



PUGET SOUND ENERGY
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BAKER RIVER GRAVEL MANAGEMENT PLAN SETTLEMENT AGREEMENT ARTICLE 108

BAKER RIVER HYDROELECTRIC PROJECT
FERC No. 2150



Puget Sound Energy
Bellevue, Washington

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Acronyms and Abbreviations

This abbreviation, acronym, or short name	Refers to
ARG	Aquatic Resource Group
BMPs	Best Management Practices
BRCC	Baker River Coordinating Committee
BRGMP	Baker River Gravel Management Plan
CWA	Clean Water Act
Ecology	Washington State Department of Ecology
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
JARPA	Joint Aquatic Resources Permit Application
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Commission
OHWM	Ordinary High Water Mark
PSE	Puget Sound Energy, Inc.
SA	Settlement Agreement
SEPA	State Environmental Policy Act
TESC	Temporary Erosion and Sediment Control Plan
TRIG	Terrestrial Resources Implementation Group
USACE	United States Army Corps of Engineers
USDA-FS	United States Department of Agriculture- Forest Service
USFWS	United States Fish & Wildlife Service
WDFW	Washington State Department of Fish and Wildlife
WA DNR	Washington Department of Natural Resources



1.0 Executive Summary

This Baker River Gravel Management Plan established guidelines and procedures to evaluate and monitor channel and substrate conditions of the lower Baker River alluvial fan and affected reaches of the Skagit River downstream and immediately upstream of the Baker River confluence, and to implement gravel augmentation measures if warranted. It has been prepared to guide implementation of settlement agreement article 108 (SA 108), “Gravel” of the *Order on Offer of Settlement, Issuing New License and Dismissing Amendment Application as Moot* for the Baker River Hydroelectric Project (FERC No. P-2150). This plan was prepared collaboratively by the Baker River Project Aquatic Resource Group, which is comprised of representatives of the signatories to the settlement agreement and other interested parties.

Implementation of SA 108 involves the following key elements:

- Identification of gravel augmentation measures that could be implemented to improve the geomorphic function of the lower Baker River alluvial fan and affected downstream reach of the Skagit River;
- Development of procedures for evaluating and monitoring the conditions in the Skagit River; and
- Identification of implementation guidelines and triggers for gravel/cobble augmentation.

2.0 Introduction

The Baker River Gravel Management Plan (BRGMP) has been prepared for the Baker River Hydroelectric Project, Federal Energy Regulatory Commission (FERC) No. P-2150, (“project”), pursuant to the *Order on Offer of Settlement, Issuing New License and Dismissing Amendment Application as Moot* dated October 17, 2008 (the “license”). Specifically, settlement agreement article 108 (SA 108), “Gravel” sets forth the applicable guidelines and procedures to evaluate and monitor channel and substrate conditions of the lower Baker River alluvial fan and affected reaches of the Skagit River downstream and immediately upstream of the Baker River confluence, and to implement gravel augmentation measures if warranted. This plan was prepared in consultation with the Aquatic Resource Group (ARG), which is comprised of representatives of the signatories to the settlement agreement and other interested parties.

The Baker Project is owned and operated by Puget Sound Energy (PSE) and consists of the Lower Baker Development completed in 1925, and the Upper Baker Development completed in 1959 (figure 1). The project includes facilities located on and adjacent to the Baker River, occupying about 5,200 acres of land within the Mt. Baker-Snoqualmie Forest. The Lower Baker Dam forms Lake Shannon and is located near Concrete, Washington, near the confluence of the Baker and Skagit rivers. Lake Shannon is approximately seven miles long and covers about 2,278 acres at full pool. The Upper Baker Dam forms Baker Lake, located in Whatcom County near the border with Skagit

County. Baker Lake is approximately nine miles long and covers about 4,980 acres at full pool. The two existing hydroelectric facilities have been operating at a combined capacity of 170 megawatts. Downstream of Lower Baker Dam, the Baker River flows south for approximately 1.2 miles before entering the Skagit River near RM 54.

Under the terms of the license and the settlement agreement, PSE will implement this BRGMP. This document describes relevant Project features, identifies commitments of various parties, outlines the anticipated schedule of activities, and describes the administrative process that will be followed when implementing the plan.

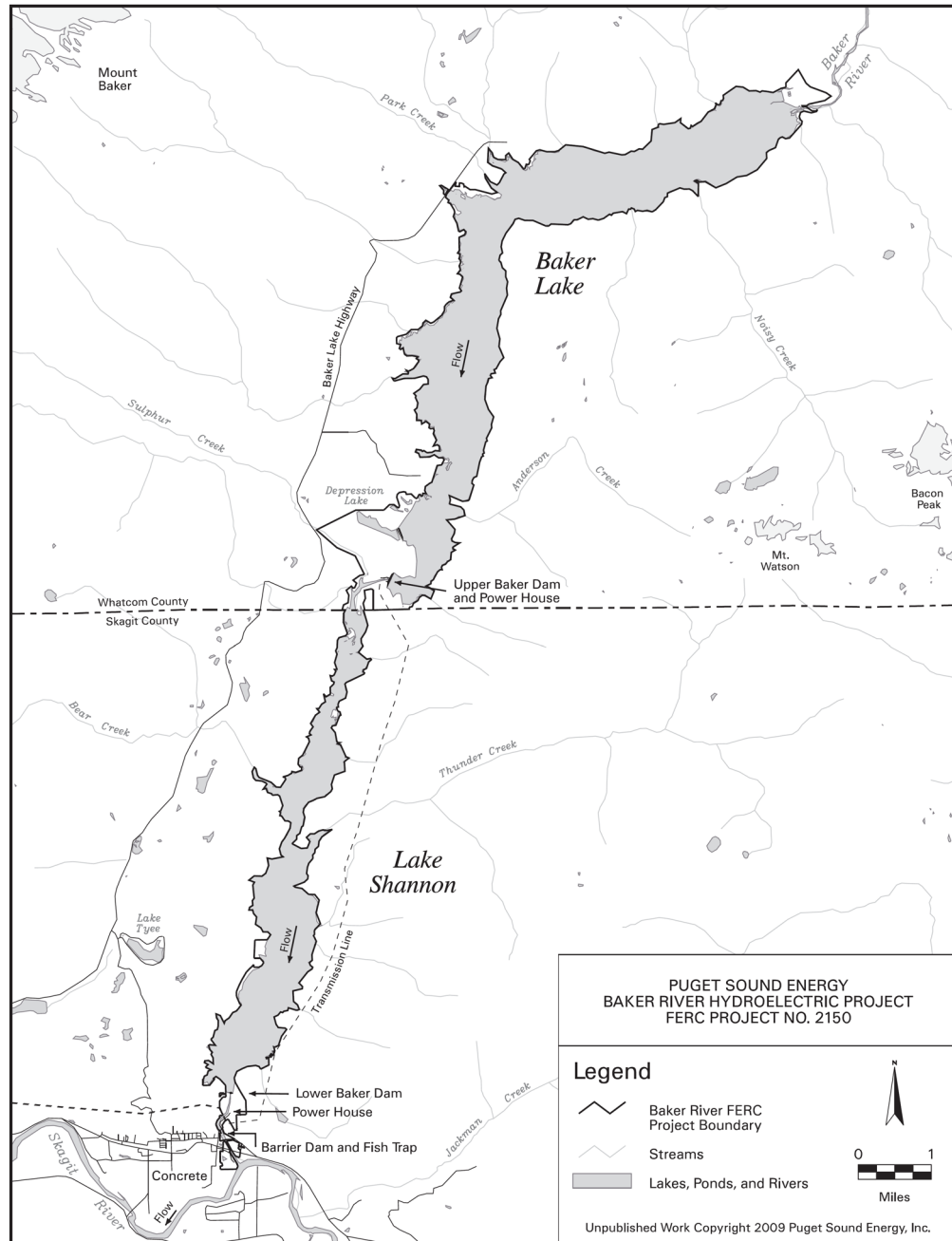


Figure 1. Baker River Hydroelectric Project, Concrete, Washington.

3.0 Basis for the Plan

SA 108 was developed to maintain or improve the geomorphic function of the lower Baker River alluvial fan and affected downstream reach of the Skagit River. This BRGMP has been prepared in response to SA 108, which is provided in its entirety below in section 3.1.

3.1 SA 108 – Gravel

SA 108, “Gravel”, states:

“Within two years of license issuance, or on an alternative schedule submitted to the Commission for approval, the licensee shall develop and file with the Commission for approval a Baker River Gravel Management Plan (BRGMP) for the purposes of evaluating sediment interruption by the Baker Project and identifying any gravel augmentation measures to be implemented by the licensee. Gravel augmentation identified in the plan shall not exceed 12,500 tons annually. Licensee shall develop the plan in a manner that considers cost-effective evaluation measures and does not require a comprehensive assessment of sediment dynamics in the Skagit River Basin. The BRGMP, at a minimum, shall describe the existing and proposed:

Gravel augmentation measures intended to improve the geomorphic function of the Lower Baker River alluvial fan and affected downstream reach of the Skagit River to the extent of Project impediment to sediment transport, which includes the mainstem river channel and associated depositional features located within the Skagit River floodplain and may address the following: 1) location and contribution of gravel/cobble-sized material in the affected reach, 2) condition and substrate attrition rates in the reach immediately upstream, 3) substrate attrition rates within the affected reach, and 4) substrate sizes in relation to biological needs of salmonids and other aquatic organisms;

Procedures for evaluating and monitoring the conditions in the Skagit River to determine when and if gravel augmentation is or becomes warranted and to track long-term trends in substrate profile degradation; and

Implementation guidelines and triggers for gravel/cobble augmentation. Triggers may be based on various factors, which may include, without limitation, the condition of the middle Skagit River absent Project influence, fluvial geomorphic changes throughout the term of the license, and/or habitat suitability for salmonids or other aquatic organisms using the middle Skagit River.

The licensee shall develop the BRGMP following consultation with the ARG. The licensee shall allow a minimum of 60 days for the consulted entities to comment and to make recommendations before filing the plan with the Commission. The licensee shall include with the plan, documentation of consultation and copies of comments and recommendations on the completed plan after it has been prepared and provided to the ARG, and specific descriptions of how ARG comments are accommodated by the plan. If the licensee does not accept a recommendation, the filing shall include the licensee’s reasons, based on Project-specific information.

If licensee needs to submit an alternative schedule to the Commission, licensee shall prepare the schedule in consultation with the ARG. Licensee shall provide a copy of the proposed alternative schedule to the ARG at least 30 days prior to submitting the alternative schedule to the Commission, and shall forward any comments on the alternative schedule to the Commission along with the proposed alternative

schedule. Upon approval, the alternative schedule becomes a requirement under the license, and the licensee shall implement the alternative schedule, including any changes required by the Commission.

Licensee shall perform the evaluation and monitoring, and gravel augmentation measures as required by the plan.”

3.2 Relationship to Other Articles of the License and Settlement Agreement

The FERC license and settlement agreement refer to the BRGMP in several other articles. Under settlement agreement article 102 (SA 102), “Aquatics Reporting”, PSE shall submit an annual report by March 31 of each year that includes a description of how PSE, agencies, and tribes coordinated implementation of SA 108. Activities conducted during the previous 12-month reporting period (January 1 to December 31) and the status of development or implementation of measures will be summarized in each annual report.

Under settlement agreement article 410 (SA 410), “Water Quality”, PSE shall comply with the terms and conditions of the 401 Certification issued by Ecology.” The Ecology 401 certification for the Baker River Hydroelectric Project (FERC No. 2150), included as Appendix C of the License, states in part:

“If water quality exceedances are predicted as being unavoidable, a short-term modification must be applied for in writing to Ecology and WDFW at least three months prior to project initiation. If any project has a long-term impact on a regulated water quality parameter, characterization monitoring must be performed for the impacted parameter(s), and a monitoring plan must be outlined in the Water Quality Protection Plan.”

The 401 Certification specifically notes that this requirement applies to gravel augmentation projects that may be implemented as part of the license.

Settlement agreement article 601(SA601), “Baker River Coordinating Committee”, formalizes a licensing implementation entity referred to as the Baker River Coordinating Committee (BRCC), and provides the framework for completing consultation with settlement agreement signatories, making decisions, coordinating activities between resource groups, and implementing actions required under the agreement. SA 601 states in part:

“For decisions related to implementation of plans for Articles 108, 109, 305, 502-505, 602, and 603 only, the BRCC may approve a proposal on a majority vote of the BRCC.”

4.0 Goals

The goal of the BRGMP is to maintain or improve the geomorphic function of the lower Baker River alluvial fan and affected downstream reach of the Skagit River. Monitoring of the Skagit River will evaluate long-term trends in substrate profiles. SA 108 provides for augmentation of up to 12,500 tons of gravel by the licensee if warranted.

4.1 Key Elements of SA 108

SA 108 involves the following key elements:

- 1) Description of potential gravel augmentation measures intended to improve the geomorphic function of the lower Baker River alluvial fan and affected downstream reach of the Skagit River;
- 2) Procedures for evaluating and monitoring the conditions in the Skagit River; and
- 3) Implementation guidelines and triggers for gravel/cobble augmentation.

5.0 Regulatory Reference and Definitions

The BRGMP has been developed and will be implemented in a manner consistent with applicable local, state, and federal laws and regulations. If conflicts exist between the objectives or management guidelines of the BRGMP and any applicable law or regulation, the objectives and guidelines will be followed to the extent possible while still complying with the law or regulation.

5.1 Federal Authority and Reference

The License incorporates U.S. Department of Interior U.S. Fish and Wildlife Service, and U.S. Department of Commerce National Marine Fisheries Service conditions under section 7 of the Endangered Species Act (ESA).

Section 404 of the Clean Water Act (CWA) requires the issuance of a permit by the U.S. Army Corps of Engineers (USACE) prior to any discharge of dredge or fill material into waters of the U.S. As part of the permitting process, applicants must also demonstrate compliance with the ESA, the National Historic Preservation Act (NHPA), the Coastal Zone Management Act, and section 401 of the CWA. Enhancement and restoration activities in aquatic habitats, such as gravel augmentation, may require section 404 permits from the USACE and Section 401 water quality certifications from Ecology. Activities should be designed to minimize their effect on waters of the U.S.

5.2 Washington State Authority and Reference

The license incorporates requirements by Washington State Department of Ecology under Section 401(a)(1) of the Clean Water Act, including preparation of a Water Quality Protection Plan.

Activities conducted within “shorelines of the state” (non-federal lands within 200 feet of lakes of 20 acres or more and streams with an average annual flow of 20 cubic feet per second [cfs] or more) are subject to review and approval under the Washington State Shoreline Management Act and pertinent county and city shoreline management master programs. The shorelines of the Baker and Skagit rivers fall under the jurisdiction of the Shoreline Management Act. Gravel augmentation measures may require formal approval under the Shoreline Management Act.

The Washington State Hydraulic Code (RCW 77.55) requires the issuance of a hydraulic project approval (HPA) from WDFW for any activity that will use, divert, obstruct, or change the bed of a water of the state. State waters include all fresh waters, except those watercourses that are entirely artificial such as irrigation ditches, canals, and storm water

run-off devices. Most management activities that will occur in aquatic habitats, including gravel augmentation measures will require an HPA.

Washington State asserts ownership, through article XVII of the state constitution, to the, “beds and shores of all navigable waters in the state,” except those sold according to law. The State of Washington owns its aquatic lands in fee, and abutting owners and others wishing to use state-owned aquatic lands (SOAL) must obtain prior authorization for use of the land from the Washington Department of Natural Resources. Aquatic habitat activities, such as gravel augmentation would require such authorization.

6.0 Plan Implementation

6.1 Plan Area

The plan area for SA 108 includes the lower Baker River alluvial fan and affected reaches of the Skagit River downstream and immediately upstream of the Baker River confluence. The BRGMP applies to all lands within or below the ordinary high water mark (OHWM) of the lower Baker and Skagit rivers.

6.2 Rationale

Trapping of sand, gravels and larger-sized sediments in Baker Lake and Lake Shannon could potentially affect the salmonid spawning gravels downstream of the dams. Gravel augmentation restores the recruitment of gravels to the lower Baker River alluvial fan and middle Skagit River. Whether gravel augmentation would be effective at salmonid spawning habitat rehabilitation would depend on the processes that affect instream substrate conditions.

6.3 Funding

The cost of implementing the BRGMP will be the responsibility of PSE.

6.4 Development and Modification of the BRGMP

The licensee has prepared the BRGMP in consultation with the ARG. Consulted parties were provided a minimum of 60 days to comment and to make recommendations on the draft plan. Documentation of consultation and copies of comments and recommendations on the draft BRGMP are provided in section 9 of this report. Any recommendations not accepted by PSE have been identified, along with the licensee’s reasons based on project-specific information. During performance of the BRGMP, site conditions may warrant modifications to the FERC-approved plan. If required, future modifications to the BRGMP will be made following the decision-making process outlined in SA 601.

6.5 Procedures, Standards and Criteria

Implementation of the BRGMP involves identifying measures that could be implemented to augment gravel, defining channel conditions that will trigger the need for augmentation, and monitoring to determine when, where and if gravel augmentation is warranted. Elements of the implementation process are shown in figure 2 and described in greater detail in the following sections.

The BRGMP provides for the monitoring of conditions in the Skagit River below the Baker River confluence, and implementation of gravel augmentation measures if monitoring identifies such actions are warranted. During plan implementation, gravel augmentation will be implemented using best management practices and according to guidelines identified through the permitting process and consultation with the ARG. Changes to the standards and criteria will be reported in the annual report consistent with SA 102.

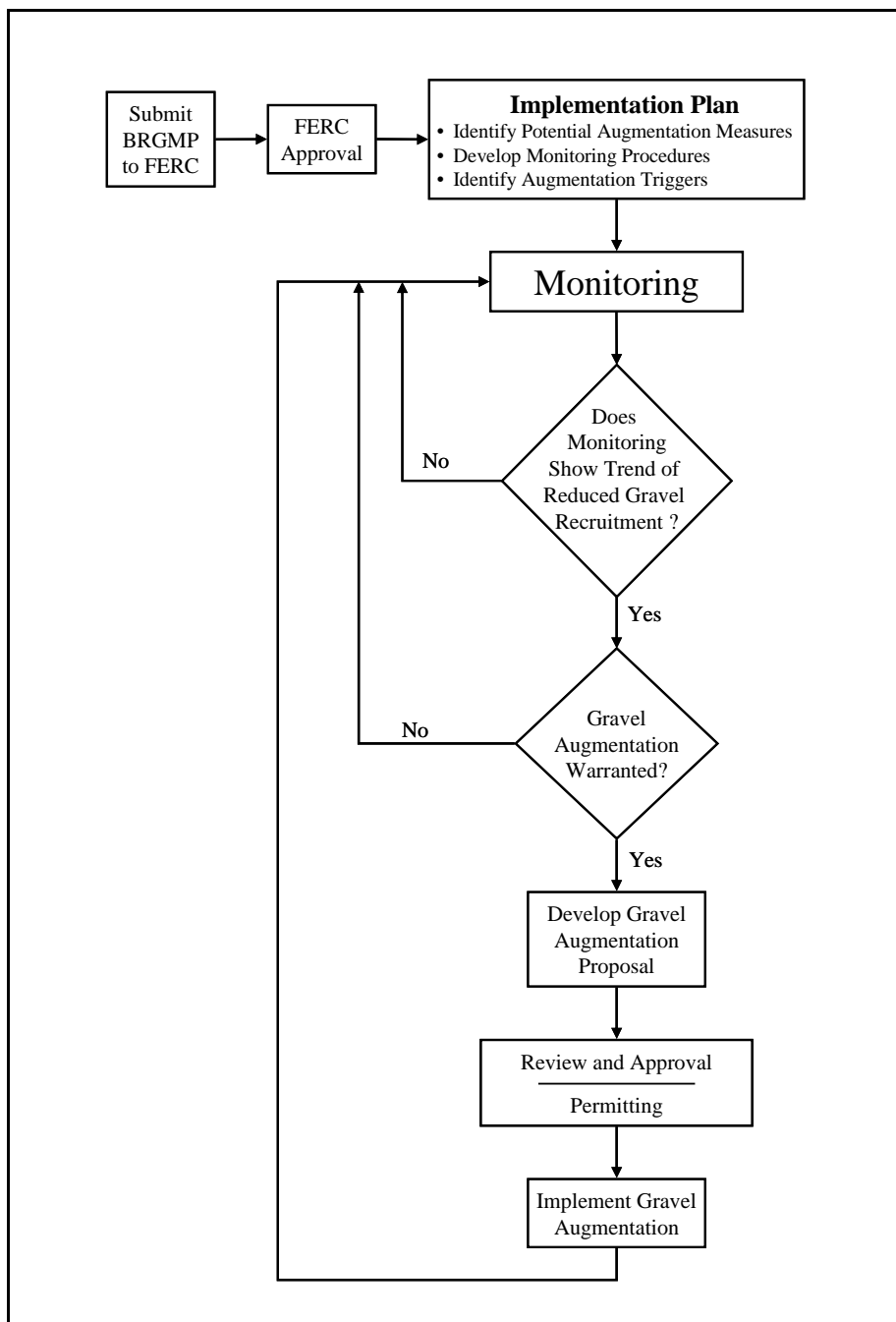


Figure 2. Process flow chart for the Baker River Gravel Management Plan, SA 108.

6.5.1 Identification of Potential Gravel Augmentation Measures

The selection of potential gravel augmentation measures is related to the spatial scale of the intended benefit. Gravel augmentation treatments such as hydraulic structure placement, spawning channels, riffle augmentation and bar shaping are designed to improve gravel conditions at the local scale (i.e., 5-7 stream widths). Reach scale gravel augmentation typically consists of passive gravel augmentation that provides for hydraulic entrainment and transport of gravels below a source location (Bunte, 2004).

SA 108 provides for gravel augmentation to improve the geomorphic function of the lower Baker River alluvial fan and the Skagit River reach below the Baker River confluence. Potential gravel augmentation measures will be identified in an implementation plan to be developed in consultation with the ARG. Measures to be considered will focus primarily on passive approaches, which involve placement of gravel in the river channel, allowing for subsequent redistribution by the river during high flows. For this approach to be successful, high flows must be available to entrain and transport the placed gravels, entrained gravels must be transported downstream and settle out in bars or riffles instead of being stored in deep pools or other gravel sinks where it is unavailable for use by spawning salmonids (Wheaton et al., 2004).

The implementation plan will identify potential input locations in the lower Baker River and techniques, placement timing, and volume and size gradation of material. The volume of material placed shall not exceed 12,500 tons annually, the amount of bedload that the Baker River is estimate to have annually contributed to the Skagit River system (R2, 2004). Permits required to implement the measures will be identified, along with an estimated timeline for obtaining those permits. Documentation of recommended potential gravel augmentation measures and implementation guidelines will be provided to the ARG for review. A copy of the document, along with comments received from the ARG and specific descriptions of how ARG comments are accommodated by the plan will be provided to the FERC as part of the annual report.

6.5.2 Development of Monitoring Procedures

River channel morphology will respond to changes in flow and sediment regimes unless hardened by hydromodification or natural bedrock/boulders. Channel change in response to reduced gravel recruitment can include channel degradation, substrate coarsening and channel narrowing. River channels may also respond to individual hydrologic or geomorphic events and exhibit short-term fluctuations that are not indicative of long-term trends. Monitoring of the mainstem Skagit River will be designed to identify long-term trends in channel change and differentiate trends from short-term fluctuations.

Potential channel change in the mainstem Skagit River will be evaluated by surveying channel cross-sections at gravel bars downstream and immediately upstream of the Baker River confluence. Transects will be surveyed to actual elevations (NAVD 88) during summer low flow conditions. The number, location and frequency of transect measurements will be developed in consultation with the ARG and identified in the implementation plan to be prepared following approval of the BRGMP. In addition to surveying the elevation of select transects, the composition and condition of gravel/cobble-sized material will be monitored at mainstem Skagit River gravel bars

downstream and immediately upstream of the Baker River confluence. Gravel condition will be assessed in relation to the biological needs of salmonids and other aquatic organisms using the middle Skagit River. Measurement techniques will be identified in the implementation plan but may consist of multiple pebble counts taken at gravel bars that support salmonid spawning activity. Subsurface sampling using a McNeil sampler is commonly used to determine substrate quality (Rosser and O'Connor, 2007); however, McNeil sampling in a cobble-bed river is problematic and a large number of samples are typically required to obtain data with high precision. Surface sampling using pebble counts can be used to monitor substrate quality in gravel and cobble-bed areas and can also indicate the frequency of bed mobilization.

Multiple pebble counts taken from select channel areas can be compiled to develop grain size distribution curves to reflect sediment conditions. A two-stage sampling approach can be used where multiple samples per site will be analyzed separately and then pooled to determine the number of samples needed to characterize sediment conditions within defined confidence intervals. The number, location, timing, frequency and method of substrate measurements will be identified in consultation with the ARG and identified in the implementation plan. The implementation plan, along with comments received from the ARG and specific descriptions of how ARG comments are accommodated by the plan, will be provided to the FERC as part of the annual aquatics reporting requirements.

The implementation plan will identify parameters that quantify conditions identified as augmentation triggers. Monitoring will identify conditions that indicate whether gravel augmentation is warranted, and, if augmentation occurs, to document the effects of the program. Monitoring results will be reported to the ARG annually, along with a specific description of the status of conditions identified as gravel augmentation triggers. If gravel augmentation triggers are not exceeded, monitoring will continue according to the timeline identified in the implementation plan.

If gravel augmentation occurs, monitoring will continue to document the results of augmentation activities. Compliance monitoring activities will be developed to ensure that augmentation activities comply with all permit conditions. Ongoing monitoring will confirm whether augmentation activities alter conditions that triggered the action. Documents produced in support of monitoring and implementation of gravel augmentation projects will be submitted to FERC as part of the annual aquatics report.

6.5.3 Identification of Augmentation Triggers

SA 108 provides for the annual augmentation of up to 12,500 tons of gravel if warranted. The objective of the mainstem Skagit River monitoring program will be to identify if gravel augmentation is or becomes warranted and to track long term trends in substrate composition. Conditions warranting gravel augmentation include long-term trends in channel degradation, substrate coarsening or other channel responses to reduced gravel recruitment. Triggers may be based on the condition of the Skagit River absent Project influence, fluvial geomorphic changes throughout the term of the license, or habitat suitability for salmonids or other aquatic organisms using the middle Skagit River. The trigger mechanism will be identified in consultation with the ARG and will utilize the results of mainstem Skagit River monitoring to assess the need for gravel augmentation. If gravel augmentation is determined to be warranted, the location,

volume, size distribution, timing, and augmentation procedures will be developed in consultation with the ARG. Gravel augmentation will be implemented if it will improve geomorphic functioning of the lower Baker River alluvial fan and affected downstream reach of the Skagit River without causing unintended consequences.

Documentation of the augmentation triggers will be provided to the ARG for review as part of the implementation plan. A copy of the document, along with comments received from the ARG, will be provided to the FERC as part of the annual aquatics report. If gravel augmentation is deemed warranted by the ARG, permit applications, including an application to the WA DNR for Right of Entry authorization, will be submitted and the project will be implemented. If permit requirements result in substantial changes to the proposal, a modified augmentation proposal will be developed and resubmitted to the ARG for review prior to implementation.

6.6 Implementation Schedule

The schedule for specific actions to be undertaken in support of the BRGMP will be developed as described in table 1.

Any modifications to the implementation schedule will be developed in consultation with the ARG. PSE shall provide a copy of the proposed alternative schedule to the ARG at least 30 days prior to submitting the alternative schedule to the FERC, and shall forward any comments on the alternative schedule to the FERC along with the proposed alternative schedule. Upon FERC approval, PSE will implement the alternative schedule, including any changes required by the Commission.

Table 1. Implementation schedule for the Baker River Gravel Management Plan.

Implementation Activity	Schedule
Prepare implementation plan describing potential gravel augmentation measures, monitoring procedures, and augmentation triggers	Within 1 year of FERC approval of the BRGMP
Begin monitoring affected reach of the Skagit River downstream and immediately upstream of the Baker River confluence	Within 1 year of FERC approval of the BRGMP
Report monitoring activity, results and status of gravel augmentation triggers	Annually, consistent with SA 102
Report gravel augmentation activities, if any, including augmentation sites, size and volume of placed gravel, subsequent sediment mobilization, and effects augmentation activities on mainstem channel conditions.	Annually, consistent with SA 102

6.7 Monitoring, Maintenance, and Management

Monitoring requirements associated with implementation of SA 108 will be developed as described in Section 6.5.2. Maintenance of access routes, infrastructure, and material stockpiles developed as part of the augmentation program will be funded and implemented as part of the overall BRGMP.

7.0 Reporting

7.1 BRGMP Annual Report Schedule

For the purposes of SA 108, the annual reporting period for the BRGMP will be January 1 through December 31 as defined in SA 102. An annual report will be prepared describing activities accomplished as part of SA 108 in the prior twelve months. The report will be submitted to the ARG for review and comment in accordance with SA 102.

7.2 BRGMP Annual Report Content

The annual report shall include a summary description of activities conducted in support of each key element during the preceding 12-month reporting period including:

- Summary description of the existing BRGMP including any proposed plan modifications;
- Summary description of potential gravel augmentation measures, implementation guidelines and triggers, and monitoring plan;
- Summary of monitoring results and status of gravel augmentation triggering conditions; and
- Summary of gravel augmentation activities (if any) conducted in the previous 12-month period including augmentation sites, size and volume of placed gravel, and subsequent sediment mobilization.

PSE will provide the annual report to the ARG per the schedule in SA 102 for 30-day review. Comments and recommendations by the ARG will be included in the annual report submitted to the FERC, along with specific descriptions of how comments are accommodated in the report. If recommendations are not adopted, the filing will include PSE's explanations based on project specific information.

8.0 References

- Bunte, K. 2004. State of the Science Review - Gravel mitigation and augmentation below hydroelectric dams: a geomorphological perspective. Report submitted to the Stream Systems Technology Center USDA Forest Service Rocky Mountain Research Station, Fort Collins, CO by Engineering Research Center Colorado State University, Fort Collins, CO. October 2004. 144 p.
- PSE (Puget Sound Energy). 2010. Final notes of the September 14, 2010 meeting of the Aquatic Resource Group, Baker River Project License Implementation, Puget Sound Energy, Inc. Bellevue, Washington.
- R2 (R2 Resource Consultants, Inc.) 2004. Hydrology and geomorphology of the Baker and middle Skagit rivers. Part 2: Sediment transport and channel response. Consultant report prepared for Puget Sound Energy, Inc. Bellevue, Washington, R2 Resource Consultants (R2), 2004. A24 Part 2. Sediment report.

Rosser, B. and M. O'Connor. 2007. Statistical analysis of streambed sediment grain size distributions: Implications for environmental management and regulatory policy. USDA Forest Service Gen. Tech. Rep. PSW-GTR-194. P.445-456.

Wheaton, J.M., G.B. Pasternak, and J.E. Merz. 2004. Spawning habitat rehabilitation – I. Conceptual approach and methods. Intl. J. River Basin Management 2(1) p. 3–20.

9.0 Review Comments and Responses

Under terms of the settlement agreement and 2008 FERC order issuing new license, the BRGMP was to be filed with the Commission within two years of license issuance. At the September 14, 2010 meeting of the ARG, a quorum was available and by consensus the ARG agreed to extend the deadline to January 31, 2011 (PSE, 2010). On September 22, PSE sent the Document Review Transmittal Letter and draft BRGMP to the ARG and TRIG by certified mail for 60-day review and comment (table 2). For reference purposes, an example of the document review transmittal letter (figure 3) is provided in section 9.2.

9.1 Distribution List

Table 2. Parties that were mailed the draft Baker River Gravel Management Plan as part of the formal review process.

Name and Title	Organization	Address
Ric Abbett	The WA Council of Trout	3025 Angus Drive S.E. Tenino, WA 98589
Len Barson	The Nature Conservancy	1917 First Avenue Seattle, WA 98101
Chuck Ebel	US Army Corps of Engineers	4735 E. Marginal Way S. Seattle, WA 98124
Alison Evans	WA Department of Ecology	3190 160th Ave. S.E. Bellevue, WA 98008-5452
Steve Fransen	NOAA Fisheries	510 Desmond S.E., Ste. 103 Lacey, WA 98503
JoAnn Gustafson	WA Dept. Natural Resources	919 N. Township Sedro-Woolley, WA 98284
Bob Helton	Skagit County Resident	21032 Little Mountain Rd. Mount Vernon, WA 98274
Brock Applegate	WA Dept. of Fish and Wildlife	PO Box 1100 La Conner, WA 98257
Lou Elyn Jones	US Fish and Wildlife Service	510 Desmond S.E., Ste. 102 Lacey, WA 98503-1273
Scott Lentz	USDA Forest Service	810 State Route 20 Sedro-Woolley, WA 98284
Lorna Ellestad	Skagit County	1800 Continental Place Mount Vernon, WA 98273-5625
Scott Schuyler	Upper Skagit Indian Tribe	25944 Community Plaza

Name and Title	Organization	Address
		Sedro-Woolley, WA 98284
Sue Madsen	Skagit Fisheries Enhancement Group	PO Box 2497 Mount Vernon, WA 98273
Stan Walsh	Sauk-Suiattle Indian Tribe	PO Box 368 La Conner, WA 98257
Stan Walsh	Swinomish Indian Tribal Community	PO Box 368 La Conner, WA 98257
Ashley Rawhouser	North Cascades National Park	810 SR 20 Sedro-Woolley, WA 98284
	Town of Concrete	45909 Division Street Concrete, WA 98237
Cary Feldmann	Puget Sound Energy	10885 NE 4th St PSE-09S Bellevue, WA 98004-5591
Informal Courtesy Copy		
Greta Movassaghi	USDA Forest Service	810 State Route 20 Sedro-Woolley, WA 98284
Jon-Paul Shannahan	Upper Skagit Indian Tribe	25944 Community Plaza Sedro-Woolley, WA 98284

9.2 Cover Letter

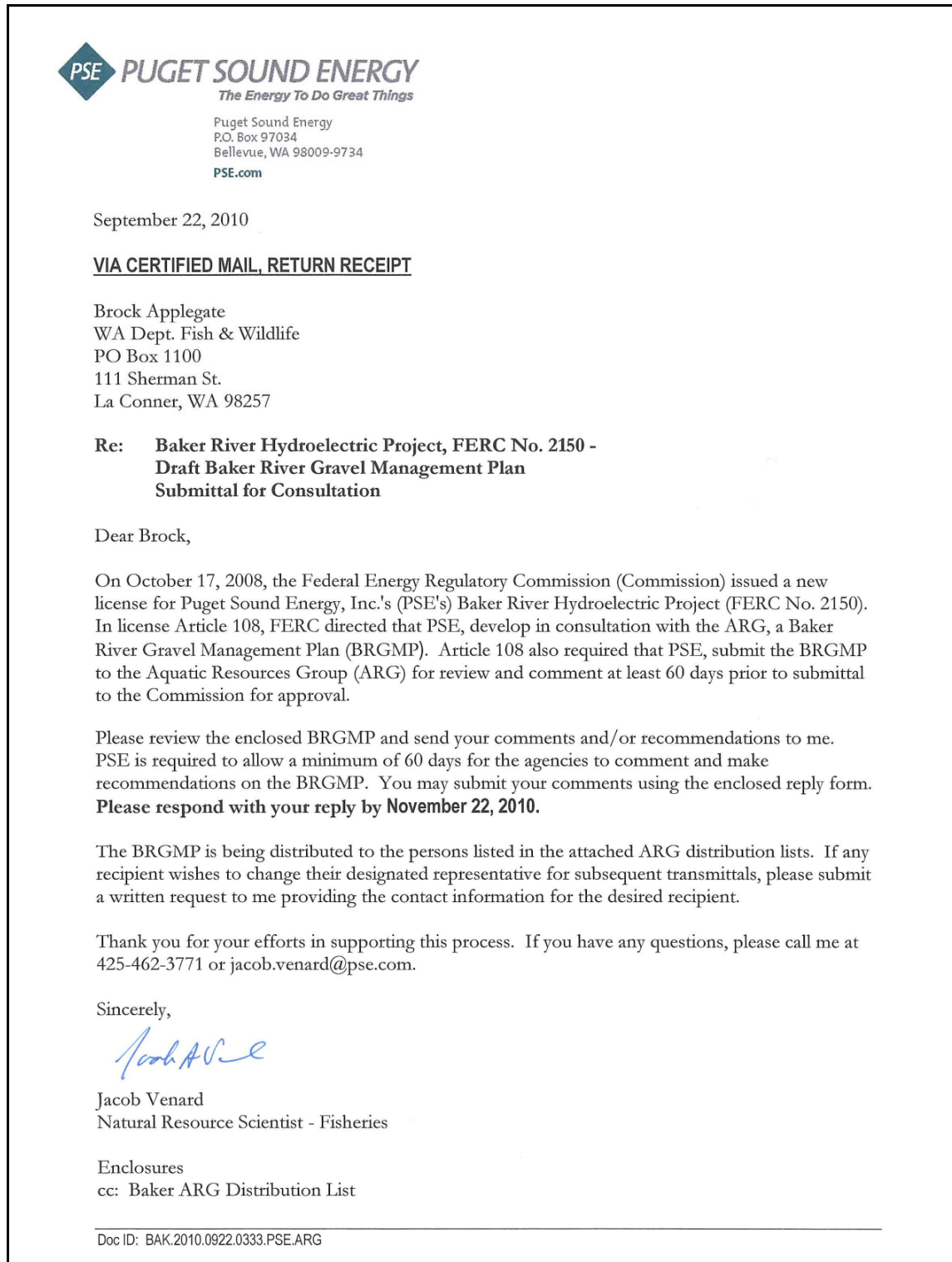


Figure 3. Example transmittal letter from Jacob Venard, PSE, September 22, 2010, distributing the draft Baker River gravel management plan for 60-day review.

9.3 Summary of Reviewer Replies

The following reviewers sent comments to PSE (see section 9.4 for details).

- JoAnn Gustafson, Washington Department of Natural Resources
- Brock Applegate, Washington Department of Fish & Wildlife
- Greta Movassaghi, USDA Forest Service (comments provided on 11/30 and 12/09)

The following reviewers replied but had no comments.

- LouEllyn Jones, U.S. Fish and Wildlife Service

9.4 Reviewer Comments and PSE Responses

Comments received from reviewers and PSE responses to those comments are provided in table 3. Copies of the original comment letters are provided in section 9.5.


Table 3. Comments following formal review of the Baker River Gravel Management Plan, September 22-November 22, 2010, and PSE response to those comments.

Comment	Puget Sound Energy Response
USFWS – LouEllyn Jones, received October 7, 2010	
I have no comments.	Comment noted. No revisions to plan.
WA DNR – JoAnn Gustafson, received November 17, 2010	
PSE will need a Right of Entry authorization and will need to approve each site before document is issued. If approved adding material to the river shall be done during the fish window.	As noted in section 6.5.3, if gravel augmentation is deemed warranted by the ARG, permit applications will be submitted to appropriate parties. If permit requirements result in substantial changes to the proposal, a modified augmentation proposal will be developed and resubmitted. Text in section 6.5.3 has been revised to specifically identify the Right of Entry authorization.

Comment	Puget Sound Energy Response
WDFW – Brock Applegate, received November 19, 2010	
<p><u>6.6 Implementation Schedule, Table 1, Row 1, Column 1.</u> Settlement Agreement Article 108 directs PSE to address some points in the BRGMP. "...The BRGMP, at a minimum, shall describe the existing and proposed:</p> <p>Gravel augmentation measures intended to improve the geomorphic function of the Lower Baker River alluvial fan...</p> <p>Procedures for evaluating and monitoring the conditions in the Skagit River to determine when and if gravel augmentation is or becomes warranted...</p> <p>Implementation guidelines and triggers for gravel/cob augmentation...."</p> <p>Table 1 merely repeats the above. The Settlement Agreement has directed PSE to accomplish the tasks above with some detail. WDFW understands that PSE cannot develop very specific plans, but the BGGMP should give a few ideas on the possible directions of the plan with the following points above.</p>	<p>PSE has described the general direction of gravel augmentation measures and monitoring; however, specific details will be developed in consultation with the ARG as part of the implementation plan.</p> <p>For example, section 6.5 proposes that gravel augmentation will involve placement of gravel in the river channel allowing for subsequent redistribution by high river flows.</p> <p>Monitoring will consist of surveying channel cross-sections to detect bed aggradation or degradation, and multiple pebble counts to develop grain size distribution curves. The pebble count sample size will be determined through a two-stage sampling approach to characterize sediment conditions within defined confidence intervals.</p> <p>Gravel augmentation will be triggered by long-term trends in channel degradation, substrate coarsening, or other channel responses to reduced gravel recruitment. No revisions to plan.</p>
USDA-FS – Greta Movassaghi, received November 30, 2010 after the formal review period ended on November 22, 2010	
We have no comments on SA 108.	Comment noted. No revisions to plan
USDA-FS – Greta Movassaghi, received December 09, 2010 after the formal review period ended on November 22, 2010	
<p>We don't agree that the area to be monitored should only start at the Baker confluence with the Skagit. There could be some upstream effects as a result of the change in Baker sediment regime. Monitoring should extend upriver on the mainstem to account for these effects.</p>	<p>The text of SA 108 acknowledges the potential for upstream effects and stated that the measure may address "condition and substrate attrition rates in the reach immediately upstream". References to monitoring locations have been modified to address areas downstream and immediately upstream of the Baker River confluence. Specific details of the monitoring effort will be developed in consultation with the ARG as part of the implementation plan.</p>

9.5 Comment Correspondence

Baker Consultation Reply Form



PUGET SOUND ENERGY
The Energy To Do Great Things

**REPLY FORM to Baker River Hydroelectric Project
Baker River Gravel Management Plan
Submittal for Consultation**

Name: Lou Ellyn Jones

Job Title: Fish + Wildlife Biologist

Representing: US Fish + Wildlife Service

Address: 510 Desmond Dr.

City, State, Zip: Lacey, WA 98503

Instructions: Please select from the following options:

I have read the draft Baker River Gravel Management Plan and I have no comments.

I have read the draft Baker River Gravel Management Plan and I have comments, listed below.
(Please use additional paper, if needed).

I have read the draft Baker River Gravel Management Plan and I will email my comments to *jacob.venard@pse.com*.

I do not wish to be involved in the consultation process.

Important:

Please send this reply via the self-addressed envelope and mail no later than November 22, 2010.
Date Reply Form Received by PSE: October 7, 2010

DOC ID# BAK.2010.0922.0333.PSE.ARG

Figure 4. Reply from Lou Ellyn Jones, U.S. Fish and Wildlife Service.

Baker Consultation Reply Form



REPLY FORM to Baker River Hydroelectric Project Baker River Gravel Management Plan Submittal for Consultation

Name: Dept of Natural Resources
 Job Title: JoAnn Gustafson, Area District Manager
 Representing: DNR
 Address: 919 N Township
 City, State, Zip: Sedro Woolley WA 98284

Instructions: Please select from the following options:

I have read the draft Baker River Gravel Management Plan and I have no comments.

I have read the draft Baker River Gravel Management Plan and I have comments, listed below.
 (Please use additional paper, if needed).

11-15-10
 PSE will need a Right of Entry ^{authorization} + will need to approve
~~to~~ each site before ~~the~~ document is issued
 If approved adding material to the river
 shall be done during the fish windows.

I have read the draft Baker River Gravel Management Plan and I will email my comments to
 jacob.venard@pse.com.

I do not wish to be involved in the consultation process.

Important:

Please send this reply via the self-addressed envelope and mail no later than November 22, 2010.

Date Reply Form Received by PSE: November 17, 2010

DOC ID# BAK.2010.0922.0333.PSE.ARG

Figure 5. Reply from JoAnn Gustafson, Washington Department of Natural Resources.



State of Washington
Department of Fish and Wildlife

P.O. Box 1100, 111 Sherman St. (physical address), La Conner, Washington 98257-9612

November 19, 2010

Puget Sound Energy
Jacob Venard, Natural Resource Scientist - Fisheries
P.O. Box 97034, PSE-09S
Bellevue, WA 98009-9734

Subject: Baker River Hydroelectric Project, Federal Energy Regulatory Commission No. 2150—
Settlement Agreement Article 108 Baker River Gravel Management Plan

Dear Mr. Venard:

The Washington Department of Fish and Wildlife (WDFW) has reviewed the Article 108 Baker River Gravel Management Plan (BRGMP). We have one comment on the plan below. WDFW has participated in continuous consultation with Puget Sound Energy (PSE) for many years on the Baker River Hydroelectric Project. WDFW appreciates PSE's willingness to collaborate with WDFW on their many license implementation activities.

6.6 Implementation Schedule, Table 1, Row 1, Column 1. Settlement Agreement Article 108 directs PSE to address some points in the BRGMP. "...The BRGMP, at a minimum, shall describe the existing and proposed:

Gravel augmentation measures intended to improve the geomorphic function of the Lower Baker River alluvial fan...

Procedures for evaluating and monitoring the conditions in the Skagit River to determine when and if gravel augmentation is or becomes warranted...

Implementation guidelines and triggers for gravel/cob augmentation...."

Table 1 merely repeats the above. The Settlement Agreement has directed PSE to accomplish the tasks above with some detail. WDFW understands that PSE cannot develop very specific plans, but the BGGMP should give a few ideas on the possible directions of the plan with the following points above.

WDFW welcomes the opportunity to work with PSE on future projects. We value our working

Figure 6. Reply from Brock Applegate, Washington Department of Fish and Wildlife.

Mr. Jacob Venard
November 19, 2010
Page 2 of 2

relationship with PSE and encourage future dialog. If you have any questions or need more information or clarification to comments from the WDFW, please feel free to call me at (360) 466-4345 x254.

Sincerely,



Brock Applegate
Fish and Wildlife Biologist

Cc: Brett Barkdull, WDFW La Conner
David Brock, WDFW Mill Creek
Wendy Cole, WDFW La Conner
Bob Everitt, WDFW Mill Creek
Annette Hoffmann, WDFW Mill Creek
Mark Hunter, WDFW Olympia
Bob Warinner, WDFW La Conner

Figure 6, continued.

Aspelund, Arnie

From: Greta Movassaghi [gmovassaghi@fs.fed.us]
Sent: Tuesday, November 30, 2010 7:34 AM
To: Aspelund, Arnie
Subject: comments on SA 108 and 109 plans

Arnie

We have no comments on SA 108

SA 109:

As I said at the ARG meeting, we would like to see some sort of implementation plan for how the stockpiled wood would be apportioned relative to; priorities for access to the wood, process for dispersing and management of the stockpile. We also have a concern about where and how the reservoir clearing operations will be conducted as they relate to our recreation sites.

Thanks

~~~~~  
Greta Movassaghi  
Natural Resource Specialist --  
Skagit Wild & Scenic River / Hydro  
Mt. Baker-Snoqualmie National Forest  
810 SR 20  
Sedro-Woolley, WA 98284

Sedro Woolley: 360-854-2630  
Darrington: 360-436-2325  
Cell: 360-631-4499  
email: gmovassaghi@fs.fed.us  
<http://www.fs.fed.us/r6/mbs/skagit-wsr/>  
~~~~~

Figure 7. E-mail reply from Greta Movassaghi, U.S. Forest Service.

From: Greta Movassaghi [mailto:gmovassaghi@fs.fed.us]
Sent: Thursday, December 09, 2010 8:11 AM
To: Aspelund, Arnie
Cc: Jon Vanderheyden
Subject: Fw: comments on SA 108 and 109 plans

Arnie

A few more comments on SA 108 and 109, sorry for the lateness

ON 108

We don't agree that the area to be monitored should only start at the Baker confluence with the Skagit. There could be some upstream effects as a result of the change in Baker sediment regime. Monitoring should extend upriver on the mainstem to account for these effects.

On 109

We want to have the plan address how the decision is made about **where** wood is left to accumulate in the reservoir. Safety and recreation facilities need to be taken into account. Wood for habitat, should be left where it provides the most benefit, not just assume that wood can be left anywhere.

Thanks

~~~~~  
Greta Movassaghi  
Natural Resource Specialist --  
Skagit Wild & Scenic River / Hydro  
Mt. Baker-Snoqualmie National Forest  
810 SR 20  
Sedro-Woolley, WA 98284

Sedro Woolley: 360-854-2630  
Darrington: 360-436-2325  
Cell: 360-631-4499  
email: gmovassaghi@fs.fed.us  
<http://www.fs.fed.us/r6/mbs/skagit-wsr/>  
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Figure 8. E-mail reply from Greta Movassaghi, U.S. Forest Service.