Subject: PG&E Fulton-Fitch Mountain APPLICATION NO. A.15-12-005
Date: Friday, January 22, 2016 5:03:55 PM
Attachments: Deficiency Rpt #1 Response Table 1-22-16 FIN.doc

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Lisa,

I am pleased to submit this response to the Deficiency Report for the PG&E Fulton-Fitch Mountain Reconductoring Project, Application No. A.15-12-005.

Attachments will follow in a separate email.

We will be submitting the confidential information on Monday.

Sincerely,
Molly

Molly Sandomire
Senior Environmental Planner

REPORT OVERVIEW

The California Public Utilities Commission (CPUC) has identified deficiencies in Pacific Gas and Electric Company's (PG&E) Application (A.15-12-005) and Proponent's Environmental Assessment (PEA) for a Permit to Construct (PTC) the Fulton-Fitch Mountain Reconductoring Project (project). Deficiencies were identified using the CPUC PEA Checklist (November 2008) and the CPUC Information and Criteria List (July 2008). Deficiencies are presented in Table 1.

Table 1 PG&E Fulton-Fitch Mountain Reconductoring Project Application Deficiencies

ID	PEA Requirement References	Applicant References	Issue	Deficiencies	PG&E Response
Introduction (IN)					
IN-01	**PEA Checklist:** Chapter 1: PEA Summary **Information and Criteria List:** Section V(9)	**Application:** Exhibit D – EMF Field Management Plan **PEA:** 00c Index to CPUC PEA Requirements 1.0 PEA Summary 2.3.1 Fulton-Shiloh Segment	**Potential areas of controversy** The PEA states there are no known areas of controversy for the project; however, the Project Description discusses the project alignment near schools (e.g., Mark West Elementary School and the joint campus of the San Miguel Elementary and Mark West Charter schools) and raising the heights of existing poles located adjacent to schools to reduce EMF was evaluated in the EMF Field Management Plan.	• Provide a description of EMF impacts to schools along the project alignment including any potential increase in EMF levels as a result of the project. • Provide a description of any outreach that has been conducted with schools for the project.	According to PG&E's EMF expert, the proposed reconductoring of the Fulton-Hopland 60 kV line will most likely have little effect on magnetic field levels near the transmission corridor because of the two 230 kV circuits located on the same poles. The Geysers #12-Fulton 230 kV and Geysers #17-Fulton 230 kV lines carry ten to thirty times the amount of current as that on the Fulton-Hopland 60 kV line. The EMF rating will vary depending on the current flowing through the line at a particular time, not the rating of the line. The current in the line at a given time is affected by the time of day, weather, and other variables that would increase or decrease electrical demand in this area. PG&E is in the process of contacting schools along the project alignment and setting up meetings with school principals.
IN-02	**PEA Checklist:** Chapter 1: PEA	**PEA:** 00c Index to	**Description of public outreach**	Provide a description of public outreach efforts completed to	PG&E began its initial outreach to property owners along the project route in 2011 to coordinate with them where access would be needed for early project planning

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	Summary	CPUC PEA Requirements	The Index to CPUC PEA Requirements states that a description of public outreach efforts is included in the PTC Application; however, there is no mention of public outreach efforts in the Application.	date.	purposes. Although there were informal contacts with property owners after that, there were no formal contacts until December 11, 2015, when PG&E provided notices of the application to properties located within 300 feet from the edge of ROW and anticipated work areas. PG&E is undertaking additional outreach to property owners with particular project issues, but the public outreach process will be handled by the CPUC. PG&E will meet with the Town of Windsor on January 25, 2016 and will continue outreach to other local agencies.
IN-03	**PEA Checklist:** Chapter 1: PEA Summary	**Application:** IV. Additional Information Required By Section IX(B) of GO 131-D **PEA:** 00c Index to CPUC PEA Requirements	**Description of inter-agency coordination** The Index to CPUC PEA Requirements states that a description of inter-agency coordination is included in the PTC Application. Section IV of the Application states that PG&E met with staff from the Central Coast Regional Water Quality Control Board (CCRWQCB) regarding the project in 2012; however, the project is located in Sonoma County which is located in the North Coast Regional Water Quality Control Board (NCRWQCB) region (Region 1) as stated in the PEA Hydrology and	Provide a description of coordination efforts with the CCRWQCB and address why the NCRWQCB was not contacted (see ODN-01 for additional details).	The application correctly indicated that PG&E met with Steve Bargsten. Mr. Bargsten is from the North Coast Regional Water Quality Control Board, not the Central Coast Regional Water Quality Control Board as indicated in the application. His office was incorrectly identified, but the meeting was with the correct RWQCB office.

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			Water Quality Section.		
Project Description (PD)					
PD-01	**PEA Checklist:** 3.2 Existing System **Information and Criteria List:** Section V(10)	**PEA:** 2.2 Project Objective, Purpose, and Need 2.4 Existing System	**Existing system information and project objectives** The Project Description states the existing conductor on the Fulton-Hopland Line between Fulton Substation and Fitch Mountain #1 Tap is 4/0 aluminum, which has a summer interior rating of 375 amperes. No information is provided regarding the existing conductor and summer interior rating on the Fulton-Hopland line from Fitch Mountain #1 Tap to Hopland Substation. This information is needed to evaluate the project purpose and need. The Project Description states the Geyserville Substation serves customers in the City of Geyserville and surrounding areas, and following construction of the project, Geyserville Substation	a. Provide the existing conductor and summer interior rating on the Fulton-Hopland line from Fitch Mountain #1 Tap to Hopland Substation. b. Describe the existing system in greater detail and why existing power sources for the Geyserville Substation are not sufficient.	a. The summer interior rating of the Fulton-Hopland 60 kilovolt (kV) Power Line is 297 amperes. The limiting conductor size is 4/0-7, AAC with normal summer interior normal rating of 297 Amps, and emergency rating of 345 amperes. The PEA mistakenly identified the summer interior rating of the Fulton-Hopland 60 kilovolt (kV) Power Line as 375 amperes. b. The existing system has two sources feeding Geyserville Substation: Fulton-Hopland and Fulton No. 1 60 kV power lines. During loss of one of those sources, the existing limiting section of Fulton – Fulton line does not entirely support serving customers in the City of Geyserville and surrounding areas. With completion of the project, this constraint is eliminated and either power line can support the Geyserville electric load.

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			would have an alternate source of power during an outage. Additional information regarding the existing system and project objectives is needed.		
PD-02	**PEA Checklist:** 3.2 Existing System 3.4 Proposed Project	**PEA:** 2.3.1 Fulton-Shiloh Segment	**Existing clearances and separation distances for the Fulton-Shiloh Segment** The Project Description states that an existing 12-kV distribution line along Old Redwood Highway would be relocated, and two street lights along Faught Road would be lowered or moved to provide adequate clearance. The location of the existing and relocated 12-kV distribution pole and additional information regarding existing clearances for the 60-kV line were not provided. The Project Description states the 60-kV conductor would have minimum separation distances of 10 feet	a. Describe how existing clearances for the Fulton-Shiloh Segment would change, and if the existing 60-kV line has the same clearance violations that would be addressed with proposed conductor. b. Provide the existing and proposed 12-kV distribution pole location along Old Redwood Highway that would be relocated with GIS data for project structures (see PD-07 for additional details). c. Provide existing conductor separation distances for the Fulton-Shiloh Segment.	a. There are no existing 230kV to 60kV clearance violations. The existing minimum radial phase clearance between the 230kV and 60kV is 10.4'. Modifying the segment will require a minimum of 13.5' clearance. b. The coordinates for the two poles (P1 & P2) carrying the span that crosses underneath the 60kV are: P1: Lat: 38.50890261 Long: -122.76048877 P2: Lat: 38.50860362 Long: -122.76006983 The new pole locations have not yet been determined. c. The existing vertical separation for the 230kV conductor from 24/117a-24/101 is 20'. The current vertical separation for the 60kV conductor from 24/117a-24/101 is 9'. The existing minimum radial phase clearance between the 230kV and 60kV is 10.4'

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			vertically and 15 feet horizontally, and the minimum separation distances between the 60 kV conductor underbuild and the 230-kV conductor will be 20 feet vertically and 15 feet horizontally. The existing separation distances for these lines are not provided in the PEA. This information is needed to determine if the location of conductor on existing poles would change.		
PD-03	**PEA Checklist:** 3.2 Existing System 3.4 Proposed Project	**PEA:** 2.5.1.1 Fulton-Shiloh Segment	**Conductor for the Fulton-Shiloh Segment** The Project Description states existing 230-kV conductor on the Geysers #12-Fulton Line, currently bundled 1113 kcmil all aluminum conductor (AAC), will be replaced with 954 kcmil ACSS 54/7 "Cardinal" conductor, and that the new conductor would not increase in capacity. No information is given regarding the bundling	a. Clarify if the new 230-kV conductor installed for the Fulton-Shiloh Segment would be bundled. If the conductor would be bundled, explain how the capacity of the 230-kV line would not increase as stated. b. Identify the spans where each type of conductor would be installed for the Fulton-Shiloh Segment using unique structure IDs (see PD-07 for additional details).	a. New 230-kV conductor will not be bundled. b. Refer to attached Table 1. PD-03(b): Fulton-Shiloh Conductor Types.

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			of the new conductor. The Project Description states that a combination of 477 kcmil aluminum conductor steel supported (ACSS) 24/7 strand "Flicker," and 477 kcmil aluminum conductor composite reinforced (ACCR) 26/7 strand "Hawk;" however, the span locations where these two types of conductor are not identified.		
PD-04	**PEA Checklist:** 3.1 Project Location	**PEA:** 2.7.3 Access Roads 3.4 Biological Resources 3.9 Hydrology	**Drainage and wetland crossings** The Project Description states that access roads cross seasonal watercourses or seasonal wetlands at several locations; however, the number of crossings and locations are not identified in the PEA.	a. Provide the number of seasonal watercourse and wetland crossings, a description of the feature being crossed including information on its jurisdictional determination, proposed type of crossings that would be used (e.g., fiberglass mats, steel plates, culverts, and/or temporary bridges, or "Arizona" low-water crossing), and a unique ID for each crossing location. b. Provide GIS point data for each crossing point corresponding to the	a. There are approximately 24 seasonal watercourse and wetland crossings. Refer to attached Table 2. PD-04(a): Seasonal Watercourse and Wetland Crossings and Crossing Methods. A map showing the locations of the crossings on this table is being prepared and will be submitted when available. b. If GIS data is available, it will be provided confidentially under Public Resources Code § 583. Note that any such information is based on preliminary project design and/or current conditions and will likely change.

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				unique ID and attributes described above.	
PD-05	**PEA Checklist:** 3.4 Proposed Project	**PEA:** Section 2.2	**Capacity increase in Megawatts (MW)** The PEA does not identify capacity increases in MW for the project, as required by the PEA Checklist.	Provide the capacity increases for each segment and for the substation in MW.	Approximately 9.9 miles of the existing, single-circuit Fulton-Hopland 60 kV Power Line from Fulton Substation to Fitch Mountain #1 Tap will be replaced to give an additional normal and emergency capacity of approximately 829 Amps and 781 Amps respectively, or approximately 82 MW. Although approximately 1.3 miles of the Geysers #12-Fulton 230 kV Transmission Line will be reconductored, the capacity will not be increased. This section of 230 kV will be reconductored only to provide adequate spacing between the Fulton-Hopland 60 kV Power Line and the Geysers #12-Fulton 230 kV Transmission Line.
PD-06	**PEA Checklist:** 3.4 Proposed Project 3.5.2 Poles/Towers 3.7.1.2 Work Areas 3.7.1.5 Vegetation Clearance 3.7.2.1 Pull and Tension Sites **Information and Criteria List:** Section V(11)	**PEA:** 00c Index to CPUC PEA Requirements 2.7.2 Work Areas	**Detailed workspaces and facility locations** The Project Description describes the number of pole work areas, guard structure work areas, and pull sites that would be needed, but the locations are not identified. The Index to CPUC PEA Requirements states that GIS data would be provided to CPUC separately; however, no GIS data layers nor any substantive detail maps identifying the location of project facilities or work areas have been provided to CPUC.	Provide GIS data layers for the following project facilities and work areas based on preliminary engineering, as well as a corresponding detailed map book displaying the data (scale of approximately 1:3,000 or larger). The GIS data layers shall include unique object IDs and attributes that correspond to the PEA, technical reports, and survey reports. At a minimum, the GIS data must include the following layers: a. Existing PG&E right-of-way (ROW) and easements b. Proposed PG&E ROW and easements modifications need to construction and operate the project c. Existing and proposed project structures (see PD-07 for additional details) d. Existing footprints for the Fitch Mountain and Fulton	A map showing the locations of workspaces and facility locations is being prepared and will be submitted when available. If GIS data is available, it will be provided confidentially under Public Resources Code § 583. Note that any such information is based on preliminary project design and/or current conditions and will likely change.

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				Substations e. Proposed footprints for the Fitch Mountain and Fulton Substations, if different than existing f. Existing conductor alignments including name and voltage attributes g. Proposed conductor alignments including name and voltage attributes h. Temporary work areas broken down into the following attribute types: i. Staging areas ii. Material laydown areas iii. Helicopter landing zones and touch down areas (see PD-13 for additional details) iv. Structure access, installation, removal areas v. Pull sites (sometimes referred to pull and tension sites or stringing sites) vi. Guard structures (i.e., space for temporary pole installation or positioning a boom truck) vii. Drainage and wetland	

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				crossing installation areas (i.e., sufficient workspace beyond the access road on either side of the drainage to deliver and install materials, and park vehicles) i. Permanent work areas by attribute type (i.e., any work areas that would be developed or maintained free of vegetation) j. Turnaround, maneuvering, and parking areas along access roads and adjacent to other workspaces (See PD-12 for additional details) k. Any vegetation clearance or trimming areas that are not located within direct work areas such as mid-span locations and adjacent to access roads (see PD-18 for additional details)	
PD-07	**PEA Checklist:** 3.5.2 Poles/Towers **Information and Criteria List:** Section V(11)	**PEA:** 00c Index to CPUC PEA Requirements 2.5.2 Poles	**Structure locations, details, and unique IDs** Structure (i.e., poles and towers) details, unique IDs, and locations were not included with the PEA. The Index to CPUC PEA Requirements states	Provide GIS point data based on preliminary engineering with the locations of all proposed and existing project structures that would be accessed in any way by the project. The GIS data layers shall include, unique object IDs and detailed attributes including but not	Final design and pole locations have not been determined but new poles will be installed within approximately 35 feet of the existing pole locations (typically within 12 feet) and in line with the existing conductor. The exact structures to be transported by helicopter will not be identified until construction; however, any of them may be transported by helicopter if warranted. A map showing the locations of project poles is being prepared and will be submitted and available. If GIS data is available, it will be provided confidentially under Public Resources Code § 583. Note that any such information is based on preliminary project design and/or current conditions and will likely change.

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			that GIS data for structures would be provided to CPUC separately; however, no GIS data layers nor any substantive detail maps identifying the location of project structure have been provided to CPUC.	limited to the structure type, height (feet above ground level), and base elevation (feet above mean sea level). Any structures that would be removed from existing locations or delivered to proposed locations by helicopter should be identified in the GIS (see PD-13 for additional details regarding helicopter transport). Structure categories for the project where GIS data is required include the following: a. Proposed structures that would installed b. Existing structures that would be removed c. Existing structures that would be relocated (existing and proposed locations) d. Existing structures that would be modified and remain in place, or that would be accessed in any way during construction (e.g., TSPs along the Fulton-Shiloh Segment, topped structures, structures accessed during power clearances or reconnections following reconductoring, key interset poles that would	Locations of temporary poles used for stringing and temporary guard structures are not yet available, but all temporary poles will be located within the study area and within the disturbance footprint analyzed in the PEA.

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				be accessed, etc.) e. Temporary poles used for stringing or guard structures	
PD-08	**PEA Checklist:** 3.5.2 Poles/Towers	**PEA:** 2.5.2 Poles	**Typical structure diagrams** The Project Description contains varying height descriptions for typical structures that would be installed for the project. Height values vary between the PEA Project Description text and on Figures 2.0-3 and 2.0-4. LDS pole height descriptions in the text range from 58-73 feet, and from 70-85 feet on Figure 2.0-3. TSP height descriptions in the text range from 60-75 feet, and from 55-70 feet on Figure 2.0-4.	a. Confirm the typical structure types and their heights that would be installed for the project. b. Confirm that typical structure information on Figures 2.0-3 and 2.0-4 is correct, or provide revised diagrams with correct heights and/or structure names. c. Clarify whether heights provided for each structure are the above ground heights or the total structure lengths including underground setting distance.	a. The typical structure types and approximate heights for poles supporting the new 60 kV conductor are correct in the text. This information is preliminary. b. Figure 2.0-3 has been revised to show 12' phase spacing on the LDSP DLS-Transposition structures, not 10' as originally shown. Figure 2.0-4 has been revised to show dead end will be a 70' pole, not 75' as originally shown. These figures are preliminary and subject to change. c. Figure 2.0-3 provides pole lengths, including below ground lengths. Figure 2.0-4 provides above ground heights. Figure 2.0-4 shows that TSP heights range up to 75 feet (not 70 feet, as stated under here under Issue).
PD-09	**PEA Checklist:** 3.5.4 Substations **Information and Criteria List:** Section V(11)	**PEA:** 00c Index to CPUC PEA Requirements 2.3.3 Substation Modifications 2.5.3 Substation Modifications	**Substation modifications** No substation plans or profiles were provide with the PEA for the Fulton or Fitch Mountain Substations. The Index to CPUC PEA Requirements states that substation plans and profiles would be provided to CPUC when design	a. Provide existing and proposed plans and profiles for the Fulton and Fitch Mountain Substations based on preliminary engineering. b. Describe any additional lighting fixtures that would be installed at the substations, or state that none would be installed. c. Describe installation of the	a. Existing plans of Fitch Mountain and Fulton substations will be provided confidentially under Public Resources Code § 583. No changes are proposed for Fulton Substation plan. Engineering plans for changes at Fitch Mountain Substation will be provided when available. b. PG&E will install lights near and around the new equipment, including lights on structures near operating handles for switches and breakers and potentially near the entrances of the control building. c. A new control building will be installed within Fitch Mountain Substation's perimeter fence in the southwest corner. The size of the building, based on preliminary estimates, is approximately 16'W x 40'L x 11'H. The building will be built off site and assembled (if necessary) on site. No retaining walls are necessary. d. The new structures inside the station will require new foundations. The deep

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			information is available. Preliminary engineering is needed for the proposed substation modifications. The potential need for additional lighting at substations is not addressed in the PEA. Detailed construction information for the proposed structures, retaining walls, and the control building at the Fitch Mountain Substation are not addressed in the PEA.	proposed control building and retaining walls at the Fitch Mountain Substation, and if the control building would be built onsite or if it would be prefabricated and delivered to the site. d. Clarify if proposed structures in the substation would include foundations and if excavation would be required. If so, describe the foundations and installation process.	foundation system will be composed of concrete drilled shafts from 3'-4' in diameter and of varying depth depending on site specific geotechnical parameters. The excavation will be performed with a vertical drilling rig using an auger or barrel type bit, depending on soil conditions at the site and at the time of construction.
PD-10	**PEA Checklist:** 3.6 Right-of-Way Requirements	**PEA:** 2.6 Right-of-Way Requirements	**ROW and easement requirements** The Project Description states that the existing PG&E easement for the Fulton-Shiloh Segment varies in width from 42 to 82 feet, and no width is specified for the Shiloh-Fitch Segment easement. No GIS data or maps were provided showing PG&E's existing easements and ROW. Alternatively to the easement width for the	a. Provide GIS data for the existing PG&E easement for the project. If the extent of the easement for the Shiloh-Fulton Segment is undefined, provide the limits of areas maintained free of vegetation along the power line corridor. b. Describe what existing easement right clarifications are being referred to in Section 2.6 of the PEA. c. Identify all access routes on private land available to PG&E through existing easements that would be	a. GIS data for the existing PG&E easement and the extent of vegetation clearing is not available. b. While land rights are not at issue in a PTC proceeding, PG&E provides the following response: PG&E's land rights along the existing line are being reviewed to determine if any additional rights will be obtained. c. See PD-12. All PG&E easements contain express or implied secondary access rights; most easements do not specify a particular access route. Please see PD-12.

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			Shiloh-Fulton Segment, the area maintained free of vegetation along the power line corridor was not provided. The Project Description describes PG&E's existing easements, but it is not stated that the existing easements would be sufficient to construction the project. The PEA also states that "PG&E may update or clarify its existing easement rights, as needed, prior to construction." The Project Description states that ingress and egress rights to the power line and transmission line are included in existing easement rights; however, the specific access routes on private land are not identified, and the limits of access are not defined.	used for the project (see PD-12 for additional details).	
PD-11	**PEA Checklist:** 3.7.1.1 Staging Areas **Information**	**PEA:** 2.7.1 Staging Areas	**Staging areas** The Project Description lists the locations of potential staging	a. Provide a map and GIS data with the locations of proposed staging areas (see PD-06 for additional	a. A map showing the locations of proposed staging areas is being prepared. If GIS data is available, it will be provided confidentially under Public Resources Code § 583. Note that any such information is based on preliminary project design and/or current conditions and will likely change.

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	and Criteria List: Section V(11)		areas, but these are not shown on a map and no GIS data were provided to CPUC.	details). b. Provide written statements from the landowners that the identified staging areas would be available for use at the time of construction.	b. This information is not yet available.
PD-12	**PEA Checklist:** 3.7.1.2 Work Areas 3.7.1.3 Access Roads and/or Spur Roads **Information and Criteria List:** Section V(11)	**PEA:** 00c Index to CPUC PEA Requirements 2.7 Construction 2.7.3 Access Roads	**Access roads and footpaths** Access road widths, lengths, and area are listed in Table 2.0-1; however, the locations are not identified or shown on maps. The Index to CPUC PEA Requirements states that GIS data for access roads would be provided to CPUC separately; however, no GIS data layers for access road locations have been provided to CPUC. The Project Description states that minor adjustments to access roads may be necessary to address land use changes, unanticipated impacts, and other factors. More information is needed regarding the factors that PG&E believes	a. Provide GIS data for all access roads and footpaths that would provide sufficient access from public road ways to project work areas, including alternate access routes if the availability of the route is under question (see PD-06 for additional details regarding temporary access support work areas for turning around, maneuvering, and parking). The GIS data for access roads and footpaths shall include detailed attributes for each segment with unique characteristics including type (e.g., paved, graveled, unpaved bare ground, unpaved overland), ownership and PG&E easement rights, and proposed improvements or reestablishment. b. Describe the potential factors in detail that are referred to in Section 2.7.3	a. If GIS data is available, it will be provided confidentially under Public Resources Code § 583. Note that any such information is based on preliminary project design and/or current conditions and will likely change. PG&E's existing easement rights include access to the power line. Detailed information on proposed improvements is not available at this time. b. This information is not available at this time. Factors that could require modifications of access road use include, but are not limited to: changes in land use, such as development of new residences or agricultural facilities; avoidance of new water courses or other biological features; minimization of vegetation clearing and/or avoidance of vegetation; avoidance of newly discovered cultural or paleontological resources; changes in the landform, including landslides; changes in construction plans or project design, and other factors. c. This information is not available.

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			could change access considerations. The use of existing gates and installation of new gates is described in the Project Description; however the locations of these gates are not identified.	of the PEA that could impede access road use. Describe and identify the locations of changing land uses that could block access road use. Describe what other factors could affect access road use. c. Provide GIS point data for the locations of existing and proposed gates for the project.	
PD-13	**PEA Checklist:** 3.7.1.4 Helicopter Access **Information and Criteria List:** Section V(11)	**PEA:** 2.7.1 Staging Areas 2.7.2.4 Helicopter Landing Zones	**Helicopter access** The Project Description states that helicopters will be used to facilitate access to the majority of work areas, deliver and remove materials, and to set poles; however, the proposed or exiting locations of poles that would transported by helicopter are not identified. These locations are needed to determine flight paths and transport hazards over populated areas, and to assess air emissions from helicopter operation. The Project Description states that	a. Identify structures that would be transported from existing locations or to proposed locations by helicopter (see PD-07 for additional details regarding structure GIS attributes). b. Provide GIS data with the locations of helicopter landing zones within and outside of staging yards, and helicopter touch down locations. c. Describe any vegetation clearing or site development that would be needed at helicopter touch down areas, and identify paths needed to adjacent work areas (see PD-12 for additional details). d. Describe flight paths,	a. The exact structures to be transported by helicopter will not be identified until construction; however, any of the structures along the Shiloh-Fitch segment may be transported by helicopter if warranted. b. If GIS data is available, it will be provided confidentially under Public Resources Code § 583. Note that any such information is based on preliminary project design and/or current conditions and will likely change. Helicopter touch down may occur in open, level spaces along the alignment. c. Vegetation clearing or site development will not be needed at helicopter touch down areas. Overland travel from helicopter touch down areas to work areas will be within the study area and disturbance footprint analyzed in the PEA. d. Refer to PEA Section 2.7.2.4 for a description of flight paths and payloads. Helicopter use is likely to take place any time between 7 a.m. and 7 p.m. e. The actual flight plan for the project will not be developed until construction.

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			approximately six landing zones would be used, including two located within project staging areas; however, no location details, maps, or GIS were provided for these helicopter landing zones. The Project Description states that helicopters may also touch down at locations along the alignment other than landing zones when transporting workers and equipment; however, the locations of helicopter touch down areas have not been identified.	payloads, and hours of operation for helicopter activities. e. Provide maps showing helicopter flight paths and any areas where helicopter activities would not occur.	
PD-14	**PEA Checklist:** 3.7.1.5 Vegetation Clearance	**PEA:** 00c Index to CPUC PEA Requirements 2.7.4 Vegetation Clearance	**Vegetation clearance** Vegetation clearing is described in the Project Description; however, there is no information on tree removal. Vegetation communities in the project area are shown on Figure 3.4-1 at a small project overview scale. The vegetation communities cannot	a. Describe the types, and approximate number and size, of trees that may be removed. b. Provide GIS data for vegetation communities for the project corridor (within biological survey area), including a minimum buffer of 30 feet surrounding all work areas, access roads, and footpaths. c. Identify the locations	a. This information is still being developed. Additionally, please note that vegetation conditions in the project area fluctuate and are subject to change as a result of natural occurrences, landowner activity, and regularly scheduled vegetation maintenance. b. If GIS data is available, it will be provided confidentially under Public Resources Code § 583. Note that any such information is based on preliminary project design and/or current conditions and will likely change. c. Based upon a preliminary evaluation of current conditions, it is anticipated that vegetation clearing for work areas may occur near the following locations: Fulton Substation to pole 3, poles 6-9, 11, 13, 14, 17, 18, 19, 20, 21, 22, 23, 24, 25, 28, 29, 37, 38, 39, 40, 41, 42, 44, 45, 46, 50, 55, 58, 59, 60, 61, 62, 64, 66, 67, 69, 71, and 74. Vegetation clearing locations are approximate and subject to change.

ID	PEA Requirement References	Applicant References	Issue	Deficiencies	PG&E Response
			be discerned at this scale and no GIS data was provided. The Index to CPUC PEA Requirements states that GIS data for vegetation communities and disturbance would be provided to CPUC separately; however, no GIS data layers or detail maps have been provided to CPUC.	where vegetation clearance (brushing, clearing, or mowing, tree trimming, and tree removal would occur (see PD-06 for additional details).	d. Based upon a preliminary evaluation of current conditions, it is anticipated that vegetation clearing not located within direct work areas may occur near the following locations: • Poles 23-25 full span tree work • Access road to pole 28 • Access road to pole 29 • Access road to pole 45 • Access road between poles 50 and 53 • Mid-span between poles 51and 52 • Access roads between poles 56 and 57 • Access roads between poles 58 and 61 • Access roads to pole 67 • Access road to pole 74 A map of these locations is being prepared and will be submitted when available.
PD-15	**PEA Checklist:** 3.7.1.6 Erosion and Sediment Control and Pollution Prevention during Construction	**PEA:** 2.7.5 Erosion and Sediment Control and Pollution Prevention during Construction	**Soil disturbance** The Project Description does not address specific areas of soil disturbance including acreage totals or cut-and-fill volumes, where required.	a. Identify areas of soil disturbance for the project based on preliminary engineering and GIS data submitted to CPUC (see PD-06 for additional details). b. Provided a table of estimated cut and fill volumes by specific soil disturbance location, or state that no cut and fill would occur.	This information is not yet available.
PD-16	**PEA Checklist:** 3.7.5	**PEA:** 2.7.7.5	**Construction workforce and equipment**	Provide a revised version of Table 2.0-2 that addresses all	Refer to attached Table 4. PD-16: Updated 2.7.7.5 Construction Workforce and Equipment.

ID	PEA Requirement References	Applicant References	Issue	Deficiencies	PG&E Response
	Construction Workforce and Equipment	Construction Workforce and Equipment	Table 2.0-2 in the Project Description does not list typical construction equipment and duration of use information for the following activities: • Substation modifications • Vegetation removal and trimming • Equipment and helicopter refueling • Preparation of staging yards and work areas (e.g., grading equipment, gravel delivery trucks, etc.) The Project Description is missing information on the specific number of crew members that would be required for each activity. The Project Description is missing information on peak and non-peak construction vehicle trips.	proposed project activities. Include columns for the number of crew members that would be needed for each activity and the peak and non-peak daily vehicle trips that would be involved with each activity during construction. If new types of equipment are added to Table 2.0-3, provide descriptions of the equipment.	
PD-17	**PEA Checklist:**	**PEA:**	**Operation and**	a. Describe existing operation	a. The unmanned electric substations are operated remotely, and routine inspections

ID	PEA Requirement References	Applicant References	Issue	Deficiencies	PG&E Response
	3.8 Operation and Maintenance	2.8 Operation and Maintenance	**maintenance** The Project Description briefly describes operation and maintenance of facilities on the conductor alignment, but does not address existing or proposed operation and maintenance for the Fitch Mountain Substation or Fulton Substation. Vegetation clearance for construction activities is briefly described in the Project Description; however, vegetation clearance and trimming during operation and maintenance is not addressed.	and maintenance activities at the Fitch Mountain Substation and Fulton Substation including how operation and maintenance would change with the proposed project, or state why it would not change. b. Describe existing areas that are maintained free of vegetation such as around existing poles, and any existing areas where vegetation is regularly trimmed such as trees adjacent to conductor along the alignment, or where pesticides are sprayed for fire protection. Describe any changes that would occur during operation and maintenance for the project, and state if fire prevention maintenance would change after wood poles are replaced with LDS poles along the Shiloh-Fulton Segment.	by substation personnel occur monthly or as needed under emergency conditions. These activities would not change as a result of the substation modifications proposed at Fitch Mountain Substation. Substations are typically maintained with no vegetation inside the substation fence as well as approximately a 3 foot border around the substation fence. Vegetation management maintenance activities will not change at the existing substations as a result of this project. b. As stated above, fenced areas within substations are typically maintained free of vegetation. Public Resource Code § 4292 requires that poles with non-exempt equipment maintain a minimum 10 foot circle free of vegetation at the base of the pole. Annual vegetation management activities are performed on the entire length of the overhead electric transmission line. This includes tree removals and trimming. This is to maintain sufficient clearance for the conductors as well as around structures. Fire prevention maintenance will not change once wood poles are replaced with LDS poles.
Air Quality and Greenhouse Gases (AQ/GHG)					
AQ/GHG-01	**PEA Checklist:** 5.3 Air Quality **Information and Criteria**	**PEA:** 00c Index to CPUC PEA Requirements	**Air quality and GHG data** The Index to CPUC PEA Requirements states that supporting air	Provide the data calculations, spreadsheets, and technical reports that support emission estimates in the PEA.	Data calculations, spreadsheets, and technical reports that support emission estimates in the PEA are being provided on CD.

ID	PEA Requirement References	Applicant References	Issue	Deficiencies	PG&E Response
	List: Section V(14)	3.3 Air Quality	quality data would be provided to CPUC separately; however, no calculations, spreadsheets, or technical reports have been provided to CPUC.		
AQ/GHG-02	**PEA Checklist:** 5.3 Air Quality **Information and Criteria List:** Section V(14)	**PEA:** 3.3 Air Quality	**Sensitive receptors** The PEA does not include any information on distances to sensitive receptors.	Provide documentation of the location and types of sensitive receptors that could be impacted by the project (e.g., schools, hospitals, houses, etc.). Critical distances to receptors are dependent on the type of construction activity.	Refer to 3.3.4.3(d) for a discussion of location and types of sensitive receptors with potential to be impacted by the project. Sensitive receptors identified in this section include residential properties adjacent to the proposed alignment and schools. As described in this section, the nearest receptor to a proposed preliminary landing zone is located at a distance of approximately 175 feet.
Biological Resources (BR)					
BR-01	**PEA Checklist:** 5.4 Biological Resources **Information and Criteria List:** Section V(14)	**PEA:** 00c Index to CPUC PEA Requirements 3.4 Biological Resources	**Wetland delineation report** The Index to CPUC PEA Requirements states that a copy of the Wetland Delineation and supporting documentation would be provided to CPUC separately; however, this information has not been provided to CPUC.	a. Provide a copy of the Wetland Delineation and supporting documentation (i.e., data sheets and records of correspondence with the U.S. Army Corps of Engineers regarding verification). If verified, provide supporting documentation. b. Provide GIS data for wetlands with complete attributes corresponding to surveys, wetland delineation, and the PEA.	a. Available survey reports will be provided confidentially under Public Resources Code § 583. b. If GIS data is available, it will be provided confidentially under Public Resources Code § 583. Note that any such information is based on preliminary project design and/or current conditions and will likely change.
BR-02	**PEA Checklist:** 5.4 Biological	**PEA:** 00c Index to CPUC PEA	**Biological survey reports** The Index to CPUC PEA	a. Provide a copy of surveys for wildlife, botanical, and aquatic species, as	Available survey reports data will be provided confidentially under Public Resources Code § 583. If GIS data is available, it will be provided confidentially under Public Resources Code § 583. Note that any such information is based on preliminary project

ID	PEA Requirement References	Applicant References	Issue	Deficiencies	PG&E Response
	Resources **Information and Criteria List:** Section V(14)	Requirements 3.4 Biological Resources	Requirements states that survey reports for special-status species and supporting documentation would be provided to CPUC separately; however, this information has not been provided to CPUC. All survey reports completed for the project and referenced in Section 3.4 must be provided to the CPUC. The CPUC also requires GIS data with the location of special-status species, extent of vegetation communities, and biological survey areas.	applicable. b. Provide GIS data for biological survey areas broken down by survey date and surveyor, and that correspond to survey reports. c. Provide GIS data documenting locations of special-status species with complete attributes corresponding to survey reports and the PEA.	design and/or current conditions and will likely change.
Cultural/Paleontological Resources (C/PR)					
C/PR-01	**PEA Checklist:** 5.5 Cultural Resources **Information and Criteria List:** Section V(14)	**PEA:** 00c Index to CPUC PEA Requirements 3.5 Cultural Resources	**Cultural Resources Report** The Index to CPUC PEA Requirements states that the Cultural Resources Report and copy of the records search found in literature would be provided to CPUC separately; however, no report has been	a. Provide a Cultural Resources Report documenting the cultural resources investigation for the project. The report needs to include a literature search, results of the field survey, and Native American consultation. b. Provide GIS data for cultural survey areas broken down by survey	The Cultural Resources Report and a copy of the records search will be provided confidentially under Public Resources Code § 583. If GIS data is available, it will be provided confidentially under Public Resources Code § 583. Note that any such information is based on preliminary project design and/or current conditions and will likely change.

ID	PEA Requirement References	Applicant References	Issue	Deficiencies	PG&E Response
			provided to CPUC.	date and surveyor, and that correspond to survey reports submitted with the Cultural Resources Report. c. Provide GIS data of all resources within the survey area and provided GIS data for the survey area. d. Provide a copy of all site records for any resources in the area.	
C/PR-02	**PEA Checklist:** 5.5 Cultural Resources **Information and Criteria List:** Section V(14)	**PEA:** 3.5 Cultural Resources	**Paleontological report** The Cultural Resources section of the PEA references a paleontological report that was prepared for the project. This report was not submitted with the PEA.	Provide the paleontological report.	The paleontological report will be provided confidentially under Public Resources Code § 583.
Geology, Soils, and Seismic Potential (GSS)					
GSS-01	**PEA Checklist:** 5.6 Geology, Soils, and Seismic Potential **Information and Criteria List:** Section V(14)	**PEA:** 00c Index to CPUC PEA Requirements 3.6 Geology and Soils	**Geotechnical investigation** The Index to CPUC PEA Requirements states that a copy of the geotechnical investigation would be provided to CPUC separately; however, a geotechnical investigation has not been provided to CPUC. A geotechnical investigation needs to	Provide a copy of the geotechnical investigation.	No geotechnical investigation has been prepared. The reference in the Index to CPUC PEA Requirements that suggested otherwise was incorrect. Site-specific geotechnical reports will be prepared as needed for individual pole locations and provided to the CPUC.

ID	PEA Requirement References	Applicant References	Issue	Deficiencies	PG&E Response
			be completed given that pole replacement may occur in areas with shallow groundwater and where liquefaction or other geologic hazards could be a concern.		
Hazards and Hazardous Materials (HHM)					
HHM-01	**PEA Checklist:** 5.7 Hazards and Hazardous Materials **Information and Criteria List:** Section V(14)	**PEA:** 00c Index to CPUC PEA Requirements 3.8 Hazards and Hazardous Materials	**Environmental Data Resources Report** The Index to CPUC PEA Requirements states that the Environmental Data Resources Report would be provided to CPUC separately (Environmental Data Resources, Inc. (2015)); however, the report has not been provided to CPUC. In addition, the index states that the Hazardous Substance Control and Emergency Response Plan, Health and Safety Plan, and Worker Environmental Awareness Program are to be provided to CPUC separately.	a. Provide a copy of the Environmental Data Resources Report. b. Clarify if a Hazardous Substance Control and Emergency Response Plan, Health and Safety Plan, or Worker Environmental Awareness Program have been prepared for the project. If so, provide these documents.	a. See attached report: EDR. 2015. *PG&E Fulton-Fitch Healdsburg, CA 95448 Corridor Study*. b. No Hazardous Substance Control and Emergency Response Plan, Health and Safety Plan, or Worker Environmental Awareness Program have been prepared specifically for the project; any prepared plans will be provided to the CPUC prior to the start of construction.
HHM-02	**PEA Checklist:** 5.7 Hazards and Hazardous	**PEA:** 3.8 Hazards and Hazardous	**Hazardous materials used during construction**	a. Describe what chemicals would be used for construction and operation	As described in Section 3.8.4.3, other than substances associated with construction vehicles and equipment (e.g., fuels, oils, lubricants, and solvents), no hazardous materials will be associated with project construction.

ID	PEA Requirement References	Applicant References	Issue	Deficiencies	PG&E Response
	Materials **Information and Criteria List:** Section V(14)	Materials	The PEA does not include information on hazardous materials that would be used during construction and operation of the project.	of the project. b. Provide approximate quantities of each chemical that would be used.	
Hydrology and Water Quality (HWQ)					
HWQ-01	**PEA Checklist:** 5.8 Hydrology and Water Quality **Information and Criteria List:** Section V(14)	**PEA:** 3.9 Hydrology and Water Quality	**Hydrology and water quality impacts** Some hydrologic features in the project area are shown on Figure 3.9-1 at a small project overview scale; however, work areas adjacent to these features and the locations of drainage and wetland crossings are not shown and no GIS data was provided.	Provide GIS data layers for drainage and wetland crossings, and hydrologic features identified on Figure 3.9-1(see PD-06 and BR-01 for additional details).	If GIS data is available, it will be provided confidentially under Public Resources Code § 583. Note that any such information is based on preliminary project design and/or current conditions and will likely change.
Land Use and Planning (LUP)					
LUP-01	**PEA Checklist:** 5.9 Land Use and Planning Chapter 7: Other Process-Related Data Needs **Information and Criteria List:**	**Application:** Section VI **PEA:** Appendix A: Affected Properties within 300 feet	**GIS data for properties within 300 feet of project facilities** A list of affected properties within 300 feet of the project was included in Appendix A of the PEA; however, GIS data or detailed maps of project facilities and properties	a. Provide GIS data for the 300-foot buffer from all project facilities used to identify properties within 300 feet that require noticing. b. Provide GIS parcel data for affected properties within 300 feet with attributes that correspond to the affected properties list included with	A spreadsheet was provided as Attachment A of the PEA. A new spreadsheet is attached. The data source is CoreLogic. GIS data is not available at this time. Note that the CPUC PEA Checklist specifies an Excel spreadsheet.

ID	PEA Requirement References	Applicant References	Issue	Deficiencies	PG&E Response
	Section V(15)		within 300 feet were not provided with the PEA.	Appendix A of the PEA (e.g., APN number, owner mailing address, and parcels physical address). c. Identify the source and dates of the GIS parcel data.	
Noise (NS)					
NS-01	**PEA Checklist:** 5.11 Noise **Information and Criteria List:** Sections V(12) and V(14)	**PEA:** 3.12 Noise	**Ambient noise levels** The PEA does not address ambient noise levels in the project area.	Provide baseline ambient noise level data for each noise environment in the project area.	Refer to discussion NS-01 below.
Recreation (REC)					
REC-01	**PEA Checklist:** 5.14 Recreation **Information and Criteria List:** Section V(14)	**PEA:** 3.15 Recreation	**Trail and park closures** The PEA does not include information on the duration of park and trail closures.	Provide information on the location and duration of any trail or park closures during construction.	This information is not yet available.
Traffic and Transportation (TT)					
TT-01	**PEA Checklist:** Chapter 4: Environmental Setting 5.15 Transportation and Traffic	**PEA:** 3.16 Transportation and Traffic	**Baseline traffic conditions** The PEA only provides baseline traffic levels for two roads and existing level of service for five roads in the project area.	Provide baseline traffic levels and level of service for all roads that would be used during construction.	Traffic volumes and flow conditions were included for primary roadways with available traffic and LOS conditions that would be used to access local road networks and construction areas. Because many of the roadways in the project area are residential streets, LOS study data is not available. The City of Healdsburg does not have LOS data for local roadways, however provides intersection LOS. All intersections along roadways used for access to the Fitch Mountain Tap operate at a LOS of C. For the remainder, and majority of the project crossing rural areas, no LOS study data is available, but would use primary roads with previously included information for access. Finally, temporary work on

ID	PEA Requirement References	Applicant References	Issue	Deficiencies	PG&E Response
	Information and Criteria List: Section V(14)		Additional details are required regarding the existing conditions for all roads that would be used during construction to determine project impacts.		local roadways would not be expected to degrade traffic volumes or flow.
TT-02	**PEA Checklist:** 5.15 Transportation and Traffic **Information and Criteria List:** Section V(14)	**PEA:** 3.16 Transportation and Traffic	**Construction traffic trips** The PEA does not provide information on peak or non-peak vehicle trips for construction vehicles and workers during construction of the project.	Provide anticipated daily vehicle trips for construction vehicles and personnel during peak and non-peak construction periods.	During peak construction periods, construction vehicles and personnel will make approximately 6 daily vehicle trips. During non-peak construction periods, construction vehicles and personnel will make approximately 2 daily vehicle trips.
TT-03	**PEA Checklist:** 5.15 Transportation and Traffic **Information and Criteria List:** Section V(14)	**PEA:** 3.16 Transportation and Traffic	**Traffic impacts from streetlight removal** Traffic impacts from removal or relocation of streetlights on Faught road are not addressed in the PEA.	Provide a description of impacts on traffic safety from the removal or relocation of the street lights on Faught Road.	No streetlights will be removed on Faught Road. With reconductoring of the 60 kV line, two street lights between Manka Circle and El Mercado Parkway along midspans will be in clearance violation with the new line. These lights will either be lowered to remove the clearance violation or moved further from midspan.
TT-04	**PEA Checklist:** Chapter 4: Environmental Setting 5.15 Transportation and Traffic **Information and Criteria**	**PEA:** 3.16 Transportation and Traffic	**Helicopter activities and impacts to air traffic** The PEA states the Sonoma County Airport is 2.3 miles west of the Fulton-Shiloh Segment; however, existing airspace in the	a. Provide a description of existing airspace in the project area and impacts from the project. b. Provide a figure with the locations of proposed helicopter landing zones, proposed flight paths, and any helicopter avoidance	a. The Fulton-Shiloh segment lies within the boundary of the Charles M. Schultz Sonoma County Airport F.A.R. Part 77 Airspace Plan. As described in Section 3.16.4.3, the helicopter crew and operator will obtain all necessary FAA permits and coordinate with local airports regarding protocols and air traffic prior to all construction-related helicopter operations. b. A map identifying the preliminary locations of proposed landing zones, based upon existing land-use conditions, is being prepared and will be submitted when available. Information on proposed flight paths is not yet available and will not be available until construction. In general, the path of the helicopter will follow existing utility line

ID	PEA Requirement References	Applicant References	Issue	Deficiencies	PG&E Response
	List: Section V(14)		project area, proposed flight paths, and helicopter landing zones are not identified. Transportation and traffic impacts for the project cannot be adequately addressed without this information.	areas, such as existing airspace with flight restrictions and where habitable structures are located (see PD-14 for additional details).	alignments to the extent possible and will avoid flying over residences.
Cumulative Impacts (CI)					
CI-01	**PEA Checklist:** 5.17 Cumulative Analysis **Information and Criteria List:** Section V(14)	**PEA:** 3.18 3.18 Mandatory Findings of Significance and Cumulative Impact Analysis	**Cumulative projects list** The PEA only provides information on cumulative private projects in the vicinity of the project. The list of cumulative projects lacks any information on public, utility, or infrastructure projects in the vicinity of the project.	Provide a list of all PG&E, other utility project, Caltrans, or City projects proposed within 2 miles of the project.	PG&E is still seeking information on this request, and will forward the additional information when complete. PG&E's Windsor Substation Project is located approximately 1.9 miles from the project. It includes distribution under-build on the Fulton #1 line that is approximately 2.02 miles from the project, and a short segment of reconductoring on the front side of Windsor sub that will be 1.9 miles from the Fulton-Hopland 60 kV line. Construction is scheduled to begin in July or August 2016, with line work completed in late 2017 and substation construction completed in late 2018.
Alternatives (ALT)					
ALT-01	**PEA Checklist:** 6.2 Description of Project Alternatives and Impact Analysis **Information and Criteria List:**	**PEA:** N/A	**Project alternatives** The PEA does not address any project alternatives that were considered or state why none were considered.	Provide a description of any alternatives that were considered during project planning. The description should include any alternative designs for new poles, modifications of pole heights, or relocation of poles. Provide the reason PG&E rejected each alternative.	PG&E is reconductoring an existing line and will replace poles near the same locations. Alternative line routes were not considered because impacts would necessarily be much greater than utilizing the existing alignment. Because PG&E is aware of no evidence that any proposed pole design or location along the existing route would create a new potentially-significant impact, a review of alternative pole types or locations has not been undertaken. PG&E did consider another system alternative before selecting the proposed project. This alternative would upgrade the system from 60 kV to 115 kV by converting about 25 miles of 60 kV lines and Fitch Mountain, Geyserville and the City of Healdsburg's Badger substations to 115 kV voltage. This alternative would also require some line

ID	PEA Requirement References	Applicant References	Issue	Deficiencies	PG&E Response
	Section V(14)				reconductoring and bus work at Fulton and Cloverdale 115 kV buses to terminate the new 115 kV line. The alternative was ruled out due to cost and a longer implementation timeline. In addition, the alternative still didn't address potential higher loadings on the Fulton-Hopland Line. Note that a review of alternatives is not required under CEQA unless the proposed project would create a potentially- significant impact that could be reduced by an alternative to the project.
ALT-02	**PEA Checklist:** 6.3 Growth Inducing Impacts **Information and Criteria List:** Section V(14)	**PEA:** N/A	**Growth inducing impacts** The PEA does not address growth inducing impacts.	Provide information on growth inducing impacts consistent with the PEA Checklist requirements.	As indicated in Section 6.3 of the Index to CPUC PEA Requirements, these issues are addressed in PEA sections 3.13.4.3 and 3.14.4.3. The issue of cumulative growth-inducing impacts is also briefly discussed in the beginning of Section 3.18.5. However, the CPUC Checklist, consistent with CEQA, requires a discussion of growth-inducing impacts only if they are significant, which is not the case for this project or any typical utility project that does not extend service into a new area.
Other Data Needs (ODN)					
ODN-01	**PEA Checklist:** Chapter 7: Other Process-Related Data Needs **Information and Criteria List:** Section V(15)	**Application:** Section VI **Declarations of Notice:** Exhibit F	**Notice of application filing** Exhibit F of PG&E's Declarations of Notice submitted to CPUC on December 16, 2015 lists agency personnel and their mailing addresses who were sent formal notice of the PTC application filing. Notice was provided to the California Department of Fish and Wildlife (CDFW) Fresno office and to the CCRWQCB;	Provide a description of why regional offices for CDFW and RWQCB located outside of the project area were sent notice, rather than those in the project area (see IN-03 for additional details).	Notice of the application was mailed to the NCRWQCB and CDFW Region 3 on January 4, 2016. The original notices were sent to the wrong offices, apparently due to a document version-control error.

ID	PEA Requirement References	Applicant References	Issue	Deficiencies	PG&E Response
			however, the project area is not located within these regional office management areas. The project is located within the CDFW Bay Delta Region (Region 3) and the NCRWQCB region (Region 1), and personnel from these regions are not identified in the mailing list located in Exhibit F.		

Table 1. PD-03(b): Fulton-Shiloh Conductor Types

Power/Transmission Line	Status	Structure						
		Fulton Sub Takeoff	Fulton substation 230 kV Cap Bank Tie Structures		Geysers-Fulton Structures			
			1	6	7a	8	21	23
Fulton-Hopland 60 kV Power Line	Existing	4/0-7 ACC						
	Proposed	477 KCMIL ACSS 24/7 Strands "Flicker"		477 KCMIL ACCR 26/7 Strands "Hawk"				477 ACSS 24/7 Strands "Flicker"
Geysers-Fulton #12 230 kV Transmission Line	Existing	Bundled 1113 KCMIL AAC						
	Proposed	N/A			954 KCMIL ACSS 54/7 Strands "Cardinal"			N/A

Table 2. PD-04(a): Seasonal Watercourse and Wetland Crossings and Preliminary Crossing Methods

ID	Feature Type	Depth (feet)	Width (feet)	Culvert Information	Crossing Type
FFX1	Seep	0-1	10	No Culvert	Fiberglass mats, steel plates, and/or temporary bridges, or "Arizona" low-water crossing
FFX2	Seasonal Wetland	1	15	No Culvert	Fiberglass mats, steel plates, and/or temporary bridges, or "Arizona" low-water crossing
FFX3	Seasonal Watercourse	1	2-10	No Culvert	Fiberglass mats, steel plates, and/or temporary bridges, or "Arizona" low-water crossing
FFX4	Seasonal Watercourse	1	4	No Culvert	Fiberglass mats, steel plates, and/or temporary bridges, or "Arizona" low-water crossing
FFX5	Seasonal Wetland	0	10	No Culvert	Fiberglass mats, steel plates, and/or temporary bridges, or "Arizona" low-water crossing
FFX6	Seasonal Wetland	0	10	No Culvert	Fiberglass mats, steel plates, and/or temporary bridges, or "Arizona" low-water crossing
FFX7	Seasonal Watercourse	2	3	No Culvert	Fiberglass mats, steel plates, and/or temporary bridges, or "Arizona" low-water crossing
FFX8	Seasonal Watercourse	2-4	8	2.5ft diameter by 8ft, rusted steel pipe, non-functioning (filled in with sediment)	Fiberglass mats, steel plates, culvert, and/or temporary bridges, or "Arizona" low-water crossing
FFX9	Seasonal Watercourse	5	6	No Culvert	Fiberglass mats, steel plates, and/or temporary bridges, or "Arizona" low-water crossing
FFX10	Seasonal Watercourse	1	6	No Culvert	Fiberglass mats, steel plates, and/or temporary bridges, or "Arizona" low-water crossing
FFX11	Seasonal Watercourse	0-1	2	No Culvert	Fiberglass mats, steel plates, and/or temporary bridges, or "Arizona" low-water crossing
FFX12	Seasonal Watercours/ Riparian Woodland	3-6	5	1.5ft diameter, 20ft length, corrugated steel pipe in good condition	Existing culvert in good condition
FFX13	Seasonal Watercourse /Riparian Woodland	6	4	4ft diameter, 40ft length concrete-reinforced	Existing culvert in good condition

ID	Feature Type	Depth (feet)	Width (feet)	Culvert Information	Crossing Type
				corrugated steel rusted at bottom	
FFX14	Seasonal Watercourse	2	3	No Culvert	Fiberglass mats, steel plates, and/or temporary bridges, or "Arizona" low-water crossing
FFX15	Seasonal Watercourse	7	12	2ft diameter, 45ft corrugated steel in good condition	Existing culvert
FFX16	Seasonal Watercourse /Riparian Woodland	2	5	No Culvert	Fiberglass mats, steel plates, and/or temporary bridges, or "Arizona" low-water crossing
FFX17	Drainage Ditch	1	2	1ft diameter, 20ft corrugated steel in good condition	Existing culvert
FFX18	Seasonal Watercourse	1	1	1ft diameter, 25ft pvc in good condition	Existing culvert
FFX19	Seasonal Watercourse /Riparian Woodland	13	8	7ft diameter, 11ft concrete eroded and in poor condition	Bridge
FFX20	Seasonal Watercourse	1-2	3-5	No Culvert	Fiberglass mats, steel plates, and/or temporary bridges, or "Arizona" low-water crossing
FFX21	Seasonal Watercourse	1	3	No Culvert	Fiberglass mats, steel plates, and/or temporary bridges, or "Arizona" low-water crossing
FFX22	Seasonal Watercourse	0-1	4	No Culvert	Fiberglass mats, steel plates, and/or temporary bridges, or "Arizona" low-water crossing
FFX23	Seasonal Wetland	0-1	30	No Culvert	Fiberglass mats, steel plates, and/or temporary bridges, or "Arizona" low-water crossing
FFX24	Seasonal Watercourse			No culvert	Culvert or temporary bridge
Please note that this information is based on preliminary project design and/or current conditions and will likely change.					

Table 3. PD-16: Updated 2.7.7.5 Construction Workforce and Equipment

Activity	Estimated Quantity of Equipment		Estimated Days per Week of Operation	Estimated Hours per Day of Operation	Estimated Duration of Use (weeks)	Peak Daily Vehicle Trips	Non-Peak Daily Vehicle Trips	Crew Members Needed
Survey	1	pickup truck	4	8	5	6	2	2
Vegetation Removal and trimming	1-2	Pickup truck	6	10	5	6	2	6-10
	1-2	Bucket truck	6	10	5	6	2	
	1-2	Chipper truck with chipper	6	10	5	6	2	
Access Road Improvements and Reestablishment	1	ASV mower or similar equipment on rubber tracks	2	4	6	6	2	6
	1	D4 Dozer	4	8	7	6	2	
	1	pickup truck	4	8	4	6	2	
	1	semi truck with trailer to haul grader	1	4	4	6	2	
	1	water truck	4	6	4	6	2	
Drainage Crossings (includes culverts, "arizona" low-water crossing, and temporary bridges)	1	crawler backhoe	4	4	4	6	2	
	1	pickup truck	4	4	4	6	2	
Auger LDS Pole Holes	1	UTV w/ excavator	5	6	6	6	2	21
	1	pickup truck	5	6	6	6	2	
	1	line truck with auger attachment	5	6	2	6	2	
Pole Delivery	1	Shiflet truck	4	6	2	6	2	
LDS Pole Installation – Aerial Access (includes old pole removal)	1	crew-cab truck – transport to walk-in access point	7	4	4	6	2	

Activity	Estimated Quantity of Equipment		Estimated Days per Week of Operation	Estimated Hours per Day of Operation	Estimated Duration of Use (weeks)	Peak Daily Vehicle Trips	Non-Peak Daily Vehicle Trips	Crew Members Needed
	2	helicopter (small)	7	10	17	Peak daily and non-peak daily trips for helicopters are unknown. Helicopters were assumed to be operational all day (i.e. no idle time was assumed).		
	1	helicopter (large)	7	10	9			
LDS Pole Installation - Ground Access (includes old pole removal)	1	crew-cab truck	7	6	4	6	2	
	1	UTV with worker-lift attachment	5	4	6	6	2	
	1	line truck with trailer	7	6	2	6	2	
	1	UTV mounted with hydraulic jack	4	6	12	6	2	
	1	back hoe	5	6	15	6	2	
	1	jackhammer	4	6	12	6	2	
	1	compressor	5	4	15	6	2	
Auger TSP Holes	1	crawler mounted auger	5	6	5	6	2	
	1	dump truck	5	6	5	6	2	
TSP Installation (includes pole removal)	1	crane	5	6	6	6	2	
	1	boom truck	5	6	6	6	2	
	1	rigging truck (2-ton)	5	6	6	6	2	
	1	crew-cab truck	7	6	6	6	2	
	1	pickup truck	7	6	6	6	2	
	1	cement truck	2	6	3	6	2	
Material, Equipment, and Supplies Hauled to or from Staging Areas	1	boom truck	7	4	10	6	2	
	1	F550 truck	5	2	10	6	2	

Activity	Estimated Quantity of Equipment		Estimated Days per Week of Operation	Estimated Hours per Day of Operation	Estimated Duration of Use (weeks)	Peak Daily Vehicle Trips	Non-Peak Daily Vehicle Trips	Crew Members Needed
Conductor Installation (includes old conductor removal)	3	100 ton cranes	7	5	3	6	2	
	1	wire reel attached to line truck or trailer	7	7	13	6	2	
	3	pickup truck	7	7	15	6	2	
	2	worker lift attached to line truck	7	7	13	6	2	
	1	puller attached to line truck	7	7	13	6	2	
	1	tensioner attached to line truck	7	7	13	6	2	
Right-of-Way Restoration and Cleanup	1	motor grader	5	4	8	6	2	6
	1	D6 dozer	5	4	3	6	2	
	1	semi truck with trailer	5	2	8	6	2	
	1	pickup	5	6	8	6	2	
Circuit Breaker Installation (includes structure and conductor replacement)	1	bobcat	4	10	12	6	2	6-8
	1	excavator	4	10	12	6	2	
	1	fork lift	4	10	12	6	2	
	1	crane	4	10	12	6	2	
	1	boom truck	4	10	12	6	2	
	1	man lift	4	10	12	6	2	

Discussion NS-01

General ambient noise levels by land use have been estimated by the EPA (EPA, 1978). A more detailed estimate is provided in the American National Standards Institute (ANSI) standard 12.9-1993 / Part 3. The standard provides estimates of existing ambient equivalent sound levels (Leq) and day-night sound levels (Ldn) based on detailed descriptions of land use categories. The levels are in general agreement with those published by EPA. The ANSI standard noise estimation divides land uses into six distinct categories. These categories, their descriptions and the estimated daytime and nighttime Leq ambient noise levels are provided in Table 3: NS-01. Land Use Categories for Estimating Ambient Noise Levels.

Table 4: NS-01. Land Use Categories for Estimating Ambient Noise Levels

ANSI Category	Land Use	Description	Estimated Existing Daytime Leq (dBA)	Estimated Existing Nighttime Leq (dBA)
1	Noisy Commercial and Industrial Areas	Very heavy traffic conditions, such as in busy downtown commercial areas, at intersections of mass transportation and other vehicles, including trains, heavy motor trucks and other heavy traffic, and street corners where motor buses and heavy trucks accelerate.	66	58
2	Moderate Commercial and Industrial Areas, and Noisy Residential Areas	Heavy traffic areas with conditions similar to Category 1 but with somewhat less traffic, routes of relatively heavy or fast automobile traffic but where heavy truck traffic is not extremely dense, and motor bus routes.	61	54
3	Quiet Commercial, Industrial Areas, and Normal Urban and Noisy Residential Areas	Light traffic conditions where no mass transportation vehicles and relatively few automobiles and trucks pass, and where these vehicles generally travel at low speeds. Residential areas and commercial streets and intersections with little traffic comprise this category.	55	49
4	Quiet Urban and Normal Residential Areas	These areas are similar to Category 3 above but, for this group, the background is either distant traffic or is unidentifiable.	50	44
5	Quiet Suburban Residential Areas	Isolated areas, far from significant sources of sound.	45	39
6	Very Quiet, Sparse Suburban or Rural Areas	These areas are similar to Category 5 above but are usually in unincorporated areas and, for this	40	34

ANSI Category	Land Use	Description	Estimated Existing Daytime Leq (dBA)	Estimated Existing Nighttime Leq (dBA)
		group, there are few if any near neighbors.		
Source: ANSI S12.9-1993 / Part 3				

Existing ambient noise levels in the vicinity of the substations and along the transmission line were estimated by determining the land uses in each area through a review of aerial photography. Ten residential locations were chosen along the proposed transmission line (Figure 1), and the ambient sound levels were estimated for those areas. The ambient sound levels were also estimated for the residences directly surrounding the Fulton and Fitch Mountain Substations. Table 4. NS-01: Project ANSI Land Use Categories and Estimated Ambient Noise Levels lists these representative locations, the estimated ANSI land use category, and the expected ambient sound levels.

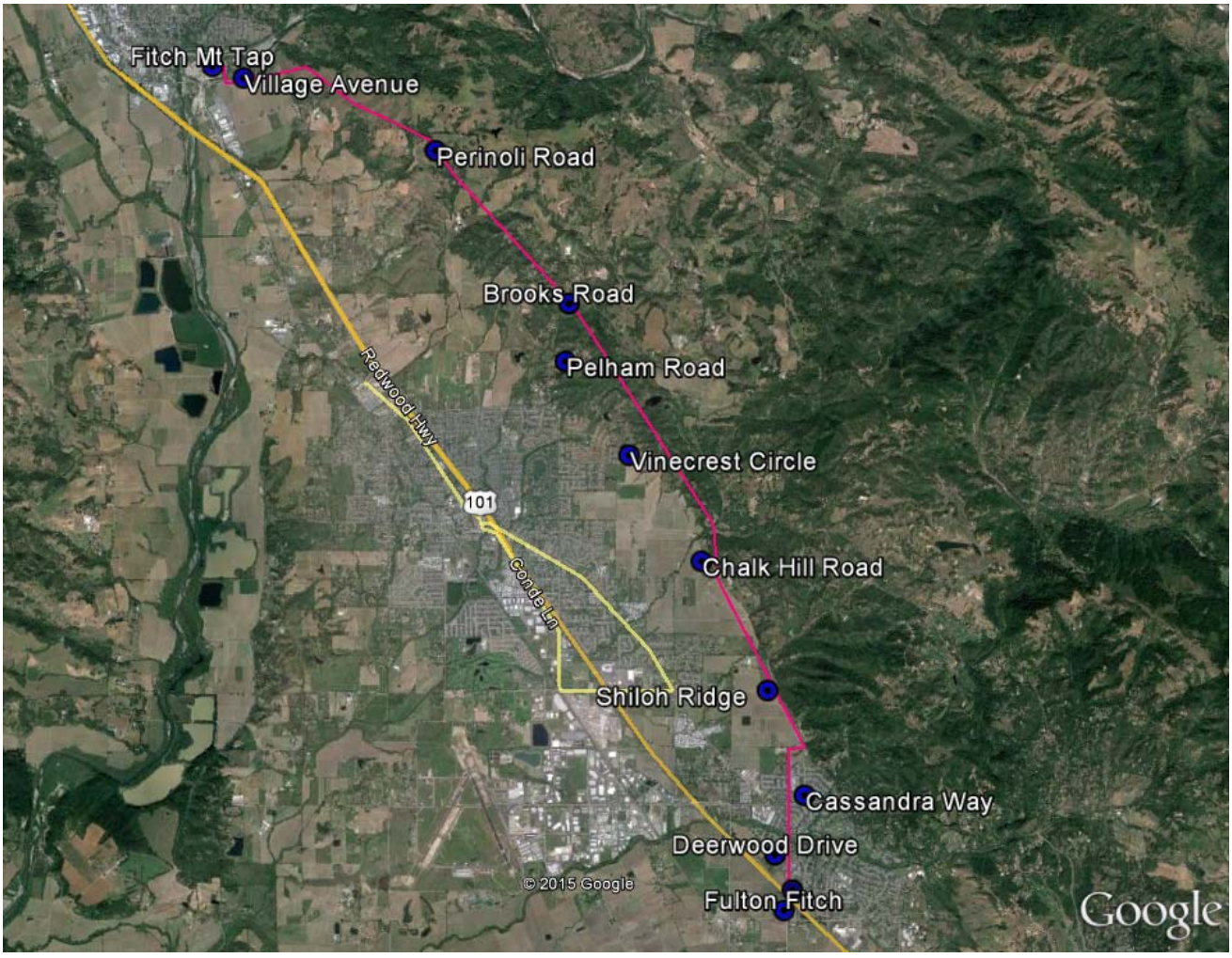
Table 5. NS-01: Project ANSI Land Use Categories and Estimated Ambient Noise Levels

Location	ANSI Category	Estimated Existing Daytime Leq (dBA)	Estimated Existing Nighttime Leq (dBA)
Fitch Mountain Substation	3	55	49
Village Avenue	4	50	44
Perinoli Road	5	45	39
Brooks Road	5	45	39
Pelham Road	4	50	44
Vinecrest Circle	4	50	44
Chalk Hill Road	4	50	44
Shiloh Ridge	4	50	44
Cassandra Way	3	55	49
Deerwood Drive	2	61	54
Mayfield Drive	2	61	54
Fulton Substation	2	61	54

Location	ANSI Category	Estimated Existing Daytime Leq (dBA)	Estimated Existing Nighttime Leq (dBA)
Source: ANSI S12.9-1993 / Part 3			

Large sections of the proposed transmission line are in rural areas, with very few residences nearby. The majority of residences are located in Categories 2 and 3 land uses.

Figure NS-01(1): Representative Residential Locations



References

United States Environmental Protection Agency, 1978. Protective Noise Levels. Office of Noise Abatement & Control. Report Number EPA 550/9-79-100. Washington, D. C. 20460.

Subject: PG&E Fulton-Fitch Mountain APPLICATION NO. A.15-12-005 Attachments
Date: Friday, January 22, 2016 5:09:06 PM
Attachments: Air Quality and GHG Calculations.zip
EDR Report.zip
Revised Typical Structure Drawings.pdf
Affected properties FFM.xlsx

Lisa,

Please find attached the following:

Revised Typical Structure Drawings
Air Quality and Greenhouse Gas Calculations
EDR Report
New affected properties spreadsheet

Thank you,

Molly Sandomire
Senior Environmental Planner