supported by Brian Kessler (InfraTerra Staff Geologist), is based on a review of pertinent geologic and seismologic literature, soil survey maps, and aerial imagery. Our reconnaissance-level assessment included driving or walking each existing and proposed project to verify mapped landslide and erosion features and document recent slope failures not captured on available aerial and lidar imagery. Specifically, this study included the following tasks:

- Compilation of available geologic information;
- Preparation of GIS-based derivative slope, hillshade, and contour maps from lidar datasets;
- Desktop mapping of landslide and erosion features;
- Field reconnaissance; and,
- Preparation of this report.

Data Sources

Documented below are the data sources used to evaluate landslide hazards for the power line corridor. Geographic information systems (GIS) technology enables numerical- based mapping of natural hazards, including landslide susceptibility. Available digital geologic and soils data have been evaluated using ESRI ArcGIS® software (version 10.8.2) with the 3D Analyst™ and ArcGIS® Spatial Analyst™ extensions. We have incorporated various geologic and geohazards layers through the integration of existing regional geologic mapping (50,000 scale) combined with available digital hazard data and performing analysis of available satellite imagery (Table 1-1).

Lidar data downloaded, processed, and reviewed for this study was obtained from the online USGS National Map and consisted of lidar point cloud data collected and processed in 2006, 2007 and 2018 (Table 1-1). The 'Hillshade' tool within ArcGIS® Spatial Analyst was used for different illumination source angles to create shaded relief maps from the lidar-derived bare-earth surface raster. Slope generally is the dominant factor controlling whether a slope failure can occur regardless of the susceptibility to failure (e.g. consolidation, saturation or direction of bedding planes) of the geologic unit. The 'Slope' tool within ArcGIS® 3D Analyst™ was used to calculate and depict slope

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

(gradient, or rate of maximum change in z-value) from each cell of the lidar rasters.

Assessment of conditions and potential geologic hazards included desktop compilation and analyses of available geologic and soil data, and satellite imagery in Google Earth. For this study, initial screening of slope stability was based on landslide inventories developed by the California Geological Survey (2003a, 2003b) and statewide landslide susceptibility hazard maps (Wills et al., 2011).

Compiled bedrock geologic mapping by Graymer (2000) of the corridor was incorporated in the landslide mapping (Figure 1). Non-digital geologic mapping by Radbruch (1957; 1969) also provide useful information on engineering properties of bedrock along the project extent. Soils reviewed for this study, published by the Natural Resources Conservation Service of the U.S. Department of Agriculture (USDA), were obtained digitally from the Soil Survey Geographic (SSURGO) database. The landslide hazard maps accompanying this report incorporate mapped landslides and erosion features within GIS layers (ESRI shapefile format) in UTM Zone 10 North on the North American Datum of 1983 (NAD83) coordinate system.

Table 1-1: Data Sources Used in Landslide Mapping

Digital and Non-Digital Data	Data Source
Lidar-derived Digital Elevation Models from point cloud datasets	USGS Seamless: USGS Lidar Point Cloud CA_ALAMEDACO_2006 USGS Lidar Point Cloud CA_CONTRACOSTACO_2007 USGS Lidar Point Cloud CA_NoCAL_3DEP_Supp_Funding_2018_D18 Various PG&E lidar datasets (2007 through 2022)
50,000 scale geologic mapping	Compilation by USGS (Graymer, 2000): Radbruch (1957; 1969)
Landslide inventory	Statewide California Geological Survey database compiled from CGS (2003a, 2003b)
Landslide susceptibility hazard (Map Sheet 58)	California Geological Survey (Wills et al., 2011)
Digital aerial imagery	USGS National Agriculture Imagery Program (NAIP) M_3712215_ne/nw/sw (10-25-2017)
Surficial soil data	Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) database

Satellite imagery of the area from Google Earth was compared against historic aerial photographs to detect areas of slope change over time. Digital scans of historic aerial photographs were obtained from the University of California Santa Barbara (UCSB) aerial photography library. Available relevant imagery ranging from 1939 through 1965 was interpreted for this study (Table 1-2). More recent digital NAIP Plus imagery (2016) overlain within GIS provided more recent information on slope conditions (Table 1-1).

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

Table 1-2: Aerial Photographs Interpreted for This Study

C-5750	8-2-193	1:20,0C	289-44, -45, -46	Black and Wh vertical ang
GS-CP	10-28-19	1:23,6C	6-38, -39	Black and Wh vertical ang

As part of geologic data compilation for seismic hazard zonation of the western project area, CGS (2003a; 2003b) prepared an inventory of existing landslides in Oakland based on review of previously published landslide mapping, analysis of stereo-paired aerial photographs, and limited field reconnaissance. Landslides were mapped at a scale of 1:24,000 with the completed mapping scanned, digitized, and attributes compiled in the statewide CGS landslide database. The CGS landslide inventory has been incorporated as part of this study and updated with more detailed (1:2,400-scale) landslide mapping using more recent aerial and lidar imagery.

For preparation of the CGS landslide inventory, previously published geologic mapping that included delineation of landslides was compiled and reviewed including mapping by Lawson (1914), Louderback (1951), Radbruch (1957, 1969), Taylor and Brabb (1972), Nilsen (1973a, 1973b, 1975), Blake and others (1974), Nilsen and others (1976), and Graymer and others (1996). Landslide features identified from these sources were reevaluated during the aerial photograph interpretation and limited field reconnaissance conducted by CGS (2003a; 2003b). The landslide inventory also included review of records of historical landslide occurrences that were in the files of the City of Oakland. For this study, the source geologic references cited above, and within the reference section of this report, were re-evaluated and incorporated along with the CGS landslide mapping. Landslides originally mapped by CGS (2003a, 2003b) are shown on detailed landslide maps prepared for this study (Figures 3 through 12).

2.0 CORRIDOR GEOLOGY

Bedrock and surficial deposits along the electrical corridor and proposed underground portion have been mapped by Case (1968), CGS (2003a), Dibblee and Minch (2005), Radbruch (1969), Graymer (2000), Graymer et al. (1994, 1997a/b, 1998), Helley et al. (1972), Helley and Graymer (1997a and b), Knudsen, et al. (1997 and 2000), Witter, et al. (2006), Wagner et al. (1991), and Ellen and Wentworth (1995). The bedrock geologic map prepared by Graymer (2000) provides the most comprehensive digital mapping covering the project area and is included as Figure 1.

Geologic Units

The susceptibility to slope failure along the corridor is controlled largely by the nature of the underlying bedrock and alluvial deposits, shown on Figure 1. Table 2-1 provides a general overview of the relative potential for landsliding (low to high) for bedrock and alluvial units along the project

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E01-131 (cont'd)

corridor based on the density of existing mapped landslides within each unit and inferred shear strength from laboratory test data compiled by CGS (2003a, 2003b). CGS (2003a, 2003b) have classified bedrock formations along the corridor based on shear strength differences between coarse-grained (higher strength) and fine-grained (lower strength) lithologies. Formations which contain interbedded sandstone and shale were further subdivided based on the stratigraphic and material strength characteristics related to favorable and adverse bedding orientation, as determined from structural and terrain data. Generally coarse-grained material strength dominates where bedding dips into a slope (favorable bedding) while fine-grained material strength dominates where bedding dips out of a slope (adverse bedding).

Table 2-1: Description of geologic units and vulnerability to slope instability (from west to east)

Geologic Unit	Map Symbol	Description	Landslide Potential	Corridor Sections
Alluvial fan and fluvial deposits (Pleistocene)	Qpaf/Qpof	Brown, dense, gravely and clayey sand or clayey gravel that fines upward to sandy clay.	Low	Oakland X Substation; Western part of underground portion and western aboveground
Sandstone of the Novato Quarry terrane (Late Cretaceous)	Kfn	Distinctly bedded to massive, fine- to coarse-grained, mica-bearing, lithic wacke.	High	Eastern part of the underground portion and western aboveground
Franciscan complex mélange (Cretaceous and/or Late Jurassic)	KJfm/fs	Sheared argillite and graywacke with minor tuff, Includes blocks of meta-graywacke (unit fs), chert (fc), greenstone (fg) and serpentinite (sp)	High	Highway 13 corridor crossing
Undivided Franciscan complex rocks (Cretaceous and Jurassic)	Kjfm	Sheared and metamorphosed graywacke, shale, mafic volcanic rock, chert, ultramafic rock, limestone, and conglomerate.	High	Highway 13 corridor crossing
Coast Range ophiolite (Jurassic)	Jb	Massive basalt and diabase.	Moderate	East of Highway 13
Keratophyre and quartz keratophyre (Late Jurassic)	Jsv	Highly altered intermediate and silicic volcanic and hypabyssal rocks.	Moderate	East of Highway 13
Joaquin Miller Formation (Late Cretaceous)	Kjm	Thinly bedded shale with minor sandstone.	High	East of Highway 13

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

Geologic Unit	Map Symbol	Description	Landslide Potential	Corridor Sections
Oakland Conglomerate (Late Cretaceous)	Ko	Massive, medium- to coarse-grained, biotite and quartz-rich wacke and prominent interbedded lenses of pebble to cobble conglomerate.	Low	East of Highway 13
Shephard Creek Formation (Late Cretaceous)	Ksc	Distinctly bedded mudstone and shale, mica- rich siltstone, and thin beds of fine-grained, mica-rich wacke.	High	East of Highway 13
Redwood Canyon Formation (Late Cretaceous)	Kr	Distinctly bedded, cross-bedded to massive, thick beds of fine- to coarse-grained, biotite- and quartz-rich wacke and thin interbeds of mica-rich siltstone.	Moderate	Shepherd Canyon
Unnamed glauconitic sandstone (Paleocene)	Ta	Coarse-grained, green, glauconite-rich, lithic sandstone interbedded with mudstone.	Moderate	Shepherd Canyon
Unnamed mudstone (Eocene)	Tes	Green and maroon, foraminifer-rich mudstone, locally interbedded with hard, distinctly bedded, mica-bearing, quartz sandstone.	High	Shepherd Canyon
Unnamed glauconitic mudstone (Miocene and Oligocene(?))	Tsm	Brown mudstone interbedded with sandy mudstone containing prominent glauconite grains	Moderate	Shepherd Canyon
Claremont chert (late to middle Miocene)	Tcc	Laminated and bedded chert, minor brown shale, and white sandstone.	Low	San Leandro Creek crossing
Orinda Formation (late Miocene)	Tor	Distinctly to indistinctly bedded, nonmarine, pebble to boulder conglomerate, conglomeratic sandstone, coarse- to medium-grained lithic sandstone, and green and red siltstone and mudstone	High	Moraga Hills
Moraga Formation (late Miocene)	Tms	Interflow sedimentary rocks	High	Uphill of Moraga Substation
Siesta Formation (late Miocene)	Tst	Nonmarine siltstone, claystone, sandstone, and minor limestone	High	Moraga Substation

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

The western section of the Moraga-Oakland X power line corridor, starting at Oakland X Substation, is located on older alluvial fan deposits (geologic units Qpaf and Qpoaf; Figure 1). These deposits typically consist of clayey sand near the surface with clayey to sandy gravel at depth. Landslides are present on steeper slopes, but failures typically are infrequent and shallow consisting of debris flows and slumps (Figures 11 through 12). Hazards are greatest in areas of shallow groundwater or sources of uncontrolled surface drainage.

In the section of the corridor along Sausal Creek, west of Highway 13, bedrock of the Franciscan Complex (geologic units Kfh, KJf, KJfm, and fs) underlies the corridor. Both aboveground and underground portions cross bedded to massive fine- to coarse-grained sandstone (unit Kfh) that locally is prone to deep-seated slides. The steep banks of Sausal Creek are mantled by numerous older, potentially active slides that locally have been remobilized as shallower debris and earth flows (Figures 9 and 10).

Complex slivers of sheared and faulted bedrock (units Jb, fs, sp, Kjm and Ko) are present along the Hayward fault at the Highway 13 corridor crossing. These bedrock materials of the Oakland Conglomerate, Redwood Canyon, and Joaquin Miller Formations can have highly variable physical properties and susceptibility to landsliding (Table 2-1). Along Shepherd Canyon and east to San Leandro Creek, unnamed sandstone and mudstone units are highly prone to landslides with the exception of the more resistant Claremont Chert (unit Tcc; Figure 1). The eastern section of the corridor, including Moraga Substation, is underlain by sedimentary rocks of the Siesta, Moraga, and Orinda formations (Units Tst, Tms, and Tor; Figure 1), all of which are highly susceptible to slope failure.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

3.0 LANDSLIDE HAZARDS

Geologic hazards with potential impact to the above and below-ground portions of the project, including along the corridor and underground replacement portion, consist primarily of slope failures which often are associated with areas of active slope erosion. Slope failures occur most frequently during and following the rainy season when high groundwater (elevated pore pressure) conditions persist. Landslides can also occur during or following during earthquakes, triggered by the strain induced in soil and rock by the ground shaking vibrations, or following significant rainfall events.

Earthquakes with magnitudes greater than about M_w4 can trigger landslides on susceptible slopes, and earthquakes greater than about M_w6 can generate widespread and large landslides (Jibson, 1993). The types of slope failure that are most commonly triggered by strong ground shaking include rock falls and topples in jointed hard rock, debris and rockslides in weathered bedrock, and translational/rotational slumping and sliding of hillslopes and stream banks.

The susceptibility of hillslopes to landslides is based on the field-verified observation that slope failures are rare on flat-lying areas, even in weak materials, and that landslide susceptibility increases with steeper slope and in weaker rocks. Landslide inventory mapping performed for this study provides a basis for determining the most likely locations for future shallow and deep-seated slope failure based on identification of past and current slope movement.

Mapping Procedures

Available lidar data and aerial imagery along the corridor were interpreted for this study with detailed landslide mapping conducted at 1:2,400-scale. Processing of available corridor lidar was first completed to create Digital Elevation Model (DEM) datasets. Mapping included assessment of the current conditions and evaluation of existing landslides centered along the existing power line corridor, as well as the underground portion. Figure 2 provides an index map of the detailed maps sheets along the project corridor. Maps of identified potentially active landslides identified on lidar for this study include Figures 3 through 12.

For this project, landslide features were mapped based on morphologic expression in lidar-derived topographic maps (e.g., crown scarps, evacuated drainages); tonal contrasts and appearance observed in aerial imagery; and review of available maps and publications of historic landslides. Mapping of landslides included identification of associated topographic features, such as concave slope (closed) depressions, steep or vertical scarps, shear zones located along the flanks of a landslide, and transverse ridges, snouts, and toes (Turner and Schuster, 1996). Recognizing these topographic features allows identification of landslides with a high level of certainty.

Mapped slope failures within the geodatabase include evaluation of:

(1) Slide activity (active, historic to pre-historic, older (potentially active));

(2) Interpretation certainty (definite, probable, questionable);

(3) Slope movement process (e.g., slump, earthflow, translational slide, rock fall); and,

(4) Estimated slide thickness.

The landslide inventory mapping performed for this study includes development of tabular GIS data that records the location, type, inferred activity, confidence in identification, and inferred depth of

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

each slope failure identified along the electrical power line corridors. This information is provided in numerical form for individual slope failure polygons, as shown on the inventory map legend for each map sheet (e.g., Figures 3 through 12).

The first number in the landslide inventory database provides the state of activity for the slope failure. Activity of the landslide is classified as active, historic to pre-historic, or older and potentially active (likely Quaternary age) based on the freshness of landslide features and amount of erosion. Recency of failure typically is estimated based on erosion of the headscarp and failure margins and the degree of vegetation within the failure. Potentially active describes landslides with no obvious historic movement but evidence of a landslide mass that could be reactivated under the right conditions.

The second landslide inventory number provides the certainty of identification (e.g., definite, probable, or questionable). The third number refers to the inferred thickness of landslide deposits. These estimated thicknesses are based on evaluation of the type of landslide, height of the slide headscarp, and field observations. For example, soil slumps and earth flows along the power line corridor and underground portion are typically shallow (less than five feet thick), while slumps and translational slides typically are more than ten feet thick, and deeper-seated slides over 15 feet thick.

The fourth number denotes the dominant type of movement of the slope failure. Classification of the types of slope failures mapped along the power line corridor is based on the scheme developed by Varnes (1978), which encompass a range of mass movements including rock falls, debris flows, earth slides, and other mass movements. The dominant type of movement for each slide is assigned to the following:

(1) Soil slip/earth flow

(2) Debris slide, including rock and talus fall

(3) Debris flow

(4) Slump/rotational slide

(5) Translational slide

Desktop interpretation of lidar and aerial imagery for this project, validated by field reconnaissance conducted in September and October of 2023, confirms the presence of numerous landslides along the central and eastern sections of the project corridor (Figures 3 through 10). Recent slope failures identified in the field, but not captured on available aerial photography and lidar imagery, were added to the landslide inventory database developed for this project. For example, a recent soil slip along Trestle Glen Road located along the overhead corridor was identified and mapped (Photo 1).

Relatively few slides are mapped in the vicinity of the underground portion and existing towers that connect Oakland X Substation to the proposed transition structure for Circuit 1 at the intersection of Park Boulevard and Estates Drive.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

Photo 1: View southwest of recent shallow soil slip along overhead corridor on south side of Trestle Glen Road (See Figure 10 for location).

Landslide Hazards to Above Ground Structures

No landslides are identified extending beneath proposed aboveground structures. Several proposed locations are located near active or pre-historic/older slides, with the structures typically located uphill from mapped landslides. Locations with nearby slides that could potentially extend uphill toward structures include existing northern (EN) line structure EN8 and proposed replacement northern (RN) line structure RN8 (Figure 4), ES10 and proposed RS9 (Figure 5), ES19 and RS16 (Figure 7), and ES22 (Figure 8). Although considered low risk, additional site-specific evaluation may be prudent to confirm the absence of a long-term hazard. However the locations mentioned above are on intact ground with no evidence of recent undercutting or active encroachment from the slides lower on the slope.

CGS (2003a) mapped a large landslide extending beneath Park Boulevard just east of the intersection with Estates Drive (see Figure 10). This slide appears to have been identified based on interpretation of historic aerial imagery and was not confirmed as part of our review of lidar and aerial imagery. The mapped eastern margin of the slide mapped by CGS is located adjacent to, but not extending under, RN26 and RS26. The existing and proposed structures are located east of the slide margin and therefore not considered at risk from the slide, if present.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

Landslide Hazards to Underground Portion

Relatively few, generally shallow slides are mapped in the vicinity of the underground portion. Along Park Boulevard southwest of Leimert Boulevard do not cross any mapped slides (Figures 10 through 12). A landslide inferred by CGS at the intersection of Park Boulevard with Estates Drive, near proposed transition northern line structure TN27A for Circuit 1 (Figure 10), crossed by the northern underground line appears to either not be expressed in the current topography or repaired as part of construction of the Park Boulevard roadway. Additional site-specific evaluation may be necessary to confirm the absence of a long-term hazard.

4.0 EROSION HAZARDS

Potential erosion hazards typically exist where undergrounds lines are located beneath ephemeral or perennial stream channels or topographic swales that may flood during rainstorms or near active gullies on hillslopes. Damage to tower foundations may occur from vertical channel incision (downcutting) from concentrated erosion or from lateral erosion, either during individual storms or as the result of gradual long-term channel scour or widening. Other less common erosion-related features include sinkholes or collapse features that can occur from subsurface piping or soil compaction/dissolution.

Mapping Procedure

The susceptibility of a channel bed or hillside gully to erosion depends on the frequency and magnitude of storm runoff, stream channel or hillside gradient and dimensions, watershed area, geologic materials, and presence of features that may focus concentrated channel or overland flow with high velocities, and land-use practices. Hazards from erosion typically are a function of both hillslope and fluvial processes, and therefore slope stability (landslide) and stream scour hazards may overlap and be interrelated.

The first number in the erosion database provides the state of activity for the slope failure. Activity of each erosion site is classified as ongoing (active), during major rainfall/flood events only, or dormant or repaired based on the freshness of erosion features. The second erosion inventory number provides the certainty of identification (e.g., definite, probable, or questionable).

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

The third number refers to the inferred hazard to the alignment including high (potential for immediate impact), moderate (no immediate impact), or low (minimal potential for impact).

The fourth number denotes the type of erosion hazard. The dominant types of erosion include:

(1) Fluvial erosion

(2) Scour

(3) Undercutting

(4) Hillslope erosion

(5) Gullying/headward erosion

Erosion Hazards

Thirty-six (36) erosion sites were identified and mapped based on interpretation of available lidar and aerial imagery, confirmed where accessible via field reconnaissance (Figures 3 to 12). These potential erosion sites generally consist of hillside gullies, incised slope erosion, and creek or drainage crossings with generally minimal potential for immediate impact to aboveground structures. The main concern is headward erosion within gullies located downslope of towers and erosion or undercutting, with associated slope failure, of roadways proposed for underground portion.

Several locations along the proposed aboveground and underground portions have an elevated level of impact of moderate erosion hazard. Of these locations, none significantly impact proposed aboveground structure locations. Location #4 located downslope of ES3 and RS3 consists of gullying and is related to incipient slope instability (Location #3; Figure 3). Location #31 consists of gullying extending uphill near EN23 and RN21, west of Mountain Blvd and may be related to incipient slope instability (Location #31; Figure 8).

Slope erosion (Erosion Site #28) identified downhill of the intersection of Park Boulevard with Estates Drive, near proposed TN27A for Circuit 1 (Figure 10), is a potential minor hazard to northern underground line if the inferred slide mapped by CGS is present.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

5.0 SUMMARY AND RECOMMENDATIONS

Desktop interpretation of lidar and aerial imagery for this project, validated by field reconnaissance, confirms the presence of numerous landslides along the central and eastern sections of the project corridor. Field reconnaissance conducted in September and October, 2023, confirmed the absence of active slope failure extending beneath existing and proposed surface tower locations.

Overhead Replacement Portion

No landslides are identified extending beneath proposed aboveground replacement towers with the structures located on intact ground with no evidence of recent undercutting or encroachment from the slides lower on the slope. Several proposed aboveground tower locations are located uphill of active or pre-historic/older slides. These locations with nearby slides that could potentially extend uphill toward towers include EN8 and RN8 (Figure 4), RN9 and RS9 (Figure 5), ES19 and RS16 (Figure 7), and ES22 (Figure 8). Additional site-specific evaluation may be necessary to confirm the absence of a long- term hazard.

CGS (2003a) mapped two large landslides extending beneath Park Boulevard just east of the intersection with Estates Drive (Figure 10). Although the presence of these features was not confirmed as part of our review of lidar and aerial imagery the existing and proposed aboveground replacement towers are relocated east of the inferred slides and therefore not considered at risk.

Several locations along the proposed aboveground and underground portions have an elevated level of impact of moderate erosion hazard, including Location #3 near structure ES3 and RS3 (Figure 3) and location #31 (Figure 8) near structure EN23 and RN21, east of Mountain Blvd.

Underground Replacement Portion

The northern underground alignment crosses a landslide inferred by CGS at the intersection of Park Boulevard with Estates Drive, near proposed TN27A for Circuit 1. This slide does not appear to be expressed in the current topography and may have been repaired as part of construction of the Park Boulevard roadway. Slope erosion was identified downhill of the intersection (Erosion Site #28). Additional site-specific evaluation may be necessary to confirm the absence of a long-term slope hazard. Evidence of ongoing localized slope instability includes road cracking and patches along Park Boulevard. No major erosion features or associated incipient landsliding are mapped along the underground portion.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

Limitations

The information provided in this report is based on desktop interpretation of publicly available data largely derived from regional mapping studies. Although inferred conditions at each structure location have been evaluated based on review of recent topographic and aerial imagery, only limited field reconnaissance of the structures has been performed with no subsurface data collection. Site conditions and associated slope hazards may vary from that inferred from regional datasets and desktop evaluation alone.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

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Comment Set E01 – Pacific Gas and Electric Company (continued)

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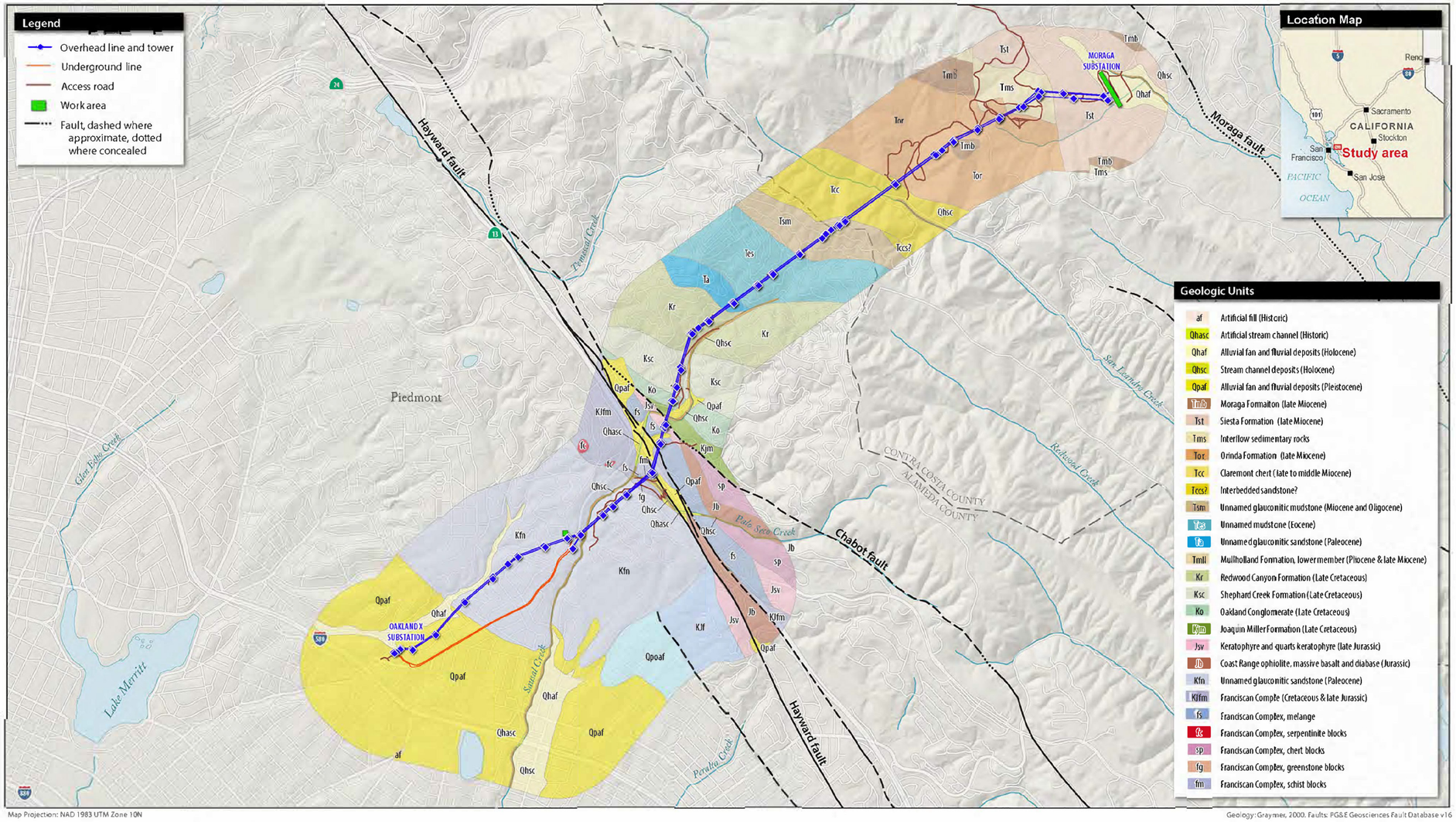
Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



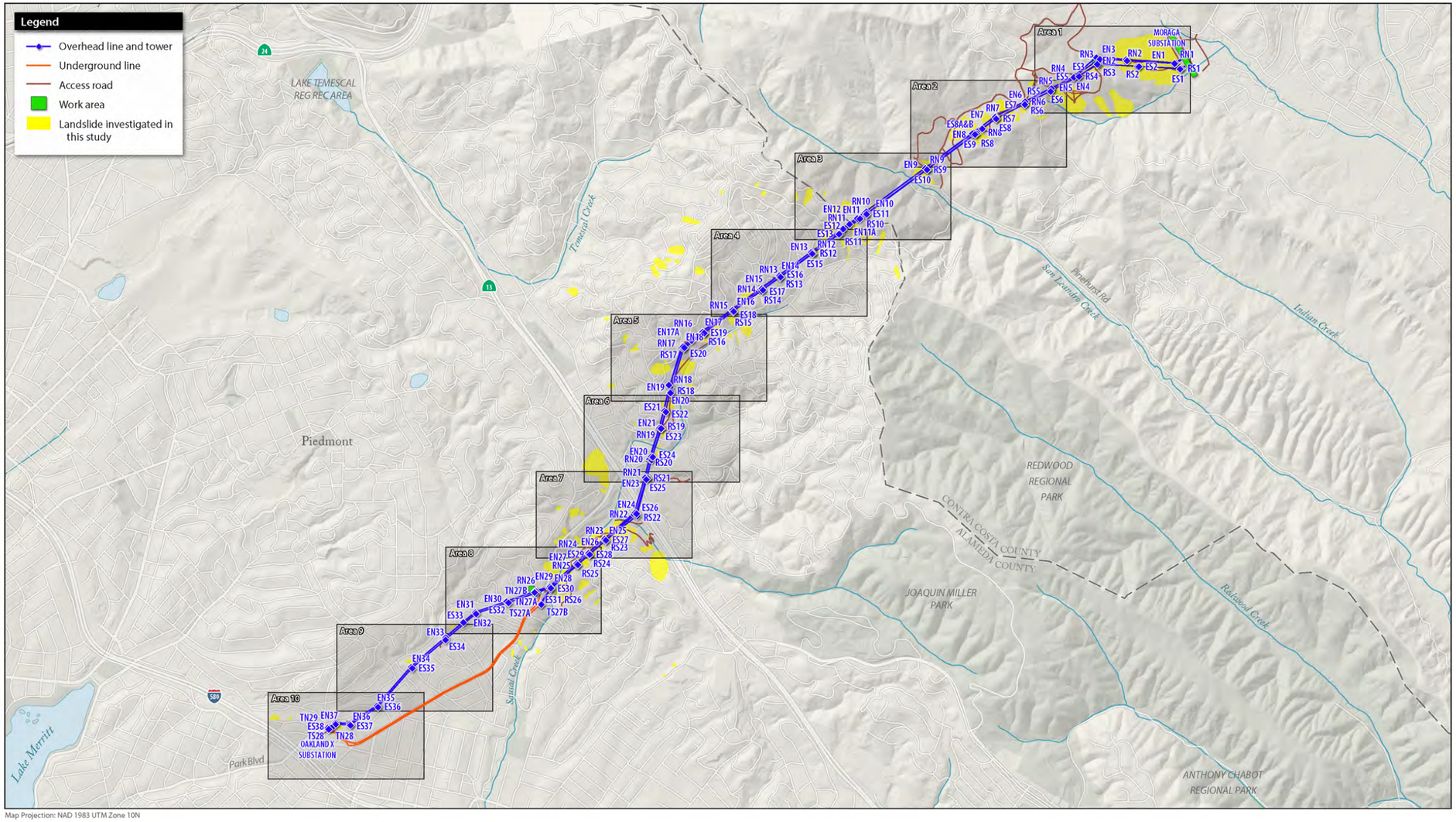
MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 1. Bedrock Geologic Map

JUL 2024

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



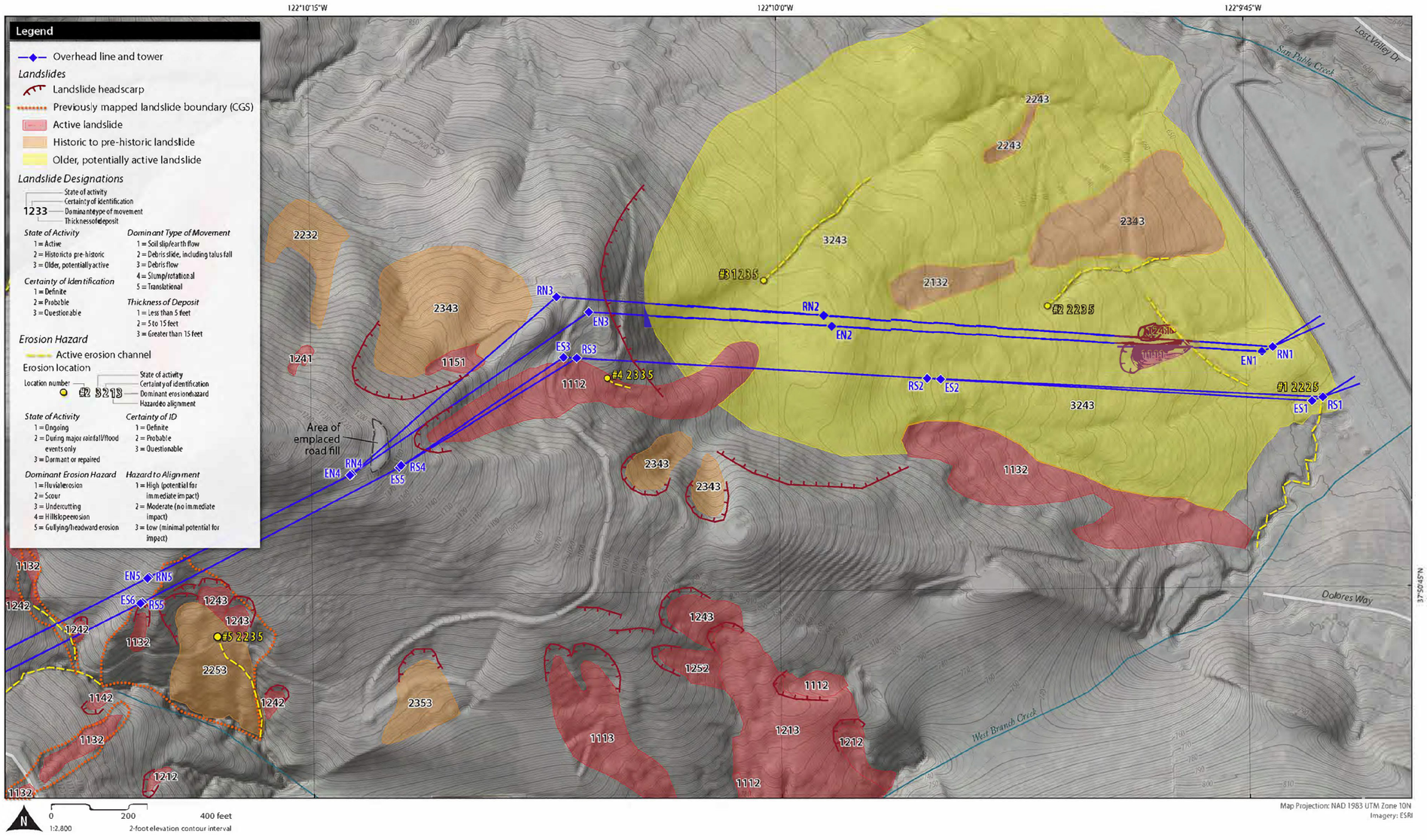
MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 2. Index Map of Detailed Slope Hazard Maps Along Project Route

JUL 2024

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



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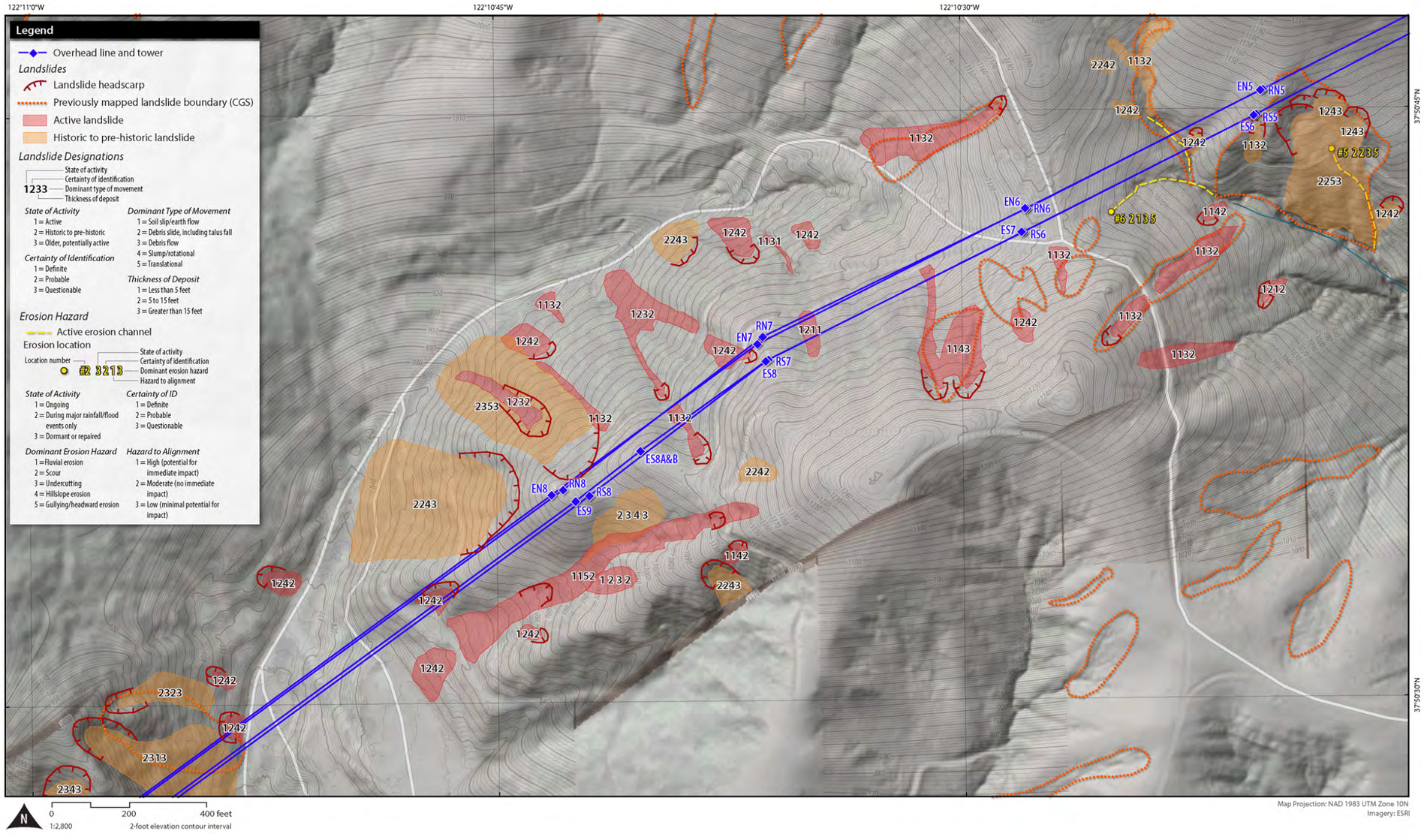
MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 3. Landslide Area 1

JUL 2024

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



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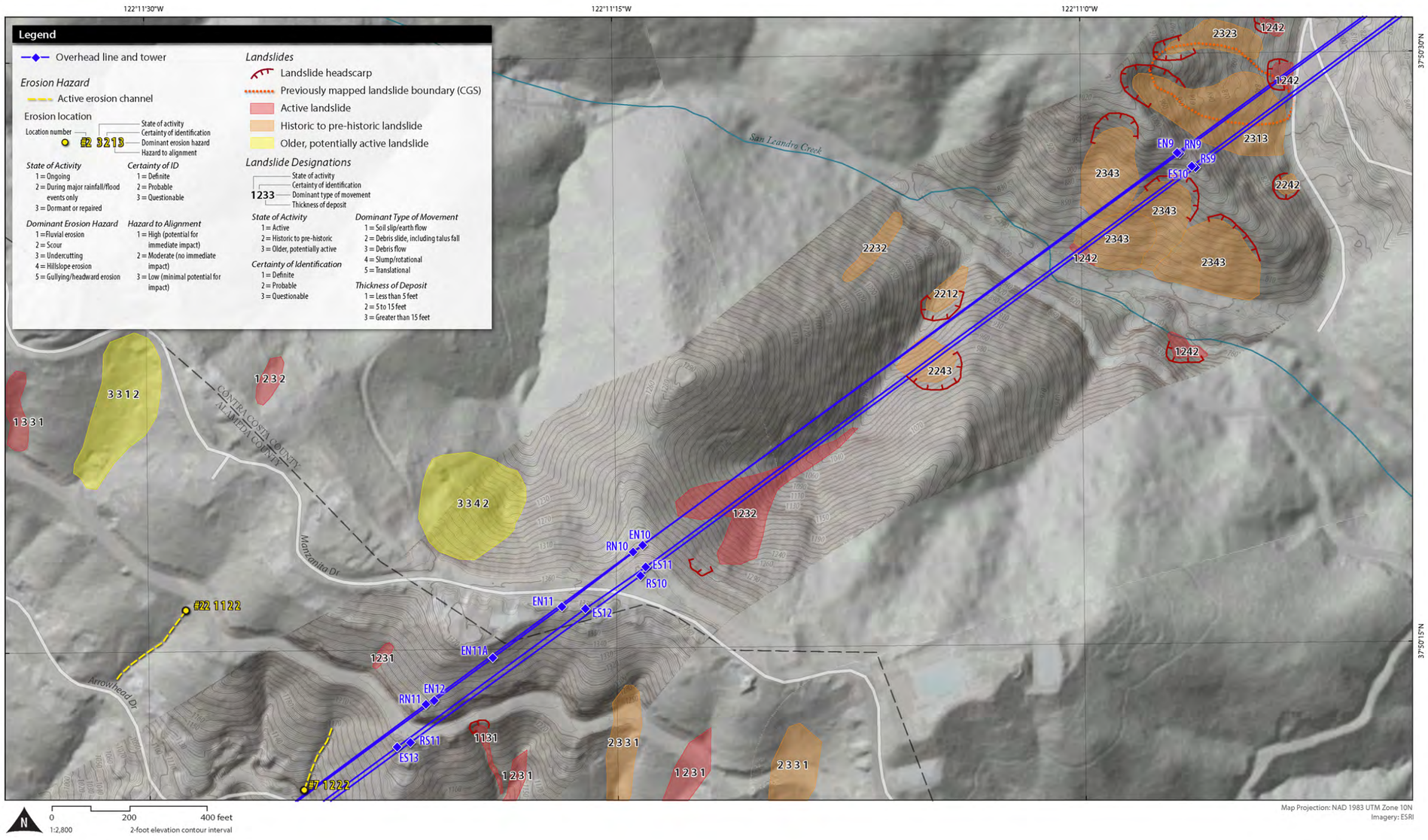
MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 4. Landslide Area 2

JUL 2024

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



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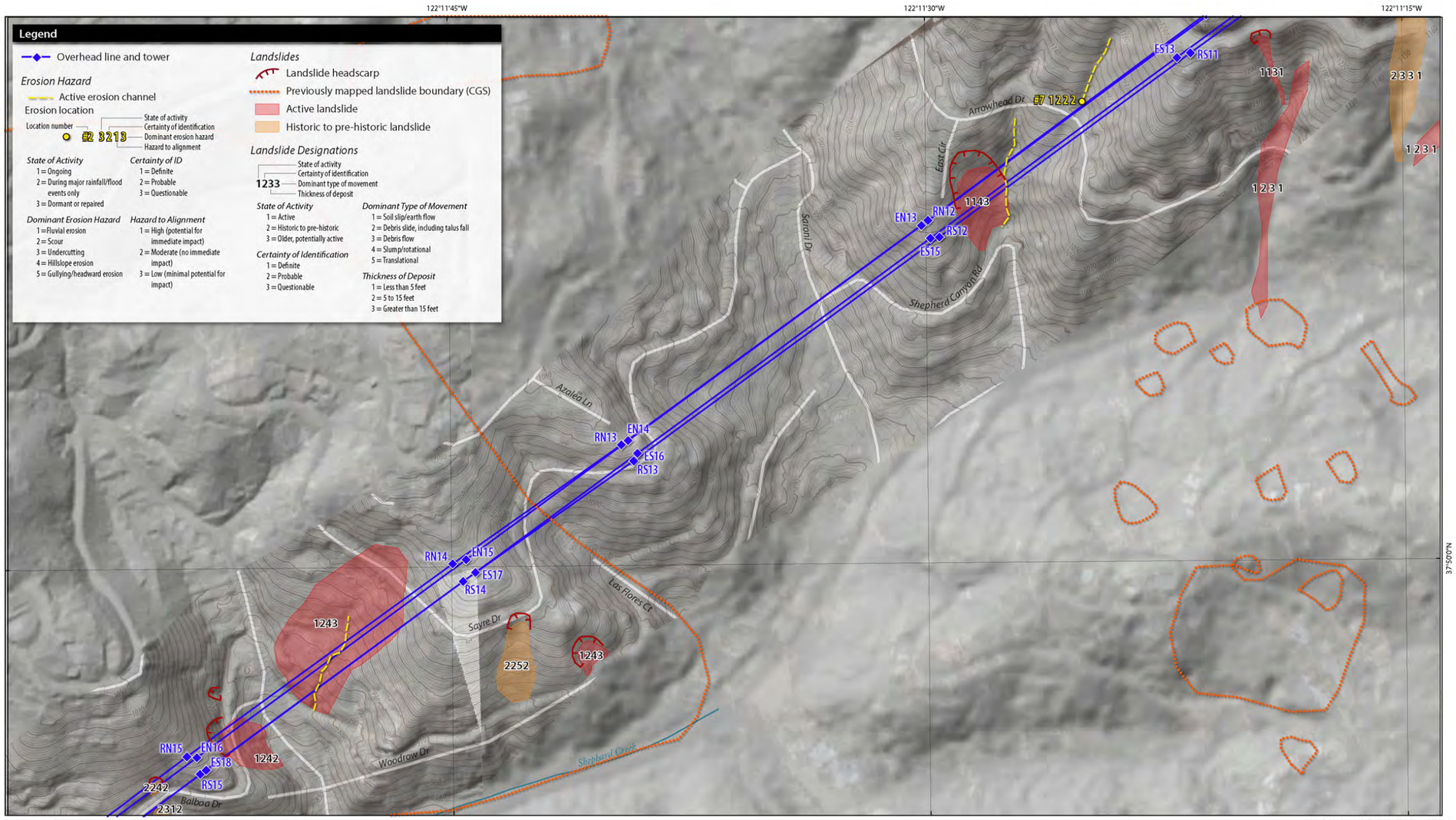
MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 5. Landslide Area 3

JUL 2024

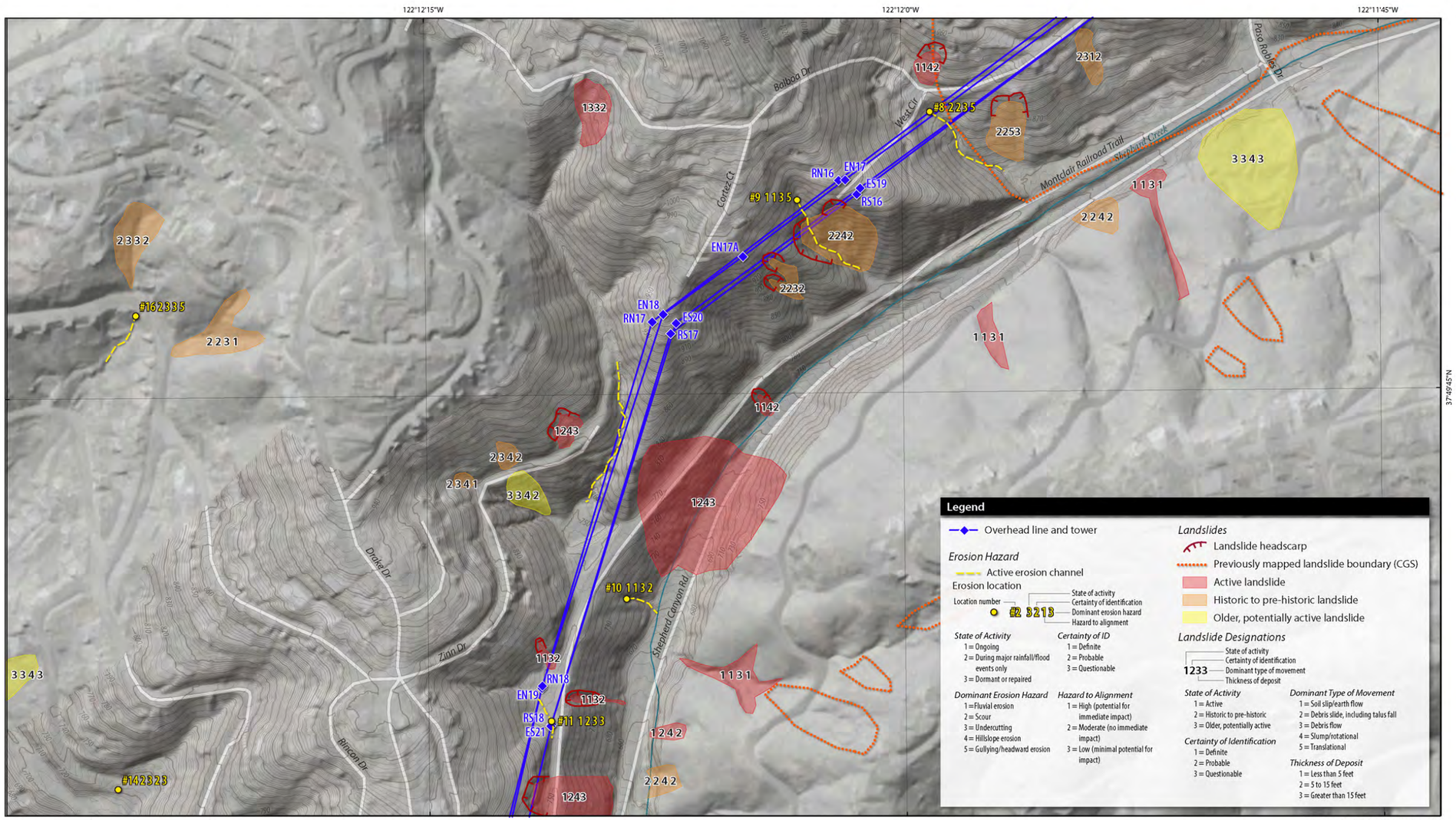
Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 7. Landslide Area 5

JUL 2024

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

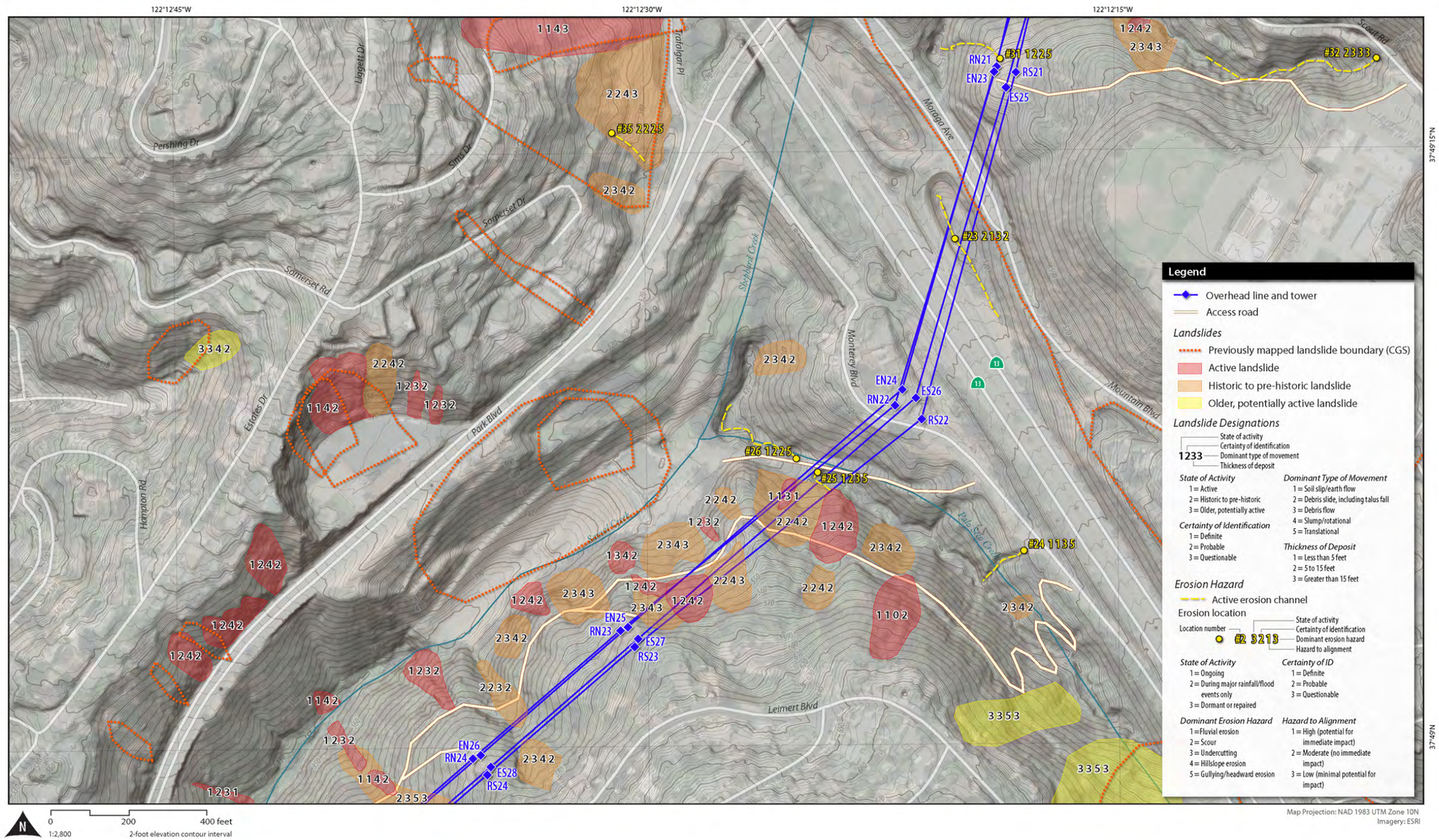
MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 8. Landslide Area 6

JUL 2024

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



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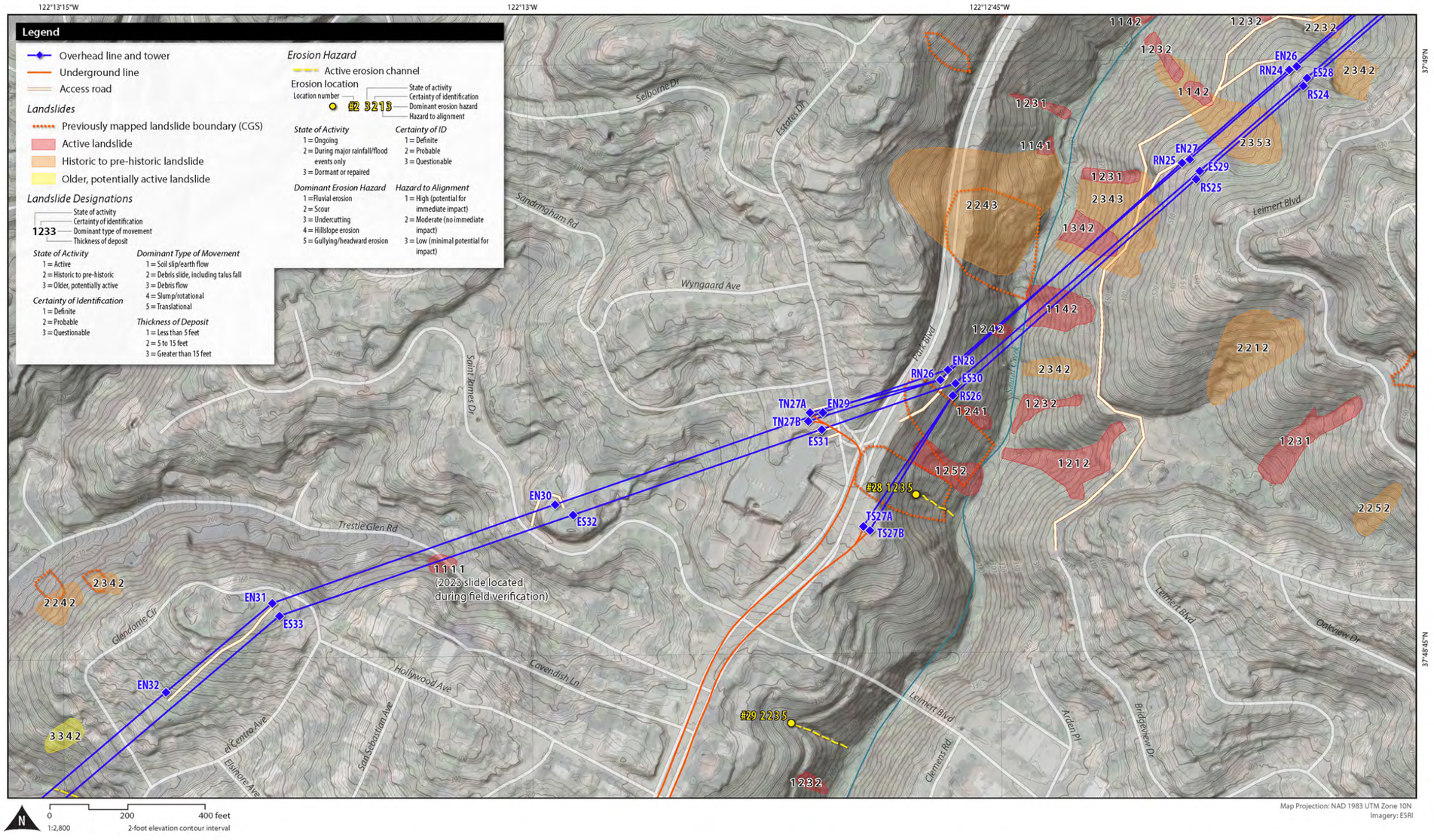
MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 9. Landslide Area 7

JUL 2024

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



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MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 10. Landslide Area 8

JUL 2024

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

InfraTerra

MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 11. Landslide Area 9

JUL 2024

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

InfraTerra

MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 12. Landslide Area 10

JUL 2024

Comment Set E01 – Pacific Gas and Electric Company (continued)

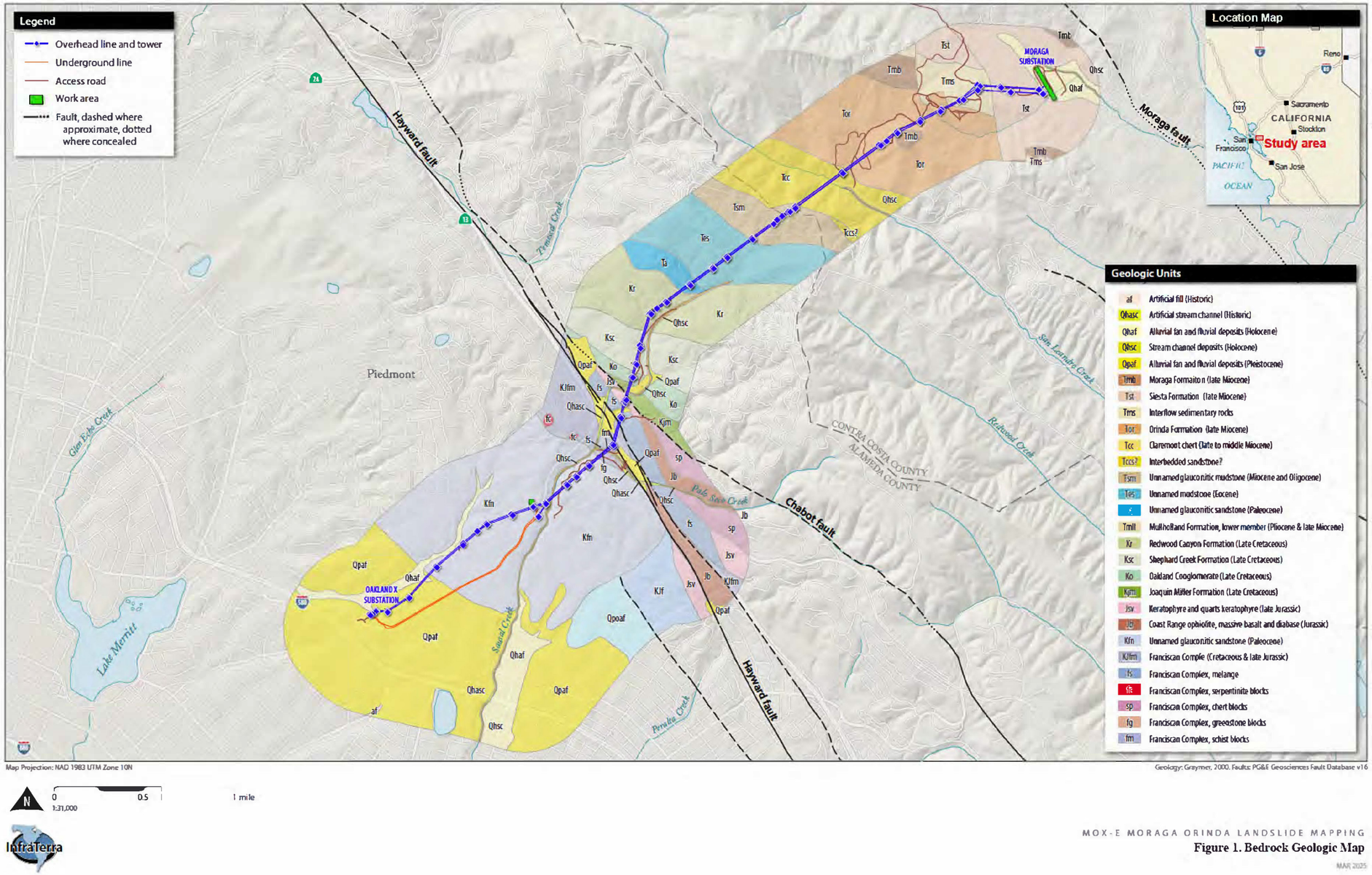
E01-131 (cont'd)

Figure Set Revised on March 31, 2025

Figure legends revised to clarify the Landslide Designations numbering.

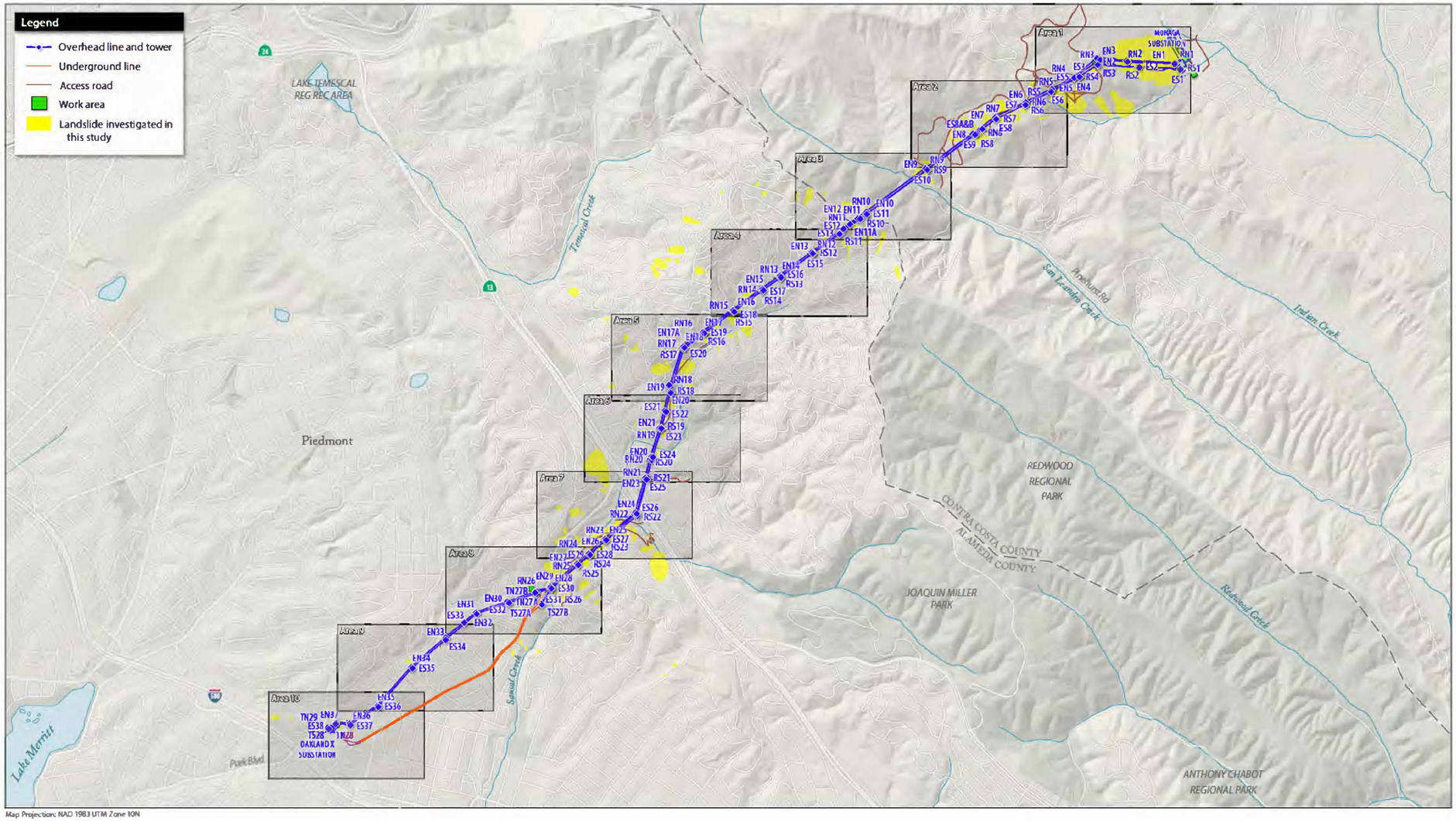
Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



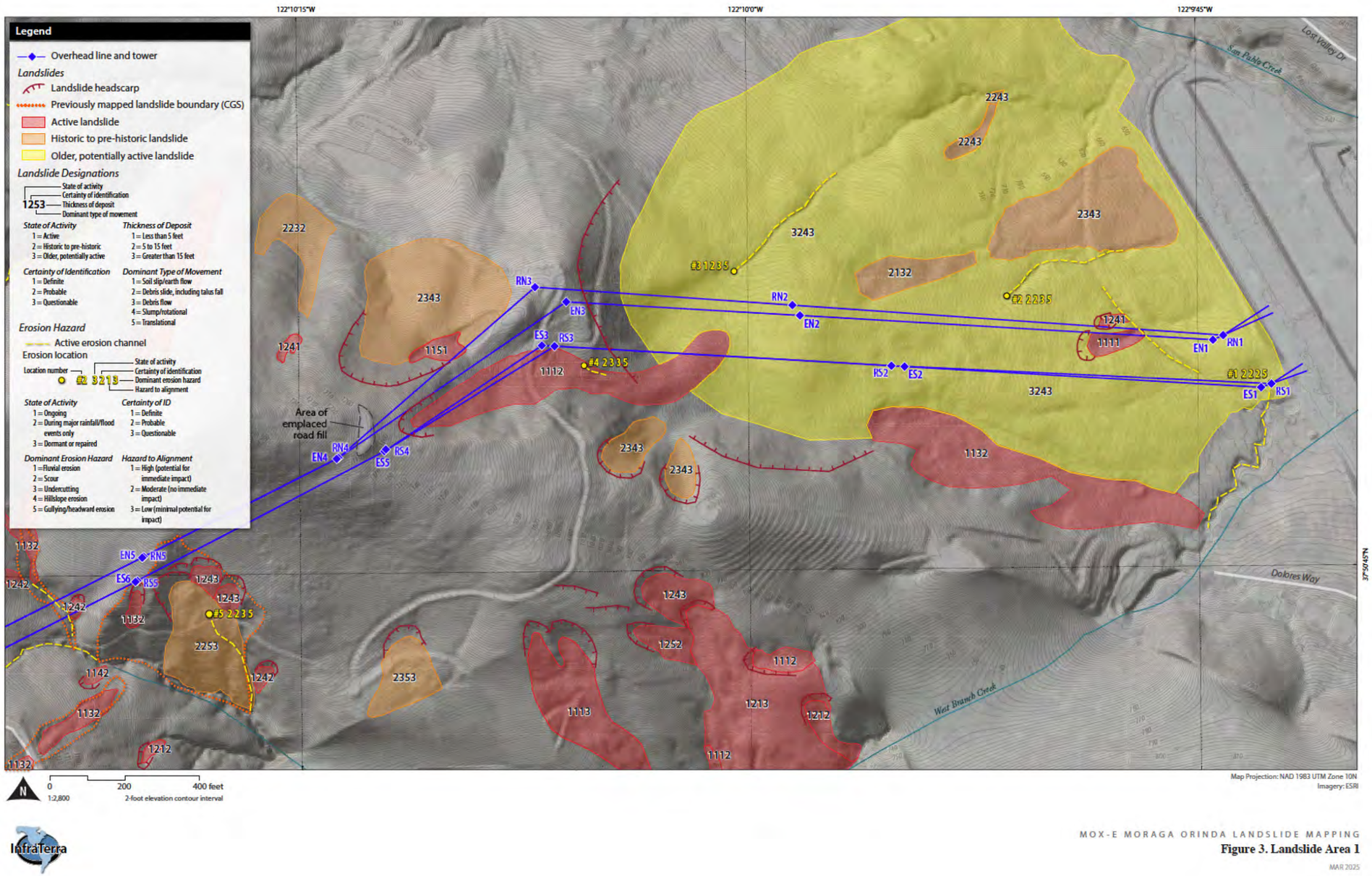
MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 2. Index Map of Detailed Slope Hazard Maps Along Project Route

MAR 2025

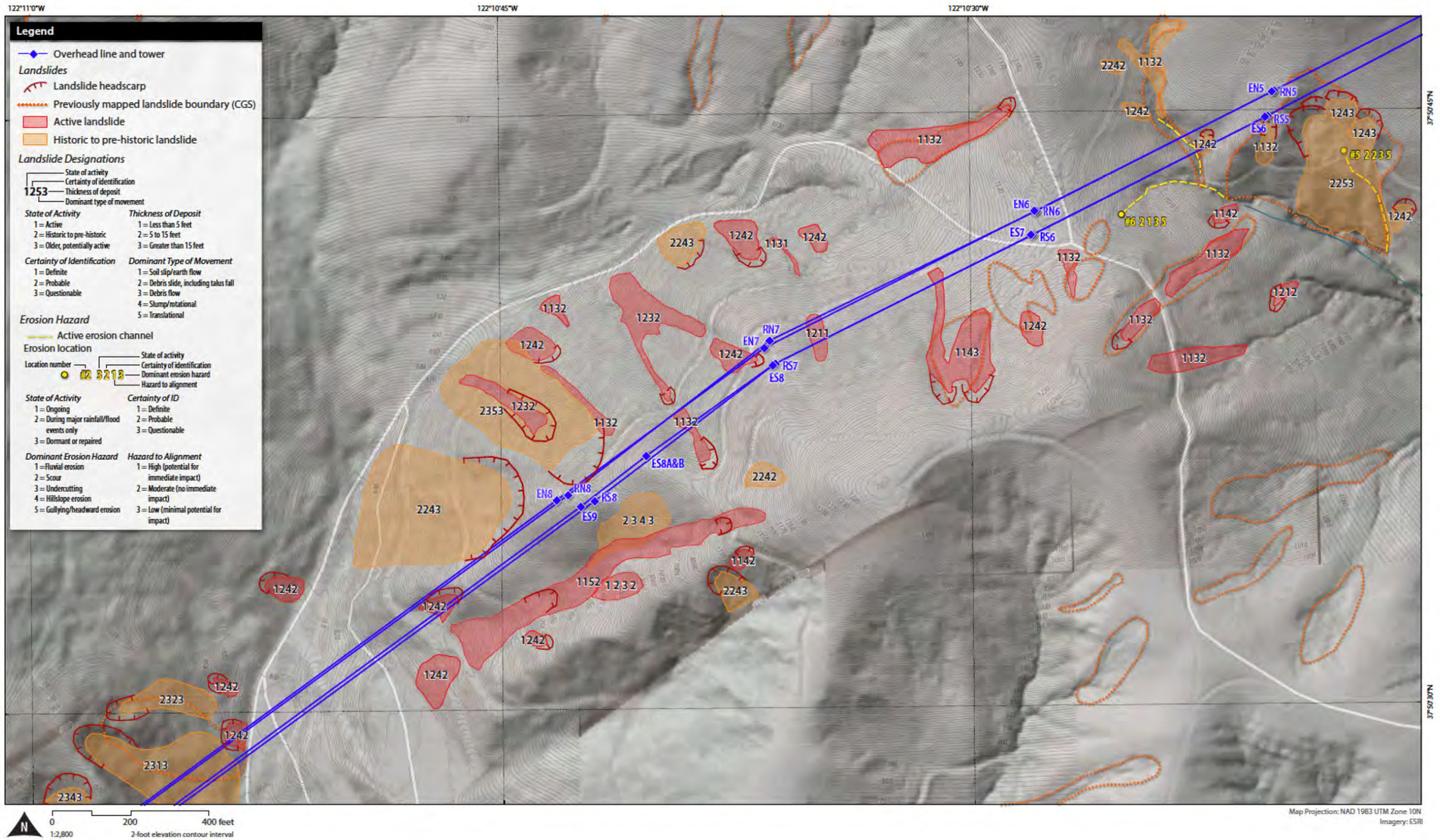
Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



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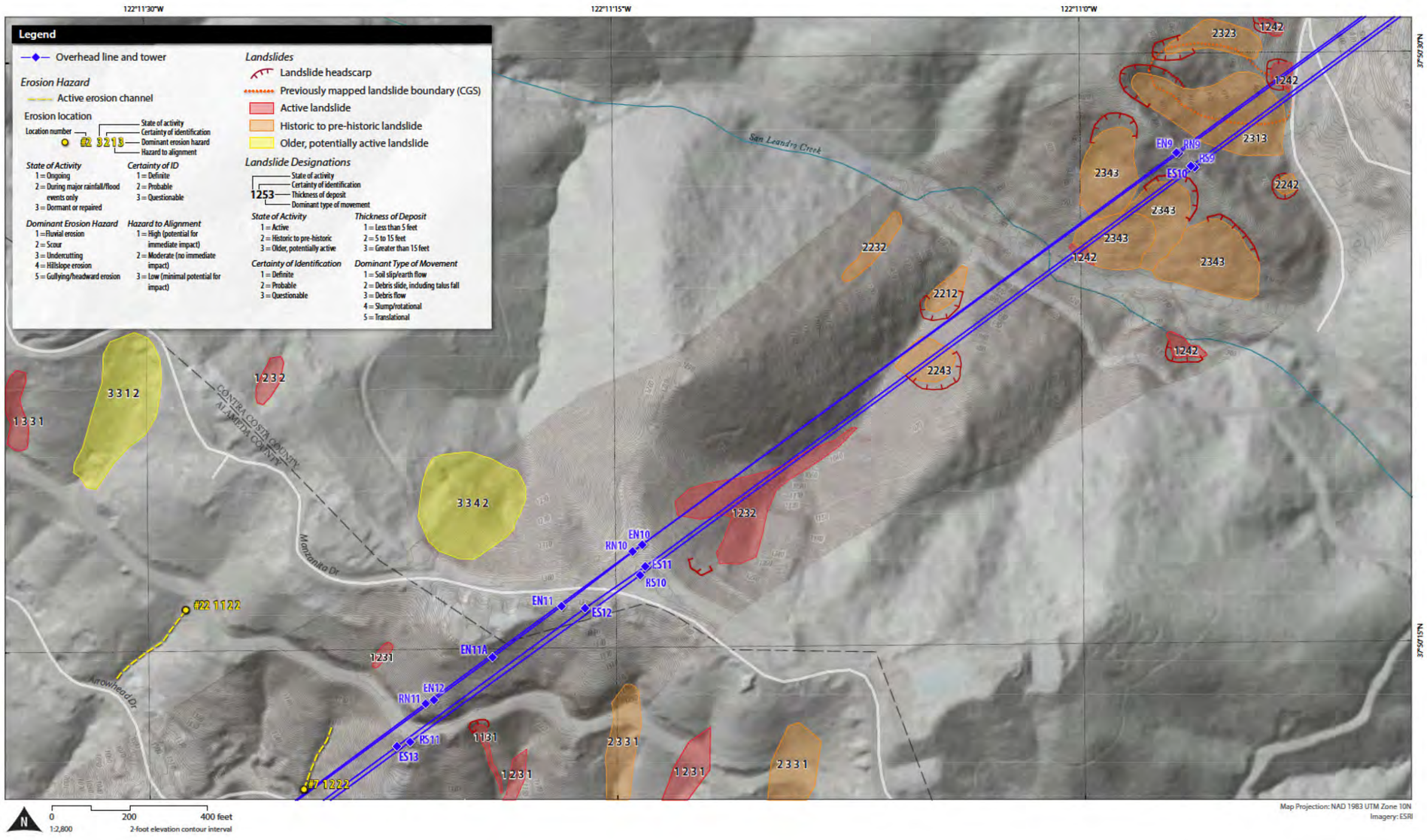
MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 4. Landslide Area 2

MAR 2025

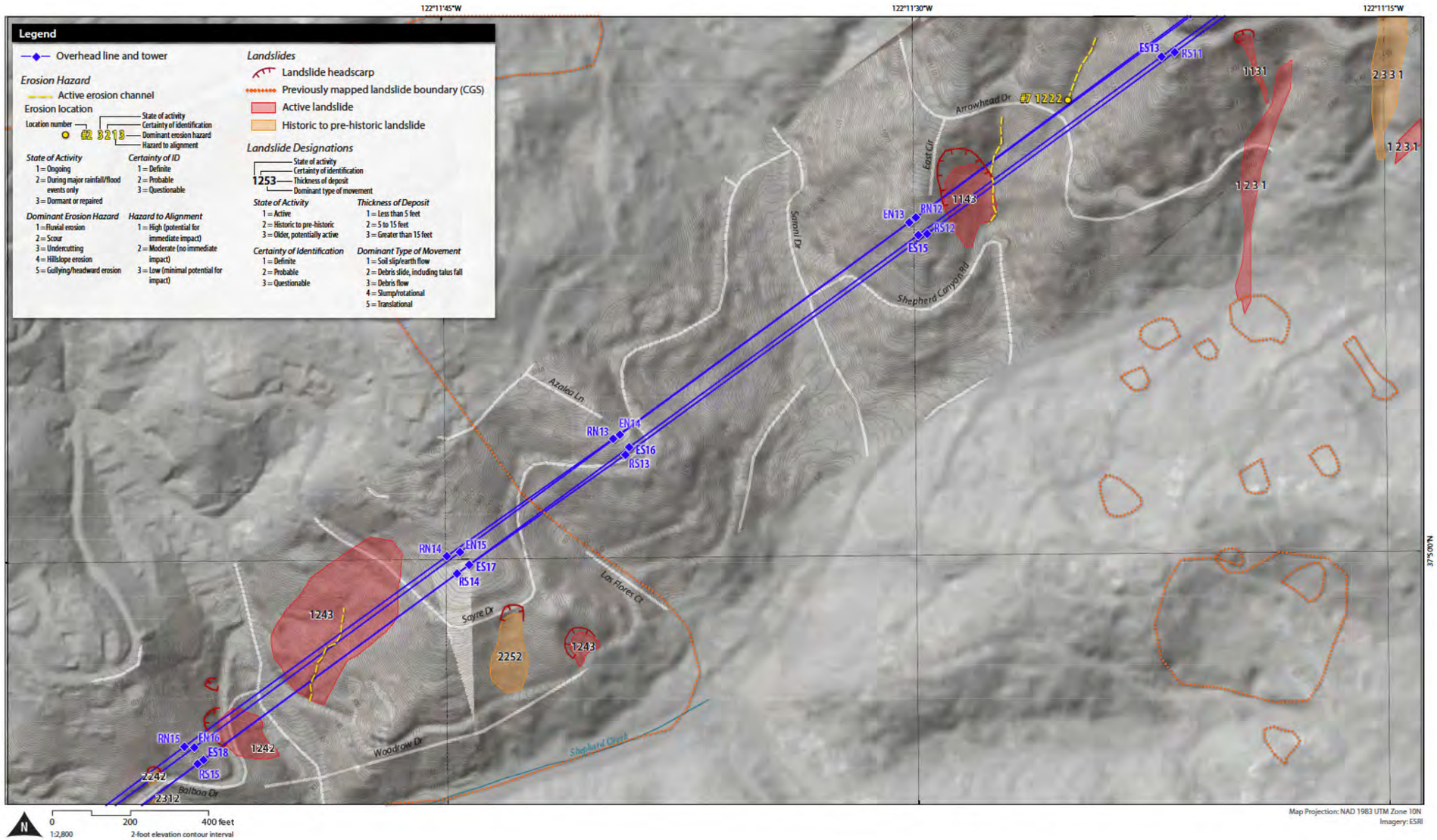
Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



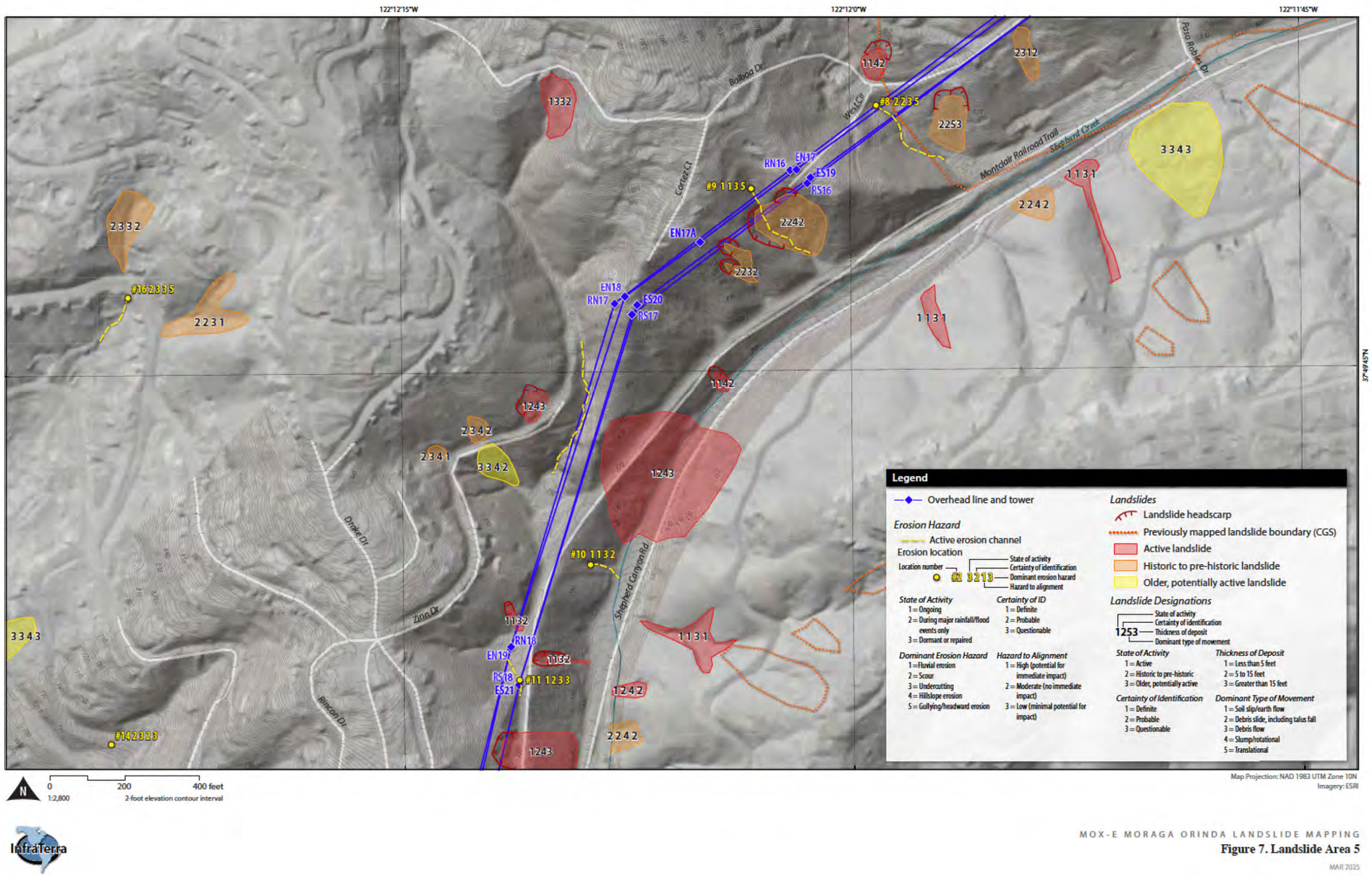
Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 7. Landslide Area 5

MAR 2025

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

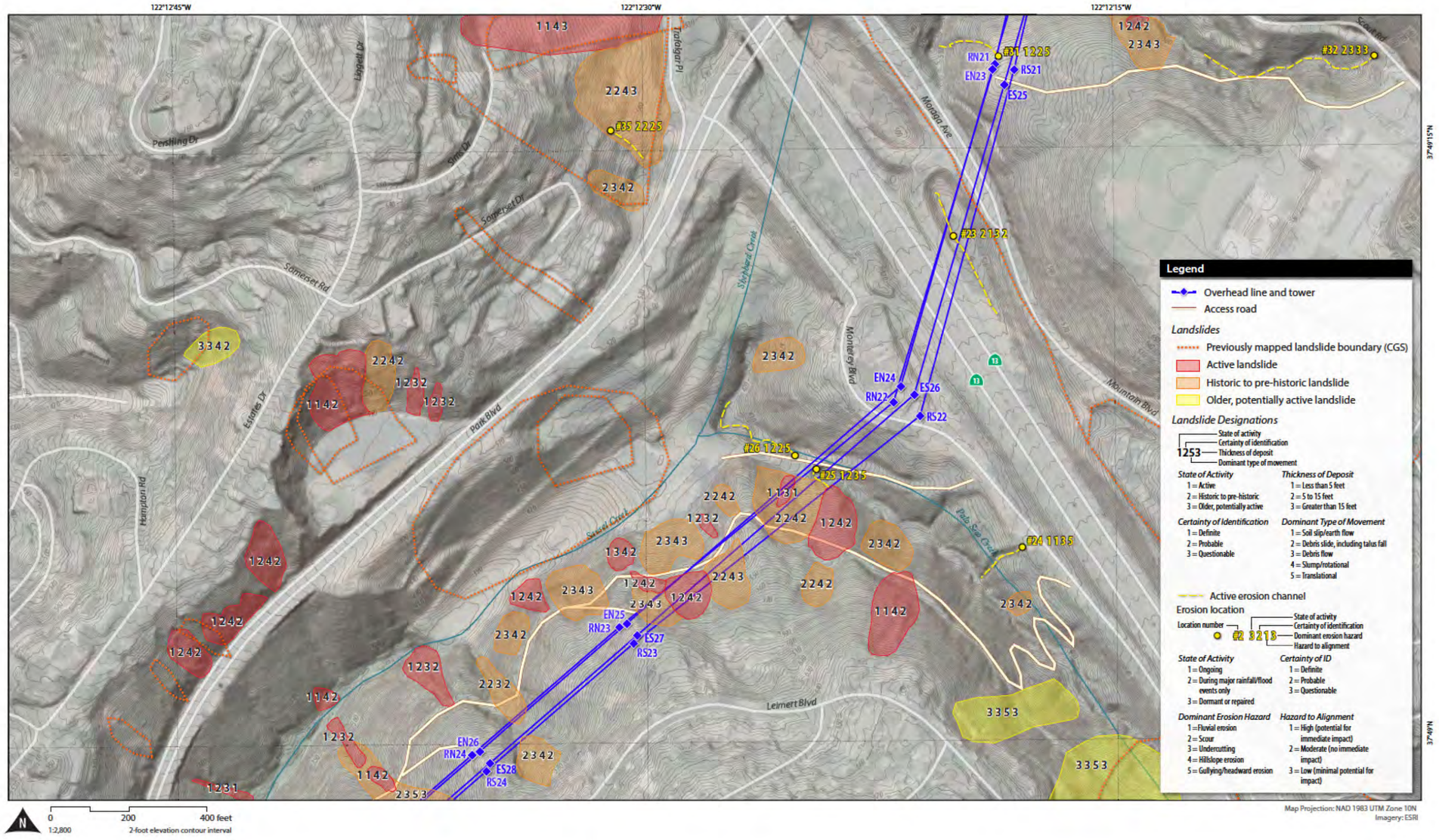
MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 8. Landslide Area 6

MAR 2025

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



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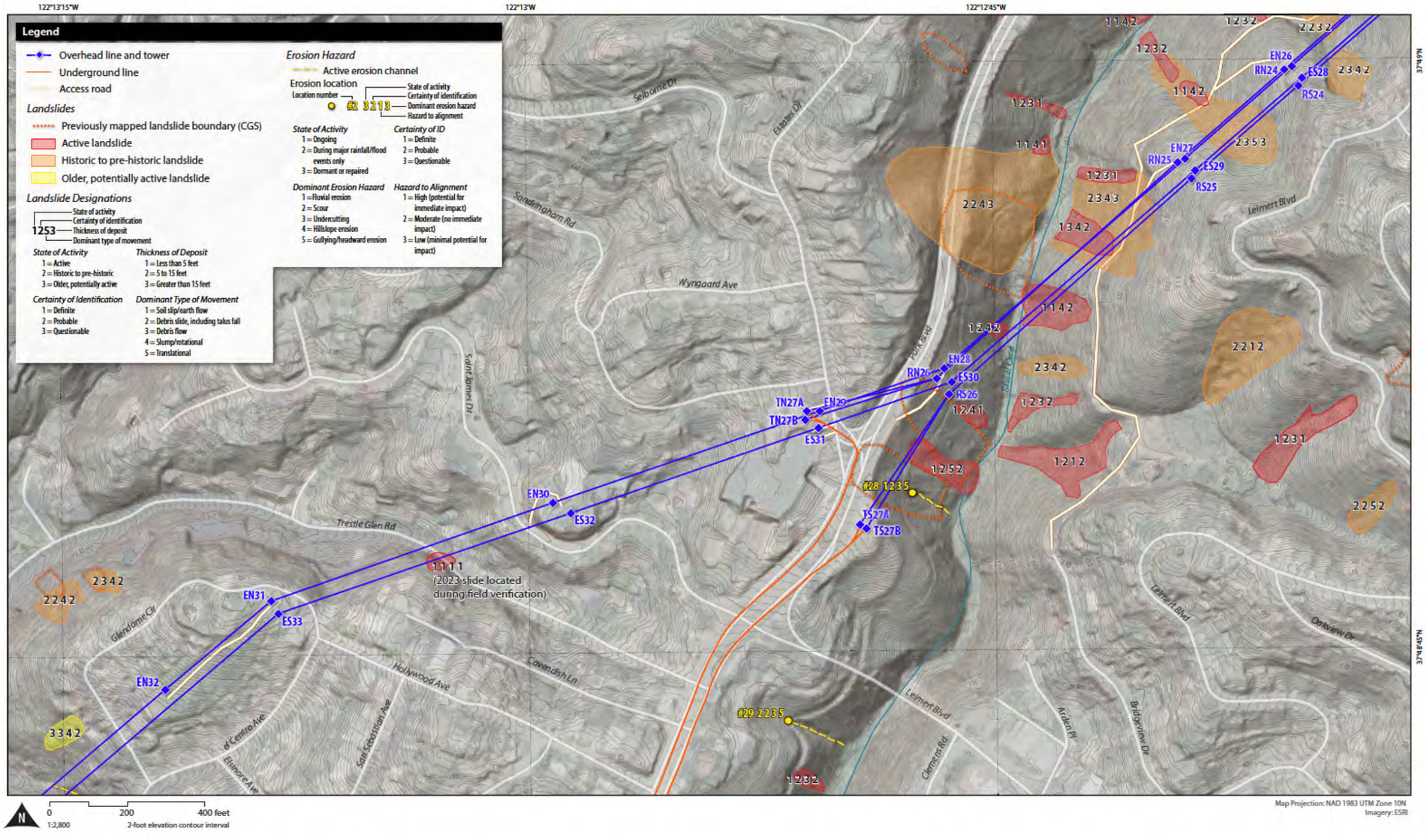
MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 9. Landslide Area 7

MAR 2025

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)



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MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 10. Landslide Area 8

MAR 2025

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

InfraTerra

MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 11. Landslide Area 9

MAR 2025

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-131 (cont'd)

InfraTerra

MOX-E MORAGA ORINDA LANDSLIDE MAPPING

Figure 12. Landslide Area 10

MAR 2025

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-132

Attachment 3
PG&E Response to CPUC Data Request 6, Part B

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-132 (cont'd)

Pacific Gas and Electric Company

Brandon Liddell
PRINCIPAL LAND PLANNER
ENVIRONMENTAL MANAGEMENT

PG&E GENERAL OFFICE
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May 13, 2025

Tharon Wright
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California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102
VIA EMAIL

RE: CPUC Data Request #6 for PG&E's Moraga to Oakland X 115 Kilovolt Rebuild Project (A.24-11-005) – Part B Response

Dear Ms. Wright,

This letter is in reply to your March 17, 2025, letter in which you request certain additional information regarding Pacific Gas and Electric Company's (PG&E's) application (A.24-11-005) for a Permit to Construct (PTC) and Proponent's Environmental Assessment (PEA) for the Moraga-Oakland X 115 kilovolt (kV) Rebuild Project (project). The original text for each data request item from the California Public Utilities Commission (CPUC) is included, followed by PG&E's response.

This letter provides the response to item ALT-1. Please refer to the Data Request #6 Part A response provided on April 21, 2025 for the other Data Request #6 items.

There is one attachment to this letter to support PG&E's response.

- Attachment 1 – ALT-1a Duct Bank Bend Radius Exhibit

PEA Chapter 4, Description of Alternatives

ALT-1 Some of the alternatives defined in PEA Chapter 4 would require that segments be installed underground in narrow and winding roadways, including some with "hairpin" turns. In addition, the feasibility of these 6 underground alternatives would depend on the presence and location of other buried utilities (water, sewer, distribution-level electricity, fiber, gas). The following additional information is required.

a. Please define the maximum bending angle for underground conduit or duct banks that could be constructed where all 4 circuits and are installed underground in one road, as well as for 2 circuits.

The maximum bending angle value of a duct bank can change depending on the radius of the bend in the road. Smaller bend radii would allow smaller bend angles and larger bend radii would allow larger bend angles. Therefore, the maximum bending angle is not a reliable value to consider when determining whether one or more duct banks can be installed in one road. Numerous engineering design criteria in addition to a single bend radius are required for a qualified, professional engineer to design an underground double-circuit duct bank. As such, the measurement unit of the bending radius – which is generally assumed to be approximately 40 feet for this project's cable type and double-circuit duct bank configuration (refer to Attachment 1, Duct Bank Bend Radius Exhibit) – is not useful on its own. Also, this bend radius of approximately 40 feet is reasonably feasible only when considered in the horizontal plane. Road geometry (including slope and grade) must be considered as well during design. Road geometry may not accommodate adequate lateral and longitudinal space for a double-circuit duct bank or its separation from an adjacent duct bank to maintain the required ampacity. The distance between the outside duct bank to the inside duct bank would need to maintain a minimum of 15 feet of separation.

Additionally, curvature in a duct bank is limited by cable installation criteria. Pulling tension in the cable increases exponentially through curves and sidewall pressure (a function of pulling tension) with inverse proportionality to curve radii. When a cable is pulled through a conduit, the cable brushes against the sidewall of the conduit as it is pulled into place. When the conduit is not straight, the cable will push against the sidewall as it moves around a bend. Tighter bends create more sidewall pressure. It becomes increasing difficult to pull the cable with the collective sidewall pressure resulting from the cumulative horizontal curvature (series of bends in the road).

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-132 (cont'd)

May13, 2025
Page 2 of 3

The cumulative horizontal curvature between power line vaults determines the distance between adjacent vaults. Assuming the calculations allow, a cable might be able to be pulled through a single hairpin turn but the cable may not be able to be pulled through the next turn. The pulling calculations look at the entire run of the cable between vaults and not just individual turns. The more bends in the duct bank, the closer together the vaults need to be. Instead of the typical spacing of 1,000 to 1,200 feet, the vaults may need to be closer together to splice the line more frequently. However, lines with a greater number of splices, which would occur with more closely spaced vaults, often are less reliable during operation.

b. Please define the maximum bending angle for underground conduit or duct banks that could be constructed where only 2 circuits are installed underground in one road.

Refer to the response to ALT-1a and Attachment 1, Duct Bank Bend Radius Exhibit. The discussion on the maximum bending angle for underground conduit or duct banks that could be constructed where only 2 circuits (in a single double-circuit duct bank) are installed underground in one road does not differ from the maximum bending angle for two double-circuit duct banks installed in one road. However, in this scenario, road geometry only would need to accommodate adequate lateral and longitudinal space for one double-circuit duct bank instead of considering its separation from an adjacent duct bank to maintain the required ampacity.

c. Please define the minimum road width in which the 4 circuits could be installed underground. Would the minimum width be defined by the size and width of vaults, or by the space required for duct bank installation?

The minimum width is defined both by the size and width of vaults, the space required for duct bank installation and the minimum 15-foot separation between the closest circuit of each double-circuit duct bank. Refer to PEA at page 4-15 for the minimum road width definition of two double-circuit duct banks (4 circuits) not considering vaults or construction work areas and access:

> *Therefore, a minimum road width of at least 22 feet is needed to fit both double-circuit duct banks, not inclusive of other utility obstructions. However, utilities, including sewer and water, natural gas distribution, and telecommunication lines, are expected to be present in the roadways in unknown locations and may present additional constraints if they cannot be relocated to provide enough room for the duct banks.*

This minimum road width of at least 22 feet is required for the as-built completion and is applicable to straight sections of a road with no grade or slope. This minimum road width does not include design conditions resulting from connecting or adjacent infrastructure including connecting power line vaults, or geotechnical conditions of the road and the surrounding area. In the central portion of the project, other than the portion of Shepherd Canyon Road identified in PEA Alternative C, geotechnical conditions would likely preclude installation of two double-circuit duct banks in a single road. The risk of duct bank and road failure from a common landslide would be reduced if each double-circuit duct bank was placed in roads not within the same landslide potential. Refer to the response to Data Request #6 PD-10c, Construction in Park Boulevard Way, for additional discussion including the minimum work area width of 24 feet for installing a double-circuit duct bank between vaults.

Locations where vaults are required will necessitate more roadway width to accommodate two double-circuit duct banks (4 circuits). A minimum road width of 32 feet is needed for these locations when considering two double-circuit duct banks and the associated power line vaults, assuming that two vaults are not installed side by side and in a staggered position with a vault adjacent to a duct bank. This width is primarily defined by the size and width of the vaults as well as the required separation distance (15 feet) between cables in adjacent double-circuit duct banks. For the width of an installed power line vault connecting to a double-circuit duct bank, refer to PEA at page 3-16:

> *Vaults (approximately 22 feet by 12 feet and 10 feet tall) are located where sections of the underground cable line lengths are pulled through the duct banks and spliced together during construction. The 12-foot dimension is the vault width when installed which is less than the minimum road width of at least 22 feet is needed to fit both double-circuit duct banks.*

Construction work areas are expected to be wider than 22 feet for some construction equipment operation. From PEA page 4-16:

> *In addition, temporary construction areas wider than 22 feet would be needed for some construction activities. For example, a typical crane truck for installing precast power line vaults*

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-132 (cont'd)

would require a work area of approximately 32 feet by 40 feet and additional space above that to rotate. Conservatively, a typical hydraulic excavator, while only approximately 16 feet wide, requires an approximately 53-foot-wide space to rotate.

d. Please define the process for determining the types, sizes, and locations of existing utilities buried in city or county roadways.

For utility surveying and locating, standard practice is to use the Utility Quality Levels based on American Society of Civil Engineers (ASCE) standard 33. The Quality Levels range from A to D. Quality Level A is the most accurate and complete and Quality Level D is a desktop study.

Quality Level D is based on documentation (historical records, utility construction and As-Built drawings, permits, locate markups, etc.).

Quality Level C builds on top of Quality Level D and requires the surveyor to go to the site and record accessible information. The surveyor will open covers and lids to utilities, mark the size of the enclosure as well as the size and direction of the utility.

Quality Level B further builds on Quality Level C by requiring the surveyor to perform a geophysical review of the site to look for all underground utilities. Data gathered during the geophysical study is added to the information recorded in the Quality Level C data.

Quality Level A is the most accurate level of utility locating by using the information from Quality Level B and visually inspecting the locations of the underground utilities. This includes going to the site and excavating each utility and providing data on the exact location of the utility and its depth.

Please refer to PEA Section 3.5.4.2 Utilities for the timing of utility surveys and the activities that will follow a utility survey:

Prior to any excavation, PG&E will notify utility companies (via the Underground Service Alert [USA]) to locate and mark existing underground structures along the power line rebuild locations and any other area of ground disturbance. Additionally, PG&E will conduct exploratory excavations (potholing) to prove the locations for proposed facilities as needed. A final determination on the need to relocate utilities will be made during final engineering. Localized underground utilities will be identified during final design and will be either avoided or relocated in coordination with the facility owner. If buried utilities are identified during construction and it is not reasonably feasible to avoid the line, PG&E will coordinate with the utility owner to relocate the facility. Construction methods will be adjusted as necessary to assure that the integrity of existing utility lines is not compromised. If any utility requires relocation, PG&E will provide adequate operational and safety buffering.

We trust the information provided herein is fully responsive to your requests. However, should you have any further requests, please contact me at **415-990-6001** or **BXLG@pge.com**.

Sincerely,

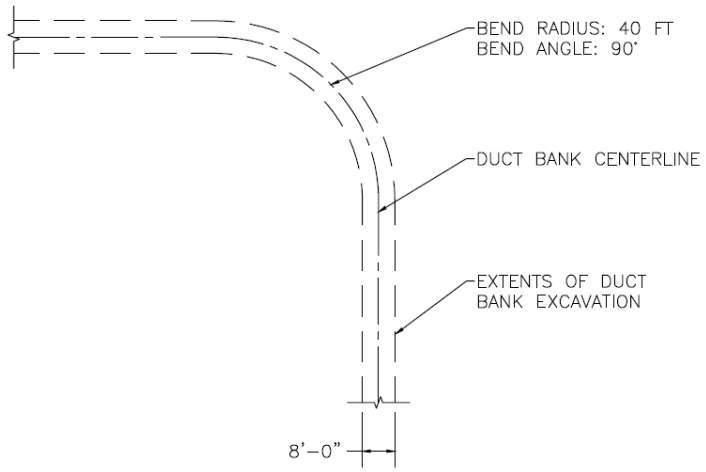
Brandon Liddell
Principal Land Planner

Attachment:
Attachment 1 – ALT-1a Duct Bank Bend Radius Exhibit

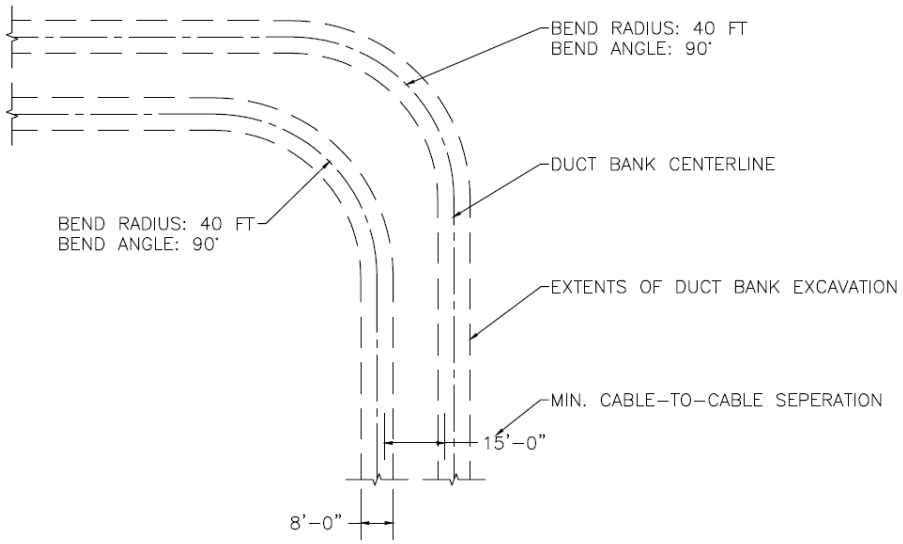
cc:
Michelle Wilson, CPUC CEQA Unit
Erica Schlemer, PG&E Law Department
Colleen Taylor, Jacobs
Hedy Koczwara, Aspen Environmental Group

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-13 (cont'd)



PLAN VIEW
ONE (1) DOUBLE CIRCUIT DUCT BANK
BEND RADIUS EXAMPLE



PLAN VIEW
TWO (2) DOUBLE CIRCUIT DUCT BANK
BEND RADIUS EXAMPLE

Exact duct bank type, configuration, and dimensions will be determined by CPUC requirements, final engineering, and other factors and are subject to change.

CPUC Energy Division Data Request 6 Item ALT-1a
Duct Bank Bend Radius Exhibit
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas and Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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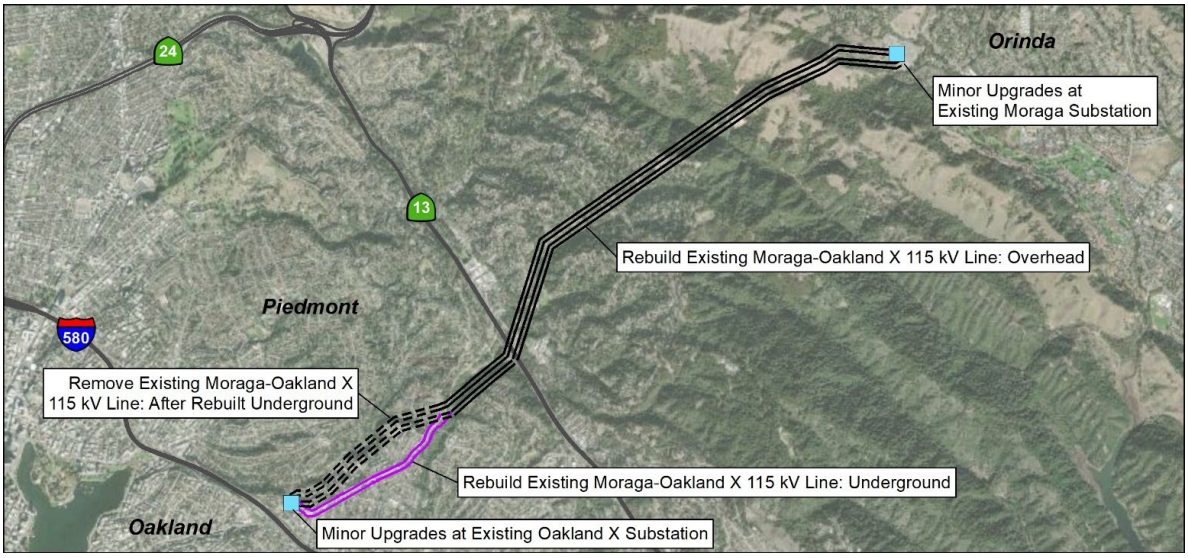
Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133

Attachment 4
PEA Chapters 4 and 6

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)



Proponent's Environmental Assessment for Pacific Gas and Electric Company's Moraga–Oakland X 115 kV Rebuild Project

November 15, 2024

Pacific Gas and Electric Company (PG&E) is proposing to rebuild approximately 5 miles of four overhead 115 kilovolt (kV) power lines between Moraga and Oakland X substations. Work would include approximately 4 miles of overhead rebuild within the existing alignment as two double-circuit 115 kV power lines and approximately 1 mile would be undergrounded in city streets in two double-circuit duct banks. Minor upgrades would be required at the existing Moraga and Oakland X substations.

The project would be located within the unincorporated areas of Contra Costa County and the cities of Orinda, Oakland, and Piedmont, California.

Application A.24-11-XX to the California Public Utilities Commission

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Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

4. Description of Alternatives

This chapter considers and discusses alternatives to the project, consistent with the California Environmental Quality Act (CEQA) Guidelines, Section 15126.6. It is prepared in accordance with the CPUC *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments*, which assumes an EIR will be prepared for the proposed project, unless CPUC CEQA unit staff make a preliminary determination during pre-filing consultation that a Mitigated Negative Declaration is likely. The description of alternatives is provided in this chapter of the Proponent's Environmental Assessment (PEA), and the comparison of each alternative to the proposed project is provided in Chapter 6, Comparison of Alternatives. The project is described in detail in Chapter 3, Project Description, of this PEA.

Because the CPUC anticipates that an EIR may be prepared for the state environmental document, this PEA section has been prepared consistent with CEQA requirements to support the CPUC action. CEQA Guidelines Section 15126.6 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 alternative." The alternatives considered must represent a reasonable range of potentially feasible alternatives that foster informed decision-making and public participation. An EIR is not required to consider alternatives that are not feasible. The rationale for selecting the alternatives should be discussed.

Section 4.1 discusses the alternatives evaluation methodology. Section 4.2 lists alternatives considered and describes those carried forward for analysis. Section 4.3 provides a description of the No Project Alternative. Section 4.4 discusses alternatives that were rejected and the reasons for the rejection.

4.1 Alternatives Evaluation Methodology

As noted in the CEQA Guidelines Section 15126.6(a), the alternatives described in an EIR must feasibly accomplish most of the basic project objectives, should reduce or eliminate one or more of the significant impacts of the proposed project, and must be potentially feasible. To comply with these requirements, PG&E screened potential alternatives based on three criteria:

1. *Does the alternative meet most basic project objectives?*

   Section 15124(b) of the CEQA Guidelines requires that an EIR contain a clearly written statement of objectives to help the lead agency develop a reasonable range of alternatives to the proposed project to evaluate in the EIR. Moreover, a project may not limit its objectives in such a way as to effectively confine the range of feasible alternatives that are available. The project objectives are discussed in Chapter 2.

   The purpose of this project is to replace power line equipment that has reached the end of its useful life, to ensure adequate line clearances between the ground or land use, and to reconductor existing project power lines to accommodate future energy needs in the north Oakland area. The project is needed for safe operation of the lines. Refer to Chapter 2 for additional discussion of the project purpose.

   PG&E has identified the following objectives for the project:

   - Provide lifecycle updates of the Moraga–Oakland X 115 kV four circuit power line path by removing and replacing four circuits to avoid future reliability issues while maintaining safe operations.
   - Replace four project power line circuits using a larger size conductor that will accommodate the region's reasonably foreseeable future energy demands.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

- Ensure the project at completion meets power line reliability and safety requirements and industry standards.
- Construct a safe, economical, and technically feasible project that minimizes environmental and community impacts.

2. *Does the alternative avoid or substantially lessen any significant environmental effects of the proposed project (including consideration of whether the alternative itself could create significant environmental effects potentially greater than those of the proposed project)?*

   Per Section 15126.6(a) of the CEQA Guidelines, alternatives considered must "avoid or substantially lessen any of the significant effects of the project." Based on the analysis presented in Chapter 5, Environmental Analysis, the project is not expected to result in significant impacts. Nevertheless, PG&E evaluated alternatives based on their potential to reduce environmental impacts, including the following potential impacts:

   - Conflicts with existing land uses
   - Noise and air quality impacts from construction
   - Impacts to visual resources
   - Impacts associated with wildfire

3. *Is the alternative feasible?*

   As defined by Section 15364 of the CEQA Guidelines, "feasible" means capable of being accomplished in a successful manner within a reasonable time period, taking into consideration economic, environmental, legal, social, and technological factors. PG&E considered these factors in evaluating the overall list of potential alternatives. To evaluate the feasibility of different alternatives, PG&E considered the evaluation factors in Table 4.1-1.

Table 4.1-1. Evaluation Factors and Existing Setting

Evaluation Factors	Existing Setting
Constructability and Maintenance	▪ Site side slope ▪ Work area access and staging ▪ Use of typical construction equipment (cranes and helicopters) ▪ Geotechnical conditions, including crossing of known faults and landslide-prone regions ▪ Road width and road geometry
Compatibility with Land Use and Land Ownership	▪ Land ownership and jurisdiction, including need for new ROW ▪ Conservation easement ▪ Land use ▪ Removal of existing residential buildings ▪ Restrictions on use of properties (for replacement lines)
Compatibility with Infrastructure	▪ Existing utilities and facilities ▪ Other linear facilities
Protection of Resources	▪ Wetlands and waterways ▪ Historic landmarks and historic places ▪ Visually sensitive areas ▪ Wildfire risk ▪ Biological resources

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

4.2 Alternatives Considered

4.2.1 Process to Identify Potential Alternatives to the Project

PG&E obtained input on potential alternatives from CAISO, community and agency stakeholder information, and project planners and engineers. The public outreach process is described in Chapter 2. In developing alternatives for consideration in this PEA, PG&E considered the following factors:

- Alternatives to the proposed project that were proposed to CAISO. This includes feedback from CAISO on PG&E's proposed project that was included in CAISO's 2019-2020 Transmission Planning Process.
- Alternatives suggested during resource agency, local government, and public outreach. In particular, in 2023, community members expressed an interest in an alternative that would place the lines underground through the Montclair neighborhood area (Montclair) within the City of Oakland.
- Project phasing. No alternatives were identified for project phasing because the entire project must be built to meet basic objectives. Ongoing periodic replacement of small numbers of structures is incorporated in the No Project Alternative.
- Alternatives using the existing ROW. Primarily, this would be to place the lines underground within the existing ROW. This was deemed infeasible based on several issues, including steep and varying topography and lack of access to the ROW by construction and maintenance vehicles that would be required for underground lines. Undergrounding along the existing ROW also would result in major tree removal, ground disturbance to residential landscaping, and removal of existing residential structures. Therefore, underground in the existing ROW was not considered as an alternative.
- Alternative replacement locations outside the ROW. PG&E reviewed multiple alignment locations for overhead and underground alignments for different portions of the replacement.
- Engineering alternatives, including different overhead conductor type and different underground cable configurations. Alternatives with three or more overhead and underground segments along the same circuit would require a transition station at one end of an isolated underground segment instead of using transition structures. A transition station would be required to protect the conductor in the event of an electrical fault occurrence along the alignment. A transition station for four circuits would be approximately 0.5 acre in size and similar to a substation design with a level and rocked surface area and perimeter fence. Covered cable would further reduce wildfire risk compared to the project; however, it is too heavy and is not available for power lines at this voltage.
- Renewable energy, energy conservation, energy efficiency, demand response, distributed energy resources, and energy storage. The potential for alternatives of this type was limited. For example, feasible reductions in energy use from energy conservation/energy efficiency would not be sufficient to eliminate the need for the four Moraga–Oakland X 115 kV circuits. Distributed energy sources and energy storage alternatives have been included for completeness.
- Power lines paralleling or crossing the Hayward Fault underground would need to accommodate fault creep and coseismic displacement measured in feet, rather than in inches, which a typical underground power line can accommodate. An innovative, unprecedented design would be required to conceptually accommodate the movement of the lines expected from the maximum credible earthquake on the Hayward Fault. This degree of displacement likely would require construction of a tunnel (of approximately a 10-foot diameter or more) with tracks from which the cables would hang. The tracks would move to accommodate a potential range of displacement. Construction of such a tunnel would be extremely costly but would still leave residual risk. In the general area, either side of the Hayward Fault zone has topography and structures that are not compatible land use for the multi-acre construction work areas required at the ends of a potential tunnel. In addition, the cable that would be used is fragile and may not be able to withstand this degree of displacement. The length of the section under the fault would make locating and addressing faults more difficult, leading to longer outages. The resulting lines may not be sufficiently reliable. Because of these

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

geotechnical conditions and insufficient space for construction work areas, extending power lines under the Hayward Fault was considered imprudent and was not carried forward.

The project already incorporates design strategies to reduce its footprint, including the use of monopole tubular steel poles and lattice steel poles instead of traditional towers where feasible, some longer spans that eliminate a few structures, and use of existing ROW where feasible. All underground routes discussed in this section assumed the same double-circuit duct bank and triplex XLPE cable configuration as the proposed project underground route in Park Boulevard.

As a first step in developing some of the alternatives, PG&E considered possible route segments or alternatives outside of the existing alignment for each of the three main sections – eastern, central, and western. The different topography and land use in each section present different opportunities and constraints to be evaluated separately. The section routes then could be combined with each other or sections of the project to create complete alternatives. The following subsections describe the routes considered for each section. The routes are shown on Figures 4.2-1a through 4.2-1d.

4.2.1.1 Eastern Section

The eastern section extends from Moraga Substation to the border between Alameda and Contra Costa counties, which is approximately at Manzanita Drive for the project alignment. A new overhead ROW in the vicinity of the existing alignment was determined to be infeasible because it would require new CEs and extensive grading and vegetation removal, resulting in greater aesthetic and biological resource impacts than the proposed project. Use of the existing ROW is the most feasible overhead option in the eastern section and would have the fewest environmental impacts.

PG&E evaluated use of the existing roads in this section, including unpaved fire roads and a paved road, for an underground replacement. Routes considered for the eastern section are as follows (refer to Figure 4.2-1b):

- Watertank Underground Route. This route would follow the existing alignment on the PG&E substation parcel west from Moraga Substation. At the third set of power line structures west of the substation, the route would follow an existing fire road to the northwest across two CEs that are anticipated to transfer to EBMUD. The route continues through a gate where the existing fire road enters EBRPD Sibley Volcanic Regional Preserve and passes by an existing water tank (including portions of Round Top Loop Trail and Water Tank Road). At the intersection of Water Tank Road and Skyline Boulevard, it would continue southeast on Skyline Boulevard to the intersection with Manzanita Drive for a total of approximately 3.5 miles from the substation.
- Pinehurst Underground Route. This route would be the same as the Watertank Underground Route from Moraga Substation to the third set of power line structures west of the substation, where the route would continue to follow the alignment where it crosses a CE southwest toward the fourth set of structures. Near the fourth set of structures, the route turns westward and follows a fire road within the CE to the McCosker sub-area of EBRPD Sibley Volcanic Regional Preserve. At this point, the route would follow existing fire roads generally south and southwest along existing unpaved fire roads that include portions of the McCosker Loop Trail, the Gudde Ridge Trail, and the Ninebark Trail and go past the planned group campground before arriving at the Eastport Staging Area at Pinehurst Road. It would then follow Pinehurst Road to its intersection with Skyline Boulevard (both paved) for approximately 3.0 miles in total.

Both the Watertank Underground Route and Pinehurst Underground Route would require a new ROW through EBMUD and EBRPD lands, CE modifications, and use of franchise rights. In addition, substantial civil engineering would be required, including grading and improvements to existing fire roads and county roads, widening roads to approximately 25 feet or more, installing retaining walls, reinforcing duct banks, and other civil infrastructure work to address geological conditions such as landslides. Refer to Section 4.2.3.2 for additional details on constraints for constructing underground power lines in the hills in this part of the East Bay.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

Although these underground routes would reduce wildfire risk and eliminate aesthetic impacts of aboveground structures, they likely would have significant impacts to biological resources, hydrology/water quality, and land use and introduce new aesthetic impacts from new grading, roadways, and retaining walls. EBRPD and EBMUD have provided input that an overhead replacement is more compatible with their land use and both districts have expressed concern about an underground option in their jurisdictions based on the extensive temporary and permanent road widening of existing fire roads necessary to accommodate construction of the lines and maintain them during the operations and maintenance phase of the project. In addition, modification to the Moraga Creek Open Space Area and Indian Valley Preserve Area Conservation Easement and Western Hills Open Space Area Conservation Easement would be a multiyear process and the schedule to replace the aging infrastructure would be extended significantly. After consulting with the California Department of Fish and Wildlife, United States Fish and Wildlife Service, and the CE administrator, Wildlife Heritage Foundation, PG&E received input that there is a plausible risk that a new easement through the CE could be denied by any of the responsible agencies that administer the CEs. As a result, PG&E determined that the Watertank and Pinehurst Underground Routes are not feasible and they were not considered as part of an alternative.

4.2.1.2 Central Section

The central section extends from approximately the Contra Costa County-Alameda County border near Manzanita Drive to SR 13. A new overhead ROW in the vicinity of the existing alignment was determined to be infeasible because this section generally is built out with residential development. All routes are assumed to use an overhead crossing of the Hayward Fault if located adjacent to SR 13. As noted previously, having three or more overhead and underground portions of the line between substations would require transition stations instead of transition structures.

PG&E evaluated the existing roadways in the vicinity of the existing alignment for underground replacement. Routes considered for the central section are as follows (refer to Figure 4.2-1c):

- Manzanita Drive Underground. This roadway, approximately 1.0 mile between Pinehurst Road and Colton Boulevard, could serve as a portion of an underground route in the central section.
- Skyline Boulevard Underground. This roadway, approximately 0.8 mile between Pinehurst Road and Colton Boulevard, is an option instead of Manzanita Drive for a portion of an underground route in the central section.
- Colton Boulevard Underground. This underground route of approximately 2.0 miles would start at the intersection of Colton Boulevard with Manzanita Drive and Skyline Boulevard and follow Colton Boulevard south, with a brief diversion onto Heartwood Drive, then back onto Colton Boulevard and to Mountain Boulevard. It would head southeast on Mountain Boulevard to the northwest intersection of Mountain Boulevard and Scout Road. There, it would transition to an overhead route to cross SR 13 and the Hayward Fault. This route would be within the Hayward Fault zone along Mountain Boulevard. Therefore, this route would require an innovative, unprecedented design along Mountain Boulevard to conceptually accommodate the movement of the lines expected from the maximum credible earthquake on the Hayward Fault, as described previously in this section. Two approximately 10-foot wide tunnels conceptually would fit in the approximately 51-foot wide Mountain Boulevard.
- Snake Road Underground. Similarly to Colton Boulevard, this underground route would start at the intersection of Snake Road with Manzanita Drive and Skyline Boulevard and follow Snake Road south to Mountain Boulevard to the intersection with Scout Road for approximately 1.9 miles, where it would transition to overhead to cross SR 13 and the Hayward Fault.
- Shepherd Canyon Road Underground. This route would be overhead and transition to underground at approximately the intersection of Saroni Drive and Gunn Drive, and then go south in Saroni Drive for approximately 0.1 mile to Shepherd Canyon Road, then progress westbound for approximately 1.0 mile. The line would transition to aboveground in a transition station near the City of Oakland

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

Municipal Service Yard and connect to structures in the existing ROW. The total length of underground route would be approximately 1.1 miles.

- Redwood Peak Tunnel. Historically, the Sacramento Northern Railway used an approximately 3,700-foot-long tunnel under the Oakland Hills between Montclair (approximately at Saroni Drive and Shepherd Canyon Road) and Eastport on Pinehurst Road near EBRPD's Eastport Staging Area where the Pinehurst Underground Route transitions to Pinehurst Road.

Skyline Boulevard Underground was determined to have more severe landslide issues than Manzanita Drive Underground, so it was not considered further. Snake Road Underground is in proximity to Colton Boulevard Underground but, similarly, has issues with road width, curvature, and potential landslides, so it was not considered further. The Sacramento Northern Railway tunnel has been filled in, is of unknown structural condition and may have collapses, and does not have sufficient multi-acre work areas at either end of the tunnel for construction to rebuild for power line use, so it was not considered further.

Manzanita Drive Underground, Colton Boulevard Underground, and Shepherd Canyon Road Underground were considered for development of alternatives.

4.2.1.3 Western Section

The western section extends from SR 13 to Oakland X Substation. PG&E evaluated existing roadways in the vicinity of the existing alignment for underground replacement routes. In all cases, the routes would start overhead after crossing SR 13 and then would transition to underground; at Oakland X Substation, they would transition to aboveground. In addition, PG&E evaluated use of the existing power line ROW for an overhead alignment to Oakland X Substation. A new overhead ROW in the vicinity of the existing alignment in the western section was determined to be infeasible because the area is fully built out and removal of residences would be required.

Routes considered for the western section are as follows (refer to Figure 4.2-1d):

- Estates Drive Underground. This underground route would start from the existing ROW and extend northwest in Monterey Boulevard to the intersection of Park Boulevard. The route then would continue overland northwest up an undeveloped hillside to the west of the southbound SR 13 off-ramp north of the intersection of Trafalgar Place and Park Boulevard. The route then would split to have one double-circuit duct bank in each of Sims Drive and Somerset Road, then rejoin at Estates Drive to extend south to Park Boulevard. This route would be combined with the proposed project's underground segment from the intersection of Estates Drive and Park Boulevard to Oakland X Substation for a total of approximately 2.2 miles.
- Trestle Glen Road Underground. This underground route would follow Trestle Glen Road from Park Boulevard south to Grosvenor Place and then to Oakland X Substation. This route would be combined with the proposed project's underground segment from the intersection of Estates Drive and Park Boulevard that proceeds southwest along Park Boulevard to the intersection of Trestle Glen Road for a total of approximately 1.4 miles.
- Lincoln Avenue Underground. This underground route would start from the existing ROW and extend southeast on Monterey Boulevard. It would continue southwest on Lincoln Avenue; then northwest on MacArthur Boulevard, which turns into Excelsior Avenue; then north on Kingsley Street, which turns into Park Boulevard Way; and then transition aboveground on a transition structure at Oakland X Substation for a total of approximately 3.1 miles. This route would be within the Hayward Fault zone along Monterey Boulevard and across Lincoln Avenue. Therefore, this route would require an innovative, unprecedented design along Monterey Boulevard to conceptually accommodate the movement of the lines expected from the maximum credible earthquake on the Hayward Fault, as described in Section 4.2.1.2. An approximately 10-foot-wide tunnel would fit conceptually in the approximately 27-foot-wide Monterey Boulevard and in the 40-foot-wide Lincoln Avenue.
- Park Boulevard between SR 13 and Estates Drive Underground. Instead of transitioning to underground at Estates Drive and Park Boulevard, the lines would transition to underground just

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

west of SR 13 and continue underground northwest in Monterey Boulevard to Park Boulevard and southwest to Estates Drive. This route would be combined with the proposed project's underground segment from the intersection of Estates Drive and Park Boulevard that proceeds southwest along Park Boulevard toward Oakland X Substation for a total of approximately 2.0 miles.

- Western Overhead. This route would reuse the existing ROW between the Estates Drive/Park Boulevard intersection and Oakland X Substation by placing the lines overhead for approximately 1 mile.

The Trestle Glen Road Underground option was eliminated because it would connect the same points as the proposed project's underground route on Park Boulevard but would have greater constructability issues. Trestle Glen Road has a narrow street width and has several existing buried utilities. It is unlikely to accommodate one double-circuit duct bank. In addition, Trestle Glen Road is not as straight as Park Boulevard and may require more vaults. While the length of the underground portion would increase only by approximately 0.1 mile, the cost would be greater because of having to place the duct bank below the many existing utilities and potentially to add a greater number of vaults. The longer underground portion, the longer construction period, and the potential need for slope reinforcement would likely have greater impacts to adjacent properties than the Park Boulevard alternative route. Additionally, another route would be needed for the second double circuit.

The Park Boulevard between SR 13 and Estates Drive Underground route was not retained because it would pose too much risk to public safety and adjacent properties based on design issues, so it was eliminated. Park Boulevard north of Estates Drive is supported by three bridges (viaducts) under the roadway (refer to Figure 4.2-1d) that are located within approximately 1,600 feet of Park Boulevard north of Estates Drive. Underground construction in this portion of Park Boulevard would require avoidance and setback from the girders and other bridge structures. PG&E would be forced to excavate into the hillside along the northwest side of Park Boulevard to accommodate a ROW space for both duct banks. This excavation of steep uphill slopes poses a landslide risk to upslope residential structures along Estates Drive. If the route circumvented three bridge structures on the southeast side of Park Boulevard, PG&E would need to install retaining walls on the downslope side of the hill, which could pose a safety risk by undermining the bridge structures.

A variation of the Park Boulevard segment was considered where the overhead line would transition underground in Park Boulevard just west of SR 13 and then aboveground northeast of the bridge structures, a length of approximately 1,300 feet. Before transitioning to underground within Park Boulevard west of SR 13, a new overhead span at SR 13 and the Hayward Fault would be needed from the existing alignment (structures RN21 and RS21 on the northeast side of SR 13) to two new structures west of the intersection of Trafalgar Place and Park Boulevard. The area west of this intersection is approximately 60 feet lower than RN21 and RS21. The four circuits then would have short spans to connect to transition poles, either in the same general location or in Montclair Golf Course across Park Boulevard. After the underground length of approximately 1,300 feet with approximately two vaults, an approximately 0.5-acre transition station would be required at the southern end of the isolated underground segment, likely along the south side of Park Boulevard along or in Dimond Canyon Park. Retaining walls or reinforced duct banks may be needed in some locations based on landslide risk. From the transition station, new spans across Dimond Canyon Park would cross back to the existing alignment. Refer to Section 4.2.3.2 for a discussion of transition stations and landslide risk. Overall, this variation would result in the elimination of four to six structures in the existing alignment (possibly RN22, RS22, RN23, RS23, RN24, and/or RS24; refer to Figure 3.5-1), while adding two new structures, four transition poles, and a transition station with four transition poles to install an isolated underground segment. Because of the cost and impacts of the variation and the minimal benefit, this variation was not carried forward.

Estates Drive Underground, Lincoln Avenue Underground, and Western Overhead were considered for development of alternatives.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

4.2.2 Identified Alternatives

PG&E evaluated the section routes that were not eliminated in combination with each other and with sections of the project to create alternatives for consideration, in addition to system-level and other alternatives. Based on the information presented in Section 4.2.1, PG&E identified eight alternatives to the project, as follows:

A. Moraga–Oakland X 3-Circuit Replacement with Moraga–Claremont Reconductoring and Park Boulevard/Lincoln Avenue Underground (Figure 4.2-2)

B. Manzanita Drive-Colton Boulevard-Estates Drive Underground (Figure 4.2-3)

C. Shepherd Canyon Road Underground (Figure 4.2-4)

D. All Overhead Rebuild in Existing Alignment (Figure 4.2-5)

E. Proposed Project with Campground Overhead Option (Figure 4.2-6)

F. Conceptual South Overhead Alignment (Figure 4.2-7)

G. Distributed Energy Resources

H. Energy Storage

These alternatives were evaluated against the criteria discussed in Section 4.1. As discussed in Section 4.2.1, PG&E considered multiple alternatives, including both aboveground and underground configurations, and multiple locations. Nearly all the alternatives did not meet some project objectives, and most had significant technical and economic feasibility issues as well as greater impacts to some environmental resources. Ultimately, alternatives were identified that represented a range of locations and configurations to show the public why the proposed project is superior to other alternatives analyzed for technical and economic feasibility and impacts to some environmental resources. Two of the alternatives (Alternative A and Alternative E) also had been shared with stakeholders.

The alternatives are discussed in the following subsections. Figures 4.2-2 to 4.2-7 provide maps of the alternatives. Table 4.2-1 summarizes the alternatives evaluation. The alternatives are described in more detail following Table 4.2-1. Bold text in the first column indicates an alternative carried forward for consideration in this PEA.

4.2.3 Alternatives Carried Forward for PEA Evaluation

Four alternatives, Alternatives A, B, C, and E, in addition to the No Project Alternative, are carried forward for evaluation in this PEA. These alternatives are shown on Figures 4.2-2, 4.2-3, 4.2-4, and 4.2-6 and are described in the following subsections. These alternatives were selected because they meet the underlying purpose of the proposed project, meet some of the project objectives, incorporate feedback from stakeholders, and represent a reasonable range of alternatives to the project. As noted earlier in this chapter, the proposed project is not expected to result in potentially significant impacts.

4.2.3.1 Alternative A: Moraga–Oakland X 3-Circuit Replacement with Moraga–Claremont Reconductoring and Park Boulevard/Lincoln Avenue Underground

Description

This alternative would replace three of the four existing Moraga–Oakland X circuits on two sets of structures in an overhead configuration (refer to Figure 4.2-2). Two circuits would be placed on a double-circuit structure and one circuit would be placed on the adjacent structure, similarly to the existing two sets of structures. The northern circuit and southern circuit would always remain on the northern and southern set of structures, respectively. The middle circuit between these two circuits would oscillate between the northern and southern set of structures, and the northern and southern

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circuits would move from the outside position to the inside position when the middle circuit was on the other set of structures to minimize ROW modification. The three circuits would be built within the same ROW from Moraga Substation to the intersection with Monterey Boulevard.

From there, the northern and middle circuits would continue in an overhead configuration on one set of double-circuit structures to Estates Drive/Park Boulevard. The two circuits would transition to underground at the northwest corner of Estates Drive and continue down Park Boulevard (one single-circuit duct bank on each side of the roadway) to Park Boulevard Way and terminate at Oakland X Substation. Each circuit would be installed in a separate duct bank with a minimum 15 feet of separation. The other circuit would be installed underground in Monterey Boulevard and progress southeast toward Lincoln Avenue; then continue southwest on Lincoln Avenue before turning northwest on MacArthur Boulevard, which turns into Excelsior Avenue; then north on Kingsley Street, which turns into Park Boulevard Way; and then transition aboveground on a transition structure at Oakland X Substation for a total of approximately 3.1 miles. In addition, Alternative A would include reconductoring two portions of the Moraga–Claremont Circuits 1 and 2 115 kV lines (approximately 3 miles total), which would include installation of new structures and conductors and removal of existing structures and conductors, primarily in parks and open space. The eastern end of the reconductoring would be within the eastern extent of the Montanera Wilder Conservation Easement and adjacent to the western edge of the Lost Valley residential neighborhood in Orinda. The eastern half of the western end of the reconductoring would cross portions of EBMUD watershed and EBRPD Sibley Volcanic

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Table 4.2-1. Summary of Alternatives Evaluation

Potential Alternative	Project Purpose and Objectives Criterion	Feasibility Criterion[a]	Environmental Criterion[b]
A. Moraga–Oakland X 3-Circuit Replacement with Moraga–Claremont Reconductoring and Park Boulevard/ Lincoln Avenue Underground	Meets project purpose and most objectives.	Alternative would be more expensive because of Moraga–Claremont reconductoring and greater length of underground duct bank installation. Would require an innovative, unprecedented design along Monterey Boulevard and the eastern portion of Lincoln Avenue to accommodate movement expected from Hayward Fault.	Impacts likely greater than the project because of larger construction footprint, which would be nearly the same along the Moraga–Oakland X project alignment and would add impacts along an additional approximately 2 miles of Moraga–Claremont power line and construction impacts along the approximately 3.1 miles of the Lincoln Avenue Underground Route portion.
B. Manzanita Drive-Colton Boulevard-Estates Drive Underground	Meets project purpose and most objectives.	Extensive engineering and constructability issues that may make this alternative not economically or technically feasible. Would require significant road stabilization projects and may require demolition of homes and restrictions on use of adjacent properties. Would require an innovative, unprecedented design along Mountain Boulevard to accommodate movement expected from Hayward Fault.	Reduces permanent visual and wildfire impacts compared to the project. Construction impacts would be greater than the project for some resource areas such as traffic, safety, and air quality because of the scale of construction required for the additional underground portion. Significant and unavoidable impacts may occur to population and housing and land use based on loss of existing housing and restrictions on future uses of property.
C. Shepherd Canyon Road Underground	Meets project purpose and most objectives.	Extensive engineering and constructability issues that may make this alternative not economically or technically feasible. Would require extensive geotechnical stabilization of roadway and slopes and may require demolition of homes and restrictions on use of adjacent properties.	Reduces permanent visual and wildfire impacts compared to project. Construction impacts would be greater than the project for some resource areas such as biological resources, transportation, safety, and air quality because of the scale of construction required for the additional underground portion. Significant and unavoidable impacts may occur to population and housing and land use based on loss of existing housing and restrictions on future uses of property, and to transportation from extended closure of Shepherd Canyon Road.
D. All Overhead Rebuild in Existing Alignment	Meets project purpose and most objectives.	May not be technically feasible because of constructability issues in the western section.	Most impacts would likely be similar to the project. Land use impacts may be greater because of proximity to homes in the western section. Greater aesthetic impacts than the project because underground replacement would not occur.
E. Proposed Project with Campground Overhead Option	Meets project purpose and most objectives.	Alternative is feasible. Additional easement would be required. Introduces new angle in the power lines replacement, requiring larger structures.	Impacts would likely be similar to the project with greater impacts to biological resources from EBRPD tree removal for compliance with CPUC GO 95. Minor aesthetic impact reduction with two spans shifting slightly farther away from EBRPD campground.

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Table 4.2-1. Summary of Alternatives Evaluation

Potential Alternative	Project Purpose and Objectives Criterion	Feasibility Criterion[a]	Environmental Criterion[b]
F. Conceptual South Overhead Alignment	Meets project purpose and most objectives.	Not legally or economically feasible. Would require extensive new ROW. Substantially greater cost because of the greater length and acquisition of new ROW.	Impacts would be substantially greater than the project because of the significantly increased length of the project and associated construction impacts. Existing CEs in the eastern section prohibits new development. Significant biological and aesthetic impacts from new alignment in parks and open space.
G. Distributed Energy Resources	Would not meet project purpose or objectives.	Not technically feasible to provide sufficient distributed resources to eliminate need for Moraga–Oakland X path.	Unable to determine because exact improvements are unknown.
H. Energy Storage	Would not meet project purpose or objectives.	Not technically feasible to provide sufficient energy storage to eliminate need for Moraga–Oakland X path.	Unable to determine because exact improvements are unknown.

[a] Considers economic, environmental, legal, social, and technological factors.

[b] Proposed project will not result in significant environmental impacts.

Bold = alternatives carried forward in the PEA.

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Regional Preserve and most of the western half is adjacent to the southern edge of the City of Oakland's North Oakland Sports Center ball fields. The western half of the western portion would cross or parallel roads with adjacent residential use such as Grizzly Peak Boulevard, Skyline Boulevard, Balsam Way, Pine Needle Drive, Broadway Terrace, Gwin Road, Fairlane Drive, Swainland Road, Pali Court, Glenarms Drive, and the northern extent of Mountain Boulevard.

Construction activities for the overhead replacement of the Moraga–Oakland X lines would be similar to the project, including installation of new and removal of existing structures and conductors. Modifications to Moraga and Oakland X substations would be similar to the project with the addition of minor modifications to the Moraga–Claremont line terminals. Construction activities for this alternative would be more extensive than the project, given the additional construction activity to reconductor the Moraga–Claremont line, including additional pull sites and helicopter use and potential structure replacement, and construction activities for the Lincoln Avenue Underground route. As discussed previously, this route would require an innovative, unprecedented design along Monterey Boulevard and in the eastern portion of Lincoln Avenue to conceptually accommodate the movement of the underground line expected from the maximum credible earthquake on the Hayward Fault.

Rationale for Carrying Forward

Alternative A had been one of PG&E's Northern Oakland Area Reinforcement projects, and it represents a different engineering alternative with a different type of overhead conductor and underground cable configuration. This alternative would meet the project objectives.

Public and Agency Comments

Alternative A was shared with the CPUC and some local jurisdictions as part of earlier project development and was included as a potential alternative presented at the April 2024 open house. No specific negative comments were noted.

4.2.3.2 Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground

Description

This alternative would incorporate the Manzanita Drive and Colton Boulevard underground routes described in Section 4.2.1.2 (refer to Figure 4.2-3). It would replace the existing Moraga–Oakland X 115 kV lines by replacing overhead lines in the existing ROW in the eastern section, in Contra Costa County, the same as the proposed project. From there, the route would transition belowground near Manzanita Drive and follow Manzanita Drive west to Colton Boulevard, with two double duct banks in the roadway. The underground alignment then would follow Colton Boulevard south, with a brief diversion onto Heartwood Drive, then back onto Colton Boulevard to Mountain Boulevard. It would head southeast on Mountain Boulevard to the northeast intersection of Scout Road, where it would transition to overhead to cross over SR 13 and the Hayward Fault. It would transition underground west of SR 13 within an undeveloped hillside northwest of the intersection of Trafalgar Place and Park Boulevard. From there, the alignment would go southwest with one double-circuit duct bank in Sims Drive and one double-circuit duct bank in Somerset Road. Both duct banks would rejoin within Estates Drive and continue to Park Boulevard, progress southwest within Park Boulevard to Park Boulevard Way and terminate at Oakland X Substation. This alternative would have approximately 1.6 miles of lines replaced overhead, approximately 4.2 miles of lines replaced underground, and multiple transitions between overhead and underground sections.

This alternative would have similar construction activities as the project for replacing the eastern section overhead; constructing the underground portion on Park Boulevard between Estates Drive and Oakland X Substation; removal of the existing overhead Moraga–Oakland X 115 kV lines in all the central and western sections after replacing underground; and modifications to Moraga and Oakland X substations.

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Transition Station

To achieve reliable line operation, system protection equipment needs to be interset on a hybrid line with multiple section lines. Where neither end of an underground segment of a power line is connected to a substation, a transition station is required to provide system protection information indicating approximately where an electrical fault in the line has occurred. An electrical fault in this context means the flow of electricity is interrupted. An electrical fault can occur in both overhead and underground lines and can happen during several conditions, such as when a tree branch falls onto the line, there is an unanticipated dig into the duct bank, land movement impacts the duct bank, during power surges, or when the flow of electricity in the line is otherwise interrupted. Overhead power lines can have temporary, semi-temporary, and permanent fault conditions. Temporary faults include when a tree branch falls on a conductor long enough for a fault to occur, but then it falls off the conductor of its own accord. A semi-temporary fault is similar to a branch falling on a conductor but then the branch does not fall off by itself and instead requires removal by an electrical worker. Permanent faults such as damage to an underground cable or overhead conductor require replacement of the material before the system can be reenergized.

When a fault happens on a line, advanced safety technology can turn off the line within 0.1 second. Before restarting the line, protection equipment at a substation calculates the approximate distance from the substation to the electrical fault location on the circuit. This approximate distance is communicated to a field team who will inspect the potential electrical fault location to determine what occurred and perform any maintenance required before requesting the flow of power through the line be restarted. When a line has an isolated underground segment, the substation protection equipment is unable to determine if the fault occurred in the underground segment or the overhead segment. In consideration of the distinct operation characteristics of overhead and underground circuits, field crews are trained to conduct either overhead maintenance or underground maintenance. When an electric fault occurs on a hybrid line, potentially both types of field crews would be mobilized instead of a single field crew type for a nonhybrid circuit. Without a transition station, addressing faults and restoring power would take substantially longer because potentially the entire length of line would need to be inspected (beginning by inspecting vault by vault) before being able to identify the electrical fault location through a process of elimination. Without protection equipment at one end of an isolated underground segment, reliability may fall to unacceptable levels with the slow inspection process. A transition station at one end of an isolated underground segment will include protection equipment that can estimate the approximate fault location on the underground segment and thereby reduce the amount of time required to inspect and restore power.

A transition station needs to include adequate separation between cable vaults for the incoming underground lines, a riser structure for each circuit, a communication enclosure with protection equipment, and other related equipment within security fencing. A transition station needs to have a relatively flat yard area with safe vehicular access to all equipment for maintenance during varying weather and day or nighttime conditions.

A transition station for this project would occupy approximately 0.5 acre to accommodate the four 115 kV circuits and associated station equipment. An example transition station on two PG&E 230 kV lines is shown on Figure 4.2-8. For Alternative B, it is assumed that the transition station would be constructed at the west end of the underground segment because the area contains what appear to be more suitable locations than the eastern end (refer to Figure 4.2-3), including commercial parking lots with existing road access. Transition poles would be used at other transition locations, including the underground segment terminating at Oakland X Substation, which will have the requisite protection equipment within the substation.

Deflection and Landslides

The distance or angle measurement of how a pipe bends or deforms is called deflection. Deflection results when permanent ground displacement occurs. Buried utilities have a range of flexibility. Underground power line cables have a much lower deflection tolerance than other types of utility pipes

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such as water or sewer. Structural design of buried utility pipes is informed by internal fluid pressure and external soil load. In general, buried utility pipes carrying water are generally considered "flexible pipes," and can tolerate more deflection than underground power cables (Watkins and Smith 1973; PPI 2008). The existing buried utility lines in roads provide local neighborhood service, unlike the power lines that provide power to the north Oakland area, including the Port of Oakland and the City of Alameda. An impact to the buried water or sewer lines would have a localized impact versus the broader impact resulting from a rupture of the project proposed power lines. Repair of water or sewer line typically is completed in a shorter time than repairing underground electric power lines. In an area with a risk of landslides, therefore, underground power lines would be subject to a greater risk of failure than other underground utilities, and the consequences of failure are greater for underground power lines than for other utility lines in terms of both impacts to service and repair time. In addition, there is no feasible option to place water, sewer, and some other utilities aboveground whereas power lines can be installed aboveground.

Based on the cable manufacture guidance (Alverez pers. comm. 2024), the maximum allowable elongation of the triplex XLPE cable bundle is estimated at no greater than 50 millimeters (approximately 2 inches) after installation. The allowable elongation accounts for tightening of the bundle through the approximate maximum 1,300-foot cable lengths between splice vault locations. The cable and the duct bank system would likely be damaged beyond use with any lateral deflection of the duct bank and conduits because of earth movement. Because the cable splices in the vault would be well supported, the more likely failure from displacement would be in the cable between vaults. This is a reliability risk for the electrical system during a seismic or landslide event, when it is important to have these circuits available to provide power to customers. Repair of the underground power lines at that point would require demolition of entire portions of the duct bank and cable, resulting in a long-term outage on the order of 6 months or greater, not including other ground stabilizing construction that would necessarily be performed to stabilize the slope and road prior to repair of the power line facilities.

Design and construction of this alternative's underground portion in the Montclair neighborhood hills of the City of Oakland would entail extensive engineering and constructability issues to address geotechnical conditions. Because of the local geology and soils, the Oakland Hills contain multiple existing landslides and areas of extremely elevated landslide susceptibility. These slides can continue to move for several reasons, including rainfall, earthquakes, and destabilization from construction activities. Movement of these slides is common, although unpredictable, and can be observed in the area; for example, where local roads are cracking. Refer to Figure 4.2-9 for photos of a slide in Novato, California, in an area with similar soils and geology. As can be seen in this image, deep-seated landslides may extend below a valley floor and may uplift soils near the base of the slope.

In addition, seismic activity can cause new slides in areas with steep slopes. This underground portion of Alternative B is near the active Hayward Fault (refer to Section 5.7) and is in an area with steep slopes; therefore, it also would be at risk for seismically induced slides. PG&E used a proprietary regional landslide model (PG&E 2023) and United States Geological Survey (USGS) deterministic seismic input of the Hayward Fault to identify locations with greater than 50 percent probability of exceeding the 2-inch threshold of deformation of a duct bank causing failure of the line from landslides. The spectrum of horizontal ground motion was derived using the USGS Unified Hazard Tool (USGS 2024) with a mean moment magnitude of approximately 7.0 for the design seismic event. Figure 4.2-3 shows these landslides mapped along this underground portion of Alternative B.

The central underground segment of this alternative is in an area with a risk of landslides that could impact the duct banks containing the underground power lines by several feet, which would exceed the displacement tolerance of the cable. A landslide such as this would require reconstruction of the underground line duct bank, as previously noted, which could affect power delivery to large portions of the East Bay for long periods of time. Some power could potentially be rerouted from other area substations for a portion of the distribution customers depending on the seasonal demand. In addition, a long-term temporary overhead line, or shoofly, could be installed to connect with adjacent overhead segments while the duct bank was being designed and replaced. A shoofly typically involves installing tall poles to support overhead conductors as a temporary solution to provide power. The prevalence of

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landslides in the area presents an unacceptable risk to reliability without engineered protection and additional construction. One option to protect underground power lines is to build duct banks with much thicker reinforced concrete walls using rebar reinforcement; however, greater road width is required for this construction and, as described in the following text, the road widths for a typical duct bank width already represent a constraint. Additionally, there is a practical limit to the amount of reinforcement for a duct bank. Duct bank geometry, reinforcement detailing, and construction means and methods will impact the ability of a reinforced duct bank to be feasible. Geological conditions also can be addressed with retaining walls or other subgrade geotechnical improvements to remediate global slope stability hazards. In either case, substantial in-situ geotechnical information must be collected to evaluate the feasibility of using either reinforced duct bank or other geotechnical improvements to protect the proposed underground power lines.

Exploratory data from geotechnical investigations would be needed from each landslide shown on Figure 4.2-3 before detailed design could be completed. Extensive soil boring sampling would need to be done to collect the data. Typically, a track-mounted drill rig is used to move along a transect and collect soil samples. A boring sample would need to be taken every 50 to 100 feet along a transect from the duct bank location to the top of the landslide as well as one boring above the landslide. These sampling transects would need to be repeated approximately every 200 feet. Boring sampling would require bringing heavy construction equipment, including drilling rigs, onto residential properties. Because of the steep slopes along this alternative's alignment, grading may need to be performed to provide vehicle access to place the drilling rigs at the sampling locations. Trees and shrubs in the access and sampling areas would need to be removed, which could affect much of the existing vegetation on each property. After access and the work area are established, sampling at each location would take approximately 2 days. When working from the roadway, a single lane closure would be required during the geotechnical investigation activity. The exploratory data would confirm whether a retaining wall is needed at each slide location and, if so, the size of wall needed. Land use restrictions such as no changes to buildings or no new trees would be required for all upslope properties to avoid excess loading of the retaining walls or other load-bearing components that could impact the underground line installation.

Typically, retaining walls would be constructed in locations where the duct bank displacement from a landslide could exceed 2 inches. While the length of the wall typically extends along the width of the landslide, the wall design would depend on the depth of the landslide. Shallower landslides may only need a simple retaining wall and a duct bank itself could be designed to be a headwall to deflect soil movement. Moderate landslides may need a retaining wall in the range of 15 to 30 feet high, which would be visible to surrounding areas. Large landslides may require a much more robust wall, for example with tiebacks or rock anchors. Construction of each retaining wall would require removal of vegetation and excavation into the hillside. Installation of a retaining wall can vary from approximately 3 weeks to several months depending on the wall type which can include construction activities such as pile driving. Based on current data, it is assumed a retaining wall of unknown size would be needed along all landslides shown on Figure 4.2-3 to prevent displacement greater than 2 inches.

Road Width

The roadways in the Manzanita Drive and Colton Boulevard underground routes generally are narrow and present constraints to construction. Each of the two double duct banks (each duct bank would contain two circuits) is approximately 4 feet wide. In addition, 15 feet of separation must be maintained between the edges of the two duct banks to address mutual heat generated by each power line circuit and to maintain ampacity, which is the amount of current a conductor can safely carry without exceeding its temperature rating. The 15 feet of separation is a standard for separation of single circuits developed by PG&E through many years of project development. Separating the double duct banks by less than 15 feet would result in too great a loss of ampacity from co-heating and would not achieve the project objective to accommodate load demands in the Oakland area. Therefore, a minimum road width of at least 22 feet is needed to fit both duct banks, not inclusive of other utility obstructions. However, utilities, including sewer and water, natural gas distribution, and telecommunication lines, are expected to be present in the roadways in unknown locations and may present additional constraints if they cannot be relocated to provide enough room for the duct banks.

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In addition, temporary construction areas wider than 22 feet would be needed for some construction activities. For example, a typical crane truck for installing precast power line vaults would require a work area of approximately 32 feet by 40 feet and additional space above that to rotate. Conservatively, a typical hydraulic excavator, while only approximately 16 feet wide, requires an approximately 53-foot-wide space to rotate. Required work areas for vaults, approximately 1,500 square feet, also may extend beyond existing road width to accommodate the typical excavation size of approximately 42 feet long by 18 feet wide by 13 feet deep. Typically, the workspace for open trenching operations to install the duct bank between the vaults may extend up to approximately 1,500 feet long by 24 feet wide. Manzanita Drive, Colton Boulevard, Heartwood Drive, Sims Drive, Somerset Road, and Estates Drive are narrow, often less than approximately 25 feet wide. It is likely that the road will need to be fully closed where and when construction is occurring, potentially for up to several weeks at some locations such as where vaults or retaining walls or other geotechnical improvements are constructed. Where road width is not sufficient, temporary or permanent widening of roads may be required. The route has roads that narrow to 20 feet in several locations, which will only accommodate one duct bank and will limit construction work areas and access for some roadway lengths. If roadway width, soil borings, and further design indicated that only one duct bank instead of two would fit in the roadways, construction of another alignment would be required for the second duct bank. That alignment would face similar, if not greater, constructability issues.

Vaults would be constructed along the alignment of similar dimensions (approximately 12 feet wide by 22 feet long by 10 feet tall) and materials as the proposed project. Delivering precast vaults, which would be done for the project, may not be feasible in some locations of the alternative because the large trucks delivering the vaults may not be able to access all locations based on the narrow and winding roads. Additionally, work area constraints would likely prevent cranes from lifting the vaults into place. While vaults can be cast in place, the roadway width feasibility issues would constrain cement trucks and other equipment. When a vault is cast in place, the excavation, installation, and concrete curing of the vault would likely require road closures of 3 to 4 weeks per vault.

Curves in a road create additional tension necessary to overcome friction of cable in the conduit when the duct bank bends around a curve. The splicing action relieves the tension developed by the series of bends by reducing the total degrees of bend the cable must be pulled through during installation. The curves in the roadway would reduce the spacing of the vaults for the alternative and further increase the number of vaults. Because of the much greater length of underground line and greater road curves compared to the project, Alternative B would have many more vaults than the proposed project given the underground portion is approximately 4.2 miles through curving roads versus the proposed project's approximately 1-mile of underground lines in roadway with few curves. The proposed project is anticipated to require approximately 5 to 10 vaults with an average spacing of approximately 1,300 feet per line. Alternative B would have up to approximately 25 to 30 vaults minimum with a maximum spacing at approximately 1,000 feet per line to address the friction created in the cable as it follows the curves of the road. However, numerous splices in an underground power line circuit introduce an increased risk of failure because the circuits are not a solid length of contiguous cable. Additionally, the triplex XLPE cable reels that hold at least 1,300 feet are large and heavy. These cable reels are transported on a semitruck lowboy trailer, which is unlikely to be able to transport the cable reels to installation location on narrower, curvy roadways with undulating or steep grades.

Rationale for Carrying Forward

Alternative B, the Manzanita Drive-Colton Boulevard-Estates Drive Underground Alternative, would meet the project purpose and some of the objectives, although it would not be economical and would not minimize environmental impacts. Exploratory borings and additional design may indicate that the alternative is not technically feasible. The alternative was carried forward because it appears to be one of the less technically constrained options for placing the lines underground through the central section.

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Public and Agency Comments

Community members have expressed an interest in an alternative that would underground power lines in residential areas, particularly in the central section.

4.2.3.3 Alternative C: Shepherd Canyon Road Underground

Description

This alternative would replace the existing Moraga–Oakland X 115 kV lines by constructing new overhead lines in the existing ROW in the eastern section in Contra Costa County and part of the central section, the same as the proposed project (refer to Figure 4.2-4). From there, the route would transition underground at approximately the intersection of Saroni Drive and Gunn Drive, which was identified as the first potentially feasible transition location on PG&E-owned land from the eastern boundary of Alameda County. The two double duct banks would go south in Saroni Drive to Shepherd Canyon Road for approximately 0.8 mile. The lines would transition to aboveground near the City of Oakland Municipal Service Yard in a transition station before connecting overhead to structures in the existing ROW to cross SR 13 and the Hayward Fault. It would continue overhead in the existing ROW to the intersection of Estates Drive and Park Boulevard, where it would transition underground in Park Boulevard and Park Boulevard Way to Oakland X Substation. This alternative would have approximately 3 miles of lines replaced overhead and approximately 2 miles of lines replaced underground.

This alternative would have similar construction activities to the project, including replacing the eastern section overhead, removing the western section of the existing lines, building the underground portion on Park Boulevard from Estates Drive to Oakland X Substation, and modifying Moraga and Oakland X substations. This alternative also would remove approximately 1 mile of existing lines in the central section after approximately 1 mile of underground lines were built and in service.

Transition Station

The underground section along Shepherd Canyon Road is not connected to a substation and, therefore, as discussed for Alternative B, this alternative would require a transition station at one end of the Shepherd Canyon underground segment, with transition poles used at the other end of the underground segment transition location. The options for a 0.5-acre space are limited at the north end of this segment. The largest space identified, a small PG&E-owned vacant parcel at the intersection of Gunn Drive and Saroni Drive, is steeply sloped, has landslide potential, is irregularly shaped, and at approximately 0.25 acre, likely is too small. As a result, Alternative C would include the transition station at the southern end of the Shepherd Canyon underground segment in the City of Oakland Municipal Service Yard, which uses an area of approximately 0.9 acre. Use of approximately 0.5 acre in this location for a transition station would require the City of Oakland to sell the land to PG&E. It also likely would require relocation of the Municipal Service Yard to a new unidentified location. The Shepherd Canyon Park field on the east side of Shepherd Canyon Road, across from the Municipal Service Yard, also was considered. However, the loss of parkland is unlikely to be supported by the City of Oakland; Shephard Creek, which runs underground in the field, may constrain the transition station location; and the location would introduce a sharper bend to the underground lines than lines that connect to a transition station in the Municipal Service Yard location.

Two options were identified to connect the aboveground circuits from the Municipal Service Yard to the existing ROW. One option would have the four circuits connect directly from the transition poles south-southwest to the new overhead structures RN20 and RS20, which would result in the lines crossing over a private residence. The other option, which avoids passing over a private residence, would require two new structures in the existing alignment approximately 170 feet southwest of the Municipal Service Yard on the hillside north of Shephard Creek. Connecting the overhead lines to RS19 and RN19 is not reasonably feasible because it would require transition structures 130 feet tall or greater, clearing of vegetation between the transition structures and RS19/RN19, and the replacement of RS19/RN19 with structures 20 to 30 feet taller than the existing.

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Deflection and Landslides

Construction of this alternative's underground segment along Saroni Drive and Shepherd Canyon Road would entail extensive engineering and constructability issues. As discussed for Alternative B, the Oakland Hills contain multiple existing landslides. Figure 4.2-4 shows the landslides that were mapped along Shepherd Canyon Road. As discussed in Section 4.2.3.2, these landslides can continue to move, seismic activity from the Hayward Fault can cause new landslides on steep slopes, and Shepherd Canyon Road is at risk from landslides that can be multiple feet deep and lift the roadway and/or move it laterally, causing deflection of the underground lines.

As with Alternative B, the prevalence of landslides in the area presents an unacceptable risk to reliability without engineered protection, which likely would be retaining walls based on road width constraints. Retaining walls would be constructed in locations where the displacement from a landslide could exceed 2 inches. This includes a large landslide area north of Alternative C along Shepherd Canyon Road, west of Paso Robles Drive (refer to Figure 4.2-4). PG&E Geosciences staff conducted a field visit in 2024 at this landslide location to gather observations. The field observations at the ground surface and road cuts included the type of rock, estimate of the strength of the blocks of rock, and how fractured and weathered the rock is. These field observations were evaluated in two strength models: Hoek-Brown (Hoek and Brown 2019) and Bay Area Coseismic Landslide Tool (Wade et al. 2023). Geological strength can be used to estimate the mechanical behavior of typical rock masses encountered in tunnels, slopes, and foundations. These models evaluate the probability of geotechnical conditions, including slope stability and landslide deformation. The deformation predicted for this landslide area using the Bay Area Coseismic Landslide Tool strength model is approximately 23 inches of deformation and the Hoek-Brown strength model is approximately 27 inches of deformation for the design seismic event (mean moment magnitude of approximately 7.0, USGS 2024). Based on these predictive landslide models, the Alternative C underground segment in Shepherd Canyon Road likely would be subject to deformation much greater than 2 inches. Retaining walls or other civil infrastructure would be needed along the north side of Shepherd Canyon Road and could result in removal of residences. Exploratory geotechnical data would be needed from each landslide shown on Figure 4.2-4 before detailed design could be completed. Extensive soil boring sampling would need to be done to collect the data using the same grid process described in Section 4.2.3.2. As described for Alternative B, boring sampling would require bringing heavy construction equipment, including drilling rigs, onto residential properties, grading to provide vehicle access to get the drilling rigs to the sampling locations, and extensive vegetation removal. The exploratory data would confirm whether a retaining wall is needed at each landslide location and, if so, the size of wall needed. Land use restrictions would be required for all upslope properties to avoid excess loading of the retaining walls or other load-bearing components of the underground line installation. Based on current data, it is assumed a retaining wall of unknown size would be needed along all landslides shown on Figure 4.2-4 to prevent displacement greater than 2 inches. Construction of each retaining wall would require removal of vegetation and, depending on location, excavation into the hillside.

Road Width

Saroni Drive and Shepherd Canyon Road generally are narrow roadways, which presents constraints to construction. As discussed for Alternative B, a minimum road width of 22 feet is needed to fit both double duct banks, and temporary construction areas wider than 22 feet would be needed for some construction activities.

Shepherd Canyon Road is known to contain utilities. Maps provided by the City of Oakland show that water and sewer are in the roadway; other utilities also may be present. However, utilities, including sewer and water, natural gas distribution, and telecommunication lines, are expected to be present in the roadways in unknown locations. The utilities may present additional constraints if they cannot be relocated to provide enough room for the duct banks. Where road width is not sufficient, temporary or permanent widening of the road may be required. The Montclair Railroad Trail, a paved recreational trail located along the northern side of a portion of Shepherd Canyon Road, could potentially be used if additional width were needed. The trail would require long-term closures for geotechnical investigation

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

and then construction. Saroni Drive likely would need to be fully closed during construction activities for several weeks and Shepherd Canyon Road between Escher Drive and Oakland Fire Station No. 24 would close for up to several months; work areas within roadways typically require the width of at least two lanes and most of the roadways do not have a road shoulder.

Rationale for Carrying Forward

The Shepherd Canyon Road Underground Alternative would meet the project purpose and some of the objectives, although it would not be economical and would not minimize most of the environmental impacts associated with the proposed project. Exploratory borings and additional design may indicate that the alternative is not technically feasible. It appears to be one of the less technically constrained options for placing the lines underground through the central section. It provides a contrast to Alternative B, which has narrower and more winding roads but generally fewer landslide issues than Alternative C.

Public and Agency Comments

Community members have expressed an interest in an alternative that would underground power lines in residential areas, particularly in the central section.

4.2.3.4 Alternative E: Proposed Project with Campground Overhead Option

Description

Design and construction of this alternative would be the same as the proposed project from Moraga Substation to the two structures northwest of the Eastport Staging Area entrance of EBRPD Sibley Volcanic Regional Preserve (refer to Figure 4.2-6). The two structures would be replaced approximately 325 feet northwest of the existing locations, introducing an angle to the lines and moving the back spans farther away from a planned campground near the Eastport Staging Area entrance of EBRPD Sibley Volcanic Regional Preserve. The length of this portion of the alignment with the angle would increase the overall total 5-mile line length by approximately 100 feet. New easements would need to be acquired and the front spans would move out of PG&E property owned in fee. To maintain CPUC GO 95 compliance, vegetation management – including removal of trees – would be required within EBRPD Sibley Volcanic Regional Preserve and EBRPD Huckleberry Botanical Regional Preserve. Continuing southwest from this location, this alternative would be the same as the proposed project to Oakland X Substation. Impacts of this alternative would be similar to the proposed project.

Rationale for Carrying Forward

This alternative would meet the project purpose and objectives and appears to be feasible.

Public and Agency Comments

EBRPD agreed to this PG&E proposed option because it could reduce the visibility of the overhead lines during stargazing from the planned campground.

4.3 No Project Alternative

Section 15126.6(e) of the CEQA Guidelines requires that the No Project Alternative be considered to allow decision makers to compare the impacts of approving the proposed project against the impacts of not approving the proposed project. CEQA requires a discussion of what would be reasonably expected to occur in the foreseeable future if the project were not approved.

Under the No Project Alternative, the existing Moraga–Oakland X lines would not be replaced. Lifecycle updates of line structures would not be completed, leading to future reliability issues and potentially unsafe operations. Lifecycle updates would occur in a piecemeal fashion for years driven by ongoing

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

inspections that identify maintenance issues, including additional aging structure replacement. NERC recommendations to the industry for clearance and wildfire risk reduction would occur with each structure replacement over an indeterminate amount of time. In addition, forecasted load growth in the project area would not be accommodated and PG&E would be unable to meet future customer demands. The No Project Alternative would not meet project objectives in the intended timeframe.

4.4 Rejected Alternatives

This section discusses all alternatives considered by PG&E that were not selected for further analysis. For each alternative, this section provides a brief description of the alternative, a description of why the alternative was rejected, and comments from the public or agencies about the alternative. Table 4.2-1 provides a discussion of the extent to which each alternative would meet project purpose and objectives, its feasibility, its potential to reduce environmental impacts of the project, and any new impacts that could occur with its implementation.

4.4.1 Alternative D: All Overhead Rebuild in Existing Alignment

4.4.1.1 Description

This alternative would replace the power lines overhead in the existing ROW for the full length of the existing alignment (refer to Figure 4.2-5). Design and construction of this alternative would be the same as the project from Moraga Substation to approximately the intersection of Park Boulevard and Estates Drive. This alternative would have similar impacts to the proposed project in this portion of the alignment. Between the Park Boulevard/Estates Drive intersection and Oakland X Substation, new overhead structures would be replaced at or adjacent to the location of the existing structures. The new conductors would be installed on the new structures. Because approximately 80 residences are located immediately below the conductors and adjacent to structures, residents may need to be temporarily relocated during construction. New ROW may need to be acquired for new structure locations. This alternative would replace approximately 5 miles of lines overhead in the existing ROW.

4.4.1.2 Rationale for Rejection

This alternative would have extensive constructability issues for the replaced structures between Park Boulevard/Estates Drive and Oakland X Substation given the immediate proximity of residences. It would have severe impacts on land use from locating replacement structures mainly on residential property with limited PG&E property owned in fee in this portion of the lines. While it is likely that replaced structures would be monopoles or lattice steel poles that have a smaller footprint to the existing towers, land use is predominantly residential structures or roadways in the western section of the project. Insufficient space is available to install replacement structures within the existing ROW without extensive modification of private properties, including potentially removing residences or impacting adjacent property owner's limited backyard space to install replacement structures. Power demands of the project's lines create limited periods when one or two circuits can be taken out of service, or deenergized to replace towers without the conductor attached to tower arms. While it is feasible to take two circuits out of service for a few weeks in the winter months, those weeks may only allow removal and replacement of one or two existing structures during each outage. Replacing approximately 15 structures over potentially 5 to 10 years of annual seasonal planned outages does not meet the project's schedule. These issues make the alternative infeasible. Therefore, this alternative was rejected.

4.4.1.3 Public and Agency Comments

No public or agency comments were made on this alternative. It was identified internally during PG&E's alternatives development.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

4.4.2 Alternative F: Conceptual South Overhead Alignment

4.4.2.1 Description

The South Overhead Alignment Alternative would include construction of two new double-circuit lines, primarily overhead in a new ROW (refer to Figure 4.2-7). The new ROW would extend southwest from Moraga Substation through open space owned by EBMUD (Indian Valley Preserve Conservation Easement), EBRPD (Reinhardt Redwood Regional Park), and the City of Oakland (Joaquin Miller Park) and cross over SR 13/Hayward Fault. The Hayward Fault crosses Lincoln Avenue southwest of its intersection with Monterey Boulevard. The lines would remain overhead until they cross the Hayward Fault and only then transition below ground at an undetermined location west of SR 13 near Lincoln Avenue outside of the fault zone. The underground portion would be within Lincoln Avenue southwest to MacArthur Boulevard before continuing northwest into Excelsior Avenue and, finally, turning northeast on Kingsley Street and Park Boulevard Way to Oakland X Substation. This alignment would be a minimum of approximately 6 miles long, with approximately 3.5 miles of the 6 miles being overhead lines.

The existing four circuits of the Moraga–Oakland X 115 kV Line would be removed, including conductors and structures, using similar construction activities as the project. Construction of the underground portion of the alternative would entail similar activities as the project, for a greater length. Modifications of Moraga and Oakland X substations for this alternative would be similar to the project.

Construction of the new overhead lines portion would require acquisition of at least approximately 3.5 miles of new approximately 150- to 200-foot-wide ROW. New temporary and permanent access roads would be required for construction and operation. Trees and shrubs would be removed from the ROW. New lattice steel towers, lattice steel poles, and tubular steel poles would be constructed using similar construction methods as the proposed project. Construction would likely be completed with the use of helicopters over open space and parkland. Construction staging areas, including helicopter landing sites and pull sites, were not identified, but likely would be located within open space areas.

4.4.2.2 Rationale for Rejection

This alternative likely would not be legally feasible based on the need to acquire new ROW through CEs. In addition, it likely would have significant impacts to biological resources and aesthetics resulting from construction of new lines and ROW in an undeveloped area. Therefore, this alternative was rejected.

4.4.2.3 Public and Agency Comments

No public or agency comments were made on this alternative. It was identified internally during PG&E's alternatives development.

4.4.3 Alternative G: Distribution Energy Resources

4.4.3.1 Description

This alternative would implement improvements to reduce electrical system demand through distributed energy generation to the degree that the Moraga–Oakland X power lines are not needed. As discussed in Chapter 2, the structures are aging and the entire Moraga–Oakland X path requires replacement for safe operation of the lines. If it is not rebuilt, the Moraga–Oakland X path would require removal. If this alternative were to be done in lieu of the proposed project, it would need to replace at a minimum the energy demand at Oakland X Substation provided by the four 115 kV circuits with distribution energy resources. As discussed in Chapter 2, the forecasted demand at Oakland X Substation is approximately 43.31 MW for 2024 and approximately 103.1 MW in 2039.

A high-level review of this alternative assumed that the new load would be served using a solar and battery solution over a 24-hour period without weather or seasonal variation and with worst case energy consumption. The new power generation (solar and battery) was assumed to be 100 percent

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

renewable to inform the solar photovoltaic (PV) direct current system size. The power generated by the solar PV system would be stored in a battery that would maintain service of the load when the solar PV system was not generating (lack of sunlight).

To replace the approximately 43.31 MW load, a round number of 50 MW is used for this discussion. To provide a 50 MW constant load, the battery plant size is calculated by multiplying the load (50 MW) times the hours per day (24 hours). A 1.2 gigawatt hour (GWh) battery plant would be required to deliver 50 MW of constant load 24 hours per day.

Battery design generally sizes a battery with an assumed 20 percent degradation over 10 years. Using that progressive degradation, the initial battery plant would be sized to yield a 1.5 GWh battery plant on day 1 (1.2 GWh divided by 80 percent). PG&E would build in additional battery capacity to account for weather events such as extended storms with a conservatively sized 2 GWh battery power plant. Each 250 MW, 1 GWh Tesla Megapack requires 3 acres, and to store energy for the 50 MW load, two Megapacks, or 6 acres, of total battery plant would be needed (The Tesla Team 2019). Assuming the battery can only be charged by solar, and it cannot be charged from an electrical grid or from onsite diesel generation, then the solar PV plant would need to be capable of charging that battery completely during the day. The worst-case scenario would be wintertime charging, which offers (conservatively) only 2 solar hours per day, which would mean the solar PV direct current plant would need to be approximately 750 MW to charge the 2 GWh batteries. Typically, PG&E has found that 1 MW of solar PV requires approximately 6.89 acres of flat land. The solar PV plant would require approximately 5,167 acres (approximately 8 square miles) of solar fields to replace the load provided by the existing project power lines. The 500 MW, 2 GWh battery power plant would be an additional 6 acres. In addition, battery power plants typically are connected to a nonrenewable fuel source such as natural gas or a diesel plant to support load delivery when solar panels are blocked from receiving the solar energy during weather events such as extended storms. If the system was designed for the 2039 load forecast estimated at 103.1 MW, then the values could be doubled for an approximate estimate. Refer to Section 4.4.4 for additional discussion on energy storage.

4.4.3.2 Rationale for Rejection

Load relief has to be instantaneous and dependable, and the required amount would depend on the operating condition. Solar generation is time and weather limited. The Moraga–Oakland X power lines delivers power to two utilities (Port of Oakland and City of Alameda) that are not subject to CPUC jurisdiction. Therefore, the replacement of an approximately 43.31 MW demand at Oakland X Substation by distribution energy resources primarily would need to happen in the City of Oakland. As previously noted, this would require approximately 5,173 acres of solar fields and battery storage primarily within the City of Oakland. Vacant land of this size likely does not exist in Oakland. For example, the Oakland Coliseum property, perhaps the largest undeveloped site in Oakland, is approximately 112 acres (City of Oakland 2024). If the entire site were converted to solar generation, it would provide approximately 2 percent of the area required. To replace the current demand, a solar PV and battery plant would require flat areas approximately 46 times the size of the Oakland Coliseum Complex. In addition, the needed area for solar fields would have to more than double to meet demand in 2039. Relying on rooftop solar to meet the 43.31 MW demand is not feasible either. Approximately 42 million kWh of power is generated each year in Oakland through rooftop solar (SunPower n.d.), a level that took years to achieve, occurs only when the sun is shining, and represents only a fraction of the existing demand. Providing an additional 43.31 MW of power would take many years to generate though rooftop solar, long after the existing lines would require replacement. For these reasons, this alternative is largely infeasible.

PG&E did not perform a detailed analysis of a distribution energy resources alternative because it was determined that it would not meet the project's basic purpose and objectives. It is not technically feasible to reduce electrical system demand sufficiently to eliminate the need for the Moraga–Oakland X path. The existing facilities cannot be retained because the structures are aging, and the entire path requires replacement for safe operation of the lines.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

4.4.3.3 Public and Agency Comments

No public or agency comments were made on this alternative. It was included for consistency with CPUC *Guidelines for Energy Project Applications Requiring CEQA Compliance*.

4.4.4 Alternative H: Energy Storage

4.4.4.1 Description

This alternative would implement improvements to provide sufficient energy storage in the project area that the Moraga–Oakland X path would not be needed. As discussed in Chapter 2, the structures are aging and the entire Moraga–Oakland X path requires replacement for safe operation of the lines. If it is not rebuilt, the Moraga–Oakland X path would require removal. If this alternative were to be done in lieu of the proposed project, it would need to store energy within the East Bay to accommodate the increasing forecast demand of approximately 103.1 MW at Oakland X Substation in 2039. To supply approximately 100 MW, the load is multiplied by 24 hours and calculates the need for a 2.4 GWh battery plant. This would require approximately 9 acres for battery energy storage facilities, assuming Tesla Megapack technology of 3 GWh at 250 MW is required. The battery storage facility would need to be connected to a power source that could replenish the battery on a continual basis.

4.4.4.2 Rationale for Rejection

The Moraga–Oakland X path delivers power to two utilities (Port of Oakland and City of Alameda) that are not subject to CPUC jurisdiction. The energy storage would, therefore, need to happen in the City of Oakland. As discussed in Section 4.4.3, the City of Oakland may have sufficient vacant land to accommodate 9 acres of Tesla Megapack battery energy storage power plant and generation facilities, but it requires a source of energy to charge the batteries. Energy would have to be delivered to the energy storage through new power lines if not generated, which could have impacts at least comparable to the proposed project, or through distribution energy resources, for which sufficient vacant land likely is not available (refer to Section 4.4.3).

PG&E did not perform a detailed analysis of an energy storage alternative because it was determined that it would not meet the project's basic purpose and objectives. It is not technically feasible to provide sufficient energy storage in a densely developed urban area to eliminate the need for the Moraga–Oakland X path. The existing lines would require replacement long before the needed level of energy storage and supporting energy delivery could be constructed.

4.4.4.3 Public and Agency Comments

No public or agency comments were made on this alternative. It was included for consistency with CPUC *Guidelines for Energy Project Applications Requiring CEQA Compliance*.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

9. References

9.1 Chapter 1. Executive Summary

None.

9.2 Chapter 2. Introduction

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9.3 Chapter 3. Proposed Project Description

None.

9.4 Chapter 4. Description of Alternatives

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9.5 Chapter 5. Environmental Analysis

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Comment Set E01 – Pacific Gas and Electric Company (continued)

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Figures

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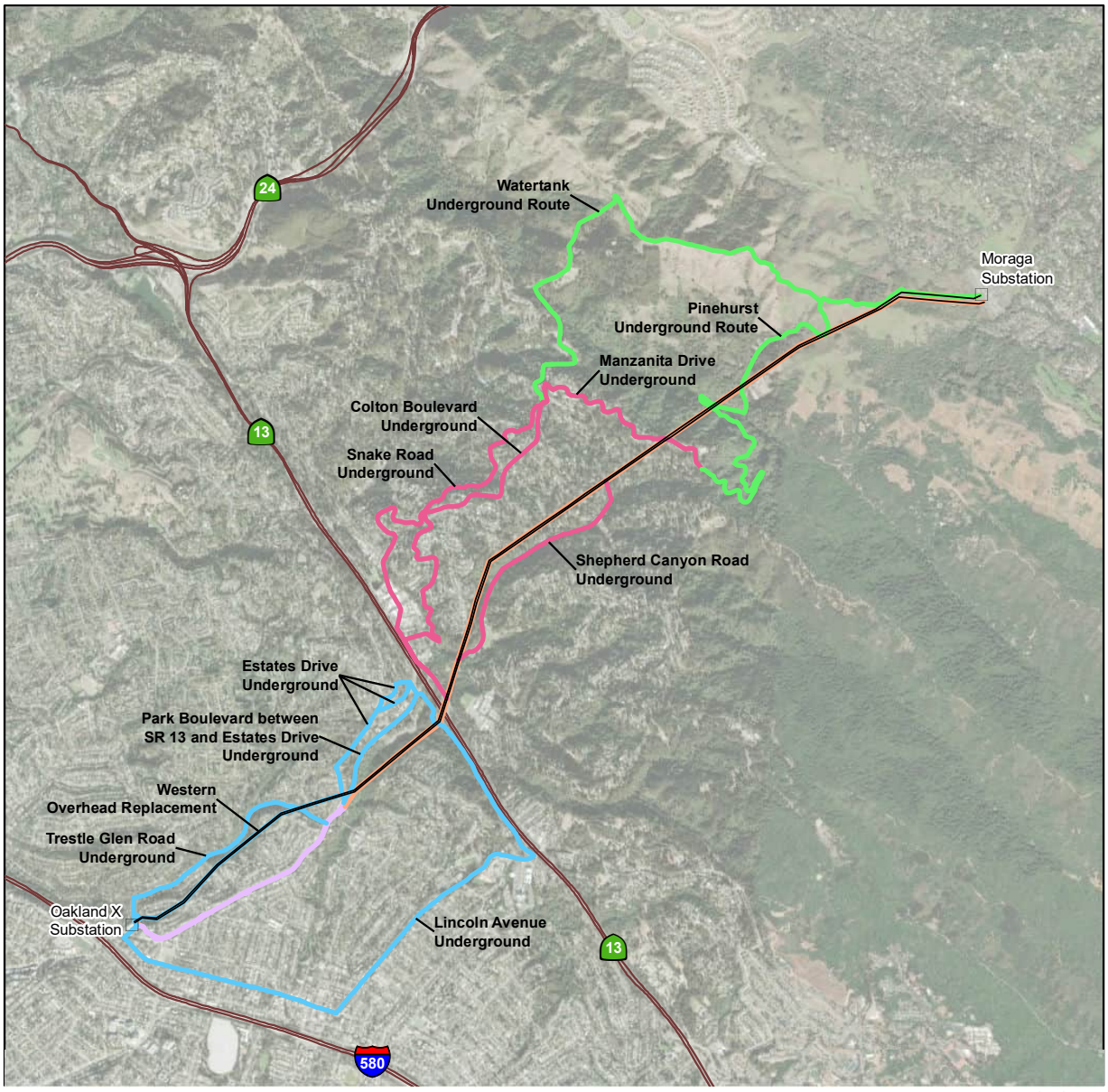

Version: 10/24/2024

Legend

- Substation
- Existing Overhead Route

Proposed Project

- Proposed Overhead
- Proposed Underground

Replacement Route (Overhead and Underground) Options

- Eastern Section
- Central Section
- Western Section

N

0 0.5 1

Miles

Figure 4.2-1a
Replacement Route (Overhead and Underground) Options
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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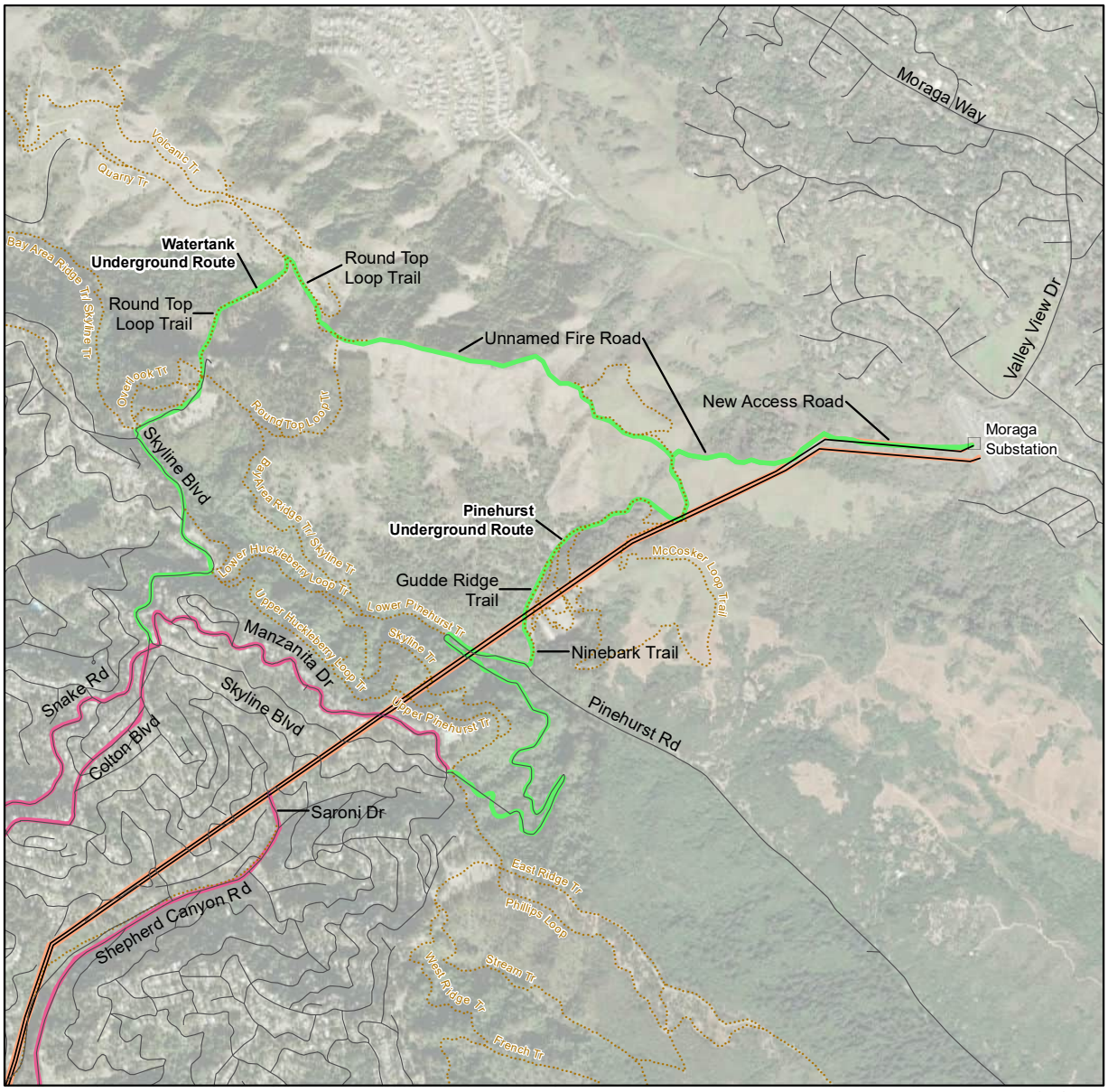

Version: 10/24/2024

Legend

- Substation
- Trail
- Existing Overhead Route

Proposed Project

- Proposed Overhead

Replacement Route (Overhead and Underground) Options

- Eastern Section
- Central Section

N

0 0.25 0.5

Miles

Figure 4.2-1b
Replacement Route (Overhead and Underground) Options
Eastern Section
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

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Comment Set E01 – Pacific Gas and Electric Company (continued)

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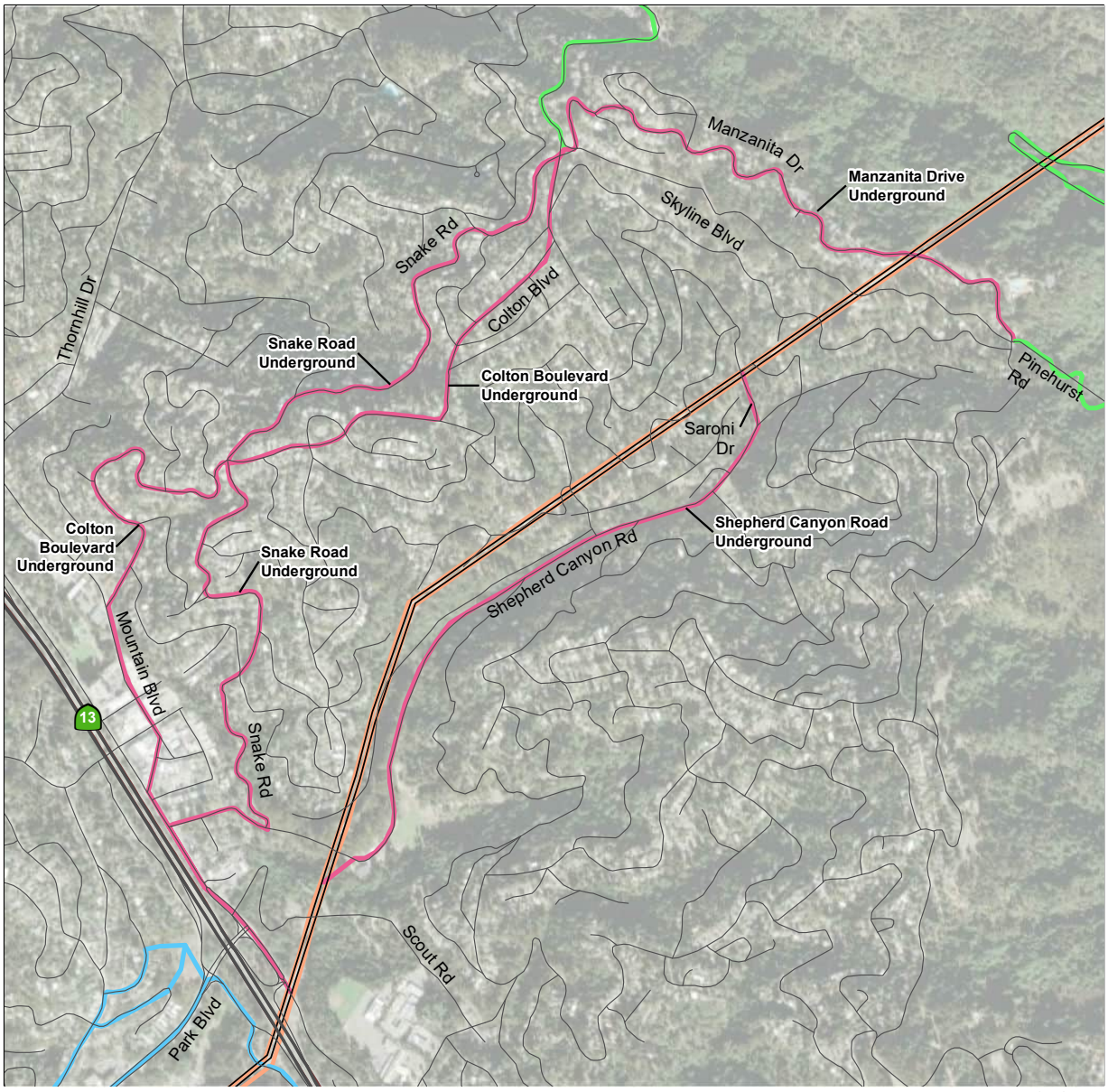

Version: 10/24/2024

Legend

- Substation
- Existing Overhead Route

Proposed Project

- Proposed Overhead

Replacement Route (Overhead and Underground) Options

- Eastern Section
- Central Section
- Western Section

N

0 0.25 0.5

Miles

Figure 4.2-1c
Replacement Route (Overhead and Underground) Options
Central Section
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

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Comment Set E01 – Pacific Gas and Electric Company (continued)

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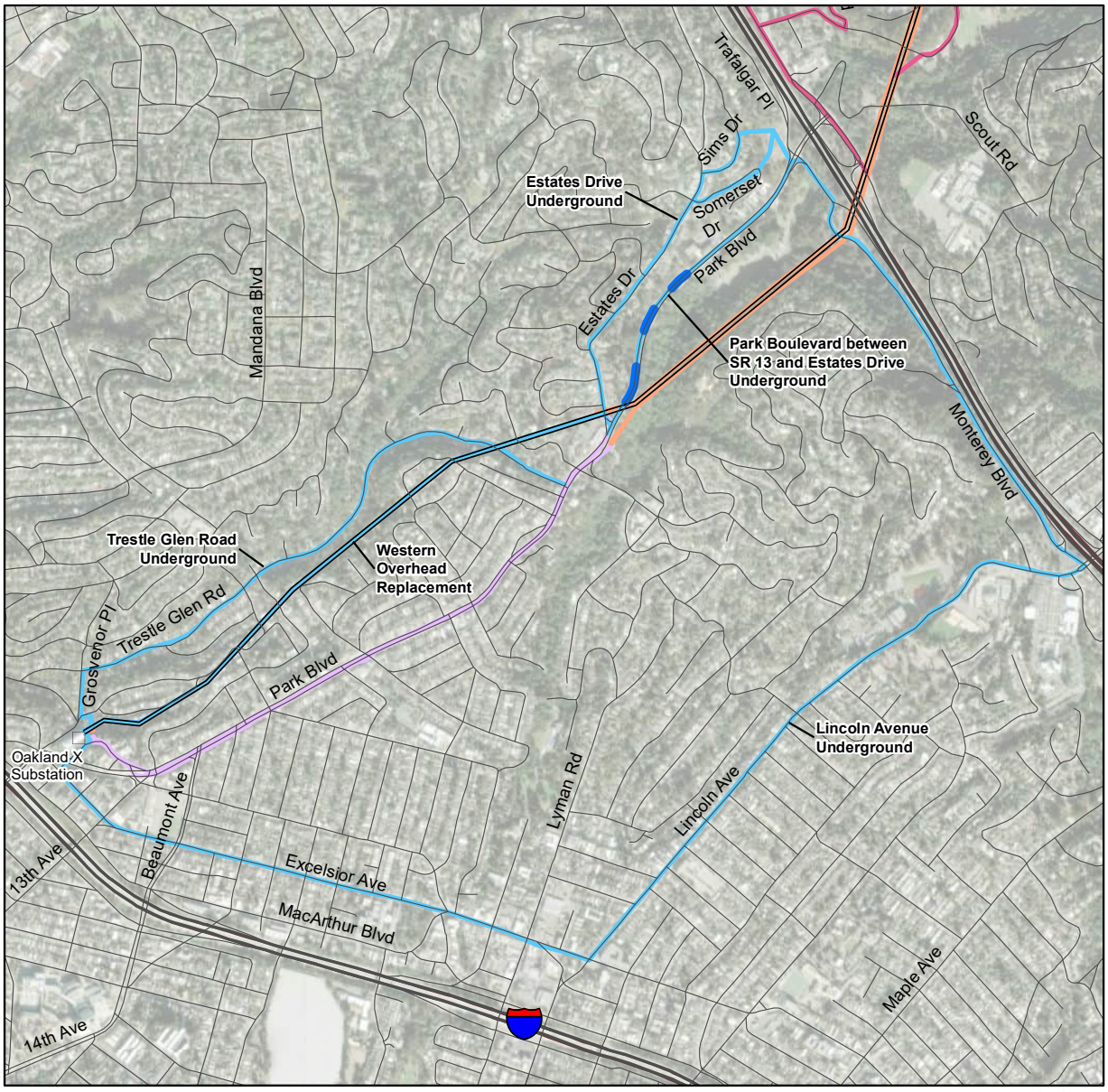

Version: 10/24/2024

Legend

- Substation
- Existing Overhead Route

Proposed Project

- Proposed Overhead
- Proposed Underground

Replacement Route (Overhead and Underground) Options

- Central Section
- Western Section
- Park Boulevard Viaduct

N

0 0.25 0.5

Miles

Figure 4.2-1d
Replacement Route (Overhead and Underground) Options
Western Section
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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Comment Set E01 – Pacific Gas and Electric Company (continued)

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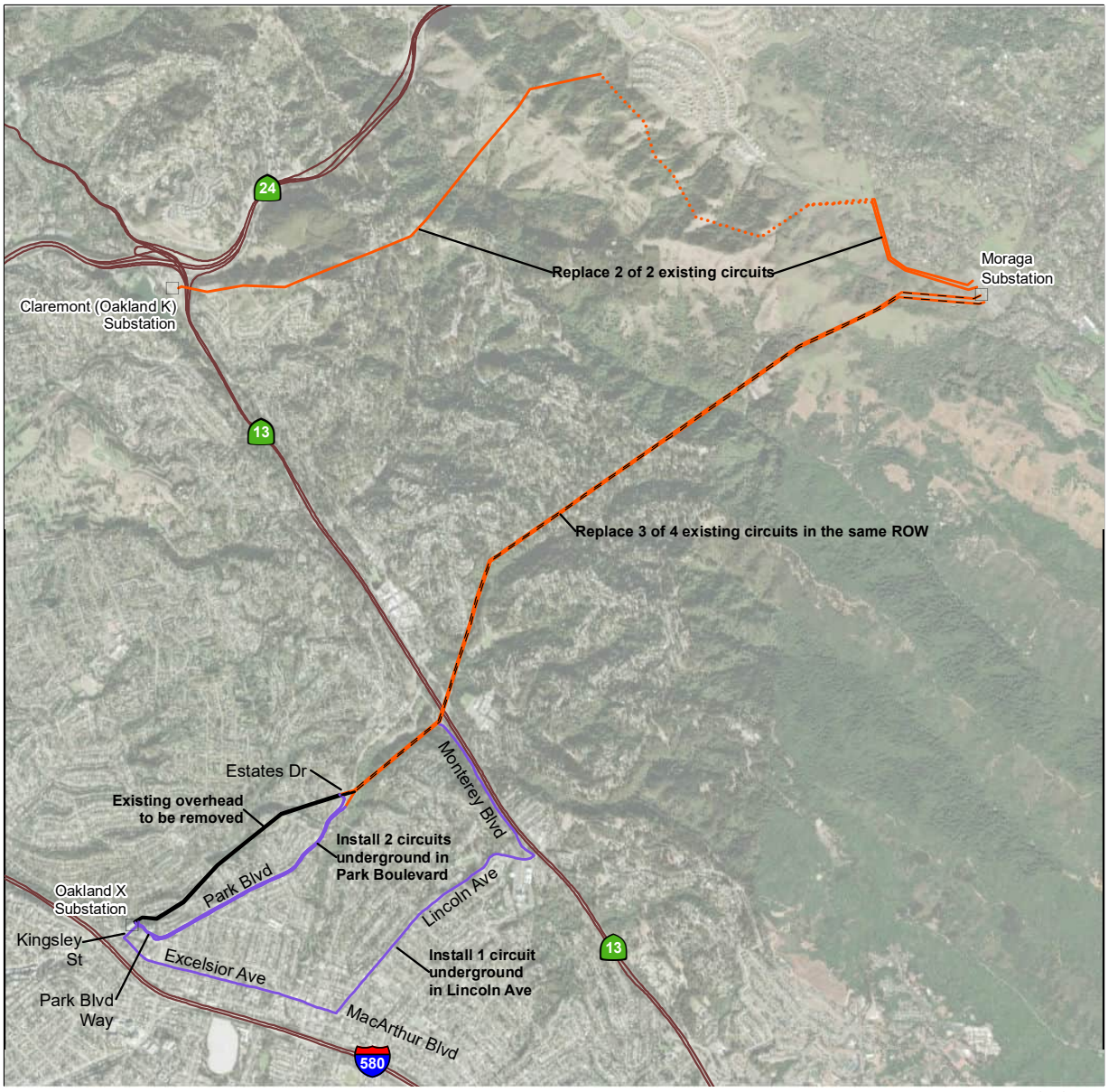

Version: 6/11/2024

Legend

- Substation
- Existing Overhead Route

Alternative A: Moraga–Oakland X 3-Circuit Replacement with Moraga–Claremont Reconductoring and Park Boulevard/Lincoln Avenue Underground

- Overhead Reconductor
- Existing Overhead to be Removed
- Underground
- Overhead (no work)

N

0 0.5 1
Miles

Figure 4.2-2
Alternative A: Moraga–Oakland X 3-Circuit Replacement with Moraga–Claremont Reconductoring and Park Boulevard/Lincoln Avenue Underground
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

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Comment Set E01 – Pacific Gas and Electric Company (continued)

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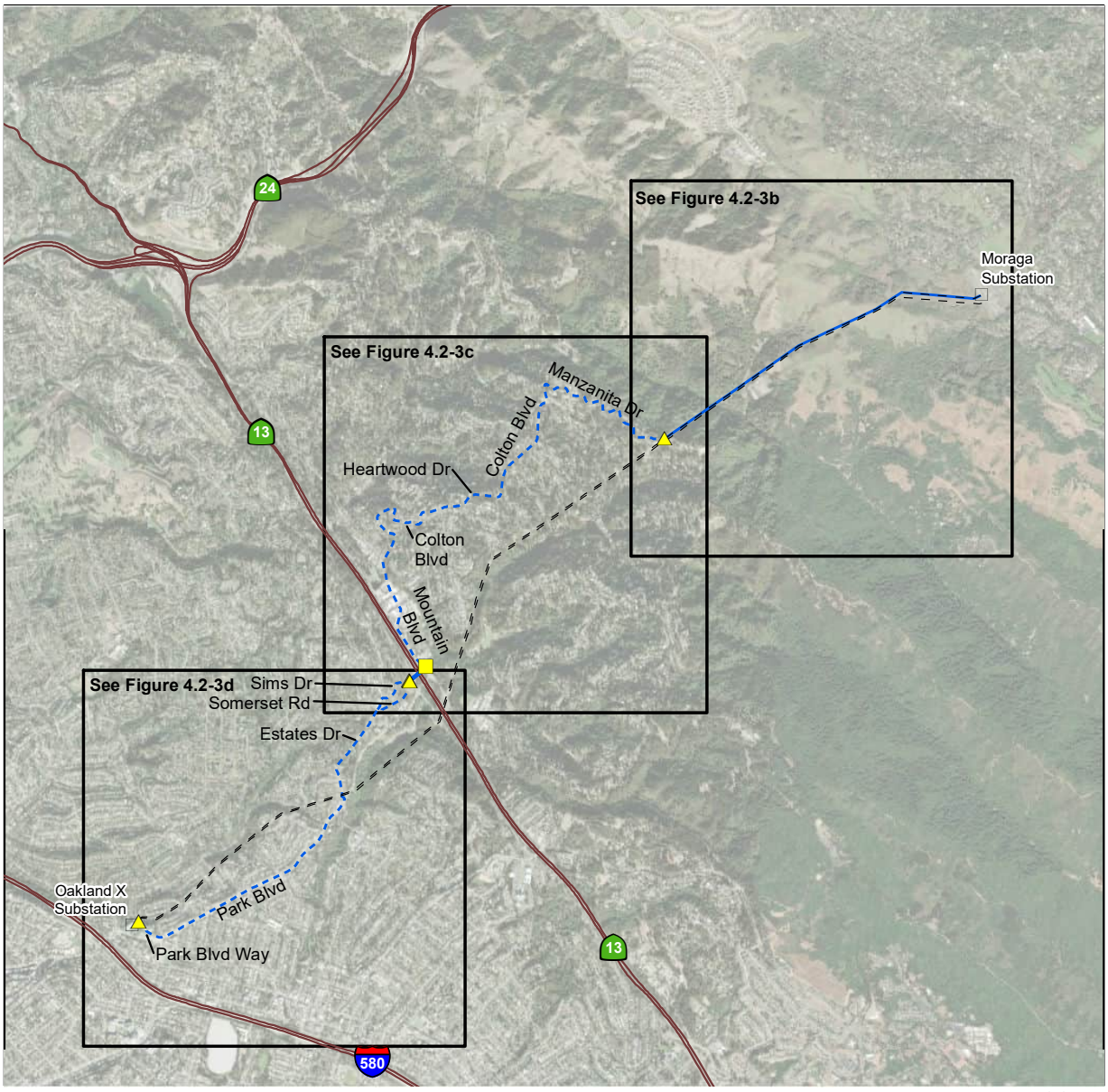

Version: 11/7/2024

Legend

- Detail Map Sheet
- Substation
- Existing Overhead Route

Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground

- Overhead
- Underground
- Transition Station
- Transition Poles

N

0 0.5 1
Miles

Figure 4.2-3a
Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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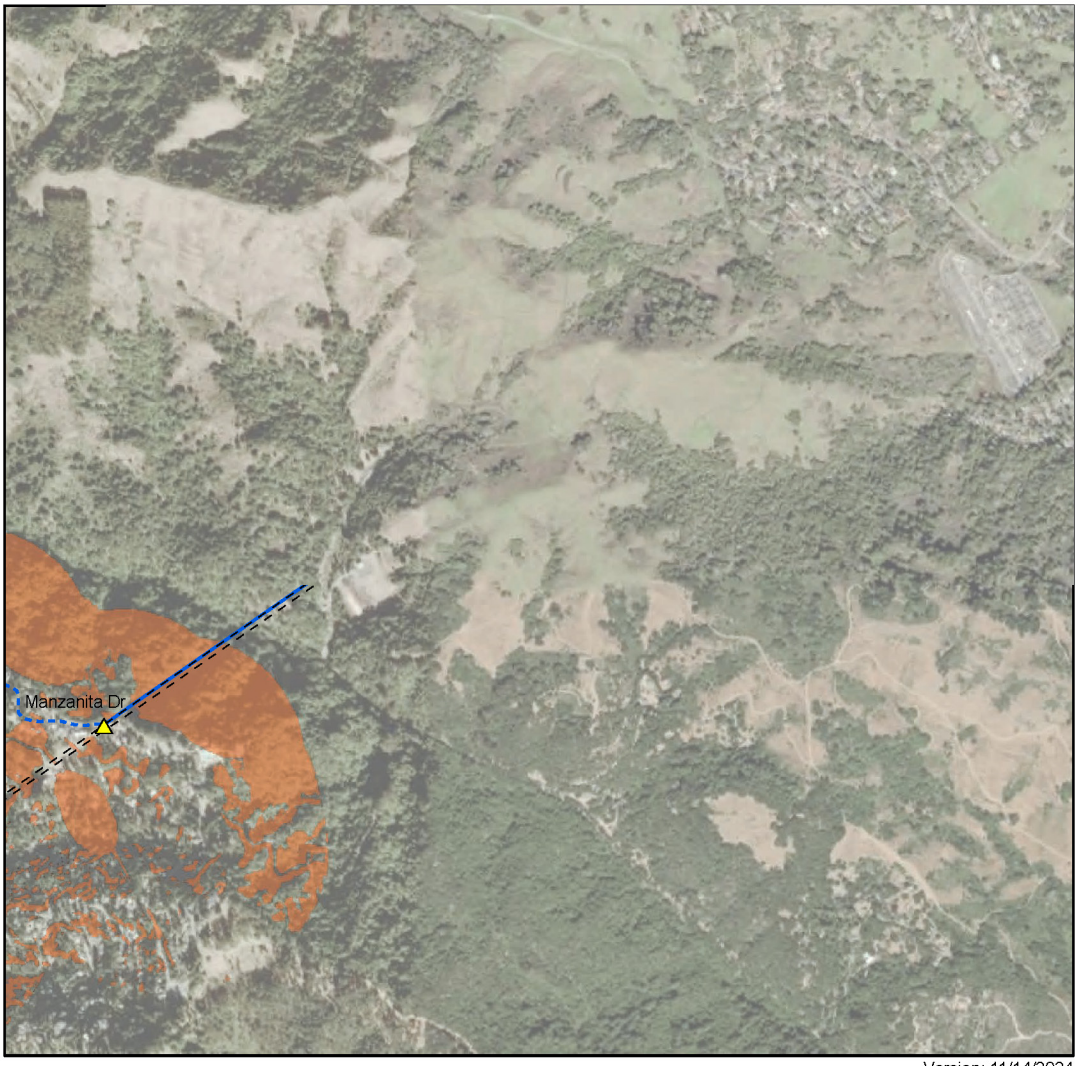
Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)



Version: 11/14/2024

Legend

- Substation
- Existing Overhead Route
- Locations with greater than 50% probability of underground duct bank failure due to landslide potential (PG&E 2024)

Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground

- Overhead
- Underground
- Transition Poles

N

0 0.25 0.5

Miles

Figure 4.2-3b
Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground - Eastern Section
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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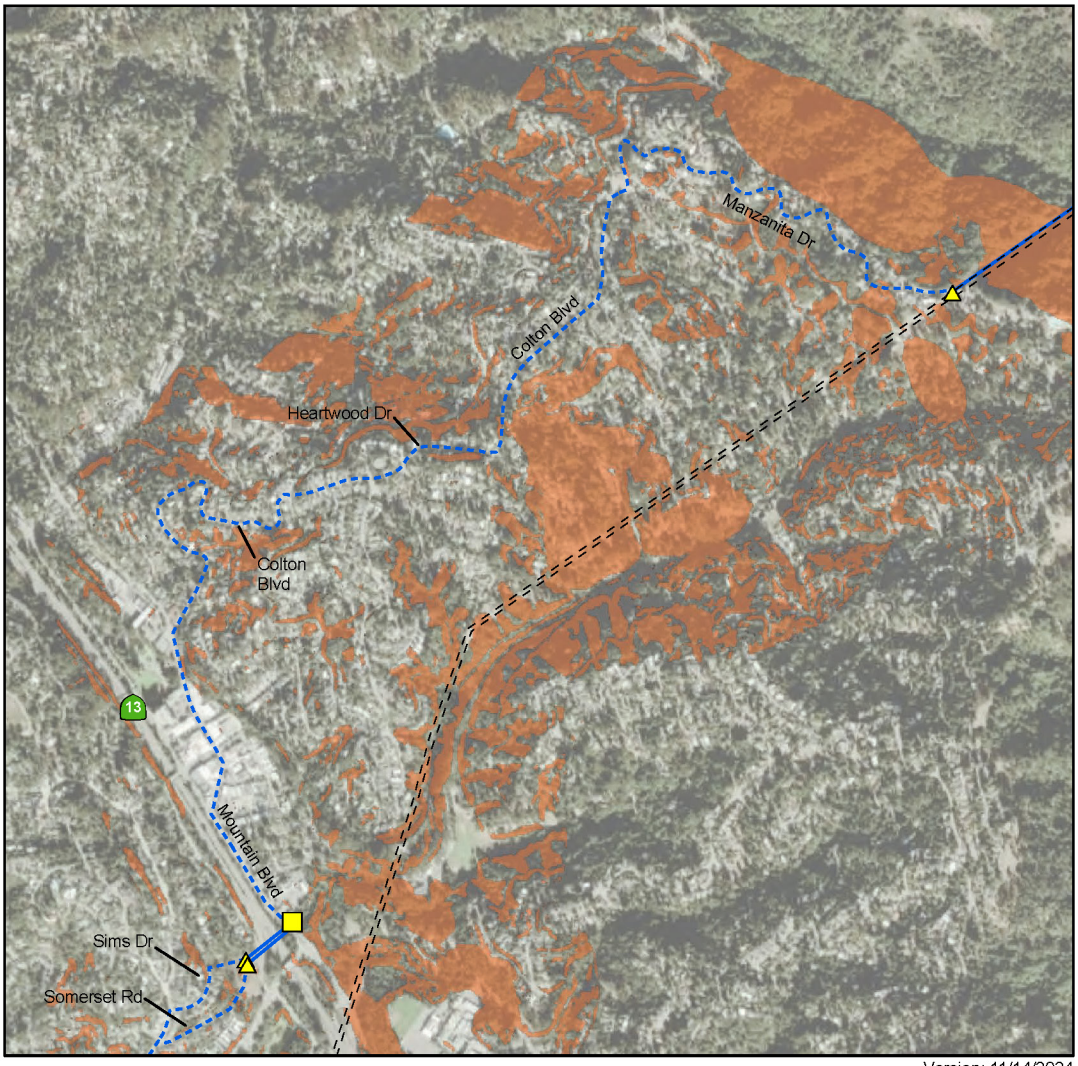
Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)



Version: 11/14/2024

Legend

- Substation
- Existing Overhead Route
- Locations with greater than 50% probability of underground duct bank failure due to landslide potential (PG&E 2024)

Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground

- Overhead
- Underground
- Transition Station (approximate location)
- Transition Poles

N

0 0.25 0.5

Miles

Figure 4.2-3c
Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground - Central Section
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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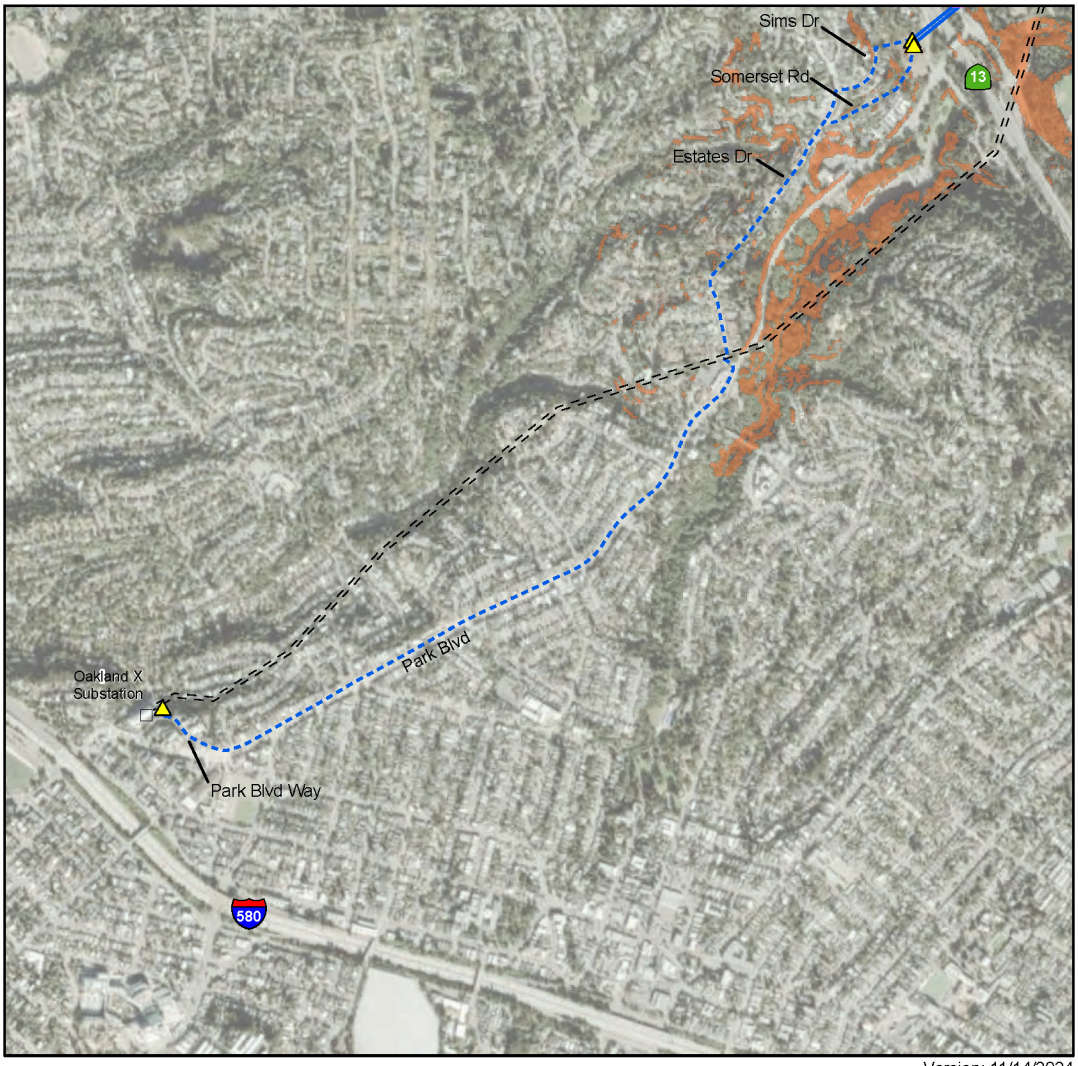
Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)



Version: 11/14/2024

Legend

- Substation
- Existing Overhead Route
- Locations with greater than 50% probability of underground duct bank failure due to landslide potential (PG&E 2024)

Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground

- Overhead
- Underground
- Transition Poles

N

0 0.25 0.5

Miles

Figure 4.2-3d
Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground - Western Section
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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Comment Set E01 – Pacific Gas and Electric Company (continued)

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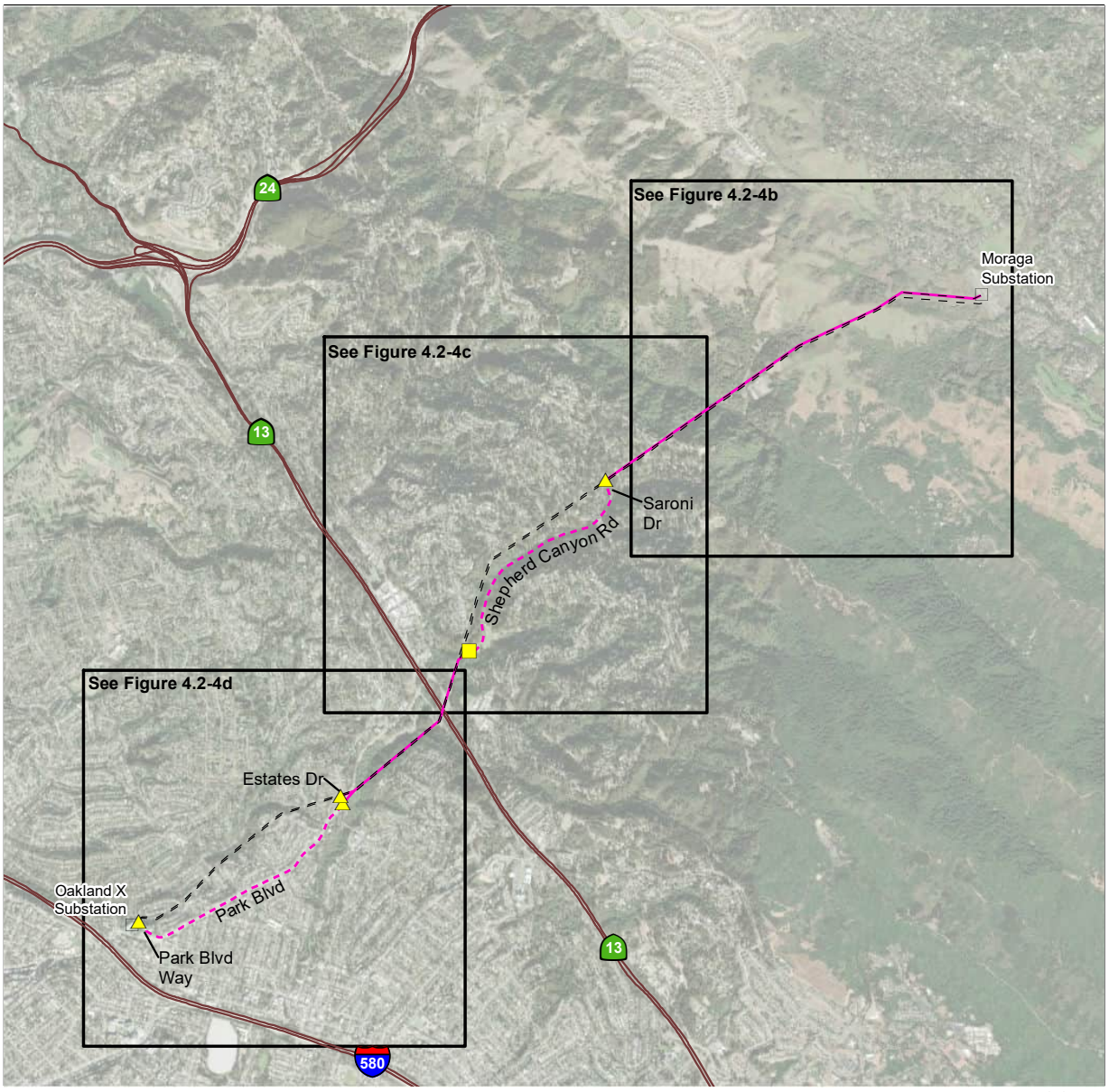

Version: 11/7/2024

Legend

- Detail Map Sheet
- Substation
- Existing Overhead Route

Alternative C: Shepherd Canyon Road Underground

- Overhead
- Underground
- Transition Station
- Transition Poles

N

0 0.5 1

Miles

Figure 4.2-4a
Alternative C: Shepherd Canyon Road Underground
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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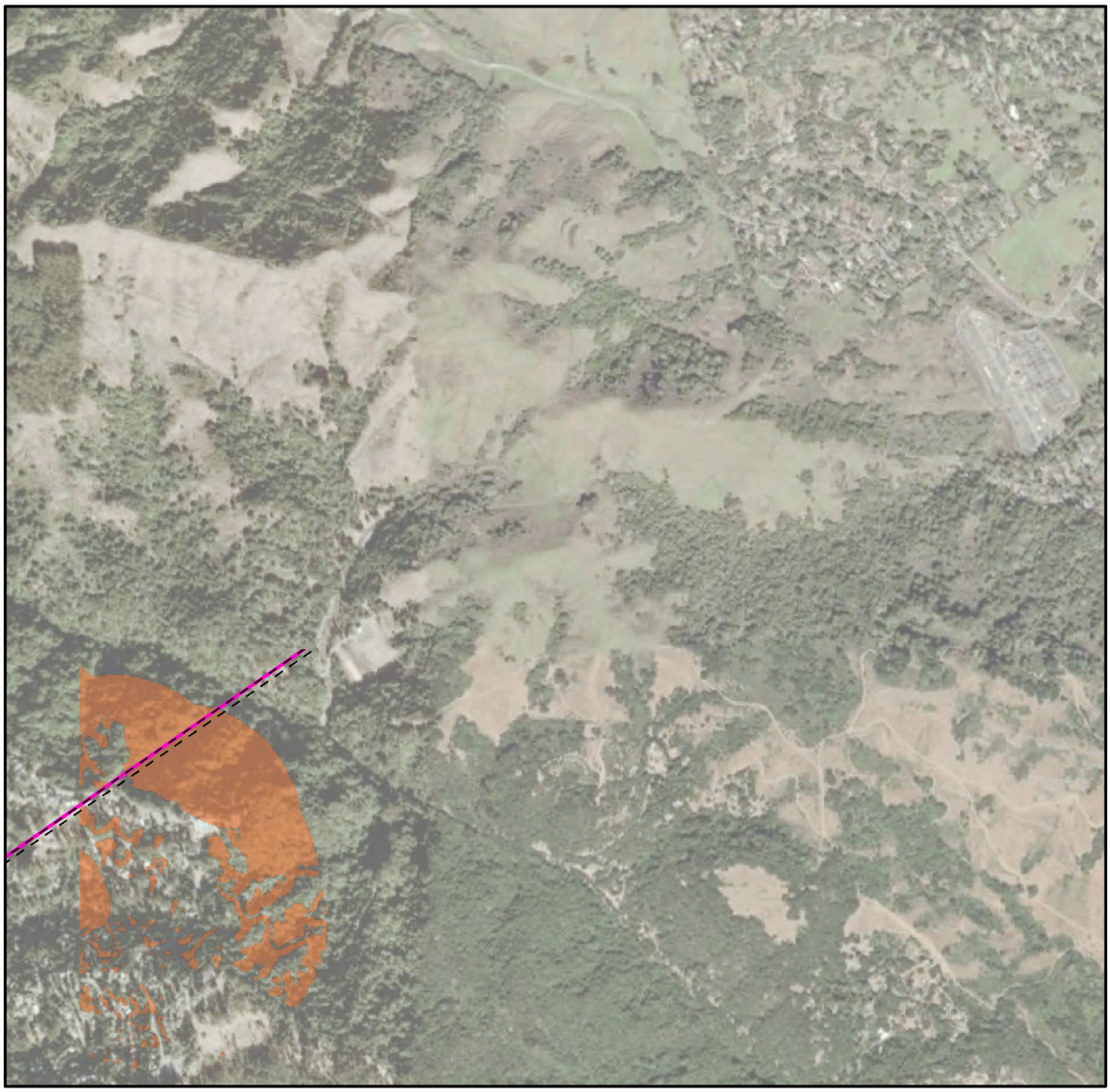
Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)



Version: 11/14/2024

Legend

- Substation
- Existing Overhead Route
- Locations with greater than 50% probability of underground duct bank failure due to landslide potential (PG&E 2024)

Alternative C: Shepherd Canyon Road Underground

- Overhead
- Underground

N

0 0.25 0.5

Miles

Figure 4.2-4b
Alternative C: Shepherd Canyon Road Underground - Eastern Section Moraga-Oakland X 115 kV Rebuild Project Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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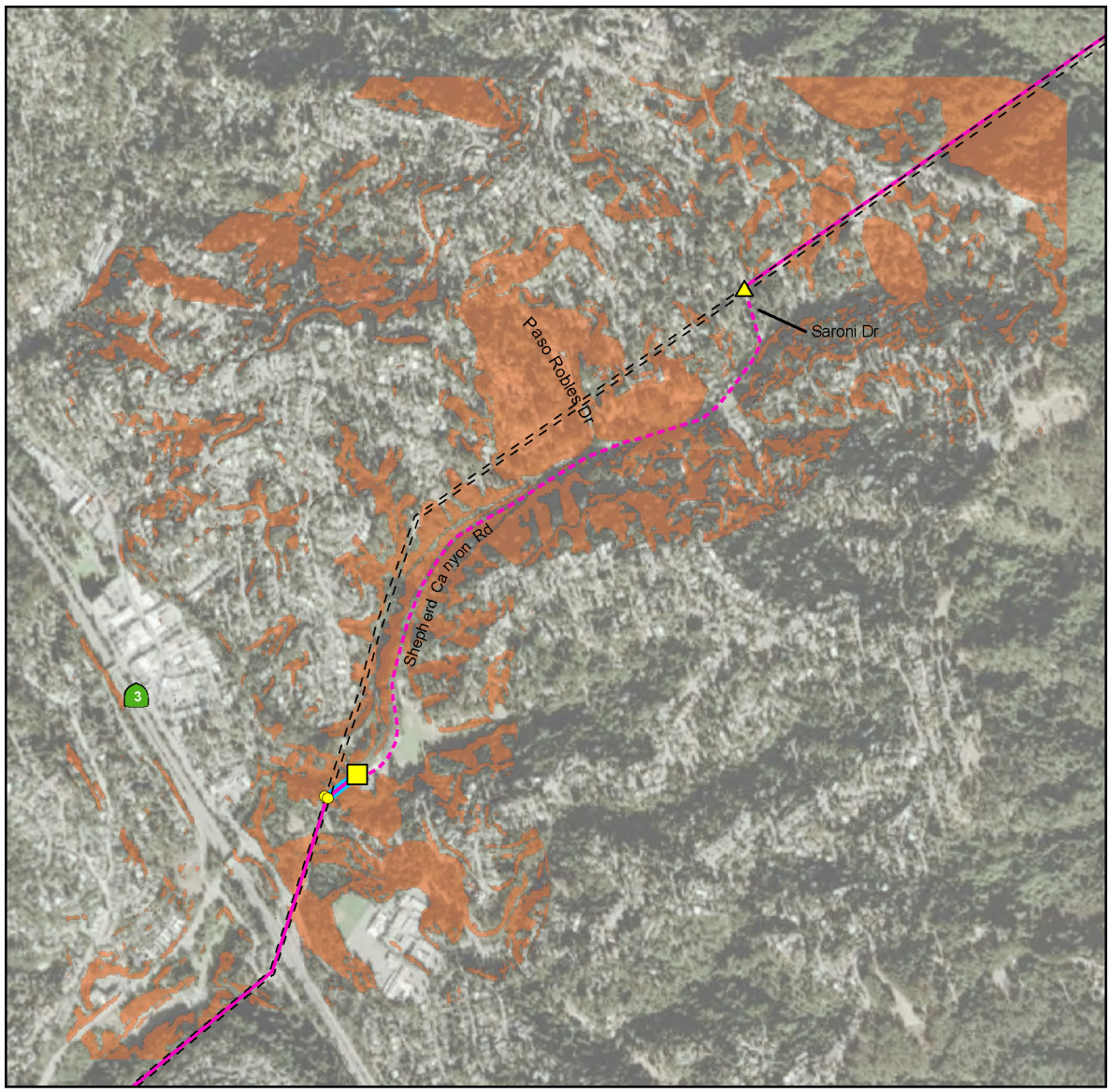
Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)



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Legend

- Substation
- Existing Overhead Route
- Locations with greater than 50% probability of underground duct bank failure due to landslide potential (PG&E 2024)

Alternative C: Shepherd Canyon Road Underground

- Overhead
- Underground
- Transition Station (approximate location)
- New Alternative C Structure
- New Alternative C Overhead Span Transition Poles

N

0 0.25 0.5

Miles

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Figure 4.2-4c
Alternative C: Shepherd Canyon Road Underground - Central Section Moraga-Oakland X 115 kV Rebuild Project Pacific Gas & Electric Company

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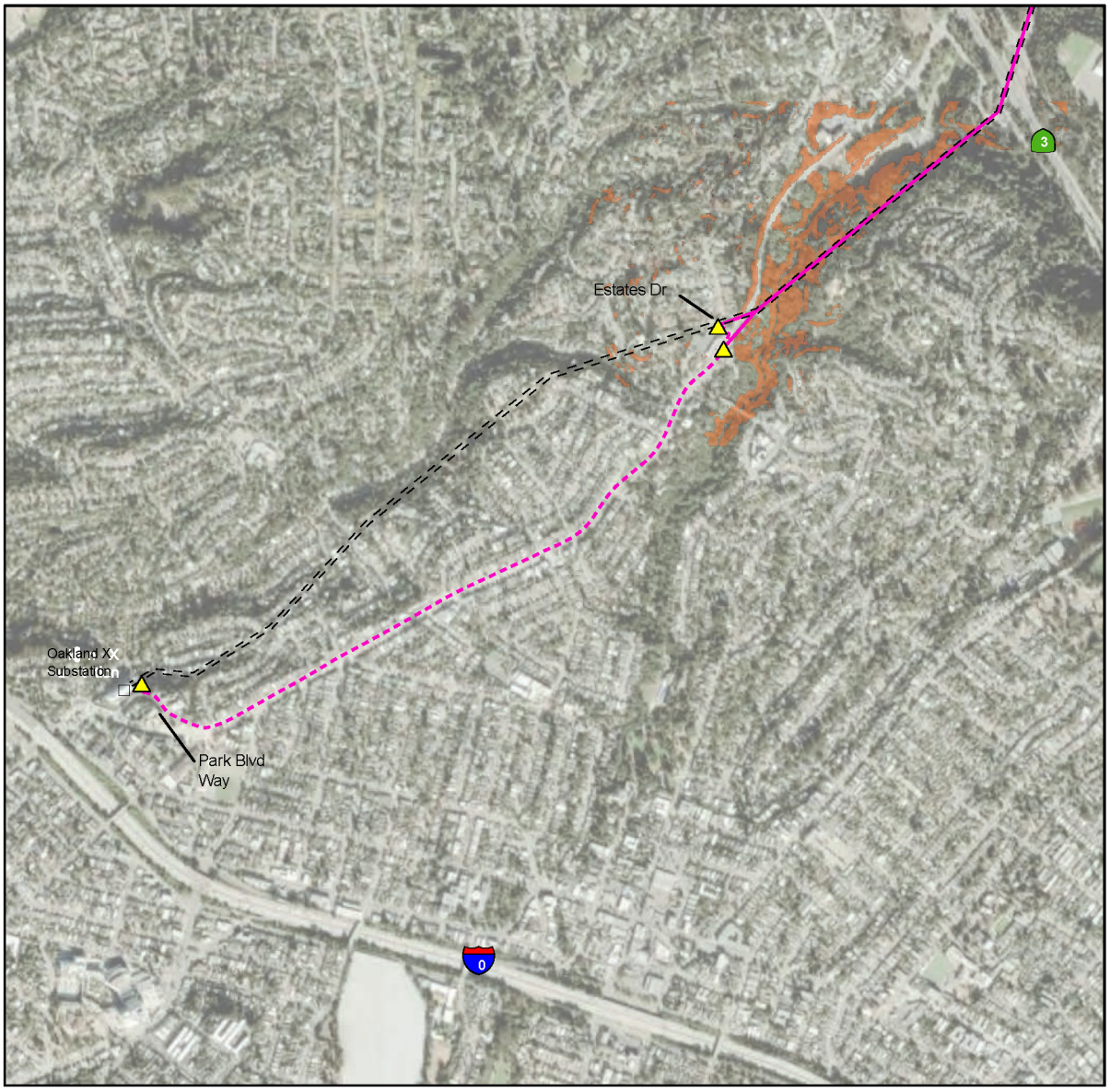
Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)



Legend

- Substation
- Existing Overhead Route
- Locations with greater than 50% probability of underground duct bank failure due to landslide potential (PG&E 2024)

Alternative C: Shepherd Canyon Road Underground

- Overhead
- Underground
- Transition Poles

Version: 11/14/2024

N

0 0.25 0.5

Miles

Figure 4.2-4d
Alternative C: Shepherd Canyon Road Underground - Western Section Moraga-Oakland X 115 kV Rebuild Project Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

Version: 6/11/2024

Legend

- Substation
- Existing Overhead Route

Alternative D: All Overhead Replacement in Existing Alignment

- Overhead

N

0 0.5 1

Miles

Figure 4.2-5
Alternative D: All Overhead Replacement in Existing Alignment
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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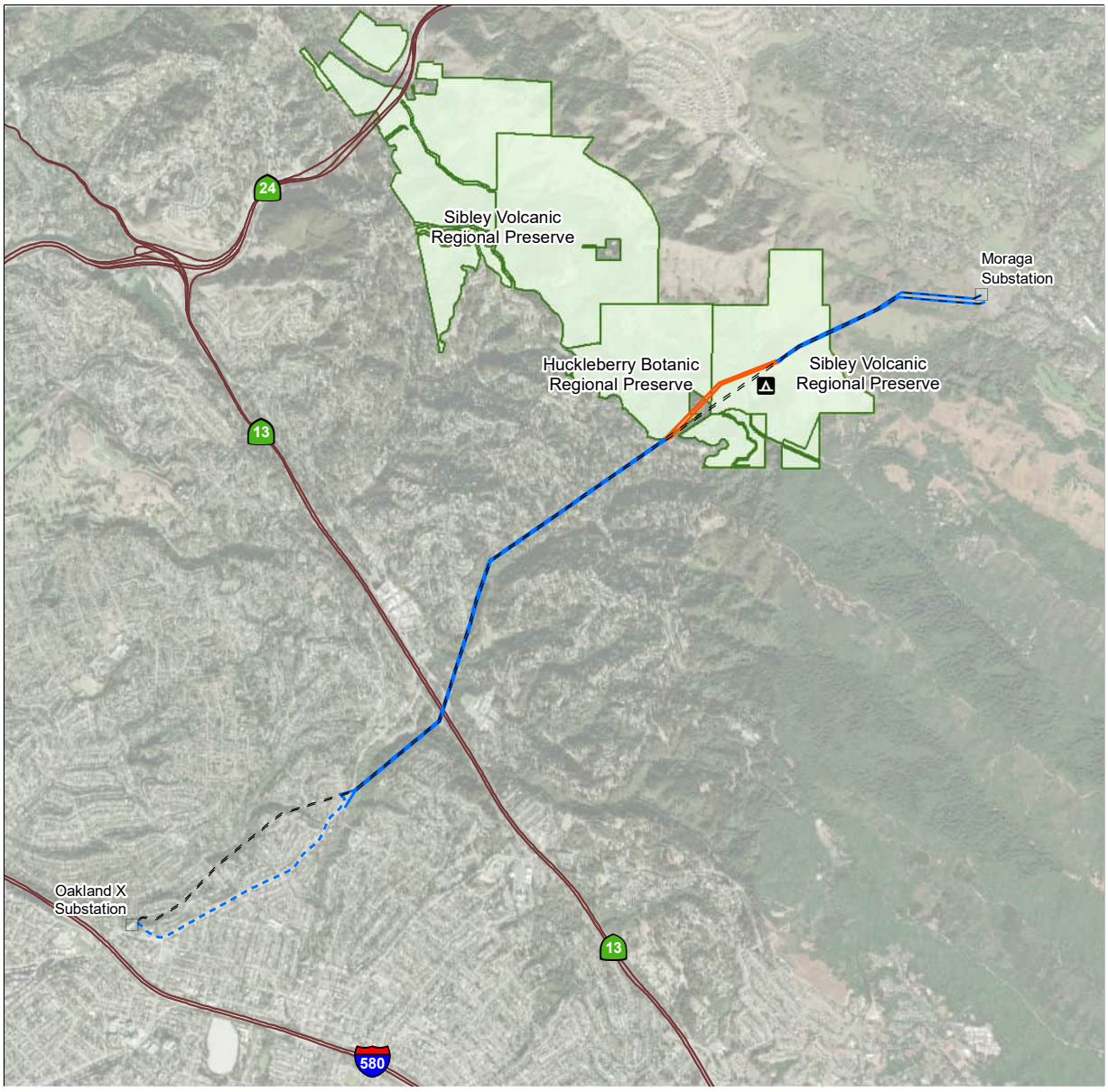
E01-133 (cont'd)



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Legend

- Substation
- Existing Overhead Route
- East Bay Regional Park District (EBRPD): Huckleberry Botanic Regional Preserve and Sibley Volcanic Regional Preserve
- Planned Campground

Alternative E: Proposed Project with Campground Overhead Option

- Overhead - Campground
- Overhead
- Underground

N

0 0.5 1
Miles

Figure 4.2-6
Alternative E: Proposed Project with Campground Overhead Option
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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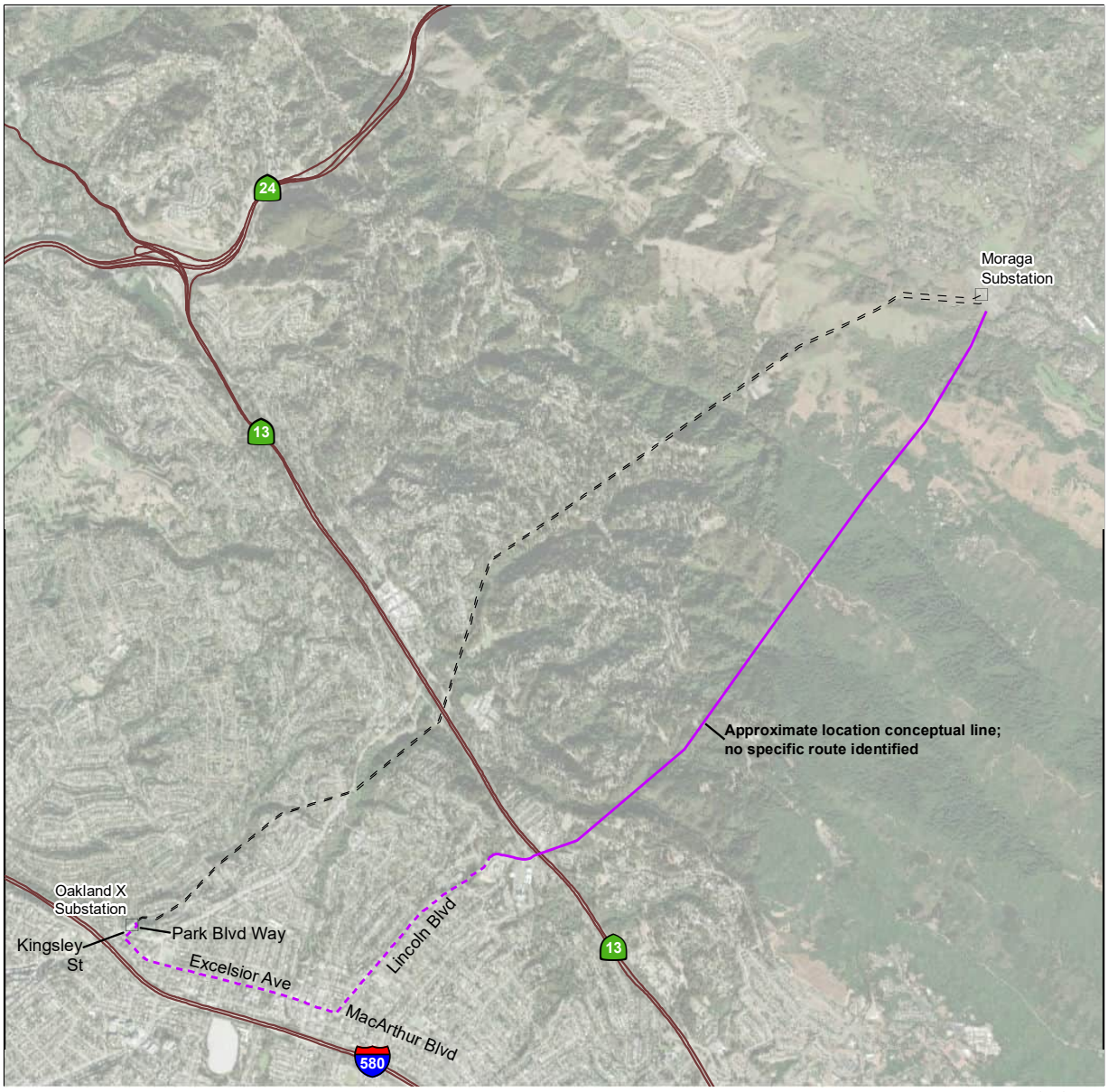
Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)



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Legend

- Substation
- Existing Overhead Route

Alternative F: Conceptual South Overhead Alignment

- Overhead
- Underground

N

0 0.5 1

Miles

Figure 4.2-7
Alternative F: Conceptual South Overhead Alignment
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Jacobs

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Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

Figure 4.2-8
Example Transition Station with Two 230 kV Circuits in an Approximately 0.3-acre Yard
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

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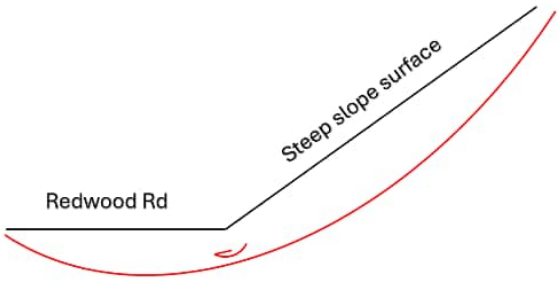
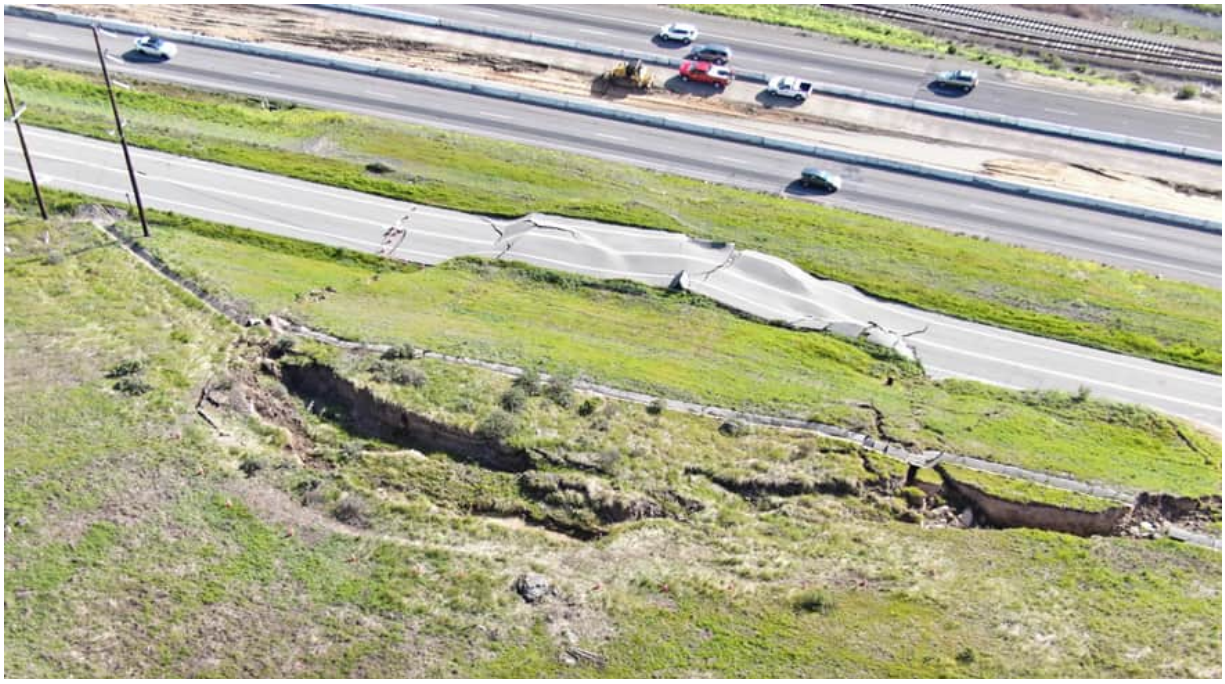
Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

View of the approximate 3 to 4 feet of vertical displacement.



Landslide profile showing a failure plane under roadway.



A deep-seated landslide with a failure plane extending under roadway.

Figure 4.2-9
Example Landslide Failure Plane and Roadway Uplift of Redwood Road in Novato, California
Moraga-Oakland X 115 kV Rebuild Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

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Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

6. Comparison of Alternatives

Section 15126.6 of the CEQA Guidelines requires that a range of reasonable alternatives for a 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, be described in an EIR. The EIR also must evaluate the comparative merits of the alternatives. The CEQA Guidelines also require an evaluation of the No Project Alternative. Because the CPUC may do an EIR for the state environmental document, this PEA section has been prepared consistent with CEQA requirements to support the CPUC action.

Section 6.1 provides a brief summary of the four alternatives to the proposed project and the No Project Alternative. The section also describes the approach for comparing the potential impacts of the alternatives to the proposed project. Section 6.2 includes the environmental setting and potential impacts of the four alternatives to the proposed project. Section 6.3 provides a summary of the alternative comparison results and ranks the alternatives in order of environmental superiority.

6.1 Alternatives Comparison

This chapter compares the potential impacts of alternatives, including the No Project Alternative, against the proposed project. The comparison of potential impacts is organized with a proposed project discussion followed by the discussions for each of the possible project alternatives. The chapter concludes with ranking the proposed project and the alternatives and summarizing the potential impacts for each.

6.1.1 Alternatives Compared

Chapter 4 of this PEA describes four possible alternatives carried forward for evaluation against the proposed project: the Moraga–Oakland X 3-Circuit Replacement with Moraga–Claremont Reconductoring and Park Boulevard/Lincoln Avenue Underground Alternative (Alternative A); the Manzanita Drive-Colton Boulevard-Estates Drive Underground Alternative (Alternative B); the Shepherd Canyon Road Underground Alternative (Alternative C); and the Proposed Project with Campground Overhead Option Alternative (Alternative E). These alternatives would meet the underlying project purpose and objectives and are potentially feasible. The following paragraphs briefly summarize these alternatives as well as the No Project Alternative. Refer to Chapter 4 for additional detail on Alternatives A, B, C, and E.

Alternative A: Moraga–Oakland X 3-Circuit Replacement with Moraga–Claremont Reconductoring and Park Boulevard/Lincoln Avenue Underground Alternative. This alternative would replace three of the four existing Moraga–Oakland X circuits within the same ROW from Moraga Substation to the intersection with Monterey Boulevard. From there, one circuit would be installed underground southeast in Monterey Boulevard and Lincoln Avenue to Oakland X Substation for a total of approximately 3.1 miles. The other two circuits would continue overhead in the ROW on one set of double-circuit structures to the intersection of Estates Drive and Park Boulevard and transition to underground to Oakland X Substation in the same streets as the proposed project. In addition, Alternative A would include reconductoring two portions of the Moraga–Claremont Circuits 1 and 2 115 kV lines (approximately 3 miles total), which would include replacing conductors and would likely include replacement of structures, primarily in parks and open space but also through and adjacent to residential neighborhoods in Orinda and Oakland. Alternative A had been one of PG&E's Northern Oakland Area Reinforcement projects, and it represents a different engineering alternative to the proposed project with a different type of overhead conductor and underground cable configuration.

Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground Alternative. All four of the existing Moraga–Oakland X 115 kV lines would be replaced overhead in the existing ROW in the eastern section, in Contra Costa County, the same as the proposed project. In the central and western sections of the project, the lines would be replaced underground in Oakland and Piedmont and the existing overhead lines would be removed. An overhead span between new riser poles and a transition

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

station (approximately 0.5 acre) would be used to cross over SR 13 and the Hayward Fault. New riser poles also would be required near Manzanita Drive where the lines transition from aboveground to underground. The western-most mile of underground line between the intersection of Estates Drive and Park Boulevard and Oakland X Substation would be the same as the proposed project. This alternative would have approximately 1.6 miles of lines replaced overhead and approximately 4.2 miles of lines replaced underground.

Alternative C: Shepherd Canyon Road Underground Alternative. All four of the existing Moraga–Oakland X 115 kV lines would be replaced overhead in the existing ROW in the eastern section and part of the central section, matching the proposed project. From there, the route would transition underground at approximately the intersection of Saroni Drive and Gunn Drive, and the two double duct banks would go south in Saroni Drive for approximately 0.1 miles to Shepherd Canyon Road and progress westbound for approximately 1.0 mile. The lines would transition to aboveground in a transition station near the City of Oakland Municipal Service Yard. From there, the four circuits would connect to two new structures north of Shephard Creek before connecting to the existing ROW to cross SR 13 and the Hayward Fault. The four circuits would continue overhead in the existing ROW to the intersection of Estates Drive and Park Boulevard, where they would transition underground in Park Boulevard and Park Boulevard Way to Oakland X Substation in the western section, also matching the proposed project. This alternative would have approximately 3 miles of lines replaced overhead and approximately 2 miles of lines replaced underground.

Alternative E: Proposed Project with Campground Overhead Option Alternative. This alternative would be the same as the proposed project other than the two structures northwest of the Eastport Staging Area entrance of the EBRPD Sibley Volcanic Regional Preserve. The two structures would be replaced approximately 325 feet northwest of the existing locations. This alternative was developed to provide better maintenance access in the future next to an existing access road with a flatter surrounding work area and to place them farther from the planned group campground in Sibley Volcanic Regional Preserve. The length of this portion of the alignment with the angle would increase the overall total approximately 5-mile line length by approximately 100 feet.

No Project Alternative. Under the No Project Alternative, the existing Moraga–Oakland X lines would not be replaced. Lifecycle updates of line structures would not be completed, leading to future reliability issues and potentially unsafe operations. Lifecycle updates would occur in a piecemeal fashion for years driven by ongoing inspections that identify maintenance issues, including additional aging structure replacement. NERC recommendations to the industry for clearance and wildfire risk reduction would be implemented with each structure replacement over an indeterminate amount of time.

6.1.2 Comparison Approach

As discussed in Sections 5.1 through 5.20, the proposed project will not result in significant impacts. Nevertheless, alternatives were identified that could reduce one or more of the less-than-significant impacts. Therefore, the comparison of impacts focuses on the following environmental resources of concern to the community and environmental resources that distinguish among the alternatives:

- Aesthetics
- Air Quality
- Biological Resources
- Geology, Soils, and Paleontological Resources
- Noise
- Transportation
- Wildfire

For the resource topics Agriculture and Forestry Resources; Cultural Resources; Energy; Greenhouse Gas Emissions; Hazards, Hazardous Material, and Public Safety; Hydrology and Water Quality; Land Use and Planning; Minerals; Population and Housing; Public Services; Tribal Cultural Resources; and Utilities and Service Systems, either the proposed project has no impacts, or the impacts would not distinguish among the alternatives. These resource areas are not discussed further in this chapter.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

No field visits, visual simulations, fire risk calculations, or other studies were conducted to evaluate the alternatives; potential impacts were identified using existing documentation and data gathered or prepared for the proposed project unless otherwise noted. Key assumptions for the impact analysis of the alternatives include the following:

- Alternatives would include implementation of all applicable APMs discussed in Sections 5.1 to 5.20.
- Construction staging areas are assumed to be similar in size and would be located on available vacant land not in use at the time of construction. Laydown areas are assumed to be similar in areas.
- Because potential aesthetics construction (short-term) impacts would be temporary and generally of the same type for the proposed project and all alternatives, potential construction impacts associated with aesthetics are not discussed.
- Potential construction (short-term) impacts associated with air quality and noise are discussed in the context of the overall length of each alternative in comparison to the proposed project's length. All alternatives are located within the SFBAAB and fall under the jurisdiction of the BAAQMD.
- Where alternative replacement is in the same location and of the same type as the project, potential biological resources impacts are assumed to be the same. In other locations, it is assumed that structures, access roads, and construction areas would be sited judiciously to avoid waterways, wetlands, or rare plants. The BSA for the proposed project overlaps with large areas of the footprints of the alternatives and the botanical survey included the Lincoln Avenue component of Alternative A. The alternatives are located within the limits of the BAHCP; applicable measures from the BAHCP and the Bay Area Operations and Maintenance ITP would be implemented for all alternatives.
- Potential wildfire impacts associated with construction, such as overland travel, the use of equipment that may create sparks, and construction equipment and vehicles that contain combustible materials such as fuels and oils and ignition sources, generally would be the same for the proposed project and the alternatives, and the same APMs would be implemented. Wildfire construction impacts are not discussed further.
- O&M impacts for the alternatives are assumed to be similar to O&M impacts for the proposed project and typically would not distinguish among alternatives. They are not discussed except for Alternatives B and C. Potential O&M transportation impacts that would occur for Alternatives B and C are compared with the proposed project.
- As with to the proposed project, all alternatives would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b) regarding vehicle miles traveled.
- As with the proposed project, the potential for avian electrocution or accidental line collision would be minimized for all alternatives by rebuilding the electrical lines in accordance with avian-safe construction standards and PG&E's Avian Protection Plan. This is not discussed further for the alternatives.
- Permanent changes to aesthetics, geology, and wildfire could occur from alternatives and are discussed.
- No scenic vistas were identified in the viewshed of any alternative.

6.1.3 Proposed Project Impact Summary

The proposed project includes rebuilding the four PG&E existing 115 kV circuit lines and structures and implementing minor modifications to Moraga and Oakland X substations. Approximately 4 miles of the existing 5 miles of overhead lines will be rebuilt overhead and approximately 1 mile will be rebuilt in city streets. This section summarizes potential impacts of the proposed project. Refer to Sections 5.1 (Aesthetics), 5.3 (Air Quality), 5.4 (Biological Resources), 5.7 (Geology, Soils, and Paleontological Resources), 5.13 (Noise), 5.17 (Transportation), and 5.20 (Wildfire) for additional information, including environmental setting.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

6.1.3.1 Proposed Project – Aesthetics Impacts

As discussed in Section 5.1, the project will not result in any significant impacts to aesthetics and no mitigation is required.

The proposed 115 kV power line rebuild will not substantially degrade the existing visual character or quality of the landscape setting. There are no specific recognized scenic vistas within the project viewshed. The perceived change from Interstate 580, the nearest designated state scenic highway approximately 600 feet west of the project, will be minor. Where the existing overhead lines will be replaced by underground lines, the removal of the existing towers, to the extent they are visible, will be a positive visual change. In most cases, structures along the alignment are only partially visible and from any one location where the project can be seen, views are, in many cases, limited to a single pair of structures. Only a few locations afford open (public) views of multiple project structures. Permanent visual change resulting from modifications to the existing PG&E alignment will be noticeable but largely incremental and will not substantially alter or degrade the existing visual character of the landscape within the project area. Intervening vegetation and built structures will fully or partially screen public views of the project to a large degree. For the most part, modifications to existing PG&E 115 kV lines will occur in a predominantly urban context, where established landscape features seen in public views include a variety of existing infrastructure, such as wood power poles and lattice power line structures. The rebuilt 115 kV power lines will use non-specular conductors and a dulled galvanized finish on the new project poles, reducing potential glare of power line components.

6.1.3.2 Proposed Project – Air Quality Impacts

As discussed in Section 5.3, the project will not result in any significant impacts to air quality and no mitigation is required.

The air emissions from construction of the project will result in a temporary increase in criteria air pollutants. Air quality emissions will occur within the SFBAAB under the jurisdiction of the BAAQMD. The BAAQMD has provided project-level thresholds of significance for criteria pollutants; project construction emissions will not exceed these limits. The project will not conflict with or obstruct implementation of the applicable air quality plan and will not result in a cumulatively considerable net increase in the nonattainment pollutants. Incorporation of APMs to manage dust and asbestos, if it occurs on structures to be removed, will further reduce construction emissions. Because the project involves the rebuilding of existing infrastructure, no change to current O&M activities is expected. For this reason, the change in operational air emissions from the project was not estimated but was instead presumed to be zero.

6.1.3.3 Proposed Project – Biological Resources Impacts

As discussed in Section 5.4, the proposed project will not result in any significant impacts to biological resources and no mitigation is required.

No special-status plant species were identified within the project footprint (direct impact area); however, there is potential for occurrence in later years of annual species not previously observed. The plant AMMs from the BAHCP will be implemented.

Several special-status wildlife species have the potential to occur within or in the vicinity of the project footprint: Crotch's bumble bee, Monarch butterfly, foothill yellow-legged frog, California red-legged frog, Northwestern pond turtle, Alameda whipsnake, pallid bat, Townsend's big-eared bat, Western red bat, San Francisco dusky-footed woodrat, Cooper's hawk, golden eagle, and birds protected under the MBTA and Fish and Game Code Section 3503. The incorporation of applicable measures from the BAHCP and the ITP, as well as project-specific APMs, further minimizes potential impacts.

Little riparian habitat and other sensitive communities exist in the BSA. Within the project footprint, riparian habitat occurs primarily along access roads and near Moraga Substation. The project will not impact any riparian habitat that it spans. Only minor trimming of riparian habitat will be necessary to

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-133 (cont'd)

provide construction equipment access. Trimming or removal of a small number of trees in coast live oak woodland along Dimond Canyon Park to accommodate replacement structures RN26 and RS26 also will occur. With implementation of measures from the BAHCP and ITP noted previously, both direct and indirect effects will be further minimized.

The project has been designed to avoid impacts on waterways and wetlands to the greatest extent feasible, and the project will not remove, fill, or result in the hydrologic interruption of waterways or wetlands. No direct impacts to aquatic resources are expected to occur. Implementation of the general measures from the BAHCP and ITP will minimize indirect adverse impacts to wetlands.

Wildlife may move through the BSA and use breeding habitat during work activities. The eastern section of the project footprint has been recognized as an important open space area and essential corridor/ linkage by the California Department of Fish and Wildlife, the California Essential Habitat Connectivity Project, and the Critical Linkage Project. Construction may impede wildlife movement and degrade breeding habitat or nursery sites within and adjacent to work areas. Migratory birds may move through the BSA during work activities and may nest in the vicinity. Construction activities may temporarily degrade nesting habitat within the immediate vicinity of the work locations. Any potential effect is expected to be minimal based on the disturbed nature of many of the work locations and the large amount of surrounding habitat. These potential impacts will be further minimized through implementation of applicable measures from the BAHCP, ITP, and project-specific APMs.

There also is potential for avian interactions with PG&E power lines and structures, including collisions and electrocutions. Species of birds reported to be susceptible to collisions generally have a large body size, long wingspan, heavy body, and poor maneuverability. PG&E will minimize the potential for electrocution or accidental line collision by rebuilding the electrical lines in accordance with avian-safe construction standards and will implement the processes and procedures outlined in the PG&E Avian Protection Plan.

6.1.3.4 Proposed Project – Geology, Soils, and Paleontological Resources Impacts

As discussed in Section 5.7, the proposed project will not result in any significant impacts to geology, soils, or paleontological resources and no mitigation is required.

As discussed in Section 5.7, it is likely that the project area will be exposed to at least one moderate or greater earthquake located close enough to produce strong ground shaking in the project area. The greatest potential for strong seismic ground shaking within the project area comes from the Hayward Fault, which has produced moderate to large earthquakes during historical time. Proposed power line structures are not located above active traces of the fault. In addition, overhead power line spans will be designed to accommodate potential fault displacement between support structures. The project will incorporate APM GEO-1 to develop seismic design criteria and appropriate safety design measures.

The project generally is not within a known area of liquefaction hazard; however, localized areas of rated liquefaction potential occur within the project area. Although there is a low probability that conditions conducive to liquefaction will be encountered within the project alignment, the project will implement APM GEO-2, which will minimize liquefaction and associated ground failure hazards such as lateral spreading that could be exacerbated by strong seismic ground shaking.

The project is located within a known landslide hazard area. No proposed project facilities, including overhead structures in the overhead portion of the alignment and power lines in the underground portion of the alignment, are located within a mapped landslide area. However, the proposed locations of two structures are above mapped landslides. The proposed deep foundations, including micropiles and caissons, will minimize the potential for impacts from shallow slope failure. Furthermore, the project will incorporate APM GEO-3 to include appropriate design measures for localized soil conditions.

Project impacts associated with erosion and loss of topsoil during construction will be minimized because of the limited areas that will be graded and disturbed, the temporary nature of construction, and the use of standard best management practices and dust control measures to minimize fugitive dust

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emissions and stormwater runoff. The project also will incorporate APM HYD-1, which requires development and implementation of a stormwater pollution prevention plan.

Expansive soils were identified in the Contra Costa County section of the project area. Replacement foundations in the overhead portion of the alignment will be either a group of micropiles with a pile cap or a single drilled-shaft reinforced-concrete caisson. In the underground portion of the alignment, a duct bank will be encased in 1.5-foot-thick thermal concrete located a minimum of 3 feet below the road surface. Neither the deep foundations to be used for the aboveground portion of the project nor the duct banks in the underground portion of the project are susceptible to damage from expansion and contraction of shallow soils.

Excavation activities deeper than 3 feet in four geological units in the project study area have high paleontological sensitivity and have high potential to encounter paleontological resources. For these construction activities, PG&E will implement APM PAL-1, which requires a qualified project paleontologist; APM PAL-2, which requires worker awareness training monitoring for all project excavation activities deeper than 3 feet below ground surface; APM PAL-3, which requires monitoring for select construction activities; and APM PAL-4, which requires recovery of paleontological resources.

6.1.3.5 Proposed Project – Noise Impacts

As discussed in Section 5.13, the proposed project will not result in any significant impacts to noise, so no mitigation is required.

Because construction activities will be conducted near residences, a temporary increase in noise will result. Although noise levels from construction activities at times may exceed noise limits established by local jurisdictions, construction of most project components at any given location will occur for a short period of time and will move between different points of the lines. Construction within each work area is anticipated to last from a few days to 2 to 3 weeks with intermittent and nonconsecutive days, further minimizing the total duration of elevated noise experienced by any one sensitive receptor. PG&E is exempt from local noise standards. Given the limited and intermittent duration of construction activity at any one location, impacts under this criterion will be less than significant with the implementation of APM NOI-1 through APM NOI-7.

Pile driving would be limited in duration and only be used for construction of the underground portion of the project if sheet piles are needed to stabilize vault excavations. These construction areas are expected to be far enough from buildings to not exceed vibration damage criteria. Nevertheless, APM NOI-8 will be implemented to require a vibration assessment that will consider site-specific factors and be incorporated into project construction. Impacts will be temporary and less than significant.

The replaced 115 kV power lines are not predicted to cause an exceedance of 45 A-weighted decibels at any noise sensitive receptor during foul weather conditions during the operational phase after construction. Proposed changes to Moraga Substation and to Oakland X Substation do not add transformer banks or any other new noise-producing equipment at the substations. Maintenance activities for the rebuilt power lines generally are expected to be the same as existing maintenance activities and typically will occur over short timeframes and generate minimal noise.

6.1.3.6 Proposed Project – Transportation Impacts

As discussed in Section 5.17, the proposed project will not result in any significant impacts to transportation, so no mitigation is required. The project will not conflict or be inconsistent with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Project construction traffic would temporarily increase traffic volumes on local roadways, arterials, and state highways, and most trips would occur when background traffic volumes are somewhat lower. The effects of these volume increases would be short term and periodic. Not all trips will affect the same roads, as crew members along with the necessary equipment will be working at multiple locations. When construction is completed, construction-related traffic will cease,

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and vehicle miles traveled will return to pre-existing conditions. The project will not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b).

Temporary road and lane closures are anticipated when certain sections of the PG&E lines are being removed or reconductored at the overhead road crossings and where lines will be installed underground. In some locations, road closures may last up to 2 weeks. Full closures at several locations along Montclair Railroad Trail also will likely last up to 2 weeks. Temporary interference with walking or bicycling accessibility may occur from temporary closures of sidewalks and trails along roadways. Any closures will be temporary and short term, and closures will be coordinated with Caltrans or local jurisdictions to reduce the impacts to potential temporary and short-term emergency access. PG&E will provide, as part of the Traffic Management Plan, notification to property owners and businesses in advance of work. In addition, where the installation of guard structures is required, APM TRA-1, which requires that traffic controls and other traffic safety measures be in place to maintain proper traffic flow, will further reduce potential impacts. Implementation of APM TRA-2 will restore all removed or damaged curbs, gutters, sidewalks, and paved surfaces, as necessary.

6.1.3.7 Proposed Project – Wildfire Impacts

As discussed in Section 5.20, the proposed project would not result in any significant impacts to wildfire, so no mitigation is required.

Portions of the project are in areas identified as very high FHSZs, including some in SRAs. Construction activities, including work areas, staging areas, and laydown areas, and temporary access associated with rebuilding the power lines could cause a temporary increase in fire risks from overland travel, the use of equipment that may create sparks, and construction equipment and vehicles that contain combustible materials such as fuels and oils and ignition sources. However, PG&E will comply with all applicable California Health and Safety Codes and ordinances regulating the handling, storage, and transportation of hazardous materials, which would help to minimize the potential for accidental conditions, including fire. Additionally, during construction, PG&E will implement APM WFR-1, Construction Fire Prevention Plan, and APM WFR-2, Fire Prevention Practices.

Construction vehicles and equipment are anticipated to access project construction areas by using existing PG&E access and paved roads, existing dirt access roads, or overland access. Construction vehicles and equipment needed at the pull sites will follow designated access routes and are expected to be parked or staged within the project ROW or alongside existing access roads. Two 4,000-gallon water trucks will be used during construction activities in unincorporated Contra Costa County, where fire hydrants and related fire suppression infrastructure are not present. Road closures will be coordinated with Caltrans or local jurisdictions to reduce the effects to potential temporary and short-term emergency access.

Completion of the project would replace aging structures with stronger, more fire-resistant structures and conductors. The results of the Wildfire Transmission Risk Model estimate a 90 percent reduction in wildfire risk from the project. The project will not have occupants and, therefore, will not potentially expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire caused by slope, prevailing winds, or other factors.

6.2 Potential Impacts of Alternatives

For each of the four alternatives to the proposed project, this section provides a summary of the existing setting and a description of potential impacts to the following resources: aesthetics; air quality; biological resources; geology, soils, and paleontological resources; noise; transportation; and wildfire. The analysis of each resource topic also provides a comparison to proposed project impacts.

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6.2.1 Alternative A: Moraga–Oakland X 3-Circuit Replacement with Moraga–Claremont Reconductoring and Park Boulevard/Lincoln Avenue Underground

6.2.1.1 Alternative A – Existing Setting

The environmental setting for Alternative A is similar to the proposed project setting where it would replace three of the four Moraga–Oakland X circuits in the existing alignment and construct the underground replacement portion with two circuits in Park Boulevard. These portions of Alternative A generally would be in the same locations; would be near the same sensitive receptors; would have the same habitats and potential special-status species present; would have the same soils and slopes; and would be in the same very high FHSZ as the proposed project.

The third underground circuit would be in Monterey Boulevard, Lincoln Avenue, MacArthur Avenue, and other streets, all of which generally are relatively flat and developed urban streets similar to Park Boulevard. The roads are adjacent to residential areas and near several schools, including Growing Light Montessori School, Head-Royce School, and Sequoia Elementary School. Vegetation and trees are present along both sides of these roads. A portion of this underground circuit would be in a very high FHSZ.

The additional aboveground portion of Alternative A between Moraga and Claremont substations (approximately 3.1 miles) is located primarily within open space, including in the EBRPD and East Bay Municipal Utility District, with undulating open grass areas and woodland greenbelts in the East Bay Hills. The existing alignment crosses over several hiking and recreation trails, including the Skyline Trail, Quarry Road, Pond Trail, and Volcanic Trail, and several roadways, including Skyline Boulevard and Grizzly Peak Road, which are Alameda County designated scenic routes. Near Moraga Substation, Alternative A is adjacent to a low-density residential area. Near Claremont Substation, Alternative A passes through an area of low-density residential development adjacent to City of Oakland ball fields. The Temescal Regional Recreation Area and Lake Temescal are located immediately west of Claremont Substation. SR 24 is located just north and SR 13 just east of Claremont Substation. This part of Alternative A is in areas identified as very high FHSZ.

The area through which the Moraga–Claremont portion of Alternative A would cross contains steep slopes that may be subject to landslides, may contain expansive soils and soils with liquefaction potential, may be near or cross fault zones, and may contain soils with high paleontological sensitivity and high potential to encounter paleontological resources.

Surveys completed for the proposed project's BSA overlap with areas along and near the Moraga–Claremont reconductoring portion of Alternative A. Based on those survey results, vegetation types along this part of Alternative A include coast live oak, moderate grasslands, and eucalyptus. The eastern section of the Moraga–Claremont replacement is within Alameda whipsnake critical habitat and BAHCP modeled habitat for California red-legged frog potential breeding and Alameda whipsnake movement. Because no critical habitat for plants was identified within 5 miles of the proposed project, critical habitat for plants would not be expected to occur in the footprint of Alternative A.

6.2.1.2 Alternative A – Aesthetics Impacts

The impacts to visual resources from Alternative A would be similar to the proposed project where it would replace three of the four Moraga–Oakland X circuits, remove the existing lines, and construct two underground single-circuit lines in Estates Drive/Park Boulevard. Permanent visual change resulting from replacement of three of the four existing PG&E circuits between Moraga and Oakland X substations would be incrementally better than the proposed project but would not substantially alter or degrade the existing visual character of the landscape, as with to the proposed project. As with the proposed project, Alternative A would result in a positive visual change between the intersection of Estates Drive and Park Boulevard and Oakland X Substation, where the existing overhead line will be replaced by underground lines. Between Monterey Boulevard and Park Boulevard, Alternative A would have one set

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of structures and associated conductors instead of the proposed project with two sets of structures and associated conductor, resulting in a minor improvement to visual character compared to the proposed project at this location. Alternative A would have a different transition structure location compared to the proposed project, with a single-circuit structure at Monterey Boulevard just west of SR 13 for the underground portion of the third circuit. The third underground single-circuit would be in Monterey Boulevard/Lincoln Avenue/MacArthur Avenue and other roadways to reach Oakland X Substation. The transition structure would be noticeable and generally similar to existing power line structures in the same area.

Permanent visual change also would result from reconductoring two end sections of the Moraga–Claremont Circuits 1 and 2 115 kV lines, which would require replacement of conductors and would likely require associated replacement structures. This change would be noticeable by nearby residents and users of the recreational trails but would be largely incremental and similar to the replacement of structures and conductor along the proposed project. Because of this additional reconductoring, visual changes from Alternative A would occur over a wider area than the proposed project and would be seen by more residents and recreational trail users.

Alternative A would include implementation of APM AES-2, requiring the use of non-specular conductors and a dulled galvanized finish on new structures. Although its visual impacts would extend over a larger area than the proposed project, Alternative A would be expected to result in less visual impacts than the proposed project at the local scale.

6.2.1.3 Alternative A – Air Quality Impacts

Localized construction air quality impacts from Alternative A would be similar to the proposed project because similar construction activities and equipment would be used. Alternative A also would implement applicable air quality APMs, as with to the proposed project. However, because of the greater length of Alternative A compared to the proposed project, total air emissions from Alternative A construction would be greater and more sensitive receptors could be affected compared to the proposed project.

6.2.1.4 Alternative A – Biological Resources Impacts

The impacts to biological resources from Alternative A would be similar to the proposed project where it would replace three of the four Moraga–Oakland X circuits, remove the existing lines, and construct the underground single-circuit lines in Estates Drive/Park Boulevard. The same biological resources APMs would be implemented.

Depending on the location of existing utilities in Monterey Boulevard, Lincoln Avenue, and MacArthur Avenue, trimming or removal of existing vegetation, including native and non-native trees, may be required along these roads. Palo Seco Creek crosses under Monterey Boulevard and Sausal Creek crossed under MacArthur Boulevard and may be impacted during construction of the third underground circuit unless a horizontal directional drill or other trenchless construction was possible.

The vegetation and habitats along the reconductoring of the two circuits between Moraga and Claremont substations likely are similar to the proposed project. Vegetation removal may be required to access structures and to prepare staging areas and helicopter landing zones. Construction activities for this overhead reconductoring would be similar to construction activities for the proposed project. Because of the greater length of Alternative A from the additional underground alignment and Moraga–Claremont reconductoring, Alternative A would result in greater vegetation and tree removal than the proposed project. Alternative A also could result in impacts during construction to Palo Seco Creek and Sausal Creek that would not occur with the proposed project.

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6.2.1.5 Alternative A – Geology, Soils, and Paleontological Resources Impacts

Because of the similar setting and similar construction activities, the impacts to geology, soils, and paleontological resources from Alternative A would be similar to the proposed project for the portion associated with replacing three of the four Moraga–Oakland X circuits, removing the existing lines, and constructing the underground single-circuit lines in Estates Drive/Park Boulevard, as well as reconductoring the Moraga–Claremont lines. Impacts from seismic hazards, expansive soils, landslides, and liquefaction in these portions of Alternative A would be similar to the proposed project and the same geology APMs would be implemented where applicable. Paleontology APMs would be implemented in any areas with high paleontological sensitivity where soil disturbance below 3 feet would occur with a drill diameter wider than 3 feet.

The third underground circuit would be in Monterey Boulevard, Lincoln Avenue, MacArthur Avenue, and other streets, all of which generally are relatively flat and would not be expected to be subject to landslide issues. However, the third underground circuit alignment would cross the Hayward Fault along Monterey Boulevard and again along Lincoln Avenue. Underground power lines paralleling or crossing the Hayward Fault underground would need to accommodate fault creep and seismic displacement measured in feet, rather than inches, for a typical underground line to accommodate the maximum credible earthquake. An innovative, unprecedented design would be required to conceptually accommodate the movement of the lines expected from the maximum credible earthquake on the Hayward Fault. This degree of displacement likely would require construction of a tunnel (approximately 10-foot diameter or more) with tracks from which the cables would hang. The tracks would move to accommodate a potential range of displacement. Construction of such a tunnel would be extremely costly and would have residual reliability risk. The cable may not be able to withstand the potential degree of displacement. The length of the section crossing under the fault would make locating and addressing damage to the line more difficult, leading to longer outages. The resulting third underground circuit may not be sufficiently reliable. Such an underground crossing of the Hayward fault that would be imprudent and contrary to accepted engineering practice. PG&E is not aware of any tested engineering solution to the dangers of an underground power line crossing an active fault with the potential fault creep and coseismic displacement measured in feet. Because of these geotechnical conditions, an underground line crossing the Hayward Fault is considered to present significant and unavoidable geology impacts.

6.2.1.6 Alternative A – Noise Impacts

Localized construction noise impacts from Alternative A would be similar to the proposed project because similar construction activities and equipment would be used. Horizontal directional drilling, if used to cross Sausal Creek and Palo Seco Creek, would create noise levels at 50 feet similar to other proposed construction equipment. Alternative A also would implement applicable noise APMs, as with the proposed project. However, because of the greater length of Alternative A compared to the proposed project, noise impacts from Alternative A construction would be more widespread and more sensitive receptors could be affected compared to the proposed project.

6.2.1.7 Alternative A – Transportation Impacts

The impacts to transportation from Alternative A would be similar to the proposed project for the portion where it would replace three of the four Moraga–Oakland X circuits, remove the existing lines, and construct two underground single-circuit lines in Estates Drive/Park Boulevard. Temporary road and lane closures are anticipated when certain sections of the lines are being removed or reconductored at the overhead road crossings and where lines will be installed underground. In some locations, road closures may last up to 2 weeks. Full closures at several locations along Montclair Railroad Trail also will likely last up to 2 weeks. Guard structures would be installed where the alignment crosses roads or trails. APM TRA-1, which would require that traffic controls and other traffic safety measures be in place to maintain proper traffic flow, and APM TRA-2, which would restore all removed or damaged curbs, gutters, sidewalks, and paved surfaces, would be implemented to further minimize impacts.

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Similar temporary lane and road closures also would occur along Monterey Boulevard, Lincoln Avenue, MacArthur Avenue, Excelsior Avenue, Kingsley Street and Park Boulevard Way during construction of the third underground circuit. APM TRA-1 and APM TRA-2 also would be implemented.

For the Moraga–Claremont reconductoring, guard structures would be installed where the alignment crosses roads or trails. Existing trails and roads in the open space areas may have minor improvements installed and be used for construction access. Where structures to be replaced cannot be accessed by roads, helicopters would be used for construction.

Because of the greater length of Alternative A compared to the proposed project, transportation impacts from Alternative A construction would be more widespread and more temporary road and trail closures would occur compared to the proposed project.

6.2.1.8 Alternative A – Wildfire Impacts

Completion of the project would replace aging structures with stronger, more fire-resistant structures and conductors on both the Moraga–Oakland X circuits and the Moraga–Claremont circuits, as with the proposed project. Although the wildfire risk reduction was not calculated for Alternative A, the wildfire risk reduction from Alternative A on the Moraga-Oakland X circuits likely would be similar to the proposed project because it is upgrading the same infrastructure. In addition, upgrades on the Moraga-Claremont circuits likely would result in some reduction in wildfire risk in the surrounding area. Alternative A would not have occupants and, therefore, would not potentially expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire caused by slope, prevailing winds, or other factors. Because Alternative A would reduce fire risk along both the Moraga–Oakland X and Moraga–Claremont lines, it would provide fire risk reduction in a larger area than the proposed project.

6.2.2 Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground

6.2.2.1 Alternative B – Existing Setting

The environmental setting for Alternative B is similar to the proposed project setting. It has the same location as the proposed project in the eastern section for structure removal and replacement and in the central and western sections for the removal of the existing lines and for construction of the underground lines on Park Boulevard. These portions of Alternative B generally would be in the same locations, would be near the same sensitive receptors, would have the same habitats and potential special-status species present, would have the same soils and slopes, and would be in the same very high FHSZ as the proposed project.

The additional underground portion in the central section of Alternative B includes construction in Manzanita Drive, Colton Boulevard, Heartwood Drive, Mountain Boulevard, Sims Drive, Somerset Road and Estates Drive. These roadways and the transition station location are in residential areas, including hillside residential, interspersed with recreational open space preserves. Mountain Boulevard, a north-south arterial that runs parallel to SR 13 and has two to four lanes, passes through a commercial area in the village of Montclair. The others are local roads and are narrow and windy with limited straight sections. The predominant vegetation type along these roads is urban/developed, likely with some areas of coast live oak woodland, non-native ornamental, and eucalyptus trees, as with to the proposed project. No additional wetlands or waters were identified in this area. This area of Alternative B likely would have similar conditions associated with expansive soils, soils with liquefaction potential, and soils with high potential to encounter paleontological resources. In addition, these roads pass by or through several areas susceptible to landslides.

6.2.2.2 Alternative B – Aesthetics Impacts

As with to the proposed project, permanent visual change resulting from Alternative B from replacement of structures aboveground in the eastern section would be noticeable but largely

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incremental and would be similar to the proposed project. Alternative B would include implementation of APM AES-2 requiring the use of non-specular conductors and a dulled galvanized finish on new structures.

As described in Chapter 4, Alternative B would include a transition station at the west end of the underground segment in an area with commercial parking lots with existing road access. The transition station would occupy approximately 0.5 acres. Riser poles would be required where the lines transition to underground near Manzanita Drive and on the west side of SR 13. An example transition station is shown on Figure 4.2-8. The new transition station required for this alternative would result in visual changes at a location not affected by the proposed project. The new riser poles near Manzanita Drive and west of SR 13 also would be new structures that would result in a visual change that does not occur with the proposed project. Therefore, at the transition station location and riser pole locations, Alternative B would result in greater impacts to aesthetics than the proposed project.

A greater portion of the alignment, a total of approximately 3.4 miles, would be replaced underground compared to the proposed project. These underground duct banks would be in sections of Manzanita Drive, Colton Boulevard, Heartwood Drive, Mountain Boulevard, and, after crossing over SR 13, in Sims Drive, Somerset Road and Estates Drive. In these areas in the central and western sections, the removal of the existing power line structures, to the extent they are visible, would be a positive visual change.

However, existing conditions of Manzanita Drive, Colton Boulevard, Heartwood Drive, Sims Drive, Somerset Road and Estates Drive could require modifications affecting visual character. As described in Chapter 4, these roads may need to be widened, retaining walls constructed, and trees and vegetation removed, which would impact aesthetic resources. Several roads, including Manzanita Drive and Colton Boulevard, are in areas of significant grade change and landslide susceptibility. In some locations, to meet design and reliability requirements, large retaining walls may be needed to protect the underground lines from ground movement. Retaining walls could be high enough to be visible beyond the immediate roadway. Construction of the retaining walls would require removal of trees and vegetation. The change from trees and vegetation to large, engineered structures would result in a negative impact to aesthetic resources. Soils data would be needed prior to completing project design to identify areas at risk and determine the size and location of retaining walls. Creation of access to, and drilling equipment work areas in, residential yards would be required to obtain the soils data.

Although the removal of power line structures and conductors between Manzanita Drive and Park Boulevard would create a positive visual change at those locations, Alternative B's modifications to Manzanita Drive, Colton Boulevard, Sims Drive, Somerset Road and Estates Drive could result in greater impacts to visual character in other locations that would not occur with the proposed project. Treatments to retaining walls that reduce their visibility and revegetation where substantial earth disturbance has occurred could reduce impacts.

6.2.2.3 Alternative B – Air Quality Impacts

Localized construction air quality impacts from Alternative B would be similar to the proposed project in the eastern section for structure removal and replacement and in the central and western sections for the removal of the existing lines and construction of the underground lines on Park Boulevard because similar construction activities and equipment would be used. However, construction of the underground alignment on Manzanita Drive, Colton Boulevard, Heartwood Drive, Mountain Boulevard, Sims Drive, Somerset Road and Estates Drive, as well as construction of the transition station and additional riser poles, would result in a longer construction duration and greater earth disturbance in the central section than the proposed project and would generate greater air emissions from dust and construction equipment than the proposed project. Alternative B would implement applicable air quality APMs, as with to the proposed project.

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6.2.2.4 Alternative B – Biological Resources Impacts

The impacts to biological resources from Alternative B generally would be the same as the proposed project in the eastern section and in the western section where the existing lines would be removed and the underground portion in Park Boulevard constructed. Similar impacts to special-status species, riparian habitat, and coast live oak woodland would occur in this area.

Depending on location of any existing utilities and the site-specific geotechnical issues in Manzanita Drive, Colton Boulevard, Heartwood Drive, Mountain Boulevard, Sims Drive, Somerset Road, and Estates Drive, trimming or removal of existing vegetation, including native and non-native trees, may be required along these roads. The number and species of trees and vegetation that would be removed cannot be determined at this time without extensive soil sampling and detailed design and engineering, but it would be greater than the proposed project.

6.2.2.5 Alternative B – Geology, Soils, and Paleontological Resources Impacts

The impacts to geology, soils, and paleontological resources from Alternative B generally would be the same as the proposed project in the eastern section and in the western section where the existing lines would be removed and the underground portion in Park Boulevard would be constructed. Impacts from seismic hazards, expansive soils, landslides, and liquefaction in these portions of Alternative B would be similar to the proposed project. Paleontology APMs would be implemented in any areas with high paleontological sensitivity where soil disturbance below 3 feet would occur with a drill diameter of more than 3 feet.

As noted previously, Manzanita Drive, Colton Boulevard, Heartwood Drive, Mountain Boulevard, Sims Drive, Somerset Road and Estates Drive pass by or through several areas susceptible to landslides, which expose this route to significant geological hazards. To prevent failure of an underground line from landslide, construction of underground lines in these areas would require retaining walls and other engineered stabilization in some locations, which may require acquisition of multiple residential properties and removal of buildings. Additionally, land use restrictions would be required for all upslope properties to avoid excess loading of the retaining walls or other load-bearing components of the underground line installation. For example, these restrictions could include no residential expansions, no accessory dwelling units, and no pools. Without retaining walls, the alternative would be subject to an unacceptable risk of failure. Alternative B, therefore, would result in greater geology impacts than the proposed project and these impacts could be significant.

6.2.2.6 Alternative B – Noise Impacts

Localized construction noise impacts from Alternative B would be similar to the proposed project in the eastern section for structure removal and replacement and in the central and western sections for the removal of the existing lines and construction of the underground lines on Park Boulevard because similar construction activities and equipment would be used. Alternative B would have less construction noise impacts along the existing alignment in the central section from Manzanita Drive to Park Boulevard than the proposed project, which would remove but not replace structures and conductors in this location. However, construction of the underground alignment on Manzanita Drive, Colton Boulevard, Heartwood Drive, Mountain Boulevard, Sims Drive, Somerset Road and Estates Drive to replace the existing overhead alignment, as well as construction of the transition station and additional riser poles, would result in a longer construction duration and greater earth disturbance than the proposed project. These construction activities also would be in proximity to more residences than the proposed project. Therefore, Alternative B would result in greater noise impacts than the proposed project. Alternative B would implement applicable noise APMs, as with the proposed project.

6.2.2.7 Alternative B – Transportation Impacts

The impacts to transportation from Alternative B generally would be the same as the proposed project in the eastern section where the lines will be rebuilt in place and in the western section where the

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existing lines would be removed and the underground portion in Park Boulevard constructed. In these areas, temporary road closures of up to 2 weeks may occur. Transportation APMs similar to the proposed project would be implemented during construction.

Construction of the underground lines on Manzanita Drive, Colton Boulevard, Heartwood Drive, Mountain Boulevard, Sims Drive, Somerset Road, and Estates Drive presents additional transportation challenges. As discussed in Chapter 4, the construction work areas would extend the width of the road, and possibly beyond, in numerous areas. Construction of Alternative B, therefore, likely would require full closure of some roads. Because the trucks that would carry precast vaults may not be able to navigate the narrow, winding roads, and because straight road segments of approximately 165 feet are needed to install precast vaults, it is expected that many of the vaults would have to be cast in place. This construction approach would extend the time required for full road closure. Installation of forms and concrete pouring for vault walls and floors would take approximately 3-4 weeks to complete. At the end of each work day, the vault pit could be plated to allow for traffic flow during non-construction hours. Road widening and retaining wall construction would further extend the duration of road closures. Although portions of Mountain Boulevard are wider with four lanes, closure of one or more lanes during construction could disrupt access to businesses along Mountain Boulevard in the Montclair Village.

Depending on the specific site conditions and design requirements, temporary road closure at a given location could last several weeks or more. Access to some residences may be limited or not possible during these times. Property owners may be required to use detours and alternate routes to get to and from their properties or, in cases of temporary inaccessibility, arrange for temporary relocation. Emergency access could be affected, particularly for Sims Drive and Somerset Road, which are deadend roads. Construction of Alternative B would have greater impacts to transportation than the proposed project. Detours and temporary relocation could reduce these impacts.

During O&M of Alternative B, the curvature of the roads could present risks while accessing vaults for maintenance. Some vaults would be located with significant road curves on either side, and some would be on a significant grade. These factors may make it more difficult to safely access the vaults for maintenance. Temporary full closure of Manzanita Drive, Colton Boulevard, Heartwood Drive, Sims Drive, Somerset Road, and Estates Drive may be required during some O&M activities. Depending on the duration, detours and temporary relocation may be required to reduce impacts of these closures. In addition, even with construction of retaining walls, a coseismic event could damage the underground duct bank in Manzanita Drive, Colton Boulevard, Heartwood Drive, Sims Drive, Somerset Road or Estates Drive, and repair could require months of construction activity that affects transportation. These O&M impacts would not occur with the proposed project.

6.2.2.8 Alternative B – Wildfire Impacts

Because of the greater construction activity in vegetated areas required for Alternative B compared to the proposed project, the risk of wildfire during construction would be greater for Alternative B than for the proposed project. The additional construction activity would result from the construction of the underground segment on Manzanita Drive, Colton Boulevard, Heartwood Drive, Mountain Boulevard, Sims Drive, Somerset Road, and Estates Drive and the associated transition station, new riser poles, retaining walls, and relocated utilities.

Completion of Alternative B would replace aging structures with stronger, more fire-resistant structures and conductors, as with the proposed project. Alternative B would replace approximately 4.2 miles of the existing overhead lines by underground lines. Although the wildfire risk reduction was not calculated for Alternative B, it is likely that it would result in a substantial reduction in wildfire risk. Alternative B would replace more of the lines underground and would provide an incrementally greater reduction in wildfire risk than the proposed project during the O&M project phase.

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As with to the proposed project, Alternative B would not have occupants and, therefore, would not potentially expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire caused by slope, prevailing winds, or other factors.

6.2.3 Alternative C: Shepherd Canyon Road Underground

6.2.3.1 Alternative C – Existing Setting

The environmental setting for Alternative C is similar to the proposed project setting. It has the same location as the proposed project in the eastern section and the eastern edge of the central section for structure removal and replacement. It also has the same location in the central and western sections for the removal of the existing lines and for construction of the underground lines on Park Boulevard. These portions of Alternative C generally would be in the same locations, would be near the same sensitive receptors, would have the same habitats and potential special-status species present, would have the same soils and slopes, and would be in the same very high FHSZ as the proposed project.

The additional underground portion in the central section of Alternative C includes construction in Saroni Drive and Shepherd Canyon Road. These roadways and the transition poles near Saroni Drive and Gunn Drive are in residential areas, including hillside residential, interspersed with recreational parks. Shepherd Canyon Road is a two-lane local road in Oakland that runs through a residential area and adjacent to Shepherd Canyon Park. It connects to Skyline Boulevard, Pinehurst Road, and Manzanita Drive at its northeast end and to Snake Road in the village of Montclair at its southwest end. Shepherd Canyon Road is designated as part of the existing bike network in Oakland (Oakland 2019). Saroni Drive is a narrow local road that is relatively straight where the underground segment would be located. The predominant vegetation type along Saroni Drive is urban/developed. Along Shepherd Canyon Road, vegetation includes coast live oak woodland, non-native ornamental, urban/developed, and eucalyptus trees. No additional wetlands or waters were identified in this area. This area of Alternative C likely would have similar conditions associated with expansive soils, soils with liquefaction potential, and soils with high potential to encounter paleontological resources. In addition, Shepherd Canyon Drive and Saroni Drive pass through areas susceptible to landslides. Refer to Figures 4.2-4b to 4.2-4d.

6.2.3.2 Alternative C – Aesthetics Impacts

As with to the proposed project, permanent visual change resulting from Alternative C from replacement of structures aboveground in the eastern section and part of the central section would be noticeable but largely incremental and would be similar to the proposed project. Alternative C would include implementation of APM AES-2 requiring the use of non-specular conductors and a dulled galvanized finish on new structures.

An additional approximately 1.1 miles of the alignment would be replaced underground compared to the proposed project. These underground duct banks would be in Saroni Drive and Shepherd Canyon Drive in the central section. The removal of this section of the existing power line structures, to the extent they are visible, would be a positive visual change.

Alternative C would include a new transition station where the lines transition from aboveground to underground at the City of Oakland Municipal Service Yard. The transition station would occupy approximately 0.5 acres. This new transition station would result in visual changes at a location not affected by the proposed project. An example transition station is shown on Figure 4.2-8. The existing site currently contains parking and several small one-story buildings and a fenced enclosure. The transition station would introduce four riser poles up to approximately 65 feet tall. The riser poles would be much more visible than the existing buildings and fenced enclosure. In addition, two new structures comparable in height to the proposed project structures would be constructed north of Shephard Creek. The new riser poles would be visible from Shepherd Canyon Park and surrounding areas; the new structures north of Shephard Creek may be visible from Shepherd Canyon Road or residential areas directly south. Therefore, in the vicinity of the transition station, Alternative C would result in greater impacts to aesthetics than the proposed project.

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Four new riser poles approximately 65 feet tall would be constructed near the intersection of Saroni Drive and Gunn Drive, where Alternative C would transition from aboveground to underground. Currently, no power line structures are visible from this intersection and surrounding area. The addition of the riser poles would result in an aesthetic impact in the area that would not occur with the proposed project.

The existing conditions of Saroni Drive and Shepherd Canyon Road would require modifications because of the risk of landslides and narrow roadways. As described in Chapter 4, the roads may need to be temporarily or permanently widened in locations, retaining walls would be required, and trees and vegetation would have to be removed. Retaining walls could be high enough to be visible beyond the immediate roadway. Construction of the retaining walls and protection of the duct banks from root zones would require permanent removal of trees and vegetation. The collection of exploratory borings, described in Chapter 4, would be required to determine the size and location of retaining walls. Completing the borings would require bringing heavy construction equipment, including drilling rigs, onto residential properties, grading to provide vehicle access to get the drilling rigs to the sampling locations, and extensive vegetation removal. Land use restrictions would be required for all upslope properties to avoid excess loading of the retaining walls or other load-bearing components of the underground line installation. The change from roadside trees and vegetation to large, engineered structures would affect the visual character of the roads and result in a negative impact to aesthetic resources along most of the underground segment on Saroni Drive and Shepherd Canyon Road. Treatments to retaining walls that reduce their visibility and revegetation where substantial earth disturbance has occurred could reduce impacts.

Overall, Alternative C would result in positive visual changes in some locations compared to the proposed project and in negative aesthetic impacts in other locations compared to the proposed project.

6.2.3.3 Alternative C – Air Quality Impacts

Localized construction air quality impacts from Alternative C would be similar to the proposed project in the eastern section for structure removal and replacement and in the central and western sections for the removal of the existing lines and construction of the underground lines on Park Boulevard because similar construction activities and equipment would be used.

Construction of the underground segment in Saroni Drive and Shepherd Canyon Road, as well as construction of the transition station and additional riser poles, would result in a longer construction duration and greater earth disturbance than the proposed project and overall would generate greater air emissions from dust and construction equipment than the proposed project. Alternative C would implement applicable air quality APMs, as with to the proposed project.

6.2.3.4 Alternative C – Biological Resources Impacts

The impacts to biological resources from Alternative C generally would be the same as the proposed project in the eastern section and part of the central section, where existing lines and structures would be removed and replacement structures and lines installed, and in the western section where the existing lines would be removed and the underground portion in Park Boulevard would be constructed. Similar impacts to special-status species, riparian habitat, and coast live oak woodland would occur in these areas.

Construction of the underground segment in Saroni Drive and Shepherd Canyon Road, as well as construction of the transition station and additional riser poles, would result in potentially extensive removal of trees, shrubs, and other vegetation to complete the exploratory geotechnical investigation and construct retaining walls. Vegetation also would be removed to construct the two new structures south of Shephard Creek and the new transition station. The amount of vegetation removal in the central section would be greater than for the proposed project. In addition, Shephard Creek runs under Shepherd Canyon Road (Oakland Museum of California n.d.) and could be affected during construction,

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potentially requiring relocation. Overall, biological impacts of Alternative C would be greater than the proposed project.

6.2.3.5 Alternative C – Geology, Soils, and Paleontological Resources Impacts

The impacts to geology, soils, and paleontological resources from Alternative C generally would be the same as the proposed project in the eastern section and part of the central section, where existing lines and structures would be removed and replacement structures and lines would be installed, and in the western section, where the existing lines would be removed and the underground portion in Park Boulevard would be constructed. Impacts from seismic hazards, expansive soils, landslides, and liquefaction in these portions of Alternative C would be similar to the proposed project. Paleontology APMs would be implemented in any areas with high paleontological sensitivity where soil disturbance below 3 feet would occur with a drill diameter of more than 3 feet.

As noted previously, Saroni Drive and Shepherd Canyon Road pass through an area susceptible to landslides, which exposes this route to significant geological hazards. To prevent failure of an underground line from landslide, retaining walls would be required in some locations, which may require acquisition of multiple residential properties and removal of buildings. Additionally, land use restrictions would be required for all upslope properties to avoid excess loading of the retaining walls or other load-bearing components of the underground line installation. For example, these restrictions could include no residential expansions, no accessory dwelling units, and no pools. Without retaining walls, the alternative would be subject to an unacceptable risk of failure. Alternative C, therefore, would result in greater geological impacts than the proposed project and these impacts could be significant.

6.2.3.6 Alternative C – Noise Impacts

Localized construction noise impacts from Alternative C would be similar to the proposed project in the eastern section and part of the central section for structure removal and replacement and in the central and western sections for the removal of the existing lines and construction of the underground lines on Park Boulevard because similar construction activities and equipment would be used. Alternative C would have less construction noise impacts along the existing alignment in a portion of the central section than the proposed project where existing structures would be removed but not replaced. However, construction of the underground alignment on Saroni Drive and Shepherd Canyon Road as well as construction of the transition station, additional riser poles, and two new structures would result in a longer construction duration and greater earth disturbance than the proposed project in the central section. In particular, the construction equipment used for the exploratory geotechnical investigation and to construct retaining walls likely would generate noticeably greater noise for longer periods than the proposed project. Therefore, compared to the proposed project, Alternative C would result in comparable noise impacts in some locations, lesser noise impacts in some locations, and much greater noise impacts in some locations. Alternative C would implement applicable noise APMs, as with the proposed project.

6.2.3.7 Alternative C – Transportation Impacts

The impacts to transportation from Alternative C generally would be the same as the proposed project in the eastern section and part of the central section where the lines will be rebuilt in place, and in the western section where the existing lines would be removed and the underground portion in Park Boulevard would be constructed. In these areas, temporary road closures of up to 3 to 4 weeks may occur at specific locations to excavate and install underground vaults. Transportation APMs similar to the proposed project would be implemented during construction.

Construction of the underground lines on Saroni Drive and Shepherd Canyon Road presents additional transportation challenges. As discussed in Chapter 4, the construction work areas would extend beyond the width of one lane and the roads do not have shoulders in most locations. Construction of Alternative C, therefore, likely would require full closure of the roads. On Shepherd Canyon Road, construction work may be at one location for a period of time with the road closed at that location; as the construction

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work areas move, the location of the closure would move. Closures on Shepherd Canyon Road could last for several weeks to several months or longer, especially where large retaining walls are needed near the roadway. In some locations, because of road width or road curves, vaults may need to be cast in place, which also would extend the time required for full road closure. If feasible, at the end of each work day, vault pits or trenches for duct banks could be plated to allow for traffic flow during non-construction hours.

Shepherd Canyon Road is one of the larger northeast-southwest roads in the area that connect the hillside neighborhoods to SR 13 and Montclair Village. The nearest road of comparable size that connects the hillside neighborhoods to SR 13/Montclair Village is Thornhill Drive, approximately 0.6 mile northwest. Access to some residences may be limited or not possible during these times. Property owners may be required to use detours and alternate routes to get to and from their properties or, in cases of temporary inaccessibility, arrange for temporary relocation. Emergency access could be affected, including emergency vehicles from Oakland Fire Station No. 24 on Shepherd Canyon Road. Emergency vehicles from this station may need to divert to Thornhill Drive, Snake Road, Ascot Drive, or other roads to reach areas north of the station on Shepherd Canyon Road, taking longer to respond to some emergencies. Therefore, construction of Alternative C would have greater impacts to transportation than the proposed project. Detours and temporary relocation could reduce these impacts.

During O&M of Alternative C, the narrowness of Saroni Drive and Shepherd Canyon Road may require temporary full closure to safely access vaults. Depending on the duration, detours and temporary relocation may be required to reduce impacts of these closures. In addition, even with construction of retaining walls, a coseismic event could damage this segment of underground pipeline in Saroni Drive or Shepherd Canyon Road and repair could require months of construction activity that affects transportation. These O&M impacts would not occur with the proposed project.

6.2.3.8 Alternative C – Wildfire Impacts

Because of the greater construction activity in vegetated areas required for Alternative C compared to the proposed project, the risk of wildfire during construction would be greater for Alternative C than for the proposed project. The additional construction activity would result from the construction of the underground segment on Saroni Drive and Shepherd Canyon Road and the associated transition station, two new structures, new riser poles, retaining walls, and relocated utilities.

Completion of Alternative C would replace aging structures with stronger, more fire-resistant structures and conductors in the eastern section and parts of the central and western sections, as with to the proposed project. This would result in a similar substantial reduction in wildfire risk in these areas. As with to the proposed project, Alternative C would replace approximately 1.1 miles of overhead lines with underground lines in Park Boulevard and result in a similar reduction in wildfire risk in this area. For the approximately 1.1 mile of underground lines on Saroni Drive and Shepherd Canyon Road, Alternative C would result in an incrementally greater reduction in wildfire risk than the proposed project during the O&M phase.

As with to the proposed project, Alternative C would not have occupants and, therefore, would not potentially expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire caused by slope, prevailing winds, or other factors.

6.2.4 Alternative E: Proposed Project with Campground Overhead Option

6.2.4.1 Alternative E – Existing Setting

The environmental setting for Alternative E is the same as the setting for the proposed project because it has the same existing and proposed replacement alignment except near the planned EBRPD Sibley Volcanic Regional Preserve Group Campground, where two structures would be replaced northwest approximately 380 feet outside of the existing alignment. The location for these two structures would be

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within the same open space visual setting with the same vegetation type (coast live oak) as the proposed project. The structures would be in the same very high fire hazard severity zone as the proposed project. The two structures would be replaced on a flatter area adjacent to an existing access road and away from the existing structure locations on steeper slopes but otherwise have similar soils and geologic conditions as the related proposed project structures.

6.2.4.2 Alternative E – Aesthetics Impacts

Replacing two structures farther from the planned EBRPD Sibley Volcanic Regional Preserve Group Campground would result in a minor but noticeable long-term improvement in visual character of the immediate campground area where the lines span would be farther (approximately 160 feet) in the overhead view. However, the two structures would be at a higher elevation than the corresponding proposed project towers and would be more visible to hikers and other users of the Sibley Volcanic Regional Preserve and East Bay Skyline Trail (Bay Area Ridge Trail). In addition, more vegetation would need to be removed, along approximately 3,200 feet of the new alignment, compared to the proposed project for construction of these two new structures, and to comply with General Order 95. The additional vegetation removal would affect views of campground users and nearby hikers and trail users. Therefore, Alternative E would result in greater aesthetic impacts than the proposed project in the vicinity of these two structures.

6.2.4.3 Alternative E – Air Quality Impacts

Localized construction air quality impacts from Alternative E would be similar to the proposed project over most of the alignment because similar construction activities and equipment would be used. Alternative E also would implement applicable air quality APMs, as with to the proposed project. However, at the location of the planned EBRPD Sibley Volcanic Regional Preserve Group Campground, replacing two structures farther from the campground would increase the construction time and activity, primarily for vegetation removal, compared to the corresponding proposed project structures. Therefore, Alternative E would result in incrementally greater construction air emissions than the proposed project.

6.2.4.4 Alternative E – Biological Resources Impacts

Impacts to biological resources from Alternative E would be expected to be similar to the proposed project along nearly the entire alignment, and the same biological resource APMs would be implemented. At the location of the planned EBRPD Sibley Volcanic Regional Preserve Group Campground, replacing two structures farther from the campground generally would occur in the same type of habitat and have the same impacts as the proposed project in this area. However, an increase in vegetation removal and tree trimming or removal compared to the proposed project (an additional approximately 3,200 feet) may be required for construction and to meet General Order 95 clearance requirements in the new ROW in this area.

6.2.4.5 Alternative E – Geology, Soils, and Paleontological Resources Impacts

Impacts to geology, soils, and paleontological resources from Alternative E would be the same as the proposed project along nearly the entire alignment. Where the two structures would be replaced farther from the campground, applicable APMs would be implemented. Alternative E would incorporate APM GEO-1 to develop seismic design criteria and appropriate safety design measures; APM GEO-2 to minimize liquefaction and associated ground failure hazards; and APM GEO-3 to include appropriate design measures for localized soil conditions. Impacts would be similar to the proposed project.

6.2.4.6 Alternative E – Noise Impacts

Localized construction noise impacts from Alternative E would be similar to the proposed project over most of the alignment because similar construction activities and equipment would be used. Alternative E also would implement applicable noise APMs, as with to the proposed project. However, at the

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location of the planned EBRPD Sibley Volcanic Regional Preserve Group Campground, replacing two structures farther from the campground would increase the construction time and activity due to an increase in vegetation removal, compared to the corresponding proposed project structures. Therefore, Alternative E would result in incrementally greater construction noise impacts than the proposed project at this location.

6.2.4.7 Alternative E – Transportation Impacts

Impacts to transportation from Alternative E would be nearly the same as for the proposed project. Temporary road and lane closures may occur when certain sections of the lines are being removed or reconductored at the overhead road crossings and where lines will be installed underground. In some locations, road closures may last up to 2 weeks. Guard structures would be installed where the alignment crosses roads or trails. Similar construction access and road or trail closures as the proposed project would be done for replacement of the two structures farther from the planned EBRPD Sibley Volcanic Regional Preserve Group Campground. The project would include APM TRA-1 and APM TRA-2 to further minimize impacts. Transportation impacts of Alternative E would be similar to the proposed project.

6.2.4.8 Alternative E – Wildfire Impacts

Completion of Alternative E would replace aging structures with stronger, more fire-resistant structures and conductors, as with to the proposed project. Because all the structures except two would be replaced in the same locations and with the same types of structures as the proposed project, and two structures would be replaced approximately 160 feet away, it is expected that the reduction in wildfire risk would be the same as the proposed project. Alternative E would implement the same wildfire APMs as the proposed project. Wildfire impacts of Alternative E would be the same as the proposed project.

6.3 Alternatives Ranking

CEQA Guidelines Section 15126.6(e) states that "if the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."

Table 6.2-1 compares the impacts of the alternatives to the proposed project impacts for aesthetics, air quality, biological resources, geology and soils, noise, transportation, and wildfire. As discussed in Section 6.1.2, for the other environmental resource topics, either the proposed project has no impacts, or the impacts would not distinguish among the alternatives The alternatives are listed from left to right in order of increasing impacts. As shown in Table 6.2-1, the proposed project would be the environmentally superior alternative because the impacts of the alternatives would be greater for several environmental resources with only incremental, if any, improvements to aesthetics or wildfire.

Table 6.2-1. Alternatives Comparison Summary and Ranking

Environmental Resource	No Project Alternative	Alternative E: Proposed Project with Campground Overhead Option	Alternative A: Moraga–Oakland X 3-Circuit with Moraga–Claremont and Park Blvd/Lincoln Ave[a]	Alternative B: Manzanita Drive-Colton Blvd-Estates Drive Underground	Alternative C: Shepherd Canyon Road Underground
Aesthetics	↑	↑	↓	=	=
Air Quality	=	↑	↑	↑	↑
Biological Resources	=	↑	↑	↑	↑
Geology and Soils	=	=	↑	↑	↑
Noise	=	↑	↑	↑	↑
Transportation	=	=	↑	↑	↑

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Table 6.2-1. Alternatives Comparison Summary and Ranking

Environmental Resource	No Project Alternative	Alternative E: Proposed Project with Campground Overhead Option	Alternative A: Moraga–Oakland X 3-Circuit with Moraga–Claremont and Park Blvd/Lincoln Ave[a]	Alternative B: Manzanita Drive-Colton Blvd-Estates Drive Underground	Alternative C: Shepherd Canyon Road Underground
Wildfire	↑	=	↓	↓	↓

[a] The complete name is Alternative A: Moraga–Oakland X 3-Circuit Replacement with Moraga–Claremont Reconductoring and Park Boulevard/Lincoln Avenue Underground.

↑ indicates impacts are relatively greater than the proposed project impacts.
↓ indicates impacts are relatively less than the proposed project impacts.
= = indicates impacts are similar to the proposed project impacts.

The No Project Alternative would individually replace aging structures over time. Ultimately, all structures and the conductors would be replaced, resulting in similar localized construction impacts as the proposed project to air quality, biological resources, noise, and transportation. However, the No Project Alternative would delay the substantial wildfire risk reduction of the proposed project for many years. In addition, the visual improvements from the proposed project from replacing a portion of the overhead lines underground in the western section would not occur with the No Project Alternative.

Alternative E, the Proposed Project with Campground Overhead Option Alternative, generally would have the same impacts as the proposed project except for the different replacement location of two towers near the planned EBRPD Sibley Volcanic Regional Preserve Group Campground. Compared to the proposed project at this location, Alternative E would result in increased localized impacts to air quality and noise during construction; greater aesthetic impacts because of visibility to more visitors to Sibley Volcanic Regional Preserve and East Bay Skyline Trail (Bay Area Ridge Trail); and greater biological impacts from the removal of more trees and vegetation.

Alternative A, the Moraga–Oakland X 3-Circuit Replacement with Moraga–Claremont Reconductoring and Park Boulevard/Lincoln Avenue Underground Alternative, would result in wildfire risk reduction over a greater area than the proposed project. Alternative A also would result in a minor improvement in aesthetics compared to the proposed project along the existing alignment between Monterey Boulevard and Park Boulevard. However, Alternative A has a much larger footprint than the proposed project with the additional underground construction on Monterey Boulevard, Lincoln Avenue, MacArthur Avenue, and other streets and the reconductoring of most of the Moraga–Claremont power lines. As a result, Alternative A would result in overall greater impacts to air quality, biological resources, noise, and transportation than the proposed project. The third underground circuit along Monterey Boulevard and Lincoln Avenue would cross the Hayward Fault twice. Because of the associated geotechnical conditions and the need for an innovative, unprecedented design, an underground line crossing the Hayward Fault is considered to present a potential significant and unavoidable geology impact.

Alternative B, the Manzanita Drive-Colton Boulevard-Estates Drive Underground Alternative, would result in an incrementally greater reduction in wildfire risk than the proposed project. It also would place a greater length of the power lines underground, potentially resulting in improvements to the visual character of the area where the existing overhead lines are currently located, benefiting some residents and public road users. However, construction along Manzanita Drive, Colton Boulevard, Heartwood Drive, Sims Drive, Somerset Road, and Estates Drive could result in road widening and retaining wall construction, as well as creation of new visible transition station and riser poles. These changes likely would substantially alter the visual character in multiple locations and would result in greater visual impacts to views of other residents and public road users than Alternatives A and E and the No Project Alternative. These construction activities also could result in extensive vegetation removal and greater biological impacts than Alternatives A and E and the No Project Alternative. The underground portion on Manzanita Drive, Colton Boulevard, Heartwood Drive, Mountain Boulevard, Sims Drive, Somerset Road, and Estates Drive could result in significant geology impacts because the roads are in areas susceptible to landslides and are exposed to significant geological hazards.

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Alternative C, the Shepherd Canyon Road Underground Alternative, would result in an incrementally greater reduction in wildfire risk than the proposed project. It also would place a greater length of the power lines underground, potentially resulting in improvements to the visual character of the area where the existing overhead lines are currently located, benefiting some residents and public road users. However, construction along Saroni Drive and Shepherd Canyon Road would result in retaining wall construction in some locations, possible road widening in some locations, and creation of visible new transition station, power line structures, and riser poles. These changes likely would substantially alter the visual character in multiple locations and would result in greater visual impacts to views of other residents and public road users than any of the other alternatives. These construction activities also could result in extensive vegetation removal and greater biological impacts than any of the other alternatives. The underground portion on Saroni Drive and Shepherd Canyon Road could result in significant geology impacts because the roads are in areas susceptible to landslides and are exposed to significant geological hazards.

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Western Regional Climate Center (WRCC) 2024. NOAA Cooperative Stations – Temperature and Precipitation. Oakland Museum, California (046336). Accessed April 10, 2024. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6336.

9.5.21 Section 5.21. Mandatory Findings of Significance

None.

9.6 Chapter 6. Comparison of Alternatives

Oakland Museum of California. n.d. Sausal Creek Watershed Map. Accessed October 25, 2024. https://explore.museumca.org/creeks/1190-OMSausal.html#.

9.7 Chapter 7. Cumulative Impacts and Other CEQA Considerations

Bay Area Air Quality Management District (BAAQMD). 2023. *California Environmental Quality Act Air Quality Guidelines*. April. https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

California Air Resources Board (CARB). 2017. California's 2017 Climate Change Scoping Plan. November. https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf.

East Bay Municipal Utility District (EBMUD). 2019. *Central Reservoir Replacement Project Draft Environmental Impact Report*. Prepared by ESA. November. https://www.ebmud.com/about-us/construction-and-maintenance/construction-my-neighborhood/central-reservoir-replacement-project.

9.8 Chapter 8. List of Preparers

None.

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Attachment 5
PG&E Response to CPUC Data Request 9

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Pacific Gas and Electric Company

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June 17, 2025

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VIA EMAIL

RE: CPUC Data Request #9 for PG&E's Moraga to Oakland X 115 Kilovolt Rebuild Project (A.24-11-005)

Dear Ms. Wright,

This letter is in reply to your June 4, 2025 letter in which you request certain additional information regarding Pacific Gas and Electric Company's (PG&E's) application (A.24-11-005) for a Permit to Construct (PTC) and Proponent's Environmental Assessment (PEA) for the Moraga-Oakland X 115 kilovolt (kV) Rebuild Project (project). The original text for each data request item from the California Public Utilities Commission (CPUC) is included, followed by PG&E's response.

There is one attachment to this letter to support PG&E's response.

- Attachment 1 – Table ALT-6 Road Closures

PEA Chapter 4, Alternatives

ALT-6 Roadway widths for underground alternatives are discussed under PEA Alternatives B and C; however, the PEA analyzes installation of 4 circuits and the EIR is considering 2 circuits each road. The EIR must evaluate impacts of construction of the underground alternatives on traffic and evacuation routes, so must consider the need for road closures. Please define the minimum roadway width that would allow retaining a single traffic lane open at all times during underground installation of 2 power line circuits and associated vaults.

Specifically, please define the specific areas (by block, e.g., "along x street between y and z streets") along the following roadways that would require full roadway closure for any length of time during installation of 2 underground circuits:

Manzanita Drive to State Route 13
- Skyline Boulevard
- Colton Boulevard
- Heartwood Drive
- Snake Road
- Shepherd Canyon Road (west of Saroni Drive)
- Ascot Drive

West of State Route 13
- Sims Drive
- Somerset Drive
- Estates Drive (west of Somerset Drive to Park Boulevard)

PG&E's Response

The minimum roadway width required for construction and to retain a single traffic lane open depends on several factors. PG&E assumed the following to provide a response:

- Construction width required to install 2 circuits in a double-circuit duct bank in one of the roads listed above would be the same as described in the PEA Project Description for installing 2 circuits in Park Boulevard. As noted on PEA Page 3-28:

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> *[T]he workspace for open trenching operations to install the duct bank between the vaults typically may extend up to approximately 1,500 feet long by 24 feet wide.*

The 24 feet provides space for the 4-foot wide trench, sidecasting of excavated soil into a hauling truck, a cement pouring truck, a cable splicing trailer, construction equipment access, and materials and equipment storage, among other construction activities.

- The construction width required to install a vault in one of the roads listed above would be the same as described in the PEA Project Description for installing a vault in Park Boulevard. As noted on PEA Page 3-28,

  > *Each vault will have an excavation size of 42 feet long by 18 feet wide by 13 feet deep*.

- Vault construction requires greater road width than duct construction. Where a road would not be wide enough for a traffic lane during duct bank construction, it also would not be wide enough for a traffic lane during vault construction.

- The minimum required width of a traffic lane during construction would be established in coordination with the applicable agencies (primarily City of Oakland). For this response, the minimum traffic lane width is assumed to be 10 feet wide. This assumption is based on several sources:

  (1) The City of Oakland's "Supplemental Design Guidance: Accommodating Pedestrians, Bicyclists, and Bus Facilities in Construction Zones" requires that motor vehicle travel lanes be maintained at least 10 feet wide if narrowed to provide temporary bike lanes in construction zones (https://cao-94612.s3.amazonaws.com/documents/OakDOT-Updated-Guidance-Temporary-Traffic-Control_2017_01_06.pdf).
  (2) The City of Oakland also requires, in its Street Design Manual (https://cao-94612.s3.us-west-2.amazonaws.com/documents/STREET-DESIGN-GUIDELINES.pdf), that driveways be a minimum of 10 feet wide.
  (3) Federal Highway Administration's *Manual on Uniform Traffic Control Devices* (https://mutcd.fhwa.dot.gov/htm/2003/part6/part6h1.htm) states that lanes should be a minimum of 10 feet wide when shoulders are temporarily closed for construction work.

- The entire width of pavement, including paved parking lanes and paved shoulders, is assumed to be available for construction activities or a traffic lane. Areas outside of existing pavement on public right-of-way would not be available for construction or traffic because private residential property or vegetated slopes are adjacent to the pavement along nearly the entire length of the roadways. It is assumed no temporary road widening would occur. The PEA notes that the Montclair Railroad Trail (MRRT) along Shepherd Canyon Road could potentially be used if additional width was needed (p. 4-18). However, much of the MRRT is not at the same grade as Shepherd Canyon Road and extensive vegetation removal, earthwork, and modifications to a drainage would be required to accommodate a traffic lane along an entire block. Use of MRRT therefore was not assumed.

Based on the above assumptions, a minimum existing road width of 34 feet would be required for construction of a duct bank with 2 power line circuits and associated vaults. This assumes the trench location is placed optimally in one lane with no shifting of the alignment to avoid existing utilities (e.g. concrete storm drains, electric distribution lines). Aerial and street view imagery were reviewed to identify which blocks of the roads in question have an existing width of at least 34 feet. Blocks with one lane each way and without paved shoulders or parking lanes are less than 34 feet wide and were eliminated from further consideration. Where the roadways could be seen to have more than one lane in each direction, have a double yellow center line, or have a shoulder or parking lane, the roadway width was measured for each block using an online map with aerial imagery base.

Most blocks had only intermittent and short lengths wider than 34 feet and were less than 34 feet wide most of the block length. For example, while Skyline Boulevard has lengths that are wider than 34 feet, most lengths have areas with less than 34 feet of width, as illustrated in PEA Figure 5.1-2c, Representative Photo: *5. Skyline Boulevard looking west*. Blocks such as these were assumed to require complete closure. It should be noted that intersections may appear to have sufficient width because the intersecting road(s) add "width" in that location. Isolated intersections were not included as separate blocks. The desktop review results are summarized in Table ALT-6 Road Closures in Attachment 1.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-134 (cont'd)

Based on this review, it appears nearly all blocks of the roadways listed would require complete closure during construction. Several road blocks may be sufficiently wide to accommodate a traffic lane during construction of a duct bank with 2 circuits, although they may not be wide enough to accommodate vault construction with a traffic lane left open. These road blocks are:

- Colton Boulevard between Arrowhead Drive and Lodge Court
- Snake Road between Hemlock Street and Thornhill Drive
- Ascot Drive between Ascot Lane (a deadend street) and Skyline Boulevard
- Ascot Drive between Mountaingate Way and Scout Road
- Ascot Drive between Longwalk Drive and Melville Drive

ALT-7 For each road, please define the estimated duration of full closure for any one segment requiring a detour for installation of the underground power line (2 circuits) and vault.

PG&E's Response

The pace and durations provided in this response are approximate and would change depending on engineering design, site conditions, construction sequencing, and other factors. Because of these limitations, it was not feasible to develop a specific estimated duration of full closure for each road segment and block discussed in the ALT-6 response. However, this response does provide an estimate of what road closure durations may be like for shorter and longer road segments to illustrate the possible range of road closures. The road closure duration estimates presented below represent a "best case" scenario because the durations used were developed for a wide road with minimal grade and bends. Actual durations would likely be longer than presented below.

Construction duration at a single location is assumed to be the same as construction in Park Boulevard described in the PEA and in previous responses to data requests. The Part A Response to CPUC Data Request #6 (dated April 21, 2025), identifies a timeline of construction activities at a single address on Park Boulevard, assuming a vault within 100 feet, as follows:

- *Vault (excavation, shoring, soil hauling, installation, and backfill) will take approximately 2 weeks [12 days].*
- *Duct bank (trenching, shoring, soil hauling, conduit installation, and backfill) will take approximately 6 days of active construction progressing at minimum of 40 feet/day, nonconsecutive days expected.*
- *Cable pulling installation at a vault will take approximately 12 days (6 days in each direction to the adjacent vault).*
- *Cable splicing at a vault will take approximately 20 days.*
- *Repaving and lane striping will take approximately 2 days.*

DR #6 Part A also notes that duct bank trenching and conduit installation would move at an approximate pace of 40 to 100 feet per day per crew in Park Boulevard. PG&E's response Item ALT-1a in Data Request 6 Part B describes the relationship between the cumulative horizontal curvature of a duct bank and vault spacing. More vaults would be expected for the windier roads in question and they would be spaced closer together than the approximate 1,000 to 1,200 feet distance on Park Boulevard. The physical characteristics of Park Boulevard have optimal construction conditions for duct bank and vault installation, including a relatively straight road alignment with slight grade and wide multiple lanes. These optimal conditions allow for construction activities to be completed at a faster pace than they would in the winding, narrow, and steep streets that are included in this request. Additionally, these smaller residential roadways may have reduced construction working hours stipulated in the encroachment permits compared to Park Boulevard thus reducing the construction pace.

Approximate full lane closure duration for shorter road segments (blocks).
Shorter blocks would be up to approximately several hundred feet and are assumed to have only one vault. Shorter blocks could be closed for approximately 12 days for vault installation. Using a roadway length of approximately 600 feet to calculate and an optimal construction pace range of approximately 40 to 100 feet per day, the shorter block would be closed for approximately 6 to 15 days for duct bank construction. During the cable installation phase of construction (cable pulling), shorter road segments would be closed for approximately 12 days. The size of cable reels, which would be placed near vaults, and the trucks that carry them would necessitate full closure of these roads. During cable splicing, the vaults would be open, and in roadways less than 28 feet wide, full closure of the roadway at each adjacent vault location would be required for approximately 20 days. The repaving phase could require full closure of shorter road segments for approximately 2 days.

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-134 (cont'd)

Approximate full lane closure duration for longer road segments (blocks).
For longer road segments, such as Skyline Boulevard between the north end of Manzanita Drive and Pinehurst Road (approximately 2,700 feet), closures would be longer. For this segment of Skyline Boulevard, for example, the duration for duct bank construction alone for one crew could be up to approximately 27 work days to 68 work days (at an approximate pace of 40 to 100 feet per day for approximately 2,700 feet). More than one vault would be constructed in longer road segments, and the road would be closed at each vault location for approximately 12 days. Skyline Boulevard would be closed to through traffic at the single inroad work area as work progressed between the north end at Manzanita Drive and Pinehurst Road. Using more than two crews on longer segments is not advisable because it would prevent vehicles between the two work areas from moving past either work area. Cable pulling would require closure for approximately 20 days at each adjacent vault work location. The repaving phase could require full closure of longer road segments for approximately 6 days.

PEA Page 5.20-11 notes that, for work on Park Boulevard, "[a]t the conclusion of a construction work day, a work area in a roadway will be demobilized and temporary lane or road closures will end." It may be possible that temporary lane closures could end at the conclusion of a construction work day along the roadway segments in question. However, this may not be possible due to the more constrained work areas compared to Park Boulevard. Leaving a single traffic lane open outside work areas, without flaggers or similar traffic controls, would be unsafe. Reestablishing both lanes of traffic (one lane each way) would require that all construction equipment and materials be demobilized from the work area to a staging area, which likely would not be near the work area, and placement of plates over the trenching. The daily mobilization and demobilization, if feasible, would leave a short work window each day and would significantly slow the pace of construction. The possibility for ending temporary lane closures each day cannot be determined at this time without detailed design and construction sequencing.

ALT-8 If underground alternatives are constructed, the existing overhead structures will need to be removed after energization of the underground circuits. PG&E has provided "Structure Work Areas" defining areas along roads where cranes would be located, and roads would be closed to through traffic while cranes are in place. For structure removal activity only, what would be the estimated duration of closure of roadways for each tower site for the removal of existing conductors and towers only?

PG&E's Response

As noted in PEA Table 3.6-4 structure removal requires approximately 1 to 2 days per structure for the proposed project. Therefore, for each pair of structures for an alternative, roadway closure is assumed to be approximately 2 to 4 days, as well as approximately 1 day for conductor removal.

ALT-9 PG&E's PEA (pages 4-18 and 4-19) discusses roadway closures for underground installation of 4 circuits under PEA Alternative C, which includes a transition pole on Saroni Drive. What is the estimated duration of closure of Saroni Drive and/or Gunn Drive to accommodate construction of the Saroni transition pole and installation of an underground 2-circuit power line from the overhead-to-underground transition location to Shepherd Canyon Road?

PG&E's Response

As noted in PEA Table 3.6-4, transition structure installation for the proposed project would require approximately 12 to 18 days. It is assumed either or both Saroni Drive and Gunn Drive would be closed for approximately 12 to 18 days for installation of transition structures at this location.

PEA Chapter 15.7, Transportation

TRA-1

a. Pending coordination with transit agencies, what is the estimated maximum distance a temporary bus stop is expected to be relocated and for what maximum duration for construction of the proposed Project?

PG&E's Response

PG&E will coordinate with the transit agencies to relocate bus stops temporarily during construction. Construction details are not known at this time to determine specific temporary bus stop locations or durations. However, based on the PEA assumptions about construction activity at a single address on

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-134 (cont'd)

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Park Boulevard (see response to ALT-7), bus stops may be moved temporarily up to several hundred feet and the duration would be up to approximately 2 weeks during vault installation and approximately 1 week during duct bank installation. If cable pulling or cable splicing requires a temporary work area at an existing bus stop location, the temporary relocation of the bus stop would be approximately 12 days and 20 days, respectively. It is anticipated that bus stop locations can be avoided for these construction activities. Paving would require temporary relocation for approximately 2 days.

b. Please describe PG&E's coordination with transit agencies and responsibilities for signage and alerting riders of temporary bus stop relocations.

PG&E's Response

Coordination with transit agencies and specific measures related to temporary bus stop locations would be done consistent with PEA APM TRA-1: PG&E Temporary Traffic Controls. Detailed measures for temporary bus stop relocation would be developed in coordination with transit agencies but could include postings of notices and appropriate signage of construction activities with construction schedule, the exact location and duration of activities at each bus stop, and a tollfree telephone number for receiving questions or complaints.

TRA-2 PEA page 5.17-14 states that "[f]ull closures at several locations along Montclair Railroad Trail [MRRT] will also likely last up to 2 calendar weeks."

a. Please confirm whether the 2-week MRRT closures would be staggered (based on specific construction activities that may take place months apart) or would trail closures be expected to occur continuously and simultaneously at multiple locations.

PG&E's Response

It is assumed that one crew would move to each work location consecutively along the trail. The 2-week, or approximately 12-day, MRRT closure would occur at one work location at a time.

b. Please describe the anticipated MRRT pedestrian and bicycle detours that would be established during each planned trail closure, including exit and reentry locations. Trail entry points are mapped at: https://montclairrrtrail.org/visit/.

PG&E's Response

Structures with work areas that will use MRRT are described on PEA Page 5.16-7. Potential MRRT temporary closures as well as possible pedestrian and bicycle detours, which would be determined during implementation of PEA APM TRA-1: PG&E Temporary Traffic Controls, are as follows:

Structures EN19/ES21/RN18/RS18 will be included in a single work area between MMRT entry point E7 (near Paso Robles Drive) and entry point E6 (near the Oakland Corporation Yard). Three detour options include:

(1) Close MRRT only at the work area so that pedestrians and bikes could use the trail from E7 or E6 and turn around upon reaching the work area, which would use flagging, barriers, or other appropriate safety measures to identify the limits of the work area and MRRT trail closure.

(2) Close MRRT between E7 and E6. Although it would be long, a MMRT detour could be marked along nearby residential roads including Paso Robles Drive, Balboa Drive, Drake Drive, and Snake Road to connect to entry point E5 on Snake Road. This detour would have substantive grade variation in comparison to the relatively flat MMRT. Closures would be indicated using flagging, barriers, or other appropriate measures.

(3) Close MRRT between E7 and the Zinn Trail, which connects to MRRT to the north of the work area, near project milepost 2.7 (see PEA Figure 3.5-1 Page 16 of 25). The Zinn Trail is unpaved and has substantive changes in grade. A detour could be marked along nearby residential roads including Paso Robles Drive, Balboa Drive, and Asilomar Drive.

Two work areas (for structures EN20/ES22 and for structures EN21/ES23/RN19/RS19) will be located between MMRT entry points E6 and E5. Detour options are similar to those described previously and include:

Comment Set E01 – Pacific Gas and Electric Company (continued)

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(1) Closure MRRT only at each work area so that pedestrians and bikes could use the trail from E6 or E5 and turn around upon reaching the marked work area.

(2) Close MRRT between E6 and E5. A detour could be marked along Zinn Trail and nearby residential roads including Zinn Drive and Snake Road to connect to entry point E5 on Snake Road.

We trust the information provided herein is fully responsive to your requests. However, should you have any further requests, please contact me at **415-990-6001** or **BXLG@pge.com**.

Sincerely,

Brandon Liddell
Principal Land Planner

Attachment:
Attachment 1 – Table ALT-6 Road Closures

cc:
Michelle Wilson, CPUC CEQA Unit
Erica Schlemer, PG&E Law Department
Colleen Taylor, Jacobs
Hedy Koczwara, Aspen Environmental Group

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-135

Attachment 6
Recent Historic Fire Risk by Month

Comment Set E01 – Pacific Gas and Electric Company (continued)

E01-135 (cont'd)

Month	R1	R2	R3	R4	R5	R5+
January	91%	9%	-	-	-	-
February	81%	19%	-	-	-	-
March	87%	13%	-	-	-	-
April	86%	12%	2%	-	-	-
May	63%	21%	15%	1%	-	-
June	17%	35%	39%	8%	-	1%
July	-	6%	65%	28%	-	1%
August	-	2%	71%	23%	3%	1%
September	4%	10%	67%	15%	4%	-
October	8%	25%	45%	12%	6%	4%
November	50%	37%	11%	3%	-	-
December	83%	10%	6%	-	1%	-

PG&E Fire Potential Index (FPI) model calculations and scale from R1 to R5-Plus consider fuel, moisture, humidity, wind speed, air temperature, and historical fire occurrence. These fire danger determination ratings are as follows:

- *R1: Very little or no fire danger.*
- *R2: Moderate fire danger.*
- *R3: Fire danger is so high that care must be taken using fire-starting equipment. Local conditions may limit the use of machinery and equipment to certain hours of the day.*
- *R4: Fire danger is critical. Using equipment and open flames is limited to specific areas and times.*
- *R5: Fire danger is so critical that using some equipment and open flames is not allowed in certain areas.*
- *R5-Plus: The greatest level of fire danger where rapidly moving, catastrophic wildfires are possible.*

Refer to DEIR at 3.18-5.

Historic Analysis of Predicted Fire Risk by Month, 2020-2025, in Proposed Project Fire Index Area (FIA 530)
Pacific Gas & Electric Company Comments, Attachment 6
Moraga-Oakland X 115 kV Rebuild Project Draft Environmental Impact Report

Responses to Comment Set E01 – Pacific Gas and Electric Company

E01-1 The commenter states that the Draft EIR provides a thorough, comprehensive analysis prepared in accordance with the requirements of the California Environmental Quality Act and describes the proposed Project. No response is required.

E01-2 The commenter states that its letter is focused on the four issues for which evidence or comment can be provided only in the CEQA environmental review process, as specified in the Assigned Commissioner's Scoping Memo and Ruling issued March 11, 2025 ("Scoping Ruling"), and the Administrative Law Judge's Ruling Setting Prehearing Conference issued September 5, 2025 ("ALJ Ruling"). The commenter states that the EIR alternatives (i) present more difficult engineering challenges that may cause the alternatives to be infeasible, and (ii) would result in greater impacts (including to neighboring properties and in the areas of transportation and wildfire risk), than the Draft EIR recognizes, namely due to construction challenges, landslide risk (Alternatives 2 & 3), visual and feasibility concerns (Alternative 4), and transportation and air quality impacts.

Please see Responses to Comments E01-7 to E01-25, which respond to the commenter's detailed comments addressing these concerns.

E01-3 The commenter states that Mitigation Measures (MM) WF-1a (Prepare Emergency Evacuation Plan) and WF-1b in the Draft EIR are stricter than necessary to mitigate impacts and raise feasibility concerns for construction.

Please see Response to Comment E01-26 regarding MM WF-1a and Response to Comment E01-27 (Limit Construction Requiring Full Road Closures) regarding MM WF-1b.

E01-4 The comment states that the Draft EIR's assessment of Biological Resources speculatively finds that the proposed Project would have significant impacts on species that have not yet been identified as present in the Proposed Project area and imposes unnecessary mitigation measures.

Please see Response to Comment E01-28.

E01-5 The commenter states that the Draft EIR overstates the proposed Project's transportation impacts under Impacts T-1, T-4, T-5, T-6, and T-7, wildfire impacts under Impact WF-1, and noise impacts under Impact N-2.

Please see Responses to Comments E01-29 to E01-33 regarding the transportation impacts, E01-34 regarding wildfire impacts, and E01-35 regarding noise impacts in the Draft EIR.

E01-6 The commenter lists the following attachments, which have been incorporated by reference:

- *Attachment 1: Text Revisions and Requests for Clarification.*

  See Responses to Comments E01-36 to E01-130.

- *Attachment 2: InfraTerra Landslide Study (PEA Appendix E4)*

  See Response to Comment E01-131, which includes PG&E's Attachment 2, and Responses to Comments E01-8, E01-12 to E01-17, which address landslide risk in the Oakland Hills.

- *Attachment 3: PG&E Response to CPUC Data Request 6, Part B*

  See Response to Comment E01-132, which includes PG&E's Attachment 3, and Response to Comment E01-9, which relates to statements citing PG&E's Responses to CPUC Data Request #6, Part B.

- *Attachment 4: PEA Chapters 4 and 6*

  See Response to Comment E01-133, which includes PG&E's Attachment 4, and Responses to Comments E01-12, E01-15, E01-17, which cite Attachment 4

- *Attachment 5: PG&E Response to CPUC Data Request 9*

  See Response to Comment E01-134, which includes PG&E's Attachment 5, and Response to Comment E01-24, which relates to comments citing PG&E's Responses to CPUC Data Request #9.

- *Attachment 6: Recent Historic Fire Risk by Month*

  See Response to Comment E01-135, which includes PG&E's Attachment 6, and Response to Comment E01-27, which cites PG&E's Historic Analysis of Predicted Fire Risk by Month, 2020-2025, in Proposed Project Fire Index Area (Attachment 6).

E01-7 The commenter states that the Draft EIR correctly selects the proposed Project as environmentally superior but believes that the undergrounding alternatives present more difficult engineering challenges and would have greater impacts than the Draft EIR recognizes. The commenter quotes the Draft EIR to describe the underground alternatives evaluated and conclusions of the comparison of alternatives, and includes a table listing significant and unavoidable impacts identified Chapters 3 and 4 of the Draft EIR.

The commenter correctly describes the EIR alternatives considered and conclusion regarding the environmentally superior alternative in the Draft EIR. Please see Responses to Comments E01-8 to E01-25, which address the commenter's specific concerns regarding the feasibility and impacts of the underground alternatives in the Oakland Hills.

E01-8 The commenter states that the underground alternatives have substantial construction challenges and points to PG&E's Attachment 2 (InfraTerra Landslide Study) as well as Impact GEO-3, which would be significant and unavoidable, as stated in Chapter 4 of the Draft EIR.

The CPUC notes the statements and Draft EIR conclusions cited by the commenter. No response required.

E01-9 The commenter describes vault installation for underground power lines, as stated in Chapter 4 of the Draft EIR.

The CPUC notes the description from the Draft EIR cited by the commenter. No response required.

E01-10 The commenter summarizes text in Chapter 4 (Alternatives) of the Draft EIR stating that an underground crossing of the Hayward Fault is not feasible and that transition stations require more ground disturbance and thus increase the potential for disturbance of resources and adverse environmental impacts.

The CPUC notes the Draft EIR statements cited by the commenter. No response required.

E01-11 The commenter summarizes text in Chapter 4 (Alternatives) of the Draft EIR describing construction driven road closures and potential conflicts with existing underground utilities.

The CPUC notes the Draft EIR statements cited by the commenter. No response required.

E01-12 The commenter summarizes text in Chapter 4 (Alternatives) of the Draft EIR describing the landslide risk in the Oakland Hills. The commenter states that landslide movement could damage underground power lines by exceeding their maximum allowable elongation (approximately two inches), which could potentially cause extensive outages and require major repairs. The commenter notes that repair efforts following a landslide could take six months or longer

and would likely involve substantial slope stabilization work. The commenter agrees with the Draft EIR's conclusion that further geotechnical investigations are needed to evaluate the feasibility of engineering solutions, such as thicker duct banks or retaining walls, while emphasizing that these solutions may have secondary impacts on adjacent properties and could significantly extend the construction timeline.

The CPUC notes the Draft EIR statements cited by the commenter. No response required.

E01-13 The commenter correctly states that Impact GEO-3 would be significant and unavoidable under Alternative 3, as stated in Chapter 4 of the Draft EIR. The commenter points to PG&E's Attachment 2 (InfraTerra Landslide Study), which suggests that protective infrastructure such as retaining walls would likely be required and could necessitate removal of existing residences. The commenter also notes that the Draft EIR contradicts this assessment, concluding that Alternative 3 is likely feasible without impacts to private property.

The commenter disagrees with the Draft EIR's conclusion that shallow landslides are more likely than deep failures in Shepherd's Canyon. The commenter cites mapping by CGS and states that these findings are consistent with InfraTerra's Landslide Study, which reports that landslide deposits exceed 15 feet in thickness in the Shepherd's Canyon area. The commenter states that the presence of deep-seated landslide features present a significant and unacceptable risk to underground infrastructure without engineered protective measures. The commenter states that the Draft EIR underestimates landslide risks by focusing on shallow failures and that deep-seated instability should be considered, especially during a seismic event.

As stated in Section 4 of the Draft EIR, additional geotechnical investigations would be conducted during design to determine location of the toe of the slide and depth of the slide plane relative to the duct bank alignment to further evaluate feasible engineering solutions. Geotechnical investigations would determine the required engineering measures and impacts to private property.

The InfraTerra Landslide analysis relied upon desktop interpretation of lidar and aerial imagery and field reconnaissance and has estimated the thickness and limits of the landslides. The required geotechnical studies at each location would provide more definitive information to evaluate landslide hazard, including seismic induced movement, and support development of engineering requirements.

See also Responses to Comments E01-14, E01-15, and E01-16.

E01-14 The commenter disagrees with the Draft EIR's conclusion under Impact GEO-3 for Alternative 3 (Shepherd Canyon Underground Alternative), which states that underground along Shepherd Canyon Road is feasible. The commenter states that the Draft EIR appears to rely solely on a visual inspection of the roadway and adjacent slopes. The commenter argues that a visual inspection is insufficient to evaluate landslide risk given the CGS mapping that identifies deep and moderate landslides in the Project area. The commenter notes that any recent pavement repairs could obscure prior damage. The commenter points to PG&E's Attachment 2 (InfraTerra Landslide Study), in which this report utilized observations of surface and subsurface conditions, rock strength, and weathering, to use in predictive slope stability models, which estimated potential ground deformation of 23 to 27 inches, which far exceeds the cable's maximum elongation tolerance of two inches. The commenter concludes that based on the analysis conducted by InfraTerra, significant exploratory geotechnical investigations, including sampling and vegetation removal, would be required to confirm feasibility and ensure safe underground installation in Shepherd's Canyon.

The Draft EIR's analysis of slope stability and potential impacts to undergrounding along Shepherd's Canyon Road under Impact GEO-3 for EIR Alternative 3 relied in part on PG&E's Attachment 2 (InfraTerra Landslide Study), as well as PG&E's decision and rationale to fully evaluate a similar alternative (Alternative C) in its PEA. The InfraTerra Landslide Study maps the corridor along Shepard Canyon as a Qpaf geologic unit, which is rated as "low landslide potential." This narrow corridor is bounded on both sides by a geologic unit with "high landslide potential." EIR Section 4.5.5.2 (Operation and Maintenance Impacts, Geology) acknowledges that in PEA Section 4.2.3.3, PG&E states about its Alternative C (Shepherd Canyon): "the prevalence of landslides in the area presents an unacceptable risk to reliability without engineered protection, which likely would be retaining walls based on road width constraints."

Should the CPUC decisionmakers approve Alternative 3, PG&E would perform geotechnical investigations, which would evaluate slope stability and landslides prior to construction and would define engineering protection requirements.

See also Responses to Comments E01-13, E01-15, and E01-16.

E01-15 The commenter states that a standard duct bank design is insufficient to accommodate the significant ground deformation expected along Shepherd Canyon Road and that engineering measures, such as reinforced duct banks or retaining walls, would be required. The commenter states that the feasibility of these engineering measures cannot be determined without detailed geotechnical investigations. The commenter concludes that without these geotechnical investigations and associated impact analysis, the Draft EIR lacks sufficient support for its conclusion that protective measures affecting private property would not be necessary.

Should the CPUC decisionmakers approve an underground alternative, PG&E would perform geotechnical investigations, which would evaluate slope stability and landslides prior to construction and would define engineering protection requirements. These additional engineering measures would be technically feasible, and would also have additional ground disturbance impacts, which are acknowledged in EIR Section 4.5.5.2 (Operations and Maintenance Impacts).

See also Responses to Comments E01-13, E01-14, and E01-16.

E01-16 The commenter disagrees with the conclusion under Impact GEO-3 under Alternative 3 (Shepherd Canyon Underground Alternative), which states that the shape of Shepherd Canyon would protect an underground duct bank from unacceptable deformation in the event of a deep or moderate landslide. The commenter disagrees with the conclusion that Shepherds Canyon Road is effectively buttressed by opposing slopes, thus, reducing the likelihood of damage. The commenter states that the landslides on either side of Shepherd's Canyon are separately mapped features and should be evaluated independently.

The commenter argues that PG&E's evidence indicates the canyon has a broad, inverted trapezoidal shape, not a narrow, V-shaped profile, allowing the toe of deep-seated rotational landslides to extend laterally beneath the roadway. The commenter cites the 2015 Vasquez Canyon landslide as a comparable example, where a similar canyon shape did not prevent roadway deformation from a deep landslide. The commenter concludes that the Draft EIR provides no technical evidence to support the claim that Shepherd Canyon's geometry would mitigate deep seated ground movement, and that significant duct bank damage remains likely under such conditions.

The Draft EIR recognizes that Shepherd Canyon is located in an area with high landslide susceptibility, and Impact GEO-3 concludes that landslide-related ground movement could result in significant impacts to underground facilities, including duct banks. The Draft EIR also identifies uncertainties in the engineering measures required to stabilize duct banks in areas of deep-

seated landslides. While the commenter raises concerns regarding the canyon's trapezoidal shape and potential lateral extension of landslide toes, the Draft EIR's analysis accounts for the possibility of duct bank damage under deep or moderate landslide conditions. Additional geotechnical investigations would be conducted during design to determine location of the toe of the slide and depth of the slide plane relative to the duct bank alignment to further evaluate feasible engineering solutions.

See also Responses to Comments E01-13, E01-14, and E01-15.

E01-17 The commenter states that the Draft EIR bases the landslide risk for Alternative 2 (Skyline-Colton-Snake Underground Alternative) primarily on visual observations of surface conditions. The commenter states that the feasibility of Alternative 2 depends on conducting geotechnical investigations to understand required engineered measures. The commenter goes on to state the construction of protective measures will result in environmental impacts, such as vegetation removal, aesthetic impacts, and extended construction and associated traffic impacts that are not discussed in the Draft EIR. The commenter states that the Final EIR should acknowledge landslide risk for Alternative 2 and the impacts of conducting geotechnical investigations and installing engineering measures.

The geotechnical investigations required would be extensive. Engineering measures and geotechnical investigations would have temporary construction-related ground disturbance. See Responses to Comments E01-18 and E01-118.

E01-18 The commenter describes impacts of Alternative 2 and states that the Fire Station Transition Station would have additional potential impacts not included in the Draft EIR, including excavation into the hill to the north and a vegetation removal setback, both of which would create biological and visual resources impacts. Loss of parking at the site may also affect recreational visitors.

Text has been added to Section 4.5.3.3 (Overhead-Underground Transition Stations and Poles), Section 4.5.3.4 (Overview of Impacts of Constructing and Operating Underground Power Lines and Transition Stations/Poles), and Section 4.5.3.5 (Impacts of Underground Alternatives, Aesthetics, Impact AES-3) in the Final EIR to note the additional construction requirements of the Fire Station Transition Station and associated potential impacts.

EIR Section 4.5.3.5 concludes that these incremental visual changes in the context of the existing utility facilities and other built landscape features would not substantially alter the existing landscape character visible from Shepherd Canyon Road. With this added language, the overall impact conclusions for Alternative 2 in Section 4.5.4 (Impacts of Alternative 2: Skyline-Colton-Snake Underground Alternative) of the Draft EIR would not change.

Furthermore, Section 4.8.2.2 [Step 2: Compare Combined Alternatives (Alternatives 2 & 3) with the Proposed Project] in the Draft EIR concludes that alternatives would not reduce or eliminate any significant and unavoidable impacts of the proposed Project and would create new significant and unavoidable impacts. The underground alternatives would have more severe and a longer duration of construction impacts across a larger geographic area. Coupled with the beneficial impacts to wildfire risk from the proposed Project, the proposed Project's central section is considered environmentally superior to the combination of Alternatives 2 and 3.

E01-19 The commenter states that the Manzanita Transition Station cannot be constructed under the existing power lines while in service and suggests three options: (1) installing shoo-flies, which would require additional vegetation removal and increase biological and visual resources impacts; (2) moving the transition station to the north, which would not be feasible due to

topography; or (3) moving the transition station to the south, eliminating a portion of the parking lot for The Hills Swim and Tennis Club.

Should Alternative 4 be approved by the CPUC, PG&E would perform final design and engineering to determine placement of the Manzanita Transition Station. Since the Manzanita Transition Station would accommodate two circuits being placed underground for Alternative 4, this would be consistent with PG&E's power line clearance requirements allowing for a November through March construction window. The use of a temporary shoofly for the other two circuits during construction of the Manzanita Transition Station would result in an impact of additional vegetation removal.

Additional text has been added to Section 4.5.3.5 (Impacts of Underground Alternatives, Aesthetics, Impact AES-3) in the Final EIR to state that to construct the Manzanita Transition Station under or directly adjacent to the lines while in service may require a temporary shoofly on either side of the existing power lines to which the power lines can be moved during construction. This would allow for construction under the existing lines, but it would require substantial vegetation removal under the temporary lines moved to the shoofly, which would result in additional visual impacts.

With this added language, the impact conclusions for Alternative 4 in Section 4.5.6 (Impacts of Alternative 4: Skyline-Ascot Underground Alternative) of the Draft EIR would not change. As described in EIR Section 4.5.3.5, under Aesthetics, the half-acre Manzanita Transition Station would create visual blockage of the expansive views to the east that are now available from this location on Manzanita Drive. This would result in a significant and unavoidable impact for Impact AES-3 (In non-urban areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings). Furthermore, Section 4.8.2.1 (Step 1: Compare Oakland Hills Underground Alternatives) in the Draft EIR concludes that Alternative 4: Skyline-Ascot Underground Alternative would have the most significant impacts of the three alternatives and is eliminated from further comparisons. EIR Section 4.9 (Environmentally Superior Alternative) concludes that the proposed Project is environmentally superior to the five underground alternatives, as is depicted in EIR Figure 4.8-1.

E01-20 The commenter states that there likely is not sufficient space to physically accommodate all six poles in the overhead line configuration for Alternative 4 along Scout Road from Ascot Drive to the existing alignment (EIR Figure 4.3-7b). The required clearance also likely would require substantial vegetation removal. The six poles of Alternative 4 along Scout Road are intended to replace the existing overhead distribution line along Scout Road with the transmission poles being generally located in the same position as the existing distribution poles. It is acknowledged that notable vegetation removal would be necessary since the existing vegetation along Scout Road is dense, often overhanging the road and in some instances nearly intruding on the existing distribution line.

The commenter also states that Section 4.3.7.1 (Option 1: Overhead Scout Road) of the Draft EIR proposes that the existing distribution lines would be underbuilt on the new power line poles. Underbuilding distribution lines on the same structures as the power line is not recommended due to this configuration of distribution and power line circuits on a single structure introduces the non-standard single-point-of-failure issue. Therefore, the commenter concludes that Option 1 in Alternative 4 may not be feasible. Installation of distribution underbuilds on transmission structures is common utility practice. The single-point-of-failure issue is not relevant in this instance for two transmission circuits on a single pole, as this has been accepted by PG&E for this Project due to the existence of multiple transmission connections between Moraga and Oakland substations. Single-point-of-failure on the existing distribution line is the

current condition, further, this is usually not of concern since distribution systems are typically sectionalized to allow for power feed from either direction along distribution segments.

Detailed engineering has not been performed for Alternative 4, including its overhead connection options to the proposed Project or to Alternative 5. Option 1 (Overhead Scout Road) and Option 2 (Overhead Across SR-13) were developed to maintain flexibility for engineering, including the overhead crossing of SR-13 and the Hayward Fault, and to ensure alternative feasibility.

Note that Section 4.8.2.1 (Step 1: Compare Oakland Hills Underground Alternatives) in the Draft EIR concludes that Alternative 4: Skyline-Ascot Underground Alternative would have the most significant impacts of the three alternatives and is eliminated from further comparisons. EIR Section 4.9 (Environmentally Superior Alternative) concludes that the proposed Project is environmentally superior to the five underground alternatives, as is depicted in EIR Figure 4.8-1.

E01-21 The commenter states that the Draft EIR does not fully recognize the construction impacts of an undergrounding route in the Oakland Hills, as any route would result in the combined construction impacts of two alternatives, plus transition facilities and removal of existing towers and lines.

Section 4.3.1 (Issues Associated with All Underground Alternatives) of the Draft EIR clearly states that due to the steep, narrow, and sharply winding roads in the Oakland Hills, placing all four overhead 115 kV lines underground in one road may not be feasible due to the width and separation required for two separate double-circuit duct banks. As a result, Alternatives 2, 3, and 4 assume that only two circuits would be installed in each road, requiring two of those three alternatives to be selected. The descriptions of Alternative 2, 3, and 4 in EIR Sections 4.3.5, 4.3.6, and 4.3.7, respectively, also explain that two underground alternatives would be required in the Oakland Hills and that upon the completion of construction and energization of the underground alternatives, the existing PG&E 115 kV overhead structures and lines would be removed.

EIR Section 4.5 (Alternatives Analysis) and EIR Section 4.6 (Impact Conclusions for All Underground Alternatives) describe the impacts of each alternative separately. Whereas the alternatives comparison in Section 4.8.2.2 (Step 2: Compare Combined Alternatives [Alternatives 2 & 3] with the Proposed Project) of the Draft EIR describes that the potential impacts discussed would be for the required construction of Alternatives 2 & 3 *combined* (emphasis added).

The number of significant and unavoidable impacts does not change with consideration of two underground alternatives compared to the proposed Project; however, the severity of the impacts would be affected. This nuance is reflected in the EIR text, such as where Section 4.8.2.2 of the Draft EIR states that "[t]he extensive construction required for undergrounding four circuits in two separate roadways would create significant traffic and access constraints and have the potential to delay evacuation and emergency access if a wildfire or other emergency occurs during construction." Furthermore, EIR Section 4.8.2.2 concludes that "[t]he underground alternatives would have more severe and a longer duration of construction impacts across a larger geographic area. Coupled with the beneficial impacts to wildfire risk from the proposed Project, the proposed Project's central section is considered environmentally superior to the combination of Alternatives 2 and 3."

Note that Table 4.8-1, referenced by the commenter, is included in EIR Section 4.8.2.1 (Step 1: Compare Oakland Hills Underground Alternatives) to compare the three Oakland Hills

underground alternatives (Alternatives 2, 3, and 4) to one another; the proposed Project is not included in Table 4.8-1.

Finally, the commenter states that the Draft EIR does not recognize the impacts associated with removal of existing overhead lines for the underground alternatives.

As explained above, EIR Section 4.3 states that upon the completion of construction and energization of the underground alternative, the existing PG&E 115 kV overhead structures and lines would be removed.

As explained in the Draft EIR, the discussion in Section 4.5.3 (Impacts Common to All Alternatives with Underground Components) focuses on the impacts that apply to all underground alternatives and that are most severe or that are anticipated to present most construction challenges. All impact significance conclusions by issue area are presented in Section 4.6 (in Table 4.6-1, Impact Conclusions for All Underground Alternatives).

Removal of the existing structures would occur as part of the proposed overhead rebuild as well as part of the underground alternatives. Removal of the existing overhead power line is analyzed as part of the proposed Project in Draft EIR Chapter 3. As part of the underground alternative, overhead power line removal would not create any new or substantially more significant impacts. Therefore, structure removal is rightly considered and factored into the impact conclusions listed in EIR Table 4.6-1 (Impact Conclusions for All Underground Alternatives).

As stated above, one major difference in the severity of impacts between the underground alternatives and the proposed Project is that impacts, including removal of existing structures, would occur over a larger geographic area since the underground alternatives would be constructed within roadways outside of PG&E's existing right-of-way where the overhead structures would be removed. Under the proposed Project, the overhead structures would be rebuilt within PG&E's existing right-of-way.

E01-22 The commenter lists potential impacts of underground alternatives in the Oakland Hills identified in Chapter 4 of the Draft EIR. The commenter states that the Draft EIR does not describe other adverse impacts from undergrounding power lines in the areas of transportation and air quality, as explained below.

Air Quality and Transportation impacts of the underground alternatives are described in Section 4.5 (Alternatives Analysis) and Section 4.6 (Impact Conclusions for All Underground Alternatives) of the Draft EIR. Regarding Transportation, EIR Section 4.8 concludes that the underground alternatives would not reduce or eliminate any significant and unavoidable impacts of the proposed Project (Impacts T-1, T-4, T-5, T-6) and would create a new significant and unavoidable impact related to Transportation (Impact T-7).

Additionally, total air emissions of construction of multiple underground segments concurrently have the potential to exceed the Bay Area Air Quality Management District's regional emissions threshold for nitrogen oxides (NOx). Air Quality Mitigation Measure MM AQ-2a [Construction Activity Management Plan (for underground alternatives)] is not recommended for the proposed Project would be required for underground alternatives to stagger construction over a longer period of time to ensure that emissions of NOX do not exceed thresholds.

See also General Response GR-1, Responses to Comments E01-23 and E01-24 regarding transportation impacts of underground alternatives, and Response to Comment E01-25 regarding air quality impacts.

E01-23 The commenter states that transportation impacts from the underground alternatives would be more substantial than the Draft EIR recognizes. Compared to undergrounding along Park Boulevard as proposed under the Project, the underground alternatives within other roadways would move more slowly because of the need for more vaults in roads with more curves; more construction challenges because of winding, narrow, and steep streets; smaller residential roadways that would have more limited construction work hours; and reduced access along narrow and winding roads, resulting in the potential for vaults that must be cast in place requiring road closures for 3 to 4 weeks instead of 2 weeks for precast vaults.

These additional details regarding constraints from the underground alternatives have been added to Section 4.5.3.4 (Overview of Impacts of Constructing and Operating Underground Power Lines and Transition Stations/Poles) in the Final EIR.

Because more severe transportation impacts for the underground alternatives compared to the proposed Project were already identified in the Draft EIR related to greater construction challenges and a longer construction duration, this comment does not identify any new impacts or substantially more severe impacts that would require additional or substantially modified mitigation measures. See also Response to Comment E01-24.

E01-24 The commenter states that 34 feet is the minimum width required to construct a duct bank with power line circuits and associated vaults while maintaining a 10-foot traffic lane; therefore, compared to the proposed Project, the underground alternatives would require more complete road closures with no lane available to maintain traffic, since many roadways within the underground alternative alignments are less than 34 feet wide, and any portion of a roadway that is less than 34 feet wide would require the entire block to be closed. The commenter provides a list of roadways that would be affected by complete road closures, including Skyline Boulevard, Colton Boulevard, Heartwood Drive, Snake Road, Shepherd Canyon Road (west of Saroni Drive), Ascot Drive between Manzanita Drive and SR-13, Sims Drive, Somerset Drive, and Estates Drive (west of Somerset Drive). The commenter also states that because of the narrow width of the roadways, it may not be possible to reopen a road or lane closure at the end of the workday due to safety reasons and space limitations, since reopening a single traffic lane outside work areas without flaggers or traffic controls would be unsafe; and reestablishing both lanes would require equipment and materials to be demobilized from the work area to a staging area, requiring the placement of plates over the trenching and substantially slowing the pace of construction.

These additional details regarding Space in Roadways constraints from the underground alternatives have been added to EIR Section 4.5.3.2 (Constraints to Undergrounding Power Lines).

Because more severe transportation impacts for the underground alternatives compared to the proposed Project were already identified in the Draft EIR related to greater construction challenges and a longer construction duration, this comment does not identify any new impacts or substantially more severe impacts that would require additional or substantially modified mitigation measures. See also Response to Comment E01-23.

E01-25 The comment suggests that air quality impacts of the underground alternatives would be greater than disclosed in the Draft EIR. The comment notes that with implementation of Mitigation Measure MM AQ-2a, the activities for any of the underground alternatives could be scheduled to reduce average daily emissions to be below the applicable threshold recommended by the BAAQMD, also known as the Bay Area Air District, but the total pollutant emissions would be increased relative to the proposed Project. The comment expresses concern that the increase in emissions due to a longer duration of construction would likely result in greater pollutant exposure and health risks. The Draft EIR adequately describes the

extended duration of construction within the analysis of the alternative's air pollution impacts as they relate to Impact AQ-2. As noted by the comment, the EIR discloses the potential increases in total construction emissions for Alternatives 2 and 3 (Draft EIR, p. 4-36). Because the applicable Bay Area Air District air quality thresholds for CEQA are based on average daily emissions, construction emissions are appropriately calculated for each year, then divided into an average daily emission rate for comparison with the thresholds. Scheduling construction of the alternatives would be a feasible means of limiting average daily emissions under MM AQ-2a. While the total emissions of the underground alternatives would be higher, the average daily emissions could feasibly be mitigated to less than significant levels.

The comment describes potentially greater pollutant exposure and health risk impacts due to greater distances covered by each of the alternatives and a longer duration. These impacts are described in the Draft EIR analysis of Impact AQ-3 (p. 3.3-18). Under the alternatives, different locations would experience the effects of construction-related emissions at different times than those identified for the proposed Project. The nature of this impact would be similar to that of the proposed Project, where emissions would not occur at rates likely to cause substantial localized pollutant concentrations for sensitive receptors. No additional analysis would be required.

E01-26 The commenter requests that MM WF-1a should be revised to use the specific evacuation routes determined by local jurisdictions. The commenter states that "critical" and "non-critical" evacuation routes cannot be made in advance, are not terms used in other municipal planning documents, and could cause confusion when residents may refer to communication tools like Genasys Protect during an emergency. The commenter provides suggested edits to MM WF-1a to ensure consistency with local jurisdictions' evacuation plans and minimize confusion to local residents. Please refer to Response to Comment E01-110 for a response to these comments.

E01-27 The commenter requests that MM WF-1b should be revised to expand the range of months when full road closures are allowed so that they align with months when fire risk is low. Currently, MM WF-1b requires that full road closures on designated evacuation routes may only occur between December 15 and February 28, but the commenter asserts the range is unreasonably short and allows for construction when winter rains are likely to occur. The commenter states that the EIR does not provide evidence for lowest fire risk between December 15 to February 28, and there is conflicting information in the environmental setting. The commenter requests to expand allowable road closures between December 1 through May 31. The commenter states that MM WF-1b, as written, could substantially extend the duration of construction by a year or more and limit feasibility of construction during winter rains. Please refer to Response to Comment E01-111 for a response to these comments.

E01-28 The comment states that the Draft EIR's assessment of Biological Resources speculatively finds that the proposed Project would have significant impacts on species that have not yet been identified as present in the Proposed Project area and imposes unnecessary mitigation measures. The commenter disagrees with the conclusion that certain impacts to species would be significant, given the application of APMs approved by resource agencies (USFWS and CDFW) in the Bay Area HCP, Bay Area O&M ITP, and Bay Area O&M ITP FEIR. Specifically, the comment states that impacts to as-yet unknown populations of species are speculative and inaccurate and argues that if a given species is determined to be present in the future, impacts to species may not be significant given the measures already outlined in the HCP and HCP EA, and ITP and ITP FEIR. Implementation of these unnecessary measures would add to ratepayer costs associated with the project.

CPUC acknowledges that there are certain species that have not been identified in the Project area during biological surveys. However, several of these species have a moderate or higher

potential to occur in the Project area. Though conducting preconstruction and protocol level surveys are important tools for categorizing biological resources under CEQA, they are a snapshot in time that can vary depending on precipitation, seed dispersal, habitat availability, range shifts, and other environmental factors. As CPUC is the CEQA lead agency for this project, mitigation measures are proposed to prevent gaps in species coverage.

The commenter goes on to state that the Draft EIR provides no support for the conclusions that O&M activities would have significant impacts given that PG&E's O&M activities will be essentially unchanged as a result of the Proposed Project, and continuation of an existing maintenance program is not a Project impact. In addition, the O&M activities were reviewed and evaluated by CDFW in Bay Area O&M ITP FEIR, which is a final document; as such, CPUC is bound by those conclusions. Given that O&M activities are essentially unchanged from current existing practices, CPUC agrees that impacts are less than significant. The impact analysis for Operations and Maintenance under Impact BIO-1 has been revised in the Final EIR, with the determination that impacts are less than significant.

Please see Response to Comment E01-62, which addresses changing the conclusion for Impact BIO-1, Operations and Maintenance, to "*LESS THAN SIGNIFICANT*."

PG&E has provided detailed proposed revisions to the Draft EIR discussion of Biological Resources and associated Mitigation measures in Attachment 1. These revisions are specifically discussed in E01-54 through E01-70.

E01-29 The commenter disagrees that the proposed Project would be inconsistent with transportation programs, plans, ordinances, or policies, as discussed under Impact T-1 in the Draft EIR. The commenter states that in some instances, no impacts would result in the geographic locations covered by certain plans, and in other instances, the plan or policy is not applicable to the proposed Project. The commenter states that the effectiveness of Mitigation Measure T-1a is understated and would effectively reduce impacts to less than significant. For these reasons, the commenter requests that that the impact conclusion be changed from significant and unavoidable to less than significant with mitigation.

The plans and policies discussed under Impact T-1 in Section 3.15 of the Draft EIR have been reviewed for applicability, and some have been removed. Refer to Section 3.15 of the Final EIR for these minor revisions.

The significant and unavoidable impact conclusion applies to the overhead power line rebuild area only (the other project alignments were determined to be less than significant with mitigation). The proposed Project's environmental setting within the overhead power line rebuild area includes narrow roadways and steep terrain. Transportation conditions within these areas would generally be considered challenging under existing conditions with respect to pedestrian, bicycle, and transit safety and access, as well as evacuation and emergency response. CEQA explicitly and fundamentally takes the environmental setting into account when determining if a project would have a significant impact. If a project would exacerbate existing hazards, the worsening of those hazards could be considered a significant impact.

Based on the scope of the proposed Project, it is reasonably foreseeable that the activities required for implementation of the proposed Project could adversely affect the circulation system within the overhead power line rebuild area due to potential lane closures, detours, equipment moving across the roadway, and other construction events within narrow roadways and on steep terrain. Therefore, as is currently stated in the Draft EIR, impacts from the overhead power line rebuild related to consistency with plans and policies addressing the circulation system would be significant and unavoidable. No changes to the impact conclusion are required.

E01-30 The commenter provides several reasons why impacts related to emergency access discussed under Impact T-4 in the Draft EIR would be less than significant rather than significant and unavoidable in the overhead power line rebuild area. The commenter requests that the impact conclusion be changed to less than significant with mitigation.

As stated in the Response to Comment E01-29, the proposed Project's environmental setting within the overhead power line rebuild area includes narrow roadways and steep terrain. Emergency access within these areas would generally be considered challenging under existing conditions. Based on the scope of the proposed Project, it is reasonably foreseeable that the activities required for implementation of the proposed Project could adversely affect emergency access within the overhead power line rebuild area due to potential lane closures, detours, equipment moving across the roadway, and other construction events within narrow roadways and on steep terrain. Therefore, as is currently stated in the Draft EIR, impacts from the overhead power line rebuild related to emergency access would be significant and unavoidable. No changes to the Draft EIR are required.

E01-31 The commenter provides several reasons why pedestrian and bicycle impacts discussed under Impacts T-5 and T-6 in the Draft EIR would be less than significant rather than significant and unavoidable in the overhead power line rebuild area. The commenter requests that the impact conclusion be changed to less than significant.

Impacts T-5 and T-6 in Section 3.15 of the Draft EIR address potentially hazardous conditions for people walking and bicycling and interference with walking or bicycling accessibility. As stated in the response to E01-29, the proposed Project's environmental setting within the overhead power line rebuild area includes narrow roadways and steep terrain. Pedestrian and bicycle safety and access within these areas would generally be considered challenging under existing conditions, especially when mixed with motor vehicle traffic, which increases the risks of crashes, injuries, and fatalities for bicyclists and pedestrians. Based on the scope of the proposed Project, it is reasonably foreseeable that the activities required for implementation of the proposed Project could worsen the already challenging conditions for pedestrians and bicyclists in the overhead power line rebuild area due to potential lane closures, detours, equipment moving across the roadway, and other construction events within narrow roadways and on steep terrain. Therefore, as is currently stated in the Draft EIR, impacts from the overhead power line rebuild on pedestrian and bicycle safety and access would be significant and unavoidable. No changes to the EIR are required.

E01-32 The commenter states that the analysis of Impact T-7 in the Draft EIR identifies three AC Transit bus lines potentially affected by the proposed Project, but evidence suggests the impacts would be less than significant, as follows:

- Because of the limited schedule for AC Transit Line V and planned lane management, including plated trenches and coordinated temporary bus stops, temporary disruption during Project construction would be minimized. Advance notice would be provided to agencies and residents, allowing adequate preparation for any temporary closures and transit stop relocations.
- Line 33 is no longer operational, so this line would experience no impact.
- For Line 642, only a brief lane closure on Monterey Boulevard is anticipated for guard pole installation, with no obstruction to buses or bus stops within the Project area.

For these reasons, the commenter requests that the impact conclusion for Impact T-7 be changed from significant and unavoidable to less than significant.

Information regarding affected bus lines and stops in Section 3.15 of the Draft EIR was obtained from PG&E's PEA. According to the PEA, "The operation of AC Transit's lines V and

33 and their stops along Park Boulevard will be temporarily affected by construction activities for the underground segment of the project." In addition, the PEA states, "The operation of AC Transit's line 642 and its stops along Snake Road, Shepherd Canyon Road, and Arrowhead Drive also may be temporarily affected." This information was incorporated into the Draft EIR prior to the EIR public review period, which began on August 12, 2025.

AC Transit Line 33 was replaced by Lines 18, 88, and 633 as part of AC Transit's Realign service changes that started on August 10, 2025. This update could not be feasibly incorporated into the Draft EIR prior to the public review period. Therefore, EIR Section 3.15 has now been updated to incorporate these transit line changes. Instead of Line 33, Line 18 includes stops along Park Boulevard that would be temporarily affected by construction activities for the underground segment of the Project.

Impact T-7 in Section 3.15 of the Draft EIR addresses whether the proposed Project would cause substantial delays in public transit. The Draft EIR states that considering that Line 642 operates only one bus at the end of the school day on weekdays, potential delays are expected to have minimal impacts on overall bus schedules and travel times. However, potential lane closures, bus route detours, equipment moving across the roadway, and other construction events could cause substantial delays in public transit along AC Transit Lines 18 and V affecting up to 2,180 riders on these lines.

For Lines 18 and V, buses traveling along the affected segment of Park Boulevard would directly experience the delay and increased travel time. However, the delay along Park Boulevard could also affect the schedule for the entire bus line and affect all riders on these bus lines during the construction period. Construction details are not known at this time to determine the locations, duration, or feasibility of specific bus stop closure or relocation or bus rerouting. As a result, it is reasonably foreseeable based on the evidence in the record that Project construction could interfere with transit operations and substantially delay public transit services. Therefore, impacts would be significant and unavoidable. No changes to the impact conclusion are required.

E01-33 The commenter contends that the scope and scale of transit impacts under the proposed Project can be compared to that of the Egbert Switching Station Project, which has approximately four miles of underground transmission lines. The commenter states that transit impacts from the Egbert Switching Station Project were determined to be less than significant because an APM would be implemented that includes methods for minimizing construction effects on transit service by maintaining access to such facilities along the project construction area or by providing an alternate route if one is needed, as well as procedures for notifying affected agencies in advance of construction activities.

The transit impacts of the Egbert Switching Station Project cannot be accurately compared to those of the proposed Project since the underground lines for the Egbert Switching Station Project would run mostly within the urban streets of San Francisco, Brisbane, and Daly City, which have a more dense, compact urban environment with a comprehensive web of inner-city transit. On the contrary, portions of the proposed Project's setting include suburban, mountainous areas with public transit routes that cover fewer areas than a city center and are intended to connect residents to the larger regional transit network, especially Bay Area Rapid Transit (BART) stations located within flatlands. For this reason, the transit impacts from the Egbert Switching Station Project are not relevant to the proposed Project. No changes to the EIR are required.

E01-34 The commenter asserts that the EIR's significant and unavoidable conclusion for Impact WF-1 is incorrect, and impacts would in fact be less than significant with APMs and MMs. The

commenter states that the EIR's statements that detours could increase evacuation times are not supported by evidence. The commenter states that two crews would be working at any time on the overhead power line rebuild, and the only designated evacuation routes with temporary full closures are Skyline Boulevard and Park Boulevard, the locations of which are over two miles apart. The commenter points to Table 2.3-6 that identifies alternate evacuation routes, the provision of safe transport, and addressing emergency access and evacuation per MM T-1a (Traffic Management Plan and Safe Transport). The commenter points to the City of Oakland General Plan 2045 Draft EIR that concludes that impacts to adopted emergency response plans or emergency evacuation plans from construction work on roads would be less than significant with approval and implementation of a Traffic Control Plan. The commenter requests the Final EIR reflect that Impact WF-1 be less than significant with mitigation.

As discussed in EIR Section 3.18 (Wildfire) Impact WF-1, the use of alternate evacuation routes during an emergency would increase the Evacuation Time Estimates (ETE) due to the longer drive times and less direct detours. Increases in ETE would also occur on routes that remain open due to the increases in evacuation demand on remaining open routes, thus affecting evacuation times for people not near road closures, including those near Skyline Boulevard and Park Boulevard. An increase in ETE, even with implementation of APMs and MMs would be significant and unavoidable, as it would increase exposure to life safety hazards in the event of an emergency evacuation, especially in the Oakland Hills where thousands of residential structures are susceptible to wildfires. A significant and unavoidable impact is a reasonably foreseeable conservative outcome.

E01-35 The commenter states that the Draft EIR's assessment of Impact N-2, which finds that the proposed Project would expose persons to or generate excessive ground borne vibration is incorrect.

The comment asserts that mitigation would not be necessary for the groundborne vibration impact caused by proposed Project construction (Impact N-2), and the comment indicates that construction equipment, including pile drivers, would be used during "regular" daytime hours. In contrast, the EIR Project Description would allow certain nighttime work or work on Sundays (Draft EIR, Section 2.4.4, p. 2-42), depending on situations such as coordination of electrical clearances or traffic controls. Because the Project Description includes the possibility of nighttime work near residences, Impact N-2 discloses how construction would exceed the annoyance thresholds established by the FTA and adopted as a threshold by the City of Oakland (80 VdB), and Impact N-2 recommends mitigation for the underground power line portions of construction.

The annoyance threshold of 80 VdB is disclosed in the Draft EIR (p. 3.11-16) from the City of Oakland guidelines (Oakland, 2023b), and this threshold is consistent with the FTA criteria. The FTA guidance additionally suggests avoiding nighttime activities especially in residential neighborhoods (FTA, 2018, p.186). Adding clear limitations on vibration-generating sources would limit the potential for disrupting residences where people normally sleep. To incorporate the commitment in the comment that use of pile drivers would be limited to daytime hours, the Final EIR modifies MM N-2a to make the schedule limitation enforceable. The modification to MM N-2a would avoid excessive levels of vibration that may disrupt sleep by exceeding the annoyance threshold for residences by limiting the hours of pile driving to the hours between 8:00 a.m. and 4:00 p.m. The Final EIR also modifies MM N-2a as requested by PG&E to clarify that the schedule limitation would avoid annoyance impacts while other provisions within MM N-2a remain applicable for avoiding impacts to structures.

Attachment 1 - Text Revisions and Requests for Clarification

E01-36 As requested, the text in Section ES.1.3 (CPUC Conclusion Regarding Environmentally Superior Alternative) of the Final EIR has been changed to clarify the location of the four Draft EIR Alternatives, which are located between Estates Drive and Manzanita Drive.

E01-37 As requested, the text in Section ES2.1 (Project Location) of the Final EIR has been changed to add additional descriptions of existing land uses in the City of Orinda, adding a school which includes outdoor recreation facilities, as shown in Draft EIR Figure 3.14-1, Map 1. The Moraga Country Club Golf Course is not within the City of Orinda.

E01-38 As requested, the text in Section ES.8.2 (Alternatives Fully Evaluated in the EIR) of the Final EIR has been changed to clarify that no agency comments have been received that request all lines be undergrounded. One comment was received from the Oakland Fire Department, stating that they are in favor of undergrounding power lines.

E01-39 As requested, the text in Section ES.8.2 (Alternatives Fully Evaluated in the EIR) of the Final EIR has been changed to clarify that two separate double circuit duct banks would be required to accommodate all four circuits that are part of the Project.

E01-40 As requested, the text in Section 1.2.1 (California Independent System Operator Consideration of the Project) of the Final EIR has been changed to clarify that PG&E will not provide as-built information to CAISO after receiving project approval, because this information would not be available until project construction is completed.

E01-41 As requested, the text in Section 2.1 (Proposed Project Overview) of the Final EIR has been changed to clarify that in addition to structures, overhead conductors would also be removed after new lines are installed underground.

E01-42 As requested, the text in Section 2.1.1.4 (System Users, Area, and Local and Regional Systems) of the Final EIR has been changed to clarify that there is no difference between the existing system and the proposed system, in terms of distribution substations and customers served. The word “capacity” has been removed, since the capacity would increase with the rebuilt lines, as stated in Section 2.1.2.1 (Proposed Facilities Expected Capacities and Proposed System Changes).

E01-43 As requested, the text in Section 2.1.5.4 (Substation Upgrades) of the Final EIR has been changed to the correct acreages for the Moraga and Oakland X Substations.

E01-44 As requested, the text in Section 2.3.5 (Power Line Construction Aboveground) of the Final EIR has been changed to clarify that the OPGW and SW (static wire) are located in the top positions of each line.

E01-45 As requested, the text in Section 2.3.12.1 (Solid Waste) of the Final EIR has been changed to clarify the procedures around characterizing excavated soils, and to be consistent with the discussion of excavated soil in Section 2.3.12.3 (Hazardous Waste).

E01-46 As requested, the text in Section 3.2.1.1 (Landscape Setting) of the Final EIR has been changed to clarify the Project’s origination location.

E01-47 As requested, the text in Section 3.2.1 (Environmental Setting) of the Final EIR has been changed to include references to the City of Piedmont in the environmental setting section where appropriate.

E01-48 As requested, the text in Section 3.2.1.6 (Representative Viewpoints) of the Final EIR has been clarified as to views of a planned group campground.

E01-49 As requested, the text in Section 3.2.2.3 (Applicable Regulations, Policies, and Standards, Local) of the Final EIR has been revised to remove the references to the Alameda County General Plan elements.

E01-50 As suggested, the text in Section 3.2.3.3 (Impacts and Mitigation Measures, Impact AES-3) of the Final EIR has been clarified to reference tension pull sites instead of stringing sites.

E01-51 As requested, the text in Section 3.2.3.3 (Impacts and Mitigation Measures, Impact AES-3) of the Final EIR has been changed to reference the permanent removal of 15 powerline structures along the ROW between Estates Drive and Oakland X Substation instead of 16 structures.

E01-52 As requested, the text in Table 3.2-4 (Consistency with Applicable Regulations) of the Final EIR has been revised to remove the references to the Alameda County General Plan elements.

E01-53 As requested, the text in Section 3.2.4 (Mitigation Measures) and Section 7.6 (Mitigation Monitoring and Reporting Program) of the Final EIR has been clarified to include safety in the exemption statement pertaining to the installation of temporary screening fencing.

E01-54 The commenter states that they believe it was the intention of the Draft EIR to list FP-14 in lieu of FP-17 in the impact analysis for Plants. As requested, the text in the Final EIR in Section 3.4.4 (Impact Analysis and Mitigation Measures, Impact BIO-1, Plants) has been changed to apply measure FP-14, which includes revegetation activities. Clarification has also been added to the text.

E01-55 The commenter states that it is speculative to indicate that Project impacts to as-yet unknown and possibly non-exiting populations of special-status plant species would be significant. As discussed in Response to Comment E01-28, though conducting preconstruction and protocol level surveys are important tools for categorizing biological resources under CEQA, they are a snapshot in time that can vary based on a variety of environmental factors. The text in the Final EIR in Section 3.4.4 (Impact Analysis and Mitigation Measures, Impact BIO-1, Plants) has been modified to include "potential" Project impacts to as-yet unknown future populations of special-status plant species.

However, CPUC maintains that the impacts determinations "would" be significant, not "potentially could" be significant. The title of MM BIO-1a has also been updated, as requested.

E01-56 The commenter states that a lack of specific definition of Crotch's bumble bee habitat in the document does not justify the conclusion that impacts would be significant. The CDFW-authored ITP FEIR for O&M activities concluded that impacts are not significant, and the language should be modified to indicate impacts potentially could be significant. PG&E has stated they will obtain a Memorandum of Understanding (MOU) as part of the CDFW 2081(a) process, which includes submittal of survey and methodology. The commenter concludes that MM BIO-1b, Crotch's Bumble Bee Avoidance, should reference the ITP/MOU process.

CPUC acknowledges that CDFW concluded O&M activities would have a less than significant impact on Crotch's bumble bee in their ITP FEIR and correctly categorizes Crotch's bumble bee as a candidate for state listing. As such, CPUC agrees that existing APMs described in the ITP and ITP FEIR will reduce the level of impact to less than significant for Crotch's bumble bee. MM-BIO-1b, Crotch's Bumble Bee Avoidance, has been removed from O&M activities.

However, Crotch's bumble bee has a moderate potential to occur within the Project area and could be impacted during construction activities. The APMs do not define survey requirements to determine if Crotch's bumble bee habitat is present, and do not define steps taken if an active nest is found. In determining the need for a CDFW 2081(a) ITP/MOU for Crotch's bumble bee, the project must first determine if potential habitat is present, and if present, determine if Crotch's bumble bee could or does occur in the Project area and may be impacted by the Project. Conducting preconstruction surveys prior to construction will determine if Crotch's bumble bee habitat or individuals are present and may be impacted by construction, and thus, can either be avoided or require the need to obtain an CDFW 2081(a) ITP/MOU. CPUC

maintains that impacts to Crotch's bumble bee during construction, if present, would be significant without mitigation. However, CPUC acknowledges that an avenue for obtaining a CDFW 2081(a) ITP/MOU should be included into the MM-BIO-1b, Crotch's Bumble Bee Avoidance, and therefore appropriate language has been added in Section 3.4.4 (Impact Analysis and Mitigation Measures, Impact BIO-1, Crotch's Bumble Bee).

E01-57 As requested, the text in Section 3.4.4 (Impact Analysis and Mitigation Measures, Impact BIO-1, Monarch Butterfly) of the Final EIR has been changed to reflect grassland habitat that could support milkweed is near the Moraga substation.

E01-58 As requested, the text in Section 3.4.4 (Impact Analysis and Mitigation Measures, Impact BIO-1, Monarch Butterfly) of the Final EIR has been changed to clarify that potential Project impacts to monarchs would be significant if milkweed or wintering sites are found during surveys in affected areas. However, in order to make a clear impact determination, the CPUC maintains that the impacts "would" be significant, not "potentially could" be significant. Since "potential" is used prior to "Project impacts," it is implied when discussing "affected areas" and does not need to be repeated, as was requested in the comment.

E01-59 CPUC acknowledges that the CDFW-authored ITP FEIR addresses impacts to pond turtle, a CDFW designated species of special concern, and concludes that impacts would be less than significant. It is also important to note that in 2023, USFWS proposed federal protections for northwestern pond turtle under the Federal Endangered Species Act. Currently, the USFWS has not decided on whether to list northwestern and southwestern pond turtle as threatened species. However, this highlights the need for protection of the species, if present.

As requested, the text in Section 3.4.4 (Impact Analysis and Mitigation Measures, Impact BIO-1, Northwestern Pond Turtle) of the Final EIR has been changed to include "to the extent the CPUC-approved PG&E biologist identifies potential nesting habitat within the 400 feet area." The Final EIR has also been revised to clarify that impacts to northwestern pond turtle would be significant *if turtles are present*. However, CPUC maintains that the impacts "would" be significant to ensure that the EIR conclusions are transparent.

E01-60 The CPUC acknowledges that the ITP FEIR APM BIO-6 references the Nesting Bird Management Plan, which is called "Nesting Birds: Species-Specific Buffers for PG&E Activities" in Appendix B6 of the PEA. Though the title is inconsistent with the measure, CPUC acknowledges that the same document is provided in Appendix D of the PG&E Bay Area O&M FEIR, which is titled "Nesting Bird Management Plan."

The CPUC agrees that MM BIO-1e, Eagle Avoidance, summarizes ITP FEIR APM BIO-6 and does not define a new measure or contain additional requirements necessary to reduce potential impacts to a less than significant level. With the implementation of ITP FEIR APM BIO-6 and other BAHCP, ITP, and ITP FEIR measures designed to avoid and minimize impacts, impacts to bald and golden eagles would be less than significant and no additional mitigation is required.

The text in the Final EIR has been revised to reflect these changes and remove MM BIO-1e from the Final EIR.

E01-61 The text in Section 3.4.4 (Impact Analysis and Mitigation Measures, Impact BIO-1, Overhead Power Line Removal) of the Final EIR has been modified, as shown below, to address the commenter's request:

> *With the implementation of APMs and BAHCP habitat mitigation requirements, <u>potential Project impacts</u> to special-status species from overhead power line removal remains significant because the Project could impact unknown future populations of special-status ~~plant~~ species, <u>including special-status plants, Crotch's bumble bee, monarch, and</u>*

northwestern pond turtle, if present. Implementation of MMs BIO-1a, BIO-1b, BIO-1c, and BIO-1d~~, and BIO-1e~~ would reduce impacts to special-status species to a less than significant level.

E01-62 The commenter states that the Operations and Maintenance (O&M) discussion should be changed to "*LESS THAN SIGNIFICANT*." Since the existing lines are already subject to O&M activities that would remain essentially unchanged, continuing these existing O&M operations is not an impact of the Project. O&M activities are already covered under the Bay Area HCP, Bay Area O&M ITP, and Bay Area O&M ITP FEIR.

Given that O&M activities are essentially unchanged from current existing practices, CPUC agrees that impacts are less than significant. As requested, the text in the EIR has been revised.

CPUC also notes that Section 6.6.2.1. of the Bay Area HCP provides the process for PG&E to undertake if a non-covered species becomes listed. In the case of northwestern pond turtle, if this species were to become listed, as required by the HCP, PG&E will evaluate potential impacts to the newly listed species, including an assessment of the presence of suitable habitat, and will develop measures to avoid take until the HCP is amended to cover the species or PG&E complies with the endangered species act via other means.

E01-63 As requested, the text in Section 3.4.5 (Mitigation Measures) of the Final EIR under MM BIO-1a, Special-Status Plants Avoidance, has been modified to remove the conflict regarding the timing of special-status plant species surveys. It is also appropriate to add "where feasible" since the measure provides guidance if special-status species cannot be avoided. In addition, the CDFW and CNPS protocols have been properly cited.

E01-64 The commenter states that the language in Section 3.4.5 (Mitigation Measures) of the Final EIR under MM BIO-1b, Crotch's Bumble Bee Avoidance, should be revised to indicate PG&E will prepare a Memorandum of Understanding (MOU) with CDFW as part of the 2081(a) Incidental Take Permit process that outlines the appropriate methodologies for habitat assessments and bee surveys. The commenter states that there is no standard accepted methodology for overwintering surveys described in the Draft EIR, nor are they typical, and the overwintering season surveys would be highly disruptive if bees were present and would pose a greater risk to bees than necessary and not likely be effective. Appropriate measures would be discussed with CDFW, as described in the MOU and implemented.

CPUC acknowledges that there is currently no standard for overwintering surveys. However, these survey protocols were developed in coordination with CDFW for similar projects. As stated in the Response to Comment E01-56, conducting preconstruction surveys for Crotch's bumble bee is important in determining if suitable habitat or individuals are present in the Project area and may be impacted by construction. CPUC agrees that an avenue for coordination with CDFW on appropriate protocols and obtaining a CDFW 2081(a) ITP/MOU should be included into the MM-BIO-1b. As such, the text in the Final EIR MM BIO-1b, Crotch's Bumble Bee Avoidance, and incorporated some, but not all, of the requested revisions. Other revisions have been added, as necessary. With implementation of the revised MM-BIO-1b, impacts to Crotch's bumble bee will remain less than significant.

E01-65 As requested, the text in Section 3.4.5 (Mitigation Measures) of the Final EIR under MM BIO-1c, Monarch Avoidance, has been modified to remove the two weeks prior to ground disturbing activity requirement, as this requirement may conflict with the appropriate timing of the milkweed surveys. As take authority of monarchs can only be granted by the appropriate wildlife agency, the statement that the measure does not authorize injury or mortality has been removed from the measure as unnecessary. However, survey methodology, such as the spacing of surveys, remains in the mitigation measure.

E01-66 As stated in Response to Comment E01-59, CPUC acknowledges that the CDFW-authored ITP FEIR addresses impacts to pond turtle, a CDFW designated species of special concern, and concludes that impacts would be less than significant. It is also important to note that in 2023, USFWS proposed federal protections for northwestern pond turtle under the Federal Endangered Species Act. Currently, the USFWS has not decided on whether to list northwestern and southwestern pond turtle as threatened species. However, this highlights the need for protection to the species, if present. As such, MM BIO-1d remains to reduce impacts to northwestern pond turtle during construction activities to less than significant.

As requested, the text in Section 3.4.5 (Mitigation Measures) of the Final EIR has been changed to include a buffer around northwestern pond turtle habitat if turtles are present, and additional survey requirements as determined by a qualified biologist.

E01-67 As discussed in Response to Comment E01-60, CPUC acknowledges that MM BIO-1e, Eagle Avoidance, summarizes ITP FEIR APM BIO-6 and does not define a new measure. As such, the text in Section 3.4.5 (Mitigation Measures) has been revised to remove MM BIO-1e.

E01-68 As requested, the text in Section 3.4.5 (Mitigation Measures) of the Final EIR under MM BIO-5a, Tree Trimming and Removal Requirements, has been revised to support project construction work area or access safety.

E01-69 As requested, the text in Section 3.4.5 (Mitigation Measures) of the Final EIR under MM BIO-3a, Ephemeral Channel Protection and Restoration, has been revised to clarify reasonably feasible implementation.

E01-70 The commenter states that MM BIO-7a, Bird and Bat Collision Reduction, is unnecessary because reduction of impacts is already incorporated into PG&E's Proposed project design standards and requirements. The commenter states that "[t]he new structures will meet current raptor safety requirements" included in the Project Description. The commenter also states that PG&E's intention to include this design element is discussed in the PEA Section 5.4.4.4.

While a statement regarding protection of raptors is included in the Draft EIR Project Description, the specific design standard for raptor protection as part of the MOX Project is not stated, and the discussion in the PEA is not enough to ensure its implementation. Therefore, MM BIO-7a was recommended for implementation in the Draft EIR to ensure impacts to raptors by electrocution or accidental line collision would be less than significant.

As requested, an expanded description of the design elements to protect raptors has been added to Section 2.4.5.1 of the Final EIR.

With inclusion of information in Section 2.4.5.1 of the Final EIR about avian-safe construction standards to be implemented as part of the MOX Project, MM BIO-7a is no longer necessary to ensure that Impact BIO-7 would be less than significant. Therefore, MM BIO-7a has been removed from the Final EIR and the impact analysis under Impact BIO-7 in Section 3.4 of the Final EIR has been revised.

E01-71 The commenter's requested clarification that *conduits within* the duct banks would be encased in 1.5-foot-thick thermal concrete rather than the entire duct bank has been made under Impact GEO-4 in Section 3.7.3 (Environmental Impacts) of the Final EIR.

E01-72 The commenter states that the Draft EIR's assessment of Impact N-2, which finds that the proposed Project would expose persons to or generate excessive ground borne vibration is incorrect.

See Response to Comment E01-35.

E01-73 The commenter notes that the Draft EIR concludes that O&M activities in parks and open spaces would be the same or less than current activities. Therefore, the commenter feels that O&M activities would result in no change from baseline conditions and requests the impact conclusion for Impact REC-3 be revised from Less than Significant to No Impact.

While impacts from O&M activities would be similar to or less than current impacts, impacts would still occur because of ground disturbance, vegetation management, and similar O&M activities. While these impacts may be less than current impacts, they still occur. Therefore, it is appropriate to identify O&M impacts as Less than Significant and not as No Impact. No revision is required to the Final EIR.

E01-74 The commenter makes the same observation regarding Impact REC-5 as was made for Impact REC-3 in Response to Comment E01-73 regarding the request to change the Less than Significant impact and No Impact conclusions.

The same logic for Response to Comment E01-73 applies to this comment. Impacts would occur but would be Less than Significant. No revision is required in the Final EIR.

E01-75 As requested, the text in Section 3.15.1.3 (Roadways) of the Final EIR has been changed to clarify the measure of VMT as daily.

E01-76 The commenter requested that the discussion of FP-12 in Table 3.15-2 is removed from the transportation chapter, because it is meant to protect water bodies from soil stockpiling and is not relevant to roadways or transportation impacts. The commenter states that APM TRA-2 includes restoration of roadways following construction and that it would include removing any soil left on the roadway.

APM TRA-2: Repair of Damaged Transportation Infrastructure does not specify that soil would be removed from the roadway, nor does it apply to general construction activities. This APM would apply to restoration of roadways post construction. Although FP-12 is intended to protect water bodies, FP-12 is retained in the Final EIR to ensure that stockpiled soils would be stabilized and would not slip onto roadways, which could result in safety hazards. No revision is required.

E01-77 The commenter stated that the section Temporary Road Closures for Crane Operation incorrectly lists Park Boulevard Way and Estates Drive as having temporary road closures for crane operation.

As requested, the text in Section 3.15.3.3 (Impacts and Mitigation Measures, Temporary Road Closures for Crane Operation) of the Final EIR has been changed to add Glendora Avenue to the list, as temporary closures for cranes would occur on this road. Additionally, the text in the Final EIR has been changed to remove Park Boulevard Way from the list of roadways with temporary closures. Estates Drive was not included in this list and therefore cannot be removed. These changes in temporary closures, including the temporary closure along Glendora Avenue, would not change the significance of transportation and wildfire evacuation impacts in the Draft EIR, as the affected roadways are within the overhead power line removal and underground power line areas where impacts can be reduced to less than significant with mitigation because the roadways are not as narrow or steep compared to the overhead power line rebuild area.

E01-78 As requested, the text in Section 3.15.3.3 (Impacts and Mitigation Measures, Temporary Guard Structures and Netting) of the Final EIR has been changed to add Saroni Court and Paso Robles Drive to the list of local roadways that would require installation of temporary guard structures.

E01-79 As requested, the text in Section 3.15.3.3 (Impacts and Mitigation Measures, Temporary Road Closures for Crane Operations) of the Final EIR has been changed to clarify that the roads listed as having no access during road closures is because they are located at the end of a roadway.

E01-80 As requested, the text in Section 3.15.3.3 (Impacts and Mitigation Measures, Construction of the Overhead Power Line Removal) of the Final EIR has been changed to remove Hollywood Avenue from the list of roadways that would have road closures for crane use.

E01-81 As requested, the text in Section 3.15.3.3 (Impacts and Mitigation Measures, Construction of the Overhead Power Line Removal) of the Final EIR has been changed to correct the duration of overhead power line removal, to be consistent with Table 2.4-3. Further details were added to clarify the location of the overhead power line removal.

E01-82 As requested, the text in Section 3.15.3.3 (Impacts and Mitigation Measures, Construction of the Overhead Power Line Removal) of the Final EIR has been changed to clarify the location of temporary lane closures and sidewalks.

E01-83 As requested, the text in Section 3.15.3.3 (Impacts and Mitigation Measures, Construction of the Underground Power Line) of the Final EIR has been changed to more accurately summarize construction activities.

E01-84 As requested, the text in Section 3.15.3.3 (Impacts and Mitigation Measures, Construction of the Underground Power Line) of the Final EIR has been changed to more accurately summarize construction activities, per Response to CPUC Data Request #6, Part A.

E01-85 As requested, the text in Section 3.15.3.3 (Impacts and Mitigation Measures, Construction of the Underground Power Line) of the Final EIR has been changed to clarify the location of potential sidewalk closures due to underground power line construction.

E01-86 The commenter states that the Project is not inconsistent with the City of Orinda's Fire Evacuation Guide, as no temporary roadway closures will occur in the City of Orinda. The commenter states that several roads in Orinda would be used for construction access, specifically, Lost Valley Road, which would be used to access Moraga Substation. The commenter states that Lost Valley Road would not be blocked or obstructed, no temporary road closures would occur, and no construction vehicles would park on the roadways.

Lost Valley Road would be used to access construction sites in Orinda. As mentioned in the scoping comment from the City of Orinda, Lost Valley Road is the only road that provides access to Moraga Substation, and is also the primary entry and exit for the Lost Valley neighborhood.

Although no road closures would be required along evacuation routes, and there would be no direct impacts because of this, indirect impacts would occur from additional vehicles using this road, and access for vehicles, pedestrians, bicyclists, and emergency service providers could be temporarily affected by the movement of Project-related construction vehicles. The additional vehicles in the area could cause potential delays due to large and/or slow moving construction vehicles traveling along the roadways, and safety hazards.

Additionally, the Moraga Substation and the Lost Valley neighborhood are located within a wildland area that could be susceptible to wildfire and is also adjacent to designated Very High Fire Hazard Severity Zones.

Therefore, the Project would be inconsistent with the evacuation planning provided in the Orinda Fire Evacuation Guide, since the additional construction vehicles may cause hazards, or may cause the use of alternative evacuation routes, which may increase evacuation and emergency response times. The text in the Final EIR in Table 3.15-3 (Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System) has not been changed.

E01-87 The commenter states that the Project is not inconsistent with the City of Orinda's General Plan Land Use and Circulation Element, as no temporary road closures would occur in the City and no roads would be blocked or otherwise obstructed. The commenter states that the Project is consistent with Safety Element Policy S-11, which would identify and maintain additional routes that are not designated as evacuation routes, to ensure capacity, safety, and viability of those routes to support safe evacuation.

Lost Valley Road would be used to access construction sites in Orinda. As mentioned in the scoping comment from the City of Orinda, Lost Valley Road is the only road that provides access to Moraga Substation, and is also the primary entry and exit for the Lost Valley neighborhood.

Although no road closures would be required along evacuation routes, and there would be no direct impacts because of this, indirect impacts would occur from additional vehicles using Lost Valley Road, and access for vehicles, pedestrians, bicyclists, and emergency service providers could be temporarily affected by the movement of Project-related construction vehicles. The additional vehicles in the area could cause potential delays due to large and/or slow moving construction vehicles traveling along the roadways, and safety hazards. This would be inconsistent with Safety Element, Policy S-11 to ensure adequate capacity, safety, and viability of evacuation routes because the availability, access, and safety of additional routes that are not designated as evacuation routes cannot be guaranteed, and the use of alternative routes may cause unsafe conditions for pedestrians, bicyclists, and transit riders and increase evacuation and emergency response times. Therefore, the project is inconsistent with the City of Orinda's General Plan Land Use and Circulation Element. The text in the Final EIR in Table 3.15-3 (Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System) has not been changed.

E01-88 The commenter states that the Contra Costa County General Plan applies only to the unincorporated areas of the County which include RN/RS4 to the County boundary east of Manzanita Drive. The Project components that are in this area include construction access on Old Tunnel Road and SR 24. They state that none of the designated evacuation routes for Contra Costa County would be blocked or otherwise obstructed by the Project, and that the Project is consistent with the Contra Costa County General Plan.

Although no designated evacuation routes would be blocked or obstructed by the Project construction, indirect impacts would occur due to construction activities on other roadways within unincorporated Contra Costa County, which would restrict local evacuation/emergency access, which would be inconsistent with the overarching goals of the Contra Costa General Plan Transportation Element.

The Project would be inconsistent with Health and Safety Element Policy HS-P7.3, which requires new development within VHFHSZ in LRA or SRA, or WUI, to prepare a traffic control plan to ensure construction equipment or activities do not block roadways or interfere with evacuation plans during the construction period. The Project would span a Very High Fire Hazard Severity Zone (Figure HS-10) and spans a WUI interface zone (Figure HS-11). Proposed mitigation measure T-1a supplements APM TRA-1 and requires PG&E to develop a TMP regardless of local encroachment permit requirements. However, this measure would not ensure that construction equipment or activities would not block roadways or interfere with evacuation plans, as this measure requires notification of emergency service providers and the public, and identifies alternative routes for travel. Additionally, the use of alternative routes in the Project area may cause unsafe conditions and increase evacuation and emergency response times. Therefore, the Project is inconsistent with the Contra Costa County General Plan. The text in Table 3.15-3 (Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System) has not been changed in the Final EIR.

E01-89 The commenter states that the Contra Costa Operational Area Emergency Operations Plan is about effective management of emergency operations in Contra Costa County, and it does not address evacuation or evacuation routes. Because the Project does not affect the procedural topics addressed in the Emergency Operations Plan, it is consistent with the plan.

The Contra Costa Operational Area Emergency Operations Plan applies to the County's management of emergency operations. While the Project would be inconsistent with the intent of the Plan because it could conflict with response to emergencies, the Plan has been removed from the analysis under Impact T-1 and Table 3.15-3 (Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System) in the Final EIR, because the Plan does not apply directly to the Project.

E01-90 The commenter states that the Alameda County General Plan only applies to the unincorporated areas of the county, and that none of the Project is within unincorporated Alameda County, so the plan goals and policies do not apply to the Project. Regardless, none of the roads listed as evacuation routes for Alameda County would be blocked or otherwise obstructed by the Project.

The Alameda County General Plan applies to unincorporated areas of Alameda County, and there are no Project features within unincorporated Alameda County. The Project would be inconsistent with the goal of the Alameda County General Plan to provide a safe, multi-modal transportation system, because construction activities on other roadways would restrict local roadway, bicycle, pedestrian, evacuation, and emergency access, causing use of alternative routes that may have unsafe conditions. However, since Project features are not located in the jurisdiction of this plan, the Alameda County General Plan has been removed from the analysis under Impact T-1 and Table 3.15-3 (Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System) in the Final EIR.

E01-91 The commenter states that only two roads included in the City of Oakland General Plan Safety Element may have temporary road closures due to crane use during construction: Skyline Boulevard and Park Boulevard. Alternate routes for these roads are listed in Draft EIR Table 2.3-6, and egress is available on either side of the road closures. The commenter states that the California Highway Patrol and Caltrans will be contacted to organize 5-minute rolling stops, and emergency evacuation on SR-13 will not be obstructed. The commenter states that according to APM TRA-1, if required for local encroachment permits, PG&E will prepare a TMP in coordination with the City of Oakland to address evacuation routes.

Road and lane closures would be required on Skyline and Park Boulevard, which are designated evacuation routes, which would be inconsistent with the policies in the General Plan Safety element to protect critical evacuation routes. Skyline and Park Boulevard are both identified as Primary Local Routes, within a Combined Hazard Area in Figure SAF-13b, which identifies residential areas with less than two access points to evacuation

Proposed mitigation measure T-1a supplements APM TRA-1 and requires PG&E to develop a TMP regardless of local encroachment permit requirements. However, this measure would not ensure that the evacuation routes network is interconnected with adequate capacity and the ability to evacuate for multiple threats, due to the lane closures that are not part of the evacuation network, which is inconsistent with Policy SAF-8.5. Road closures and other construction activities would restrict transit, bicycle, pedestrian, and emergency access. Alternative routes to designated evacuation routes may cause unsafe conditions and increase evacuation and emergency response times, due to the narrow streets and steep topography of the Project area. Therefore, the Project would be inconsistent with the Plan, and the text in the Final EIR under Impact T-1 and Table 3.15-3 (Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System) has not been changed in the Final EIR.

E01-92 The commenter states that the City of Oakland Pedestrian Master Plan addresses the construction and maintenance of infrastructure to support pedestrian access. The commenter states that any obstruction of pedestrian access during construction are temporary, and per APM TRA-1 and MM T-1a, PG&E will provide appropriate traffic controls during the temporary closures to maintain pedestrian safety and access including along Park Boulevard. Per APM TRA-2, any sidewalks or pedestrian infrastructure damaged during construction will be restored.

The Project would be consistent with Oakland Pedestrian Master Plan "Outcome 2," i.e., sidewalk repair, curb ramps, and art to create places that promote walking, because APM TRA-2 requires restoration of pedestrian facilities.

During construction, road closures and other construction activities would restrict pedestrian access, which would be inconsistent with the intent of Outcomes 1 and 3, in the City of Oakland Pedestrian Master Plan, which seek to increase pedestrian safety and improve sidewalk connections to improve walkability. MM T-1 would require PG&E to establish methods for minimizing construction effects on pedestrians, but this would not ensure that pedestrians have a safe alternative route that they can take. Although detours could be provided, the closure and rerouting of pedestrian and bicycle travel routes could cause unsafe conditions if the alternative routes are longer or are not suitable for walking or biking, such as being along a busy, narrow road. Therefore, the Project appears to be inconsistent with the City of Oakland Pedestrian Master Plan and the text in the Final EIR under Impact T-1 and Table 3.15-3 (Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System) has not been changed in the Final EIR. However, the ultimate determination of consistency with the Oakland Pedestrian Master Plan would be up to the City of Oakland.

E01-93 The commenter states that the City of Oakland Bicycle Master Plan addresses new plans and programs to enhance existing infrastructure, and does not address temporary bicycle facility closures due to construction. Any obstructions of bicycle access during project construction are temporary, and per APM TRA-1 and MM T-1a, PG&E will provide appropriate traffic controls during the temporary closures to protect bicycle access and safety. Per APM TRA-2, any road or bicycle infrastructure damaged during construction will be restored.

Since the City of Oakland Bicycle Master Plan addresses the City's vision for new plans and programs to enhance existing bicycle infrastructure, it is not applicable to construction of the Project since it is not a plan or program implemented or sponsored by the City.

The Project would be inconsistent with the intent of the Plan, because the closure of roads and presence of construction activities makes bicycling less safe, and would not support increased access. Alternative routes may cause unsafe conditions due to potential lack of bicycle infrastructure on the roads, proximity to automobiles, or condition of the route, being too steep or narrow. The Plan has been removed from the analysis under Impact T-1 and Table 3.15-3 (Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System) in the Final EIR, because the Plan does not apply directly to the Project.

E01-94 The commenter states that the City of Oakland Complete Streets Policy addresses the design of the transportation network, not the effects of temporary construction activities on access. The commenter states that APM TRA-1 and MM T-1a include appropriate traffic controls during temporary road closures to provide for ongoing access, and APM TRA-2 includes restoration of infrastructure damaged during construction.

The City of Oakland's Complete Street Policy (Resolution No. 84204 C.M.S.) applies to projects that affect the transportation system, and therefore this Policy is applicable to the Project. The Policy affirms that the City will provide streets that are safe and convenient for all users of the roadway. Therefore, the mitigations and conditions of approval applied to a project should

further this vision of the system. Although APM TRA-1 and MM T-1a would include traffic control measures, these would not ensure that the streets could safely accommodate all users in the event of a road closure.

Temporary road closures during construction would restrict transit, bicycle, and pedestrian access which would conflict with the purpose of the City of Oakland Complete Streets Policy of ensuring all streets can safely accom-modate all users, including pedestrians, bicyclists, transit riders, and drivers, regardless of age or ability. Therefore, the Project appears to be inconsistent with this Policy and the text in the Final EIR under Impact T-1 and Table 3.15-3 (Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System) has not been changed in the Final EIR. However, the ultimate determination of consistency with Oakland's Complete Street Policy would be up to the City of Oakland.

E01-95 The commenter states that the Policy 19.20 of the City of Piedmont General Plan Environmental Hazards Element is intended to ensure that design of development projects provides access for the Piedmont Fire Department, for example, entry into gated communities and adequate roads to critical infrastructure. It does not address temporary construction activities. The commenter states that Policy 19.30 does address temporary construction activities and calls for a Transportation Construction Plan to be approved by the City of Piedmont, which would be fulfilled by APM TRA-1 and MM T-1a.

The commenter states that Piedmont's Hazards Element lists complete routes, rather than individual roads, for evacuation. The project will include temporary lane closure on only one of Piedmont's major evacuation routes (Hampton Road to Estates Avenue to Park Boulevard). To evacuate residents in this area if and when a lane is temporarily closed for guard pole installation on Estates Avenue or Park Boulevard, or when Park Boulevard is temporarily closed for crane use, multiple alternate roads are available. Because two or more evacuation routes will be available during a temporary road closure at Estates Drive/Park Boulevard, and APM TRA-1 and MM T-1a will include a TMP consistent with Policy 19.30, the project is consistent with the City of Piedmont General Plan Environmental Hazards Element Policies 19.20 and 19.30.

The commenter states that Policy 10.4 of the Transportation Element does not address temporary construction activities.

Policy 19.20 ensures that the Piedmont Fire Department has complete access to all locations in the City. The Project would be inconsistent with this Policy because there would be temporary road closures within the City, as well as approximately 100 to 300 feet of trench open at any time, depending on permitting requirements. The presence of road closures and trenching could block emergency services from accessing points in the city.

Policy 19.30 requires that developers prepare and implement a Transportation Construction Plan (TCP), to be approved by the City, which would ensure emergency access and evacuation routes are not inhibited. This requirement would be fulfilled by APM TRA-1 and MM T-1a, however, the Project would require temporary lane closures on designated evacuation routes. Combined with additional road closures and construction activities, this could restrict transit, roadway, bicycle, pedestrian, and emergency access.

Policy 10.4 of the Transportation Element calls for accommodating bicycles on Piedmont roads where feasible, and that the designation of some streets as "bike routes" could enhance connectivity. However, this Policy does not address temporary construction impacts, and the Project would not affect Piedmont's designation of bike routes.

Therefore, the Project appears to be inconsistent with Policies 19.20 and 19.30 in the City of Piedmont General Plan Environmental Hazards Element. Policy 10.4 of the Transportation

Element is not applicable to the Project and has been removed from Impact T-1 and Table 3.15-3 (Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System) in the Final EIR. However, the ultimate determination of consistency with the City of Piedmont's General Plan would be up to the City of Piedmont.

E01-96 As requested, the text in the Final EIR in Table 3.15-3 (Summary of Consistency with Programs, Plans, Ordinances, or Policies Addressing the Circulation System) has been changed to remove Manzanita Drive from the list of designated evacuation routes, consistent with the City of Oakland General Plan Safety Element, Figure SAF-13a.

E01-97 As requested, the text in the Final EIR in Section 3.15.3.3 (Impacts and Mitigation Measures, Impact T-3) has been changed to remove Park Boulevard Way from the list of temporary road closures for crane use, as this activity will not occur on Park Boulevard Way. Additionally, Glendora Avenue has been added to this list.

E01-98 As requested, the text in the Final EIR in Section 3.15.3.3 (Impacts and Mitigation Measures, Impact T-3) has been changed to add Saroni Court and Paso Robles Drive to the list of local roadways that would be spanned by temporary guard structures

E01-99 As requested, the text in the Final EIR in Section 3.15.3.3 (Impacts and Mitigation Measures, Impact T-5) has been changed to correct the number of road segments where no secondary vehicle access is available because construction would occur on dead-end streets, to be consistent with Table 2.3-6.

E01-100 As requested, the text in Section 3.15.4 (Mitigation Measures) of the Final EIR under MM T-1a has been changed to clarify communication between CPUC and PG&E regarding the Traffic Management Plan preparation and review prior to construction. Additionally, the timeline of approval of one month has been removed so that the process can be aligned with the permit process. Lastly, as many work areas are located in residential neighborhoods, it may not be reasonably feasible to avoid some locations and intersections, therefore, language has been added to ensure the TMP will identify routes that avoid sensitive receptors as feasible.

E01-101 As requested, the text in Section 3.15.5 (References) of the Final EIR has been revised to add a citation to the Contra Costa Operational Area Emergency Operations Plan

E01-102 The commenter is requesting that the 500-foot buffer required for tribal monitoring pursuant to mitigation measure MM TCR-2a be reduced to 100 feet around a current or historic creek, citing a previous CPUC EIR as an example. However, the 500-foot buffer was established based on tribal knowledge and input received from the Confederated Villages of Lisjan Nation (CVLN) during formal tribal consultation for this Project and therefore will not be reduced. As requested, the text in Section 3.16.4 (Mitigation Measures) of the Final EIR has been revised to clarify that an unanticipated discovery will be assessed by a qualified archaeologist for its potential significance and not formally evaluated for the NRHP/CRHR upon initial discovery. The word "halted" has also been replaced with "discontinued" to clarify that tribal monitoring can be stopped at the discretion of the CVLN monitor in consultation with the lead agency as warranted by soil conditions.

E01-103 The commenter states that the page numbering in Section 3.18 (Wildfire) is incorrect. The Final EIR has been revised to correct the page numbering in Section 3.18.

E01-104 As requested, Section 3.18.1.6 (Road Closures, Evacuation Routes, and Alternate Routes During Construction) of the Final EIR has been revised to clarify that one lane in each direction will remain open on Park Boulevard during the installation of transition structures.

E01-105 As requested, Section 3.18.1.6 (Road Closures, Evacuation Routes, and Alternate Routes During Construction, City of Oakland Evacuation Routes) of the Final EIR has been revised to remove Manzanita Drive from the list of primary evacuation routes, as it is not designated as an evacuation route in the Safety Element of the City of Oakland's General Plan. Additionally, language has been added to clarify that guard pole installation will not require a full road closure.

E01-106 As requested, Section 3.18.1.6 (Road Closures, Evacuation Routes, and Alternate Routes During Construction, City of Oakland Evacuation Routes) of the Final EIR has been revised to clarify the portions of Snake Road that are designated as an evacuation route.

E01-107 As requested, Section 3.18.1.6 (Road Closures, Evacuation Routes, and Alternate Routes During Construction, City of Piedmont Evacuation Routes) of the Final EIR has been revised to include Estates Drive in the list of evacuation routes designated by the City of Piedmont.

E01-108 As requested, Section 3.18.3.1 (Impact Analysis Approach), Table 3.18-4 (Applicant Proposed Measures – Wildfire) of the Final EIR has been revised to change the formatting for three bullet points under APM WFR-1, to clarify that they are first-level bullets, and not sub-bullets.

E01-109 As requested, Section 3.18.3.3 (Impacts and Mitigation Measures, Impact WF-1) of the Final EIR has been revised to remove Manzanita Drive from the list of designated evacuation routes, to be consistent with the City of Oakland's General Plan Safety Element.

E01-110 The commenter requests that MM WF-1a in Final EIR Section 3.18.4 (Mitigation Measures) should be revised to use the specific evacuation routes determined by local jurisdictions. The commenter states that "critical" and "non-critical" evacuation routes cannot be made in advance, are not terms used in other municipal planning documents, and could cause confusion when residents may refer to communication tools like Genasys Protect during an emergency. The commenter provides suggested edits to MM WF-1a to ensure consistency with local jurisdictions' evacuation plans and minimize confusion to local residents.

The purpose of designating "critical" and "non-critical" routes is to identify evacuation routes that would minimize the additional evacuation time that would result from road closure. An increase in evacuation time would increase the life safety hazard impact. Relying solely on jurisdiction-determined evacuation routes does not consider impacts to human safety on other routes that may be used for evacuation. MM WF-1a has been revised to clarify the purpose of and method for defining critical and non-critical routes.

E01-111 The commenter requests that MM WF-1b in Final EIR Section 3.18.4 (Mitigation Measures) should be revised to expand the range of months when full road closures are allowed so that they align with months when fire risk is low. Currently, MM WF-1b requires that full road closures on designated evacuation routes may only occur between December 15 and February 28, but the commenter asserts the range is unreasonably short and allows for construction when winter rains are likely to occur. The commenter states that the EIR does not provide evidence for lowest fire risk between December 15 to February 28, and there is conflicting information in the environmental setting. The commenter requests to expand allowable road closures between December 1 through May 31. The commenter states that MM WF-1b, as written, could substantially extend the duration of construction by a year or more and limit feasibility of construction during winter rains.

The commenter's concern for a shortened allowable road closure period is acknowledged. However, given the Project's densely populated surroundings within very high FHSZs, MM WF-1b conservatively restricts full road closures to ensure life safety and minimize ETE. The Final EIR has been revised to change the dates in MM WF-1b when full road closures are permissible

to December 1 through March 31. This approximately one-month increased duration considers the 10-year average monthly wind direction, wind speed, humidity, and temperature as shown in Table 3.18-2. Between December and February, although the predominant wind direction is northeasterly, relative humidity remains comparatively high, while temperatures tend to be the lowest (less than 75 degrees Fahrenheit), allowing for less wildfire-conducive conditions. As discussed under "Weather Data" in Section 3.18.1.4 (Fire Risk), the rainiest months in the Project area are December, January, and February, further reducing wildfire conditions during this period. See also Response to Comment E01-27.

E01-112 The commenter requests revisions to MM WF-1c in Final EIR Section 3.18.4 (Mitigation Measures) related to school session construction timing restrictions. The commenter states that the schools in the vicinity have widely varying operating hours, and that it is not standard to have measures specific to an alternative included in a project mitigation measure. The commenter requests that the analysis of the alternative's impacts should discuss how the project mitigation should be applied.

The mitigation measure has been revised to remove the specific time frames and instead require avoiding the one-hour time periods in the morning and afternoon for drop-off and pick-up.

Language regarding Alternative 4 has not been removed from MM WF-1c in the Final EIR, as it relates to construction timing restrictions around schools and clearly states that it is applicable to Alternative 4 only. Should Alternative 4 not be approved, the specified requirements in MM WF-1c would not be applicable. Therefore, no revisions are necessary. See also Response to Comment E01-130.

E01-113 The commenter correctly states that PG&E's Alternative C does not extend east of Saroni Drive, as is stated in the first quoted sentence.

Clarifications have been made to Section 4.3.6 (Alternative 3) of the Final EIR to explain that PG&E's Alternative C does not extend east of Saroni Drive and to correct typos by changing Shepherd Canyon "Drive" to Shepherd Canyon "Road."

E01-114 The commenter requests use of a term other than "Shepherd Saddle."

The requested revisions have been made to Section 4.3.7 (Alternative 4: Skyline-Ascot Underground Alternative) of the Final EIR to change Shepherd Saddle to the intersection of Shepherd Canyon Road, Skyline Boulevard, Manzanita Drive, and Pinehurst Road.

E01-115 As requested, Section 4.4.1.1 (PG&E Alternative A: Moraga–Oakland X 3-Circuit Replacement with Moraga–Claremont Reconductoring and Park Boulevard/Lincoln Avenue Underground) of the Final EIR has been revised to summarize that PG&E defined this alternative as differing from the proposed Project by also reconductoring the approximately 3-mile Moraga–Claremont Circuits 1 and 2 115 kV lines to Claremont Substation.

E01-116 The typo in the name of Alternative 4: Skyline-Ascot Underground Alternative in Section 4.5.3.3 (Overhead-Underground Transition Stations and Poles) of the Final EIR has been corrected.

E01-117 The commenter states that APM GEO-2 applies only to two overhead alignment poles. As such, the APM would not address issues with slope stability and underground power line routes. Section 4.5.3.2 (Constraints to Undergrounding Power Lines) of the Draft EIR states that exploratory data from geotechnical investigations, including extensive boring samples, would be needed from each landslide along the alternative routes. The commenter states that this is far beyond the scope of APM GEO-2 and requests that the referenced paragraph be deleted.

While appropriate design measures for the protection of the power line structure stability (referenced in APM GEO-2) would be required for the EIR alternatives based on geotechnical

investigations, the commenter rightly states that APM GEO-2 specifies two proposed structure locations that are near active or prehistoric/older slides. Therefore, the paragraph that references implementation of APM GEO-2 has been deleted in Section 4.5.3.5 (Impacts of Underground Alternatives, Geology and Soils) of the Final EIR. Removal of implementation of APM GEO-2 for the underground alternatives would not change the impact conclusion for Impact GEO-3 in the Draft EIR as it has already been found to be significant and unavoidable.

The commenter also states that the Site Specific Landslide Assessment refers to APM GEO-2, not APM GEO-3. Correction of this typo is not required as the referenced paragraph has been deleted in the Final EIR.

E01-118 As requested, the final sentence in Section 4.5.4.2 (Operation and Maintenance Impacts, Geology) has been revised in the Final EIR to conclude that due to the uncertainty about the extent of the slope stability impacts and the well-known instability of the Oakland Hills, the geology impact is considered to be significant and unavoidable. This sentence matches the impact conclusion at the beginning of the Geology subsection in the Draft EIR.

The description of the condition of the Skyline Boulevard roadway has not been deleted in the Final EIR. However, to acknowledge the accuracy of the commenter's statement that visual inspection is not sufficient data to determine potential for slope movement and design needed to meet safety requirements, text has been added in the Final EIR to clarify that the road is considered safe for an underground system *for the purposes of alternatives feasibility consideration* (emphasis added).

In addition, text in Section 4.5.3.5 (Impacts of Underground Alternatives) has been copied to the specific discussion under Alternative 2 in the Final EIR to state that there is the potential that the geotechnical investigation may identify unstable slopes that were not visible at the road surface. For the most severe of these conditions, protective design measures could be required that would create offsite impacts to private property or adjacent residences, or extend the construction timeframe by many months.

E01-119 The commenter's suggested clarifications regarding East Bay Regional Park District names and locations has been made to Section 4.5.6.1 (Alternative 4, Construction Impacts) of the Final EIR.

E01-120 The commenter's suggested revisions regarding the description of Alternatives 2 and 3 have been made in Section 4.8.2.2 (Step 2: Compare Combined Alternatives (Alternatives 2 & 3) with the Proposed Project) in the Final EIR.

E01-121 The commenter stated that individual affirmation of procedures by all involved in project construction would be infeasible to implement. As requested, the text in Section 7.5.2 (Construction Personnel) of the Final EIR has been changed to remove this requirement. However, language was added to ensure that subcontractors would follow all procedures and that CPUC Environmental Monitors would verify implementation of these procedures.

E01-122 As requested, the text in Section 7.5.3 (Reporting Procedures) of the Final EIR has been changed to remove the reference to the FRED system, which is specific to SCE. PG&E would use their own field record environmental database.

E01-123 As requested, the "Monitoring/Reporting Action" in Measure 7.22 (Suspected Alameda Whipsnake [AWS] in Work Area) in Table 7-1 of the Final EIR under Biological Resources, CDFW Measures from the Bay Area O&M ITP, has been changed to clarify that stopping construction activities due to the discovery of AWS should be limited to the work area with the AWS.

E01-124 As requested, the "Effectiveness Criteria" in Table 7-1 of the Final EIR under APM PAL-1 has been revised to clarify that a Paleontological Principal Investigator will be retained during construction activities.

E01-125 As requested, the "Monitoring/Reporting Action" in APM PAL-4 in Table 7-1 in the Final EIR has been revised to correct the typo, changing "produces" to "procedures."

E01-126 As requested, the "Location" of Mitigation Measure (MM) T-1a (Traffic Management Plan and Safe Transport) in Table 7-1 in the Final EIR has been changed to correct the location, and exclude O&M areas, because the mitigation measure requires preparation of a Traffic Management Plan for construction and does not include O&M.

E01-127 The commenter is requesting that the 500-foot buffer required for tribal monitoring in MM TCR-2a (Native American Monitoring) be reduced to 100 feet around a current or historic creek, citing a previous CPUC EIR as an example.

Please see Response to Comment E01-102, which addresses this request.

E01-128 As requested, the "Effectiveness Criteria" of MM TCR-2a in Table 7-1 under Tribal Cultural Resources in the Final EIR has been revised to include "at their discretion." Additional clarification has also been added outlining what the Applicant should do if a monitor does not arrive on site when needed.

E01-129 As requested, the "Location" of MM TCR-2a in Table 7-1 under Tribal Cultural Resources in the Final EIR has been revised to include "...and during construction..."

E01-130 The commenter states that restricting construction to times when the schools are not in session under Alternative 4 (Skyline-Ascot Underground Alternative) in MM WF-1c (School Session Construction Timing Restriction) would effectively limit construction in this area to weekends or school breaks. This restriction would likely increase the overall length of intermittent construction in this length of roadway. The commenter requests that construction timing restrictions under Alternative 4 (Skyline-Ascot Underground Alternative) be deleted.

Ascot Drive between Scout Road and Mountain Boulevard, the roadway segment referenced in MM WF-1c, passes directly in front of Montera Middle School and Joaquin Miller Elementary School, which as described in the Draft EIR, would create severe traffic impacts to school operations.

The length of Ascot Drive that would be subject to construction timing restrictions under MM WF-1c is approximately 0.25 mile (1,320 feet) in length. EIR Section 4.3.1.2 (Construction-Driven Road Closures) states that the proposed Project would have trenching work progressing at 40 to 100 linear feet per day with overall daily progress expected to be 300 to 400 feet per workday. Therefore, restricting construction along the 1,320-foot segment of Ascot Drive to weekends and school breaks is not expected to appreciably increase construction duration, especially when compared to the level of nuisance of underground construction in front of the schools when in session. Therefore, text pertaining to Alternative 4 in MM WF-1c has not been revised in the Final EIR, but the CPUC's decision-makers will consider this comment in making their final determination on the feasibility of the proposed project and the analyzed alternatives.

See Response to Comment E01-19, Response to Comment E01-20, Response to Comment E01-112, and General Response GR-1 regarding Alternative 4 (Skyline-Ascot Underground Alternative).

Attachment 2 - InfraTerra Landslide Study (PEA Appendix E4)

E01-131 The commenter has attached the *Moraga-Oakland X Landslide Hazard Evaluation* prepared by InfraTerra, Inc. (dated July 2024), which was also included in PG&E's PEA as Appendix E4.

Please see Responses to Comments E01-8, E01-12 to E01-17, which address landslide risk in the Oakland Hills.

Attachment 3 - PG&E Response to CPUC Data Request 6, Part B

E01-132 The commenter has attached PG&E's Responses to CPUC Data Request #6, Part B, received May 13, 2025, and related to alternatives.

See Response to Comment E01-9, which relates to PG&E's Responses to CPUC Data Request #6, Part B.

Attachment 4 - PEA Chapters 4 and 6

E01-133 The commenter has attached Chapters 4 and 6 from PG&E's Proponent's Environmental Assessment (PEA) as evidence and for incorporation by reference.

See Responses to Comments E01-12, E01-15, E01-17, which cite Attachment 4, as well as Responses to Comments E01-98 to E01-135 regarding consideration of the Applicant's individual comments and the documents requested for incorporation by reference, including PEA Chapters 4 and 6.

Attachment 5 - PG&E Response to CPUC Data Request 9

E01-134 The commenter has attached PG&E's Responses to CPUC Data Request #9, received June 17, 2025, and related to alternatives and transportation.

See Response to Comment E01-24, which relates to PG&E's Responses to CPUC Data Request #9.

Attachment 6 – Recent Historic Fire Risk by Month

E01-135 The commenter has attached, as Attachment 6, a table of PG&E's Historic Analysis of Predicted Fire Risk by Month, 2020-2025, in Proposed Project Fire Index Area.

Please see Response to Comment E01-27, which addresses recent historic fire risk by month (Attachment 6).

J.3.6. Comment Set F: Comments at Draft EIR Public Meetings

Comment Sets F01 to F06 - Draft EIR Public Meetings Transcript

PG&E'S MORAGA-OAKLAND X 115 KILOVOLT REBUILD PROJECT
September 3, 2025 Public Meeting Comments

Grace Weeks - Aspen Environmental Group to Hosts and panelists (CHAT at 13:57:18, 14:02:48 and 14:08:56):

Welcome to the public meeting on the Draft EIR for the proposed Moraga-Oakland X 115 Kilovolt Rebuild Project. A copy of this presentation is available to download on the CPUC's project website. A recording of this meeting will be posted to the CPUC's website at a later date.

https://ia.cpuc.ca.gov/environment/info/aspen/moraga-oakland/moraga-oakland.htm

If you do have questions, you can reach out anytime to the CPUC via the MOX email address which is MOX@aspeneg.com.

AFTERNOON SESSION
(2:00 p.m. Pacific)

Comment #1: Jonathan Goodwin (00:27:21.000 - 00:29:24.000)

Well, I'm assuming that's me, is that correct? Good, thank you. My name is Jonathan Goodwin. Uh, sorry I couldn't figure out how to put my real name on the, uh… you know, to come up on this thing. I live in Canyon, California, uh, through which this Project passes. I actually have… two questions. **F01-1**

One is tangential about the lines that blew up during the tunnel fire. In 91, between the Temiscal substation and the Moraga substations, just as to what stage they're at. Um, but more, uh… pertaining to this project. I really liked the EIR, but… There's just one glaring, like, crazy omission, which is the… Uh, looking at the alternative of using the Redwood Peak Tunnel to run the lines underneath that whole hill. It runs from Pinehurst Road to Shepherd Canyon Road. It would be vast… should be, I would suppose, vastly cheaper, vastly safer. Uh, you know, you'd eliminate all the wildfire risk in that very, very sensitive area. Uh, by running it under, you know, through an existing bore, uh, and it would, um, it would also… the maintenance would be far easier. You know, the construct… everything would just be a big plus. So, I mean, either you didn't know about it or, you know, you withheld, um… uh, written consideration of it, I'm guessing it's the former.

So, I would suggest… I sent in an email yesterday, uh, which you may not have gotten to. But, um, giving information about this, I strongly suggest that you, um, look into this, and uh… consider this as an alternative. You know, give this… give this serious consideration, because it's… it should be a complete game changer for your project if you'd pay attention to it. Thank you.

Comment #2, Andrew Jeffries (00:29:40.000 - 00:31:44.000)

Yes, uh, my name is Andrew Jeffers. I own property near Shepherd Canyon between Cerrone Court. And, uh, say or drive, and the two towers are in my parking area on some easement. **F02-1**

Uh, towers EN15 and EN17. And as I carefully read the impact report, I realized the proposal is to move those towers, uh, essentially west. And unfortunately, on those diagrams, they don't show the actual location of one's home.

Comment Set F01-F06 Public Meetings Comments (continued)

Uh, moving… moving the towers substantially west places them directly, uh, 15 feet from the front of our deck, and uh… in our garden, and I'm wondering what kind of alternatives could be… could be placed in this situation. It looks like one could move them almost any other direction and it would be far superior. **F02-1 (cont'd)**

Also, I have a question about the wildfire risk. Certainly in Northern California, there's a very expensive project to underground, many of these lines in areas that seem substantially less risky than this area now. So the undergrounding, to me, seems vastly superior. It's commensurate with what's being done already. And I'm disappointed that that isn't really an active, real active consideration.

Secondly, I think that, overall… Uh, the wildfire should be… should be addressed.

And third last point is, would it be possible to put these less essentially the circular tubular poles in place of these extremely large structures. Thank you very much.

Andrew Jeffries to Hosts and panelists (CHAT at 14:35:03):

Why are the lot boundaries and house location not shown on the figures, The proposed replaced poles are blocking views. **F02-2**

EVENING SESSION
(5:00 p.m. Pacific)

Commentor #3: Mike Retondo (00:27:31.390 --> 00:29:15.550)

I'm Pete Retondo. I live… in a place where I can actually look out my window and see these towers across Highway 13. I've been here for 25 or more years and hope to be here for somewhat longer, although the wildfire that this overhead line reconstruction might cause will probably, at some point, cause me to lose my house. And… Sorry, Hedy, I hate to say this, I'm an architect, I have 50 years of experience in construction and reviewing plans, and I just think this report is inadequate and irresponsible when it comes to evaluating the underground alternatives. **F03-1**

What I would request is that a bona fide engineering firm that doesn't work for PG&E develop a specific plan that's actually realistic, that doesn't take a cue from PG&E objections to actually analyze the cost and feasibility for the CPUC.

This report reads like a hit job. On the alternative to underground these lines, especially when it comes to the wildland portion that you haven't even really addressed at all. The major problem is that you do not consider 8 catastrophic wildfire to be an actual environmental problem to be mitigated. You're only talking about the relatively trivial construction environmental hazards. You have a whole litany of those. I think that is the major problem with this report and needs to be addressed.

Comment #4: Ella Matsuda (00:29:39.420 --> 00:31:10.380)

Hi, my name is Ella Matsuda. I'm a botanist with Friends of Saucle Creek. We are a nonprofit that's collaborated with the City of Oakland for over 30 years to manage 20 habitat restoration projects in public parks. So we are concerned about potential impacts to the federally threatened and state-endangered pellid Manzanita, which is found in Huckleberry Preserve and along Manzanita Drive. There are only about 2,000 of these plants remaining, they grow only in the hills **F04-1**

Comment Set F01-F06 Public Meetings Comments (continued)

of Alameda and Contra Costa counties. We have permits to propagate this species, so if any are pruned or affected by the project, we would be grateful for the opportunity to salvage plant material to propagate in our nursery. We run the only nursery specializing in locally sourced native plants from the Salsa Creek watershed, growing thousands of plants each year, and local plants have been shown to establish significantly more successfully in restoration projects, so we request consideration if you're purchasing plants for any revegetation or remediation efforts. **F04-1 (cont'd)**

We're also concerned about construction waste endangering the water quality for open community members, as well as resident rainbow trout and other wildlife that rely on the creek. Excess sediment from the replacement of towers and undergrounding along Park Boulevard can cover trout nesting sites, clog their gills, and make them more susceptible to disease. We regularly find debris from construction sites in the creek, and have documented numerous fish kills caused by tools covered in paint and concrete being cleaned into storm drains. So we encourage construction crews to dispose of these materials properly and avoid storm drains to protect Oakland's water quality.

And thank you for considering our concern.

Commenter #5: Lauren Wilson (00:31:26.840 --> 00:32:31.610)

Hi there, my name is Lauren Wilson and I'm a resident of Oakland. I live about 200 feet away from the proposed project path. And I understand that this is a… necessary, improvement. And I appreciate the community engagement that has been involved, and the opportunity for public comment and engagement on this project as it has moved forward. **F05-1**

Being a necessary upgrade to the system, I believe it also has to balance the cost to ratepayers and the impact on the community. Undergrounding is a massive cost to ratepayers, and is a huge disruption and displacement to the communities, in the surrounding environment, and so I believe that the project as proposed here is the best pla- the best plan and the best path forward, and, I, hope this is the direction that the CPUC continues to move. Thank you.

Comment #6 - Erik Olafsson (00:32:49.810 --> 00:34:32.909)

My name is Eric Olofsson. I live in Canyon and one thing that I think my associate has brought up is that there's a railroad tunnel that goes from Shepherd Canyon over at the middle of Shepherd Canyon, all the way into Canyon. And this, if… if PG&E were to use this old railroad, tunnel, which is just plugged on both ends, I think it's intact for the most part. It could be used to completely avoid having the towers over the steep part of the hills in Oakland and that you could run the electrical right into that tunnel, bring it out into Canyon, and then from there, I don't know, you might have to put it on towers going to the Moraga substation, but that seems to be a fairly decent solution, could save a lot of money, could avoid fire danger, etc, etc. Could void aviation effects as well, because I know the… the FAA was concerned with the height of some of the towers going over the hills. So, that's just my suggestion, is that that be an alternative, added to this DEIR. I don't know how you could do that, if you'd have to amend it or whatever but that would be my suggestion, that, using the railroad tunnel could save PG&E and the taxpayers a lot of money. **F06-1**

That's all I have to say.

Responses to Comment Set F01 – Jonathan Goodwin

F01-1 The commenter asks at what stage are the lines that blew up during the 1991 Tunnel Fire between the Temescal and Moraga substations.

The Tunnel Fire is discussed under "Fire History in the Project Vicinity" in Section 3.18.1 (Wildfire, Environmental Setting) of the Draft EIR, which explains that it was ignited by an unknown source on a residential hillside in Berkeley, approximately 2.4 miles north of the Project alignment.

The commenter also states that the Draft EIR omits an alternative of placing the power lines underneath the Redwood Peak Tunnel from Pinehurst Road to Shepherd Canyon Road. The commenter states that this alternative would be much cheaper and safer in terms of eliminating wildfire risk in a very sensitive area. In addition, the commenter states that by running the lines through an existing bore, maintenance would be much easier. The commenter strongly suggests that this alternative be considered.

Please see Responses to Comments D06-1 and F06-1 and General Response GR-1.

Responses to Comment Set F02 – Andrew Jeffries

F02-1 The commenter states that he is a resident near Shepherd Canyon Road and Saroni Court. The commenter is concerned that two existing towers, EN15 and ES17, located in a parking area on an easement near their home, would be removed and replaced to the west of the existing locations, thereby placing the proposed structures approximately 15 feet from the front of the commenter's deck and in their garden. The commenter is concerned that the diagrams in the Draft EIR do not show the specific locations of each home and requests consideration of other locations for the replaced towers, as well as replacement of the towers with tubular poles. The commenter also supports underground alignment options to address wildfire risks and is disappointed that these options are not really being actively considered.

The support for undergrounding the power lines to eliminate wildfire risks associated with the lines is acknowledged and will be shared with the CPUC's decision-makers for their consideration. Additional information about the consideration of underground alignment options is provided in General Response GR-1.

The commenter expresses concerns about visual changes that would result from the proposed Project near their residence. The analysis of visual changes that would result from the proposed Project is provided in Draft EIR Section 3.2, Aesthetics. In that section, Key Observation Point (KOP) 6a from Balboa Drive at West Circle is the KOP that shows potential visual impacts that would result from replacing the existing LSTs referred to by the commenter (Structures EN15/ES17), with two TSPs (Structures RN14/RS14).[6] The pre- and post-Project conditions are shown in Figure 3.2-8a and Figure 3.2-8b in Appendix A.

As shown in Figure 3.2-8a and Figure 3.2-8b, the two existing LSTs that the commenter refers to would be replaced with two TSPs, which would be taller in scale relative to the existing structures being replaced. As discussed in Draft EIR Section 3.2 (see Impact AES-3 in Section 3.2.3.3), the proposed TSPs would have a similar visual dominance compared to existing conditions; as a result, the proposed Project components would be visually co-dominant with the existing structures. However, the proposed TSPs would have a more simple, narrow profile compared to the more visually complex LSTs. The increased view blockage/impairment of the background sky due to the increased structure height would be partially offset by the reduced

[6] A KOP is a strategically selected location from which a proposed project's visual impact is assessed, serving as a primary vantage point for evaluating how the project alters the existing visual landscape.

view blockage of the background vegetation due to the narrower structure form. As a result, the overall visual contrast and view blockage/impairment of the background sky would be considered to be moderate; these aspects of the proposed Project combined with the co-dominant nature of the proposed improvements would result in less-than-significant impacts on the visual character and quality of public views of the site and its surroundings.

In summary, even though the proposed structures would be shifted to the west of the existing tower locations, the two proposed TSPs would have a smaller footprint than the existing LSTs, which would minimize visual changes near the commenter's property.

See also Responses to Comment Set D14.

F02-2 The commenter asks why the lot boundaries and house locations are not shown on figures and states that the replaced poles are blocking views.

Figure 2.1-2 in the Draft EIR provides the locations of the proposed Project components, including existing and proposed structures and construction areas. The lot boundaries and house locations are not shown on this figure because these additional details would make the maps less reader-friendly by showing additional lines and polygons that could make the boundaries of the proposed Project components more difficult to see. All of the major roadways are labeled on the figures, allowing readers of the Draft EIR to locate a particular property by looking at cross streets or other major roadways, which would orient them to a specific location of a proposed Project component in relation to a residential property.

The analysis of visual changes that would result from the proposed Project is provided in Draft EIR Section 3.2, Aesthetics. As stated in Response F02-1, the two existing LSTs that the commenter is concerned about would be replaced with two TSPs, which would be taller in scale relative to the existing structures being replaced, resulting in a similar visual dominance compared to existing conditions; as a result, the proposed Project components would be visually co-dominant with the existing structures. However, the proposed TSPs would have a more simple, narrow profile compared to the more visually complex LSTs. The increased view blockage/impairment of the background sky due to the increased structure height would be partially offset by the reduced view blockage of the background vegetation due to the narrower structure form. As a result, the overall visual contrast and view blockage/impairment of the background sky would be considered to be moderate; these aspects of the proposed Project combined with the co-dominant nature of the proposed improvements would result in less-than-significant impacts on the visual character and quality of public views of the site and its surroundings (see Impact AES-3 in Section 3.2.3.3).

Responses to Comment Set F03 – Pete Retondo

F03-1 The commenter feels that the EIR is inadequate with regard to evaluating underground alternatives. He requests an engineering firm develop a realistic plan to analyze cost and feasibility. He feels that the EIR did not consider catastrophic wildfire to be an environmental problem.

This public meeting comment is addressed in responses provide to the commenters' written comments. Please see Responses to Comment Set D05.

Responses to Comment Set F04 – Ella Matsuda

F04-1 The commenter is a botanist with Friends of Sausal Creek (FOSC) and is concerned about the impacts to state endangered pallid manzanita. The FOSC have permits to propagate the species and would be grateful for the opportunity to salvage plant material. They would also like consideration if PG&E is purchasing plants for revegetation and remediation efforts. CPUC

appreciates the comments and conservation work done by FOSC. Opportunities to salvage materials or assist with revegetation efforts have been passed on to PG&E.

The commenter raises concern about construction waste endangering water quality, and the impacts it could have on rainbow trout and other wildlife that rely on the creek. The FOSC consistently find construction debris along the creek and have documented fish kill caused by paint and concrete spills. CPUC agrees that it's important to protect water quality, and prevent sedimentation and hazardous materials from entering waterways.

Sedimentation and soil erosion are disclosed as a potential impact in several sections of Impact BIO-1, including potential impacts to plants, amphibians, aquatic reptiles; and in Impact BIO-3 regarding potential impacts to water quality and aquatic resources. Though rainbow trout is not a special-status species and not specifically mentioned, APMs are provided that reduce impacts from erosion and sedimentation into local creeks and thus reduce potential impact to rainbow trout. These APMs include utilizing standard erosion and sediment control BMPs to prevent construction site runoff into waterways, establishing and covering stockpile areas so they do not enter water systems, revegetation for disturbed areas, maintaining buffers around the edge of riparian areas, pruning vegetation in a manner that promotes regrowth, and implementation of erosion control measures.

In addition, potential impacts from sedimentation and erosion were discussed in Section 3.10.3.3 under Impact HW-1. APMs include preparation and implementation of Stomwater Pollution Prevention Plan. Potential impacts from hazardous materials, including project related hazardous materials such as fuel, hydraulic fluids and lubricants, and other solvents, and hazardous wastes as a byproduct of construction activities, is discussed in Section 3.9. APMs include Development and Implementation of Hazardous Material and Emergency Response Procedures, Emergency Spill Supplies and Equipment, and Asbestos Management. An additional Mitigation Measure in Section 3.9.4. includes implementation of MM HH-1a, Prepare and Implement a Soil Management Plan, which provides the procedures PG&E shall undertake if contaminated soil is encountered. The measures will require PG&E to take appropriate measures to reduce the potential for sedimentation and erosion and spread of hazardous materials, and the process for containment is a hazardous material spill occurs. This analysis complies with the requirements of CEQA and the CEQA Guidelines, and no additional analysis is required.

Please also see Responses to Comment Sets B01 (Friends of Sausal Creek) and D15 (Paul Kubicek).

Responses to Comment Set F05 – Lauren Wilson

F05-1 The commenter's stated concerns about the cost to ratepayers, potential disruption impacts of underground construction, and support for the proposed Project are noted and will be shared with the CPUC's decision-makers for their consideration. Because the comment does not address significant environmental issues, no further response is required in the Final EIR.

Responses to Comment Set F06 – Erik Olafsson

F06-1 The commenter suggests using an abandoned railroad tunnel from Shepherd Canyon to carry power lines underground in lieu of overhead in this area. The commenter suggests that this would probably save money, reduce fire risk, and avoid towers over the hills. The commenter suggests that this should be included as an EIR alternative.

The commenter references the abandoned unlined 3,700-foot-long single-track Redwood Peak Tunnel under the Oakland Hills between Montclair (approximately at Saroni Drive and Shepherd Canyon Road) and Eastport on Pinehurst Road. The Oakland and Antioch Railway

dug the tunnel in 1910-1913, before the tunnel easement was sold in 1920 to the San Francisco-Sacramento Railroad Company (SFSRR), then sold again to Sacramento Northern Railway (Northern) in 1928.[7] Northern operated its railroad line through the tunnel from 1928 to 1957. It was last used in 1957. The tunnel is sealed at both ends. The tunnel portal at its eastern end near Canyon is no longer visible, largely due to a landslide that occurred during the El Niño rains of the early 1980s.[8]

Reportedly, in 1982 a house built over the tunnel was destroyed when part of the tunnel caved in at the western entry of the tunnel in the Oakland Hills. An unimproved parcel was purchased for residential development. During construction of the house in 1977-1978, the owner deposited fill to repair subsidence that had occurred. Four years later, in 1982, the earth collapsed beneath the house, destroying it. This event is the subject of the case *Platts v. Sacramento Northern Ry.* (1988).[9]

In 1994, home developers filled in the approach ravine and tunnel mouth and constructed residential homes on this fill and on top of the tunnel. The upper foot of the top of the tunnel portal could be observed in the back yard of one of the homes. This changed the local drainage and at least one house over the tunnel subsided and had to be removed.[10]

The Redwood Peak Tunnel is discussed in Section 4.4.2.4 of the Draft EIR and Section 4.2.1.2 (Central Section) of PG&E's Proponent's Environmental Assessment (PEA). Use of the tunnel for an underground power line was eliminated from EIR and PEA consideration because the tunnel has been partially filled in, is of unknown structural integrity, may have collapses, and has limited space.

Use of the Redwood Peak Tunnel as an underground alternative was determined to be infeasible to construct and would not feasibly attain the basic objectives of the Project related to reliability and safety requirements. The tunnel is of unknown structural condition, has a history of failures, and may collapse, thereby posing an increased safety risk. There is limited space at either end of the tunnel to support the construction activities that would be required to rebuild the tunnel for power line use, creating a significant engineering challenge. In addition, large structures would be required to transition between overhead and underground transmission lines, which presents another challenge related to space availability for these transition poles. Therefore, this alternative was eliminated from further consideration based on safety and feasibility. This analysis complies with the requirements of CEQA and the CEQA Guidelines, and no additional analysis is required.

[7] Redwood Peak Tunnel. LocalWiki. https://localwiki.org/oakland/Redwood_Peak_Tunnel.
[8] Sacramento Northern Railway. Wikipedia. https://en.wikipedia.org/wiki/Sacramento_Northern_Railway.
[9] Platts v. Sacramento Northern Ry. (1988) 205 Cal.App.3d 1025 , 253 Cal.Rptr. 269 https://lawlink.com/research/cases/65756/platts-v-sacramento-northern-ry.
[10] Sacramento Northern Railway. Wikipedia. https://en.wikipedia.org/wiki/Sacramento_Northern_Railway.