

Black Canyon Hydroelectric Project (FERC No. P-14110): COMMENTS ON PROPOSED STUDY PLAN

Comment Number	Document and Section	Commenter (Document, Date of Comment and Page #)	Comments	Black Canyon Hydro Response
FERC 1	Generic Comment	FERC (Cover Letter, 12/6/2012, pg. 1)	All study methodologies should describe: 1) what information will be collected during the study, 2) why the information will be collected, 3) how the information will be collected, 4) when and for how long sampling will be conducted, 5) where sampling will occur, and 6) how collected data will be analyzed and reported.	The applicant will verify that these elements are included in the study methodologies of each study plans.
FERC 2	Generic Comment	FERC (Cover Letter, 12/6/2012, pg. 1)	If you do not integrate specific stakeholder recommendations for methodologies, length of study season, or data analysis into your revised study plan, please provide your justification in sufficient detail to allow Commission staff to evaluate the validity of your proposal.	Comment Noted.
FERC 3	Generic Comment	FERC (Cover Letter, 12/6/2012, pg. 1)	Section 5.11(b)(3) of the Commission's regulations requires the proposed study plan to include provisions for periodic progress reports, including the manner and extent to which information will be shared, and sufficient time for technical review of the analysis and results.	Comment Noted. Revised study plans will reflect the requirements of §5.11(b)(3) of the Commission's regulations.
FERC 4	Generic Comment	FERC (Cover Letter, 12/6/2012, pg. 2)	Please incorporate these alternative project designs into each study in your revised study plan, including any necessary changes to each study description and objective, study area, and methodology.	Revised study plans will reflect any changes due to additional of alternative intake design.
FERC 5	Geology & Soils Study	FERC (Schedule A, 12/6/2012, pg. 1)	The name of the plan should be Preliminary Geotechnical Assessment Study Plan.	The study plan title has been revised to "Preliminary Geotechnical Assessment Study Plan."
FERC 6	Geology & Soils Study, §7.2 & 7.3	FERC (Schedule A, 12/6/2012, pg. 1)	The methodology section should combine data processing and analysis in section 7.3 with the preliminary geotechnical assessment in section 7.2.	These two sections of the methodology have been reorganized under the same section.
FERC 7	Geology & Soils	FERC (Schedule A, 12/6/2012, pg. 1)	The preliminary geotechnical assessment should include mapping and/or cross-section drawings showing the distribution of soil overburden and depth of the underlying bedrock at the location of each proposed project facility, including the penstock/water conveyance tunnel route.	Request added to §7.2 Preliminary Geotechnical Assessment.

FERC 8	Geology & Soils	FERC (Schedule A, 12/6/2012, pg. 1)	Section 4.41(g) of the Commission's regulations requires that a Supporting Design Report be filed with the final license application. Therefore, the requirements of section 4.41(g) should be taken into account when completing the preliminary geotechnical assessment, and the study plan should include a schedule for completing the Supporting Design Report.	Requirements of §4.41(g) now addressed specifically in both sections 7.2 Preliminary Geotechnical Assessment and 9 Schedule.
FERC 9	Geology & Soils	FERC (Schedule A, 12/6/2012, pg. 1)	Include at least a preliminary indication of the anticipated number and location of subsurface samples (boring logs), the properties that will be tested for, and under what conditions or scenarios additional subsurface testing beyond the proposed samples will be conducted.	These requests are now addressed in §7.2 Preliminary Geotechnical Assessment.
FERC 10	Geology & Soils, §10	FERC (Schedule A, 12/6/2012, pg. 1)	Section 10 should include the estimated cost of preparing the Supporting Design Report.	The estimated cost of preparing the Supporting Design Report has been added to the cost and effort table in §10.
FERC 11	Geology & Soils, §9	FERC (Schedule A, 12/6/2012, pg. 1)	Data processing and analysis and the preliminary geotechnical assessment should be combined as one component of the schedule.	The combination of data processing and analysis with the preliminary geotechnical assessment have been combined in the schedule.
FERC 12	Erosion Potential, §7.2	FERC (Schedule A, 12/6/2012, pg. 1)	The study plan should indicate that the study report will include a description of the type of vegetation and number of acres affected by project construction and maps that indicate the location and type of vegetation that would be affected.	This request has been added to §7.2 Describe Nature and Extent of Land-Disturbing Activities.
FERC 13	Erosion Potential	FERC (Schedule A, 12/6/2012, pg. 1)	The study report should also include maps of potential borrow sites and deposit areas and an estimate of the quantities of borrow and deposit material from project construction.	This request has been added to §7.3 Identify and Review BMP's.
FERC 14	Erosion Potential, §7.3	FERC (Schedule A, 12/6/2012, pg. 1)	The study plan should indicate that the study report will include maps that indicate the locations of BMPs identified for potential use during project construction.	This request has been added to §7.3 Identify and Review BMP's.
FERC 15	Erosion Potential, §9	FERC (Schedule A, 12/6/2012, pg. 2)	The schedule should include preparation of maps showing land disturbing activities and potential BMPs.	The schedule in §9 has been revised to reflect this comment.

FERC 16	Hydropower Potential & Project Economics, §6.2	FERC (Schedule A, 12/6/2012, pg. 2)	The study plan should indicate that the study report will include the estimated cost of loss of generation for each of the following potential PME measures: (1) minimum flow releases in the bypassed reach for aquatic resources; (2) ramping rate restrictions; and (3) flow releases in the bypassed reach for whitewater boating.	The study plan has been revised accordingly.
FERC 17	Groundwater, §2	FERC (Schedule A, 12/6/2012, pg. 2)	Objective 4 should be revised to include the penstock/water conveyance tunnel route in the geophysical survey.	Objective 4 has been revised to include the penstock route in the geophysical survey.
FERC 18	Groundwater, Appendix A	FERC (Schedule A, 12/6/2012, pg. 2)	The map in Appendix A of the study plan should show and label the locations of the two deep borings.	The map in Appendix A has been revised to reflect this request.
FERC 19	Fisheries	FERC (Schedule A, 12/6/2012, pg. 2)	At a minimum, the study plan should include WA Department of Ecology's protocols for sampling macroinvertebrates or alternative sampling methods that will provide similar information.	The study plan now references sampling protocols to address this comment.
FERC 20	Fisheries	FERC (Schedule A, 12/6/2012, pg. 3)	Please revise the fisheries study plan to indicate how you intend to validate the habitat suitability criteria.	The methodology proposed to validate the habitat suitability criteria has been revised.
FERC 21	Instream Flow, §7.2	FERC (Schedule A, 12/6/2012, pg. 3)	The 1985 study report should be added to your website as soon as possible, and the study plan should be revised to indicate that the 1985 study report is available on your website.	The Beck and Associates IFIM from 1985 will be made available on the BCH website along with the revised study plans after they are filed with FERC.
FERC 22	Hydrology, §7.1	FERC (Schedule A, 12/6/2012, pg. 3)	Section 7.1 should describe how historic daily streamflow will be simulated for these locations.	A description has been added.
FERC 23	Hydrology, §7.2	FERC (Schedule A, 12/6/2012, pg. 3)	Section 7.2 should provide a description of the statistical summaries planned for each streamflow measurement location, including average monthly flow, average annual flow, and minimum and maximum daily flow for the period of record.	The plan has been revised as requested.
FERC 24	Hydrology, §7.2	FERC (Schedule A, 12/6/2012, pg. 3)	Section 7.3 should describe the model that will be used to estimate flood potential for all three proposed project designs (i.e., the original design and intake alternatives A and B).	This section has been revised to address all possible design alternatives and describe the model that will be used to estimate flood potential.
FERC 25	Wildlife, Vegetation and Sensitive Habitats, §7.1	FERC (Schedule A, 12/6/2012, pg. 4)	Section 7.1 should specify the number of survey days for the proposed vegetation habitat survey.	See §7.1.1.2 Field Survey. Up to ten field days are allocated to this task.
FERC 26	Wildlife, Vegetation and Sensitive Habitats	FERC (Schedule A, 12/6/2012, pg. 4)	The study plan should also describe the method for selecting the vegetation habitat subsets for the rapid vegetation assessment.	See §7.1.1.2 Field Survey.

FERC 27	Wildlife, Vegetation and Sensitive Habitats	FERC (Schedule A, 12/6/2012, pg. 4)	The study plan should describe the methods for surveying for rare fungi and lichens.	See §7.2.1.2 Field Surveys. An initial reconnaissance survey will be conducted to establish the appropriate survey method and level of effort to be used. However, it is anticipated that the "Intuitive-Controlled Methodology" for sampling vascular plants (Whiteaker et al. 1998) will be used in the field surveys.
FERC 28	Wildlife, Vegetation and Sensitive Habitats	FERC (Schedule A, 12/6/2012, pg. 4)	The study plan for the rare plant survey should provide a schedule specifying when surveys will be conducted and when they will be performed in conjunction with the vegetation habitat survey	See §7.2.1.2 Field Surveys. Field surveys will be conducted during May through August, when rare plant species in the vicinity of the project are most likely to be detected (NRCS 2012). Multiple surveys may be required to identify plants that display characteristics (e.g., flowers or fruit) at different times of the year. It is anticipated that two surveys will be conducted during the growing season; one in spring to early summer (i.e., May through June) and one in the late summer (i.e., July through August).
FERC 29	Wildlife, Vegetation and Sensitive Habitats, §7.2	FERC (Schedule A, 12/6/2012, pg. 4)	Section 7.2 should provide a current list, compiled in consultation with the U.S. Fish and Wildlife Service and WDFW, of all threatened, endangered, and sensitive plants that may occur in the project area.	A current list will be developed as part of the study with the Wildlife, Vegetation and Sensitive Habitats work group.
FERC 30	Wildlife, Vegetation and Sensitive Habitats, §7.3	FERC (Schedule A, 12/6/2012, pg. 4)	Section 7.3 should describe how you will survey for amphibian species.	See §7.3.1.2 Field Surveys.
FERC 31	Wildlife, Vegetation and Sensitive Habitats, §7.3.1.2	FERC (Schedule A, 12/6/2012, pg. 4-5)	Section 7.3.1.2 should describe how you would survey for species that are shy, nocturnal, crepuscular, or may only use the habitat in the proposed project area during fall and winter. In addition to direct observation, methods for identifying these species could include trapping or searching for animal signs, such as prints, markings, or scat.	See §7.3.1.2 Field Surveys.
FERC 32	Wildlife, Vegetation and Sensitive Habitats, §7.3.1.2	FERC (Schedule A, 12/6/2012, pg. 5)	Section 7.3.1.2 should describe how you would survey for nocturnal and crepuscular bird species and bird species that may only be present in fall and winter.	See §7.3.1.2 Field Surveys.
FERC 33	Noise, §7.1.2	FERC (Schedule A, 12/6/2012, pg. 5)	Include a map showing the extent of the anticipated noise assessment and preliminary measurement locations.	A map has been included in Appendix A showing the extent of the anticipated noise assessment and preliminary measurement locations.

FERC 34	Noise	FERC (Schedule A, 12/6/2012, pg. 5)	The study plan should also identify the frequency and timing of sampling, including the total number of days per week, month, and season that you intend to collect sound level measurements at each location.	§7.1.2 Sound Level Measurements has been revised to include the requested information.
FERC 35	Noise, §7.3	FERC (Schedule A, 12/6/2012, pg. 5)	Provide examples of facilities that you intend to use as representative sources for sound source data that are not available for inclusion in the noise model.	An example facility, and an explanation for its potential eligibility as a representative facility, has been added to §7.3 Predict Project-Related Sound Levels.
FERC 36	Recreation Resources, §7	FERC (Schedule A, 12/6/2012, pg. 5)	Provide sample questions for inclusion in the field user surveys and follow-up interviews.	Sample questions have been provided in an appendix to the study plan.
FERC 37	Recreational Boating and River Access, §5	FERC (Schedule A, 12/6/2012, pg. 5)	List referenced document within references section.	All documents will be referenced.
FERC 38	Recreational Boating and River Access, §7	FERC (Schedule A, 12/6/2012, pg. 5)	Provide sample questions for inclusion in the structured interviews, flow comparison surveys, and flow reconnaissance assessment.	Sample questions have been provided in an appendix to the study plan.
NPS 1	Aesthetics	NPS (PSP Comments Letter, 12/4/2012, pg. 1)	NPS recommends that the study plan also identifies key scenic attractions in the project area and ways the public can view these through creating new or enhancing existing viewpoints.	Key scenic attractions have been added explicitly to §7.1 Summarize Aesthetic Resources. A discussion of ways to improve public access through creating new or enhancing existing viewpoints has been added explicitly to §7.4 Propose PM&E.
NPS 2	Aesthetics	NPS (PSP Comments Letter, 12/4/2012, pg. 1)	We would like the study to determine any changes in the natural lightscape from proposed project related lighting facilities and to consider night skies when selecting and using outdoor lighting at any project facilities.	Nightsky and outdoor lighting issues have been added explicitly to §7.3 Review Potential Conflicts and §7.4 Propose PM&E.
NPS 3	Aesthetics	NPS (PSP Comments Letter, 12/4/2012, pg. 2)	Lighting considerations: light needs, hoods, energy saving technology, amber/yellow lights, intensity.	These considerations will be addressed in §7.4 Propose PM&E.
NPS 4	Recreation Resources, §7.1	NPS (PSP Comments Letter, 12/4/2012, pg. 2)	Include a web-based survey.	A web-bases survey has been incorporated.
NPS 5	Recreation Resources, §7.1	NPS (PSP Comments Letter, 12/4/2012, pg. 2)	Ensure the field user surveys address all current recreation activities.	All current recreation activities will be addressed.
NPS 6	Recreation Resources, §7.1	NPS (PSP Comments Letter, 12/4/2012, pg. 2)	The study and surveys should address the quality of the recreational experiences as well as quantity.	Both quality and quantity of recreational experiences will be addressed.
NPS 7	Recreation Resources, §7.1	NPS (PSP Comments Letter, 12/4/2012, pg. 2)	Ensure the inventory includes sites that have received funding or resources through the Land and Water Conservation Fund (LWCF) or Federal Lands to Parks programs and any project effects to those sites.	The plan will also attempt to inventory sites nearby that may be affected by the project.

NPS 8	Recreation Resources, §7.2	NPS (PSP Comments Letter, 12/4/2012, pg. 2)	Future needs and capacity analysis should include specially looking at trail opportunities, river access sites for fishing and boating, camping, and viewpoints.	These opportunities will be included in the analysis.
NPS 9	Recreation Resources, §7.2	NPS (PSP Comments Letter, 12/4/2012, pg. 2)	We recommend holding resident/community/recreation user groups focus group meetings and visioning workshops, particularly in order to tailor possible mitigation measures and solutions to the community's vision for recreation in the future.	Focus groups have been proposed for recreation/resident/community user groups.
NPS 10	Recreation Resources, §7.5	NPS (PSP Comments Letter, 12/4/2012, pg. 2)	Potential measures to improve management of current recreation use and quality of these experiences should also be addressed.	PM&E measures are a component of the revised study plan.
NPS 11	Recreation Resources	NPS (PSP Comments Letter, 12/4/2012, pg. 2)	We would like to see a draft of the survey instrument and a chance to review this.	The recreation workgroup will have an opportunity to review a draft survey instrument.
NPS 12	Recreation Resources	NPS (PSP Comments Letter, 12/4/2012, pg. 2)	What other opportunities for informal input do you envision besides the formal points listed in the table?	See revised study plan.
NPS 13	Recreation Resources	NPS (PSP Comments Letter, 12/4/2012, pg. 2)	Communications protocol would clarify mechanisms and procedures for a collaborative approach.	A Communication and Information Protocol has been developed and distributed to stakeholders.
NPS 14	Recreation Resources, Appendix A	NPS (PSP Comments Letter, 12/4/2012, pg. 3)	What is the study area distance around the river and how was it developed?	See revised study plan.
NPS 15	Recreation Resources	NPS (PSP Comments Letter, 12/4/2012, pg. 3)	We recommend that the study plan for both the recreation study and recreation boating study address current and future public recreation access options.	PM&E measures are a component of the revised study plan, but it should be recognized that BCH cannot authorize public access on private property not owned by BCH.
NPS 16	Recreation Resources	NPS (PSP Comments Letter, 12/4/2012, pg. 3)	NPS recommends that a public access analysis be included in both of these studies and range of feasible alternative options be developed to address how public access will be provided in the future.	Current public access and use will be evaluated as a part of this study. PM&E measures are also a component of the revised study plan, but it should be recognized that BCH cannot authorize public access on private property not owned by BCH.
NPS 17	Recreational Boating and River Access	NPS (PSP Comments Letter, 12/4/2012, pg. 3)	NRI status and ORV included under resource goals and background information.	This comment has been added to the study plan.
NPS 18	Recreational Boating and River Access	NPS (PSP Comments Letter, 12/4/2012, pg. 3)	NPS believes a level 3 or intensive study is needed.	Comment Noted.
NPS 19	Generic Comment	NPS (PSP Comments Letter, 12/4/2012, pg. 3)	Please add a timeframe of how long participants will have to comment on documents produced within/for the work group forum. A minimum of 14 days is preferred.	Comment Noted.

WDFW 1	Geomorphology, Large Wood, and Sediment Transport	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 6)	Predict the amount of sediment and debris that the inflatable diversion may retain and evaluate methods to slow accumulation while avoiding dredging.	Comment addressed in §7.6 Assess If and How Seasonal Variations in the Duration of Flows in the Project Reach Impact the Timing and Quantity of Sediment and Large Wood Flux Into and Through the Project Reach.
WDFW 2	Geomorphology, Large Wood, and Sediment Transport	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 6)	Predict frequency that inflatable diversion would be lowered to allow active transport of sediment and debris.	Comment addressed in §7.7 Define Potential Scenarios for Sediment and Large Wood Transport to Affect Project Infrastructure.
WDFW 3	Geomorphology, Large Wood, and Sediment Transport	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 6)	Mitigation could include gravel augmentation, if studies show gravel will gradually accumulate behind the weir structure.	Comment addressed in §7.7 Define Potential Scenarios for Sediment and Large Wood Transport to Affect Project Infrastructure. Gravel augmentation is a potential PM&E measure.
WDFW 4	Geomorphology, Large Wood, and Sediment Transport	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 7)	Pre-Construction and Post Construction Monitoring of gravel could help predict the rate of gravel and sediment deposition behind the inflatable weir, the amount of natural sediment and debris transport by the weir, and describe triggers when BCH would take adaptive management actions.	Comment addressed in §7.7 Define Potential Scenarios for Sediment and Large Wood Transport to Affect Project Infrastructure.
WDFW 5	Geomorphology, Large Wood, and Sediment Transport	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 7)	BCH should establish a baseline for natural sediment and woody debris transport by the inflatable weir structure.	Comment addressed in §7.7 Define Potential Scenarios for Sediment and Large Wood Transport to Affect Project Infrastructure.
WDFW 6	Geomorphology, Large Wood, and Sediment Transport	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 8)	BCH should do a cumulative effects analysis on all the existing and proposed hydroprojects on the North Fork of the Snoqualmie River and its tributaries.	The information necessary for FERC to make a cumulative effects analysis will be generated.
WDFW 7	Geomorphology, Large Wood, and Sediment Transport	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 8)	WDFW recommends following our Hydroelectric Project Assessment Guidelines (1995) for Bed Load Studies for general methodology of a study.	The WDFW Hydroelectric Project Assessment Guidelines (1995) have been reviewed and its Bed Load Studies concepts have been utilized generally in developing the study's objectives and methodology.
WDFW 8	Geomorphology, Large Wood, and Sediment Transport	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 8)	Please include the downstream reach below the powerhouse to the confluence of the Middle Fork in Goal 5.	While the downstream control reach was only proposed to be 0.5 miles, the data gathered will allow for an evaluation of effects further downstream.
WDFW 9	Geomorphology, Large Wood, and Sediment Transport	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 9)	BCH should evaluate the cost of maintenance at their intake screens, behind the inflatable weir, and at the proposed fish bypass channel.	Construction, maintenance, and operational costs will be evaluated by the Applicant, but not within this study plan.

WDFW 10	Geomorphology, Large Wood, and Sediment Transport	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 9)	WDFW recommends using an airburst cleaning system with your debris racks.	Comment noted as a potential PM&E measure and design/operation alternative.
WDFW 11	Geomorphology, Large Wood, and Sediment Transport	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 9)	Please utilize a log boom crane to remove large woody debris above the inflatable weir and to hoist it below the weir structure.	Comment noted as a potential PM&E measure and design/operation alternative.
WDFW 12	Geomorphology, Large Wood, and Sediment Transport	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 10)	We recommend all woody debris and sediment stay in the river.	Comment noted as a potential PM&E measure.
WDFW 13	Geomorphology, Large Wood, and Sediment Transport	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 10)	WDFW recommends a crane pedestal at the upstream end of the proposed fish bypass channel as well.	Comment noted as a potential PM&E measure and design/operation alternative.
WDFW 14	Geomorphology, Large Wood, and Sediment Transport	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 10)	Please include the crane and airburst system when making your scenarios for the study plan.	Comment noted as a potential PM&E measure and design/operation alternative.
WDFW 15	Geomorphology, Large Wood, and Sediment Transport	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 10)	WDFW recommends that BCH includes the entire reach to the confluence of the Middle Fork when conducting a study.	While the downstream control reach was only proposed to be 0.5 miles, the data gathered will allow for an evaluation of effects further downstream.
WDFW 16	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 11)	BCH should conduct species-specific surveys for any threatened, endangered or Washington State Priority Species and Priority Habitat that may exist in the project area.	A species-specific survey component has been added to the revised study plan.
WDFW 17	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 11)	The project area should include the area of indirect effects, which could include species that live outside the project area, but receive impacts from disturbance, noise, or loss of habitat conductivity by the construction or operation of the project.	The project area has been revised to reflect this comment. See §3.1.Vegetation Habitat Study.
WDFW 18	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 11)	We recommend that BCH conduct surveys, especially for physical habitat removal, or assume presence while taking the correct mitigation or avoidance measures.	The study plan has been revised accordingly. See §3.1.Vegetation Habitat Study.
WDFW 19	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 11)	Some of the important habitats to consider include cliffs, caves, seeps, wetlands, riparian areas, and springs.	Comment Noted. See §3.1.Vegetation Habitat Study.

WDFW 20	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 12)	BCH may not only affect riparian habitat species along the river and in the project area, but areas in and around the powerhouse, intake structure, fish screens, penstock exit and entrance holes, power lines, and new roads, including the vehicle and people traffic of new and old roads by construction and operations personnel.	The study plan has been revised accordingly. See §3.1.Vegetation Habitat Study.
WDFW 21	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 12)	WDFW recommends that BCH find the Mount Si eyrie or the closest area to the project that could contain an eyrie and give the correct distance buffer during construction or construct out of breeding season.	The study plan has been revised accordingly. See §7.3.1.2 Field Surveys.
WDFW 22	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 12)	WDFW also directs Black Canyon Hydro to the WDFW website to retrieve PHS data for observations and management recommendations for Priority Habitat and Species.	The study plan has been revised accordingly. See §7.3.1.1 Review of available information.
WDFW 23	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 12)	BCH should conduct additional habitat and species surveys because much of the information in the PAD remains 20 years-old and surveyors have not recently looked for Priority Habitat or Species.	The study plan has been revised accordingly. See §7.3.1 Identify PH List wildlife that is or may be present within and adjacent to the Study Area.
WDFW 24	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 13)	A wildlife study could affect construction area, construction timing, application of best manage practices, and avoidance areas.	The study plan has been revised accordingly. See §7.3.2 Evaluate the potential effects of the project on the identified wildlife.
WDFW 25	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 13)	Study methodology would start general with maps searches and ground-truthing of habitat to a number of possible protocols and best available survey methodology for individual species.	The study plan has been revised accordingly. See §7.3.1.2 Field Surveys.
WDFW 26	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 13)	WDFW would recommend that BCH determine the amount of old-growth and mature forest habitat and possible associated species early in the process.	The study plan has been revised accordingly. See §7.1.1.4 Habitat Unit Delineation.
WDFW 27	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 13)	WDFW recommends that BCH adds raptor nest surveys and Priority Species-specific surveys to the list.	The study plan has been revised accordingly. See §7.3.1.2 Field Surveys.
WDFW 28	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 13)	Please include all Washington Priority Habitats on the list as well: http://wdfw.wa.gov/conservation/phs/list/ .	Comment Noted.

WDFW 29	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 13-14)	2.1 Vegetation Habitat Study, bullets. Please add two more bullets to the list: 1) Identify, describe, and map habitats that BCH will permanently impact during construction or operations; 2) Identify, describe, and map habitats that BCH may impact through indirect effects from disturbance (noise, people, traffic, etc.).	The study plan has been revised accordingly. See §2.1 Vegetation Habitat Study.
WDFW 30	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 14)	WDFW recommends that the regionally rare, endangered, and atypical plant associations also include Washington Priority Habitats: http://wdfw.wa.gov/conservation/phs/list/ .	Comment Noted.
WDFW 31	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 14)	BCH should conduct species-specific protocol surveys in the appropriate habitat within the disturbance buffer associated with the Washington Priority Species and/or sensitive raptor.	The study plan has been revised accordingly. See §3.1 Wildlife Study.
WDFW 32	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 14)	Please conduct habitat surveys first including those habitats listed under Priority Habitats.	The study plan has been revised accordingly. See §2.1 Vegetation Habitat Study.
WDFW 33	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 14)	BCH can find the species that need species-specific surveys through conducting the vegetation habitat surveys and/or review of a map.	The study plan has been revised accordingly. See §7.3.1 Identify PH List wildlife that is or may be present within and adjacent to the Study Area.
WDFW 34	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 14-15)	Beyond raptors, please look at habitat surveys or map searches for a number of other species (see document for details).	Comment Noted. A wide-ranging literature review including habitat surveys and map search has been incorporated into the study plan.
WDFW 35	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 15)	BCH may rule out the possibility of some of these species because of lack of habitat.	Comment Noted.
WDFW 36	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 15)	Please consider surveys for those species impacted by indirect effects like disturbance and survey with disturbance buffers in mind (IE surveys may reside outside the project area, but within the indirect effects area of the project).	The study plan has been revised accordingly. See §3.1 Wildlife Study.

WDFW 37	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 16)	While searching in western hemlock forest habitats, please survey for trees with mistletoe. Washington Priority species, Johnson's Hairstreak (<i>Mitoura johnsoni</i>) may reside within your project area and need consideration for migration corridors between habitats.	The study plan has been revised accordingly. See §7.3.1.2 Field Surveys.
WDFW 38	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 16)	A population of Large Mountain Salamander (<i>Plethodon larselli</i>) exists on top of Snoqualmie Pass and any areas with scree would warrant a survey. These salamanders occasionally reside in the forest habitats as well.	The study plan has been revised accordingly. See §7.3.1.2 Field Surveys.
WDFW 39	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 16)	The North Fork of the Snoqualmie River may provide adequate habitat for Harlequin Ducks (<i>Histrionicus histrionicus</i>). Please consider this species in your species-specific surveys, timing of construction, or possible habitat removal.	The study plan has been revised accordingly. See §7.3.1.2 Field Surveys.
WDFW 40	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 16)	WDFW has the largest concern of the disturbance and impacts to raptors. WDFW recommends a raptor nest search in the indirect (disturbance) buffer.	The study plan has been revised accordingly. See §7.3.1.2 Field Surveys.
WDFW 41	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 17)	Please include PHS Management Recommendations for species the project may impact: http://wdfw.wa.gov/conservation/phs/mgmt_recommendations/ .	The study plan has been revised accordingly. See §7.3.3 Identify PME measures that could be implemented if a license is issued, and incorporate those measures into the HMP.
WDFW 42	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 17)	WDFW recommends replacing "adversely affect" with "affect" or "impact."	The study plan has been revised accordingly. See §7.3.2 Evaluate the potential effects of the project on the identified wildlife.
WDFW 43	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 17)	BCH should conduct species-specific surveys for Washington Priority Species and other raptor species that have species survey protocols. Other raptors should receive raptor nest surveys unless licensee will construct out of the breeding surveys and will not physically remove/degrade species habitat.	The study plan has been revised accordingly. See §7.3.1.2 Field Surveys.
WDFW 44	Wildlife, Vegetaion, and Sensitive Habitat	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 18)	WDFW recommends conducting habitat survey for wetlands, springs, seeps, etc., before deciding not to conduct amphibian surveys. Some amphibians can travel farther from water than others.	The study plan has been revised accordingly. See §3.1. Vegetation Habitat Study.

WDFW 45	Instream Flow	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 18)	Please refer to the (Appendix VI) of our Hydroelectric Project Assessment Guidelines (1995) which outline agency standards for conducting instream flow studies.	The WDFW Hydroelectric Project Assessment Guidelines were one resource used to develop the Environmental Flow Study Plan.
WDFW 46	Instream Flow	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 18)	WDFW would recommend re-running the existing habitat work with updated preference curves, particularly for rainbow trout (<i>Oncorhynchus mykiss</i>).	This issue was discussed at the Aquatic Resource Workgroup meeting (attended by WDFW) and the revised study plan reflects that discussion.
WDFW 47	Instream Flow	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 19)	Please use ramping rates criteria developed in Hunter (1992). WDFW recommends finding the worst-case sites for stranding during the Instream Flow Incremental Methodology (IFIM) scoping and development of rating curves to set interim rates. We recommend determining final ramping rates before the start of operation.	This issue was discussed at the Aquatic Resource Workgroup meeting (attended by WDFW) and the revised study plan reflects that discussion.
WDFW 48	Instream Flow	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 19)	WDFW recommends that BCH includes the entire reach to the confluence of the Middle Fork when conducting a study.	This issue was discussed at the Aquatic Resource Workgroup meeting (attended by WDFW) and the revised study plan reflects that discussion.
WDF 49	Instream Flow	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 20)	Please add Objective 5: Identify possible PM&E measures for any possible unavoidable loss of habitat.	Objective 4 includes the development of an Adaptive Management Plan to ensure that flows and other conservation goals are being met, and that any unwanted project impacts are being adequately addressed.
WDFW 50	Fisheries	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 20)	WDFW recommends that BCH includes the entire reach to the confluence of the Middle Fork when conducting a study.	This issue was discussed at the Aquatic Resource Workgroup meeting (WDFW) and the revised study plan reflects that discussion.
WDFW 51	Fisheries	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 20-21)	WDFW recommends collecting baseline food web, trout growth, survival, and distribution information prior and subsequent to project construction so that we can monitor project impacts to game fish resources in the North Fork and Mainstem Snoqualmie above Snoqualmie Falls and recommend adaptive management if necessary.	These issues were discussed at the Aquatic Resource Workgroup meeting (attended by the WDFW) and the revised study plan reflects that discussion.
WDFW 52	Fish Passage	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 21)	WDFW recommends almost vertical, bank-angled fish screens setup with airburst cleaning system.	Comment Noted.

WDFW 53	Fish Passage	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 21)	WDFW also recommends the Alternative B with the roughened channel that allows diversion of water and passage of fish, other aquatic life, recreational boaters, sediment, and debris.	Comment Noted.
WDFW 54	Fish Passage	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 21)	We suggest that BCH conduct a study that considers maintenance costs.	Comment Noted. O&M costs are included within the Hydropower Potential and Project Economics Study Plan.
WDFW 55	Fish Passage	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 21)	Please consider all aquatic organisms and other fish including suckers and whitefish when considering passage.	These issues were discussed at the Aquatic Resource Workgroup meeting (attended by the WDFW) and the revised study plan reflects that discussion.
WDFW 56	Fish Passage	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 21)	WDFW has recommended placing the fish passage structure on the same side of the river as your intake.	Comment Noted.
WDFW 57	Fish Passage	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 21-22)	WDFW recommends adopting the following objectives: 1) BCH should select project structures that will help pass fish up and downstream as close to current baseline conditions as possible; 2) Figure out the amount of maintenance each structure will require when considering debris and sediment.	See §7.1.1 Define objectives for fish passage at the diversion under anticipated operations.
WDFW 58	Water Quality	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 22)	WDFW has concerns about the diverted water having temperature changes between entering the intake and exiting the powerhouse.	This concern has been added explicitly to §7.3 Water Temperature Modeling.
WDFW 59	Water Quality	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 22)	We propose BCH conducts studies as outlined in the WDFW Hydroelectric Project Assessment Guidelines (1995).	The WDFW Hydroelectric Project Assessment Guidelines (1995) have been reviewed and its water quality concepts have been utilized generally in developing the study's objectives and methodology.

WDFW 60	Water Quality	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 23)	WDFW recommends a study that includes the bypass reach, a reach above the diversion, a reach below the powerhouse to the Forks, and a reach below Snoqualmie Falls.	The study area proposed includes the North Fork Project Reach from the upper Alternative 'B' Intake site downstream to immediately below the powerhouse & tailrace site at the lower Project gaging station. Water quality analysis of this reach will be sufficient to document pre-project existing conditions and form a baseline for post project construction monitoring. The upper site represents water quality before the project intake and the lower site represents water quality at the end of the Project Reach. Water quality downstream of the project becomes increasingly influenced by non-project related inputs from other land uses and becomes increasingly complex due to non-project development impacts. Previous water quality investigations have established a reasonable record of existing water quality conditions and potential influences.
WDFW 61	Fisheries	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 24)	WDFW recommends conducting continuous habitat surveys (sensu Thompson et al. 2011) throughout the bypass reach to set baseline conditions prior and subsequent to project construction.	Continuous habitat surveys will be conducted to set baseline conditions. Surveys subsequent construction could be discussed as a component of the adaptive management program outlined in several study plans or as a PM&E measure.
WDFW 62	Water Quality	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 25)	WDFW recommends that BCH monitor daily water temperatures above the dam, within the bypass reach, downstream of the powerhouse outflow, and at the mouths of non-ephemeral tributaries, and floodplain channels near the project.	Yes, with qualifications. Applicant will monitor temperatures at the diversion site and downstream of the powerhouse outflow. Temperature will also be monitored at other locations on an ad hoc basis when sampling is occurring during other studies. For example, during Aquatic Resources surveys, technicians will take temperature readings as they move down the project reach. A post construction monitoring plan will include additional sites.
WDFW 63	Water Quality	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 25)	BCH should assess dissolved oxygen and nutrient loading seasonally, as practical, within and downstream of the bypass.	§7.2 Water Quality Monitoring - Baseline addresses seasonal assessments of dissolved oxygen and nutrient loading.

WDFW 64	Water Quality	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 25)	How would changes in temperature brought about by the operation of the project affect the biological productivity of the system, particularly macro-invertebrates that provide food for fish? How would temperature differences brought by the project affect fish and aquatic life downstream, including below the falls?	The evaluation of potential changes of water temperature and potential effects on aquatic resources due to project operation will be addressed in the aquatic resources related study plans.
WDFW 65	Groundwater	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 26)	WDFW recommends evaluating the partial water diversions affect on seeps, springs, wetlands, riparian areas, and tributaries.	The Groundwater Study Plan addresses potential impacts from water diversion on the interface between groundwater and the North Fork. If impacts are identified, this evaluation would include a discussion of effects on seeps, springs, wetlands, riparian areas, and tributaries.
WDFW 66	Groundwater	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 26)	WDFW recommends evaluating the study area include seeps, springs, wetlands, riparian areas, and tributaries within the zone of influence.	The Groundwater Study Plan addresses potential impacts from water diversion on the interface between groundwater and the North Fork. If impacts are identified, this evaluation would include a discussion of effects on seeps, springs, wetlands, riparian areas, and tributaries.
WDFW 67	Groundwater	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 26)	WDFW recommends evaluating the diversion to have impacts on seeps, springs, wetlands, riparian areas, and tributaries.	The Groundwater Study Plan addresses potential impacts from water diversion on the interface between groundwater and the North Fork. If impacts are identified, this evaluation would include a discussion of effects on seeps, springs, wetlands, riparian areas, and tributaries.
WFW 68	Hydrology	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 26)	WDFW requests an explanation on how the licensee will gauge or calculate how much water they will divert.	The turbine inlet valve will be equipped with pressure transducers, during plant commissioning a calibration curve is developed relating pressure to flow and valve aperture. Diversion quantities will be known with high accuracy and precision.
WDFW 69	Hydrology	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 27)	WDFW recommends including all fish species and other important aquatic species like macro-invertebrates.	The Aquatic Resources Study Plan will incorporate hydrology data in any format necessary to evaluate impacts on species of interest.
WDFW 70	Hydrology	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 27)	WDFW recommends creating Objective 4: Please develop PM&E measures for any unwanted project impacts due to changed hydrology.	PM&E measures for potential project impacts will be done on a resource specific basis. For example, wildlife PM&E measures would be discussed within the Wildlife, Vegetation, and Sensitive Habitats study report. The Hydrology Study Plan simply produces the baseline hydrologic data needed for a resource-specific analysis.

WDFW 71	Noise	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 27)	WDFW suggests that BCH also follows disturbance buffers created or recommended by WDFW and the U. S. Fish and Wildlife Service.	Comment Noted. See §7.4 Determine if Construction Activities and Operation of the Project Would Be Audible to Area Residents, Recreational Users, or Other Sensitive Receptors in the Vicinity Of The Project.
WDFW 72	Noise	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 27)	BCH will need the home ranges of large ranging species and the habitats within the ranges. Raptors, including peregrine falcons, ospreys, and Northern goshawk, and bats will make up most of the large ranging species.	This comment will be addressed in the Wildlife, Vegetation, and Sensitive Habitats Study Plan, but information generated in the Noise Study Plan will feed the analysis of large ranging species. See §7.4 Determine if Construction Activities and Operation of the Project Would Be Audible to Area Residents, Recreational Users, or Other Sensitive Receptors in the Vicinity Of The Project
WDFW 73	Noise	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 28)	Actively managed timberlands do not rule out habitat for sensitive species such as more common raptors and nocturnal species.	Comment Noted. See §7.4 Determine if Construction Activities and Operation of the Project Would Be Audible to Area Residents, Recreational Users, or Other Sensitive Receptors in the Vicinity Of The Project.
WDFW 74	Noise	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 28)	Please adjust seasonal-timing and time of day for construction activities as possible measures to avoid impacts to some wildlife. Moving the project area can create distance between the disturbance and the sensitive wildlife species.	This is a potential PM&E measure, which will be addressed in the Wildlife, Vegetation, and Sensitive Habitats Study Plan. See §7.5 Propose Measures, as Needed, to Reduce, Avoid or Mitigate Noise Impacts.
WDFW 75	Recreational Boating and River Access	WDFW (Recommendations and Comments on PSPs, 12/6/2012, pg. 28)	PM&E measure could require river access downstream and upstream of the weir and/or portage around the weir.	The development of PM&E measures is a component of the study plan.
WDFW 76	Fish Passage	WDFW (E-mail, 12/13/2012)	The air-burst cleaning system is meant as a screen cleaner, not on the trash racks. WDFW indicated that the screens should be near vertical, but would like to specify that we recommend that BCH install the screen at a incline to the angle of the existing bank line, because they actually clean better than vertical ones.	Comment Noted.
WDFW 77	Fish Passage	WDFW (E-mail, 12/13/2012)	How will the river maintain sweep velocities for fish guidance and debris removal?	Comment Noted. Sweeping velocities for fish guidance and debris removal are two issues to be considered when carrying out §7.1.3 of the study plan.
WDFW 78	Fish Passage	WDFW (E-mail, 12/13/2012)	How long will it take for a cleaning cycle, assuming the screen air-burst system will burst sections sequentially starting at the upstream end?	Comment Noted. Time required for a cleaning cycle is another issue to be considered when carrying out §7.1.3 of the study plan.

WDFW 79	Fish Passage	WDFW (E-mail, 12/13/2012)	WDFW recommends that BCH move the notch in the weir structure as close to the screens as possible (flush if possible) to maintain the sweeping flow across the face of the screen or they will not clean.	Comment Noted.
WDFW 80	Fish Passage	WDFW (E-mail, 12/13/2012)	Another thought to consider, would we occlude the lower sections with debris from the upper sections and reducing the overall screening area during a cleaning cycle?	Comment Noted.
ECY 1	Geomorphology, Large Wood, and Sediment Transport	ECY (Recommendations and Comments on PSPs, 12/6/2012, pg. 3)	BCH must demonstrate how the inflatable dam would impact the natural flow of sediments during project operation. Explanation should include maintenance procedure and frequency for cleaning up the sediment build up behind inflatable dam and how it's going to impact turbidity downstream.	§7.7 Define Potential Scenarios for Sediment and Large Wood to Affect Project Infrastructure and §7.6 Assess If and How Project Design and Operation Alternatives May Impact Flow Duration, Stream Power, and Resulting Channel Forming Processes address this comment.
ECY 2	Geomorphology, Large Wood, and Sediment Transport	ECY (Recommendations and Comments on PSPs, 12/6/2012, pg. 3)	Based upon experiences with other inflatable dam structures, if BCH anticipates turbidity violations during routine inflatable dam maintenance and clean up then use the study plan to discuss alternatives to avoid turbidity violations.	§7.7 Define Potential Scenarios for Sediment and Large Wood to Affect Project Infrastructure and §7.6 Assess If and How Project Design and Operation Alternatives May Impact Flow Duration, Stream Power, and Resulting Channel Forming Processes address this comment.
ECY 3	Water Quality	ECY (Recommendations and Comments on PSPs, 12/6/2012, pg. 3)	Determine the existing water quality conditions in the water bodies impacted by the construction and operation of Black Canyon Hydroelectric Project. Evaluate if the current water quality standards are being met or not. Ecology recommends that BCH monitor daily water temperatures above the dam, within the bypass reach and downstream of the powerhouse.	Water temperatures will be monitored above the dam, within the bypass reach and downstream of the powerhouse.
ECY 4	Water Quality	ECY (Recommendations and Comments on PSPs, 12/6/2012, pg. 3)	Determine the background conditions for turbidity and natural conditions for temperature, DO, pH, total dissolved gas (TDG), phosphorus, pesticides, etc.) BCH must assess dissolved oxygen and nutrient loading seasonally, as practical, within and downstream of the bypass reach.	§7.2 Water Quality Monitoring - Baseline includes sampling of temperature, DO, pH, dissolved gas, phosphorus, pesticides, and nutrients on a seasonal basis (or more frequent).
ECY 5	Water Quality	ECY (Recommendations and Comments on PSPs, 12/6/2012, pg. 3)	Provide detailed monitoring plan for parameters of concern (e.g., dissolved oxygen, TDG, temperature etc.). Plan should include monitoring locations, frequencies, analysis protocols and QA/QC plan.	The requested additional details for the Plan have been included in the revised study plan.

ECY 6	Generic Comment	ECY (Recommendations and Comments on PSPs, 12/6/2012, pg. 3)	Provide inventory, storage location and handling plan for all hazardous materials, petroleum products and wastes.	The study results will help inform the development of a management plan that will be submitted with the license application addressing these issues.
ECY 7	Generic Comment	ECY (Recommendations and Comments on PSPs, 12/6/2012, pg. 3)	Provide Spill Prevention, Control, and Countermeasure (SPCC) Plans.	The study results will help inform the development of an SPCC Plan that will be submitted with the license application.
ECY 8	Generic Comment	ECY (Recommendations and Comments on PSPs, 12/6/2012, pg. 4)	Ecology recommends evaluating the impacts of water diversion on tributaries, wetlands and riparian areas.	An evaluation of impacts on tributaries, wetlands and riparian areas has been addressed in the study plan.
ECY 9	Water Quality	ECY (Recommendations and Comments on PSPs, 12/6/2012, pg. 4)	Page 6, Section 5.4: Change the heading from Potential of Hydrogen to pH.	Change made.
ECY 10	Generic Comment	ECY (Recommendations and Comments on PSPs, 12/6/2012, pg. 4)	BCH must briefly discuss Construction Waste Management plan to handle the solid waste generated during construction. Description must include types of waste generated and the brief plan to dispose it off. Depending upon the amount and type of waste generated detailed plan may be required with the Construction Stormwater NPDES permit.	The study results will help inform the development of a management plan that will be submitted with the license application addressing these issues.
DNR 1	Wildlife, Vegetation, and Sensitive Habitats	DNR (Comments on PSPs, 12/6/2012, pg. 2)	In the phrase "... or rare plants that have been designated as rare under the Washington Natural Heritage Program. ", the term "rare" should be defined as Endangered, Threatened, or Sensitive.	The study plan has been revised accordingly. See §2.2 Rare Plan Study.
DNR 2	Wildlife, Vegetation, and Sensitive Habitats	DNR (Comments on PSPs, 12/6/2012, pg. 2)	Rare plant surveys should include non-vascular species designated by WNHP as Endangered, Threatened, or Sensitive.	The study plan has been revised accordingly. See §2.2 Rare Plan Study.
DNR 3	Wildlife, Vegetation, and Sensitive Habitats	DNR (Comments on PSPs, 12/6/2012, pg. 2)	Reference to "project features identified in Appendix B ". Appendix B is a map and appears to be a duplicate of Appendix A. Appendix B needs to be corrected.	Comment Noted.
DNR 4	Wildlife, Vegetation, and Sensitive Habitats	DNR (Comments on PSPs, 12/6/2012, pg. 2)	The term "regionally rare" should be defined to include Washington Natural Heritage Program (WNHP) rankings of G1, G2, G3, S1, S2, or S3 and any habitats included in WDFW Priority Habitats List. See http://www1.dnr.wa.gov/nhg/refdesk/lists/stat_rank.html for Global and State rank definitions. Contact the WNHP regarding habitats and plant association lists and rankings.	The study plan has been revised accordingly. See §2.2 Rare Plan Study.

DNR 5	Wildlife, Vegetation, and Sensitive Habitats	DNR (Comments on PSPs, 12/6/2012, pg. 2)	The Study Areas for the Rare Plant and Wildlife Observation components of the study should be consistent with the Vegetation Habitat Study, and in particular should include the riparian areas adjacent to, and immediately up- and downstream of the North Fork Project reach. At least portions of these riparian areas are likely to be affected by fluctuating water levels, which could affect plant and wildlife species.	The study plan has been revised accordingly. See §3.2 Rare Plan Study.
DNR 6	Wildlife, Vegetation, and Sensitive Habitats	DNR (Comments on PSPs, 12/6/2012, pg. 2)	RE: wetland classification. Classification should include hydrogeomorphic class (HGM), as described in Washington Dept. of Ecology Wetland Rating System, in addition to Cowardin type.	The study plan has been revised accordingly. See §7.1.1.5 Habitat Unit Sampling.
DNR 7	Wildlife, Vegetation, and Sensitive Habitats	DNR (Comments on PSPs, 12/6/2012, pg. 2)	Field surveys for rare plants should be conducted via floristic inventories of the project area. Because rare plant occurrences are not necessarily correlated with "overall diversity" or "structural complexity", these factors should not be used to guide field surveys. Floristic inventories should be conducted throughout the project area, with additional focus on habitat types that are most likely to support particular rare plants, i.e. using the "intuitive-controlled methodology" to distribute inventory time among habitat types. Also, plant surveys should follow the WNHP "Suggested Guidelines for Conducting Rare Plant Surveys for Environmental Review, Washington State ", located at: http://www1.dnr.wa.gov/nhp/refdesk/pubs/rareplantsurveyguidelines.pdf .	The study plan has been revised accordingly. See §7.2.1.2 Field Surveys.
DNR 8	Wildlife, Vegetation, and Sensitive Habitats	DNR (Comments on PSPs, 12/6/2012, pg. 2-3)	In addition to conducting point counts and walking surveys, field surveys should include searches for the closest proximity peregrine falcon eyrie. This location should be used in assessing potential disturbance to peregrine falcon from proposed project activities, including noise levels.	The study plan has been revised accordingly. See §7.3.1.2 Field Surveys.

DNR 9	Wildlife, Vegetation, and Sensitive Habitats	DNR (Comments on PSPs, 12/6/2012, pg. 3)	The statement that "Wetlands and habitat for stream-dwelling amphibians are not likely to exist within the project area. " should be re-considered. The river corridor itself likely has suitable habitat for amphibians, and there are a number of tributary streams that join the river within the project area. This statement also conflicts with statements in 7.1.1.5 regarding the classification of any wetlands found within the project area, suggesting there may be wetlands in the area.	The study plan has been revised accordingly. See §7.1.1.5 Habitat Unit Sampling.
DNR 10	Wildlife, Vegetation, and Sensitive Habitats	DNR (Comments on PSPs, 12/6/2012, pg. 3)	The project area as shown on this map is not consistent with the project area as described on p. 3 as the "Study Area". The map does not include the riparian areas adjacent to, and immediately up- and downstream of the North Fork Project reach.	Comment Noted.
Snoq. Tribe 1	Cultural Resources	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 1)	We would like it to be known that the Snoqualmie People consider water a sacred resource.	Comment noted and added to §5 Existing Information within the study plan.
Snoq. Tribe 2	Cultural Resources	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 1)	This project has the potential to affect the water that flows over the Snoqualmie Falls.	Comment noted and a statement identifying the project's location upstream of Snoqualmie Falls has been added to §5 Existing Information.
Snoq. Tribe 3	Fisheries/Fish Passage	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 2)	Passage for non-salmonid species, including benthic species such as Cottus spp.	These issues were discussed at the Aquatic Resource Workgroup meeting (attended by the Snoqualmie Tribe) and the revised study plan reflects that discussion.
Snoq. Tribe 4	Fisheries/Fish Passage	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 2)	Fish screening and attraction water should be explicitly and thoroughly addressed.	Comment Noted. Attraction water is another issue to be considered when carrying out §7.1.3 of the study plan. At this point, BCH is assuming that fish screens will be required and will design the project to meet WDFW requirements for velocity, etc.
Snoq. Tribe 5	Fisheries/Fish Passage	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 2)	A complete description of possible maintenance scenarios and how they could affect fish passage.	§7.1.3 includes an evaluation of different alternatives which include minimizing environmental disturbance and evaluating the effectiveness of final design in passing the relevant fish species.
Snoq. Tribe 6	Fisheries/Fish Passage	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 2)	Periphyton, benthic macroinvertebrate, drift, and mollusk sampling per Chris Maynard's (ECY) guidance submitted regarding this proposed site. Include analysis of fish stomach contents, not limited to trout and suckers but extended to Prosopium and Cottus.	These issues were discussed at the Aquatic Resource Workgroup meeting (attended by the Snoqualmie Tribe) and the revised study plan reflects that discussion.

Snoq. Tribe 7	Geomorphology, Large Wood, and Sediment Transport	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 2)	Describe bedload movement under a No Action alternative as well as under various Operational Alternatives (degree of inflation/deflation of dam) and also include other Design Alternatives.	The baseline analysis will describe bedload movement under a No Action Alternative. The plan will also describe movement under various operational scenarios. See §7.7 Define Potential Scenarios for Sediment and Large Wood Transport to Affect Project Infrastructure.
Snoq. Tribe 8	Groundwater	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 2)	Quantify how river dewatering is expected to affect wet rock faces, seeps, and riparian wetlands in the bypass reach as well as downstream from the tailrace.	The Environmental Flows Study Plan evaluates changing flow regimes impact on aquatic habitat within the project reach.
Snoq. Tribe 9	Instream Flow	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 3)	Ensure minimum instream flows are set that will enable compliance with all applicable State and Federal water quality laws.	Comment Noted.
Snoq. Tribe 10	Instream Flow	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 3)	Ensure that minimum instream flows are sufficient not to deleteriously impact salmonids and other fish species (e.g. Cottts spp., Catostomus spp.).	Comment Noted.
Snoq. Tribe 11	Instream Flow	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 3)	Include effects of altered hydrology and flows on mollusks and amphibians (e.g. Ascaphus, Rhyacotriton, and Dicamptodon), e.g. carrying capacity of habitat during various stages of life cycles and effects of flow diversion.	The Environmental Flows study plan will address these issues in a comprehensive manner when evaluating flows under various operational scenarios. This issue was also discussed at the Aquatic Resource Workgroup meeting (attended by the Snoqualmie Tribe) and the revised study plan reflects that discussion.
Snoq. Tribe 12	Instream Flow	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 3)	Similarly, analyze how altered hydrology and flows will affect extent and productivity of "splash zone" habitat communities typically supporting plant species such as Racomitrium aciculare, Dichodontium pellucidum, and Scleropodium obtusifolium.	The Environmental Flows study plan will address these issues in a comprehensive manner when evaluating flows under various operational scenarios. This issue was also discussed at the Aquatic Resource Workgroup meeting (attended by the Snoqualmie Tribe) and the revised study plan reflects that discussion.
Snoq. Tribe 13	Hydrology	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 3)	Include a table summarizing ID, locations and operational histories of streamflow gages.	The study plan has been revised accordingly.
Snoq. Tribe 14	Noise	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 3)	Relate noise studies to wildlife studies.	The noise and wildlife studies will be interrelated, particularly in determining the areas of effect and identifying potential impacts and mitigation efforts. See sections 7.4 and 7.5 of the revised study plan.

Snoq. Tribe 15	Water Quality	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 3)	Relate water quality to discharge, and quantify likely effects of various proposed operational scenarios on water quality parameters including temperature, turbidity, dissolved oxygen, and chemistry; and for the latter, taking into account the various materials alternatives likely to be used in the construction of the proposed bypass tunnel. Relate to fisheries and other biota.	The Environmental Flows study plan will address these issues in a comprehensive manner when evaluating flows under various operational scenarios.
Snoq. Tribe 16	Water Quality	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 4)	Define water quality monitoring stations, preferably including sites above the proposed diversion, two sites within the canyon, one site just above the tailrace, a site within the tailrace, and a site at a distance below the tailrace to support thorough mixing.	Water quality monitoring stations have been defined. However, at this point, prior to construction BCH is proposing a monitoring site above the intake, within the Project reach, and below the tailrace.
Snoq. Tribe 17	Water Quality	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 4)	Define the frequency of the proposed water quality sampling protocol.	The frequency of sampling has been defined in the revised study plan.
Snoq. Tribe 18	Wildlife, Vegetation, and Sensitive Habitats	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 4)	See above references to "splash zone" (a sensitive habitat) under Hydrology, and to wildlife under Noise.	Comment Noted.
Snoq. Tribe 19	Wildlife, Vegetation, and Sensitive Habitats	Snoq. Tribe (Comments & Requests on PSPs, 12/5/2012, pg. 4)	Include analysis of temporary and permanent impacts to wildlife, vegetation and sensitive habitats such as wetlands and rock-faced seeps, in conjunction with an inventory of potential affected species.	The revised study plan will analyze temporary and permanent impacts to wildlife, vegetation, and sensitive habitats.
City of Snoq. 1	Groundwater	City of Snoq. (Comments on BCH Proposed Studies, 12/6/2012, pg. 1)	The area in question is bounded by discrete landforms including the river to the north, east, and south and bedrock outcroppings to the west. The area in question is roughly 0.5 square mile.	Comment Noted.
City of Snoq. 2	Groundwater	City of Snoq. (Comments on BCH Proposed Studies, 12/6/2012, pg. 2)	An adequate representation of hydrogeological parameters such as aquifer thickness, formation geology, transmissivity, hydraulic conductivity, recharge, etc., will be crucial to provide an accurate representation of the aquifer that supplies Canyon Springs.	Comment Noted. Objective 3 highlights the importance of these elements.
City of Snoq. 3	Groundwater	City of Snoq. (Comments on BCH Proposed Studies, 12/6/2012, pg. 2)	The City wants to ensure that the criteria for determining the need for additional boreholes or subsurface investigation is based on sound hydrogeologic reasoning. In addition, the City would like to review any geological data and provide input prior to that decision.	The Progress Reporting section and schedule has been updated to provide an opportunity for review of geological data and input from the City.

City of Snoq. 4	Groundwater	City of Snoq. (Comments on BCH Proposed Studies, 12/6/2012, pg. 2)	The emphasis of the Proposed Groundwater Study Plan is on impacts to water quantity to Canyon Springs. The Plan should also address impacts to water quality.	Water quality issues will primarily be addressed in the Water Quality study plan, but information gathered across a range of studies will allow for a discussion of potential water quality impacts on groundwater.
City of Snoq. 5	Groundwater	City of Snoq. (Comments on BCH Proposed Studies, 12/6/2012, pg. 2)	BCH should note that water quality is also an issue in terms of mitigation for quantity impacts.	Comment Noted. The general goals identified in §2 Study Description and Objectives describe an identification of potential impacts and mitigation measures. This analysis will include both quantity and quality issues.
City of Snoq. 6	Groundwater	City of Snoq. (Comments on BCH Proposed Studies, 12/6/2012, pg. 2-3)	It should be noted that any mitigation water provided to the City of Snoqualmie must be of similar water quality to Canyon Springs.	Comment Noted.
City of Snoq. 7	Groundwater	City of Snoq. (Comments on BCH Proposed Studies, 12/6/2012, pg. 3)	If water is supplied from the penstock, it will be considered a surface source and would require treatment to current drinking water standards under WAC 246-290 and the Safe Drinking Water Act. This treatment would include filtration and disinfection.	Comment Noted.
City of Snoq. 8	Groundwater	City of Snoq. (Comments on BCH Proposed Studies, 12/6/2012, pg. 3)	We concur that it is in everyone's best interest to maintain open communication and the City is eager to review and comment on the geophysical data and the groundwater model as it develops. In addition, we are willing to assist BCH in obtaining historical Canyon Springs data from the City of Snoqualmie.	BCH will continue to maintain open communication with the City and appreciates the City's offer to provide assistance in obtaining historical Canyon Springs data.
AW 1	Recreation Resources	AW (Comments on PSP & SD2, 12/6/2012, pg. 2)	Angler use should be included explicitly within this study.	Angler use will be included in the general evaluation of recreation.
AW 2	Recreation Resources	AW (Comments on PSP & SD2, 12/6/2012, pg. 2)	Include analysis of changes in HFM permit system over the past ten years and its impacts to visitor use.	If made available by HFM, a discussion of the permit system and visitor use will be included.
AW 3	Recreation Resources	AW (Comments on PSP & SD2, 12/6/2012, pg. 3)	Visitor usage should be considered in the context of changing public access policies.	Comment Noted.
AW 4	Recreational Boating and River Access	AW (Comments on PSP & SD2, 12/6/2012, pg. 4)	Study Area should include the King County Three Forks Natural area, which is the current take-out. Access points should be mapped and identified along with their current access status.	The study plan was revised in consultation with the Recreation workgroup (including AW) to reflect these comments.
AW 5	Recreational Boating and River Access	AW (Comments on PSP & SD2, 12/6/2012, pg. 4)	Concur with the use of USGS gage 12142000 as the basis for hydrologic analysis and evaluation of recreation flows.	Comment Noted.
AW 6	Recreational Boating and River Access	AW (Comments on PSP & SD2, 12/6/2012, pg. 4)	It is important that the 15-minute data be used for hydrologic analysis.	The revised study plan provides for the use of 15-minute data if necessary.

AW 7	Recreational Boating and River Access	AW (Comments on PSP & SD2, 12/6/2012, pg. 4)	See document for detailed comment regarding Phase 1.	The study plan was revised in consultation with the Recreation workgroup (including AW) to reflect these comments.
AW 8	Recreational Boating and River Access	AW (Comments on PSP & SD2, 12/6/2012, pg. 4)	See document for detailed comment regarding Phase 2.	The study plan was revised in consultation with the Recreation workgroup (including AW) to reflect these comments.
AW 9	Recreational Boating and River Access	AW (Comments on PSP & SD2, 12/6/2012, pg. 4-5)	See document for detailed comment regarding Phase 2 Report.	The study plan was revised in consultation with the Recreation workgroup (including AW) to reflect these comments.
AW 10	Recreational Boating and River Access	AW (Comments on PSP & SD2, 12/6/2012, pg. 6)	See document for detailed Survey Recommendations.	The study plan was revised in consultation with the Recreation workgroup (including AW) to reflect these comments.