

**Black Canyon Hydroelectric Project  
FERC Project No. P-14110  
Proposed Cultural Resources Study Plan  
September 2012**

Prepared for  
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## 1 INTRODUCTION

Black Canyon Hydro, LLC, (BCH) ultimately plans to file an application for an original license for the Black Canyon Hydroelectric Project (Project), FERC Project Number P-14110, and associated facilities on the North Fork Snoqualmie River (North Fork), approximately 4 miles northeast of North Bend in King County, Washington. The Project has a proposed generation capacity of 25 megawatts (MW) and would be located entirely on private lands.

The Project would consist of the following new facilities: 1) a 8-foot-high, 162.4-foot-long inflatable rubber diversion with associated fish passage and intake structures; (2) a variable pooling area behind the diversion with a normal water surface elevation of 971 feet above mean sea level and a maximum pooling of 2.83 acres; (3) a power conduit tunnel consisting of an approximately 450-foot-deep vertical tunnel into an approximately 8,300-foot-long, 12-foot-diameter horizontal tunnel and penstock connecting to; (4) a 60-foot-long, 100-foot-wide metal powerhouse with two Francis turbine units, one rated at 16 MW and the other rated at 9 MW; (5) a 200-foot-long, 24-foot-wide tailrace; (6) a 4.2-mile-long, 115-kilovolt overhead transmission line that transmits project power to the regional grid (transmission line would be an overbuild of an existing transmission line with only approximately 0.65 miles of new transmission); (7) a 0.75-mile-long and a 0.5-mile-long extension of two existing logging roads that lead to the project facilities; and (8) appurtenant facilities (switchyard, maintenance building, etc.).

The project would operate in run-of-river mode. The combined maximum hydraulic capacity of the two project turbines would be 900 cubic feet per second (cfs). The project would divert water from a 2.6-mile-section of the North Fork Snoqualmie River.

BCH filed a Notice of Intent (NOI) and the associated Pre-Application Document (PAD) to commence the FERC Integrated Licensing Process on March 27, 2012. In response to the subsequent study requests filed by FERC staff and other stakeholders and as detailed in 18 CFR 5.11, BCH is required to submit relevant resource study plans. This includes a study of cultural resources near the Project Reach which follows the requirements of 18 CFR 5.11(b)-(e).

## **2 STUDY DESCRIPTION AND OBJECTIVES**

In accordance with 18 CFR §5.11(d)(1), this section describes the goals and objectives of the study and the information to be obtained. The goal of this study is to determine the potential effects of project construction and operation on archaeological and historic resources that are included in or eligible for the National Register of Historic Places (National Register). The survey and study report, including identification of the project's Area of Potential Effects (APE), will be developed in consultation with the Washington State Historic Preservation Officer (SHPO), the Snoqualmie and Tulalip Tribes, and other interested parties. The specific objectives of the study are to:

- Identify the project site's APE;
- Conduct a field inventory within the APE to locate any historic or archaeological resources;
- Conduct an ethnographic inventory in cooperation with the Snoqualmie and Tulalip Tribes to locate any property of cultural or religious significance within the APE;
- Assess the National Register eligibility of historic, archaeological, or other resources of religious or cultural significance within the APE, including considering whether they may contribute to a larger district;
- Evaluate the potential effects on paleontological resources and historic properties from construction or proposed operation of the project or from project-related activities; and
- Prepare a draft historic properties management plan (HPMP) to be filed with the preliminary licensing proposal and a final HPMP to be filed with the license application, if historic properties are identified and would be adversely affected by construction or proposed operation of the project or from project-related activities.

The Cultural Resource Study Plan was primarily based on the comments submitted by FERC staff on July 24, 2012 (FERC, 2012) and comments submitted by the Snoqualmie Tribe (Snoqualmie, 2012). While other stakeholders mentioned evaluating cultural resources, FERC staff specifically requested a study of cultural resources, which also met the criteria found in Appendix A of Scoping Document 1 for formal study requests. Also, the FERC staff's study request appears to encompass comments from other stakeholders.

## **3 STUDY AREA**

A discussion on the Study Area is included within the "Methods" section below when discussing identification of the Project Site's APE. However, at a minimum, the APE will include the lands both in-water and on-shore where project facilities, and lands or properties outside the project boundary where project construction and operation or other

project-related activities may cause changes in the character or use of historic properties, if any historic properties exist.

#### **4 RESOURCE MANAGEMENT GOALS**

In accordance with 18 CFR §5.11(d)(2), this section describes resources management goals of agencies or Indian tribes with jurisdiction over the resources to be studied.

If historic properties are identified and would be adversely affected by construction or proposed operation of the project or from project-related activities, then an HPMP should be developed after consultation with the Washington SHPO, Snoqualmie and Tulalip Tribes, and other interested parties. When developing an HPMP, the generally acceptable practice is to use the “Archeology and Historic Preservation: Secretary of the Interior’s Standards and Guidelines” (Federal Register 49, No. 190 [September 29, 1983]: Part IV, pp. 44716-44740) and the Advisory Council on Historic Preservation and Commission’s “Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects” (issued May 20, 2002). The HPMP would consider and/or address the following items:

- Completion, if necessary, of identification of historic properties within the project’s APE;
- Continued use and maintenance of historic properties;
- Maintenance and operation of the Project according to the Secretary of Interior’s “Standards for the Treatment of Historic Properties” (36 CFR Part 68) and applicable National Park Service Preservation Briefs;
- Treatment of historic properties threatened by project induced shoreline erosion, other project related ground disturbing activities, and vandalism;
- Identification and evaluation of historic properties, determination of effects, and ways to avoid, minimize, or mitigate adverse effects;
- Consideration and implementation of appropriate treatment that would minimize or mitigate unavoidable adverse effects on historic properties;
- Treatment and disposition of any human remains that may be discovered, taking into account any applicable state laws and the Advisory Council on Historic Preservation's "Policy Statement Regarding Treatment of Human Remains and Grave Goods" (September 27, 1988, Gallup, NM);
- Compliance with the Native American Graves Protection and Repatriation Act (Title 25 of the United States Code [USC] Section 3001), if federal lands are within the project boundary;
- Discovery of previously unidentified properties during project operations;

- Public interpretation of the historic and archaeological values of the project;
- List of activities (such as routine repair, maintenance, and replacement in kind at the project) not requiring consultation with the Washington SHPO, because these activities would have little or no potential to affect historic properties;
- Procedures to address effects during project emergencies; and
- Coordination with the Washington SHPO, Snoqualmie and Tulalip Tribes, and any other identified parties during implementation of the HPMP.

## **5 EXISTING INFORMATION**

In accordance with 18 CFR §5.11(d)(3), this section describes existing information on cultural resources in the Project area, and the need for additional information.

No known archaeological or historic sites, or historic properties eligible for listing on the National Register of Historic Places are known to exist in the Project area. Additionally, there are no known Washington Information System for Architectural and Archaeological Records Data (“WISAARD”) sites in the project’s vicinity.

The North Fork is also in the traditional territory of the Snoqualmie Tribe. The Snoqualmie Tribe has lived in the Snoqualmie River Valley from at least 1844 to present, although no village sites have been recorded on the North Fork or its tributaries. It is likely that the Snoqualmie Tribe used the North Fork basin and surrounding area seasonally, especially during the summer and early Fall. Hunting and gathering parties could have hunted upland game and foraged for berries and other plant foods. It is possible that there are remains of a pre-contact or even post contact summer camp or food-processing site near the proposed project area. The Snoqualmie Tribe was a signatory of the 1855 Treaty of Point Elliott, but was only recently re-recognized and granted tribal status from the Bureau of Indian Affairs. Following recognition of the 650-member strong Snoqualmie Tribe, the Tribe acquired its initial reservation land and developed a casino to help fund the costs of tribal governance, administration and service to its members. The Snoqualmie Tribe has located its government in the town of Snoqualmie.

Immediately following the 1855 Treaty of Point Elliott, the Tulalip Tribes were the successors in interest to the Snohomish, Snoqualmie and other signatory bands. The Tulalip Tribes are located on the Tulalip Reservation in the mid-Puget Sound area which encompasses a land-base of approximately 22,000 acres for 4,000 members (2,500 of whom reside on the Tulalip Indian Reservation).

Additional information needs for cultural resources include the following:

- Previous Archaeological, Historic Resources, and Ethnographic Studies
- Literature review to determine “Cultural and Historical Context” (Prehistory, Ethnohistory, and Historic Land Use) and develop an appropriate APE
- Archaeological surveys to accurately determine if cultural resources are present in the project area.

## **6 NEXUS TO PROJECT**

In accordance with 18 CFR §5.11(d)(4), this section describes any nexus between Project operations and effects on cultural resources.

Section 106 of the National Historic Preservation Act requires that federal agencies, licensees, and those receiving federal assistance take into account the effect of proposed undertakings on any district, site, building, structure, or object that is included in or eligible for the National Register. Construction, operation, and maintenance of the diversion, intake, powerhouse, penstock sections, transmission line, access roads, and any potential staging areas could adversely affect historic properties through ground-disturbing activities and cause other indirect adverse effects associated with noise, vibration, and other interferences on historic properties of religious and cultural significance to the Snoqualmie and Tulalip Tribes.

## **7 METHODS**

In accordance with 18 CFR §5.11(d)(1) and §5.11(d)(5), this section provides a detailed description of the proposed study methodology, including data collection and analysis techniques, or objectively quantified information, sampling strategy, and a schedule including data collection and analysis techniques, or objectively quantified information, sampling strategy, and a schedule including appropriate field season(s) and the duration (see “Schedule” heading below for schedule).

### **7.1 Identify the Project Site’s APE**

An analysis of the broadest practical areal extent of project influence and potential disturbance for study.



### 7.1.1 Record Search and Literature Review

A record search and literature review will be conducted to identify previously documented archaeological and historic resources within and near the project area and to help establish a context for resource significance. The cultural resources considered in the study area may be categorized into three major types: archaeological, ethnographic, and historic. Each category is described below.

- **Archaeological Resources.** These resources represent important evidence of past human behavior, including portable artifacts, such as arrowheads or tin cans; non-portable features, such as cooking hearths, foundations, and privies; or residues, such as food remains and charcoal. Archaeological resources are all sites, objects, structures, artifacts, implements, and locations of prehistoric or archaeological interest, whether previously recorded or still unrecognized, including, but not limited to, those pertaining to prehistoric and historic American Indian or aboriginal burials, campsites, dwellings, and habitation sites, including rock shelters and caves; and their artifacts and implements of culture, such as projectile points, arrowheads, skeletal remains, grave goods, basketry, pestles, mauls and grinding stones, knives, scrapers, rock carvings, and paintings. Other implements and artifacts of any material that are located in, on, or under the surface of any lands or waters owned by or under the possession, custody, or control of the State of Washington or any county, city, or political subdivision of the state are also considered to be archaeological resources.
- **Ethnographic Resources.** These resources consist of sites, areas, and materials important to Native Americans for religious, spiritual, or traditional uses. These resources, also known as Traditional Cultural Properties, can encompass the sacred character of physical locations (e.g., mountain peaks, springs, and burial sites) or particular native plants, animals, or minerals that are gathered for use in traditional ritual activities. Also included are traditional hunting, gathering, and fishing sites. In some cases, resources defined as TCPs may be physical manifestations, such as prehistoric or historic archaeological sites. These might include villages, burials, rock art, and rock features.
- **Historic Resources.** Historic resources are elements of the historic built environment that are more than 50 years old. They can include houses, barns, stores, post offices, bridges, monuments, railroads, trees, roads, trails, levees, and community structures.

Previously documented prehistoric and historic resources within the project area will be identified using the Washington Department of Archaeological and

Historic Preservation's (DAHP) Washington Information System for Architectural and Archaeological Records Data (WISAARD) system. National, state, and local inventories of architectural and historic resources will also be examined to develop a cultural context to identify significant local historical events and people, development patterns, and unique interpretations of architectural styles. The following inventories and sources will be consulted:

- The National Register of Historic Places, National Register Information System (NRIS);
- WISAARD;
- Historic maps, including General Land Office (GLO) Plats, US Geological Survey (USGS) Land Classification Sheets, and Sanborn Insurance Maps; and
- Local historic inventories.

### **7.1.2 Project Area Analysis**

To determine the probability that the project area contains cultural resources, information on slope, the distance to water sources, terrace and ridgeline locations, and environmental diversity will be garnered from sources such as topographic maps, aerial photographs, and LiDAR mapping. Information gathered during the record search and literature review will be synthesized with these landscape features to determine high, medium, and low probability areas for locating archaeological resources. Field survey methods will be based on this data.

## **7.2 Conduct a Field Inventory Within the APE to Locate Any Historic or Archaeological Resources**

The archaeological assessment for this project will involve two levels of investigation: pedestrian survey and subsurface testing.

### **7.2.1 Pedestrian Survey**

The pedestrian survey will consist of traversing linear transects and carefully inspecting areas of soil exposure for artifacts. Parallel linear transects will be spaced 10 meters (33 feet) apart in areas of high probability, 20 meters (66 feet) apart in areas of medium probability, and 30 meters (98 feet) apart in areas of low probability. Any archaeological materials will be flagged for documentation.

### **7.2.2 Shovel Test Probes**

Subsurface archaeological survey will be completed by excavating shovel test probes (STPs) in all project areas where the surface slope is less than 20 percent. STPs will measure approximately 30 to 40 centimeters (12 to 16 inches) in diameter at the surface and will be excavated to a depth not to exceed 100 centimeters (39 inches). STPs will be excavated on transects at 15-meter (49-foot) intervals in areas of high probability and at 30-meter (98-foot) intervals in areas of low probability.

All excavated sediments will be screened through 1/4-inch mesh and documented on shovel testing forms. Any finds will be recorded by depth and stratigraphic context. If archaeological materials are found in an STP, additional test units will be placed around the initial find to determine the extent of the resource and to delineate site boundaries. All STPs will be backfilled upon completion.

### **7.2.3 Data Analysis**

Any archaeological materials found during pedestrian survey and/or STP excavation will be documented by depth, photographed, described, and left on site. Any temporally or functionally diagnostic artifacts found will be mapped using global positioning system (GPS), photographed, illustrated, and left on site. There will be no collection of artifacts during the fieldwork portion of this project, unless circumstances of the find require collection and further analysis. This will be decided at the discretion of the Principal-in-Charge in coordination with the Black Canyon Hydroelectric Project Manager and Tribal representatives.

Any archaeological site or isolate discovered during the project will be documented on DAHP Archaeological Site/Isolated Find record forms.

## **7.3 Conduct an Ethnographic Inventory in Cooperation with the Snoqualmie and Tulalip Tribes to Locate Any Property of Cultural or Religious Significance Within the APE**

The identification of TCPs within the project area will require consultation with the Tulalip and Snoqualmie Tribes. Prior to any fieldwork efforts, a letter will be sent to the tribes detailing the project APE and inviting them to voice any cultural concerns about the project. In addition, representatives from the Tulalip and Snoqualmie Tribes will be asked to provide any available information about archaeological or traditional cultural properties that may be affected by the Project. Consultation and discussion among all parties will be encouraged throughout the Section 106 process.

#### **7.4 Assess the National Register Eligibility of Sites Within the APE, Including Considering Whether They May Contribute to a Larger District**

Any historic buildings and structures (older than 50 years) within or adjacent to the APE will be evaluated for direct or indirect impacts from the proposed Project. The properties will be photographed and their physical features documented on standard historic building inventory forms. Data collected from each historic building will be entered into the Washington State Historic Property Inventory Form (HPIF) database. Documentation will include photographic documentation of at least one elevation, a physical description, and a concise Statement of Significance.

Any cultural resources identified within the project area will be evaluated in terms of eligibility for listing in the National Register. Within the State of Washington, the National Register program is administered by the DAHP under the direction of the SHPO. Assessment of National Register significance entails evaluating historic structures, sites, buildings, and districts that are more than 50 years old under the criteria listed in 36 CFR 60.34.

#### **7.5 Evaluate the Potential Effects on paleontological resources and Historic Properties from Construction or Proposed Operation of the Project or from Project-Related Activities**

Following determination of eligibility for the resources, cultural resources specialists will analyze potential Project effects and will develop measures for adverse effects in the HPMP, as described below. The effects analysis will consider such impacts as possible changes to the Project's facilities and wildlife habitat management lands over the license period, natural effects such as erosion, and human effects such as inadvertent recreation damage, unauthorized artifact collection, and vandalism.

#### **7.6 Prepare a Draft Historic Properties Management Plan (HPMP) to Be Filed with the Preliminary Licensing Proposal and a Final HPMP to Be Filed with the License Application, if Historic Properties Are Identified and Would Be Adversely Affected by Construction or Proposed Operation of the Project or from Project-Related Activities**

Management measures proposed in the HPMP may include some combination of avoiding impacts, protecting resources, monitoring their condition, and conducting mitigation as needed. The measures will provide for appointing and training a licensee Cultural Resources Coordinator, providing for Tribal and agency consultation, conducting periodic monitoring of historic properties, inventorying and evaluating the

APE’s additional buildings and structures when they attain 50 years of age, conducting inventory and evaluation of resources for future changes to the Project, and a decision-making process for future effects on historic properties. The measures will include an Inadvertent Discovery Plan for archaeological and human remains.

In general, the development and contents of the HPMP will take into consideration FERC’s Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects (FERC 2002). Among other things, the HPMP will summarize the cultural history of the area and provide information on the inventory and evaluation of the resources. It will discuss Project impacts on historic properties and provide measures for managing them, including a schedule for implementation of the measures.

## **8 PROGRESS REPORTING**

In accordance with 18 CFR §5.11(b)(3), this section describes provisions for periodic progress reports, including the manner and extent to which information will be shared; and the time allotted for technical review of the analysis and results.

Study reports will be submitted as required by the FERC Integrated Licensing Process (ILP). The most recent schedule, issued by FERC in Appendix B of Scoping Document 1, includes a number of opportunities for progress reports, exchange of analysis and results between stakeholders, and information sharing. After proposed study plans are filed with FERC there will be a study plan meeting and comment period before a revised study plan is filled and a comment period passes. Once studies begin, the ILP also has deadlines for an Initial Study Report to be submitted, an Initial Study Report Meeting, and an Initial Study Report Meeting Summary. However, this schedule is subject to change by FERC staff and should not necessarily be relied upon. It is BCH’s understanding that any changes to the ILP plan and schedule will be noticed by FERC staff.

## **9 SCHEDULE**

In accordance with 18 CFR §5.11(b)(2), the schedule for conducting the study is provided in Table 1 below.

**Table 1. Resource Study Schedule**

<b>Component</b>	<b>Completion Date*</b>
Proposed Study Plan Meeting	October 8, 2012

Proposed Study Plan Comments Due	December 6, 2012
File Revised Study Plan	January 7, 2013
Revised Study Plan Comments Due	January 22, 2013
Agency/Tribal Coordination, Background Review	2013
Ethnographic Survey	2013
Pedestrian Survey	2013
Draft Report	2013
Initial Study Report Meeting	February 21, 2014
Initial Study Report Meeting Summary	March 10, 2014

\*Dates based on schedule created and presented by FERC in Scoping Document 1 and subject to change.

## 10 LEVEL OF EFFORT AND COST

In accordance with 18 CFR §5.11(d)(6), the anticipated level of effort and cost are provided in Table 2 below.

The estimated cost of this work is approximately \$42,500.

**Table 2. Level of Effort and Cost**

<b>Task</b>	<b>Labor and Expenses</b>
Agency/Tribal Coordination, Background Review	\$1,000
Ethnographic Survey	\$11,250
Pedestrian Survey	\$26,250
Draft Report	\$4,000
Total	\$42,500

## 11 REFERENCES

FERC (Federal Energy Regulatory Commission). 2002. Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects.

<http://www.ferc.gov/industries/hydropower/gen-info/guidelines/hpmp.pdf> Accessed August 9, 2012.

Federal Energy Regulatory Commission, 2012. Letter to Chris Spens with request for studies, additional information, and study requests in response to the Notice of Intent to File, Pre-Application Document (PAD) and Scoping Document. July 24, 2012. Federal Energy Regulatory Commission. Washington, D.C.

Snoqualmie Tribe, 2012. Letter to FERC “Review of Pre-Application Document (PAD), Scoping Document 1 (SD1), and Identification of Issues and Associated Study Requests for the Black Canyon Hydroelectric Project, FERC Project No. 14110.” July 24, 2012.

## 12 APPENDIX A: Cultural Resources Study Area

