

Butte County Federal/State Land Use Coordinating Committee

August 18, 2020 4:00 P.M. to 5:00 P.M.

Zoom Meeting – SEE BELOW

Meeting Agenda

- 1) Self-Introductions (committee members and public)
- 2) Approval of Minutes for 2020 meetings: January 6, 2020 and June 30, 2020
- 3) Discussion of PG&E letter to FERC requesting waiver of the requirement to develop a recreational trail along the Feather River. ACTION REQUESTED: Determine whether issuance of a letter to PG&E and FERC is appropriate, and direct staff to draft letter for approval.

Public comment received so far from Thad Walker:

“I did see the PG&E letter to FERC and figured that was coming since they fought the feasibility requirement from the beginning. It is important for local government and recreational users to voice their frustrations with the appeal.”

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July 30, 2020

Via Electronic Submittal (E-File)

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N. E.
Washington, D.C. 20426

**Re: Poe Hydroelectric Project, FERC No. 2107-CA
Article 407 – Hiking Trail Feasibility Study**

Dear Secretary Bose:

Pacific Gas and Electric Company (PG&E) respectfully submits this letter and the final Poe Hiking Trail Feasibility Study, attached hereto as Attachment A (Feasibility Study), to the Federal Energy Regulatory Commission (FERC) to satisfy the requirements of Article 407 of the Poe Hydroelectric Project (Project) license¹ (FERC No. 2107). The Feasibility Study reassesses the feasibility of the Bardees Bar Trail and assesses the recreation (and other) benefits and challenges of constructing and maintaining an all-weather Poe Hiking Trail. The Feasibility Study also assesses the potential routes for a Poe Hiking Trail, provides recommended specifications for route segments and ancillary infrastructure (e.g., trailheads), and provides generic cost estimates. The Feasibility Study concludes, without reconciling identified challenges and PG&E actual costs, that a trail constructed according to its recommended specifications would provide a valuable recreational trail experience.

PG&E has reviewed the Feasibility Study and determined that a number of the challenges identified in the study render an all-weather hiking trail infeasible. PG&E has reviewed the reassessment of the potential Bardees Bar Trail and concludes that such a trail continues to be infeasible because the costs are high, and the recreational use and value of the trail are low. Similarly, PG&E has concluded that the potential Poe Hiking Trail is infeasible because of the location of segments of the trail on private land, potential adverse environmental impacts, and lack of evidence of demand for such a trail. In addition, the cost of the Poe Hiking Trail is significant, and the cost is not in proportion with the limited benefits identified in the Feasibility Study. Based on PG&E's review of the Feasibility Study, stakeholder comments on the draft Feasibility Study, adverse impacts on private properties, and the significant cost for PG&E to construct and maintain the trail, PG&E has determined that neither the potential Bardees Bar Trail nor the Poe Hiking Trail are feasible. As a result, PG&E is not submitting a construction schedule with this filing.

I. Background

On December 17, 2018, FERC issued the License Order for the Project. On April 18, 2019, FERC issued the *Order Granting Rehearing* (Order Granting Rehearing, collectively with the License Order, the License) for the Project, which, among other things, included a new Article 407, requiring PG&E to conduct a hiking trail feasibility study, to compare the results of the study with previously-provided

¹ *Pacific Gas and Electric Co.*, 165 FERC ¶ 62,172 (2018), as amended on rehearing, 167 FERC ¶ 61,047 (2019).

information, and, if feasible, to include a trail construction schedule in the Recreation Plan. Article 407 provides as follows:

Article 407. Hiking Trail Feasibility Study. Within 9 months of license issuance, the licensee must conduct a feasibility study on improving an existing abandoned trail between Bardees Bar and the Poe powerhouse road and compare the results of this study with the information provided in PG&E's September 2006 feasibility report on modifying the abandoned construction road, upstream of Bardees Bar, for use as a trail; and if feasible, based on the results of the study, include in the Recreation Plan a schedule for constructing an all-weather hiking trail in one of the two locations.

On October 22, 2019, and March 9, 2020, FERC approved PG&E's requests to extend the deadline set forth in Article 407 of the License. The deadline to submit a trail feasibility study and a schedule for constructing the trail, if determined to be feasible, is July 31, 2020.

II. Feasibility Study

Article 407 of the License directs PG&E to conduct a feasibility study on improving an existing abandoned trail between Bardees Bar and the Project Powerhouse Road. During 2019, PG&E contracted with the Butte County Resource Conservation District (RCD) to conduct the Feasibility Study, which would include alternatives and preliminary cost estimates. The RCD provided a draft Feasibility Study on November 11, 2019, and PG&E provided comments and reviewed and shared the draft study with stakeholders in December 2019. PG&E also worked with RCD to resolve inadequacies in the preliminary cost estimates included in the draft Feasibility Study. PG&E received written and additional verbal comments from stakeholders at a January 23, 2020 stakeholder meeting. Since that time, PG&E engaged with stakeholders and RCD to resolve and address the comments prior to making this submission to FERC.

Attached, as Attachment A, is the final Feasibility Study prepared by RCD. The Feasibility Study concludes as follows:

While there are a number of difficult challenges associated with the construction and maintenance of the Poe Hiking Trail the backdrop is stunning and allows for a valuable recreational trail experience that provides amazing vistas and access to the North Fork of the Feather River. Currently there are a limited number of managed recreational trails in a county where new recreational opportunities can serve as a catalyst for economic growth and improvement in the quality of life for Butte County residents.

This conclusion does not address the feasibility of development of the trail by PG&E at the proposed location. PG&E is providing this letter to describe additional requirements for trail development that are necessary for a comprehensive perspective on trail development and to support PG&E's conclusion that an all-weather trail located upstream or downstream from Bardees Bar is infeasible.

III. Comparison of Results of Feasibility Study with Information Provided in PG&E's September 2006 Feasibility Report

Article 407 of the License Order directs PG&E to compare the results of the Feasibility Study with the information provided in PG&E's September 2006 feasibility report on modifying the abandoned construction road, located upstream of Bardees Bar, for use as a trail (Bardees Bar Trail

Assessment, 2006 Report). As described in the Feasibility Study, RCD compared the Bardees Bar Trail Assessment to the proposed Poe Hiking Trail and concluded that development of Bardees Bar Trail, which would be an approximately 7,531 foot-long trail, would have a high cost, the trail would see low estimated use, and the trail would provide low recreational value. (See page 4 of Feasibility Study). The Bardees Bar Trail is therefore not recommended for development.

IV. Construction of the Poe Hiking Trail is Infeasible

As described in detail below, PG&E has determined that construction of the Poe Hiking Trail as a component of the Poe Hydroelectric Project is not feasible because the minor incremental benefits to recreation do not justify the substantial costs to construct and operate such a trail, and would unsettle FERC's balancing of interests under Federal Power Act Section 10(a) heavily in favor of recreation to the detriment of other interests, including PG&E's interest in cost-effectively operating the Project, private property interests, and environmental resources.

As a preliminary matter, the Feasibility Study acknowledges that there is no existing trail between Bardees Bar Road and the Project Powerhouse Road, and the proposed alignment of the trail does not correspond with any existing or historic trail. Development of an all-weather hiking trail would require far more than simply repairing or rebuilding an existing trail. Indeed, the Feasibility Study estimates that "trail construction" would be required for approximately 80% of the conceptual trail's 3-mile-long alignment. The remaining 20% of the conceptual alignment was identified as "existing trail that is suitable for recreational use" *after necessary improvements are made*. As a result, it is clear that construction of the hiking trail would be a significant undertaking.

As outlined herein, the incremental recreation benefits of the trail do not support the substantial cost to construct the hiking trail and the potential adverse impacts on private landowners and environmental resources.

A. Adverse Impacts on Private Property

The proposed alignment of the hiking trail recommended in the Feasibility Study crosses two private properties and the impacts to these properties were not evaluated during the licensing process. At a minimum, before FERC could consider including such lands within the Project boundary, notice and an opportunity for hearing would need to be provided to these landowners during an amendment proceeding. The position of these landowners regarding public uses on their lands is unclear. Further, it is unclear whether these private landowners would consent to construction and access activities that may be necessary to construct and maintain the hiking trail.

B. Adverse Impacts on Environmental Resources

The Feasibility Study does not assess the potential environmental impacts associated with construction of the hiking trail and does not consider additional costs associated with compliance with existing plans included in the License or management plans and standards of federal land management agencies. For example, the potential for Project recreation-related effects on archaeological sites is recognized in the License, and it is likely that additional cultural resource issues would need to be addressed to comply with Section 106 of the National Historic Preservation Act in order to construct and maintain the trail. The proposed trail alignment is topographically constrained and there would be limited opportunities, if any, for

avoidance of identified resources, which avoidance is required by Condition 8 in Appendix A of the License. Further, ongoing public use of the trail would require management of long-term use, which would need to be a component of the Project's Historic Properties Management Plan (HPMP).

Similarly, the proposed trail alignment includes several stream crossings, which are environmentally sensitive and provide habitat for Foothill Yellow Legged Frog (FYLF), which may occur in the Project area. Construction in these areas could impact sensitive resources and avoidance of these impacts is preferred. As the stream crossings are a required component of the trail construction, the mitigation requirements for these impacts could be prohibitive.

In addition, portions of the trail would be constructed on federal lands managed by the Forest Service, which would require meeting the Forest Service's stringent design standards, which appear incompatible with the proposed route. Trail management also would include compliance with FERC-licensee land management requirements to protect resources including through management of invasive weeds, fuel treatment, and accessibility. As noted above, the costs associated with studies and environmental review, future mitigation or avoidance measures, and initial and ongoing compliance with agency standards were not included in the cost estimate in the Feasibility Study or PG&E's cost estimate.

C. The Costs to Construct and Maintain the Trail Are Substantial

The cost estimate to construct the trail provided by RCD in the Feasibility Study may be a fair estimate for RCD to oversee and manage construction; however, the Feasibility Study severely underestimates PG&E's construction and operational costs. The cost estimate in the Feasibility Study of approximately \$645K did not include PG&E's actual labor cost, PG&E's material costs, or construction standards required by PG&E. Further, the Feasibility Study cost estimate assumed partly volunteer labor for operational costs, which could not be assumed by PG&E for budgetary purposes.

The cost for PG&E to build the trail in accordance with PG&E's construction safety standards, Forest Service standards, and FERC license requirements (e.g., invasive species, fuel treatment, and accessibility) is estimated at \$2.5M (Attachment B). This estimate includes environmental and permitting costs (e.g., CWA 404 permit and related 401 permit), labor and construction for each of the five trail segments and the trailheads, and other related costs such as mobilization and overhead. This estimate does not include the costs associated with the FERC amendment proceeding necessary to add to the project boundary lands for the trail and does not include the cost of environmental studies necessary to support a FERC application.

D. Lack of Demand for Additional Recreation Features

While it is possible that the proposed hiking trail could be desirable and may add value to Butte County, there is very little evidence regarding demand for the proposed hiking trail that could support its need. The record in the license proceeding indicates that the hiking trail is not in high demand or necessary to serve Butte County.² Given the tremendous uncertainty regarding

² FERC Final Environmental Assessment, March 29 2007, p. 146 ("However, since most of the activities currently enjoyed are not facility-dependent, and visitors have indicated that they prefer the undeveloped nature of the sites, PG&E does not believe that there is a high demand for additional recreation facilities in the Poe bypassed reach.")

potential use of the proposed hiking trail, the substantial costs associated with the construction and maintenance of the Poe Hiking Trail are not justified, particularly because the License is heavily weighted in favor of recreation.

For example, the License requires PG&E to implement numerous recreational enhancements, including significant improvements to the Sandy Beach area, the Bardees Bar area, the Poe Beach area, and the Poe Powerhouse Beach area. In addition, even though not recommended by FERC staff given the specialized interest involved and the cost of compliance, the License also requires the construction of a trail to Poe Reservoir in the FERC boundary for FERC

Project No. 1962 (Rock Creek-Cresta) and the release of whitewater boating flows because these recreational enhancements were included in mandatory conditions.

V. Conclusion

PG&E has assessed the Feasibility Study prepared to comply with Article 407 of the License and determined that construction of an all-weather trail upstream or downstream of Bardees Bar is infeasible, primarily because the incremental benefit of such a trail does not justify the significant cost involved in building safe and environmentally acceptable trails in the Project area. Because PG&E has determined that an all-weather trail is infeasible, this filing does not include a schedule for construction of a trail.

If you have any questions concerning this matter, please contact PG&E's Senior License Coordinator, Matthew Joseph, at 415-973-8616.

Sincerely,



Elisabeth Rossi
Interim Supervisor, Hydro Licensing

Attachments

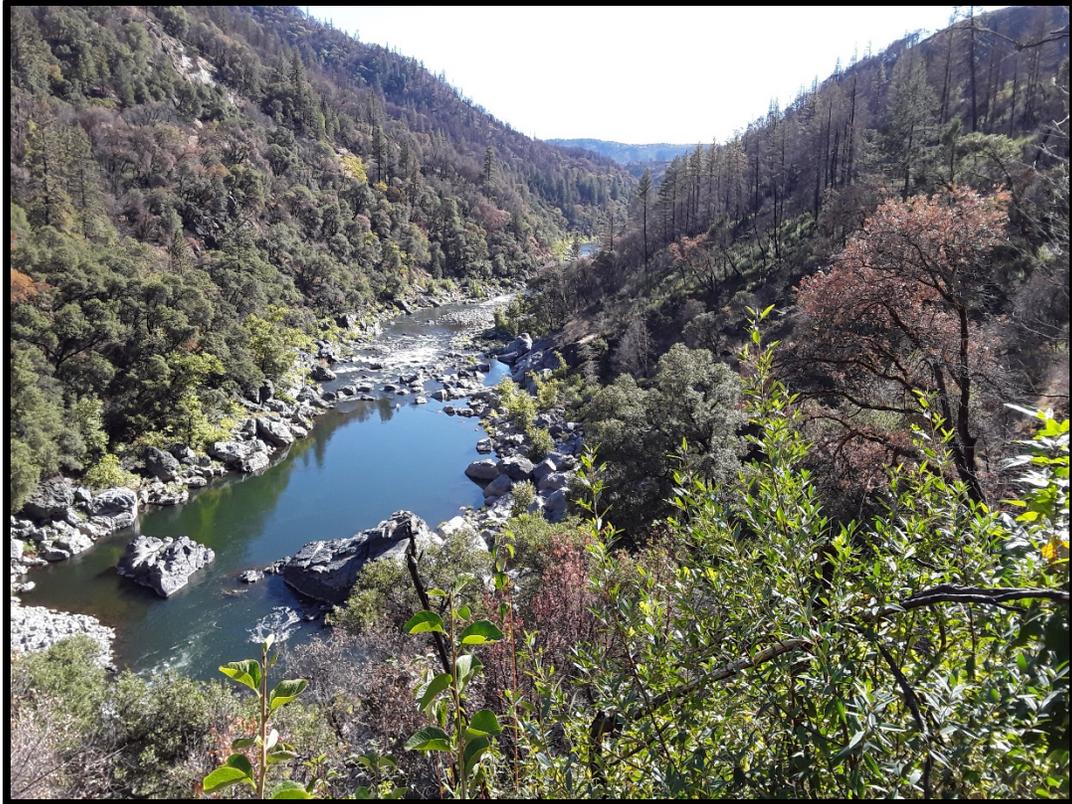
- A. Poe Hiking Trail Feasibility Study
- B. PG&E's Cost Estimate for Poe Trail Construction

cc: via email (w/ Attachments)
Savannah Downey (SWRCB)
Jeff Wetzel (SWRCB)
Amy Lind (Forest Service)
Dave Steindorf (American Whitewater)

Attachment 1

Poe Hiking Trail Feasibility Study

Poe Hiking Trail Feasibility Study



Butte County Resource Conservation District
150 Chuck Yeager Way, Suite A
Oroville, CA 95965



July 2020

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Rock pinch point in trail- notice the historical dry-stack rock work and proximity to North Fork Feather River



BACKGROUND

On December 17, 2018, the Federal Energy Regulatory Commission (FERC) issued a new license for Pacific Gas and Electric Company's (PG&E or Licensee) Poe Project, FERC Number (No.) 2107 (Project). This Poe Hiking Trail Feasibility Study was conducted to comply with License Article 407, which states,

Within 9 months of license issuance, the licensee must conduct a feasibility study on improving an existing abandoned trail between Bardees Bar and the Poe powerhouse road and compare the results of this study with the information provided in PG&E's September 2006 feasibility report on modifying the abandoned construction road, upstream of Bardees Bar, for use as a trail; and if feasible, based on the results of the study, include in the Recreation Plan a schedule for constructing an all-weather hiking trail in one of the two locations.

The potential trail between Bardees Bar and the Poe powerhouse road is herein referred to as the Poe Hiking Trail. Although we refer to the trail route as Poe Hiking Trail it is important to understand under that currently this trail does not exist on the ground as a recreational trail. The proposed alignment has great potential to be a high-quality recreational experience but will need multiple realignments and upgrades. In the current state the trail is not suitable for public access and crosses private property. The abandoned construction road upstream of Bardees Bar discussed in this study is herein referred to as the Bardees Bar Trail.

Butte County Resource Conservation District (BCRCD) was retained by PG&E to assess the feasibility of constructing and maintaining the Poe Hiking Trail. BCRCD has extensive experience in conducting trail studies, project management, environmental surveys/ document writing, and trail grant acquisition/ management. As part of this feasibility study BCRCD agreed to complete the following tasks:

Task 1. Reconnaissance Field Investigation BCRCD staff will evaluate existing conditions along the potential trail route between Bardees Bar Road and the Poe Powerhouse Road to identify and characterize the current conditions and alternatives. The assumed route and identified alternatives will be 1) mapped by BCRCD using digital mapping software applications, 2) inventoried and characterized, and 3) prioritized in relation to recreational value, potential for resource impacts, cost for environmental analysis/ development, long-term operation/maintenance costs, ownership/land rights, safety, and access.

Task 2. Field Inspection Findings and Recommendations Report A summary of field investigation findings and alternatives will be compiled containing a narrative description of site conditions, a site map, photographs, and recommendations. Multiple recommended conceptual level design alternatives will be provided with preliminary cost estimates. Recommendations will be compatible with USFS Trail Management Objectives format. As part of this summary, the BCRCD will communicate with the private landowner about his long-term goals for his property and potential for recreational trail easement or fee title acquisition. This process will also involve consultation with the USFS Feather River Ranger District about this feasibility study and/or NEPA as well as any associated federal compliance requirements (Endangered Species Act, National Historic Preservation Act, etcetera). The report will also suggest potential opportunities for assistance for project funding and easement/ land acquisition.

Bardees Bar Trail Assessment

The Bardees Bar Trail Assessment (North Fork Associates (NFA), September 2006), evaluated an abandoned roadway heading upstream (north) from Bardees Bar Road and connecting to State Hwy 70 at mile post 40.34 (Bardees Bar Trail). The 2006 Assessment concluded:

Prior to further project planning, NFA recommends that the project area be surveyed by a geo-technical or soils engineering firm to determine the stability of the existing slides and washouts and to determine the feasibility of re-constructing the road/trail on the current alignment. With that said, we find that it would not be feasible or cost-effective to reconstruct a trail in the present configuration or location. Because of the lack of a significant scenic feature along the trail or at its destination, demand for this type of recreational opportunity is greatly diminished. In addition, the trail's singular function as a casual hiking trail without ancillary activities such as fishing or swimming greatly reduces its value as an amenity. The regional or statewide significance of the recreational site cannot be justified, and the current incidental local level of use would most likely continue. These factors, coupled with the high cost of reconstruction, make this project difficult to justify.

Butte County RCD compared the Bardees Bar Trail Assessment to the proposed Poe Hiking Trail as a part of this Poe Hiking Trail Feasibility Study, and reached the conclusion that the development of the Bardees Bar Trail which is an approximately 7,531 ft trail, would come at a high cost, would see low estimated use, and would provide low recreational value.

POE HIKING TRAIL ASSESSMENT

The Poe Hiking Trail Feasibility Study is focused on the analysis of the existing and proposed trail segments that would connect Bardees Bar Road to Poe Powerhouse Road. In 2008, North Fork Associates initiated a preliminary assessment of a similar trail at this location, called the *Poe Reach Trail Assessment*. This assessment was reviewed by BCRC and used as background for the 2020 updated assessment required in License Article 407.

Project Setting

The Poe Hiking Trail is located along the North Fork of the Feather River approximately 21 miles from Oroville, CA via CA Highway 70. The trail ranges in elevation of 1,000 ft – 1,500 ft. The alignment including the most existing segments traverses along the west side of North Fork of the Feather and connects Bardees Bar Road to Powerhouse Road. Current land ownership is a combination of Plumas National Forest- Feather River District, PG&E, and two additional private landowners. The site vegetation is a combination of mixed oak woodland and chaparral. In addition to the trail, there is also infrastructure associated with the energy transmission and a Northern Pacific rail line on the East side of the river.

The northern two miles of the trail route was burned in November of 2018 as part of the Camp Fire. There are a number of standing dead trees and associated vegetation regrowth. The vegetation regrowth in the next few years will likely be accelerated post fire. In addition to regrowth, it is to be expected with winds and winter rains that some of the standing dead trees are likely to fall in the coming years which could make access difficult and elevate associated construction/ maintenance costs.

Methodology

BCRCD staff conducted mapping, research, and three site visits to the project area. Before the first site visit, mapping was conducted to identify the existing environmental settings, land uses, hydrology, geology, access and land ownership. The first visit focused on mapping the existing trail where the following two visits worked to identify alternatives to the existing trail alignment and trailheads. The field staff utilized GPS and other survey equipment.

In addition, BCRCD retained the services of a professional trails contractor, Casa di Tera, which is a member of the Professional Trail Builders Association (PTBA) and has extensive experience in trail planning and construction. Casa di Terra advised RCD staff on some technical aspects of the project.

The mapping of the existing trail segments was completed by hiking the trail with a GPS unit, capturing notes on an existing trail/ environmental conditions, measuring stream crossings, measuring trail slope, and identifying positive/ negative control points.

The second and third site visits focused on identifying alternatives to the existing alignment that would improve the recreational experience, reduce environmental impacts and create a more sustainable trail alignment. These visits also focused on the potential for trailhead locations. A number of the reroutes were identified and flagged but there will need to be a layout -detailed corridor flagging- process before environmental analysis and construction.

Existing Trail Conditions

The existing trail segments are a combination of historic mining trails that were constructed and utilized to access mine sites along the river reach and more recent construction by the public to provide connectivity between the historic sections of trail to create sections of continuous trail.

Trails that were originally constructed for resource extraction can serve as durable alignments for recreational trails because the builders often did the heavy lifting of removing rock control points - places where solid rock was removed to construct the trail- and utilized the specialized skill of dry stack stone work. However in many cases these types of trails utilize fall line alignments -steep and over grade- and often have stream crossings that are unsustainable and impact natural resources. Trails that are built by the public -non trail professional- often pose issues for sustainable use and management. In most cases these types of trails are not suitable for managed recreational use and long term lead to increased impacts on natural/ cultural resources. Issues like steep grades, narrow tread, inadequate stream crossings, half trail bench construction, lack of signage, trail features not built to approved specifications, lack of corridor clearing, inadequate trail heads, etc. lead to long term issues for both the trail user, land manager, and natural environment.

The Poe Hiking Trail route with the most existing segments is approximately 3.4 miles in length and includes a combination of historic mining trails and more recently publicly constructed connector segments that complete a mostly continuous route. However in the current state the trail is not suitable for public recreational access. Some of the historic segment feature dry stack stonework and trail bench that was constructed through solid rock. The publically constructed segments of trail that link the historic segments are also mixed in terms of viability. Many of the newer sections force a steeper grade, are narrow, were hand-built utilizing half bench, and did not address stream crossings. Many of the existing trail segments would need reconstruction before public access would be suitable. All of the

stream crossings would need upgrading to allow for safe crossings and reduced impacts with the addition of causeways and bridges. There are also several segments where the trail is not constructed.

Trailheads

Access to the existing trail is via undersized roadside pullouts without established parking or an official trailhead. Not having sufficient parking for a trail can create safety and natural resources issues for both users and land managers. Trailheads need to provide a safe place to park and information that guides the user about the expectations of the trail experience

Break-down of existing viable trail as compared to new construction needed

Existing trail that is suitable for recreational use	20%
Trail construction needed to complete trail	80%

Opportunities

Enhanced Recreation for Butte County Area

Butte County has a long history of outdoor recreation and many people move or chose to remain in, the area for the recreational opportunities and way of life. Trails based recreation has a strong tie to the economy of the county and many trail users desire additional high-quality recreational trails in the area (*Butte County Trails Plan -A Framework for Collaboration, BCRC, 2018*). The Poe Hiking Trail would be a valued recreational opportunity for residents and visitors alike. Also by providing a high-quality trail experience, it can go along way to deter negative use of the area.

The public accessible lands and roads in and adjacent to the project area are currently used for recreational driving, hunting, fishing access, mountain biking, off-highway vehicles (OHV), and whitewater paddling. With the addition of future whitewater recreational releases of Poe Reach it is expected that the recreation use will continue to increase.

Ancillary or Secondary Benefits

Access for Monitoring

One of the added values for the Poe Hiking Trail is that it will allow scientists from various agencies to more easily monitor the aquatic environment and ecosystem health of the North Fork of the Feather River.

Watershed Protection

Trails that are well designed and constructed can help limit associated natural resource impacts that are often associated with unsustainable trails. It is also important to preserve lands for resource conservation within key watershed. The existing trail connects through two privately owned parcels. If these parcels could be acquire and the trail constructed it would protect the lands within these private parcels for recreational access and natural resource protection.

Wildland Fire Protection

The North Fork of the Feather River has been impacted by multiple wildfires. Due to the topography and geographical location the watershed consistently sees higher wind speeds that can quickly spread wildfire across the landscape. Trails can provide wildland fire fighters safer and faster access for suppression. Thinning out vegetation in the trail prism increase the speed and safety factor and also creates an improved experience for the recreational trail users as well.

Location and Loop Opportunities

With the lower elevation range of the Poe Hiking Trail route it will be possible to access and utilize the trail most of the year. Many trails in the higher elevations of Butte County above the snow line don't allow for winter recreation access.

Many trail users prefer trails that offer loop opportunities. The Poe Hiking Trail could be utilized as a loop option by utilizing the road access. Users could also shuttle the trail by leaving a vehicle at each end which would provide the opportunity to enjoy the entire duration of the trail without having to include the road portions. The majority of trail uses will likely park on one end -with the south end being most utilized due to shorter drive and improved road access- of the trail and hike out-and-back.

Challenges

Private Lands

Private lands with an unwilling landowner can be a deal-breaker when it comes to trail development. Even landowners that do not access a property or have no long-term vision for the property can be leery of allowing public access and granting an easement. California law clearly states that a landowner is protected from recreational use liability, but many landowners are still cautious of allowing public access.

Studies have shown that having trails or trail access on or near a property increase the value of that property. Also, if a landowner does not have any legal access to their property a trail can provide access that they would not otherwise have.

The construction of the Poe Hiking Trail would require easements or acquisition from two private property landowners in order to complete the trail. Easements can be an attractive route as it would allow the landowner to retain ownership while allowing access. Easements can be a complicated process and can only be held by specific organizations like a Resource Conservation District, Agency or Land trust. Although easements are less costly in many cases than fee title it is ultimately the landowners' decision to enter into an easement. Once an easement is placed on the property for recreational access it stands in perpetuity regardless of a future sale of the property.

If the landowners were not willing to provide an recreational easement for the trail it would be feasible to construct two loop options (north and south) that do not rely on access to the private property segments. The two loop alternatives were not highly developed in the field work or cost estimate and would need additional ground truthing to verify alignment, feasibility, and cost. A preliminary summary of the additional costs required to develop these alternative loops is provided in Table 1.

Table 1 – Preliminary Approximate Additional Costs for Loop Trail Alternatives

Alternative	Approximate Distance	Approximate Additional Cost
North Loop	4,000 ft	\$56,400*
South Loop	5,280 ft	\$46,000*

These rough costs estimates are in addition to the costs for corresponding trail segments (see Attachment 3). As stated above, these estimates need additional ground truthing to verify alignment, feasibility, and cost. The North loop would utilize trail segments 1-3 (see figure 2e: map of segments)

and work to climb back toward the Bardees Bar Road on contour and connect back into the trail on segment 1. The South loop would utilize trail segment 5 and would create a loop that would connect back into the trail close to the South Trailhead

Trailheads

The proposed trailhead locations are not currently suitable for parking or recreational trailhead access. Trailheads are expensive to build but are a vital resource to the overall trail experience and safety.

Maintenance

Many agencies and land managers are reluctant to provide new recreational trails due to the cost and reduced capacity of maintaining them. Any new trail that is constructed needs to have a long term plan and mechanism for trail maintenance. Many USFS Districts have had no trail crew staffing or only a few staff to maintain many miles of trail which often leads to a lack of maintenance which overtime makes a trail impassable or a hazard to users. Many ranger districts utilized fire staffing to help maintain trails in the offseason but with the fire season getting longer this opportunity has been reduced.

Groups like the CCC and volunteer groups that focus on trail maintenance are sometimes the only source of labor available to land managers. If the Poe Hiking Trail is developed, in order to manage affordable construction costs, it will be important to have established funds and coordination with a group that can adopt the trail and provide regular maintenance.

Road Condition and Access

The access to the Poe Hiking Trail relies on two natural surface roads (Bardees Bar Road and Powerhouse Road). These roads are low in the watershed and not frequently maintained or upgraded. With a mid-slope road that has a number of stream crossings washouts can present a challenge to access. If one of the two access roads was to have a failure it could create long term trail access and maintenance challenges.

Project Funding Assistance

Although trail project funding assistance grants are limited and highly competitive, they are a potential resource for supplemental funding but often require a match element. In addition, having volunteer assistance with trail construction on a project can serve as match for a grant.

There are also organizations that focus on land conservation which might be a possible route to assist with acquisition, easement or associated monitoring of the two private properties that are needed for trail access.

Specification Recommendations

Trail Design

The USFS trail classes are general categories reflecting trail development scale, ranging from 1 (minimally developed) to 5 (fully developed). The class identification for a trail provides its development scale, representing its intended design and managed standards. For every class of trail there are defined attributes: tread and flow, obstacles, constructed features and elements, signs, and typical recreation environs and experience.

For the Poe Hiking Trail we are basing our cost estimates and recommendations on the utilization of USFS Class 3- Developed trail standards for development and management. This standard will allow a 4' width constructed bench. In addition, the new trail was designed on a 5% target grade to limit erosion and provide a recreational experience for a wider range of user fitness levels. With the recommended alignment and trailhead locations it is estimated that the proposed trail will be 3.6 miles in length.

Trail Usage

With the trail being constructed with a 4' width trail bench to USFS class 3 specifications it would likely be a good fit as a non-motorized multi use trail. Even with increased trailhead parking capacity it will still not be able to accommodate equestrian trailer parking needs. Although the trail does provide a loop option it is likely that most users will do an out-and-back option from the North or South trailhead.

Construction

In addition to constructing new sustainable alignments where needed, the construction process will rebuild several of the existing trail segments to allow for an improved recreational experience, reduce natural resource impacts and reduce the maintenance demand. The utilization of specialized mechanized equipment for construction will allow a builder to construct a more durable tread bench in a shorter amount of time. As part of the trail bench construction compaction should be utilized to assure durability of the tread. It is also recommended that the trail construction take place only when soil moisture is suitable for adequate compaction -likely in the winter and spring.

Trailheads

In order to accommodate recreational use, provide a safer trail experience and limit resource damage it is recommended that the current trail access be relocated and trailheads be established (**Attachment 2, b and c**)

The north access point (Bardees Bar Road) should be moved up-road by 200' to allow for a larger parking/ trailhead area to be constructed. Even with an improved trailhead it is only estimated that the new site will be able to accommodate four passenger size cars.

On the south end (Powerhouse Road) the current access point would require the trail to traverse a slope that has seen a recent road failure and associated landslide above. It is recommended that the South trailhead be relocated up road to a broad switchback (currently being utilized as a log deck). This location also has a rock fill area that could accommodate additional parking expansion if not being utilized for PG&E operations.

Reroutes

Due to the current condition and alignment of the existing trail it is recommended that several sections be rerouted to improve trail sustainability and recreational trail user experience. **Attachment 2a** shows the variation of the proposed reroute trail from existing. The major reroutes consist of the north and south end as we as two reroutes in the in the two major drainages.

River Access Spur Trails

Having additional river access is a big draw and would help connect the trail users with the North Fork Feather River ecosystem. In addition, with hot summer temperatures the ability to access the river from

the trail is a necessity. As part of the trail construction we have planned for two spur trails that will access the North Fork Feather (**Attachment 2a**). Care must to be taken when constructing trail in aquatic environments and below the high water mark. Having hardened spur trails to access the river will help mitigate unauthorized trails that often cause resource damage and develop when no planned access is provided.

Crossings

Due to the proximity of the trail within the watershed, there are a large number of stream crossings that the proposed trail will have to cross. In order to limit the impact on aquatic organisms and reduce sediment loading associated with the trail construction and use it is recommended that bridges be utilized on all streams. On some class 3 streams, it may be appropriate to utilize armored crossings but this would be dependent on biological evaluations of each crossing.

Trail bridges are expensive and take time to build. With the trail residing in a high fire probability area, the use of stone masonry bridges should be considered (see attachment 1, figure 12). Utilizing stone for bridges also reduces the long term maintenance and inspection costs of a wooden bridge while also matching the aesthetic of the dry stack portions of the historical trail.

Phased Construction

The Poe Hiking Trail project could be constructed in a phased approach to accommodate land acquisition challenges, contractor availability, weather conditions, available funding, and environmental assessment. With designated trailheads on each end the trail could be built from either side to one of the two identified spur locations (**Attachment 2a**). This approach would still allow for access but would accommodate a longer construction schedule.

Cost Estimate and Conclusion

Cost Estimate

The provided cost estimate was developed based on looking at all the elements involved in the planning, construction and maintenance of the project. The estimate breaks out the various costs by category and associated costs. The costs for trail construction utilize per linear foot cost for the tread work that is broken into segments and an additional per item cost for specialty elements like switch backs, rock work, bridges, etc. The estimates were based on the “high” end to accommodate higher material or labor costs. Table 2 is a summary of the costs. A breakdown can be found in **Attachment 3**.

Table 2 - BCRCO Cost Estimate for Poe Hiking Trail Development

Description/ Task	Cost
Planning/ Acquisition	\$ 207,400
Construction	\$378,464
Project Management	\$60,000
Total	\$645,864

Conclusion

While there are a number of difficult challenges associated with the construction and maintenance of the Poe Hiking Trail the backdrop is stunning and allows for a valuable recreational trail experience that provides amazing vistas and access to the North Fork of the Feather River. Currently there are a limited number of managed recreational trails in a county where new recreational opportunities can serve as a catalyst for economic growth and improvement in the quality of life for Butte County residents.

In addition, with much of the Poe Reach Hydro infrastructure, on the east side of the North Fork Feather, being subterranean and Highway 70 running upslope from the trail, it allows for a largely intact view of the natural environment from the west side which is uncommon on other reaches of the North Fork Feather. It is only when the train passes that you even notice the tracks and to some users this proximity to the Union Pacific line is a bonus.



Figure 1: Historic section of trail.

Figure 2: Rock pinch point on segment 2 – from bottom. This section will require 200 ft of mortar stone work back by concrete and anchored into wall. Lies below high water mark.



Figure 3: Rock pinch point from above. Care will be taken to preserve section of historic dry stack wall.



Figure 4: Section 1 departing from Bardees Bar Road is new construction and will need extensive stone processing to construct.

Figure 5: North end trail head off Bardees Bar Road will be upgraded to allow for more space and drainage. Trail kiosk will also be placed at trailhead to provide users with trail information.



Figure 6: Spring flow. This site will require a bridge. There are 12 bridges sites that have been identified on the trail.



Figure 7: Whitewater kayakers on Poe Reach Section (class III-IV). Including a trail will increase recreational draw.

Figure 8: Example of historic/ existing trail. The trail bench will need to be constructed and increased to 4' to accommodate recreational use. Wider corridor will also for vegetation management and fire suppression access.



Figure 9: Trail will have 2 spur trails that will allow trail users to access the North Fork Feather.



Figure 10: Trailhead on south end. Large landing in switchback can accommodate 6-8 vehicles. Rock fill site just down hill could serve as additional parking area. Trailhead will feature a kiosk.

Figure 11: Example of a switchback constructed utilizing stone work. Switchbacks that are constructed with stone are durable, will have less maintenance issues overtime, and match the current historical aesthetic.



Figure 12: Example of stone mortar bridge. This type of bridge would require less maintenance than traditional wood bridge, would be fire resistant and match current historical dry stack aesthetic.

Attachment: 1d Site Photos

Poe Hiking Trail Feasibility Study

Butte County Resource Conservation District



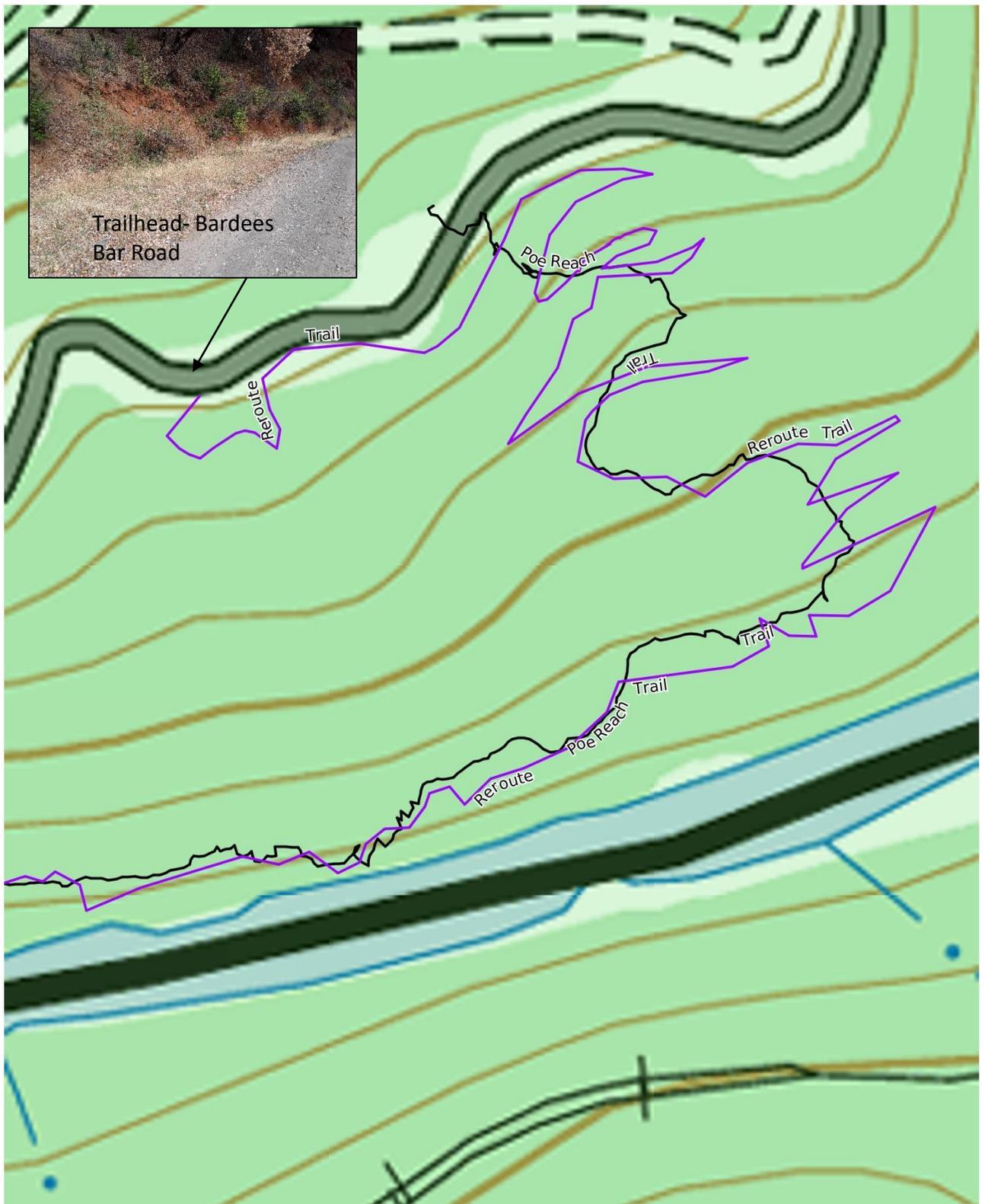


Figure: 2b Maps – Segment 1 (North- trailhead)
 Poe Hiking Trail Feasibility Study
 Butte County Resource Conservation District

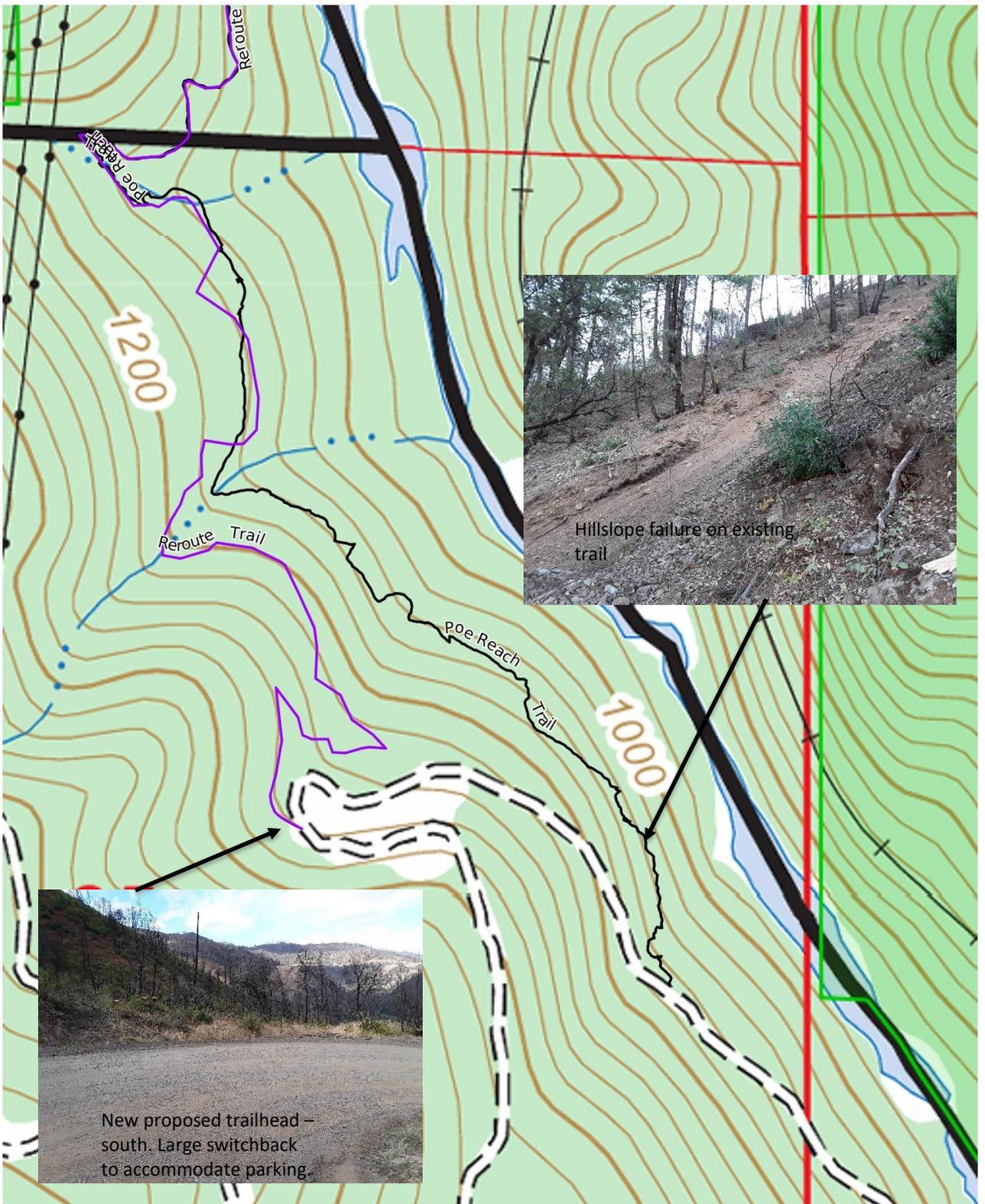


Figure: 2c Maps – Segment 5
 Poe Hiking Trail Feasibility Study
 Butte County Resource Conservation District

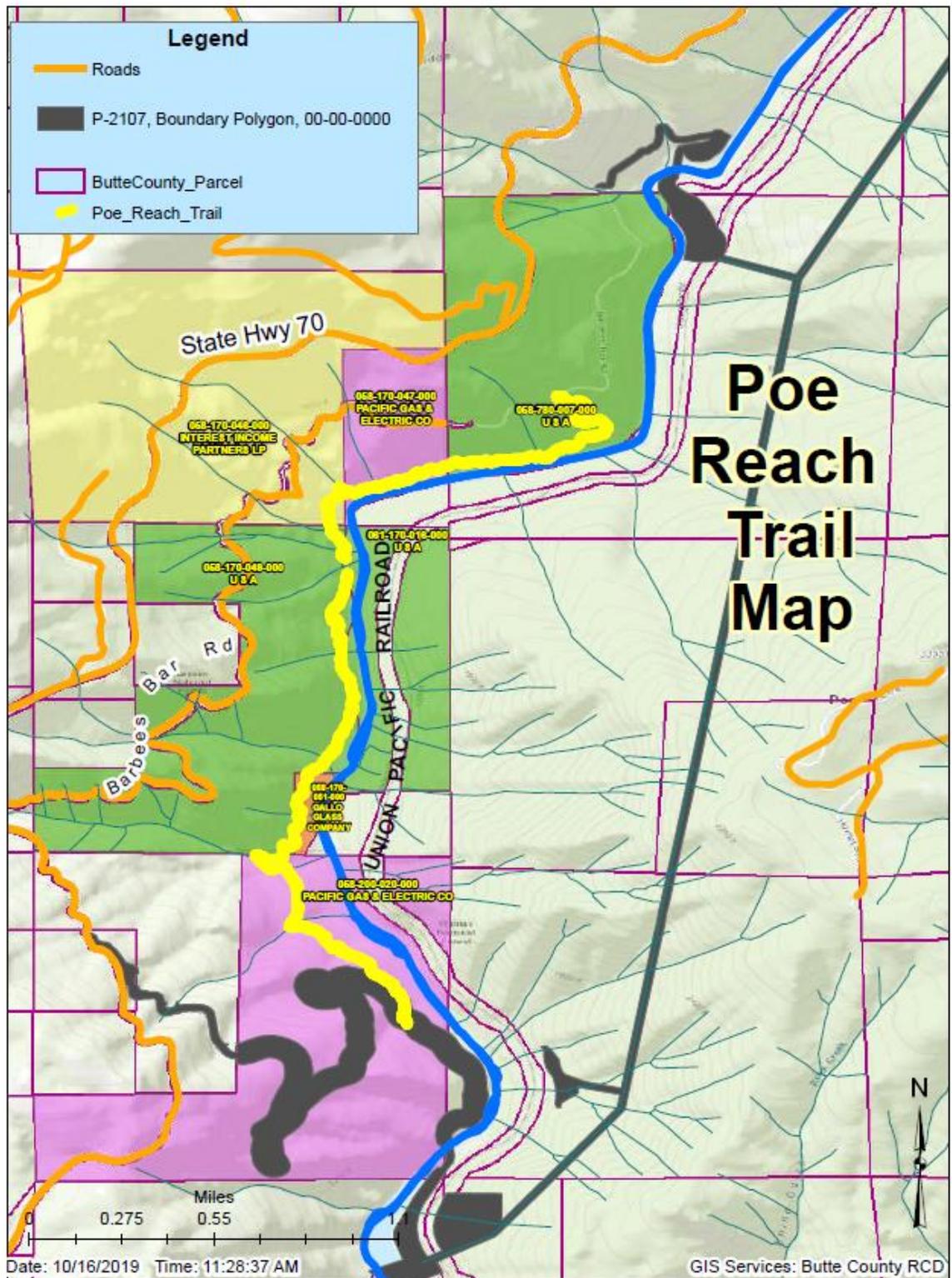


Figure: 2d Map – Private Property with FERC Boundary
 Poe Hiking Trail Feasibility Study
 Butte County Resource Conservation District



Description/ Task	Unit Cost	Unit Measurement (ft., item, etc)	# of units	Total
1. Planning and Acquisition				\$207,400.00
Corridor flagging for specialist review	\$1,200.00	day	2	\$2,400.00
NEPA/ Enviro Review (entire project)	\$150,000.00	item	1	\$150,000.00
Surveying private parcels	\$7,500.00	item	2	\$15,000.00
Easement Acquisition	\$40,000.00	item	1	\$40,000.00
2. Construction				\$378,464.50
Fine flagging for construction	\$1,200.00	day	3	\$3,600.00
Trail Head - North (Bardees Bar)				
parking lot- enhance upslope drainage, inslope parking and drain, surface rock, site plan, permit	\$25,000.00	item	1	\$25,000.00
trail kiosk at signage 6'x6' 1 panel kiosk	\$2,000.00	item	1	\$2,000.00
Trail Segment 1				
new trail construction/ improve existing	\$4.50	ft	4857	\$21,856.50
switchbacks	\$1,000.00	item	17	\$17,000.00
stone processing -150 ft	\$1,500.00	item	1	\$1,500.00
stone hardened bridge 4'L x3'W	\$10,000.00	item	1	\$10,000.00
trail spur for river access	\$8,000.00	item	1	\$8,000.00
Trail Segment 2				
new trail construction/ improve existing	\$3.00	ft	2500	\$7,500.00
mortar stone work backed by concrete anchored into wall (200 ft)	\$20,000.00	item	1	\$20,000.00
rock prism constructed causeway (200 ft)	\$10,000.00	item	1	\$10,000.00
structural drystack headwall (40 ft)	\$4,000.00	item	1	\$4,000.00
Trail Segment 3				
new trail construction/ improve existing	\$4.00	ft	3379	\$13,516.00
stone hardened bridge 4'L x3'W	\$10,000.00	item	4	\$40,000.00
headwall construction with fill rock on site (200 ft)	\$8,000.00	item	1	\$8,000.00
Trail Segment 4*				
new trail construction/ improve existing	\$5.00	ft	5280	\$26,400.00
switchbacks	\$1,000.00	item	7	\$7,000.00
4'x3' hardened bridge	\$10,000.00	item	3	\$30,000.00
drystack headwall	\$4,000.00	item	1	\$4,000.00
Trail Segment 5				
new trail construction/ improve existing	\$4.00	ft	3273	\$13,092.00
8' x 3' hardened bridge	\$16,000.00	item	3	\$48,000.00
4' x 3' hardened bridge	\$10,000.00	item	1	\$10,000.00
trail spur for river access	\$8,000.00	item	1	\$8,000.00
switchbacks	\$1,000.00	item	8	\$8,000.00
4' x 4' rock cobbling at crossings	\$1,000.00	item	2	\$2,000.00
drill and/ or blast, at bedrock contact 40'	\$8,000.00	item	1	\$8,000.00
Trailhead- South (Powerhouse Road)				
widen parking area and incorporate drainage, site plan, permit	\$20,000.00	item	1	\$20,000.00
trail kiosk at signage 6'x6' 1 panel kiosk	\$2,000.00	item	1	\$2,000.00
3. Project Manager/ Admin	\$80.00	hour	750	\$60,000.00
* if trail segment 4 needs to be rerouted cost would be an additional \$20,000				
			Total	\$645,864.50

Figure: 3a Budget – Breakdown
Poe Hiking Trail Feasibility Study
Butte County Resource Conservation District



Trail Maintenance

Trail Maintenance Estimate- Annual				\$3,500.00
Trail brushing and corridor clearing- CCC (annual)	\$1,500.00	day	2	\$3,000.00
Trail Inspection (annual)	\$500.00	day	1	\$500.00

Breakdown by construction task

Description/ Task	Unit Cost	Unit Measurement (ft., item, etc)	# of units	Total
Trail Construction Summary				\$378,464.50
fine flagging for construction	\$1,200.00	day	3	\$3,600.00
Trail Head - Bardees Bar Road (North)	\$27,000.00	item	1	\$27,000.00
Trail Head - Powerhouse Road (South)	\$22,000.00	item	1	\$22,000.00
8' x 3' hardened bridge	\$16,000.00	item	3	\$48,000.00
4' x 3' hardened bridge	\$10,000.00	item	9	\$90,000.00
new trail construction/ improve existing (per foot average)	\$4.27	ft	19289	\$82,364.50
trail spur for river access	\$8,000.00	item	2	\$16,000.00
switchbacks	\$1,000.00	item	32	\$32,000.00
rock work	\$57,500.00	item	1	\$57,500.00
Project Manager/ Admin	\$80.00	hour	750	\$60,000.00
			Total	\$438,464.50

Figure: 3b Budget – Annual Maintenance / Trail Construction
 Poe Hiking Trail Feasibility Study
 Butte County Resource Conservation District



Attachment 2

PG&E's Cost Estimate for Poe Trail Construction

PG&E Cost Estimate for Poe Trail Construction

Notes/Description	Mobilization / Setup		
	Activity	Costs	Total
	Mobilization / Setup	\$ 33,284.00	
			\$ 33,284.00
	Poe Trail Head		
Site is bigger but access and flat area is easier to work in. Prep existing log deck and cover/compact with AB. Add signs and kiosk.	Labor	\$ 102,538.04	
	Construction Materials	\$ 16.20	
			\$ 102,554.24
	Trail Segment 1		
Very steep with no equipment access. Very labor intensive hand work on a steep slope. Steep slope will require lots of manual fill to get 4' wide path. Very steep will also require many switch backs to keep trial at 5%. Assume approx 200'/day average. Locally sourced rock will be hand carried and hand stacked on the down hill side and then local material will be cut on the uphill side to fill behind the stacked rock (no mortar) and compacted by hand. The balance should produce a 4' wide trail.	Labor	\$ 320,431.38	
	Construction Materials	\$ 5,400.00	
			\$ 325,831.38
	Trail Segment 2		
However here trail does not drop drastically in elevation. Conditions here are steep but much rockier in solid granite in some locations. Assume rock mason sub to build masonry trail for 200' and rock masonry cosway for 200'. Approximately 400' for masonry and 2000' for trial improvement. Assume similar to seg 1 at 200'/day for construction crew. Masonry production rate unknown. Assume rock is sourced at the site, but assume helicopter deliveries for sacks of cement. For safety reasons a large chunk of money could be sank into overhead rock stability. Area looked very dangerous for continued occupancy. Stabilizing a rock face of this size could reach a million depending on required scope.	Labor	\$ 128,172.55	
	Equipment	\$ 120,000.00	
	Construction Materials	\$ 3,240.00	
	Sub Contracts (Mason)	\$ 80,000.00	
			\$ 331,412.55
	Trail Segment 3		
Did not get first hand look at this segment. Based on map contours and familiar with area, assume terrain is a cross between seg 2 and segment 4. For this reason, I assume slightly less steep downhill slope with softer local material. Assume 300'/day production. Assume trail will be hand dug to balance cut and fill only using stacked rock if necessary. At 3400' this is about 12 days.	Labor	\$ 153,807.06	
	Construction Materials	\$ 5,400.00	
			\$ 159,207.06
	Trail Segment 4		
Only saw lower end of section 4 at large creek but trail seemed established at about 18" wide. Very overgrown with fresh barriers after fire. Ground had fair amount of rocks but overall a soft dirt in most locations. Assume about 400'/day.	Labor	\$ 166,624.32	
	Construction Materials	\$ 5,400.00	
			\$ 172,024.32
	Trail Segment 5		
Upstream end of segment 5 has a visible trail but only about 18" wide and overgrown. Ground is mainly soft dirt with some rock pockets. The downstream end will have to switch back to gain elevation to Trailhead. Area is steep but not as steep as segment 1. Assume 300' average per day with little stack rock needed.	Labor	\$ 153,807.06	
	Construction Materials	\$ 5,400.00	
			\$ 159,207.06
	Trail Head Bardees Bar		
15 days to cut out more room and haul off spoils for an increased parking area. Install AB. Install Kiosk and signs.	Labor	\$ 128,172.55	
	Construction Materials	\$ 10,800.00	
			\$ 138,972.55
	Environmental Permitting Cost		
PD Development, botanical surveys, cultural resource evaluations, wetland delineation, CEQA/NEPA assistance.	Surveys/Studies	\$ 150,000.00	
Current CEQA review fee for ND/MND	App/Envi Review Fees	\$ 2,400	
Streambed Alteration Agreements - each bridge requires SAA		\$ 20,220	
401 Certification		\$ 52,200	
Application Fee based on ITP Table		\$ 30,000	
401/404 fees typically pay into the in-lieu fee if possible. Current rates around \$205,000 per acre.	Mitigation Fee	\$ 30,000	
Agencies may likely expect a mitigation monitoring plan that identifies restoration, plantings, success ratios and schedule.	Mitigation/Monitoring (first 5 years)	\$ 240,000	
			\$ 524,820.00
	Over Heads		
	Project Management	\$ 80,000.00	
	Inspection Services	\$ 154,198.02	
	Construction Support	\$ 59,813.86	
	Expenses (Per Diem, etc.)	\$ 40,000.00	
	Helicopter Support	\$ 192,000.00	
			\$ 526,011.88
	Construction Total		\$ 2,473,325.04