

PG&E FULTON-FITCH MOUNTAIN RECONDUCTORING PROJECT – APPLICATION NO. A.15-12-005

Table 1 Data Needs #1

ID		Applicant References	Issue	Data Need	PG&E Response					
Project Description (PD)										
PD-01	PEA: 2.7.2.4 Helicopter Landing Zones Other: Response to DR #2 (PD-01)	Staging areas and helicopter landing zone classifications PG&E has provided maps and GIS data that identify proposed work areas by category including staging areas, helicopter landing zones, and a combination of staging areas/landing zones. The PEA Project Description states, "Helicopter sites will also be used to facilitate other project activities, such as staging and storing construction materials and equipment, refueling, and assembling construction materials." Additional information is needed regarding the proposed activities at these locations.	<p>a. Please identify the construction activities and typical equipment to be used at each of the staging areas, landing zones, and combination staging area/landing zone locations. A table format would suffice, as shown below.</p> <table border="1"> <thead> <tr> <th>Staging/Landing/Combined Area</th> <th>Activities</th> <th>Typical Equipment</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p>b. Please clarify if staging areas and landing zones in the Southern Segment may be used to support construction in the Northern Segment¹ and vice versa, or if the locations would only be used to support construction activities at the nearest pole sites.</p>	Staging/Landing/Combined Area	Activities	Typical Equipment				<p>a. See Table 1 below.</p> <p>b. Materials and equipment for each segment will generally be staged at the closest construction work area. Helicopter landing zones may be used for poles within an approximately 3-mile distance. Staging areas and landing zones along the Southern Segment are unlikely to be used for work along the Northern Segment with the exception of landing zone LZ-2 at Faught Road. LZ-2, although located along the Southern Segment, may be used for the Northern Segment.</p>
Staging/Landing/Combined Area	Activities	Typical Equipment								
PD-02	PEA:	Helicopter use	a. Please identify which, if any, proposed work areas would not be	a. PG&E has not identified any work areas that would not						

¹ The Southern Segment refers to the Fulton-Shiloh Segment as defined in the PEA. The Northern Segment refers to the Shiloh-Fitch Segment.

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	<p>2.7.2.4 Helicopter Landing Zones</p> <p>Other: Response to DR #1 (PD-07 and PD-13) Response to DR #2 (PD-01 and PD-03) Preliminary Helicopter Use Plan</p>	<p>The PEA Project Description states that helicopters are required to facilitate access (e.g., transport workers, poles, materials, equipment, and concrete) due to steep terrain, ground conditions, or other project restrictions. Helicopters are also proposed to support pole setting and reconductoring. It may be feasible for PG&E to entirely construct the Southern Segment using conventional ground-based equipment (i.e., bucket trucks and cranes) and the use of helicopters may not be needed in the Southern Segment, particularly near the densely populated residential areas in Larkfield-Wikiup.</p>	<p>accessed aurally by helicopters due to potential hazards, noise considerations, available flat and cleared workspace, or other limiting factors).</p> <p>b. Please clarify if and how project construction would change if all proposed activities in the Southern Segment were completed using conventional ground-based equipment, such as bucket trucks and cranes, and without the use of helicopters. Please clarify if any new equipment would be required and how the proposed construction schedule may be affected. Please identify any anticipated impacts to traffic and transportation that may be required if additional workspace is needed within existing roadways.</p> <p>c. Please state if helicopters were previously used to construct any component of the Southern Segment or Fulton Substation.</p> <p>d. Please state if PG&E currently uses helicopters for operation and maintenance activities in the Southern Segment (i.e., annual inspection). Provide the nature, duration, and frequency of such maintenance activities.</p>	<p>potentially be accessed by helicopters. As stated in the Fulton-Fitch Mountain Reconductoring Project Preliminary Helicopter Use Plan (April 1, 2016), helicopter work could potentially occur at any point along the line, depending on conditions in the field during construction.</p> <p>PG&E's preference is to use helicopters because they allow the work to be completed in a shorter time frame and are safer for the construction workers.</p> <p>PG&E recognizes the CPUC's concerns about potential safety hazards and noise considerations. PG&E and PG&E's helicopter contractor will comply with all relevant Federal Aviation Administration regulations and requirements concerning helicopter safety.</p> <p>Noise from helicopters will be for brief periods and temporary at any one location. Helicopter work hours will comply with local ordinances unless there is an unforeseen emergency.</p> <p>To address any community concerns about helicopter use, PG&E will assign a person to provide customer outreach for the project. PG&E will send a letter to nearby customers to communicate the timing and work methods of the upcoming construction and provide a telephone number and person to contact at PG&E with any questions or complaints.</p> <p>b. As discussed further below, if conventional ground-based equipment were to be utilized versus helicopter work methods on the Southern Segment of the project, it would extend the project's schedule and have a lengthier, although less-than-significant, impact on traffic and transportation.</p> <p>The approximately 1.3 miles of the existing 230 kV conductor on the Geysers-Fulton #12 230 kV transmission</p>

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				<p>line being replaced is bundled conductor. There are more than 126 mid-span spacers that keep the bundled conductor separated. These spacers are easily removed utilizing helicopter long line work methods. However, if PG&E were to use conventional work methods to remove the spacers, bucket trucks or cranes would have to be set up at each mid-span location; in some cases, spacers would have to be removed during conductor pulling operations, which would further extend the construction schedule.</p> <p>The project schedule would be extended by at least 16 working days to allow time for conventional removal of the spacers and other ground work. Conventional work methods would require closing off lanes in order to stage a crane, resulting in additional traffic impacts to Faught Road, Lavell Road, Old Redwood Highway, and the Highway 101 crossing.</p> <p>c. Helicopters were not previously used to construct any component of the South Segment or Fulton Substation. All work was completed utilizing conventional work methods, as the area was not populated as it is today so access was much easier, and helicopter work methods were not as established as they are today.</p> <p>d. Maintenance activities will not change as a result of the project. Typically, PG&E conducts annual inspections of power lines. Helicopter inspection alternates yearly with ground inspection. Helicopters are used for repair and maintenance activities as necessary.</p>
Noise (NS)				
NS-01	PEA: 2.7.7.5 Construction Workforce and Equipment	Schedule and project construction phasing To adequately address construction noise impacts for both helicopters and conventional ground based equipment, more information	Tables A and B (attached) summarize CPUC’s understanding of the duration of work and dispersal assumption (i.e., if daily activities would be either continuous at each work site or periodic because work would be dispersed across multiple work sites). Information in Tables A and B is based on information provided by PG&E to date and estimates from past PG&E projects. a. Please review Table A (attached) and address CPUC’s questions	a. See Table A below. b. See Table B below. c. Night time work will be required for installing and removing guard structures and netting across Hwy 101 at Fulton Substation. Caltrans will require the Hwy 101 crossing to be performed at night (during early morning

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	2.7.7.6 Construction Schedule 3.12.5.3 Potential Impacts Other: Response to DR #1 (PD-07 and PD-13) Response to DR #2 (PD-01 and PD-03) Preliminary Helicopter Use Plan	is needed regarding the approximate duration of proposed activities (i.e., days of work per phase) and dispersal assumptions.	regarding the project schedule and anticipated phasing of construction. CPUC understands timelines are preliminary and subject to a variety of factors. This information is needed to understand overlapping and potentially concurrent construction activities. Please provide a revised version of the table with any comments and corrections that better reflect the proposed schedule and phasing. b. Please review Table B (attached) and address CPUC’s questions regarding the duration of proposed construction activities broken down by project segment, construction phase, and work area type, and separated between conventional ground-based equipment and helicopters. Please provide a revised version of the table as indicated. c. Please describe all nighttime construction activities that could occur, applicable project locations, and safety and land owner considerations that may require night time work.	hours) as it is the least impactful to highway traffic, and therefore the safest time to perform the work. PG&E also anticipates that some night time work may be required along the Southern Segment to accommodate clearances on the Geysers #12 and Geysers #17 230 kV circuits.
Traffic (TT)				
TT-01	Other: Response to DR #1 (PD-04)	Construction vehicle and helicopter trips PG&E provided a revised version of Table 2.0-2 from the PEA project description in response to DR #1 that provided peak and non-peak estimated vehicle trips. Additional information is needed to determine if vehicle trips in Table 2.0-2 include equipment that would travel off of public roadways, and how vehicle trips may be focused or dispersed across the project and between construction phases. This information will	a. Please review Table B (attached) and address CPUC’s questions regarding the dispersal of daily vehicle trips on public roadways, as well as helicopter trips, and dispersal assumption across between construction phases and work areas. Please provide a revised version of the table with any comments and corrections that better reflect construction traffic and dispersal considerations.	a. See Table B below.

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		<p>be used to determine peak and non-peak construction vehicle trips on public roadways that may occur during simultaneous construction phases.</p> <p>Additional information is also needed to estimate the dispersal of helicopter trips and to identify fluctuations in helicopter trips by construction phase and location.</p>		

ATTACHMENTS

Table 1 Construction Activities and Typical Equipment to be used at Staging Areas and Landing Zones

Staging/Landing/Combined Area	Activities	Typical Equipment
Lavell Road Landing Zone / Faught Road Landing Zone	Helicopter landing and refueling zones Storage for construction materials and equipment as they arrive on site Parking of vehicles and equipment Meeting area for project management and work crews	Helicopter (large and small) Refueling truck F550 truck, pickup, crew-cab truck, boom truck Line truck (with auger attachment, trailer, worker lift)
Lavell Road Staging Area / The Cove Staging Area	Possible crane staging area Storage for construction materials and equipment as they arrive on site Parking of vehicles and equipment Meeting area for project management and work crews	100-ton cranes F550 truck, pickup, crew-cab truck, boom truck Line truck (with auger attachment, trailer, worker lift)
Shiloh Ranch Regional Park Work Area	Stage vehicles and equipment including compressor	Pickup trucks, compressor
Shiloh Ridge Road Staging Area/Landing Zone Chalk Hill Road Staging Area/Landing Zone Brooks Road Staging Area/Landing Zone Minaglia Ranch Landing Zone	Helicopter landing and refueling zones Storage for construction materials and equipment as they arrive on site Parking of vehicles and equipment Meeting area for project management and work crews	Helicopter (large and small) Refueling truck F550 truck, pickup, crew-cab truck, boom truck Line truck (with auger attachment, trailer, worker lift)

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Table A Anticipated Construction Schedule

Component	Anticipated Start	Anticipated End	Approximate Duration	PG&E Comment
Southern Segment				
Site Development	September 2019	September 2019	4 weeks	
TSP Hardware Replacement	October 2019	December 2019	3 months	
60 kV and 230 kV Reconductoring	October 2019	December 2019	3 months	
Cleanup and Restoration	December 2019	January 2020	2 months	
Total Segment Construction	September 2019	January 2020	5 months	
Northern Segment				
Site Development	July 2018	September 2018	3 months	
Pole Installation	September 2018	December 2018	4 months	
Pole Removal	September 2018	December 2018	4 months	
60 kV Reconductoring	September 2018	December 2018	4 months	
Cleanup and Restoration	May 2019	June 2019	2 months	
Total Segment Construction	July 2018	July 2019	12 months	
Fitch Mountain Substation				
All Substation Modifications	July 2018	April 2019	2 months	Construction activities at Fitch Mountain Substation will be constructed intermittently over the course of the project. Completion of the substation modifications depends on phasing of the Fitch Mountain #1 Tap. Substation modifications to accommodate power rerouted from the

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				Fulton-Hopland 60 kV south of the tap will be completed prior to October 2018. Final substation modifications will be completed once construction along the Fulton-Shiloh segment is complete and the line re-energized in March 2019.
Total Project Construction	July 2018	January 2020	18 months	

Table B Proposed Construction Activities by Phase and Work Area

Work Areas	Number of Individual Locations	Ground-based Vehicles and Equipment ¹				Helicopters		
		Approx. Duration of Work per Location	Daily Work Schedule Assumption	Approx. Peak Daily Vehicle Trips per Location	Approx. Non-Peak Daily Vehicle Trips per Location	Approx. Duration of Work per Location	Daily Work Schedule Assumption	Approx. Total Trips per Location (5-10 Minutes. Each)
Southern Segment (Fulton-Shiloh Segment)								
Site Development	N/A	1-5 days	Periodic	10 trips	20 trips	N/A	N/A	N/A
Structure Modification (e.g., TSP arm replacement)	21	2-4 days	Continuous	4 trips	4 trips	N/A	N/A	N/A
Pull Sites	5	11-33 days	Continuous	8 trips	8 trips	N/A	N/A	N/A
Structure Reconductoring ^{2,3,4}	21	1-2 days per pole	Periodic	12 trips	12 trips	1-2 days	Periodic	12
Lavell Road Landing Zone	1	3 months	Continuous	4 trips	4 trips	2 months	Near continuous	72 total flights per day
Lavell Road Staging Area	1	3 months	Continuous	4 trips	4 trips	N/A	N/A	N/A
The Cove Staging Area	1	3 months	Continuous	4 trips	4 trips	N/A	N/A	No landings

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Work Areas	Number of Individual Locations	Ground-based Vehicles and Equipment ¹				Helicopters		
		Approx. Duration of Work per Location	Daily Work Schedule Assumption	Approx. Peak Daily Vehicle Trips per Location	Approx. Non-Peak Daily Vehicle Trips per Location	Approx. Duration of Work per Location	Daily Work Schedule Assumption	Approx. Total Trips per Location (5-10 Minutes. Each)
								but may pick up and drop off – Approx. 1-2 total flights per day
Faught Road Landing Zone	1	3 months	Continuous	4 trips	4 trips	2 months	Near continuous	Approx. 72 total flights per day
Northern Segment (Shiloh-Fitch Segment)								
Site Development	N/A	1-2 days	Periodic	3 trips	3 trips	N/A	N/A	N/A
Structure Replacement (Installation/Removal) ^{4,5}	67	2-4 days	Continuous	2 trips	2 trips	2-4 days	Near continuous	8 trips per location
Structure Removal/Reframe Only ⁴	4	1-2 days	Continuous	2 trips	2 trips	1-2 days	Periodic	8 trips per location
Pull Sites	4	22 days	Continuous	6 trips	8 trips	N/A	N/A	N/A
Structure Reconductoring ³	67	1-2 days	Periodic	1 trips	1 trips	1-2 days per structure	Periodic	8 trips per location
Shiloh Ranch Regional Park Staging Area	1	10-12 months	Continuous	2 trips	2 trips	N/A	N/A	No landings but may pick up and drop off – Approx. 1-2 total flights per day
Shiloh Ridge Road Staging	1	10-12	Continuous	6 trips	6 trips	3 months	Near	100 to 120

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Work Areas	Number of Individual Locations	Ground-based Vehicles and Equipment ¹				Helicopters		
		Approx. Duration of Work per Location	Daily Work Schedule Assumption	Approx. Peak Daily Vehicle Trips per Location	Approx. Non-Peak Daily Vehicle Trips per Location	Approx. Duration of Work per Location	Daily Work Schedule Assumption	Approx. Total Trips per Location (5-10 Minutes. Each)
Area/Landing Zone		months					continuous	trips per day
Chalk Hill Road Staging Area/Landing Zone	1	10-12 months	Continuous	6 trips	6 trips	3 months	Near continuous	100 to 120 trips per day
Brooks Road Staging Area/Landing Zone	1	10-12 months	Continuous	6 trips	6 trips	3 months	Near continuous	100 to 120 trips per day
Minaglia Ranch Landing Zone	1	N/A	N/A	6 trips	6 trips	3 months	Near continuous	80 trips per day
Fitch Mountain Substation								
All Substation Modifications	1	2 months	Intermittent	6 trips	2 trips	N/A	N/A	N/A

Notes:

¹ Conventional equipment includes all proposed construction equipment other than helicopters.

² At each pole location on the Southern Segment the 60 kV power line would be reconducted at the same time as the 230 kV power line while equipment is positioned at each pole.

³ Reconductoring at structures includes installing pulleys, clipping the line in, and removing the pulleys.

⁴ While duration entered for helicopter use is approximate duration of work per location, helicopters would be flying back and forth between work locations each day for the entirety of structure reconductoring.

⁵ Structure replacement in the Northern Segment would be near 1:1; however, there would be three locations (E36, E46, and E104) where existing poles would be removed without replacement with a new pole, and one location where a structure would be reframed (E104). New poles would be installed within approximately 35 feet of existing poles. Three-poled structures are counted as one structure.

* Construction will typically take place between 7 a.m. and 7 p.m. or in accordance with local noise ordinances. It is anticipated that construction crews will work concurrently on a rotating schedule of 11 days on and 3 days off. Infrequent and short term nighttime work may be necessary to reach a safe stopping point or if scheduled electrical outages must be scheduled during nighttime hours to reduce interruption to electrical services.