



May 20, 2019

Mr. David Turner  
Federal Energy Regulatory Commission  
Office of Energy Projects  
Washington, D.C. 20426

In Care of:  
Mr. Kevin Webb  
Hydro Licensing Manager  
Fulcrum, LLC  
100 Brickstone Square, Suite 300  
Andover, MA 01810

RE: Request for Additional Studies and Comments on the Pre-Application Document  
Barber Dam Hydroelectric Project  
FERC No. 4881

Dear Mr. Turner,

The Boise River Enhancement Network (BREN) is hereby submitting this request for additional studies and comments on the Pre-Application Document to support the relicensing effort of the Barber Dam Hydroelectric Project in Boise, Idaho (Dam and/or Project). These requests are being made in response to the November 30, 2018 Pre-Application Document (PAD) submitted to the Federal Energy Regulatory Commission (FERC) by Fulcrum, LLC and Ada County, Idaho (herein the Project Licensees and/or Applicants).

BREN is a federally recognized 501(c)(3) non-profit-organization that represents a network of people that live, work and play in the Boise River watershed dedicated to promoting the ecological enhancement of the river. The requests provided herein are compiled from comments we've received from our members, many of whom also professionally represent private, public, non-profit, local, state and federal entities/agencies. BREN currently does not promote any particular action(s) regarding the Project. Rather, we are requesting that the Applicants perform additional studies for FERC and the greater Treasure Valley Community (Community) to make meaningful, informed decisions regarding the future of the Barber Dam Hydroelectric Project.

The Barber Dam Hydroelectric Project is located on the Boise River, upstream of downtown Boise in an area commonly referred to as the "Barber Valley." The Dam creates a reservoir commonly referred to as the "Barber Pool." The river, floodplains and associated ecosystems through the Barber Valley and Barber Pool comprise a rare, relatively large, undeveloped and moderately intact ecosystem along the Boise River. In addition, the properties in and along the Barber Pool are owned and managed by a limited number of owners, most of whom have expressed to us a shared interest in preserving (and potentially enhancing) the Barber Pool area in a more natural condition for the benefit of fish, birds, wildlife and the

Community-at-large. BREN recognizes the value of the social, cultural and natural resources in the Barber Valley/Pool area.

The PAD indicates the Project Study Area and/or area of the Project's Impact is limited to only the 75 acre "Impoundment Area." We contend this area is too small as the Dam historically impacted a much longer reach of the river channel from the Dam itself upstream to the location of the Diversion Dam. Additionally, the Dam's flashboards were historically 11-feet above the crest of the Dam; river features and sediment deposits upstream of the Dam clearly confirm this area of impact. Further, since the peak flashboard elevation constitutes just the functional base elevation of the historically operational dam and not the historic water elevations, we suggest that at least 3-feet of additional elevation be added to the peak flashboard elevation to identify the Project's Area of Impact (aka, minimum Project Study Area). Therefore, we request the minimum Project Study Area be expanded to include the following elevations: the existing Dam crest elevation, plus 11-feet (to account for the historic peak flashboard elevation), plus an additional 3-feet (to account for approximate historic water depths). This elevation is 14-feet above the existing weir elevation. Based on Section 3.2.1 of the PAD (entitled "Embankment Dam") this additional 14-feet of elevation corresponds to the elevation of the embankment dam, the crest of which is at elevation 2792.2 (NAVD88).

As indicted in Section 5.2 of the PAD, we understand "The Applicants are not proposing any additional resource studies for the relicensing at this time." While BREN recognizes the value in the existing studies cited in the PAD, we believe many of the existing studies are incomplete, outdated and/or do not cross-reference one another. Further, many of the studies we consider essential simply do not exist. We, therefore, respectfully request that the Applicants perform the additional studies attached to this letter as **Attachment A: Additional Studies Requested by BREN**. Also, several issues and discrepancies were noted upon our review of the PAD. A list of items in the PAD that require your review and refinement are included as **Attachment B: Comments on the Pre-Application Document**.

The Boise River Enhancement Network appreciates this opportunity to submit these requests to FERC and the Applicants. And - in keeping with the spirit of our broad commitment to both the River's ecological health and the Community – BREN is willing to assist the Applicants in this relicensing effort however we are able.

Respectfully, on behalf of the BREN Board of Directors, Coordinating Team, Members and Partners.

Michael K. Homza, PE



Chairperson

Boise River Enhancement Network Coordinating Team

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*Transmitted via email*

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Attachments: Attachment A: Additional Studies Requested by BREN  
Attachment B: Comments on the Pre-Application Document

## ATTACHMENT A

### Additional Studies Requested by BREN

Barber Dam Hydroelectric Project  
FERC No. 4881

## INTRODUCTION

### **Request Guidelines**

We understand the Applicants desire requests for additional studies be presented in a manner that addresses the applicable guidelines listed in Section 5.2 of the PAD. We recognize that our requests are numerous, so for brevity we are simply presenting these requests in the following, overarching context of the desired format rather than address each guideline for each individual request.

### **Goals and Objectives**

The overall goals and objectives of the requested studies are to study the identified resource in a manner that fully identifies this historic, existing, future and potential impacts and interactions between the Barber Dam Hydroelectric Project (and its operations) and the identified resource. Future scenarios should consider impacts from climate change as well.

### **Resource Management Goals of Agency or Tribe**

BREN is neither an agency or Tribe, therefore this guideline is not applicable.

### **BREN's Resource Management Goals**

An overview of BREN's constituency and overriding goals are briefly described in the accompanying letter.

### **Existing Information and Need for Additional Information**

Additional studies are being requested because many of the existing studies are incomplete, outdated and/or do not cross-reference one another. Additionally, many of the studies BREN sees as essential currently do not exist.

### **Nexus Between Project Operations and the Resources Requested to be Studied**

The Barber Dam Hydroelectric Project was - and continues to be - a significant impact to the resources mentioned herein. These resources are inextricably connected to the Project and its operations; it is therefore essential to understand the various relationships between the Project and these resources prior to Project relicensing.

### **Proposed Study Methodology**

It is incumbent upon the Applicants' consultants to utilize the best available science and all available data in their studies.

### **Level of Effort and Cost**

It is understood that future studies should be scientifically appropriate and economically prudent. With that said, should the Applicants deny requested studies on the basis of expediency or cost, BREN requests justification in the form of a preliminary scientific investigation and/or cost/benefit analysis.

## **STUDY REQUEST 1: GEOLOGY, SOILS, SEDIMENT AND GROUNDWATER**

The project impoundment alters the health and function of the Boise River in and downstream of the Project area. Water depth has a significant impact on water quality and aquatic and riparian habitat. A bathymetric map is needed to develop strategies to improve water quality, especially temperature, and aquatic and riparian habitat. It is therefore requested that the Applicants conduct the necessary research and provide a bathymetric map of the impoundment.

The Barber Dam predates the four (4) large dams upstream: Diversion Dam, Lucky Peak Dam, Arrowrock Dam and Anderson Ranch Dam. Additionally, the dam is situated downstream of the mouth of a canyon in a historically wider, braided, slower-moving section of river that naturally accumulated sediments. The Barber Dam/Pool captured significant amounts of sediment transported down the Boise River prior to the construction of the upstream dams, this includes sediments from mining operations throughout the upper watershed. In addition, the Pool was used to store logs for the Barber Lumber Company. Hazardous materials from historic mining and logging/lumber operations are very likely to remain in the soils captured behind the Dam and in the vicinity of the Dam. Given this situation, we request the following studies.

- The sediments behind the Dam should be analyzed and characterized to fully understand the sediment's chemical constituency and the potential to contain hazardous materials.
- Core samples of the sediment behind the Dam should be obtained and analyzed to facilitate this analysis. The numbers and placements of the sample locations should be enough to properly characterize the soils through the larger Project Impact Area as described in BREN's accompanying letter.
- Investigate whether the sediments behind the Dam are chemically safe; can or should be capped; or can be allowed to be reintroduced downstream.

It is understood that the Diversion Dam (and possibly Lucky Peak) is managed such that sediments are periodically passed downstream to Barber Dam. In addition, it is understood that sediment is occasionally dredged behind Barber Dam to facilitate Project operations. Further, the Boise River downstream of Barber Dam is known to be "sediment starved." Given these conditions, we request a sediment transport analysis be performed to account for and to understand these variables. The sediment transport analysis should be performed such that the Dam and/or Project operations can be refined, if appropriate, to optimize channel geomorphology, habitat, water quality, irrigation operations and municipal water operations both upstream and downstream of Barber Dam.

To better understand groundwater levels, variations, movement, chemistry, pumping influences, influences from the New York Canal and seepage through the Dam itself, we request:

- Test wells be explored, and piezometers be installed and monitored. The groundwater study should be developed such that it will be useful to future vegetation management plans and possible river, side channel and habitat enhancement projects both upstream and downstream of the Dam.
- The utility of Barber Pool as it pertains to the recharge of the downstream, shallow aquifer and its influence on the riparian plant community should be studied.

## **STUDY REQUEST 2: WATER RESOURCES**

Water resources issues that should be studied include the following.

- Water chemistry upstream of the Pool, throughout the Pool and immediately downstream of the Dam should be tested, monitored and reported upon.
- The lower reaches of the Boise River experience warm temperatures. These warm temperatures impair water quality impacting aquatic resources and recreation and can threaten public safety. Thermal impacts from the large, shallow Pool therefore need to be studied.

- Although the Project operates run-of-river, water flow is disrupted below the Project when the plant goes offline. Reductions in flow caused by these disruptions are detrimental to instream habitat as well as downstream municipal water treatment facility operations and irrigation operations. Please conduct a study that evaluates options to eliminate disruptions in water flow below the project.
- Discharges from the Project's area of impact need to be monitored with stream gauges. At a minimum, gauges should be installed near/downstream of Diversion Dam, immediately upstream of Barber Dam and immediately downstream of Barber Dam. These gauges should be calibrated with the aforementioned piezometers and/or groundwater study so a thorough understanding of all surface and groundwater flow through the Project Study Area is understood. Stream gauges should be reported to the public in "real time" on the internet.

### **STUDY REQUEST 3: FISH AND AQUATIC RESOURCES**

We understand adjacent upstream property owners are currently designing side channels for fish and wildlife habitat. Other neighbors are considering the creation of similar side channels and associated wetland/riparian enhancements in the future as well. These future side channels and associated enhancements will change the functional fish habitat in the Pool; potentially adding or enhancing fish spawning, brood rearing and flood refugia habitat. There currently exists no upstream fish passage at Barber Dam. Given these conditions, we request the following studies be performed.

- We request that the value of providing upstream fish passage at the Dam be studied in consideration of the existing and future instream habitat potential for fish and other aquatic species.
- Studies should consider whether Barber Pool could be a resource for fish inhabiting the river below Barber Dam for spawning, brood rearing, or flood refugia. Studies should consider whether the creation of upstream fish passage would have either positive benefits or adverse impacts for fish populations throughout the system.
- The studies should consider the utility of Barber Dam serving as a barrier between a future upstream, cold water fishery and downstream, warm water fishery. This scenario is based on predicted increases in ambient water temperatures in the Lower Boise River due to climate change.

### **STUDY REQUEST 4: WILDLIFE AND GENERAL HABITAT RESOURCES**

The following wildlife and general habitat resources issues should be studied.

- Please conduct studies to evaluate the potential to improve bird and wildlife habitat in the Project area. Please consider actions that can be taken in conjunction with actions taken by the Intermountain Bird Observatory (IBO) and Idaho Foundation of Parks and Lands (IFPL) including side channel enhancement and vegetation restoration.
- We request the impacts of varying water levels in the Pool with an inflatable weir or other strategies be studied.
- Conduct a study to identify opportunities to support populations of wildlife that make part time use of Barber Pool area but reside largely in the Boise Foothills. Please include options to protect wildlife corridors between the two natural landscapes.
- Please identify opportunities to coordinate habitat protection and improvement actions with IBO, IFPL, Idaho Department of Fish and Game (IDFG), Harris Ranch Wildlife Mitigation Association and other organizations with an interest in wildlife.

## **STUDY REQUEST 5: VEGETATION RESOURCES**

The following vegetation resources issues should be studied.

- Noxious, exotic and invasive vegetation species throughout the project area should be inventoried and their impact on fish and wildlife habitat, recreation, water quality and aesthetics should be assessed.
- A range of strategies to manage populations of undesired vegetation in order to minimize negative impacts should be evaluated.
- Native trees, shrubs, forbs and grasses throughout the project area should be inventoried. The genetic composition of black cottonwoods (*Populus trichocarpa*) in the Project area should be determined.
- Studies should be performed to evaluate the impacts of varying Dam operations to periodically restore natural river flow regimes for the benefit of preferred vegetation species and associated habitats, fish and wildlife.
- Studies should be performed in conjunction with proposed/ongoing studies performed by neighboring property owners and pertinent organizations.

## **STUDY REQUEST 6: RECREATION, LAND USE AND AESTHETIC RESOURCES**

The following recreation, land use and aesthetic resources issues should be studied.

- A recreation study and user survey should be performed to understand current and future uses of the Project area. The study should provide information as to who is using the Project Area, how often and for what purposes. Survey participants should be given the opportunity to provide feedback on the adequacy of project recreation facilities and experience. The Applicants should also host one or more focus group sessions to identify uses and needs.
- An inventory should be made of unauthorized trail/land use in the project area or to access the project area. The potential effects of various kinds and amounts of human activity in Barber Pool to wildlife species of public interest should be identified and quantified.
- The study should consider wildlife-friendly and passive foot-traffic deterrents in lieu of fences. Examples include strategic placement of ditches, watercourses, wetlands, vegetation, and topographic features.
- The study should include an assessment of safe river access and egress.
- A study of the need for and potential to provide emergency access to the Pool should be conducted.

## **STUDY REQUEST 7: CULTURAL, TRIBAL AND SOCIAL RESOURCES**

The following cultural, tribal and social resources issues should be studied.

- Cultural, tribal and social resources should be studied to better understand, preserve and enhance these resources in the Project area. The impacts to these resources should be considered in the context of all other studies undertaken as part of this Project's relicensing effort.

## **ATTACHMENT B**

### **BREN Comments on the Pre-Application Document**

Barber Dam Hydroelectric Project

FERC No. 4881

#### **CHAPTER 3**

##### **Impoundment**

1. When has the area around the intake and trash racks been excavated and dredged in the past 20 years? How is that done? Does equipment enter the impoundment to perform the work? How much material is removed and where does it go? What is the schedule for excavation and dredging in the future?

##### **Powerhouse and Intakes**

1. On what are the footings of the powerhouse founded?
2. Does water from the impoundment continually or intermittently flow through the trash sluice? How much water?
3. Describe the “significant damage” to the “upstream lakebed” that was found during the 2017 inspection. How much is a “significant” amount of debris? What is the composition of the debris: rocks, wood, garbage? If the debris is rocks, what is the size range and distribution of the rocks?
4. How does the debris interfere with power generation efficiency? What is the solution to this problem?

##### **Project Lands**

1. Provide a map and describe the revisions to the project boundaries.
2. Explain in detail how the acquisition of additional land rights will impact dam safety.

##### **Current Project Operations**

1. Please revise the description to accurately describe what happens when there is a unit trip or shut-down. Describe the lag time that occurs before inflow is spilled over the spillway in the same volume as that which flowed through the turbines before the unit trip or shut-down. Describe what happens during all seasons.
2. How often is the pond kept at a level that isn't “normal”? Provide as much detail on dates and pond levels as possible.

##### **Compliance History**

1. Provide a more detailed account of the flow variation event of February 5, 2015. Include details about the “lack of downstream flow” in the river. What were the levels in the river? How far did the impacts extend downstream? What was the duration of the flow impact in the river?
2. Provide a detailed explanation of the resumption of flow through the turbines. Did the project simply resume run-of-river operations? How long did it take for the project to resume normal operation? What impact did the re-start of the project have on downstream flow and for how long and what distance?
3. Provide an account of operational malfunctions that have occurred since the February 5, 2015 event.

## **CHAPTER 4**

### **Hydrology and Streamflow**

1. Several tributaries enter the Boise River between Barber Dam and Glenwood Bridge. The flow in these tributaries is intermittent but can amount to a significant addition of water to the Boise River. Please list these tributaries and provide a brief description of each.

### **Sedimentation**

1. Provide additional detail about the amount of sediment that accumulates in the impoundment.

### **Existing Water Quality Data**

1. A large amount of water quality data has been collected by the USGS at Eckert Bridge, just a short distance downstream of the project. Many parameters were measured including temperature, turbidity, and *E. coli*. Include this data and provide a more comprehensive discussion of existing water quality conditions.

### **Water Use**

1. Lucky Peak Dam was constructed by the U.S. Army Corps of Engineers for flood control. Please correct this section.

### **Existing Aquatic Habitat and Fish Communities**

1. The Boise River is 102 miles long, not “about 200.”
2. In Table 4-8, brown trout should be listed as resident, non-stocked species.

### **Effects of Project on Temporal and Spatial Distribution and Any Associated Trends**

1. Project operations have had and have the potential to have future significant impacts on fishery resources because the project can block flow of water in the river.
2. While there are many irrigation diversions on the Boise River, not all of them segment aquatic habitat. Please describe how many dams on the lower Boise River block fish passage. Give their location and talk about seasonal variations in their operation. Also include a discussion of anticipated or possible changes that would change the operations at any of these dams. For example, there is ongoing discussion about replacing the diversion at Americana with a safer facility; fish passage could be provided.
3. Identify the percentage of fish that survive as well as anticipated injury to fish that pass through the powerhouse turbines.

### **Wildlife Resources**

1. It’s unlikely there are “several species of deer and elk” in the project vicinity. This should be clarified.

### **Land Use**

1. BPCA is certainly an important wildlife habitat area, but because access is restricted, wildlife viewing is minimal.

### **Tribal Resources**

1. The Nez Perce Tribe is not the only federally recognized Indian tribe located near Boise, Idaho. Please update this section accordingly.