AMERICAN WHITEWATER

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Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Re: Comments on the Preliminary Application Document (PAD), Scoping Document 1 (SD1), and Study Requests for the Black Canyon Hydroelectric Project (FERC P-14110)

Dear Secretary Bose:

Enclosed for filing in the above referenced proceedings is Alpine Lakes Protection Society, American Rivers, American Whitewater, North Cascades Conservation Council, The Mountaineers, and Washington Wild's COMMENTS AND STUDY REQUESTS, submitted in response to the Commission's May 25th, 2012 Notice Soliciting Comments on the Pre-Application Document (PAD) and Scoping Document 1 (SD1) for the Black Canyon Hydroelectric Project.

Copies of this filing have been served on all parties of record to these proceedings. Thank you for your assistance. Please call me at (425) 417-9012 if you have any questions or need additional information.

Sincerely,

Thomas O'Keefe, PhD
Pacific Northwest Stewardship Director

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Black Canyon Hydro LLC	)	Project No. 14110-000
	)	Black Canyon
	)	Hydroelectric Project
	)	
	)	Comments of Conservation
	)	Groups

ALPINE LAKES PROTECTION SOCIETY, AMERICAN RIVERS, AMERICAN WHITEWATER, NORTH CASCADES CONSERVATION COUNCIL, THE MOUNTAINEERS, AND WASHINGTON WILD COMMENTS AND STUDY REQUESTS ON THE PRELIMINARY PERMIT APPLICATION AND SCOPING DOCUMENT 1 FOR THE BLACK CANYON HYDROELECTRIC PROJECT, FERC PROJECT NUMBER 14110-000

(Submitted July 24, 2012)

I. Introduction

Alpine Lakes Protection Society, American Rivers, American Whitewater, North Cascades Conservation Council, The Mountaineers, and Washington Wild (hereafter Conservation Groups) offer the following comments and study requests in response to the Federal Energy Regulatory Commission's Notice Soliciting Comments on the Pre-Application Document (PAD) and Scoping Document 1 (SD1), as well as study requests for the Black Canyon Hydroelectric Project, dated May 25th, 2012. Conservation Groups have reviewed the PAD and SD1 and also participated in and provided initial comments at the scoping meeting held on June 19th in North Bend, Washington.

The Black Canyon Project would be located on private lands and would consist of the following new facilities: (1) a 7-foot-high, 156-foot-long dam with a fish ladder and an intake structure equipped with coanda screens; (2) a 4.2-acre impoundment with a normal water surface elevation of 958 feet above mean sea level; (3) an 8,175-foot-long buried penstock that includes a 6,990-foot-long, 14-foot-diameter section that connects the intake structure to a 1,185-foot-long, 17-foot-diameter section that connects to; (4) a 60-foot-long, 100-foot-wide powerhouse containing two Francis turbine generating units, one 16.5-MW unit and one 8.5-MW unit, for a total installed capacity of 25 MW; (5) a 150-foot-long, 40-foot-wide tailrace; (6) a 4.2-mile-long, 115-kilovolt overhead transmission line that transmits project power to the regional grid; (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 (figure 2). The project would have an estimated average annual generation of 104,720 megawatt-hours.

Interest of Conservation Groups.

The Conservation Groups are national or regional environmental and recreational non-profit organizations with an interest in protecting and restoring rivers and streams and other natural resources located in the Pacific Northwest. Each organization has a direct interest in changes to flows, public river access, flow information, habitat, land management, watershed protection and other topics that will arise in the consideration of a hydropower project on the Black Canyon section (also referred to as "Ernie's Gorge") of the North Fork Snoqualmie River near North Bend, King County, Washington.

Alpine Lakes Protection Society (ALPS) works to protect lands, waters and forests, and to encourage environmentally sustainable recreational development in the Alpine Lakes region, a dramatic area of peaks, forests and over 600 lakes in the central Cascade mountains directly east of Puget Sound.

American Rivers is a national, non-profit, 501(c)(3) conservation organization with northwest regional offices in Seattle, Washington and Portland, Oregon. American Rivers serves more than 35,000 members nationwide and 2,250 members in the region. American Rivers is dedicated to protecting and restoring America's river systems and to fostering a river stewardship ethic. Additionally, American Rivers promotes public awareness about the importance of healthy rivers and the threats that face them. American Rivers' programs address flood control and hydropower policy reform, endangered aquatic and riparian species protection, instream flow, clean water, and urban rivers.

American Whitewater is a national non-profit 501(c)(3) river conservation organization founded in 1954 with over 5,500 members and 100 local-based affiliate clubs, representing whitewater paddlers across the nation. American Whitewater's mission is to conserve and restore America's whitewater resources and to enhance opportunities to enjoy them safely. As a conservation-oriented paddling organization, American Whitewater has a significant percentage of members residing in Washington State and thus an interest in Ernie's Gorge and the North Fork Snoqualmie areas potentially affected by this project.

North Cascades Conservation Council (NCCC) is a 501(c)(3) not-for-profit organization formed to protect and preserve the North Cascades' scenic, scientific, recreational, educational, and wilderness values. NCCC has a 50 year history of aggressively promoting National Parks and Wilderness, protecting old growth forests and pristine watersheds, conserving endangered wildlife, preventing off-road vehicle damage to public lands, and guiding Park and Wilderness management.

The Mountaineers was formed in 1906 to explore the wild areas and peaks surrounding the City of Seattle. The Mountaineers works to ensure that wilderness areas are preserved and protected through the actions of their Conservation, Recreation Resources and Stewardship divisions, and with a mission to enrich the community by helping people explore, conserve, learn about and enjoy the lands and waters of the Pacific Northwest.

Washington Wild is a nonprofit 501(c)(3) conservation organization founded in 1979 with more than 10,000 members and supporters statewide. Its mission is to preserve and restore wild lands and waters in Washington State through citizen empowerment, support for grassroots community groups, advocacy and public education.

II. Comments

Conservation Groups are opposed to the Project due to the impacts that would result from damming and dewatering one of the region's most treasured free-flowing rivers. The Conservation Groups recognize that hydropower is an important source of energy and have supported projects to improve generation efficiency and new generation at sites that are appropriate for development.[1] This project will not improve efficiency and is not an appropriate site for new development. Rather, this proposed dam would bring new and unacceptable impacts to a river of high value to the region and state, while providing unneeded and only intermittent energy generation. [2] As stated by the Northwest Power and Conservation Council, the "[h]igh value of some streams cannot be compensated by mitigation, outweighing any potential hydropower benefits."[3]

The key to recognizing the promise of increased hydropower generation is choosing the right sites. The North Fork Snoqualmie River is simply an inappropriate river to consider for new hydropower generation. The proposed Project is contrary to local, state and federal laws, policies, and comprehensive plans. The proposed Project site is on a reach of the river that has been recommended to Congress by the USDA Forest Service as a Wild and Scenic River, is within the Washington State Department of Natural Resources Mt. Si Natural Resources Conservation Area, and is identified as a Protected Area from hydropower development by the Northwest Power and Conservation Council. The Project is also inconsistent with the King County Code, King County Comprehensive Plan, King County Shoreline Master Plan, and a

[1] The Hydropower Reform Coalition, of which many Conservation Groups are members, has spent the past two decades working with dam owners to improve the environmental performance of working dams. Over this time, the Coalition has supported more than 16,000 MW of hydropower at dams where owners have modernized their operations to benefit fisheries, watershed lands, water quality, and recreation.

[2] The North American Electric Reliability Council's (NERC) 2010 annual forecast for electrical supply and demand nationally and regionally for a 10-year period shows that winter peak demands and annual energy requirements for the Northwest sub region are projected to grow at rates of 1.1 percent and 1.2 percent, respectively, from 2010 through 2019 (NERC, 2010). This slow growth in energy requirements is offset by the Northwest Power and Conservation Council's (NWPCC) 2010 Sixth Power Plan that identifies energy efficiency as the least cost resource and envisions that almost 60 percent of the Pacific Northwest's new demand for electricity over the next five years and 85 percent of load growth over the next 20 years could be met cost effectively with energy efficiency. The plan also predicts that this efficiency will reduce the risk of future electricity shortages, reduce emissions from power plants to help meet regional carbon reduction goals and policies, and cost consumers less than relying solely on new power plants (Emphasis added).

[3] Memorandum ("Discussion of Protected Areas History and Update on Current Work") from Philip Thoennes, Peter Paquet, Manager, and John Shurts, General Counsel, Northwest Power and Conservation Council, to Council Members. 5 (Apr. 26, 2012). Available at http://www.nwcouncil.org/news/2012/05/4.pdf, last visited July 24, 2012.

conservation easement purchased by King County with the specific goal "to prevent any use of the forestland that will significantly impair or interfere with its conservation value."[4]

A. Inconsistency With Local, State, and Federal Comprehensive Plans

Section 10(a)(2)(A) of the Federal Power Act (FPA) specifically requires the Commission to consider "the extent to which [a] project is consistent with a comprehensive plan (where one exists) for improving, developing, or conserving a waterway or waterways affected by the project that is prepared by an agency established pursuant to Federal law that has the authority to prepare such a plan; or the State in which the facility is or will be located."[5] The project proposed in Black Canyon Hydro's Pre Application Document would be plainly inconsistent with a number of relevant comprehensive plans that have previously been filed with the Commission, and are described in further detail below.[6] These plans constitute substantial legal and policy barriers that will make this project extremely difficult if not impossible to license.

The Commission has long recognized the importance of regional and coordinated planning, and has declined to issue licenses in cases where the negative impacts of a proposed project would run counter to these regional plans.[7] Wild and Scenic suitability, inclusion in the National Rivers Inventory, Protected Area status, State Natural Resource Conservation Area designation, and County conservation measures and policies recognizing the river's natural resource value each constitute relevant in-place plans and strategies to enhance and protect the aquatic, aesthetic, habitat, recreational and conservation resources of the North Fork Snoqualmie River. In addition, the North Fork Snoqualmie, and Ernie's Gorge in particular, has been recognized for its free-flowing nature and for providing outstanding, unique, and regionally significant whitewater opportunities close to the City of Seattle.

1. Wild and Scenic River Status

In 1990, the USDA Forest Service, as a part of its land management planning, evaluated all rivers and streams originating on National Forest Lands within the Mt. Baker-Snoqualmie

[4] Transfer of Development Rights Deed of Conservation Easement, Section 5(g), December 14, 2004, recorded on the same date as King County Official Public Record 20041214002392.

[5] 16 U.S.C. § 803 (a)(2)(A); See also COMPREHENSIVE PLANS IN THE FEDERAL ENERGY REGULATORY COMMISSION'S LICENSING PROCESS http://www.ferc.gov/industries/hydropower/gen-info/licensing/complan.pdf, last visited July 24, 2012.

[6] Such plans include, but are not necessarily limited to: Mt. Baker/Snoqualmie National Forest Land and Resources Management Plan (June 1990); National Park Service Nationwide Rivers Inventory (June 1982); NWPPC Protected Areas Amendment (Sept. 14, 1988); and NWPPC Sixth Northwest Conservation and Electric Power Plan (February 2010).

[7] *See City of Idaho Falls* 80 FERC 61,342, *Order Denying License*, (1997) (Shelly Project No. 5090-005; Accession No. 19970925-3154); *Intermountain Power Corp* 58 FERC 62,227, *Order Denying License Application* (1992) (Oxbow Bend Hydroelectric Project No. 6329-001, Accession No. 19920324-0183); and *City of Redding*, 55 FERC 62,012 *Order Denying License Application* (1991) (Lake Redding Hydroelectric Project No. 2828-001, Accession No. 19910405-0338).

National Forest to determine their eligibility and suitability for designation under the federal Wild and Scenic Rivers Act. The proposed Black Canyon Hydroelectric Project would be located on a section of the North Fork Snoqualmie River that was found to be suitable and was recommended by the Forest Service for designation; specifically, from Wagner Bridge at River Mile 12.1 (T25N, R09E, S20 NE/NE) to the confluence with the Middle Fork Snoqualmie.[8] The Forest Service recommended this section of the North Fork Snoqualmie even though it lies outside of the forest boundary. While the Forest Service has no direct authority to manage rivers off the National Forest prior to designation, the Forest Service recognized the unique and valuable character of this segment of the North Fork Snoqualmie River by assigning Outstandingly Remarkable Values, including recreation and fisheries.

2. Nationwide Rivers Inventory

The North Fork Snoqualmie also is listed in the 1993 update of the Nationwide Rivers Inventory (NRI), which includes the 12-mile reach from Wagner Bridge to the confluence of the Middle Fork Snoqualmie.[9] The NRI is a comprehensive plan as defined under section 10(a)(2)(A) of the Federal Power Act. The website for the NRI explains:

> "The Nationwide Rivers Inventory (NRI) is a listing of more than 3,400 free-flowing river segments in the United States that are believed to possess one or more 'outstandingly remarkable' natural or cultural values judged to be of more than local or regional significance. Under a 1979 Presidential directive,[10] and related Council on Environmental Quality procedures,[11] all federal agencies must seek to avoid or mitigate actions that would adversely affect one or more NRI segments."[12]

To be listed on the NRI, a river must be free-flowing and contain at least one outstandingly remarkable value (ORV) or a river related resource that is unique, rare, or exemplary on a regional or national scale. The North Fork Snoqualmie has two such exemplary river related resources that include resident cutthroat trout and high quality advanced kayaking opportunities. These values are specifically identified for the 12-mile segment from Wagner Bridge to the confluence with Middle Fork Snoqualmie River, which includes the reach that

[8] United States. Forest Service. Land Resource Management Plan. Mt. Baker-Snoqualmie National Forest. June 1990. Wild and Scenic Rivers, Appendix E, pp. E-218 to E-223.

[9] Nationwide Rivers Inventory. National Park Service http://www.nps.gov/ncrc/programs/rtca/nri/states/wa2.html last visited July 24, 2012.

[10] MEMORANDUM FOR THE HEADS OF DEPARTMENTS AND AGENCIES. Presidential Directive of President Jimmy Carter. August 2, 1979. http://www.nps.gov/ncrc/programs/rtca/nri/hist.html#pd The Directive orders that: "Each federal agency shall, as part of its normal planning and environmental review process, take care to avoid or mitigate adverse effects on rivers identified in the Nationwide Inventory... Each Federal agency with responsibility for administering public lands shall...to the extent of the agency's authority, promptly take such steps as are needed to protect and manage the river and the surrounding area in a fashion comparable to rivers already included in the Wild and Scenic Rivers System."

[11] Procedures for Interagency Consultation to Avoid or Mitigate Adverse Effects on Rivers in the Nationwide Inventory. Council on Environmental Quality. http://www.nps.gov/ncrc/programs/rtca/nri/hist.html#ceq

[12] http://www.nps.gov/ncrc/programs/rtca/nri/, last visited July 22, 2012.

would be impacted by the Project.

3. Northwest Power and Conservation Council Protected Area

The proposed Project is located on a segment of the North Fork Snoqualmie River that is identified as a "Protected Area" for resident fish and wildlife by the Northwest Power and Conservation Council ("the Council").[13] The Council "develops and maintains a regional power plan and a fish and wildlife program to balance the Northwest's environment and energy needs."[14] The Fish and Wildlife Program is in place to "protect and rebuild fish and wildlife populations affected by hydropower development in the Columbia River Basin."[15] In order to meet this goal:

> "[t]he Council has adopted a set of standards for the Federal Energy Regulatory Commission, Bonneville and other federal agencies in the Columbia River Basin. As part of this effort, the Council designated certain river reaches in the basin as 'protected areas.' The Council found that new hydroelectric development in a designated protected area would have unacceptable risks of loss to fish and wildlife species of concern, their productive capacity, or their habitat."[16]

While the Commission is not prohibited outright from licensing a project in a Protected Area,

> "[t]he Council expects the Federal Energy Regulatory Commission, in the exercise of its licensing authority under the Federal Power Act, to take the Council's protected areas decision into account to the fullest extent practicable. *The Commission should implement the Council's decision in the Commission's licensing and exemption proceedings unless the Commission's legal responsibilities require otherwise.*"[17]

In the years since the Council first designated Protected Areas in 1988, the Commission has not approved a new license within a Protected Area. For example, in the case of the proposed Shelly Hydroelectric Project on the Snake River in Idaho in 1997, the Commission denied a license application by the City of Idaho Falls, stating that Protected Areas "represent an attempt by the region to prevent the continued degradation of the remaining

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[13] See Protected Areas Mapper, available at: http://map.streamnet.org/website/protectedquery/viewer.htm, last visited July 21, 2012. Protected Areas were established as part of the Northwest Power Plan to meet the stipulations of Section 4(e)(2) of the Northwest Power Act; that is, to develop a Plan that considers the "protection, mitigation, and enhancement of fish and wildlife and related spawning grounds and habitat" during its development and implementation. Northwest Power Act § 4(e)(2)(C).

[14] http://www.nwcouncil.org/about/; last visited July 20, 2012.

[15] *Id.*

[16] Northwest Power and Conservation Council Columbia River Basin Fish and Wildlife Program 2009 Amendments. October 2009. Council Document 2009-09, Section II(D)(1)(e), pages 15-16. Available at: http://www.nwcouncil.org/fw/protectedareas/Default.htm (last visited July 24, 2012).

[17] Section II(D)(1)(e); Northwest Power and Conservation Council Columbia River Basin Fish and Wildlife Program 2009 Amendments. October 2009. Council Document 2009-09 at page 15-16. Available at: http://www.nwcouncil.org/fw/protectedareas/Default.htm (last visited July 24, 2012).

high quality fish and wildlife habitat, and the region's unwillingness to risk further fish and wildlife losses…[The Shelly Project] would… have unavoidable, long-term adverse impacts on fish and wildlife resources, which the Council has determined to be important to the region."[18]

In the Pre Application document and during the Scoping meeting, the applicant made the statement that "the plan includes processes to except or amend a Protected Area designation."[19] While a formal exception process was in place in 1987 and 1994,[20] it is no longer contained in the Fish and Wildlife Program.[21] However, even if the exception process were still in existence, the proposed Project would fail to meet the rigorous standard. The exception process in the previous plans required that parties filing for a petition for an exception to a Protected Area designation must show that the proposed project will achieve "exceptional fish and wildlife benefits" and consult with relevant fish and wildlife agencies and Indian tribes.[22] The Council itself noted "that the standard for exemption based on exceptional benefits is very demanding."[23] When the program was implemented in 1988, the Council "[did] not anticipate making exceptions to the protected areas designations routinely, and that it "intend[ed] to make exceptions from protected areas only in those infrequent cases where there is general agreement that a project promises real fish and wildlife benefits, and will contribute to the recovery of the region's fish and wildlife populations."[24]

4. Mt. Si Natural Resources Conservation Area

The reach of the North Fork Snoqualmie River proposed for the Black Canyon Project includes a segment that flows through the Washington State Department of Natural Resources Mt. Si Natural Resources Conservation Area (NRCA), an area of important conservation value. The state legislature has recognized "the importance of guarding portions of this area from those types of development which would permanently alter the area's natural form and beauty."[25] The resource values of this area are described as follows in the Mt. Si. NRCA Public Use Plan:

> "The Mount Si Natural Resources Conservation Area (NRCA) was one of the first to be

[18] *City of Idaho Falls* 80 FERC 61,342, *Order Denying License*, (1997) (Shelly Project No. 5090-005; Accession No. 19970925-3154).
[19] Black Canyon Hydroelectric Project (FERC No. 14110), Pre Application Document. Page 82. Applicant cites to the Northwest Power and Conservation Council's Protected Areas Amendments and Response to Comments, published September 14, 1988. Council Document 88-22, http://www.nwcouncil.org/fw/protectedareas/Default.htm, last visited July 21, 2012.
[20] See §1300 of the 1987 and 1994 Fish and Wildlife Programs.
[21] See generally Northwest Power and Conservation Council Columbia River Basin Fish and Wildlife Program 2009 Amendments. October 2009. Council Document 2009-09.
[22] Northwest Power and Conservation Council's Protected Areas Amendments and Response to Comments, published September 14, 1988. Council Document 88-22, §1300(g).
[23] Northwest Power and Conservation Council's Response to Comments, 1992 Protected Areas Rulemaking, published August 13, 1992. Council Document 92-26.
[24] *Id.* at Summary of Comments § H(5).
[25] RCW 79A.05.725

established in 1987. It was designated to protect numerous natural resources including outstanding geologic features, examples of old growth forest, wildflower communities, and habitat for mountain goat and other species of wildlife. The towering site is a scenic landmark and popular recreation area, offering views of the Olympic Mountains, Snoqualmie Valley, and the Cascade Mountains. The NRCA encompassed 4,670 acres when it was designated in 1987, and has since been expanded to 13,363 acres."[26]

Land within the river corridor was acquired with funding assistance from the Land and Water Conservation Fund (LWCF) stateside program, which is administered by the Washington Recreation and Conservation Office (RCO). Therefore, these lands are protected under section 6(f)3 of the LWCF Act, which includes strong provisions and an anti conversion requirement to protect the federal investment.[27] The Mount Si NRCA Public Use Plan states that, "The significant features to be found on Mount Si make this NCRA an excellent example of Washington's natural heritage, especially since it's so close to the state's largest urban center."[28] These natural heritage values are the defining quality of the experience enjoyed by those who recreate in this river corridor, and hydropower development would run counter to these goals and the purposes for which lands were acquired with LWCF funding.

5 . King County Conservation Measures for the North Fork Snoqualmie

Black Canyon Hydro LLC is proposing to build the Black Canyon Hydroelectric Project in King County, even though it is inconsistent with several provisions of the King County Code and the King County Comprehensive Plan. The river has been specifically identified for its conservation values and King County holds a conservation easement on lands within the watershed including parcels specifically identified as necessary for development.

a. King County Code – Shoreline Master Plan

Under the King County Code, shorelines are defined as "all marine water, lakes greater than twenty acres and rivers and streams with a minimum of twenty cubic feet per second mean annual flow."[29] An "instream structure" is defined as "anything placed or constructed below the ordinary high water mark, including, but not limited to, weirs, culverts, fill and natural materials and excluding dikes, levees, revetments and other bank stabilization facilities."[30] The code also prohibits hydroelectric generation as an instream structural use in areas with either "Natural" or "Conservancy" shoreline designations.[31] Under the updated Shoreline Master Plan, adopted by King County Council on November 16, 2010, yet pending final approval by the Washington

[26] http://www.dnr.wa.gov/AboutDNR/ManagedLands/Pages/amp_na_si.aspx, last visited July 22, 2012.
[27] 16 U.S.C. § 460l-4 *et. seq.*
[28] See Introductory Cover Letter, Washington State Department of Natural Resources. Mount Si NRCA Public Use Plan. June 1997. Available at:
http://www.dnr.wa.gov/Publications/amp_na_mt_si_public_use_plan_1997_final.pdf
[29] K.C.C. 21A.06.1083.
[30] K.C.C. 21A.06.638.
[31] K.C.C. 21A.25.100.

Department of Ecology, the powerhouse for the proposed project is located on lands designated as "Natural Shoreline."[32] In the pre 2010 version of the Shoreline Master Plan, the powerhouse for the proposed project is designated as "Conservancy Shoreline."[33] While the two plans set different classifications for the shoreline land involved with the project, both prohibit hydroelectric generation.

b. King County Code - Regional Land Uses

The Black Canyon Hydroelectric Project is proposed to be built on lands that King County has zoned as "Forestry"[34] and "Rural."[35] Both zoning classifications identify hydroelectric generation as a conditional use and set forth several conditions that must be met before hydropower development can proceed.[36] The proposed project fails to meet one of the conditions, and is likely economically unfeasible under another. Under one condition, per section 100(B)(14)(a)(2), diversion structures are prohibited from impounding more than three surface acres of water at the normal maximum surface level. The proposed project would impound 4.2 acres, and fails to meet this condition. An additional condition requires developers to prove, in particular, that if a new diversion structure is built, "an exceedance flow of no greater than fifty percent in mainstream reach shall be maintained."[37] This means that the project will only be allowed to divert the flow of the river that is above the median flow level, based on historic flow records, calculated at 50%.[38] It is unlikely that the project will still be economically feasible under this flow condition.

If the project fails to meet the conditions outlined in section 100(B)(14), project proponents still have the opportunity to apply for a special use permit. Under the procedures outlined in KCC 21A.42, a special use permit will only be issued if the applicant demonstrates compliance with a number of conditions outlined in 21A.44.050. In addition, special use permits are subject to approval by the King County Council.[39]

[32] Shoreline Master Plan, Appendix A, Map: Shorelines Designations – Northeast King County, available at: http://your.kingcounty.gov/shorelines/pdf/1011-adopted-plan/shoreline-designations-map-ne.pdf; last viewed July 5, 2012.
[33] King County iMap, available at: http://www.kingcounty.gov/operations/GIS/Maps/iMAP.aspx; last visited July 5, 2012.
[34] http://www.kingcounty.gov/operations/GIS/Maps/iMAP.aspx; last visited on July 5, 2012.
[35] King County Districts and Development Conditions for Parcels 1924099001 and 1824099001; available at: http://www5.kingcounty.gov/kcgisreports/dd_report.aspx?PIN=1924099001 and http://www5.kingcounty.gov/kcgisreports/dd_report.aspx?PIN=1824099001; last visited July 5, 2012.
[36] K.C.C. 21A.08.100.
[37] *Id.* at § (B)(14)(d).
[38] Informed by the Idaho Water Resources Board's explanation of "exceedance flow", available at: http://www.idwr.idaho.gov/waterboard/WaterPlanning/nezperce/exceedence_flows.htm, last visited July 6, 2012.
[39] K.C.C. 21A.42.100

c. King County Comprehensive Plan

In the Preliminary Application Document, Black Canyon Hydro LLC states that "[t]he updated King County Comprehensive Plan…describes small hydroelectric projects that are constructed in an environmentally sound manner as a public benefit. The Comprehensive Plan explicitly lists locating hydropower facilities on streams that do not have anadromous fish as an example of environmentally sound construction."[40]

The developer's statement in the Preliminary Application Document represents a selective reading of the King County Comprehensive Plan. The Plan states that when the Federal Energy Regulatory Commission licenses projects, they:

> *"…must consider existing plans and policies of public and private jurisdictions. While power generation benefits the public, care must be taken to ensure that small hydroelectric projects are constructed in an environmentally sound manner, directing new, small hydropower facilities, for example, to streams that do not have anadromous fish. Construction and operation must also be consistent with the intended functions and uses of forestlands, where most small hydroelectric projects are located."* [41]

The Comprehensive Plan states that power generation overall is a public benefit, and that it is more environmentally sound to locate new hydroelectric projects on streams that do not have anadromous fish. However, the Plan also emphasizes the importance of existing plans and policies of public and private jurisdictions, and that construction and operation must also be consistent with the intended functions and uses of forestlands.

d. King County Conservation Easement

As further evidence of the importance of this river corridor and the commitment of the local community to the conservation of this resource, King County purchased a conservation easement for the development rights to 90,000 acres of the Snoqualmie Forest from the Hancock Timber Resources Group on September 2, 2004, including land that the project applicant has identified as necessary for project development. The 90,000 acres of the Snoqualmie Forest, currently owned by Hancock, includes two major rivers (the North Fork Snoqualmie and Tolt), numerous smaller rivers, more than 500 acres of lakes and ponds, more than 6,000 acres of riparian areas along rivers and streams, and more than 4,000 acres of wetlands. The Snoqualmie Forest is located within the ranges of the federally Threatened Northern Spotted Owl and Marbled Murrelet, and contains habitat for numerous fish species and other wildlife. Upon signing the deal, King County Executive Ron Sims said the purchase "ensures the area will always remain green to the crest of the Cascade Mountains."[42] While the

[40] March 26, 2012 Preliminary Application Document, page 16. Available at http://elibrary.ferc.gov/idmws/search/intermediate.asp?link_file=yes&doclist=14006810, last visited July 6, 2012.
[41] King County Comprehensive Plan, Chapter 8, p. 8-37.
[42] http://your.kingcounty.gov/exec/news/2004/090204.htm, last visited July 22, 2012.

conservation easement explicitly permits the right to construct, operate and maintain run-of-the-river or low-head hydroelectric projects, these are defined in the easement as "no more than 12 megawatt capacity."[43] While the average generation of the Project is estimated at 11.95 megawatts based on annual generation of 104,720 megawatt-hours, the name plate capacity of the applicant's proposed project is 25 megawatts, exceeding the 12 megawatt limit and violating the terms of the conservation easement. The 12 megawatt capacity was specifically negotiated to accommodate smaller projects considered on tributaries of the North Fork Snoqualmie, while not allowing the type of major development the applicant has proposed for the mainstem.

B. Comments on the Pre Application Document

Section 4.3 Page 16
The applicant states that "Black Canyon intends to sell the power generated by the Project to Puget Sound Energy." During the public scoping meeting however, the applicant stated that Puget Sound Energy has not made a commitment to purchase energy from this Project.[44]

Section 4.3, Page 16
The applicant characterizes the project as consistent with the King County Comprehensive Plan, and as the type of project supported by the Comprehensive Plan. However, as discussed above, this characterization is not accurate.

Section 5, Page 21
The PAD notes that much of its assessment of the existing environment is based on two PADS developed for other projects, which in turn were based on previous Final Environmental Assessments for earlier proposed projects. There needs to be additional discussion regarding the relevance of those environmental assessments given the time that has passed since the information was initially developed.

Section 5.1.3.3, Page 21
The applicant indicates that further geotechnical assessments are planned during early 2012. The details of these study plans are vague and are premature given that a study plan determination has not been made in this proceeding.

Section 5.2.1.2, Page 23
The PAD identifies that minimum flows have been established for the North Fork and that the measuring location is located below the powerhouse. It should be noted that while measured at a specific gage, the minimum flow requirement applies from the headwaters to the mouth of the river.

[43] Transfer of Development Rights Deed of Conservation Easement, Section 5(g), December 14, 2004, recorded on the same date as King County Official Public Record 20041214002392.
[44] At Page 18 and Page 77, Daytime Scoping Meeting Transcript, Black Canyon Hydroelectric Project No. 14110-001; Accession No. 20120619-4011.

Section 5.2.4.3, Page 35
The applicant's proposed water quality studies of head conduction from the tunnel walls and energy dissipation heat gain in the powerhouse bypass valve will provide insufficient information on water quality impacts of the Project. Water quality, including but not limited to temperature, is intimately linked with flow regime. The proposed water quality studies focus narrowly on the impacts of the facilities and equipment on temperature, but fail to examine the impact of project operations on temperature, turbidity, water quantity, and other water quality measures.

Section 4.3.1, Page 36
The number changes from using the 5 prefix to the 4 prefix. Throughout the section, there is inconsistent use of 5 and 4 prefixes.

Section 4.3.3.1, Page 41
The last sentence of the fourth paragraph is incomplete.

Section 4.3.3.6, Page 43
The proposed study plan for Fish and Aquatic Resources falls short for a number of reasons. Fish surveys "accomplished by helicopter" will provide insufficient information on fishery resources in the river reach impacted by the project. The literature review of fish resources studies that is described appears to provide insufficient information on the Project reach, an area with unique habitat that may serve as an important refuge for resident fish in large part due to the difficulty of access.

Section 5.4, Page 44
As indicated, the wildlife and botanical resources section is based in large part on similar resource assessments of Hancock and Calligan Creek. Because of this, the review focuses on habitat associated with second or third-growth forest. It fails to mention or consider the habitat characteristics and wildlife associated with remnant old-growth forest within the Mt. Si Natural Resources Conservation Area.

Section 5.4.1.4, Page 46
The statement that there is "no old-growth forest remaining" in the Project area is incorrect.

Section 5.4.3.1, Page 54
The PAD asserts certain locations at which a small amount of habitat will be removed. The PAD fails to list habitat lost due to the transmission lines and the creation of a pool behind the dam. This loss must be factored into the impacts. In addition, the PAD asserts that adjacent habitat will continue to support wildlife as it did before construction. This assertion, however, is premature given the lack of information regarding the interconnection of the remaining and impacted habitats.

Section 5.4.3.3, Page 55

Terrestrial habitat surveys that include on-the-ground assessment of wildlife and botanical species within the Project area need to be conducted. The review of nearby assessments on commercial forest lands do not adequately characterize the Project area.

Figure 14, Page 55
The correct organizational name is American Whitewater, and not American Whitewater Association (this appears incorrectly throughout the document).

Section 5.5.5, Page 59
The PAD appears to limit riparian habitat to the 2.6 mile stretch of the bypass reach. However, the environmental analysis must consider riparian habitat that is also affected by the inundated area created by the dam.

Section 5.5.6.2, Page 60
The PAD asserts that a habitat survey and studies of water quality and quantity will be undertaken to understand impacts on riparian habitat. However, no details are provided on the actual studies or methodologies for riparian and wetland habitat surveys. As with other resource areas, complete study plans need to be developed for stakeholder and Commission review.

Section 5.6, Page 60
The statement that there are no threatened, endangered, or special status species in the Project area should be confirmed. Old-growth forest found within the Mt. Si Natural Resources Conservation Area may provide Marbled Murrelet habitat (*Brachyramphus mamoratus*). In addition, habitat for Northern Spotted Owl (*Strix occidentalis caurina*) exists.

Section 5.6.2.3, Page 63
The species survey of rare, threatened, and endangered species needs to include old-growth habitat within the Project area where these species are likely to be present.

Section 5.7, Page 67
The North Fork Snoqualmie is incorrectly listed as an eligible wild and scenic river. As detailed above, the Forest Service found the river suitable as a wild and scenic river and recommended it to Congress for designation.

Section 5.7.2.2, Page 71
The statement is made that the Project would provide the ability to divert water from the North Fork “in a way that it would reduce high, unsafe stream flows, increasing the number of days when the bypass reach can be kayaked safely.” No data are presented to substantiate this claim.

Section 5.7.2.3, Page 71
The study methods focus on counting users but are insufficient in evaluating the impacts of the Project on the recreational resource. The proposed approach does not address the impact of

project operations on existing and future recreational uses.

5.12.1, Page 81
This section again incorrectly identifies the North Fork Snoqualmie as an eligible wild and scenic river. As noted above, the Forest Service has deemed the river as a suitable wild and scenic river.

The 1982 Nationwide Rivers Inventory is referenced as a comprehensive plan with FERC. That Inventory has been updated and filed with the Commission. As such, the 1993 update should be referenced and adopted as a Comprehensive Plan.

C. Comments on Scoping Document 1

3.3, Page 9
At a minimum, alternatives to the proposed action will need to include an alternative with minimum instream flow requirements to protect fish and wildlife resources and river-based recreational opportunities.

4.2.2, Page 11
The resource issue of impacts to the flow regime must consider magnitude, frequency, duration, timing, and rate of change. The "effect of reduced flows" is but one element of the overall impacts to the flow regime.

4.2.4, Page 12
As described above, the claim that there are no known federally listed threatened or endangered species needs to be reexamined in light of the fact that this determination was based off of reports from another project and not specific to the site of the proposed Project.

4.2.8, Page 13
The review of developmental resources and specifically project economics, needs to consider the conservation measures that are in place for this river reach. In our analysis, the proposed Project will run counter to the multiple national, regional and local comprehensive river conservation planning strategies that have been implemented to protect the environmental and recreational public resource values of the North Fork Snoqualmie.

D. Recreational Values

In the past, licenses have not been issued for rivers with outstanding recreational values, particularly where those values are unique and special.[45] The section of the North Fork Snoqualmie River proposed for development is a high gradient reach flowing through a deep and rocky canyon. It is an outstanding and regionally-significant whitewater resource close to

[45] Namekagon Hydro Company v. FPC 216 F.2d 509 (1954); Scenic Hudson Preservation Conference v FPC; 354 F.2d 608 (2nd Circuit) (1965)

the city of Seattle offering a unique, high quality whitewater kayaking experience. Ernie's Gorge (aka Black Canyon) provides one of the more challenging whitewater runs in the region, and, when the flows are right, provides some of the most technical and powerful Class V paddling in the Cascades. The river regularly attracts the region's top expert paddlers living within a 200-mile radius who come to experience the unique attributes of this river gorge. In a survey of whitewater enthusiasts on Whitewater Paddling in the North Cascades, American Whitewater found that the North Fork of the Snoqualmie, and specifically the run through Ernie's Gorge, was rated as having outstanding recreational and aesthetic qualities of regional and national significance.[46] Dozens of individual comments on this docket speak to the spectacular recreational value of this river reach.

American Whitewater's National Rivers Database[47] provides a great deal of information on the recreational use of this resource, including an interactive map of the reach illustrating access points, and suggests that a flow range between 400 and 900 cfs (based on USGS gage 12142000) could provide boating opportunities for most of the fall, winter and spring boating seasons (a quantitative evaluation of flow preferences following established methodology has yet to be conducted). USGS flow data demonstrate that the proposed project's diversion of 900 cfs around Ernie's Gorge would effectively eliminate all whitewater boating in this section of river.[48] Public access to the river is available by putting in at the Wagner Bridge within the county right-of-way (47.6417, -121.6814) and taking out at the public park within the Three Forks Natural Area (47.522, -121.7700). Most paddlers who paddle Ernie's Gorge prefer to use the alternate put-in at the Spur 10 Bridge (47.5794, -121.7150), a private access point that can be used by those who purchase an access permit from Hancock Forest Management.

In comments during the scoping meeting, the applicant referred to his own personal connection to the Stanislaus River in California and the fact that there, "are some areas like that that are so valuable that they should be preserved."[49] This statement accurately characterizes the value that the local and regional community places on the North Fork Snoqualmie and the reason that it has been identified in so many different local, state, and federal conservation plans.

During this same scoping meeting, the applicant stated that whitewater recreation would be enhanced by providing scheduled releases that would provide "more days that you can [currently] run this river".[50] By definition, run-of-river projects generate power with little to no storage, and thus will have limited or no capability to provide scheduled releases. Like recreation on the North Fork Snoqualmie, power generation will be wholly limited by seasonal and available river flow. Even if additional flows were possible, the applicant misses the

[46] http://www.americanwhitewater.org/content/Document/view/documentid/554/, last visited July 22, 2012.
[47] http://americanwhitewater.org/content/River/detail/id/2223/, last visited July 22, 2012.
[48] http://waterdata.usgs.gov/usa/nwis/uv?12142000, last visited July 22, 2012.
[49] At Page 51, Evening Scoping Meeting Transcript, Black Canyon Hydroelectric Project No. 14110-001; Accession No. 20120619-4012.
[50] At Page 52, Evening Scoping Meeting Transcript, Black Canyon Hydroelectric Project No. 14110-001; Accession No. 20120619-4012.

importance, value and experience provided by a free-flowing Snoqualmie. Everything about the experience of running Ernie's Gorge provides a unique challenge: access, the rapids, scouting and portaging, and carefully watching the weather and local hydrology to find those times with the correct flow levels. The challenge of putting all of this together is the beauty of running this river segment. Providing scheduled and dependable flows for this river segment, even in the unlikely event this is possible, are unwanted and would not enhance the existing attributes of the river.

The applicant's misleading statement that additional opportunities could be provided may be based on an evaluation of daily mean flow data. Given the flashy nature of this system and the way it responds to storm events during the winter season or the diurnal pattern of spring snowmelt, we believe an evaluation of 15 minute flow data will be necessary to understand the real impacts to instream flows on recreational opportunities.

E. Need for Power and Availability of Power with Less Impact

While the proposed Project could conceivably meet a small part of the Northwest's regional need for power, it would provide a relatively minimal amount of power at a high cost to the outstanding environmental, recreational, cultural and aesthetic values of the North Fork Snoqualmie. Equally important, this power could be easily offset by other renewable generation or by energy efficiency and conservation efforts.

IV. Conclusion

The Conservation Groups strongly object to the development of the Black Canyon Hydroelectric Project. As outlined in our above comments on both the PAD and Scoping Document 1, this project would have significant and widespread impacts on the recreational, aesthetic, habitat and ecological values of the North Fork Snoqualmie River and the surrounding area. In addition, there are a number of legal and policy barriers that will make this project extremely difficult—if not impossible—to license. The project would violate directives and policies governing the management of this river, which has been found suitable and recommended for designation under the Wild and Scenic Rivers Act and designated as a Protected Area by the Northwest Power and Conservation Council.

The Conservation Groups urge the Commission to fully evaluate our comments and concerns regarding the conservation measures in place for the North Fork Snoqualmie River before entering the study phase. To do otherwise would create an unnecessary burden and expense for the applicant, agencies (including Commission staff), and other stakeholders.

Respectfully submitted,

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Study Request
Recreational Flow Study

The applicant has proposed a major development that would transform the North Fork of the Snoqualmie River from a free-flowing river to a highly regulated river with a completely new flow regime. The Project impacts will affect river-based recreation by substantially modifying the flow regime and constructing a navigation hazard in the bed of the river. In addition, the Project will impact the overall quality of the backcountry experience this river provides. The need for a recreational flow study described in detail below is but one element of the overall need for a comprehensive recreation resources assessment.

The following study request addresses each of the seven study criteria as required in 18 C.F.R. §5.9(b):

§5.9(b)(1) —Describe the goals and objectives of each study proposal and the information to be obtained.

The goal of this study is to evaluate the effects of project construction and operation on the availability and character of river-based recreational opportunities, particularly whitewater recreation on the North Fork of the Snoqualmie River.

The objectives of the study are to:
1. Determine the acceptable range of flows and the optimum flow needed for recreational boating (evaluate for whitewater kayaks, rafts, and other craft as appropriate) in the reach of the river known as Ernie's Gorge that would be bypassed by the Project.

2. Determine the timing and duration that the minimum and optimum flows for recreational boating will be available under the current free-flowing condition and with the Project at 15 minute intervals (due to the flashy nature of this river in response to winter rain events, daily average flow data are insufficient for analysis). Evaluate under all different modes of operation scenarios that may be considered.

3. Evaluate the impact of the inundation zone and the dam structure on navigability at flow ranges identified as optimal for whitewater recreation.

4. Determine the impact on the character and quality of the current recreational experience available on the North Fork of the Snoqualmie River.

§5.9(b)(2) —If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.

The National Park Service represents the national interest regarding the preservation of natural resources, and to assure that hydroelectric projects subject to FERC licensing recognize the full potential for meeting present and future public outdoor recreation demands, while maintaining

and enhancing a quality environmental setting for those projects. Our study request is consistent with meeting these goals.

§5.9(b)(3) —If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.

Sections 4(e) and 10(a) of the Federal Power Act require the Commission to give equal consideration to all uses of the waterway on which a project is located. When reviewing a proposed action, the Commission must consider the environmental, recreational, fish and wildlife, and other non-developmental values of the project, as well as power and developmental values. Our members have a strong interest in the recreational boating opportunities as they currently exist on the Snoqualmie River and specifically the unique attributes of the wilderness-quality experience that this river provides. To fully evaluate the Project's effect on river-based recreation, a recreational flow study is relevant to the Commission's public interest determination.

§5.9(b)(4) — Describe existing information concerning the subject of the study proposal, and the need for additional information.

The PAD provides limited information on river-based recreation. American Whitewater believes that considerably more information is required to accurately identify recreational activities and trends as they relate to paddlesports in the Project area that would be directly impacted by Project operations. Additional site-specific information is necessary. Some limited information not included in the PAD is available from guidebooks and websites, and additional information can be obtained through user surveys and targeted outreach to individuals familiar with the resource. No formal studies have been done to determine the range of boatable flows for different types of watercraft. A recreational flow study will help identify impacts of the Project on river-dependent recreation.

§5.9(b)(5) — Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.

Project operation would impact flow-dependent paddling opportunities on the North Fork Snoqualmie River. The Project would impact access for paddling opportunities and flows necessary to support recreational boating in the reach impacted by the Project. An analysis of project operations relative to a range and timing of boatable flows would help form the basis for determining the Project's impact on recreational boating. This will inform associated license requirements that could result from impacts that are identified. The results will also inform the public interest determination regarding the decision of whether to license this project.

§5.8(b)(6) — Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field seasons(s) and the duration) is consistent with generally accepted

practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.

Using accepted practices for recreational flow study as described in Whittaker et al. (1993), conduct a study of the minimum and optimum instream flow needed for recreational boating including whitewater kayaks, packrafts, and other river craft as appropriate.

Whittaker et al. (1993) outline three levels of study: (1) Level 1 - desktop analysis, (2) Level 2 - limited reconnaissance, and (3) Level 3 - intensive studies. Desktop analyses are designed to pull together existing information about channel characteristics, hydrology, river recreational opportunities, access points, and flows in order to determine if whitewater resources are present and affected by a project and if additional evaluations are warranted. The river reach in question has been paddled and rough estimates of study flows are available. While the results of the desktop analysis need to be documented, we believe the existing information and knowledge that this river is used for recreation warrants more intensive studies. A quantified analysis of instream flow needs for recreation is needed to define the range of boatable flow levels, and to assess the effects of these flows on generation, project economics, and competing resources.

Prepare a report that describes the recreational boating attributes of the range of flows evaluated, including level of difficulty, portage requirements, length of trip, experiences, etc. Identify the minimum acceptable and optimal flow for each reach and describe the frequency of availability of the identified flows under current and any proposed project operations. Because the reach of interest is currently free-flowing, a controlled flow study is not possible, but we have successfully used a survey approach supplemented by an expert panel to evaluate instream flow needs for recreation on rivers where flows are not regulated. We believe this study could be conducted over two seasons.

§5.9(b)(7) —Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

The cost for preparing the study plan, conducting the study, and preparing the report is difficult to evaluate in light of the challenging terrain in the Project area. While a desktop analysis as described above is a necessary first step, we believe more intensive studies are justified for this Project. Studies specific to instream flow needs of recreation typically cost between $50,000 and $75,000, but we believe this cost could be higher for this. This cost does not include the cost of travel to the site or field work associated with hydrologic or aquatic habitat studies that could likely be integrated with this study.

Literature Cited

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and Trails Conservation Program, Oregon State University, and National Park Service Water Resources Division. January 1993.

Study Request
Resident Fish Study

The applicant has proposed a major development that would transform the North Fork of the Snoqualmie River from a free-flowing river to a highly regulated river with a completely new flow regime. With no minimum instream flow requirement proposed, the Project will affect resident fish populations. Methods and approach described in the Pre Application Document are insufficient to characterize the unique attributes of fish resources in the reach of river impacted by the Project.

The following study request addresses each of the seven study criteria as required in 18 C.F.R. §5.9(b):

§5.9(b)(1) —Describe the goals and objectives of each study proposal and the information to be obtained.

The objective of this study is to determine whether proposed Project operations and alternatives would provide suitable conditions for the long-term viability of the population of coastal cutthroat trout and rainbow trout in the river, and to determine whether proposed operations would have a negative effect on cutthroat trout and rainbow trout viability in the natural river channel bypassed by the Project.

The primary goals of the study are:

• to provide information on the fishery resources of the North Fork Snoqulamie to allow for evaluation of the health of fish populations;
• to provide information and evaluate potential differences between fish populations as they currently exist in the river and future conditions if the Project were constructed; and
• to provide information on potential project-related effects on the health and size of fish populations.

Following is a list of specific study objectives:

• characterization of fish species composition and relative spatial distribution;
• estimate of total or relative abundance;
• analysis of population size-structure and age-class structure; and
• calculation of condition factor.

§5.9(b)(2) —If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.

The mission of the Washington Department of Fish and Wildlife is to preserve, protect and perpetuate fish, wildlife and ecosystems while providing sustainable fish and wildlife recreational and commercial opportunities. Goals of the agency include conservation and

protection of native fish and wildlife while providing sustainable fishing, hunting and other wildlife-related recreational experiences. Our study request is consistent with meeting these goals.

§5.9(b)(3) —If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.

Sections 4(e) and 10(a) of the Federal Power Act require the Commission to give equal consideration to all uses of the waterway on which a project is located. When reviewing a proposed action, the Commission must consider the environmental, recreational, fish and wildlife, and other non-developmental values of the project, as well as power and developmental values. Our members have a strong interest in the viability of fishery resources of the North Fork Snoqualmie River. To fully evaluate the Project's effect on resident fish populations, a study of the fishery resources within the reach impacted by the Project is relevant to the Commission's public interest determination.

§5.9(b)(4) — Describe existing information concerning the subject of the study proposal, and the need for additional information.

As noted in the PAD, data from the Black Canyon are limited, and existing information does not address the need to evaluate Project impacts on the reach that would be dewatered by the Project. Since this reach is different in character from other reaches that have been surveyed, a site-specific analysis is warranted.

§5.9(b)(5) — Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.

A trout viability analysis is necessary because the Project has the potential to isolate trout populations particularly if there are no instream flow requirements. Construction of the project has the potential to affect environmental conditions for fish life in the river. These potential environmental affects include: water temperature, quantity, and quality; transfer of water out of the river channel; creation of reservoirs; entrainment at diversions and intakes; turbidity from dam releases; and changes in physical habitat. Through these effects, the Project could affect fish populations in project-affected stream reaches. The study results will inform the public interest determination regarding the decision of whether to license this project.

§5.8(b)(6) — Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field seasons(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.

A systematic cutthroat trout and rainbow trout population (trout) survey will be conducted in

the river reach proposed to be dewatered by the Project to determine the population size and age structure during the low flow period in the summer of 2013. Due to variable sampling conditions in the river reach, the survey methods will include both multipass electrofishing depletion and mark/resight snorkel survey techniques to estimate cutthroat trout abundance. Each of these methods is described below.

Electrofishing-Based Population Estimate

Where feasible, trout density at each sample unit will be estimated by performing a three-pass electrofishing removal estimate using analytical methods of Zippen (1958). If catch during the second pass is less than the number required for a third pass (to maintain a 95 percent confidence level), a modified two pass removal method will be completed following Seber (1982) and Seber and LeCren (1967). Multipass electrofishing bias will be assessed and reduced following Peterson et al. (2004). Average cutthroat trout densities for each habitat type by size class will then be used to make a cutthroat trout population expansion based on habitat type availability following Hankin and Reeves (1988). This will result in an estimate of total trout abundance by size class in the river.

All trout captured during the electrofishing survey will be identified to species, measured to length, and weighed. Age classes will be assigned based on length frequency distribution. These age classes will then be used to assess year-class strength for population viability analysis. Average condition factors for each age class will be calculated from the length and weight measurements. Condition factor estimates will be used to assess fish growth rates and function as a surrogate to indirectly assess food availability.

Prior to electrofishing, a review of the scientific literature will be performed to determine the minimum size and age of maturity for each trout species. In addition, the length frequency distribution data from the electrofishing survey may also suggest an alternative minimum size at age of mature fish (minimum age at maturation determined from the literature).

Mark/Resight Population Estimate

Much of the habitat in the reach impacted by the Project includes steep gradient, containing many relatively deep pools that cannot be effectively sampled using electrofishing equipment. In this situation, a more effective deep water mark/resight snorkel survey will be used to estimate adult cutthroat trout abundance. Prior to conducting the resight snorkel survey, a subsample of the trout will be captured using a combination of angling (deep pools) and marked over a three to four day period. All trout meeting the minimum adult size criteria will be caudal fin-clipped and returned to the river where they were originally captured. Effort to catch and mark trout will be distributed as evenly as possible over the entire length of the river reach impacted by the Project. The day following the last day of marking, experienced snorkel surveyors will conduct a one-day count of all marked and unmarked trout in the river that are greater than the defined minimum size for adult cutthroat trout and rainbow trout. A total population estimate with a 95 percent confidence interval of mature cutthroat within the river

reach will be calculated using the mark/resight snorkel data (i.e. mark/recapture) following the bootstrap method (Efron and Tibshirani 1986).

Age structure

Analysis matrices will be based on age classes. Existing length-age indices will be used to determine the age class. Length-age indices are relatively accurate for smaller fish; however, confidence intervals reduce with larger fish. Scales collected will be read to assist in identifying age class breaks. Regression analysis will be used to analyze the data and if necessary, adjust the indices.

Fish Size and Condition

Fish size and weight data will be summarized by species and by sample site. Standard scientific software outputs including minimum, maximum, and mean fork length and weight will be calculated. Length and weight data will be used to calculate a relative condition factor (K_n) (Anderson and Gutreuter 1983) and to provide a general indication of the health of individuals, where factors greater than 1 indicate more healthy individuals. Relative condition factors for electrofishing sites will be calculated for length and weight data collected at all quantitative electrofishing sites.

Population Viability

Subsequent to determining the population size and age structure, trout population viability will be assessed by determining if there are any survival gaps in the age class distribution and by comparing mature adult abundance to standard adult fish population viability standards for effective population size. Many studies have described a relationship between the effective number of reproducing individuals in a population and the genetic risks to that population. Theoretical genetics and available empirical data for a variety of organisms (see Franklin 1980; Lande 1995) suggest that, in general, closed populations will begin to show inbreeding depression effects after a few generations with an effective population size (Ne) < 50 reproducing adults. Similarly, over ecological time scales, closed populations will begin to lose genetic variation due to the random effects of genetic drift when Ne drops below 500. Generally, it is conservatively recommended that a spawning population of resident trout, in this case the number of potential mature adults in the bypass reach, should exceed 100 to avoid genetic and phenotypic variation through drift (Rieman and Allendorf 2001). The Ne > 100 rule applies to the short term viability of a population and the Ne > 1,000 rule applies to long term population persistence and viability. If adult abundance falls below the Ne > 1,000 viable threshold or if a substantial survival bottle neck is observed in the age class distribution, then habitat limiting factors will be assessed, and a separate study of emigration and immigration into the bypass reach will be developed.

§5.9(b)(7) —Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

The cost for preparing the study plan, conducting the study, and preparing the report is difficult to evaluate and depends on the rates of the consultant selected for the work. The total estimated hours for the trout viability analysis is approximately 400 person hours. The allocation of these hours is approximately 40 hours for coordination and study preparation; 2 weeks of field data collection for a 3-person crew (240 hours); 80 hours to complete a draft report; and 40 hours to complete a final report.

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Study Request
Indicators of Hydrologic Alteration/Range of Variability Analysis

The IHA/RVA are components of an analytical software package typically used to characterize and compare complex river reach or river basin-scale hydrologic regimes from two or more periods of time, such as pre-dam and post-dam (Richter et al. 1996; Richter et al. 1997). The program assesses and presents a summary of 64 ecologically relevant hydrology statistics derived from daily hydrologic data (e.g. magnitude of monthly flows, timing of annual extreme water conditions, frequency and duration of high and low pulses, etc.). These parameters are of great ecological importance and utility in detecting physical habitat alteration in rivers.

The following study request addresses each of the seven study criteria as required in 18 C.F.R. §5.9(b):

§5.9(b)(1) —Describe the goals and objectives of each study proposal and the information to be obtained.

Variations in the hydrologic regime over space and time play an important role in determining habitat conditions and biodiversity (Poff and Ward 1989; Poff et al. 1997), and long-term alteration of streamflow characteristics can produce large changes in aquatic ecosystem structure and function. For example, changes in the magnitude, timing, frequency, or duration of naturally occurring flow events can reduce habitat diversity, cause river channels to degrade and disconnect from floodplains, disrupt migration and spawning cues for fish, affect the breeding and dispersal of amphibians, and alter the survival and distribution of juvenile fish and macroinvertebrates (ISG 2000, NRC 1996, Richter et al. 1996).

The overall objective of the IHA/RVA study is to quantify flow differences between the existing condition and the modified flow regime that would result from Project development. The study would describe flow changes in terms of several dozen metrics that can be used to help inform future flow management decisions. The objective of the USFS' study is to characterize peak and base flow hydrographs in the reach of river impacted by the Project, comparing current condition flow statistics to a modified flow regime that would result with Project development. The availability of long-term flow records from gage sites within the North Fork Snoqualmie River basin makes it possible to evaluate changes in the flow regime resulting from development of the proposed Project. IHA analysis of the North Fork Snoqualmie River may determine the relationship between the current instream flow management practices, productivity of its fishery resources, and changes that could occur with development of the Project.

§5.9(b)(2) —If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.

The State of Washington, has management responsibility and authority over fish and wildlife resources in the North Fork Snoqualmie basin as well as obligations under Section 401 of the

Clean Water Act. The results of the study can be used to help identify instream flow management alternatives and to better understand project-related changes in river morphology and water quality. The flow statistics obtained through the analysis will also inform the results of other, related studies. Our study request is consistent with meeting these goals.

§5.9(b)(3) —If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.

Sections 4(e) and 10(a) of the Federal Power Act require the Commission to give equal consideration to all uses of the waterway on which a project is located. When reviewing a proposed action, the Commission must consider the environmental, recreational, fish and wildlife, and other non-developmental values of the project, as well as power and developmental values. Our members have a strong interest in the viability of fishery resources of the North Fork Snoqualmie River. To fully evaluate the Project's effect on resident fish populations, a study of the fishery resources within the reach impacted by the Project is relevant to the Commission's public interest determination.

§5.9(b)(4) — Describe existing information concerning the subject of the study proposal, and the need for additional information.

Streamflow data have been collected on the North Fork Snoqualmie for several decades. This analysis will provide a quantitative means of evaluating hydrology and identifying parameters of significant ecological importance and utility in detecting physical habitat alteration in the river that would occur under different development flow scenarios.

§5.9(b)(5) — Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.

Project operations would affect the hydrology of the North Fork Snoqualmie River. These changes would affect the quantity and quality of habitat available for both the aquatic and riparian communities. In a river system, this regulation can degrade habitat over time; filling in pools, reducing gravel recruitment from riverbanks and diminishing LWD recruitment. River regulation can also restrict both the lateral connectivity between the river and the floodplain and the temporal and spatial variation in connectivity in the mainstem of the river (Ward and Stanford, 1995; Kingsford, 2000).

§5.8(b)(6) — Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field seasons(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.

The analysis will rely on the IHA/RVA software (Richter et al. 1996; Richter et al. 1997)

following the development of comparable daily flow records using fairly standard approaches. Not all of the metrics evaluated by the model are necessarily relevant to the analysis for the Snoqualmie River. We anticipate that the applicant will engage stakeholders in identifying the variables that are most relevant to the goals and objectives of informing impacts of the proposed Project.

§5.9(b)(7) —Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

The study would cost approximately $20,000.

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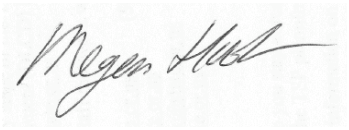
UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Black Canyon Hydro LLC	Docket No. P – 14110-001

CERTIFICATE OF SERVICE

Pursuant to Rule 2010 of the Commission's Rules of Practice and Procedure, I hereby certify that I have this day caused the foregoing Conservation Group **Comments on the Preliminary Application Document (PAD), Scoping Document 1 (SD1), and Study Requests for the Black Canyon Hydroelectric Project (P-14110),** to be served upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated this 24th day of July 2012.



Megan Hooker
American Whitewater

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