Comments on the Draft EIS and Responses

STATE AGENCIES

State Agencies

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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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April 25, 2005

Mr. Douglas A. Sipe
Environmental Project Manager
Office of Energy Projects
Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Dear Mr. Sipe:

RE: Northwest Pipeline Corporation Capacity Replacement Project – Draft Environmental Impact Statement

Docket Nos. CP05-32-000, -001

Thank you for providing the Department of Ecology (Ecology) with the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for the Williams' Northwest Pipeline Capacity Replacement Project (Northwest CRP). As a non-federal cooperating agency in the NEPA process, Ecology has completed its review of the DEIS. Ecology's comments are attached to this letter. Comments are written in a table format to be as clear, concise and useful as possible. Comments from the Washington Department of Fish and Wildlife (WDFW), the other non-federal cooperating agency in this project, are also enclosed.

As cooperating agencies, Ecology and WDFW are submitting comments directly to you, the FERC Project Manager, as well as to FERC Secretary Magalie R. Salas.

In general, the DEIS has significant improvements over the earlier Administrative DEIS. The DEIS addresses many of Ecology's comments that were made on the Administrative DEIS and has expanded discussion on many key issues. It is well organized, typically easy to follow, and has incorporated additional graphics, tables, comparisons and photos. Clearly, a great deal of effort and attention was put into the preparation of this document. Although the DEIS is enhanced, Ecology recommends additional improvements and clarifications.

The following paragraphs highlight critical comments that Ecology urges FERC and Northwest CRP to address in the FEIS. The comments in this transmittal letter are also embedded in the enclosed spreadsheet. The comments are not listed in any particular priority order, but are divided into (1) comments that follow up on earlier remarks pertaining to the Administrative

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DEIS, (2) comments that are significant for the success of this project, and (3) administrative comments.

Comments Related to Ecology's Comments on the Administrative DEIS

SA1-1

- **Wet open-cut trenching** is the primary alternative for crossing the Nisqually River and Pilchuck Creek and the secondary alternative for crossing the North and South Forks of the Stillaguamish and the North Fork of the Nooksack Rivers. This method of crossing is the least desirable from a water quality and fish protection perspective. Thank you for expanding the discussion of water crossing and the feasibility of crossing methods in the DEIS. As well, the generic sediment impact analysis on page 4-44 of the wet open cut crossing method from the Gas Research institute is useful. Nevertheless, this generic analysis does not predict the downstream extent of impact for the rivers proposed for the wet open-cut trenching method. Ecology recommends that the FEIS estimate the downstream extent of impact for at least the Nisqually River and Pilchuck Creek based on sediment transport (expected stream velocities, substrate size, and duration) and duration of non-compliance with state water quality standards. We understand there is a concern about the time it may take to provide this technical information, but this has been a consistent request of Ecology beginning with review of the resource reports in September 2004. This information will help readers and agencies gauge approximate impacts. **In addition, the *Council of* Environmental Quality's rules related to cooperating agencies further support Ecology's request for more specific information on the impacts of the proposed open-cut crossings of *Pilchuck Creek* and the Nisqually River.**

SA1-2

- Within the expanded explanation of **wet open-cut trenching,** the DEIS notes that for the crossing of Pilchuck Creek trench spoils would be placed downstream of the trench, with breaks in the spoils to allow water passage. However, the description of the wet open-cut trenching of the Nisqually River does not disclose how trench material would be handled, but we assume it would be similar to the methodology proposed for Pilchuck Creek. Ecology recommends the FEIS include additional explanation on why placing the trench material in the stream would have less impact than removing it entirely from the water body and then backfilling the trench with either the same dewatered material or other material. Ecology also recommends that the FEIS expand the description of how the surface sediments will be restored in the work areas.

SA1-3

- The DEIS has expanded the description of **unavoidable adverse impacts** in several instances (those impacts that would still occur even with implementation of recommended mitigation). Ecology recommends adding this information systematically to Chapter Four. For example, unavoidable adverse impacts could be added as a subsection to each of the 13 sections of chapter four, "*Environmental Analysis*". The new subsections would logically follow the subsection on mitigation.

SA1-1 Section 4.3.2.3 has been revised to include a site-specific discussion of the downstream effects of suspended sediments at all five of the proposed or alternative wet open-cut crossings for the project (i.e., North Fork Nooksack, North Fork Stillaguamish, South Fork Stillaguamish, and Nisqually Rivers and Pilchuck Creek).

SA1-2 Section 4.3.2.3 has been revised to clarify that Northwest proposes to handle trench spoil at the Nisqually River in the same manner as described for Pilchuck Creek. Section 4.3.2.3 has also been revised to explain why in-stream storage of trench spoil would be environmentally preferable to the removal of trench spoil from the waterbody and to expand the description of the backfill operation.

SA1-3 The FERC staff believes the EIS adequately discusses unavoidable adverse impacts.

SA1-3 (cont'd) Ecology additionally recommends summarizing the unavoidable adverse impacts in Chapter Five, "*Conclusions and Recommendations*", and in the *Executive Summary*.

SA1-4 ▪ Ecology recommends that the final or final draft mitigation plan be provided as an appendix in the FEIS. If the draft plan is included rather than the final, Ecology recommends that the document explain how the public can obtain a copy of the final plan.

SA1-5 ▪ The description of the **push-pull technique for crossing Olson Lake and Evans Creek** does not specify how the work will be accomplished if the wetlands are inundated at the time of construction. Silt fences would be inadequate and Ecology would not likely permit trench spoils to be stored within the wetland. Ecology recommends that the FEIS explain where trench spoils will be stored if the wetlands of Olson Lake and Evans Creek are inundated during construction.

▪ The DEIS expanded the discussion on **clean up of contaminated sites**. Additionally, Ecology recommends the following clarifications in the FEIS:

SA1-6 o The FEIS should note that no federal or state listed hazardous waste sites are known within ¼ mile of the pipeline except for several contaminated sites owned by Williams Gas Pipeline Company.

SA1-7 o Within the FEIS, FERC spells out a condition that requires Northwest CRP to consult with Ecology in the preparation of clean up plans. Agreement has been reached between Northwest CRP and Ecology that the clean up plans will be reviewed and approved by Ecology prior to beginning clean up. This agreement follows Washington guidelines for the voluntary clean up of contaminated sites. Ecology recommends that FERC expand the requirement to reflect this agreement that Ecology will approve of clean up plans.

SA1-8 ▪ In several areas of the document, the DEIS acknowledges that guidance from other agencies may be stricter than the **FERC staff's guidance** and shall be followed (guidance examples include: erosion control guidance; wetland and water body construction and mitigation procedures; spill prevention and response plan). Ecology recommends that this acknowledgement be consistently incorporated into the document and appendices. Further, Ecology recommends that FERC require that **contractor training** cover both the FERC guidance as well as any other agency guidance that is more stringent.

SA1-9 ▪ The DEIS has responded to Ecology's comments related to the **Environmental Inspector** (EI). An EI shall be on site to ensure adherence to environmental protection and compliance. Ecology recommends the following duties be assigned to the EI and not be left to the discretion of Northwest CRP to assign these duties:

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SA1-4 It is assumed that the WDOE is referring to the final site-specific waterbody crossing plans, final Mitigation Plan for Waterbody Crossings, and the final compensatory wetland mitigation plan. Section 4.3.2.3 has been revised to provide the most current information regarding Northwest's proposed Mitigation Plan for Waterbody Crossings. Appendix S contains the April 2005 draft of this plan. Northwest is still in the process of consulting with other federal, state, and local agencies and applicable Native American tribes to finalize its waterbody crossing plans and mitigation requirements. Section 4.3.2.3 has been revised to include the FERC staff's recommendation that Northwest continue consultations with the applicable agencies and Native American tribes and file the final site-specific waterbody crossing plans and final Mitigation Plan for Waterbody Crossings with the Secretary for the review and written approval of the Director of OEP before construction at each applicable waterbody (see also mitigation measure number 17 in section 5.4). These final plans may incorporate new information that may become available as Northwest continues consultations with the COE, the WDOE, the WDFW, various county agencies, and Native American tribes. The FWS and NOAA Fisheries may impose additional mitigation as well as part of their Biological Opinions (see section 4.7) that also should be included in Northwest's Mitigation Plan for Waterbody Crossings. The FERC staff believes these continued consultations will result in the development of acceptable site-specific crossing plans and mitigation requirements for the waterbodies that would be crossed by the Capacity Replacement Project. Section 4.3.2.3 also explains how the public can view the final plans once they are filed.

Section 4.4.4 has been revised to provide the most current information regarding Northwest's compensatory wetland mitigation plan. Northwest is still in the process of consulting with other federal, state, and local agencies and applicable Native American tribes to finalize this plan. Section 4.4.4 has been revised to include the FERC staff's recommendation that Northwest continue consultations with the applicable agencies and Native American tribes and file the final compensatory wetland mitigation plan with the Secretary before construction (see also mitigation measure number 18 in section 5.4). Section 4.4.4 also explains how the public can view the final plan once it is filed.

SA1-5 Section 2.3.2 has been revised to include additional details about the use of the push-pull method to cross Olson Lake and Evans Creek, including an explanation of where Northwest proposes to store trench spoil if these wetland systems are inundated during construction. As discussed in section 2.3.2, the FERC staff believes Northwest's proposal to store the spoil within the wetlands would be environmentally preferable to hauling it out and storing it adjacent to the wetlands. Section 4.6.2.4 has been revised to provide additional details of the impacts of the push-pull method.

SA1-6 Section 4.8.5 has been revised to clarify that contamination exists at some existing aboveground facility sites owned by Northwest.

SA1-7 The FERC staff's recommendation in section 4.3.1.2 has been expanded to include the requirement that the plan for the discovery and management of contaminated soils, sediments, and groundwater be approved by the WDOE before construction (see also mitigation measure number 14 in section 5.4).

SA1-8 Where appropriate, additional acknowledgement that state and local guidelines may be more stringent than the measures proposed and that Northwest would be required to adhere to the most stringent of its permit conditions during construction and operation of the Capacity Replacement Project has been included in the EIS. In addition, section 2.5 has been revised to state that Northwest's training for construction personnel would include instruction on the guidelines and standards adopted by other federal, state, and local regulatory agencies, some of which may be more stringent than the FERC requirements.

SA1-9 Section 2.5 has been revised to include the FERC staff's recommendation that Northwest revise its ECR Plan to expand the list of EI duties to include responsibilities related to the handling of imported fill, identification and handling of arsenic-contaminated soil, washing of equipment before entering waterbodies and public roadways, and ensuring that roadways are swept at the end of the work day if necessary. The revised section 2.5 also states that notification to agencies of construction activities, permit violations, and/or situations where permit requirements need to be altered due to field conditions should occur as soon as possible but no later than 4 hours after identification of the issue unless handled as a variance through the third-party compliance monitoring program or an alternative agreement with individual compliance agencies is adopted (see also mitigation measure number 11 in section 5.4). See also the responses to comments SA1-46, SA1-106, and SA1-150.

SA1-9 (cont'd)

- The EI shall identify the source of any imported fill material and require the fill to meet the standards for clean soil as defined in the Solid Waste Handling Standards for Washington State, Chapter 173-350-100 of the Washington *Administrative Code.*
- The EI shall identify areas of arsenic contamination along the construction routes. The EI shall ensure that arsenic contaminated soils will be handled in compliance with local, state and federal safety and environmental laws.
- The EI shall notify agencies of construction activities, permit violations, and/or situations where permit requirements need to be altered due to field conditions. Notification will occur as soon as possible or no later than four hours of a potential permit violation or situations where permit requirements need to be altered. The EI may enter into tailored alternative agreements with compliance agencies regarding notification.
- *The EI shall follow guidelines to ensure that equipment is washed prior to* entering water bodies and before traveling on public roadways.

Additional Technical Comments Significant for the Success of the Project

SA1-10

- Ecology requests that FERC provide Ecology and WDFW the opportunity to review and comment on Northwest CRP's **Implementation Plan** prior to FERC's approval of the plan. As cooperating agencies, this would allow the agencies another venue for supporting the project to meet state and local rules and guidance.

SA1-11

- **Channel migration** areas are not discussed in the DEIS. Ecology recommends (and is suggesting additional language) describing channel migration issues. Specifically, Ecology is recommending that the project must not fill, block or otherwise alter channel migration features where such alternations would cause the migration area to impact up or downstream of the area.

SA1-12

- **Withdrawing water from the Centralia Power Canal** for hydrostatic testing will require a water right permit from Ecology. Northwest CRP should contact Ecology's Water Resources Program for guidance on how to seek such a permit. The proposed withdrawal has the potential to affect existing water rights and instream resources. The extent of the effect will vary according to the timing, rate and duration of the withdrawal. Ecology recommends that the FEIS describe the timing, duration and magnitude of the withdrawal.

SA1-10 The FERC staff's recommended mitigation measure number 6 in section 5.4 has been revised to require Northwest to submit a copy of the Initial Implementation Plan to the WDOE and the WDFW. The WDOE's and WDFW's comments on the Implementation Plan, if received on a timely basis, would be taken into consideration by the FERC before approval of the plan.

SA1-11 Section 2.3.1 has been revised to state that channel migration features would not be filled, blocked, or otherwise altered where such alteration would cause the migration area to have an impact either up or downstream of the affected area. Section 4.3.2.4 has been revised to address channel migration issues.

SA1-12 Sections 2.3.1, 4.3.2.7, and 4.6.2.3 have been revised to include additional description of hydrostatic test water withdrawal from the Centralia Canal. See also the response to comment SA1-133.

SA1-12 (cont'd) In addition, the FEIS should identify existing water rights that may be affected by the withdrawal and evaluate the extent that these rights may be impaired. The withdrawal may affect the Centralia PUD ability to confirm with the requirements of its FERC hydroelectric license.

According to WDFW, withdrawal from the canal may also affect fish. The withdrawal structure will require screening. Ecology recommends the FEIS note that the Centralia Power Canal is a fish bearing water and describe the screening and other measures that will be taken to avoid impacts to fish.

Additional Cooperating Agency Comments

SA1-13 ▪ Ecology has reviewed and supports WDFW's comments on the DEIS. No conflicts between the two agencies' comments were identified by project managers.

SA1-14 ▪ Ecology requests that when referencing comments from Ecology and WDFW that the FEIS indicate that Ecology or WDFW "commented and recommended" changes rather than Ecology or WDFW "commented". This request is to help readers understand that Ecology and WDFW are cooperating agencies in the EIS process.

SA1-15 ▪ To support open and responsive communication and efficiency for the construction of the pipeline, Ecology recommends that **multi-agency pre-construction compliance meetings** between Northwest CRP Pipeline and compliance agencies be required prior to construction by FERC. These meetings would benefit the project schedule as well as the local, state and federal agencies that shall monitor compliance. These meetings would also provide opportunities for the EI to establish more tailored communication and coordination with respective agency inspectors. Meetings for each of the major geographic construction areas are recommended.

SA1-16 ▪ Ecology understands that portions of existing 26" pipeline will be abandoned in place as part of this project. If Williams proposes to remove the old line in the future, Ecology would see that action as new construction, not maintenance of the existing line. If the old line can be rehabilitated in place and re-used, Ecology could consider that action to be maintenance.

Again, thank you for the opportunity to provide comments on the DEIS. Ecology looks forward to discussing its comments with you after you have reviewed them. Ecology also looks forward to working with FERC in the process to finalize the EIS.

SA1-13 Comment noted.

SA1-14 Where appropriate, the final EIS indicates that the WDOE and/or the WDFW "commented and recommended" changes.

SA1-15 Section 2.5 has been revised to describe the third-party compliance monitoring program that would be implemented by the FERC during construction of the project. Under this program, full-time third-party compliance monitors would be present on the construction spreads to monitor and document compliance with project mitigation measures and requirements. The FERC intends to work with Northwest and applicable agencies to coordinate these compliance efforts before construction. In addition, the FERC staff and the third-party compliance monitors would participate in Northwest's training program (see mitigation measure number 6 in section 5.4). Other federal, state, and local agencies would be invited to participate in the training program as well.

SA1-16 Comment noted.

If you have any questions regarding this letter or the attached comments, feel free to contact Tiffany Yelton (425-649-4310) or Sally Toteff (360-407-6957).

Sincerely,

Ray Hellwig, Regional Director
Northwest Regional Office Director

Richard K. Wallace, Regional Director
Southwest Regional Office on behalf of RW

Attachments

RH:RW:ty
cc: Amy Davis, Natural Resources Group
Olivia Romano, Seattle District Corps of Engineers, Regulatory Branch
Gail Terzi, Seattle District Corps of Engineers, Regulatory Branch
Krista Rave-Perkins, U.S. EPA, Region 10
Misha Vakoc, U.S. EPA, Region 10
Peter Contreras, U.S. EPA, Region 10
Alan Rathbun, Utilities and Transportation Commission, Office of Pipeline Safety
Kurt Buchanan, Department of Fish and Wildlife, Habitat Program
Gary Sprague, Department of Fish and Wildlife, Habitat Program
Barbara Nightingale, Department of Natural Resources, Aquatic Resources Division
Carrie Berry, Department of Transportation, Environmental Services
Brenden McFarland, Ecology, Shorelands and Environmental Assistance Program
Barbara Ritchie, Ecology SEPA Coordinator
Joan Marchioro, Attorney General's Office
Tiffany Yelton, ORA, Ecology NWRO
Sally Toteff, ORA, Ecology SWRO
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Comments on the

Northwest Pipeline Capacity Replacement

Draft Environmental Impact Statement

Washington Department of Ecology

25-Apr-05

	Issues/Sections	Section & Page	Comment	Recommendation
	1.) COVER SHEET AND FACT SHEET (SEPA ONLY)			
	Does the cover sheet include:			
	NEPA (40 CFR 1502.11)			
SA1-17	· A list of the responsible agencies, including the lead and cooperating agencies		Yes	
	· The title of the proposed action and its location(s)		Yes	
	· The contact name, address, and phone number for further information		Yes	
	· Information on the SEPA and NEPA process		Yes	
	· Designation as draft, final, or supplemental		Yes	
	· An abstract of the EIS		Included in Executive Summary	
	· For the draft EIS, a date comments are to be received		Yes	
SA1-18	*SEPA (WAC 197-11-435) In addition to the above*			The items below must be included in the DEIS and FEIS to allow Ecology to adopt the FEIS.
	· Key environmental issues highlighted (beneficial and adverse) and options for decision makers		Yes	
SA1-19	· Date of issuance of the EIS		No	Cover is dated by identifying the month and year of issuance and the letter could have the same date
	· Date and time of any public hearings, if known		Yes	
	· Authors and principal contributors to the EIS (NEPA includes this in a separate section)		References Appendix T Yes	
	· List of all licenses and permits the proposal will require		References Section 1.5 Yes	

SA1-17 Comments indicated as adequately addressed have not been coded and will not receive a separate response. Only comments that the WDOE indicated as needing to be addressed in the final EIS have been coded and responded to.

SA1-18 Comment noted.

SA1-19 The month and year have been added to the EIS cover letter.

	Issues/Sections	Section & Page	Comment	Recommendation
	· Location of EIS supporting documentation		Yes	
	· Type and timing of subsequent environmental reviews committed to by agencies.		Yes	
	· Date of final action planned or scheduled by the lead agency		NA	
	· Cost to the public for a copy of the EIS		Yes, in cover letter	
	· NEPA & SEPA recommend 1 to 2 pages for the cover sheet. No limit on the SEPA fact sheet.		NA	
	1.2) EXECUTIVE SUMMARY			
	Does the summary describe:			
SA1-20	· The underlying purpose and need		No	A brief statement of the underlying purpose and need for the project should be in included.
	· The proposed action		Yes	
	· Each of the alternatives and preferred alternative, if any		Yes	
	· The principal environmental issues analyzed		Yes	
	Does the summary highlight key differences among alternatives?		Yes	
	Does the summary stress:		Yes	
	· Major conclusions		Yes	
	· Areas of controversy		Yes	
	· Does the summary adequately and accurately summarize the EIS		Yes	
	Other Comments			
SA1-21		ES-8	References site-specific crossing plans for Evans Creek and Olson Lake filed by Williams with FERC	No change. However, Ecology wetland staff would like to review these plans as part of the 401 permit application.
SA1-22		ES-10	States mitigation plan will be filed with FERC for analysis in the Final EIS.	Since there is no comment period on the Final EIS, Ecology requests the Final Mitigation Plan be submitted to Ecology before the FEIS is released and included in the 404 and 401permit applications so they can be part of the public review.

SA1-20 The underlying purpose and need for the project have been clarified in the Executive Summary.

SA1-21 It is assumed that the WDOE will submit a direct request to Northwest to provide the site-specific crossing plans for Evans Creek and Olson Lake to the WDOE for review as part of the section 401 permit application.

SA1-22 It is assumed that the WDOE will submit a direct request to Northwest to provide any revisions to the draft Mitigation Plan for Waterbody Crossings to the WDOE for review as part of the section 401 and section 404 permit applications. See also the responses to comments SA1-4 and SA1-10.

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Issues/Sections	Section & Page	Comment	Recommendation
SECTION 1. INTRODUCTION			
1.1 Purpose and Need			
Does the EIS specify the purpose and need, to which FERC is responding? (Applicant purpose and need)		Yes	
Does the purpose and need statement relate to the requirement or request for FERC action? (Agency purpose and need)		Yes	
Is the purpose and need written so that:			
· Does not inappropriately narrow the range of reasonable alternatives		Yes	
· Is not too broadly defined as to make the number of alternatives limitless		Yes	
1.2 PROPOSED ACTION AND ALTERNATIVES			
Does the EIS clearly describe the proposed action and alternatives? Including: · All components of the project · Construction of the project · Operation of the project		Yes Yes	
For linear projects, are corridor, the vertical and horizontal alignment and any tunneling and earthworks described?		Yes	
For linear projects are the parameters of the construction and operational rights-of-way described adequately?		Yes	
Is the proposed action described in terms of the FERC action to be taken?		Yes	
Are all activities involved in demolition or decommissioning of existing facilities described?		Yes	

Issues/Sections	Section & Page	Comment	Recommendation
Does the EIS identify the range of reasonable alternatives that satisfy the FERC purpose and need?		Yes	
Does the draft EIS indicate whether a preferred alternative exists and, if so, is it identified? For a final EIS is the preferred alternative identified?		Yes	
Is the no action alternative described in enough detail so its scope is clear and potential impacts identified?		Yes	
Are the legal ramifications of the no action alternative identified?		Yes	
For alternatives that were eliminated from further consideration, does the EIS explain fully and objectively why they were found unreasonable?		Yes	
For each alternative considered, is the depth of analysis approximately the same to compare their relative merits?		Yes	
Are the alternatives and proposed action described in enough detail so that potential impacts can be identified?		Yes	
Are all phases of the proposed action and alternatives described?		Yes	
Are appropriate mitigation measures included in the description of the proposed action and alternatives?		Yes. See technical sections.	
SEPA [197-11-440(5)] in addition to above			
Are the benefits and disadvantages of postponing the implementation of the proposal as compared to possible approval at this time included?		Yes	
1.3 Public Review and Comment		No comments	
1.4 Nonjurisdictional Facilities		No comments	

	Issues/Sections	Section & Page	Comment	Recommendation
	1.5 Permits and Approvals			
SA1-23	Does the EIS identify all the appropriate local, state and federal permits to construct and operate the proposed action?	Table 1.5-1, page 1-20	Yes, except that a Shoreline Substantial Development Permit, in addition to the Shoreline Conditional Use Permit is required from Thurston County. These are processed concurrently so there is no real substantive change to the procedure.	Add Shoreline Substantial Development Permit to list of permits for Thurston County in Table 1.5-1.
SA1-24		Table 1.5-1 page 1-15	Should state "Makes final determination on Shoreline CUP (Whatcom)". At bottom of "Agency Action" column.	Revise in FEIS as recommended
	Does the EIS identify why the permits are required?		No comments	
SA1-25	Does the EIS describe how the project will comply with the required permits?	Table 1.5-1 Pg 1-15	The DEIS states that the applicant will apply for the various identified permits. However, the column "Statement of Compliance" is not very informative. Applying for permits is not equivalent to complying with permits. The matrix does show the intent of the applicant to comply with the requirement to obtain various permits.	No changes recommended
	Other Comments			
SA1-26		Table 1.3-1, Page 1-7		In third item from bottom of page, change "text" to "test".
SA1-27		Table 1.5-1 Pg 1-15	Under Statement of Compliance for SEPA the last sentence reads "Washington's Coastal Program". Under Statement of Compliance for CZM end of the first sentence reads "Washington's Coastal Program". Under Statement of Compliance for Shoreline Management Act end of second sentence reads "Washington's Coastal Program".	Change references so they read "Washington's Coastal Zone Management Program" See Above See Above
SA1-28		Table 1.5-1 Pg 1-16	Under Permit/Approval/Consultation there is something called State CWA. This is redundant to the 401 and NPDES permit.	Delete the entry relating to State CWA in Table 1.5-1 at the top of page 1-16.
SA1-29		Sec 1.5 Pg 1-23	Under Shoreline Management Act - second paragraph, 1st sentence reads: The SMA is the principal means of regulating shoreline land and water uses throughout the coastal zone. The SMA also applies to shorelines in other areas of the state.	Revise "throughout the state including the coastal zone …"

SA1-23 Table 1.5-1 has been revised to include the Shoreline Substantial Development Permit for Thurston County.

SA1-24 Table 1.5-1 has been revised to include the WDOE's responsibility to make a final determination on Whatcom County's Conditional Use Permit.

SA1-25 The statement of compliance information presented in table 1.5-1 has been revised to clarify that Northwest would apply for and comply with all permit stipulations.

SA1-26 Table 1.3-1 has been revised to correct the noted typographical error.

SA1-27 Table 1.5-1 has been revised to state Washington's Coastal Zone Management Program instead of Washington's Coastal Program.

SA1-28 Table 1.5-1 has been revised by removing the reference to a separate State Clean Water Act (CWA) approval required for the project.

SA1-29 Section 1.5.1 has been revised to clarify that the Shoreline Management Act is the principal means of regulating shoreline land and water uses throughout the state including the coastal zone.

	Issues/Sections	Section & Page	Comment	Recommendation
SA1-30		Sec 1-5, Pg 1-24	Under Clean Water Act - 1st sentence reads: "The federal CWA addresses the issue of managing coastal developments…." The CWA does not only address coastal developments	Delete the word coastal.
SA1-31		Sec 1-5, Pg 1-24	Under Clean Water Act - second to the last sentence reads: "The WDOE's section 401 Water Quality Certification would include effluent and mixing zone conditions…." The 401 may not include effluent limits if the NPDES permit cover them.	Change the word "would" to "may".
	1.5 DESCRIPTION OF THE AFFECTED ENVIRONMENT			
	Does the EIS adequately identify the overall area to be affected (direct, indirect, and cumulative) by the proposed action?		Yes	
	Does the EIS succinctly describe the environment of the area(s) to be affected?		Yes	
	Does the EIS identify either the presence or absence of the following:			
	· Floodplains		Yes	
	· Threatened, endangered, or candidate species		Yes	
	· Prime or unique farmland		Yes	
	· State or federal parks, forests, conservation areas or other areas of recreational, scenic, or aesthetic importance		Yes	
	· Wild or scenic rivers		Yes	
	· Native American concerns		Yes	
	· Minority or low-income populations		Yes	
	Does the description of the affected environment provide enough information to support the impact analysis?		In general yes, with some exceptions as noted in these comments.	
	Are the descriptions of the affected environment substantially consistent with current baseline studies?		Yes	

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SA1-30 Section 1.5.1 has been revised to clarify that the CWA does not only address coastal developments.

SA1-31 Section 1.5.1 has been revised to clarify that the WDOE's section 401 Water Quality Certification may include effluent limits to meet state water quality standards.

	Issues/Sections	Section & Page	Comment	Recommendation
	Is the discussion appropriately limited to information that is directly related to the scope of the proposed action and alternatives?		Yes	
SA1-32	Is the impact area of each component of the affected environment adequately described with respect to potential impacts (direct, indirect, and cumulative)?		This is improved from ADEIS, but could be improved further. More specific comments are provided below.	For example, the FEIS would benefit by providing specific statements regarding impacts for streams/rivers where open-cut construction will occur, specifically Pilchuck Creek and the Nisqually River.
	Does the EIS avoid useless bulk and verbose descriptions and focus on important issues?		Yes	
	1.6 ENVIRONMENTAL EFFECTS			
	Does the EIS adequately identify the direct and indirect and cumulative impacts of the proposed action and alternatives and discuss their significance?		This is improved from ADEIS, but could be improved further. More specific comments are provided below.	
	Does the EIS adequately analyze all phases of the proposed action and alternatives?		Yes	
	Does the EIS adequately analyze short and long term impacts?		Yes	
	Does the EIS analyze both beneficial and adverse impacts?		Yes	
	Does the EIS discuss reasonably foreseeable impacts of cumulative actions?		Yes	
SA1-33	Does the EIS specifically discuss the direct, indirect and cumulative impacts to the following:		No. The FEIS does not consistently draw a distinction between direct and indirect impacts. Also, see comment on cumulative impacts below.	The FEIS would benefit by expanding information on cumulative impacts. Additional discussion of indirect impacts would also improve the FEIS. For example, indirect impacts of tree clearing may affect other nearby individual or groves of trees that may be weakened and more likely to fall during storms.
	· Jurisdictional wetlands and floodplains			
	· Threatened, endangered, or candidate species			
	· Prime or unique farmland			

SA1-32 Section 4.3.2.3 has been revised to include specific estimates of the effects of suspended sediments during the proposed wet open-cut crossings of Pilchuck Creek and the Nisqually River. These estimates are also provided for the North Fork Nooksack and North and South Fork Stillaguamish Rivers should the proposed HDDs fail and the alternative wet open-cut crossing method be implemented.

SA1-33 Section 4.13 has been revised to include an expanded discussion of cumulative impacts, including potential indirect impacts associated with the project. In addition, section 4.5.2 has been revised to address the issue of unforeseen impacts on trees located along the edge of the construction right-of-way and to include the FERC staff's recommendation that Northwest retain an arborist/forester to inspect trees within 10 days after construction on a property to identify potential safety hazards. Northwest would file a report of the tree safety assessment and a description of any corrective actions implemented with the Secretary no later than 60 days after placing the facilities in service (see also mitigation measure number 19 in section 5.4). Section 4.5.2 also explains how the public can view the report once it is filed.

	Issues/Sections	Section & Page	Comment	Recommendation
	· State or federal parks, forests, conservation areas or other areas of recreational, scenic, or aesthetic importance			
	· Wild or scenic rivers			
	· Sites of historic, archaeological, or architectural significance			
	· Native American concerns			
	· Minority or low-income populations			
	Does the EIS discuss:			
SA1-34	· Potential conflicts with land use plans, policies, or controls		Yes, but need to identify conservation easements and whether proposed activities would conflict with terms of those easements.	FERC should direct Williams to identify conservation easements that underlie areas subject to construction activity.
	· Energy requirements and conservation potential of various alternatives and mitigation measures		NA	
	· Natural and depletable resource requirements and conservation potential of the proposed action and alternatives.		See comments from WDFW and those comments below relating to water resources.	
	· Urban quality, historic, and cultural resources and the design of the built environment including reuse and conservation potential		NA	
	· The means to mitigate adverse impacts		Yes, but additional language needed. See more specific comments below.	
	Does the EIS discuss:			
SA1-35	· Any unavoidable, adverse effects		In a few instances the EIS does discuss unavoidable impacts, but in general, the EIS does not discuss or clearly identify unavoidable adverse impacts, even to say that there would not be any. 40 CFR 1502.16	Revise the text to include a subsection (following the mitigation discussion for each element) on unavoidable adverse impacts. Unavoidable adverse impacts could be identified in each resource section (Section 4) and summarized in either the Executive Summary or in Section 5.
	· The relationship between short-term uses of the environment and long-term productivity		Yes	
	· Any irreversible or irretrievable commitments of resources		Yes	

SA1-34 Section 4.8.4 has been revised to include a discussion of the conservation easement (referred to as the Walsh-Weber Sanctuary) that would be crossed by the Capacity Replacement Project.

SA1-35 See the response to comment SA1-3.

	Issues/Sections	Section & Page	Comment	Recommendation
	Does the EIS discuss:			
	· Potential effects on human health and risks		See comments on Section 4.12	
	· Effects of accidents		See comments on Section 4.12	
	· Transportation effects		Yes	
	Does the EIS discuss the potential effects of released pollutants, rather than just identify the potential releases?		Generally yes, but see comments related to open-cut construction impacts on water quality.	
	Are emergency preparedness or spill response plans included, discussed or referenced in the event of a spill?		Yes	
	Does the EIS present a description of severe impacts, while also discussing the likelihood/probability of such impacts occurring?		Yes	
	Are the methodologies used for impact assessment discussed and are they generally accepted in the scientific community?		Generally yes, but see comments on Section 4.7	
SA1-36	Are the impacts analyzed proportional to their potential significance?		In general, there could be more discussion of the comparative significance of impacts. The impacts are broadly disclosed, but without a clear indication of how important these impacts are. For example, the soils section (4.2) describes the potential impacts of soil erosion, soil compaction, and mixing of subsoil with surficial soil during trenching among other impacts. It seems as though mixing of subsoil with surficial soil may not be as significant a potential impact as, for example, soil erosion or soil compaction.	Revise the text, as appropriate to clarify the comparative significance of impacts.
	Does the EIS quantify potential impacts where possible?		No, not all—see above	
	Does the EIS give bounds for impact estimates and not obscure differences among alternatives?		Yes	
	Are sufficient data and references provided to allow validation of analysis methods, results or conclusions?		See specific section comments	

SA1-36 The FERC staff believes the EIS adequately discusses the comparative significance of impacts.

	Issues/Sections	Section & Page	Comment	Recommendation
	Does the EIS state when information to fully evaluate significant adverse impacts is incomplete or unavailable?		Yes	
	As appropriate, does the EIS identify areas of uncertainty in the analyses or conclusions?		See specific section comments	
	SEPA [197-11-440 (6)]			
	Does the EIS address the elements of environment listed in WAC 197-11-440(6)?		Yes	
SA1-37	Does the EIS, when appropriate, include a summary of existing local land use and shoreline plans applicable to the proposal and if the proposal is consistent with these requirements.		Not to the extent necessary	Table 1.5-1 should state whether the proposal complies with regulations and policies and not just whether a permit will be obtained or that permit conditions will be complied with.
SA1-38	Summarize significant adverse impacts that cannot or will not be mitigated?		No	A summary of unavoidable adverse impacts could be included at the end of each resource section in Section 4. Those impacts that would still occur even with implementation of recommended mitigation should be included as a new Section 5.5.D191
	1.7 INCORPORATION OF NEPA VALUES			
	Does the EIS identify all reasonable foreseeable impacts?		Generally yes, but see specific comments below.	
	Do the conclusions regarding potential impacts follow from the analyses and information presented in the EIS?		Yes	
SA1-39	Does the EIS avoid implying that compliance with regulatory requirements demonstrates the absence of impacts?		Not entirely. Some of the information on how compliance will be achieved (e.g. for open-cut stream crossings) is not provided.	The FEIS should provide information on compliance of all construction activities with applicable regulations and policies.
	Does the EIS identify "best management practices" associated with the proposed action or mitigation measures?		Yes	
	Does the EIS avoid the appearance of justifying decisions that have already been made?		Yes	

SA1-37 See the response to comment SA1-25. Also, as discussed in section 4.3.2.1, utilities are a permitted use within all of the designated shorelines crossed by the project with the acquisition of applicable permits. See also the response to comment SA1-39.

SA1-38 See the response to comment SA1-3.

SA1-39 Section 4.3.2.3 has been revised to include a site-specific discussion of the downstream effects of suspended sediments at all five of the proposed or alternative wet open-cut crossings for the project (i.e., North Fork Nooksack, North Fork Stillaguamish, South Fork Stillaguamish, and Nisqually Rivers and Pilchuck Creek).

Issues/Sections	Section & Page	Comment	Recommendation
Are all assumptions conservative and all analyses and methodologies generally accepted by the scientific community?		Generally yes	
Does the EIS present the potential impacts of the proposed action and alternatives in a comparative form?		Yes	
1.8 FORMAT, QUALITY, & USER-FRIENDLINESS			
Is the EIS written precisely and concisely, using plain language?		Yes	
Is information in tables and figures consistent with information in the text?		Yes	
Are units of measurement consistent?		Yes	
Are technical terms defined using plain language?		Yes	
If regulatory terms are used are they consistent with the regulatory definition?		Yes	
Does the EIS use conditional language, "would versus will?"		Yes	
Are graphics used whenever possible to simplify the EIS?		Yes	
Are abbreviations and acronyms defined the first time they are used?		Yes	
Does the EIS make appropriate use of appendices?		Yes	
Is there a discussion of the relationship between the EIS and related documents (incorporated by reference)?		Yes	
1.9 OTHER REGULATORY REQUIREMENTS			
Does the EIS include, a table of contents, index, a list of agencies and organizations, and persons to whom copies were sent?		Yes	
Does the EIS identify all federal, state, and local permits and approvals that must be obtained to implement the proposal?		Yes	

	Issues/Sections	Section & Page	Comment	Recommendation
	Does the EIS contain a list of preparers and their qualifications?		Yes	
SA1-40	Does the EIS include a contractor disclosure statement?		The DEIS does not include a disclosure statement or a discussion that the contractor has signed a disclosure statement specifiying they have no financial or other interest in the outcome of the project.	Ecology understands the process that FERC uses to select a consult and part of that process is signing a disclosure statement. The FEIS should include a brief discussion on noting the contractor does not have a conflict of interest in preparing the EIS.
	1.10 PROCEDURAL CONSIDERATIONS			
	Have the host state and tribes been notified of the determination to prepare an EIS?		Yes	
	Has a notice of intent to prepare an EIS been published in the Federal Register?		Yes	
	In addition to the EPA "Notice of Availability," has availability of the DEIS been publicized to potentially affected or interested parties?		Yes	
	To the fullest extent possible, have other environmental review and consultation requirements been integrated with the NEPA requirements?		Yes	
	1.11 Draft EIS Considerations			
	Does the DEIS consider scoping comments from the public and agencies?		Yes	
	Does the DEIS consider possible connected actions, cumulative actions, and similar actions?		Yes	
	If the DEIS identifies a preferred action does the document include a criteria and selection process?		Yes	
	Does the EIS demonstrate adequate consultation		Yes	
	· Appropriate agencies to ensure federal, state, and local compliance		Yes	
	· A list of agencies and persons consulted		Yes	
	· Letters of consultation		Yes	

SA1-40 Section 1.2 has been revised to describe the organizational conflict of interest review conducted by the FERC during the third-party EIS preparation contractor selection process and to state that the FERC determined that the selected contractor does not have a conflict of interest in preparing the EIS.

	Issues/Sections	Section & Page	Comment	Recommendation
	1.12 Final EIS Considerations			
	Does the FEIS respond to substantive comments, and objectively considered?		NA	
	Is the preferred alternative identified and include a justification for the preferred alternative?		NA	
	Is a comment responsiveness summary included?		NA	
	Are changes to the DEIS clearly marked/identified?		NA	
	2 DESCRIPTION OF THE PROPOSED ACTION			
SA1-41		Sec.2.3.1	States wetlands and other environmentally sensitive areas will be staked and surveyed.	On Page 2-18 in the paragraph under the Survey and Staking heading, the FEIS text should state that features of channel migration (e.g., channel migration areas, relic and overflow channels, spring brooks and other fluvial features related to channel migration) will also be staked and surveyed.
SA1-42		Sec.2.3.1	Clarify text to indicate that stream migration features will not be filled.	On Page 2-18 the grading and clearing subsection should be modified to state that channel migration features will not be filled, blocked or otherwise altered where such alteration will cause the migration area to cause impact up or downstream of the area.
SA1-43		Sec. 2.3.2 Pg. 2-24	Trench breakers to prevent draining wetlands through the pipe bedding are described as "polyurethane foam, or bags of sand or bentonite chips".	Ecology recommends the use of bentonite chips. Bags of sand slow but do not prevent water from draining along gravel pipe bedding, and polyurethane foam may introduce potential pollutants into wetlands.
SA1-44		Sec 2.3.2 Pg. 2-35	Description of push-pull technique for crossing Olson Lake and Evans Creek. This description does not provide specific information on how this work will be accomplished if the wetlands are inundated at the time of construction. Silt fences would not be adequate and Ecology would not likely permit trench spoils to be stored within the wetland.	The FEIS should state that if wetlands are inundated, trench spoils will be stored outside of the wetland. Ecology will review the site specific plans construction plans and condition this through the permit process.

SA1-41 Section 2.3.1 has been revised to state that features of channel migration (e.g., channel migration areas, relic and overflow channels, spring brooks, and other fluvial features related to channel migration) would also be surveyed and staked.

SA1-42 Section 2.3.1 has been revised to state that channel migration features would not be filled, blocked, or otherwise altered where such alteration would cause the migration area to have an impact either up or downstream of the affected area.

SA1-43 The draft EIS incorrectly stated that bags of bentonite chips are used as trench breakers. The FERC staff's Plan specifies that trench breakers consisting of polyurethane foam or bags of sand should be used as permanent erosion control measures to slow the flow of subsurface water along the trench. The use of trench breakers made of these materials is standard and accepted industry-wide practice during pipeline construction. The reference to bentonite chips has been removed from section 2.3.1. Northwest has stated that it would continue to consult with the WDOE regarding the potential use of bentonite chips as trench plugs at certain stream or wetland crossings.

SA1-44 Section 2.3.2 has been revised to include additional details about the use of the push-pull method to cross Olson Lake and Evans Creek, including an explanation of where Northwest proposes to store trench spoil if these wetland systems are inundated during construction. As discussed in section 2.3.2, the FERC staff believes Northwest's proposal to store the spoil within the wetlands would be environmentally preferable to hauling it out and storing it adjacent to the wetlands. Section 4.6.2.4 has been revised to provide additional details of the impacts of the push-pull method.

	Issues/Sections	Section & Page	Comment	Recommendation
SA1-45		Pg 2-39	The DEIS notes that all contractor crews will be trained on the mitigation and environmental protection guidelines that were developed by the FERC staff. Trainings should be expanded to ensure they include the guidelines and standards that are published by other regulatory agencies issuing permits for the project.	Expand each description related to contractor trainings. Indicate that the contractor crews will also be instructed on the guidelines and standards adopted by local, state, and federal regulatory agencies that are more stringent than the FERC staff guidance.
SA1-46		Sec.2.5, Pgs. 2-39 & 2-40	States that WDOE commented on the list of EI duties be expanded. Several additional duties that WDOE recommended for the EI are left to the discretion of NWP. As a Cooperating Agency, WDOE not only commented, but "recommended" that the EI duties be expanded. Ecology believes a number of the recommended duties are important functions and should not be left to the discretion of NWP.	Add to list of EI duties, including the specific duty that the EI should be made aware of the source of any imported fill. Prior to completing the FEIS, FERC and Ecology should agree on the EI role and responsibilities. In addition, to minimize the likelihood of procedural compliance issues, Ecology recommends that thye be given the opportunity to review and comment on the the ECR Plan and Implementation Plan prior to FERC approval.
SA1-47		Pg. 2-41	The FERC staff recommendation is that the ECR Plan is to be filed with the Secretary of the Commission for review and approval. However, Ecology recommends that the ECR plan also be submitted to Ecology for review and approval.	Same as preceding recommendation: To minimize the likelihood of procedural compliance issues, Ecology recommends that thye be given the opportunity to review and comment on the the ECR Plan and Implementation Plan prior to FERC approval.
SA1-48		Sec 2.6 Pg. 2-43	The DEIS states that all vegetation on the permanent right-of-way would be maintained by mowing, cutting and trimming, large brush, and trees would be periodically removed. This conflicts with proposed wetland and riparian area restoration, which will plant shrubs in the permanent right-of-way within 5 feet of the pipeline and trees in the R-O-W within 15 feet of the pipeline.	The FEIS should clarify and elaborate on how right-of-way maintenance through wetlands will be accomplished.

State Agencies 1

SA1-45 Section 2.5 has been revised to state that Northwest's training for construction personnel would include instruction on the guidelines and standards adopted by other federal, state, and local regulatory agencies, some of which may be more stringent than the FERC requirements.

SA1-46 The FERC staff believes that some of the tasks the WDOE previously recommended should be assigned to the EI would be more appropriately handled by the Northwest Lead Environmental Specialist who is responsible for project permitting and has been the main contact with the agencies throughout the environmental review process. These tasks include: 1) notifying the agencies and negotiating any necessary changes when permit violations occur and when permit requirements need to be altered due to field conditions; 2) providing an "Environmental Agency Complaint Line" to the agencies; and 3) providing the credentials of the EIs to the appropriate state agencies. In its comments on the draft EIS, Northwest submitted a revised ECR Plan that assigned the above three tasks to Northwest's Lead Environmental Specialist and expanded the list of EI duties to include the remainder of the WDOE's previous recommendations. The revised ECR Plan is provided in Appendix G.

Section 2.5 has been revised to include the expanded list of EI duties from the revised ECR Plan Northwest submitted in its comments on the draft EIS as well as the list of additional tasks assigned to Northwest's Lead Environmental Specialist. In addition, section 2.5 has been revised to list the new recommendations of the WDOE and WDFW regarding the EI's responsibilities and include the FERC staff's recommendation that Northwest prepare a revised ECR Plan to expand the list of EI responsibilities to include these duties and state that notification to agencies of construction activities, permit violations, and/or situations where permit requirements need to be altered due to field conditions should occur as soon as possible but no later than 4 hours after identification of the issue unless handled as a variance through the third-party compliance monitoring program or an alternative agreement with individual compliance agencies is adopted. In accordance with the FERC staff's recommendation, Northwest would file the revised ECR Plan with the Secretary for the review and written approval of the Director of OEP before construction (see also mitigation measure number 11 in section 5.4).

Northwest is expected to file its revised ECR Plan as part of its Implementation Plan that would be submitted to the FERC for approval before construction. The FERC staff's recommended mitigation measure number 6 in section 5.4 has been revised to require Northwest to submit a copy of the Initial Implementation Plan to the WDOE and the WDFW. The WDOE's and WDFW's comments on the Implementation Plan, if received on a timely basis, would be taken into consideration by the FERC before approval of the plan.

See also the responses to comments SA1-9, SA1-106, and SA1-150.

SA1-47 The FERC staff's recommended mitigation measure number 6 in section 5.4 has been revised to require Northwest to submit a copy of the Initial Implementation Plan to the WDOE and the WDFW. The WDOE's and WDFW's comments on the Implementation Plan, if received on a timely basis, would be taken into consideration by the FERC before approval of the plan.

State Agencies 1

SA1-48 Section 2.6 has been revised to state that the FERC staff's Procedures includes limitations on vegetation maintenance in wetland and riparian areas and at stream crossings to allow the restoration of native wetland and riparian species, including woody species, over a greater portion of the right-of-way than would be typically allowed in upland areas. The right-of-way would be allowed to revegetate; however, trees greater than 15 feet in height within 15 feet of the pipeline centerline would be periodically removed.

	Issues/Sections	Section & Page	Comment	Recommendation
	4.1 & 4.2 GEOLOGY AND SOILS			
SA1-49		Section 4.1.3, pp 4-8	Include channel migration under the erosion hazard or create a new subheading. On page 4-8, the subsection titled Erosion should be retitled to Erosion and Channel Migration and the following text should be added:	On page 4-8, the subsection titled Erosion should be retitled to Erosion and Channel Migration and the following text should be added: *Erosion hazards that may affect the loops include surface erosion of the right-of-way, scour and erosion at waterbody crossings, scour and erosion and avulsion in the channel migration zone, and subsurface erosion along the pipeline. The potential for surface erosion to occur in the right-of-way would generally be more pronounced in areas where the slope is steep, the underlying soil is loose, surface runoff is uncontrolled, and the surface vegetation has been removed or is sparse. The potential for erosion to occur due to the type of soil present in the right-of-way is discussed in section 4.2.1. The potential for surface erosion to occur at HDD entrance and exits as well as other pipeline structures in high where there are relic, overflow channels, and history of avulsions.* *The occurrence and potential effects of subsurface erosion are discussed in section 4.3.1.2. A stream scour analysis was conducted for the project and is discussed in section 4.3.2.4.*
	4.3 & 4.4 WATER RESOURCES and WETLANDS			
SA1-50	Does the EIS adequately describe the potential boundaries or extent of the impact area(s)?	Sec. 4.3.2.2 Pg. 4-44	For wet open-cut crossings at Pilchuck Creek and the Nisqually River, the downstream extent of impact is not clearly defined.	The FEIS should D207estimate the downstream extent of impact at these crossings based on sediment transport (expected stream velocities and substrate size).
SA1-51	Does the EIS describe the intensity and duration of the potential impact?	Sec. 4.3.2.2 Pg. 4-46	The DEIS states that the duration and intensity of water quality impacts due to wet open-cut crossings will be determined as a part of the state permitting process.	In the FEIS provide an estimate of turbidity levels and the duration of non-compliance with state water quality standards for the water bodies where the wet open-cut method is proposed (as primary or alternate method).

SA1-49 Section 4.1.3 has been revised to incorporate the recommended language regarding erosion and avulsion in the channel migration zone.

SA1-50 Section 4.3.2.3 has been revised to include a site-specific discussion of the downstream effects of suspended sediments at all five of the proposed or alternative wet open-cut crossings for the project (i.e., North Fork Nooksack, North Fork Stillaguamish, South Fork Stillaguamish, and Nisqually Rivers and Pilchuck Creek).

SA1-51 See the response to comment SA1-50.

	Issues/Sections	Section & Page	Comment	Recommendation
	Does the EIS adequately describe water resources and quality (surface and groundwater) that could potentially be affected by the proposed action and alternatives in the impact area?		See comment above	See above
SA1-52	Does the EIS describe potential effects of the proposed activity and the alternatives on surface water quantity and quality.	Sec 4.3.1.3, Pg 4-35 Sec 4.3.2.7, Pg 4-75	Withdrawing water from the Centralia Power Canal for the purpose of hydrostatic testing will require a water right application to Ecology. This withdrawal has the potential to affect existing water rights and instream resources. The extent of the effect will vary according to the timing, rate and duration of the withdrawal. (Also see WDFW comments on this withdrawal)	The FEIS document should describe the timing, rate and duration of the withdrawal from the Centralia Power Canal.
SA1-53	Does the EIS identify and describe potential impacts on wetlands?	Sec. 4.4.4, Pg 4-90	The compensatory mitigation plan is still under development.	Include the compensatory mitigation plan in the FEIS.
SA1-54	Does the EIS describe the methodology to delineate wetlands as required by federal, state, and local laws and regulations?	Sec. 4.4.1 Pg. 4-76	Yes. Refers to COE, 1987 and WDOE 1997. Referencing the full name and document number for each publication would have been preferable.	No change recommended for FEIS.
SA1-55	Does the EIS include mitigation for potential impacts on wetlands?	Sections 4.4.2, 4.4.3, 4.4.4	Yes. The DEIS describes construction-related mitigation measures and FERC's Wetland and Waterbody Construction and Mitigation Procedures (Appendix F). FERC recommends that compensatory mitigation plan be included in FEIS for review and analysis. Document does note that details of conceptual mitigation plan will be included in COE Public Notice allowing for public and agency comment. Ecology should be provided the site-specific crossing plans for Evans Creek and Olson Lake to review for the Section 401 water quality certification.	No change recommended for FEIS.

SA1-52 Sections 2.3.1, 4.3.2.7, and 4.6.2.3 have been revised to state that Northwest would adhere to the requirements for pump intake screens, allowable rates of water withdrawal, and other stipulations as specified in the Hydraulic Project Approval and Temporary Water Use Permit that would be issued by the WDFW and WDOE, respectively. It is expected that the total volume and allowable rate of water withdrawal would be based on flow in the Centralia Canal at the time of construction. See also the response to comment SA1-133.

SA1-53 Section 4.4.4 has been revised to provide the most current information regarding Northwest's compensatory wetland mitigation plan. See also the response to comment SA1-4.

SA1-54 Comment noted.

SA1-55 Section 4.4.4 has been revised to provide the most current information regarding Northwest's compensatory wetland mitigation plan. Northwest is still in the process of consulting with other federal, state, and local agencies and applicable Native American tribes to finalize this plan. Section 4.4.4 has been revised to include the FERC staff's recommendation that Northwest continue consultations with the applicable agencies and Native American tribes and file the final compensatory wetland mitigation plan with the Secretary before construction (see also mitigation measure number 18 in section 5.4). Section 4.4.4 also explains how the public can view the final plan once it is filed.

It is assumed that the WDOE will submit a direct request to Northwest to provide the site-specific crossing plans for Evans Creek and Olson Lake to the WDOE for review as part of the section 401 permit application.

	Issues/Sections	Section & Page	Comment	Recommendation
SA1-56	Does the EIS describe the quantity and source of water required for the project?	Sec 4.3.1.3, Pg 4-35 Sec 4.3.2.7, Pg 4-75	The document should identify existing water rights that may be affected by the withdrawal and evaluate the extent to which such rights might be impaired. The Centralia Power Canal ultimately discharges back to the Nisqually River, so the withdrawal would represent a diversion from the river and may affect the power plant as well. It also could affect Centralia PUD's ability to conform with the requirements of its FERC hydroelectric license. Withdrawal of water from the Centralia Power Canal will require a water right be obtained.	See comment #204
SA1-57	Does the EIS discuss potential effects of the proposed action and alternatives on ground water quality and quantity:		Impact on wetlands resulting from discharge of wastewater (e.g. trench dewatering water, stormwater, or hydrostatic test water) or well testing water is not discussed in the DEIS. Ecology permit review will evaluate changes in wetland hydrology from any of these discharges.	The FEIS should describe the expected impacts on wetland hydrology that may result from trench dewatering, stormwater or hydrostatic test water discharges.
SA1-58	If the proposed action may involve floodplains, does the EIS discuss potential impacts or alternative actions to avoid or minimize impacts?		The need for floodplain permits is discussed, but not all specific potential impacts and mitigation measures are presented.	Provide additional discussion of potential temporary and long-term project impacts to floodplains and measures to be implemented to avoid or minimize these impacts. Where spoils are proposed to be stored within the channel, provide explanation of how this will not impact the floodway.
SA1-59	Does the EIS describe the location of the discharge of wastewater during construction and operation, if any?	Sec 4.3.1.4, pg 4-36 Sec 4.3.2.7, pg 4-75	While measures are proposed to filter and dissipate the energy of the discharge, no details are provided to show that the water will likely infiltrate into nearby soils. Also, some discharge locations identified in Appendix B appear to be located on steep slopes.	In the FEIS provide a general evaluation of the discharge locations selected to demonstrate that discharged water is not expected to reach surface waters. Also, FERC should instruct Northwest to avoid discharge locations on steep slopes to avoid erosion.
	Does the EIS describe the water quantity and quality of the wastewater discharge, if any, during construction and operation?	Table 4.3.1-3	Yes. The table indicates the locations for discharge of hydrostatic test water; text indicates it will occur at a significant distance from wetlands and streams.	No changes for the FEIS.

SA1-56 Sections 2.3.1, 4.3.2.7, and 4.6.2.3 have been revised to include additional description of hydrostatic test water withdrawal from the Centralia Canal. See also the response to comment SA1-133.

SA1-57 Section 4.4.2 has been revised to include the potential impacts on wetlands associated with the discharge of stormwater, trench water, or hydrostatic test water and mitigation measures Northwest would implement to minimize these potential impacts.

SA1-58 Section 4.3.2.2 has been revised to include a discussion of potential impacts on floodplains and measures to minimize those impacts.

SA1-59 Sections 2.3.1, 4.3.1.4, and 4.3.2.7 have been revised to clarify that all discharges would be conducted in accordance with the requirements for hydrostatic test water discharges included in Northwest's NPDES Individual Permit for Stormwater Discharges that would be issued by the WDOE. These revised sections state that WDOE staff would conduct field reviews of Northwest's proposed hydrostatic test water discharge locations, as required, as part of the WDOE's NPDES permit review process. Based on this field review, modifications to the discharge locations would be made as necessary to ensure that the test water would infiltrate the ground before reaching sensitive areas.

	Issues/Sections	Section & Page	Comment	Recommendation
	Does the EIS describe the potential effects (construction and operation) of the wastewater on the receiving waters or facility rather than just identify the release?		Impact on wetlands is not discussed. Ecology permit review will look at changes in wetland hydrology that could result from discharge of wastewater or well testing water.	See comment #209.
	Additional technical comments			
SA1-60		Pg 4-21	The DEIS notes that the project will follow FERC guidance on erosion control. The project needs to also follow the Ecology erosion control standards that are more stringent than the FERC guidance.	Expand the paragraph to indicate that the project will also follow the Ecology erosion control standards that are more stringent than the FERC guidance.
SA1-61		Pg 4-33	The DEIS describes measures to prevent spills. An additional measure that should be included is that fuel and other hazardous liquid containers at work areas will be stored in secondary containment.	Expand spill prevention measures to state that containers of hazardous liquids will be stored in secondary containment.
SA1-62		Sec 4.3.1.4, pg 4-35	Letters notifying landowners should be sent in any case, and not only "if time permits".	Remove the phrase "If time permits" from the fifth sentence in the first paragraph in Section 4.3.1.4.
SA1-63		Sec. 4.3.2.4	Since there are no sections that discuss channel migration this geologic hazard they should be added. Section 4.3.2.4 Scouring, Channel Profile Changes, and Channel Migration mentions that this is a concern of WDOE and suggests that the existing scour analysis is adequate. However, the existing scour analysis only addresses the active channel and not the channel migration zone outside the active channel. Thus a scour analysis should include a Channel Migration Zone (CMZ) scour analysis for pipe depth and also an avulsion hazard analysis. The NF Nooksack is particularly prone to avulsions.	The scour analysis should include a CMZ scour analysis for pipe depth and avulsion hazard.
SA1-64		Sec. 4.3.2.1 Pg. 4-40 Table 4.3.2-3	303(d) - The ADEIS identified Jim Creek as being listed, it is not included in the DEIS.	Confirm status of Jim Creek and include in FEIS if appropriate.

SA1-60 Section 4.2.2 has been revised to clarify that, when WDOE erosion control standards differ from those found in the FERC staff's Plan and Procedures, the WDOE would require Northwest to follow the more stringent of the standards.

SA1-61 Section 4.3.1.2 has been revised to specify that proper storage and handling of containers includes storing containers of hazardous liquids in secondary containment structures.

SA1-62 Section 4.3.1.4 has been revised to clarify Northwest's measures for notifying landowners about hydrostatic testing activities.

SA1-63 Section 4.3.2.4 has been revised to clarify that the scour and erosion hazard analysis was not limited to only the active channel at proposed waterbody crossings. Rather, the analysis and the resulting recommendations for pipeline burial depths and sag bend setbacks considered the hydrology of the entire floodplain, including determining the potential extent of lateral migration and likelihood of avulsion.

SA1-64 The only location listed on the section 303(d) list for Jim Creek is several miles downstream of the proposed crossing location. Therefore, Jim Creek was not included in the analysis of section 303(d)-listed waterbodies in the EIS.

	Issues/Sections	Section & Page	Comment	Recommendation
SA1-65		Sec. 4.3 Pg. 4-42	SMA jurisdiction in Thurston County extends across the entire 100 year floodplain, which in some areas, may be further landward than 200 feet from the Ordinary High Water Mark. This may be true for other counties as well. In addition, any wetland located within the 100-year floodplain of a shoreline of the state is defined as an associated wetland. Work within these wetlands would require shoreline permits.	Revise text to indicate that in Thurston County the shoreline zone is the 100-year floodplain.
SA1-66		Sec. 4.3 Pg. 4-43	Both a shoreline Substantial Development Permit (because the fair market value of the work exceeds $5000) and a Shoreline Conditional Use Permit are required from Thurston County.	Revise text to indicate a shoreline substantial development development permit is also required.
SA1-67		Sec 4.3.2.1 Pg 4-44	Spoils cannot be placed into floodways, unless they will be removed prior to flood season. If spoils will be place in the floodway on a temporary basis, and removed prior to flood season, no changes to the text would be necessary. However, the text should state that spoils will not be placed in the floodway to cause an increase in flood levels.	Add new text in mitigation section (Pg 4-46). All material, including spoils, placed in the floodplain have to be removed prior to flood season.
SA1-68		Sec. 4.3.1.2 Pg. 4-31	Shallow groundwater, which can seasonally be preferential flow, can cause subsurface erosion along pipelines.	In the general Impact and Mitigation section, add additional discussion on potential impacts of shallow groundwater on pipeline infrastructure.
SA1-69		Pg 4-52	If HDD is not feasible then dry waterbody construction methods will be used.	List or reference which types of dry methods are being considered.
SA1-70		Pg. 4-54	Does not describe potential impacts from potential spills of heavy equipment working in the water or measures to minimize spills while working in the water.	The following measures should be included in Section 4.3.2.2 and Appendix H: A. Use equipment with a lower spill potential. There are excavators that are operated with cables and counter weights that may have less "oil" on board.

SA1-65 Section 4.3.2.1 has been revised to clarify that the shoreline zone in Thurston County includes the 100-year floodplain.

SA1-66 Section 4.3.2.1 has been revised to clarify that a Shoreline Substantial Development Permit is also required from Thurston County.

SA1-67 Section 4.3.2.2 has been revised to include a statement that construction would occur during the late spring and summer, outside normal flood periods. All trench spoil would be returned to the trench, and all disturbed areas restored to preconstruction contours before the flood season.

SA1-68 Section 4.3.1.2 has been revised to indicate that the presence of shallow groundwater can also contribute to soil liquefaction and mass wasting, which are discussed in section 4.1.3.

SA1-69 Section 4.3.2.3 has been revised to state that Jim Creek and the Tributary to North Fork Nooksack River would be crossed using the flume method if the HDD method fails.

SA1-70 Section 4.3.2.2 has been revised to list the WDOE's recommended measures to minimize the impacts of potential spills from equipment working within waterbodies and to include the FERC staff's recommendation that Northwest prepare a revised SPCC Plan to include these measures. Section 2.5 has been revised to include the FERC staff's recommendation that Northwest revise its ECR Plan to expand the list of EI duties to include responsibilities related to the washing of equipment before entering waterbodies and public roadways and ensuring that roadways are swept at the end of the work day if necessary. In accordance with the FERC staff's recommendations, Northwest would file the revised SPCC Plan and revised ECR Plan with the Secretary for the review and written approval of the Director of OEP before construction (see also mitigation measure numbers 16 and 11 in section 5.4). See also the responses to comments SA1-9, SA1-106, and SA1-150.

	Issues/Sections	Section & Page	Comment	Recommendation
SA1-70 (cont'd)				B. Power wash or steam clean the equipment prior to it entering the river. Use no soaps. Washing/cleaning will occur offsite at an area that is preferably paved and has stormwater treatment. Locations of wash/cleaning areas should be listed in the Implementation Plan. This section should also identify measures to minimize deposition of sediment and pollutants from equipment on public rights-of-way and private property. C. Develop a checklist to use prior to any equipment entering the river. This list would check hydraulic hoses, connections, and rams for wear or leakage. It would ensure all lube fittings (zirks) are wiped clean of excess grease. It would double check that fill caps are sealed tightly in case the rig is overturned the contents won't spill out. D. Keep only the amount of fuel onboard as will be used in the work period. This will lessen the amount in the river at one time.
SA1-71		Pg 4-54; Pg 4-63	States that if the open cut method is used the trench spoils would be placed in the river with breaks in the piles to allow water passage. This could result in increased turbidity.	Provide additional analysis on why placing the trench material in the stream would have less impact than removing it entirely from the water body and then backfilling the trench with either the same material (dewatered) or other material. Also describe how the surface sediments will be restored to original or similar conditions.
SA1-72		Pg. 4-63	The trench across Pilchuck Creek would be dug deep enough to provide five feet of cover, however, this may not be sufficient.	Ecology recommends a scour analysis be performed for this crossing, to determine the appropriate depth of the trench. See comment on Section 4.3.2.4 above.

SA1-71 Section 4.3.2.3 has been revised to explain why in-stream storage of trench spoil would be environmentally preferable to the removal of trench spoil from the waterbody and to expand the description of the backfill operation.

SA1-72 Pilchuck Creek was one of the waterbodies included in the evaluation of scour and erosion potential that was conducted in the spring of 2004 and documented in the report titled *Capacity Replacement Project, Stream Crossing Scour and Erosion Assessment, Whatcom, Skagit, Snohomish, Pierce, and Thurston Counties, Washington* (Golder, 2004c).[2] Pilchuck Creek was evaluated as having a medium potential for scour. As discussed in section 4.3.2.4, Northwest would increase the depth of cover to more than the 5-foot minimum where necessary to accommodate the potential for long-term scour and profile changes. Northwest states that the depth of cover for waterbody crossings that require more than 5 feet of cover and additional lateral setbacks would be determined during detailed pipeline design. Section 4.3.2.3 has been revised to remove the reference to 5 feet of cover at Pilchuck Creek and to state that the depth of cover necessary to bury the pipeline below scour depth would be determined during detailed pipeline design as specified in section 4.3.2.4.

[2] This report is too voluminous to include in this EIS. It is available for public inspection at the FERC's Public Reference Room in Washington, DC (call (202) 502-8317 for instructions) and at the WDOE's regional offices. If you reside in Whatcom, Skagit, Snohomish, or King Counties, you can access this document at the WDOE's Northwest Regional Office in Bellevue by calling the Public Disclosure Coordinator at (425) 649-7190 or (425) 649-7239. If you reside in Pierce, Thurston, Lewis, Cowlitz, or Clark Counties, you can access this document at the WDOE's Southwest Regional Office in Lacey by calling the Public Disclosure Coordinator at (360) 407-6365.

	Issues/Sections	Section & Page	Comment	Recommendation
SA1-73		Pg. 4-68	Nisqually River. Describes the preferred wet-open cut method, but does not describe where the trenched material will be placed. In the other crossing proposing this method, the trench material is stored instream downstream of the trench.	Describe location for placement of instream trenched material. If inwater, address comment in line 222, if out of the water describe how runoff/dewatering will be controlled.
SA1-74		Pg. 4-72	Site specific crossing plans and conceptual waterbody mitigation plans should be filed with FERC prior to the end of the DEIS comment period and included in the FEIS. Ecology requests all of the site-specific crossing plans to review for the 401 WQC. Wetland staff would particularly like to see the Olson Lake and Evans Creek plans.	No change for FEIS.
SA1-75		Sec 4.3.2.6	Swift Creek in Whatcom County (MP 1477.6) may be dry when construction occurs at its crossing. Natural landsliding has deposited naturally occurring asbestos and cadmium. Construction may disturb these deposits and could result in a water quality impact.	In Section 4.3.2.6, acknowledge this potential impact and describe measures to avoid or minimize the impact.
SA1-76		Sec. 4.4.2 Pg. 4-81	This section states that wetlands within the easement will be maintained for life as emergent/shrubby communities to facilitate corrosion/leak surveys. This is inconsistent with restoration plans, as explained in Table 4.4.1-1, Footnote b. The footnote describes the distance from the pipeline to be maintained free from shrubs and free from trees in wetlands within the right-of-way, which implies that some wetland areas within the easement but at a greater distance from the pipeline will not be maintained as emergent/shrubby communities.	This inconsistency between Table 4.4.1-1 and Pg 4-81 should be resolved.

SA1-73 Section 4.3.2.3 has been revised to explain why in-stream storage of trench spoil would be environmentally preferable to the removal of trench spoil from the waterbody. Section 4.3.2.3 has also been revised to clarify that once the trackhoes are at the point where the banks could be reached, the spoil would be stored behind silt fencing and/or hay bales to prevent runoff from the spoil materials.

SA1-74 It is assumed that the WDOE will submit a direct request to Northwest to provide the site-specific waterbody crossing plans to the WDOE for review as part of the section 401 permit application.

SA1-75 Section 4.3.2.6 has been revised to include a discussion of Swift Creek.

SA1-76 Section 4.4.2 has been revised to clarify the portion of wetlands within the permanent right-of-way that would be maintained and to be consistent with footnote “b” in table 4.4.1-1.

	Issues/Sections	Section & Page	Comment	Recommendation
SA1-77		Appendices E, F, G, and H	Many of the measures discussed in Appendices E, F, G, and H do not match guidelines in the Ecology Stormwater Management Manual for Western Washington. It is stated in Section 2.3 that state guidelines may be more stringent than the measures proposed in Appendices E and F (Plan and Procedures), and that Northwest expects that these more stringent guidelines will be required as permit conditions. The more stringent guidelines that are expected to be conditions of the Section 401 Water Quality Certification should be incorporated into Section 4 where measures are discussed, and in the site-specific Erosion Control and Revegetation Plan (Appendix G) and Spill Prevention, Containment, and Countermeasures Plan (Appendix H).	Include the final four sentences of the third paragraph on page 2-17 in the applicability, introduction, or general information sections of Appendices E, F, G, and H.
SA1-78		4.3.1.3	Ecology concurs with the FERC staff in their recommendation that Northwest provide Ecology with the locations of all wells and springs within 200 feet of the construction area. The effects of temporary groundwater and surface water disruptions due to construction activities are not regulated by Ecology's Water Resources Section. But since Ecology administers the water code, citizens mistakenly call the agency as a first action when they believe construction activity is affecting their water supply. A list of well/spring locations inside the buffer will allow Ecology to direct groundwater related questions, concerns or complaints to the potentially responsible party, which is Northwest. In addition, if Northwest could provide names and addresses of well and spring owners in the affected buffer area, and the name(s) and phone number(s) of a contact person at the company, the process of transferring citizen concerns to Northwest would be expedited.	The FEIS should include a list of all well/spring locations inside the buffer. Revise the bolded bullet in Section 4.3.1.3 to read: ***90 days before construction, Northwest will file with the Secretary and WDOE, a table and/or a figure accurately depicting the location of all wells and springs within 200 feet of the construction work area and proposed mitigation measures to avoid or minimize potential impacts. In addition, Northwest will notify all landowners with identified wells 90 days before the start of construction.***

SA1-77 Where appropriate, additional acknowledgement that state and local guidelines may be more stringent than the measures proposed and that Northwest would be required to adhere to the most stringent of its permit conditions during construction and operation of the Capacity Replacement Project has been included in the EIS. In addition, section 2.5 has been revised to state that Northwest's training for construction personnel would include instruction on the guidelines and standards adopted by other federal, state, and local regulatory agencies, some of which may be more stringent than the FERC requirements.

SA1-78 Typically the applicant files outstanding information necessary to comply with the FERC staff's recommended mitigation measures as part of its Implementation Plan. The Implementation Plan is required to be submitted to the Secretary for the review and written approval of the Director of OEP at least 60 days before the anticipated start of construction. The FERC staff believes that receiving the location of all wells and springs within 200 feet of the construction work area and proposed mitigation measures to avoid or minimize potential impacts on these wells and springs, and notifying all affected landowners that construction would occur within 200 feet of their well or spring, at least 60 days before the anticipated start of construction would be adequate. Therefore, section 4.3.1.3 has been revised to include the WDOE's suggested text; however, the timeframe has been modified from 90 days before construction to at least 60 days before the anticipated start of construction (see also mitigation measure number 15 in section 5.4).

	Issues/Sections	Section & Page	Comment	Recommendation
SA1-79		4.3.1.4	Based on Ecology records and information from the Department of Health, it is Ecology's tentative determination that all sources of municipal water in Ecology's Northwest Region listed in Table 4.3.1-2 have the 9.3 acre-feet in spare annual capacity necessary to supply the project. It should be noted that a final determination of the validity of a water right can only be ascertained through an adjudication in superior court. As a result, Ecology cannot guarantee the legal availability of the water being purchased by the company.	No changes for the FEIS recommended.
	4.5, 4.6 AND 4.7 VEGETATION, WILDLIFE AND SPECIAL STATUS SPECIES			
SA1-80	Are habitat types identified and estimates provided by type for the amount of habitat lost or adversely affected?	Sec. 4.8.1 Pgs 4-154 through 4-162	Not in the Wildlife and Aquatic Resources (Section 4.6)	Add a statement in the Wildlife and Aquatic Resources (Section 4.6) referencing where the information is provided.
SA1-81	Does the EIS quantify potential impacts on species where possible?	Section 4.6	Construction and operational impacts on species are not quantified. It is stated that "…the high variability among sampling years makes predicting the number of redds present at the crossing location during any given year difficult." (Section 4.6.2.4, page 4-126). However, for the purpose of the EIS impact analysis, it would be appropriate to estimate the expected number of redds based on the habitat type and area (feet^2) at the proposed stream/river crossings.	Provide a discussion indicating the maximum redd number that can possibly be present at each of major stream and river crossings.
SA1-82	Are the methodologies used for impact assessment discussed and are they generally accepted in the scientific community?	Sec 4.6	There is no discussion of methodology used to evaluate data and conduct analysis of impacts.	The methodologies for assessing fish and wildlife a impacts should be described.
SA1-83	Does the EIS consider mitigation measures to protect, restore, and/or enhance fish and wildlife habitat?	Section 4.6	Mitigation measures to restore wildlife habitat do not seem to be adequate, particularly due to the expected 118.6 acres of forested habitat impact (Section 4.6.1.2, page 4-110). The information is not readily available and summary tables would be helpful to the reader.	Add impact and mitigation summary tables indicating how construction and operation impacts would be mitigated. If these impacts will not be mitigated it should be identified.

SA1-79 Comment noted.

SA1-80 A footnote has been added to table 4.6.1-1 indicating that the impacts on vegetation communities associated with the project are quantified in tables 4.4.1-1, 4.5.2-1, and 4.8.1-2. Impacts on the riparian vegetation community are quantified in section 4.5.3.

SA1-81 As discussed in section 4.6.2.4, specific salmonid redd data are only available for steelhead redds in the North Fork Nooksack River. Northwest consulted with the WDFW regarding the availability of data for salmonid redds in general. The WDFW indicated that redd data in its databases provide averages for certain waterbodies and are not site specific (WDFW, 2005a). The WDFW indicated that it conducts redd counts primarily for steelhead and chinook but that its database is currently not in a format conducive to site-specific interpretation (WDFW, 2005b). The WDFW also cautioned that salmonid spawning distribution and densities are variable in time and space. Numbers of spawners change annually; streamflows vary, which in turn affect spawner distribution patterns; and in-stream habitats vary annually whether due to natural or human-related influences. According to the WDFW, any analysis and interpretation of past distributions may not reflect future distributions at specific times and locations (WDFW, 2005b).

SA1-82 Fish and wildlife data were evaluated and impacts on biological resources were assessed through a review of pertinent literature, consultations and discussions with applicable agency representatives, and professional judgment based on previous experience.

SA1-83 Section 4.6.1.2 has been revised to include additional information regarding impact and mitigation for wildlife habitat. The FERC staff believes the EIS adequately discusses the project's impact and mitigation measures without the addition of a summary table.

	Issues/Sections	Section & Page	Comment	Recommendation
	4.7 SPECIAL STATUS SPECIES			
SA1-84	Are potential effects, including cumulative effects, analyzed for special status species	Sec 4.7.4, page 4-151	Cumulative effects are discussed for special status species, but only within the context of the ESA. Cumulative effects are not discussed within the context of NEPA.	The FEIS should analyze and discuss cumulative effects for T&E species and their habitat, if any. Given the nature of the Capacity Replacement Project (extends over several geographic regions), the analysis should first consider the cumulative effect of the project itself (total acreage of permanent impact). Once this is completed, then the reasonably foreseeable future projects should be included in the analysis. Examples of future projects might include timeframes for maintenence of the easement or future pipeline replacement.
SA1-85	Are habitat types essential for special status species identified and estimates provided by type for the amount of habitat lost or adversely affected?	Sec 4.7 Pg 4-128 - 4-151	Operational impacts are not discussed and estimated habitat lost/affected quantities are not provided. Construction impacts are discussed to some degree throughout the section, but the information is not readily available. Also, the information is not summarized in tables.	Add a summary table in the FEIS. The table should provide estimates on the acreage of habitat that will be affected including ESA critical habitats, Essential Fish Habitat, and state/local priority habitat. See comment #243.
SA1-86	Are sufficient data and references provided to allow validation of analysis methods, results or conclusions including impacts?		There is no discussion of methodology used to evaluate data and conduct analysis of impacts.	Discuss the methodologies used for the impact assessment.
	4.8 LAND USE, RECREATION AND SPECIAL INTEREST AREAS, AND VISUAL RESOURCES			
	Visual Resources			
SA1-87	If appropriate, does the EIS include visualizations of the visual setting before and after the proposed action?	Sec. 4.8.6 Pg. 4-181	Photos in Appendix Q are very helpful in visualizing existing conditions, however, Appendix Q does not show what the impacts would be.	Revise Appendix Q so that photos show the existing ROW compared to the extent of clearing that will be required.

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SA1-84 Section 4.13.3 includes a discussion of present and reasonably foreseeable future projects or activities and assesses the potential impacts from these projects along with the proposed project on all resources, including protected species and their habitat.

SA1-85 Construction- and operation-related impacts on protected species and their habitat are discussed throughout section 4.7. These species-specific discussions clearly present estimates of expected habitat acreage affected and identify the mitigation measures proposed by Northwest and those recommended by the agencies. The FERC staff believes the EIS adequately discusses the project's impact and mitigation measures without the addition of a summary table. Because 99 percent of the proposed loops would be constructed within or adjacent to Northwest's existing right-of-way, operation of the project would not result in a significant amount of additional impacts on protected species.

SA1-86 See the response to comment SA1-82.

SA1-87 Additional details on the extent of clearing have been added to the applicable figures in Appendix Q.

	Issues/Sections	Section & Page	Comment	Recommendation
	4.9 SOCIOECONOMIC			
SA1-88	Did the project proponent conduct a community impact analysis	Sec 4.9.7, Pg 4-200	Based on the information presented in the EIS, none of the communities affected by the proposed Capacity Replacement Project appear to have disproportionately high percentages of minority and/or low-income populations. However, the statistics that are quoted in this section are statewide and countywide statistical averages. For a narrow corridor project, this seems inappropriate. Fort example, when discussing statewide averages of Native-Americans, to conclude that a 1.2-mile segment of the project located on tribal lands would have no impact on the "community" does not seem to be a conclusion that could be supported by countywide or statewide data. This section also states that the northern portion of the Fort Lewis Loop would cross areas where the black population is up to 17 percent of the total population. This is over five times the state average for blacks and well over twice the county average. To conclude that this is not a disproportionate impact based on the countywide and statewide averages seems inappropriate. Using census tract information would seem to be a much more accurate approach.	The FEIS should continue to recognize these population dynamics and add a discussion of any unusual or disproportionate impacts that may be experienced by these populations.
	Waste			
SA1-89	Does the EIS describe pollution prevention and waste minimization practices to be applied during the construction and operation of the proposed action?	Pg 4-54	The DEIS does not describe potential impacts from potential spills of heavy equipment working in the water or measures to minimize spills while working in the water.	See recommendation #216 and #225 -229.
	4.9.4 Transportation			
SA1-90			Northwest should ensure that truck washing occurs prior to trucks and construction equipment entering public right-of-ways.	See recommendation #225 -229 regarding washing/cleaning of equipment.

SA1-88 Section 4.9.7 has been revised to include census tract information for the environmental justice analysis of the proposed loops.

SA1-89 Section 4.3.2.2 has been revised to list the WDOE's recommended measures to minimize the impacts of potential spills from equipment working within waterbodies and to include the FERC staff's recommendation that Northwest prepare a revised SPCC Plan to include these measures. In accordance with the FERC staff's recommendation, Northwest would file the revised SPCC Plan with the Secretary for the review and written approval of the Director of OEP before construction (see also mitigation measure number 16 in section 5.4).

SA1-90 See the response to comment SA1-70.

	Issues/Sections	Section & Page	Comment	Recommendation
	4.12 RELIABILITY AND SAFETY AND HUMAN HEALTH EFFECTS			
SA1-91	Does the EIS identify all potential routes of exposure?		No information is given for radiation, dust or equipment exhaust exposure, nor is information given for worker exposure to contaminants.	The FEIS should provide more information on routes of exposure for the mentioned hazards.
SA1-92	Does the EIS adequately consider physical safety during construction and operation?		No specific reference is made.	Indicate that workers will adhere to state and federal safety regulations and recommendations.
	Other Technical Comments			
SA1-93	Pipe Inspection at the mill and staging yard	Sec. 4.12.1 Pg. 4-240	No mention of inspections at the pipe mill for QA and for loading inspection. Transportation damage is a common cause of subsequent pipe failure. Also handling in staging yards contributes to later failures.	The FEIS should stipulate that qualified pipe inspectors will monitor pipe fabrication, loading, and off-loading at the staging yards.
SA1-94	Risk Management Process, Integrity Assessment Program	Sec. 4.12.1 Pg. 4-245	Northwest relies on an Integrity Assessment Program database to assess risks to the pipeline. No mention on frequency of data base updates is cited.	The FEIS should indicate how often the database will be reviewed for accuracy and updated of completeness and applicability. The FEIS should also discuss how often the HCA's and other sensitive areas will be surveyed to inventory the risk factors present.
SA1-95	Liaison meetings with emergency service providers and public officials.	Sec. 4.12.1 Pg. 4-246	The frequency that Northwest will make liaison contacts is not specified. Nor is there any mention of GPS/GIS data to be provided.	The FEIS should indicate who the liaison will be, what frequency they plan to make original contacts and subsequent visits, and who will set up meetings. Also, the FEIS should indicate that Northwest will provide GPS/GIS data to appropriate agencies subject to FERC and Homeland Security guidelines.

SA1-91 Section 4.12.1 has been revised to include information regarding workers' potential exposure to radiation during x-ray inspection of welded joints, and dust and exhaust from equipment. In addition, as part of its preconstruction training, Northwest would implement a safety training program for construction workers and EIs to reduce the potential for injuries during construction.

SA1-92 Section 4.12.1 has been revised to specify that construction workers would be required to adhere to state and federal regulations and recommendations.

SA1-93 Section 4.12.1 has been revised to state that Northwest's pipe would be inspected at the mill, as well as during loading and offloading at the pipe storage yards.

SA1-94 Section 4.12.1 has been revised to include Northwest's review process of its Integrity Assessment Program and the frequency of its HCA surveys.

SA1-95 The FERC cannot require Northwest to provide GPS/GIS data to other agencies. The FERC assumes that other agencies would submit a direct request to Northwest if they want the data.

	Issues/Sections	Section & Page	Comment	Recommendation
SA1-96		sec 4.2.3, pg 4-26, 2nd full paragraph	The reporting requirement set out in this paragraph should explain that reporting requirements are applicable to new reports of contamination not previously reported to Ecology.	Revise the second full paragraph on page 4-26 to read: *In addition to contamination from spills or leaks associated with construction equipment, preexisting soil contamination could be encountered during pipeline construction. The WDOE has indicated that Northwest would be required to contact the WDOE's Environmental Report Tracking System Coordinator if contaminated soil and/or groundwater, that were not previously reported, are found during construction. The WDOE and Northwest are working together to address pre-existing soil contamination through a Voluntary Cleanup Program Agreement. Additional information on measures that would be taken in the event pre-existing contamination is found during construction is presented in section 4.3.1.2.*
SA1-97		sec 4.2.3., pg 4-26, 5th paragraph	Sampling will be conducted to identify any areas of asbestos concern (and mercury) prior to the commencement of construction. If no asbestos is found during this sampling, no further actions to address asbestos are required.	Revise fourth full paragraph on page 4-26 to read: *During the scoping process, concern was expressed regarding potential asbestos contamination along the existing pipeline. Northwest should sample for asbestos prior to construction. In areas where asbestos may be encountered, Northwest would notify the contractor in advance and require the contractor to submit a plan to remove and dispose of the material in accordance with state and local requirements, and to ensure worker health. If no asbestos is found, no further action to address asbestos is required. Additional information on hazardous waste sites and landfills located within 0.25 mile of the loops is presented in section 4.8.5.*

SA1-96 Section 4.2.3 has been revised to indicate that reporting requirements are applicable to new reports of contamination and not to those previously reported to the WDOE.

SA1-97 Section 4.2.3 has been revised to indicate that Northwest would be required to conduct sampling to identify any areas of asbestos before construction and, if no asbestos is found, no further actions to address asbestos would be required.

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	Issues/Sections	Section & Page	Comment	Recommendation
SA1-98		sec 4.3.1.2, pg 4-32, bulleted item	This condition seems to be an appropriate and valuable contingency plan to minimize delays in the event unanticipated contamination is encountered during construction activities. It's value would be increased if Ecology's approval of the plan (in addition to consultation in preparation) were a part of the condition.	Revise bullet to read: • ***Northwest consult with the WDOE and prepare a plan for the discovery and management of contaminated soils, sediments, and groundwater. The plan should include specific protocols for the testing, handling, and reporting of pre-existing contaminated soils, sediments, and groundwater encountered during construction as well as the contact names and telephone numbers of appropriate state and local agency personnel. The plan should be approved by WDOE and filed with the Secretary <u>before construction</u>.***
SA1-99		sec 4.8.5, pg 4-175, 1st paragraph	The lead paragraph is inaccurate in stating the no state-listed hazardous waste sites are present within ¼ mile of the loops. Examples are provided on the following page. It would be accurate to say there are no federally or state listed hazardous waste sites within ¼ mile of the work area except sites that Williams owns and is addressing in consultation with Ecology.	Revise text as follows: *A search of federal and state databases was conducted for documentation of National Priority List (NPL) sites, state-listed hazardous waste sites, and landfills located within 0.25 mile of the proposed loops. Listed sites are found in table 4.8.5-2. Northwest and WDOE are working on a plan to address these sites. Northwest has developed the following mitigation measures that would be implemented if unanticipated hazardous materials/waste are encountered during construction:*
SA1-100		sec 4.8.5, pg 4-176, para. 3 & 4 (last 2 on page after bulleted items)	The Secretary should require Northwest to submit a report of completed remedial action and/or No Further Action documentation approved by or from the Department of Ecology before construction on Capacity Replacement Project work at any of the listed sites that are within the work area proposed for the Capacity Replacement Project (current phase) can proceed.	Add the following sentence before the last sentence [end of the last paragraph] on page 4-176: *A report of the completed remedial action or No Further Action documentation from WDOE will be submitted by Northwest to the FERC prior to the start of construction in that area.*

SA1-98 Section 4.3.1.2 has been revised to include the requirement that the plan for the discovery and management of contaminated soils, sediments, and groundwater be approved by the WDOE before construction (see also mitigation measure number 14 in section 5.4).

SA1-99 Section 4.8.5 has been revised to clarify that contamination exists at some existing aboveground facility sites owned by Northwest.

SA1-100 Section 4.8.5 has been revised to include the FERC staff's recommendation that Northwest file a report of the remedial action completed at each of the 28 sites listed in table 4.8.5-1 or documentation of concurrence from the WDOE that no further action is needed with the Secretary before ground-disturbing activities at these locations (see also mitigation measure number 24 in section 5.4).

State Agencies 1

	Issues/Sections	Section & Page	Comment	Recommendation
SA1-101		Page 4-250, end of section 4.12.3	To cover impacts from the voluntary clean up that Williams has agreed to undertake, please add the attached text.	*For the clean up of any contaminated sites, the only environmental health hazards that could be encountered during performance of the remedial action is to the on-site workers. Those workers could potentially be exposed to low levels of contaminant of concern, which include primarily inorganic mercury and, to a lesser extent, asbestos in soil. There is no risk of fire or explosion and no risk of spillage of hazardous chemicals. Excavated soils will be placed in either high strength woven "super sacks" or in individual Department of Transportation (DOT) approved steel drums. All super sacks and drums will be individually labeled and sealed.* *While there is a very slight risk of a spill of mercury-impacted soil resulting from a vehicular accident during transportation to the receiving facility, that risk is deemed marginal and is further mitigate by the use of robust individual containers (i.e., sacks and drums) for the excavated soils.*
SA1-102		pg 5-8, item #14	This condition seems to be an appropriate and valuable contingency plan to minimize delays in the event unanticipated contamination is encountered during construction activities. It's value would be increased if Ecology's approval of the plan (in addition to consultation in preparation) were a part of the condition.	Revise item #14 to read: *Northwest shall consult with the WDOE and prepare a plan for the discovery and management of contaminated soils, sediments, and groundwater. The plan should include specific protocols for the testing, handling, and reporting of pre-existing contaminated soils, sediments, and groundwater encountered during construction as well as the contact names and telephone numbers of appropriate state and local agency personnel. The plan should be approved by WDOE and filed with the Secretary* ***before construction*** *.*

SA1-101 Section 4.12.3 has been revised to include the potential impacts on workers during clean up of any contaminated sites.

SA1-102 Section 5.4 has been revised to include the requirement that the plan for the discovery and management of contaminated soils, sediments, and groundwater be approved by the WDOE before construction (see also mitigation measure number 14 in section 5.4).

	Issues/Sections	Section & Page	Comment	Recommendation
	4.13 CUMULATIVE IMPACTS			
SA1-103			Cumulative effects are not discussed for wildlife or aquatic resources. Typically, cumulative analysis considers other projects within the same geographic region. However, given the nature of the Capacity Replacement Project (extends over several geographic regions), the analysis should first consider the cumulative effect of the project itself (total acreage of permanent impact). Once this is completed, then the reasonably foreseeable future projects should be included in the analysis.	Analyze and discuss cumulative effects for wildlife and aquatic species and their habitat.
	APPENDIX E Upland Erosion Control, Revegetation, and Maintenance Plan			
SA1-104		IV. F	Install temporary erosion controls immediately after initial disturbance of the soil.	Revise the erosion control appendix to reflect the same information that is stated on page 4-47 related to temporary erosion control. Page 4-47 explains that temporary erosion control measures should be installed after clearing and before initial soil disturbance. There is a danger of turbid discharges to waters of the state as soon as soil is disturbed.
	APPENDIX G Erosion Control and Revegetation Plan For the Capacity Replacement Project			
SA1-105		Sec. 2.3.1 Page G-3	Erosion Control BMPs are listed in the construction sequence after clearing and grading. Some Erosion Control BMPs should be constructed before clearing and grading, such as establishing clearing limits/preserving vegetation. Many BMPs, such as slope terracing/roughening and downslope sediment control (silt fence) should be implemented during clearing and grading. Other BMPs may be installed after grading is complete.	The FEIS should describe that certain erosion control BMPs should be constructed before clearing and grading, such as establishing clearing limits/preserving vegetation. Other BMPs, such as slope terracing/roughening and downslope sediment control (silt fence) should be implemented during clearing and grading. Other BMPs should be installed after grading is complete.
SA1-106		Sec. 4	The EI will be responsible for ensuring that ineffective temporary erosion control measures are repaired within 24 hours of discovery.	Should be revised in FEIS: *If discharges of turbid water or other pollutants are occurring, the repair of the failing temporary erosion control measures should be immediate.*

SA1-103 Section 4.13.3 has been revised to clarify that it includes an analysis of wildlife habitat and aquatic resources.

SA1-104 The intent of the FERC staff's Plan is to assist applicants by identifying baseline mitigation measures for minimizing the extent and duration of disturbances on soils associated with projects under the FERC's jurisdiction throughout the country. Because these are standard guidelines issued by the FERC, the Plan cannot be changed on a project-specific basis.

However, Northwest's project-specific ECR Plan (see Appendix G), which incorporates many of the mitigation measures outlined in the Plan and Procedures as well as agency-recommended revegetation and erosion control procedures, has been undergoing revision throughout the environmental review process for the project to address issues, concerns, and different guidelines identified by the various agencies. Section 2.5 has been revised to include the FERC staff's recommendation that Northwest prepare a revised ECR Plan to address specific comments received on the draft EIS and to list all of the EI's responsibilities that are included in the list of EI's responsibilities in the EIS. In accordance with the FERC staff's recommendation, Northwest would file the revised ECR Plan with the Secretary for the review and written approval of the Director of OEP before construction (see also mitigation measure number 11 in section 5.4). See also the responses to comments SA1-9, SA1-46, and SA1-150.

SA1-105 Section 2.3.1 has been revised to state that establishing the clearing limits of the construction work area would preserve vegetation adjacent to the right-of-way and control erosion and that temporary erosion controls (e.g., silt fence and straw bales) would be installed during clearing and grading.

SA1-106 Section 2.5 has been revised to include the FERC staff's recommendation that Northwest prepare a revised ECR Plan that states that the EI would be responsible for ensuring the repair of all ineffective temporary erosion control measures as soon as possible but not longer than 24 hours after identification, and requiring the repairs to be completed immediately if discharges of turbid water or other pollutants are occurring (see also mitigation measure number 11 in section 5.4). See also the responses to comments SA1-9, SA1-46, and SA1-150.

	Issues/Sections	Section & Page	Comment	Recommendation
SA1-107		Table 1 Pg. G-19	Lists "Quick Guard" with no explanation.	Add a footnote as in Table 4.5.2-2: *Quick Guard is a sterile hybrid of wheat and rye.*
	APPENDIX H Spill Prevention, Containment, and Countermeasures Plan			
SA1-108			The SPCC is improved, however, additional measures for working in water are necessary. See earlier comment and recommendation regarding equipment washing and cleaning.	See comments #216 and #225 - 229.
	APPENDIX I HDD Contigency Plan			
SA1-109		Section 3.8	WDOE monitoring requirements: 2nd sentence, "samples will be taken immediately after the release, 1 hr. after the release and 2 hrs. after the release"	Should add "If exceedances are still detected after 2 hours, sampling shall continue until no exceedances are detected".
	APPENDIX K			
		Table K-1 Pg. K-6		
	APPENDIX N Site-Specific Variances to the FERC Staff's Wetland and Waterbody			
SA1-110		General; MV-59A, MV-62	Many of the variance requests to increase construction R-O-W widths rely on rationale that there is a seasonal high groundwater table and saturated-unconsolidated soils. *These conditions are common* throughout western Washington and have not required wider construction widths on similar projects.	The appendix should include an evaluation of alternative methods of reducing construction right-of-way widths should be evaluated, such as timing during the dry *season, locating spoil piles* outside of wetlands, and using specialized construction techniques to limit the trench width.
		Table N-1 and N-2. MV-32A, B	Several variances are requested for construction through Olson Lake. Ecology requests review of the site specific construction and mitigation plans provided to FERC. Conditions will be placed on a 401 water quality certification that may differ from the FERC- approved variances.	No changes recommended for the FEIS.
		Table N-3, MV-7, 8	Variance would allow storage of excavation spoils within the actively flowing Pilchuck Creek. Ecology would like to review the site-specific crossing plan for Pilchuck Creek. Conditions will be placed on a 401 water quality certification that may differ from the FERC-approved variance. For example, refer to comment on trench spoils and open-cut construction (comment regarding pgs. 4-54 and 4-63).	No change recommended for the table.

SA1-107 The footnote has been added to table 1 in Appendix G.

SA1-108 Section 4.3.2.2 has been revised to list the WDOE's recommended measures to minimize the impacts of potential spills from equipment working within waterbodies and to include the FERC staff's recommendation that Northwest prepare a revised SPCC Plan to include these measures. In accordance with the FERC staff's recommendation, Northwest would file the revised SPCC Plan with the Secretary for the review and written approval of the Director of OEP before construction (see also mitigation measure number 16 in section 5.4).

SA1-109 The requested text, although worded differently, is already in section 3.8 of Appendix I.

SA1-110 The FERC staff believes that Northwest has conducted a careful review of its workspace needs and designed the project to avoid and minimize environmental impacts where feasible. Northwest's proposed mitigation measures and plans have been developed to compensate for unavoidable adverse impacts. However, sections 4.3.2.2 and 4.4.2 have been revised to state that the COE, the WDOE, the WDFW, and local authorities may approve, approve with stipulations/modifications, or deny the FERC staff-approved variance requests as part of their permit decisions.

Capacity Replacement Project

DEIS Comments - Wms Pipeline Capacity Replacement Project

Wash. Dept. Fish and Wildlife - WDFW

	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-111	1	ES-6	1	6	The Executive Summary should list the actual variances that are referred to in the first paragraph of page ES-6. The specific variances are on page G-4 and G-9.	List the actual variances that are being requested to the Erosion Control and Revegetation Plan that are referred to in the first paragraph of page ES-6
SA1-112	2	ES-7	2	10	Field investigation of the Sumas right of way discovered some undocumented seeps/springs, and what may be a private well on or adjacent to right of way. The FEIS should have the most up-to-date list of seeps, springs and wells.	The FEIS should have the most up-to-date list of seeps, springs and wells, including field notes from WDFW..
SA1-113	3	ES-7	3	end	When the project is using municipal water for hydrostatic testing, it is likely to be chlorinated. Chlorinated water should not be directly discharged to surface water. The DEIS notes that no hydrostatic test water will be discharged to surface water.	The FEIS should confirm that discharge points will not be adjacent to wetlands.
SA1-114	4	ES-7	6	4	Based on site reviews, there are many stream crossings in the Sumas loop that will require more detailed plans for the re-construction of the right-of-way. Many of these streams have been rated as Medium to High risk of future scour danger (Golder Assoc Report). Prior to receiving an HPA, more detailed plans and specifications will be required for these reconstructions. A couple of "typical detail" drawings for such work may be appropriate for inclusion in the Final EIS. Final drawings will need approval before issuing the HPA. These streams, and their fish resource, have received damage from these crossings, the stream channelization, and subsequent rock armoring. The negative impacts/damage, are on-going.	The FEIS would benefit by including a "typical drawing" of stream channel re-construction sites.

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SA1-111 The Executive Summary has been revised to specify the two measures that differ from those in the FERC staff's Plan.

SA1-112 Northwest is currently working to identify the locations of all wells, seeps, and springs within 200 feet of the construction work area. In accordance with the FERC staff's recommendation in section 4.3.1.3, Northwest would provide this information and proposed mitigation measures to the FERC and the WDOE before construction (see also mitigation measure number 15 in section 5.4). Northwest has stated that wells, seeps, and springs that have been identified by the WDFW would be included on the list.

SA1-113 The Executive Summary and sections 2.3.1, 4.3.1.4, and 4.3.2.7 have been revised to clarify that all discharges would be conducted in accordance with the requirements for hydrostatic test water discharges included in Northwest's NPDES Individual Permit for Stormwater Discharges that would be issued by the WDOE. These revised sections state that WDOE staff would conduct field reviews of Northwest's proposed hydrostatic test water discharge locations, as required, as part of the WDOE's NPDES permit review process. Based on this field review, modifications to the discharge locations would be made as necessary to ensure that the test water would infiltrate the ground before reaching sensitive areas. See also the response to SA1-134.

SA1-114 It is understood that the WDFW will require more detailed construction drawings for the Hydraulic Project Approval. Northwest has stated that it does not have any "typical" drawings of stream channel reconstruction sites and would work with the WDFW to prepare site-specific drawings where necessary to support its Hydraulic Project Approval application. Therefore, no typical drawings have been included in the final EIS. The Executive Summary and section 4.3.2.4 have been revised to include a discussion of the WDFW's comments regarding the substandard condition of some of the waterbody crossings and to state that Northwest is working with the WDFW to identify areas where repairs are necessary and, where feasible, would attempt to complete the repairs concurrently with the work associated with the Capacity Replacement Project.

Capacity Replacement Project

	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-115	5	ES-8	2	8	Based on field review, it appears necessary to modify some of the temporary extra work areas near certain streams and wetlands. It will probably require coordinated site reviews with FERC, Ecology, and company staff. Concentrated work areas around streams are necessary, but these are by their nature very sensitive areas. Their footprint needs to be minimized, or eliminated in some cases.	No changes recommended to the FEIS. See comment 10.
SA1-116	6	ES-8	5	5	The push-pull method proposed for crossing both Olson Lake, and Evans Creek, may not become acceptable to WDFW, even though it is approved by FERC.	The FEIS should expand the description of impacts from the push-pull method to Olson Lake and Evans Creek.
SA1-117	7	ES-9	1	1	Permit phasing needs discussion. Will there be one permit issued for all possible methods, or a permit written for the preferred HDD, and then an amendment process pursued if the HDD does not work?	No changes recommended to the FEIS.
SA1-118	8	ES-9	5	1	Large woody debris is appropriate when incorporated into the channel re-construction (wider cross section, bed control, flood terraces, possible meander, re-vegetation). Placement of woody debris by itself without the needed re-construction is insufficient mitigation for the on-going, long term damage occurring at these crossings.	The FEIS should describe how large woody debris will be incorporated into channel reconstruction (wider cross section, bed control, flood terraces, possible meander, re-vegetation) and not be randomly isolated placements.

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SA1-115 The FERC staff believes that Northwest has conducted a careful review of its workspace needs and designed the project to avoid and minimize environmental impacts where feasible. Northwest's proposed mitigation measures and plans have been developed to compensate for unavoidable adverse impacts. However, sections 4.3.2.2 and 4.4.2 have been revised to state that the COE, the WDOE, the WDFW, and local authorities may approve, approve with stipulations/modifications, or deny the FERC staff-approved variance requests as part of their permit decisions.

SA1-116 Section 2.3.2 has been revised to include additional details about the push-pull crossing method and a cross-reference to sections 4.4.3 and 4.6.2.4. Section 4.6.2.4 has been revised to provide additional details of the impacts of the push-pull method.

SA1-117 It is the FERC staff's understanding that the permits issued for the project would address the proposed and alternative crossing methods (i.e., an amendment process would not be pursued).

SA1-118 Section 4.6.2.3 and Appendix S discuss the placement of LWD. The Executive Summary and section 4.3.2.4 have been revised to include a discussion of the WDFW's comments regarding the substandard condition of some of the waterbody crossings and to state that Northwest is working with the WDFW to identify areas where repairs are necessary and, where feasible, would attempt to complete the repairs concurrently with the work associated with the Capacity Replacement Project.

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	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-119	9	ES-10	2	1	The scour analysis found most, but not all, stream crossings with scour problems. In many cases, because of the armored channel constriction and incision at the pipeline crossing, there is either deposition upstream, or headcutting and lateral scour. Downstream there is often further channel incision, sometimes severe, and collapse of the channel banks. The channel at the pipeline crossing has most often been shortened/straightened, and is the steepest section of stream for some distance upstream and downstream. Without this upstream, downstream, and off-site erosion information, the conclusion seems to be to bury the pipe deeper, adjust the pipe lateral bends further back from the bank, and re-armor the bank. This approach pays attention to the short-term safety needs of the pipeline, and does not address the needs of the aquatic resources, and the improvement of water quality.	No changes recommended to the FEIS.
SA1-120	10	ES-11	2	13	It may be necessary to have on-site field reviews of some selected temporary extra work sites adjacent to streams and wetlands. See comment 6 above.	No changes recommended to the FEIS.
SA1-121	11	ES-11	4	1	The Compensatory Mitigation Plan could include using mitigation banks. There are a number of private wetland/stream/and riparian banks nearly approved by COE for use in such construction projects. The most advanced bank is very near the Snohomish Loop in east King County, just over the hill from the Bear/Evans Creek drainage.	No changes recommended to the FEIS.
SA1-122	12	ES-13	3	1	The DEIS has done a good job of compiling published maps and other documents of what streams have fish on the various loops. It also does a good job delineating wetlands. However, field review has shown that some streams have been missed in the DEIS list, or mis-identified as wetlands only. Some wetlands in the lower Sumas loop appear to have been missed.	The FEIS needs to update the lists of streams and wetlands in appendices J, K and O to ensure that all water bodies are included. See comment 2.

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SA1-119 The Executive Summary and section 4.3.2.4 have been revised to include a discussion of the WDFW's comments regarding the substandard condition of some of the waterbody crossings and to state that Northwest is working with the WDFW to identify areas where repairs are necessary and, where feasible, would attempt to complete the repairs concurrently with the work associated with the Capacity Replacement Project.

SA1-120 The FERC staff believes that Northwest has conducted a careful review of its workspace needs and designed the project to avoid and minimize environmental impacts where feasible. Northwest's proposed mitigation measures and plans have been developed to compensate for unavoidable adverse impacts. However, sections 4.3.2.2 and 4.4.2 have been revised to state that the COE, the WDOE, the WDFW, and local authorities may approve, approve with stipulations/modifications, or deny the FERC staff-approved variance requests as part of their permit decisions.

SA1-121 Section 4.4.4 has been revised to provide the most current information regarding Northwest's compensatory wetland mitigation plan. Northwest is still in the process of consulting with other federal, state, and local agencies and applicable Native American tribes to finalize this plan. Section 4.4.4 has been revised to include the FERC staff's recommendation that Northwest continue consultations with the applicable agencies and Native American tribes and file the final compensatory wetland mitigation plan with the Secretary before construction (see also mitigation measure number 18 in section 5.4). Section 4.4.4 also explains how the public and other agencies can view the final plan once it is filed.

SA1-122 Northwest has provided revisions to the list of waterbodies and wetlands crossed by the Sumas Loop, which have been incorporated into the final EIS. The FERC staff expects that Northwest will continue to refine its project materials before construction.

Capacity Replacement Project

	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-123	13	ES-14	3	6	The existing conditions of some stream crossings do negatively affect habitat for anadromous fish. Maintaining them in the proposed manner will lead to on-going worsening conditions both on, and off right-of-way. For these specific sites, the FERC ruling of "not likely to adversely affect/modify proposed critical habitats" is incorrect.	FERC should re-evaluate the conclusion related to impacts to habitat of anadromous fish.
SA1-124	14	ES-14	5	1	Should identify WDFW staff and programs providing this information.	
SA1-125	15	ES-15	5	1	A closed landfill off Grandview Road (along the Mount Vernon Loop at approx. MP 1426.5) is within .25 miles of the pipeline and is not recognized. There are groundwater test wells which suggests groundwater is being monitored. The pipeline corridor is down gradient from the closed landfill and may therefore be impacted by contaminated groundwater coming from the site.	The FEIS should identify the Grandview Landfill as a possible source of off-site groundwater contamination. For example, this could be described in section 4.3.
SA1-126	16	ES-19	1	8	There have been, and are on-going, negative cumulative impacts from the construction, and maintenance, of this pipeline corridor. These impacts are felt both within right-of-way, and upstream and downstream. These are impacts to fish, wildlife, water quality, and riparian and wetland functions. Within right-of-way, construction and maintenance has resulted in all of the following: extreme channel constriction, scour, creation of partial to complete fish passage barriers, channel straightening/shortening, lack of over bank flow, lack of shade, lack of in-stream diversity. These effects are most clearly seen in those in the medium to high risk of scour category (Golder report). In lower gradient streams, the scour impacts are much decreased, but the other negative factors are present. The new project has opportunity to make the conditions much better.	FERC should encourage Northwest CRP to improve the baseline conditions for those streambanks and channels that are in substandard condition when streambank and channel reconstruction is being done.
SA1-127	17	ES-20	8	11	There is a need for more detailed plans for many of the stream crossings and HDD work which will be required for permit applications.	No changes recommended to the FEIS.

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SA1-123 The final determinations of effect will be made by the FWS and NOAA Fisheries. The Executive Summary and section 4.3.2.4 have been revised to include a discussion of the WDFW's comments regarding the substandard condition of some of the waterbody crossings and to state that Northwest is working with the WDFW to identify areas where repairs are necessary and, where feasible, would attempt to complete the repairs concurrently with the work associated with the Capacity Replacement Project.

SA1-124 Specific details of the WDFW consultations are provided in section 4.7 and Appendix T.

SA1-125 The Executive Summary and sections 4.3.1.1 and 4.8.5 have been revised to state that the WDFW identified one closed landfill within 0.25 mile of the Mount Vernon Loop that could potentially be a source of groundwater contamination.

SA1-126 The Executive Summary and section 4.3.2.4 have been revised to include a discussion of the WDFW's comments regarding the substandard condition of some of the waterbody crossings and to state that Northwest is working with the WDFW to identify areas where repairs are necessary and, where feasible, would attempt to complete the repairs concurrently with the work associated with the Capacity Replacement Project.

SA1-127 Northwest is still in the process of consulting with other federal, state, and local agencies and applicable Native American tribes to finalize its site-specific crossing plans and waterbody crossing mitigation requirements. Section 4.3.2.3 has been revised to include the FERC staff's recommendation that Northwest continue consultations with the applicable agencies and Native American tribes and file the final site-specific waterbody crossing plans and final Mitigation Plan for Waterbody Crossings with the Secretary for the review and written approval of the Director of OEP before construction at each applicable waterbody (see also mitigation measure number 17 in section 5.4). These final plans may incorporate new information that may become available as Northwest continues consultations with the COE, the WDOE, the WDFW, various county agencies, and Native American tribes. The FWS and NOAA Fisheries may impose additional mitigation as well as part of their Biological Opinions (see section 4.7) that also should be included in Northwest's Mitigation Plan for Waterbody Crossings. The FERC staff believes these continued consultations will result in the development of acceptable site-specific crossing plans and mitigation requirements for the waterbodies that would be crossed by the Capacity Replacement Project. Section 4.3.2.3 also explains how the public and other agencies can view the final plans once they are filed.

Capacity Replacement Project

	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-128	18	pg 1-3	1.2		The role of WDFW should be expanded to include its role as a cooperating agency, as well as the regulatory agency that will consider HPA applications.	The FEIS should describe the role of WDFW as a cooperating agency.
SA1-129	19	pg 1-4	1.2.2		The description of the Corps Public Notice and how it fits into the EIS process is unclear.	The FEIS should expand the explanation of how the Corps Public Notice process fits into
SA1-130	20	pg 1-14	Table 1.5-1	WDFW sec.	The discussion about water withdrawal from the Centralia Canal should explain that fish screening will be necessary because this is a fish bearing water. The reference to section 4.3.2.7, and to 4.3.2 does not provide detail on how, where, and with what kind of screened structure this withdrawal will occur.	The FEIS should note that the Centralia Canal is a fish bearing water and that fish screening will be necessary.
SA1-131	21	pg 2-15	2.2.1	1	In many cases, Northwest will use existing roads, both public and private. Some are private driveways. In some cases, these roads are not adequate for the loads needed for heavy equipment, and loaded pipe-carrying trucks. In some cases, culverts carrying streams are old, failing, are fish passage barriers, and/or have insufficient cover to prevent damage or collapse. There are some ancient, derelict and abandoned culverts carrying streams across right-of-way. FERC should require that all access road stream culverts be upgraded to current WDFW fish passage criteria. FERC should require that all abandoned or plugged culverts encountered within right-of-way be removed and the stream channel restored.	FERC should require that all access road stream culverts be upgraded to current WDFW fish passage criteria. FERC should require that all abandoned or plugged culverts encountered within right-of-way be removed and the stream channel restored.
SA1-132	22	pg 2-17	2.3	ppg 2, ln 6	Revegetation sites seen on other company projects appear to have been well done. Steep slopes have remained stable after new pipeline installation. Ecology should have staff not only to inspect on-going construction, but also to field inspect site restoration and revegetation efforts in succeeding years.	no changes recommended to the FEIS.

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State Agencies 1

SA1-128 The cover and all applicable sections of the final EIS have been revised to include the WDFW as a cooperating agency in the preparation of the document.

SA1-129 As a cooperating agency, the COE was responsible for preparing the referenced description of the COE public notice. The COE has indicated that it does not think it is necessary to revise the description for the final EIS.

SA1-130 Sections 2.3.1, 4.3.2.7, and 4.6.2.3 have been revised to include additional description of hydrostatic test water withdrawal from the Centralia Canal. The FERC staff does not believe it is necessary to include additional detail regarding the Centralia Canal in table 1.5-1.

SA1-131 Section 2.2.1 has been revised to include the WDFW's comment that some of the culverts carrying streams under the existing access roads that would be used would not be adequate to handle the weight of heavy construction equipment and loaded stringing trucks. The revised section 2.2.1 also includes the WDFW's recommendation that the FERC require Northwest to upgrade all access road culverts to current WDFW fish passage criteria and remove all abandoned or plugged culverts encountered within the right-of-way. Section 2.2.1 has been revised to state that Northwest would conduct repairs that are necessary to ensure that access roads would support the load of heavy equipment during construction and would repair any roads or culverts it damages during construction. However, as part of the FERC's authority over the proposed project, the FERC does not believe it is appropriate to require Northwest to complete the upgrades, repairs, and/or removal of all of the culverts as recommended by the WDFW.

SA1-132 Comment noted. Section 2.5 has been revised to describe the third-party compliance monitoring program that would be implemented by the FERC during construction of the project. Full-time third-party compliance monitors representing the FERC would be present on the construction spreads to monitor and document compliance with project mitigation measures and requirements. This includes erosion control and restoration efforts.

Capacity Replacement Project

	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-133	23	pg 2-21	ppg 2	6	The FEIS should describe the water removal structure that will be used for water withdrawal from the Centralia Canal. The FEIS should include all requests that will be made to WDOE and WDFW for surface withdrawals.	The FEIS should describe the water removal structure that will be used for water withdrawal from the Centralia Canal. The FEIS should include all requests that will be made to WDOE and WDFW for surface withdrawals.
SA1-134	24	pg 2-21	ppg 3	3	The figures in Appendix B should be amended to include mapped wetlands. In some cases, field review suggests that discharge points are adjacent to, or could rapidly drain into, wetlands both on and off right-of-way. Municipal water often is chlorinated with various compounds, of varying longevity. Aquatic systems are sensitive to chlorine.	FERC should require that an in-line de-chlorinator system be used prior to discharge water reaching the discharge pits. This is a simple, cost-effective way to prevent release of chlorinated water into aquatic systems.
SA1-135	25	pg 2-25	ppg 2	6	If the use of annual rye grass seeding in disturbed wetlands is an accepted wetland restoration practice, this should be stated. If Northwest Washington conditions require other methods, these should be used instead. There should be a statement that whatever methods are used meet or exceed restoration standards, not just pipeline industry standards.	The FEIS should state that wetland restoration methods will be used that meet Washington guidelines.
SA1-136	26	pg 2-25	ppg 6	2	The DEIS does not show maps of temporary work bridges or where other equipment crossings will be, when they will be needed, or for what duration. For instance, clearing crews will need such crossings well before actual pipeline construction reaches a location.	The FEIS should provide maps that show where temporary work bridges are anticipated to be needed as well as a description of when they would be needed and for what duration.
SA1-137	27	pg 2-26	1	6	WDFW may not allow access of clearing crews and their equipment through streams without using a bridge. The DEIS does not describe how the re-vegetation crews will minimize their impacts when they access sites in the following fall/winter/spring.	The FEIS should explain how clearing crews will minimize impacts near streams and wetlands. The FEIS should describe how future re-vegetation crews will minimize impacts near streams and wetlands.

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SA1-133 Section 2.3.1 describes construction procedures in very general terms; more detailed discussions of project procedures and mitigation measures are presented in the applicable resource sections in section 4.0 (Environmental Analysis). Section 2.3.1 has been revised to state that the Centralia Canal is a fish-bearing waterbody. Section 2.3.1 states that a screening device would be necessary and that Northwest would adhere to the requirements for pump intake screens, allowable rates of water withdrawal, and other stipulations as specified in the Hydraulic Project Approval and Temporary Water Use Permit that would be issued by the WDFW and WDOE, respectively. It is expected that the total volume and allowable rate of water withdrawal would be based on flow in the Centralia Canal at the time of construction. Section 2.3.1 includes a cross-reference to section 4.3.2.7 for additional details regarding hydrostatic test water withdrawal from the Centralia Canal and additional details have been added to section 4.3.2.7. Additional details have also been added to section 4.6.2.3. Northwest has not indicated plans to withdraw hydrostatic test water from any surface waters other than the Centralia Canal; therefore, the Centralia Canal is the only surface water source of hydrostatic test water that is discussed in the EIS.

SA1-134 Including mapped wetlands on the figures in Appendix B would not assist in determining whether a hydrostatic test water discharge would drain into wetlands due to the scale of the maps. Sections 2.3.1, 4.3.1.4, and 4.3.2.7 have been revised to clarify that all discharges would be conducted in accordance with the requirements for hydrostatic test water discharges included in Northwest's NPDES Individual Permit for Stormwater Discharges that would be issued by the WDOE. These revised sections state that WDOE staff would conduct field reviews of Northwest's proposed hydrostatic test water discharge locations, as required, as part of the WDOE's NPDES permit review process. Based on this field review, modifications to the discharge locations would be made as necessary to ensure that the test water would infiltrate the ground before reaching sensitive areas.

The use of municipal water for hydrostatic testing is a standard and accepted industry-wide practice during pipeline construction, including several recent projects constructed by Northwest in western Washington. Northwest has stated that it would release water into an upland area through a dissipation structure at a controlled rate and sample for constituents, as required, by its NPDES permit. Northwest would test for chlorine before discharge if required by its NPDES permit. No chlorinated water would be released into surface waters or wetlands.

As discussed in section 2.5, Northwest's EIs and the FERC's third-party compliance monitors would be present on the construction spreads to monitor and document compliance with project mitigation measures and requirements. During construction, the third-party compliance monitors would conduct daily ongoing inspections of construction activities and mitigation measures, including the monitoring of hydrostatic test water discharge activities.

State Agencies 1

SA1-135 Section 2.3.2 has been revised to clarify the wetland restoration and monitoring practices that would be followed to meet the guidelines of the FERC and the Washington state and local agencies.

SA1-136 Section 2.3.2 has been revised to include additional details about equipment bridges, including a description of when and how long they would be needed. The FERC staff expects that Northwest has not yet reached the point in project planning to be able to identify all of the specific locations where equipment bridges would be needed. However, the revised section 2.3.2 also states that Northwest would be required to obtain an Hydraulic Project Approval from the WDFW before bridge placement at all streams and to obtain this approval, Northwest would need to provide the WDFW with the specific bridge locations either on maps or in tabular form by milepost location. The Hydraulic Project Approval would cover all phases of bridge installation, maintenance, removal, and streambank restoration.

SA1-137 Section 2.3.2 has been revised to explain that the clearing crew would set the equipment bridge before crossing a waterbody. Section 2.3.2 has also been revised to explain that restoration crews working in the following year would use the right-of-way and access roads whenever possible. If no other access route is possible, the restoration crew would set a bridge before crossing a waterbody. Therefore, no machinery would ford flowing streams during construction or follow-up restoration activities.

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	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-138	28	pg 2-26	2	1	Clearing streamside buffer vegetation in the temporary work areas should be minimized as much as possible. Clearing streambanks for the temporary work areas would reduce habitat value for many years. In some instances, land owners may maintain the streambanks to remain cleared and which results in a net loss of habitat. Review and modification of the footprint of these temporary sites adjacent to streams and wetlands will significantly minimize the environmental impacts of this project.	FERC should urge Northwest CRP to review and modify the footprints of temporary work sites that are adjacent to streams and wetlands.
SA1-139	29	pg 2-26	4	4	Table K-1 in Appendix K should be modified to reflect the best timing information available, rather than to be confused with different windows.	Table K-1 in Appendix K should be modified to reflect the best timing information available, rather than to be confused with different windows.
SA1-140	30	pg 2-26	6	4	The DEIS should state which streams are being referred to.	The FEIS should state which rivers are being referred to.
SA1-141	31	pg 2-29	1	1	For many of the streams, and especially for those in the Medium to High scour risk, it is not appropriate to return the streambanks, and channel cross section, to current conditions. Some of these channels and streambanks are in a substandard condition, and continue to worsen. Returning them to their substandard condition makes little sense. Over the long term, improving their habitat condition will also improve their stability both horizontally and vertically, greatly minimizing the risk of scour damage, pipeline exposure, and to public safety.	FERC should encourage Northwest CRP to improve the baseline conditions for those streambanks and channels that are in substandard condition when streambank and channel reconstruction is being done.
SA1-142	32	pg 2-29	2	8	The DEIS should state which streams are being referred to.	The FEIS should state which rivers are being referred to.

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SA1-138 The FERC staff believes that Northwest has conducted a careful review of its workspace needs and designed the project to avoid and minimize environmental impacts where feasible. Northwest's proposed mitigation measures and plans have been developed to compensate for unavoidable adverse impacts. However, sections 4.3.2.2 and 4.4.2 have been revised to state that the COE, the WDOE, the WDFW, and local authorities may approve, approve with stipulations/modifications, or deny the FERC staff-approved variance requests as part of their permit decisions.

SA1-139 Section 4.6.2.3 states that the timing windows listed in table K-1 in Appendix K are tentative windows specified by the WDFW that may be modified by the WDFW during preparation of the Hydraulic Project Approval. Section 4.6.2.3 also states that any modifications to the allowable construction windows would be dictated by stream and fish migration conditions in the year of construction. A footnote has been added to table K-1 in Appendix K to clarify that the timing windows are tentative windows that were provided by the WDFW and may be modified by the WDFW before construction.

SA1-140 The waterbody that was referred to in section 2.3.2 of the draft EIS that would be crossed by the dry open-cut construction method if the proposed HDD method fails was the Tributary to North Fork Nooksack River. However, Northwest now proposes to cross this waterbody using the flume method if the proposed HDD method fails. Section 2.3.2 has been revised to specify that the Tributary to North Fork Nooksack River would be crossed by the flume method if the proposed HDD method fails. Section 4.3.2.3 has also been revised to reflect this new information.

SA1-141 Section 2.3.2 has been revised to state that streambanks that were in good condition before installation of the pipeline would be restored to preconstruction contours or to a stable angle of repose as approved by the EI. The revised section 2.3.2 also states that in locations where the existing streambanks and channels were in substandard condition, Northwest would work to reconstruct the banks and channels where feasible in consultation with the WDFW. Section 4.3.2.4 has been revised to include a discussion of the WDFW's comments regarding the substandard condition of some of the waterbody crossings and to state that Northwest is working with the WDFW to identify areas where repairs are necessary and, where feasible, would attempt to complete the repairs concurrently with the work associated with the Capacity Replacement Project.

SA1-142 Section 2.3.2 has been revised to specify that Jim Creek would be crossed by the flume method if the proposed HDD method fails.

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	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-143	33	pg 2-29	4	4	The DEIS discusses trench backfill at stream, and channel reconstruction. In some cases, the streambed has been reduced to a narrow trench lined with riprap. Often over the years, this riprap has been eroded out, and is prominent in the channel downstream off right-of-way. Often, the channel through right-of-way has errant chunks of riprap plugging the channel and causing stream bank erosion adjacent to the pipelines. The HPA will require more detailed plans for the reconstruction of these damaged stream channel crossings.	The FEIS should reflect this need for improved channel conditions, improved conveyance, improved habitat, and improved public safety and lack of maintenance need.
SA1-144	34	pg 2-31	1	3	Sarr Creek is a highly important stream channel, supporting a spawning population of Chinook, and other salmonid species. The crossing locations have received riparian plantings over the past few years as a mitigation project for Whatcom County's sediment removal basin upstream. A decent pool, and spawning riffle has developed over the upper Sarr Creek pipeline crossing. The least damaging crossing method would be to bore these Sarr Creek crossings, rather than the proposed dam and pump method which will tear up the stream beds and replanted banks which have been re-planted in recent years.	The FEIS should explain why the dam and pump method is preferable to a boring method for crossing Sarr Creek.
SA1-145	35	pg 2-31	2	3	Page 2-29 is incorrect in stating the Main Jim Creek is a non-coldwater fish stream. This stream supports salmon spawning and rearing. The HDD of the North Fork Nooksack will also cross under two high flow flood channels of the North Fork Nooksack. A line weight over the 30 inch main is already exposed at the Jim Creek crossing. There are multiple problems going on across this Jim Creek flat that need addressing during this project. HDD is an appropriate crossing method, but its use should not preclude repair of existing and on-going damage.	The FEIS should indicate that Main Jim Creek supports cold water fish. The FEIS should discuss the existing damage along the Jim Creek crossing.
SA1-146	36	pg 2-34	2	2	Colin Creek is a highly productive stream for salmonids. The DEIS does not stated why this small stream has an aerial crossing.	The FEIS should explain why an aerial crossing is preferable to other crossing methods.

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SA1-143 See the response to comment SA1-141.

SA1-144 Section 4.3.2.3 has been revised to include a discussion of alternative methods for crossing Saar Creek.

SA1-145 Section 2.3.2 has been revised to clarify that Jim Creek is a coldwater fishery. Section 4.3.2.4 has been revised to include a discussion of the existing damage in the vicinity of Jim Creek and Northwest's commitment to work with the Nooksack Indian Tribe, the Lummi Nation, the COE, the WDOE, and the WDFW to develop a contingency mitigation proposal if the HDD fails at the North Fork Nooksack River and a wet open-cut crossing is necessary. The requirement to implement the contingency mitigation proposal if the wet open-cut crossing is necessary would be included as a condition of the section 404 permit that would be issued by the COE. See also the response to comment SA1-141.

SA1-146 Section 2.3.2 has been revised to explain that the aerial crossing of Colin Creek is necessary because the creek is located in a deep ravine within a residential subdivision. The homes located on both sides of the waterbody at the crossing location, as well as the existing 30-inch-diameter pipeline, preclude the use of sufficient amounts of temporary extra workspace needed to trench through the deep ravine and comply with depth of cover requirements specified by the DOT. In addition, the existing 30-inch-diameter pipeline is the only operating pipeline in this area because the 26-inch-diameter pipeline is idle in this location. Northwest would have to remove the 30-inch-diameter pipeline from service in order to install it beneath the waterbody, which would disrupt service to all customers downstream of this location.

	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-147	37	pg 2-34	5	9	The DEIS does not explain why Ft. Lewis wants the Muck Creek stream crossings to be bored.	The FEIS should explain why Ft. Lewis wants Muck Creek to be crossed with a bore method.
SA1-148	38	pg 2-35	2	1	The push-pull crossing method is not a preferred method, by WDFW, for use in fish bearing waters. Both Olson Lake, and Evans Creek are fish bearing waters. Fish will be present at any time of year. In summer months, these shallow water bodies will be at their highest temperature, so the water will have the least ability to hold oxygen. The push-pull method may likely expose enormous amounts of mostly anaerobic sediments and decaying plant matter to these surface waters. The increased oxygen demand may drive dissolved oxygen to low enough to kill fish and aquatic organisms. As oxygen-depleted water flows downstream, the effects spread, and the potential fish and aquatic organism kill enlarges.	The FEIS should expand the description of impacts from the push-pull method to Olson Lake and Evans Creek.
SA1-149	39	pg 2-39	sec 2.5	ppg1 - ln1	More detailed construction drawings will be required for HPAs. A "typical detail" drawing or two of selected stream channel re-construction sites would be useful for the FEIS.	The FEIS would benefit by including a "typical drawing" of stream channel re-construction sites.
SA1-150	40	pg 2-40	bull 11		The DEIS does not explain why slash for wildlife is suggested, what species impacts are to be offset by its use, where it ought to go, and how much is enough. The EI should consult with WDFW or USFWS biologists on how slash and timber should be scattered for wildlife habitat.	The FEIS should include a description about use of slash and timber for wildlife habitat. The EI should have an additional duty amended to bullet 11 to specify that the EI should consult with WDFW biologists on use of slash and timber.
SA1-151	41	pg 2-41	ppg 3		The FEIS should indicate, "The FERC staff recommends mitigation measure number 6 (see section 5…" This should be stated as section 5, pg 5-6, provision 6…..	The FEIS should revise the reference on page 5-F446: "The FERC staff recommends mitigation measure number 6 (see section 5…" This should be stated as section 5, pg 5-6, provision 6…")+F49

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SA1-147 Section 2.3.2 describes construction procedures or issues in general terms; more detailed discussions are included in the applicable resource sections in section 4.0 (Environmental Analysis). A detailed discussion of the reasons Fort Lewis requested that Muck Creek and South Fork Creek be crossed using the bore method is presented in section 4.3.2.3. Section 2.3.2 has been revised to state that a detailed discussion of these creek crossings, including the reasons Fort Lewis requested the use of the bore method, is presented in section 4.3.2.3.

SA1-148 Section 2.3.2 describes construction procedures or issues in general terms; more detailed discussions, including discussions of impact and mitigation, are included in the applicable resource sections in section 4.0 (Environmental Analysis). Section 2.3.2 has been revised to include additional details about the push-pull crossing method and a cross-reference to sections 4.4.3 and 4.6.2.4. Section 4.6.2.4 has been revised to provide additional details of the impacts of the push-pull method.

SA1-149 It is understood that the WDFW will require more detailed construction drawings for the Hydraulic Project Approval. Northwest has stated that it does not have any “typical” drawings of stream channel reconstruction sites and would work with the WDFW to prepare site-specific drawings where necessary to support its Hydraulic Project Approval application. Therefore, no typical drawings have been included in the final EIS.

SA1-150 Section 2.0 describes construction procedures or issues in general terms; more detailed discussions are included in the applicable resource sections in section 4.0 (Environmental Analysis). Section 4.6.1.4 discusses the removal and replacement of snags. Section 4.6.1.4 has been revised to also discuss the use of slash and timber for wildlife habitat. Section 2.5 has been revised to include the FERC staff’s recommendation that Northwest prepare a revised ECR Plan that specifies that the EI’s determinations of locations where slash or non-merchantable timber would be scattered across the right-of-way to be used for wildlife habitat and the quantities that would be used would be made in consultation with WDFW biologists and landowners (see also mitigation measure number 11 in section 5.4). In accordance with the FERC staff’s recommendation, Northwest would file the revised ECR Plan with the Secretary for the review and written approval of the Director of OEP before construction. See also the responses to comments SA1-9, SA1-46, and SA1-106.

SA1-151 Section 2.5 has been revised to more specifically refer the reader to section 5.4 for mitigation measure number 6.

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	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-152	42	pg 2-41			There should be a meeting of compliance agencies, and Northwest, on the topic of construction monitoring, compliance, follow-up compliance during site reveg, etc. This should be done well in advance of the winter pre-construction meetings. The finished procedure then can be incorporated into Northwest construction and EI training so there are no surprises.	Please add to the FERC staff recommendations that Northwest meet with compliance staff at permitting agencies before construction begins.
SA1-153	43	pg 2-43	sec 2.6	ppg2 - ln 4	Maintenance of right-of-way has resulted in no trees, no bushes, and no shade, on most stream crossings. Reed canary grass, and blackberries rule. The new re-veg plan would result in at least temporary spots of brush between the pipes at the crossings.	No change in FEIS. Northwest will be asked to maintain and allow for as much re-vegetation as possible.
SA1-154	44	pg 4-1	sec. 4	ppg 2 - ln 2	The reference to FERC staff - are these are the same FERC staff as listed in Appendix T?	At first mention of FERC staff, please refer to Appendix T for detail.
SA1-155	45	pg 4-1	sec 4		For the purposes of NEPA/SEPA, the existing poor habitat conditions at many of the right of way stream crossings should not be considered "baseline conditions". The original construction in the 1950's greatly modified and damaged these stream channels, and their fish resources. These construction impacts have not been static; there has been 40 + years of continued erosion, scour, periodic repair, more erosion, exposed pipelines, and fish passage barriers created. These on-going, long-term negative impacts have not been documented in this DEIS. They should be. Installation of the new line, and maintenance of the status quo will continue to result in un-mitigated damage to water quality and fish, to say nothing about damage to neighboring properties and habitat, and the long-term risk to all the pipelines.	In this section, mention that prior crossings and the continued impact of such crossings have altered the streams from their original condition.

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SA1-152 Section 2.5 has been revised to describe the third-party compliance monitoring program that would be implemented by the FERC during construction of the project. Under this program, full-time third-party compliance monitors would be present on the construction spreads to monitor and document compliance with project mitigation measures and requirements. The FERC intends to work with Northwest and applicable agencies to coordinate these compliance efforts before construction. In addition, the FERC staff and the third-party compliance monitors would participate in Northwest's training program (see mitigation measure number 6 in section 5.4). Other federal, state, and local agencies would be invited to participate in the training program as well.

SA1-153 Section 2.6 has been revised to state that the FERC staff's Procedures includes limitations on vegetation maintenance in wetland and riparian areas and at stream crossings to allow the restoration of native wetland and riparian species, including woody species, over a greater portion of the right-of-way than would be typically allowed in upland areas. The right-of-way would be allowed to revegetate; however, trees greater than 15 feet in height within 15 feet of the pipeline centerline would be periodically removed.

SA1-154 Section 4.0 has been revised to reference the List of Preparers at the first mention of the FERC staff. The List of Preparers is provided in Appendix U.

SA1-155 Comment noted. Section 4.3.2.4 has been revised to include a discussion of the WDFW's comments regarding the substandard condition of some of the waterbody crossings and to state that Northwest is working with the WDFW to identify areas where repairs are necessary and, where feasible, would attempt to complete the repairs concurrently with the work associated with the Capacity Replacement Project.

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	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-156	46	pg 4-7	Tbl 4.1.3-1		Sumas Loop - MP 1473.7 - This is a very steep, unstable slope whose toe is a type 3 fish bearing stream, trib of Sumas River. The stream channel has been placed along the toe of this slope, and has significantly undermined it. There is ample room, and reason, to move the stream into a new, wider, flatter, and more stable channel away (south) from the toe. Please see Field Notes. Such stream channel relocation would be permitted in the HPA for this Loop. MP 1473.2 - hillslope behind and north of Richner farm. This slope has let loose before, during prior attempts to turn it into houses. If it lets loose again it will take the barns and homes But the change in stream flow patterns, and debris deposition poses a risk to the pipeline. MP 1469.9 Marshall Hill - a very steep nasty hill with past failure on or adjacent to the pipeline. The cross-over to the uphill side of the right-of-way will cause further encroachment into a fish bearing trib of Mitchell Creek. This stream has already been moved, ditched, piped, and diked by earlier maintenance activities, or emergency repairs.	Please add detail about slope and conditions described here.

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SA1-156 Section 4.1.3 has been revised to include additional information regarding the Lawrence Hillside, Marshall Hill Landslide, and Arlington Landslide.

The unnamed slope near MP 1473.2 (Richner property) appears to pose a low risk to the pipeline. The pipeline would be constructed on a flat area approximately 350 feet from the slope and well away from its toe. In table 11 of the geohazards assessment report titled *Capacity Replacement Project Geohazards, Whatcom, Skagit, Snohomish, Pierce, and Thurston Counties, Washington* (Golder, 2004b),[3] Northwest indicated that it would continue to visually monitor the slope for degradation of site conditions that could lead to slope instability.

Northwest did not observe any evidence of instability at the steep slope near MP 1428.8 during field or aerial reconnaissance. Although this slope was not specifically addressed in the draft EIS, Northwest recognized the potential concern caused by this slope in table 12 of the geohazards assessment report (Golder, 2004b). Northwest stated that best construction practices and best management practices would be utilized to minimize impacts on slope instability and that the site would be periodically inspected, including after significant seismic events.

[3] This report is too voluminous to include in this EIS. It is available for public inspection at the FERC's Public Reference Room in Washington, DC (call (202) 502-8317 for instructions) and at the WDOE's regional offices. If you reside in Whatcom, Skagit, Snohomish, or King Counties, you can access this document at the WDOE's Northwest Regional Office in Bellevue by calling the Public Disclosure Coordinator at (425) 649-7190 or (425) 649-7239. If you reside in Pierce, Thurston, Lewis, Cowlitz, or Clark Counties, you can access this document at the WDOE's Southwest Regional Office in Lacey by calling the Public Disclosure Coordinator at (360) 407-6365.

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	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-156 (cont'd)					This is one of those places where site specific planning and restoration are required. Mount Vernon Loop - MP 1428.8 - .9 - This is a very very nasty spot. There are various slide tracks that originate upslope of the right-of-way. The alder growing on them indicate these may have occurred 20 + years ago. It is possible that pipeline construction undercut the slope and contributed to the failure. The run-out track forms wetland MV - 6. The proposed cross-over and placement of the new 36 in the old 20 trench is probably to avoid re-activating the mess. There is a very real danger of re-activating this. Adjacent slopes on both sides of the right-of-way are wet with seeps. There is potential for run-out into Pilchuck Creek. Some further discussion of this site should be included in the FEIS. MP 1421.3 - this appears to be a very recent occurrence. Further discussion, beyond that on pg 4-8, should be provided in the FEIS. A major salmon bearing stream has received the run-out of this slide; it has negatively affected the stream.	
SA1-157	47	pg 4-8	bull. 3		This description should include proximity and impact to the adjacent stream and wetland complex. Past repair damage to these features should restored if possible. For all these landslide descriptions, slide initiation factors should be described. We all want to avoid their recurrence.	Please add proximity and impact data to the description here.

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SA1-157 Section 4.1.3 has been revised to include the proximity of Mitchell Creek to the Marshall Hill Landslide. The Mitchell Creek and Marshall Hill Landslides are historical landslides and the specific initiation factors are not known. As discussed in section 4.1.3, temporal physical changes such as storms, earthquakes, undercutting by erosion and streams, and/or activities by man can initiate mass wasting events. Specific initiation factors for the modern recorded landslides are discussed in section 4.1.3 where known. There are no indications of recent activity at the Mitchell Creek and Marshall Hill Landslides and they appear to be inactive.

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	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-158	48	pg 4-8	bull 4		Arlington slide - the EIS description minimizes what appears to be a very recent, and still active site. A more thorough discussion is needed in the EIS of its history, initiation factors, damage assessment to the stream and riparian zone, and the repairs done. Referencing the Golder report is not sufficient. Field review of this site shows very recent reveg efforts. The downslope trees are leaning badly in the two most obvious slump areas; the brush that has come back indicates a longer history to this slide. The slumping ground under and downslope of the pipeline is at a similar elevation to a slope riddled with seeps and past slumps on the opposite stream bank. North of the slide repair, there is a relatively new pipe at the east edge of right-of-way that discharges downslope toward the creek. It is unknown whether this is part of a system to de-water the slumping ground under the pipeline. The discharge pipe could transfer subsurface flow onto what is now a stable slope and cause it to become unstable from the added water. Additional analysis may show ways that the proposed project may further stabilize what is an ugly, active hillslope. The unnamed stream has coho salmon and cutthroat trout, and possibly steelhead. It originates in Olson Lake.	Please add detail to the existing description. (This comment will be provided to the Northwest).
SA1-159	49	pg 4-13	2	8	Concrete coating of pipes. This pipe coating will be done on-site, adjacent to streams and wetlands sensitive to waste concrete discharge. Fresh waste concrete, and the water leachate, and the concrete truck wash-down water, all are highly alkaline. This high pH discharged into otherwise neutral or acidic pH waters causes death to aquatic organisms. This needs to be a particular point covered in the water quality permits, the training of construction crews, and in the monitoring work and reports.	Reference here or in SPCC (Appendix H) how concrete used on site will be handled.

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SA1-158 Section 4.1.3 has been revised to include additional information regarding the Arlington Landslide.

SA1-159 Section 4.1.3 has been revised to indicate that in accordance with the FERC staff's Procedures, Northwest would not conduct concrete coating activities within 100 feet of a waterbody or wetland boundary. Section 4.1.3 also includes a cross-reference to section 4.3.1.2 for the required buffers on Fort Lewis. In addition, Northwest's SPCC Plan includes measures to prevent and contain releases of concrete, chemicals, fuels, and oils from concrete coating activities (see Appendix H).

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	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-160	50	pg 4-21	4.2.2	ppg 3 - ln1	Appen. E, F, and G may need revision. If FERC has already approved them as is, can this modification be made a condition of the FEIS, or are those things off the table?	Please note that changes to Appendices E, F and G maybe necessary to meet permit conditions.
SA1-161	51	pg 4-30	4.3.1.1	6	shallow groundwater - Sumas Loop - behind the Hamilton residence, MP 1476.2, there is a flowing spring that pops out of the hillside immediately upslope of the new pipe installation. There appears to be a private well intake, perhaps inactive, associated with this spring. The spring could be a problem during construction, and a source of instability on the steep hillslope above.	Add this spring to table 4.3.1-1
SA1-162	52	pg 4-34	1	4	note previous comment about concrete coating work, particularly the fate of run-off and washdown water.	
SA1-163	53	pg 4-35	para 3	1	it would help to know where these wells are adjacent to right of way. In rural areas, there are many undocumented, unregistered water intakes from streams, and from springs and shallow wells. They will not show on any map. Only the landowner knows.	No change to FEIS. (But Northwest should note)
SA1-164	54	pg 4-36	1	6	strip air maps should show locations of hydrostatic water discharge, in addition to the streams and wetlands. This helps review the waste water discharge potential impact to streams and wetlands.	No change to FEIS.
SA1-165	55	pg 4-38	1	8	There should be a statement concerning the status of this Sumas stock of Chinook to the Canadians. The implication is that since they are Fraser R. origin fish, they are unimportant.	Change "..and are not considered in…" to read " and are not considered in this document but may be of concern in Canada."

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SA1-160 Appendix E (FERC staff's Plan) and Appendix F (FERC staff's Procedures) were developed by the FERC staff. The intent of the FERC staff's Plan and Procedures is to assist applicants by identifying baseline mitigation measures for minimizing the extent and duration of disturbances on soils, wetlands, and waterbodies associated with projects under the FERC's jurisdiction throughout the country. Because these are standard guidelines issued by the FERC, the Plan and Procedures cannot be changed on a project-specific basis.

However, Northwest's project-specific ECR Plan (see Appendix G), which incorporates many of the mitigation measures outlined in the Plan and Procedures as well as agency-recommended revegetation and erosion control procedures, has been undergoing revision throughout the environmental review process for the project to address issues, concerns, and different guidelines identified by the various agencies. Section 2.5 has been revised to include the FERC staff's recommendation that Northwest prepare a revised ECR Plan to address specific comments received on the draft EIS and to list all of the EI's responsibilities that are included in the list of EI's responsibilities in the EIS. In accordance with the FERC staff's recommendation, Northwest would file the revised ECR Plan with the Secretary for the review and written approval of the Director of OEP before construction (see also mitigation measure number 11 in section 5.4). It is likely that additional revisions to the ECR Plan would be made before construction as additional issues or permit conditions are identified. In addition to the project-specific ECR Plan, various agencies (e.g., counties) may require Northwest to submit a Stormwater Pollution Prevention Plan that includes specific and/or more stringent requirements that Northwest must adhere to for the portion of the project under their jurisdiction. See also the responses to comments SA1-9, SA1-46, SA1-150, and LA2-23.

SA1-161 The spring behind the Hamilton residence at MP 1476.2 of the Sumas Loop has been added to table 4.3.1-1.

SA1-162 Section 4.3.1.2 has been revised to indicate that Northwest's SPCC Plan includes measures to prevent and contain releases of concrete, chemicals, fuels, and oils from concrete coating activities (see Appendix H). See also the response to comment SA-159.

SA1-163 Comment noted.

SA1-164 Sections 2.3.1, 4.3.1.4, and 4.3.2.7 have been revised to clarify that all discharges would be conducted in accordance with the requirements for hydrostatic test water discharges included in Northwest's NPDES Individual Permit for Stormwater Discharges that would be issued by the WDOE. These revised sections state that WDOE staff would conduct field reviews of Northwest's proposed hydrostatic test water discharge locations, as required, as part of the WDOE's NPDES permit review process. Based on this field review, modifications to the discharge locations would be made as necessary to ensure that the test water would infiltrate the ground before

SA1-164 (cont'd) reaching sensitive areas. The revised sections 2.3.1, 4.3.1.4, and 4.3.2.7 also state that no chlorinated water would be released into surface waters or wetlands.

SA1-165 Section 4.3.2.1 has been revised to state that waterbodies in the Fraser hydrologic unit drain to Canada and are not considered critical habitat in the EIS but may be of concern in Canada.

	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-166	56	pg 4-41	3	7	Evans Cr 303 d - in Table 4.3.2-3, temp. fecals, dissolved oxy., and flow are all listed as factors considered as additional problems for this stream. The mercury hit is likely nearer the downstream industrial site. Evans Creek is loaded with anadromous fish. The proposed push-pull method, as discussed above, may be the worst possible way to do this crossing, considering these impaired factors. The company has offered no methods to mitigate what is likely to become a major fish kill once this crosssing begins.	On page 4-85 in the section on Evans Creek, refer back to table 4.3.2-3
SA1-167	57	pg 4-43	3	1	King County (Snohomish Loop) is not listed as having Designated Shoreline waters. A map I have seen shows Evans Creek, at the pipeline crossing, as a Shoreline stream.	Ecology will verify this with the county
SA1-168	58	pg 4-48	bull 9-12		All these actions are subject to HPA authority. All actions may not be appropriate at all stream locations. As discussed above, a number of the stream crossings are unduly constricted by past construction and maintenance, and the damaging effects continue unabated. reestablishing pre-project bed and bank contours at these problem streams is inappropriate.	for these bullet points, please note that action is subject to local permits and approvals
SA1-169	59	pg 4-49	5	7	variances - As discussed above, some temporary work space variances will need modification to avoid damage to streams and wetlands. On-site review with the company, and agencies of jurisdiction, including WDFW, should be expected.	No change to FEIS
SA1-170	60	pg 4-54	5	1	WDFW position remains the same as stated.	No change to FEIS
SA1-171	61	pg 4-61	3	1	The North Fork Nooksack is highly dynamic. It has shifted during winter 2004/5, since the application and mapping was done. If the HDD fails, 2006 would be the year when a different crossing method would be employed. There is no clue to how the river will lay at that time; only after the spring freshet finishes will the river alignment be known. This last-minute design and planning must be taken into account for permit issuance.	Please add that alternative methods for crossing the Nooksack, should the HDD fail, will be based on river conditions as close to the time of the work as possible.

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SA1-166 Section 4.6.2.4 has been revised to provide additional details of the impacts of crossing Evans Creek using the push-pull method. Section 4.3.2.6 discusses the potential for mercury contamination at Evans Creek.

SA1-167 The WDOE confirmed with Mark Mitchell, Shoreline Planner for King County, that Evans Creek is not a designated shoreline at the proposed crossing location.

SA1-168 Section 4.3.2.2 has been revised to indicate that some of the listed measures would be subject to change by federal, state, and local permits and approvals (e.g., Fort Lewis' real estate agreement amendment and the WDFW's Hydraulic Project Approval) if determined not to be appropriate at certain locations.

SA1-169 Comment noted.

SA1-170 Comment noted.

SA1-171 Section 4.3.2.3 has been revised to state that the WDFW commented that the North Fork Nooksack River is highly dynamic and alternative methods for crossing the river would be based on river conditions as close to the time of the work as possible.

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	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-172	62	pg 4-63	3	1	WDFW position remains the same as stated.	no change to FEIS
SA1-173	63	pg 4-67	4	4	Nisqually new pipeline lay. The proposed alignment would remove a major piece of Large Woody Debris (LWD) already well embedded in the river. It would also remove a large standing western red cedar - potential LWD in the future. It is necessary to provide a more detailed plan on what would be done with the existing LWD and large trees.	no change to FEIS. Will ask for this in the mitigation plan.
SA1-174	64	pg 4-68	3	1	WDFW position remains the same as stated.	no change to FEIS
SA1-175	65	pg 4-71	5	1	mitigation - this is a topic still needing multi-agency and company discussion. As discussed above, there is ample reason to provide on-site channel reconstruction as part of this project to minimize on-going and future damage. If the crossing become more stable over the long-term, perhaps the FERC ruling can be lifted, ie preventing trees within 15 feet of pipeline.	A request is made of the FERC to consider allowing trees within 15 feet of the pipeline were stability of the land near a stream crossing is a concern.
SA1-176	66	pg 4-72	5	1	Filing amended crossing plans for all such needed locations is not likely within this DEIS comment period. In the interest of time and getting a better product, perhaps negotiations and project design can go on concurrently with the previously announced permit and FEIS timeline.	no change to FEIS
SA1-177	67	pg 4-73	2	6	scour critical. Field review of streams within the Sumas Loop has found most of these at-risk streams to be that way largely due to past pipeline construction and on-going maintenance. The solution offered, to bury the pipeline deeper and "stabilize" the bank would do nothing to get at the root of the problem. Other comments above. Also refer to the field notes for this loop.	Stabilization may need to take into consideration repair of past crossing and damage from maintenance, in addition to the impact of the proposed new crossing.
SA1-178	68	pg 4-75	1	5	Centralia Canal is a fish bearing water body subject to HPA. Intake of water from this canal will require more detailed information, see comment 23 above.	see comment number 23 above
SA1-179	69	"	3	1	An in-line de-chlorination system should be employed prior to hydrostatic test water entering the environment outside the pipeline.	Please add the use of an in-line de-chlorinator to the description of the hydrostatic test water discharge.

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SA1-172 Comment noted.

SA1-173 The FERC staff expects that Northwest would work directly with the WDFW to develop a more detailed plan to address the existing LWD and the trees at the Nisqually River.

SA1-174 Comment noted.

SA1-175 Section 4.3.2.3 has been revised to include additional details regarding Northwest's proposed mitigation for waterbody crossings. The FERC Procedures allows trees within 15 feet of the pipeline that are greater than 15 feet in height to be cut and removed from the permanent right-of-way. The purpose of this measure is to facilitate aerial pipeline corrosion/leak surveys by preventing a canopy from growing over the pipeline. Section 4.3.2.4 has been revised to include a discussion of the WDFW's comments regarding the substandard condition of some of the waterbody crossings and to state that Northwest is working with the WDFW to identify areas where repairs are necessary and, where feasible, would attempt to complete the repairs concurrently with the work associated with the Capacity Replacement Project.

SA1-176 Comment noted. Section 4.3.2.3 has been revised to include the FERC staff's recommendation that Northwest continue to consult with the COE, the FWS, NOAA Fisheries, the WDOE, the WDFW, other applicable agencies, and appropriate Native American tribes to finalize its site-specific waterbody crossing plans and Mitigation Plan for Waterbody Crossings and file the final plans with the Secretary for the review and written approval of the Director of OEP before construction at each applicable waterbody (see also mitigation measure number 17 in section 5.4). These final plans may incorporate new information that may become available as Northwest continues consultations with the COE, the WDOE, the WDFW, various county agencies, and Native American tribes. The FWS and NOAA Fisheries may impose additional mitigation as well as part of their Biological Opinions (see section 4.7) that also should be included in Northwest's Mitigation Plan for Waterbody Crossings. The FERC staff believes these continued consultations will result in the development of acceptable site-specific crossing plans and mitigation requirements for the waterbodies that would be crossed by the Capacity Replacement Project. Section 4.3.2.3 also explains how the public and other agencies can view the final plans once they are filed.

SA1-177 Section 4.3.2.4 has been revised to include a discussion of the WDFW's comments regarding the substandard condition of some of the waterbody crossings and to state that Northwest is working with the WDFW to identify areas where repairs are necessary and, where feasible, would attempt to complete the repairs concurrently with the work associated with the Capacity Replacement Project.

SA1-178 Section 4.3.2.7 has been revised to provide more detailed information regarding the withdrawal of hydrostatic test water from the Centralia Canal. See also the response to comment SA1-133.

SA1-179 The use of municipal water for hydrostatic testing is a standard and accepted industry-wide practice during pipeline construction, including several recent projects constructed by Northwest in western Washington. Northwest has stated that it would release water into an upland area through a dissipation structure at a controlled rate and sample for constituents, as required, by its NPDES permit. Northwest would test for chlorine before discharge if required by its NPDES permit. No chlorinated water would be released into surface waters or wetlands. See also the response to comment SA1-134.

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	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-180	70	pg 4-76	4.4.1	par 3	Field review of the Sumas Loop noted some extensive areas that appear to be wetlands but have not been documented on the company plans or detail sheets. Also, some streams are depicted as wetlands, and some depicted wetlands are really streams with undefined channels. Please refer to Sumas field notes. There will be some modification to app. j, k, and o	This information has been shared with the company and FERC. Please add detail as needed.
SA1-181	71	pg 4-80	5	5	Nooksack Yard - the map for this yard is only in the Biological Assessment. This should be inserted for the EIS, and a description of the stream, where it goes, and does it have fish use? I will also ask around.	Please add this map to the FEIS.
SA1-182	72	pg 4-84	11	8	Variances - append. N - as discussed above, some of these Temporary Extra Workspaces may need modification, reducing the footprint in order to better protect sensitive habitats, streams, wetlands, and water quality.	Please note that changes may be necessary to meet permit conditions.
SA1-183	73	pg 4-85	4.4.3	1	forested wetland 1464.7 - 1465. Please refer to field notes. South of Tinling Creek (1464.7) is an extensive wetland, paritally forested, part of a much larger forested wetland/stream complex to the east and south. These wetlands are seasonally interconnected, and are fish bearing. There is an undocumented fish bearing stream crossing right of way at approx 1465.2. It forms the south property line of McDougal, and is the north border of wetland S-82.	Please mention this wetland in this section.
SA1-184	74	pg 4-87	5	13	The listing of streams in app. J, k, and o will need to be revised. Please see field notes.	A more complete listing of streams can be provided by WDFW at FERC's request.
SA1-185	75	pg 4-90	2		Northwest is coordinating comment on their proposed wetland mitigation sites. Final site design features should not be expected as part of the FEIS.	No change in FEIS.

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SA1-180 Sections 4.4.1 and 4.4.2 and Appendices J, K, and O have been revised to include the additional wetland and waterbody information identified by the WDFW.

SA1-181 A map of the Nooksack Yard, as well as all of the proposed pipe storage and contractor yards, has been added as figure B-9 in Appendix B. Sections 4.3.2.1 and 4.4.1 have been revised to include an additional description of the waterbody that runs through the Nooksack Yard.

SA1-182 Sections 4.3.2.2 and 4.4.2 have been revised to state that the COE, the WDOE, the WDFW, and local authorities may approve, approve with stipulations/modifications, or deny the FERC staff-approved variance requests as part of their permit decisions.

SA1-183 Section 4.4.3 and Appendix J have been revised to include additional information on the forested wetlands at MPs 1464.7 and 1465.0.

SA1-184 Appendices J, K, and O have been revised to include the additional waterbody crossing information identified by the WDFW.

SA1-185 Section 4.4.4 has been revised to provide the most current information regarding Northwest's compensatory wetland mitigation plan. Northwest is still in the process of consulting with other federal, state, and local agencies and applicable Native American tribes to finalize this plan. Section 4.4.4 has been revised to include the FERC staff's recommendation that Northwest continue consultations with the applicable agencies and Native American tribes and file the final compensatory wetland mitigation plan with the Secretary before construction (see also mitigation measure number 18 in section 5.4). Section 4.4.4 also explains how the public and other agencies can view the final plan once it is filed.

	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-186	76	pg 4-106	2		Maintenance of right-of-way has resulted in no trees, no bushes, and no shade, on most stream crossings, and for miles of right-of-way between streams. Reed canary grass, and blackberries rule. The new re-veg plan would result in at least temporary spots of brush between the pipes at the stream crossings. It may be beyond the scope of this DEIS to determine new maintenance standards for entire 80 project. New standards could result in much more beneficial use and habitat diversity.	see comment number 43 above
SA1-187	77	pg 4-108	2	agrc.	I would be very surprised to find western pond turtle as a typically encountered species for this project.	Review scientific data to determine if this species would be typically found in the project site.
SA1-188	78	pg 4-111	3	4	please add the phrase "riparian areas" to the wetland monitoring requirement. In western washington, maint. needs are normally closer to 5 years in canary grass and blackberry areas.	please add this phrase this section.
SA1-189	79	pg 4-113	2	3	clearing right of way. Crews will need equipment access over streams and wetlands early in the year. This coincides with spring trout spawning, salmonid egg incubation, emergence, and smolt out-migration. The company must provide better detail on what sort of crossings they will need, where, and when, prior to issuance of the HPA.	Please include better detail of crossings for the time from spawnign to out-migration to illustrate how fish willb e protected.
SA1-190	80	pg 4-114	2	10	Canadian's think that Salish sucker occurs in the Sumas River system.	Verify and add this species if appropriate.
SA1-191	81	pg 4-117	Tbl 4.6.22-2		This table is being circulated to WDFW area fish biologists and habitat managers. Some minor revisions may be expected.	WDFW will provide revisions to the company and thorugh the co-op agency process.
SA1-192	82	pg 4-124	2 & 3		These are good ideas and have been done on other company projects. WDFW is not likely to have need for donated LWD for our own projects (I will ask around), nor are we set up to stockpile such donations for other's use.	No change to FEIS

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SA1-186 Section 2.6 has been revised to state that the FERC staff's Procedures includes limitations on vegetation maintenance in wetland and riparian areas and at stream crossings to allow the restoration of native wetland and riparian species, including woody species, over a greater portion of the right-of-way than would be typically allowed in upland areas. The right-of-way would be allowed to revegetate; however, trees greater than 15 feet in height within 15 feet of the pipeline centerline would be periodically removed.

SA1-187 Section 4.6.1-1 has been revised to delete any reference to the western pond turtle because no observations were reported by the WDFW in the project vicinity (see section 4.7.3).

SA1-188 Section 4.6.1.2 has been revised to include riparian areas in the wetland monitoring requirement.

SA1-189 See the responses to comments SA1-136 and SA1-137.

SA1-190 Based on COSEWIC (2002), the Salish sucker could occur within the Sumas River system or may have historically occurred there, but there has not been confirmation of the presence of this species in the waterbody. As a result, the Salish sucker was not added to section 4.6.

SA1-191 Revisions were not provided by the WDFW in time to be incorporated into the final EIS.

SA1-192 Comment noted.

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	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-193	83	pg 4-127	2	3	This is an incorrect statement. Olson Lake has a private barrier dam in the stream channel downstream that precludes access by anadromous fish. Resident cutthroat are present throughout the lake and stream system. Evans Creek has chinook, coho, and cutthroat at and upstream of the project site. Steelhead used the area historically, but are almost extinct throughout the Lake Washington drainage.	Please note changes to this statement
SA1-194	84	pg 4-131	Tbl 4.7-1		There are no sea otters in the Nisqually but there are river otters.	Please correct.
SA1-195	85	pg 4-133	3	1	WDFW raptor biologist is coordinating with Northwest on an eagle management plan for this project.	no change to FEIS
SA1-196	86	pg 4-139	5	2	Smith Cr crossing site is immediately upstream of the mapped upper extent of bull trout. The cutoff was made at the mount baker highway as a matter of mapping convenience. The crossing site should probably be considered within the range. There are also chinook that spawn within the crossing vicinity.	Please list these additional fish speciies for this crossing.
SA1-197	87	pg 4-141	8	3	I am checking on this statement that no chinook are found in the Bear Creek tribs crossed by this project. For instance, Evans Creek is a left bank trib of Bear Creek, and it does have documented chinook.	WDFW will provide revisions to the company and thorugh the co-op agency process.
SA1-198	88	pg 4-142	1	4	I am checking with other staff on the presence of chinook in these Nisqually tribs.	WDFW will provide revisions to the company and thorugh the co-op agency process.
SA1-199	89	pg 4-143	2	1	WDFW will assist both NOAA - Fish, and USFWS in review of the Biological Assessment for these two species, and provide comment. A central need is to ensure that app. Tables k and o are accurate.	No change to FEIS
SA1-200	90	"	3	8	crossing mitig plan. WDFW will participate in this. As previously discussed, many streams will need additional design detail, and reconstruction of the crossing to relieve the on-going damage to the stream habitat, fish, and water quality.	No change to FEIS
SA1-201	91	pg 4-150	1	1	note previous comment on sea otter.	see comment 84 above

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SA1-193 Section 4.6.2.4 has been revised to reflect the species present in the various waterbodies and watersheds crossed by the proposed project.

SA1-194 Because Thurston County extends west to Puget Sound and would be crossed by the Capacity Replacement Project, the FWS (2004) noted that the northern sea otter could occur in the county and is the reason this species is identified in table 4.7-1. As discussed in section 4.7.3, no northern sea otters are expected to occur in the project area. A footnote has been added to table 4.7-1 to state that while northern sea otters do not occur in the Nisqually River, river otters are present in the waterbody.

SA1-195 Comment noted.

SA1-196 Section 4.7.1 has been revised to include additional species potentially occurring at the proposed Smith Creek crossing.

SA1-197 Revisions were not provided by the WDFW in time to be incorporated into the final EIS.

SA1-198 Revisions were not provided by the WDFW in time to be incorporated into the final EIS.

SA1-199 Northwest has provided revisions to the list of waterbodies and wetlands crossed by the Sumas Loop, which have been incorporated into the final EIS. The FERC staff expects that Northwest will continue to refine its project materials before construction.

SA1-200 Section 4.3.2.4 has been revised to include a discussion of the WDFW's comments regarding the substandard condition of some of the waterbody crossings and to state that Northwest is working with the WDFW to identify areas where repairs are necessary and, where feasible, would attempt to complete the repairs concurrently with the work associated with the Capacity Replacement Project.

SA1-201 See the response to comment SA1-194.

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	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-202	92	"	4	1	Western pond turtle - Clemmys marmoratus. Not "northwestern" pond turtle.	please correct.
SA1-203	93	4-152	4.7.5	bull. B	WDFW will coordinate review with USFWS and NOAA. Fish and Wildlife Coordination Act	no change to FEIS
SA1-204	94	4-155	1	1	14.6 miles of 26 inch removed. The fate of these pipe sections is of concern. Too often we find illegal culverts installed under private roads and driveways. This is a very real problem. These pipes, cut into 40 foot lengths, will be just too attractive for recycle dealers, and they will sell them as culverts if given the chance. FERC should consider requiring that these removed pipes be destroyed, crushed, or be cut into less than 20 foot lengths, on site. While they are still under company control, ensure they aren't later re-used elsewhere in a way that will damage streams, fish, and create fish passage barriers.	Please add that the company will be asked to take action to prevent use of removed pipe as illegal culverts.
SA1-205	95	4-167	3	2	comment above about rendering the removed pipe sections impossible to re-use in streams.	See above
SA1-206	96	4-169	1	1	Within the Mount Vernon loop, MP 1421.3, the company is doing a cross over to avoid an active slide area, "Arlington Slide". To do the south side cross over under the existing 30 inch on the Bowen property, the proposal is for TEWS 58 and 59 to be very close to the stream (coho, steelhead, cutthroat). Mature Douglas fir trees will be removed to set up machinery to do the bore under the other line. 500 feet further south, the adjoining property has no such mature firs, and disturbance is further removed from the stream. The company should consider moving further south to the adjoining property. If access is necessary over the Bowen driveway culvert, it should be replaced for improved fish passage.	Please recommend that Northwest consider WDFW and Ecolgoy comments about selection and location of Temporary Extra Workspaces (TEWS).
SA1-207	97	4-171	Tbl 4.8.4-1	Sumas	MP 1476.1 is also Cloud Mount Farm - orchard and nursery. Also Taylor/Fingleton orchard immediately north at 1476.16.	Please add this entry to the table

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SA1-202 All references to the northwestern pond turtle in section 4.7 have been changed to western pond turtle.

SA1-203 Comment noted.

SA1-204 The proposal to cut the removed portions of pipe into 40-foot-long sections is an industry standard and an appropriate and efficient length for hauling pipe by truck. Cutting the pipe into 20-foot-long sections would not preclude its use as culverts by others in the future. In some cases 20-foot-long sections are sufficient for use as culverts and the 20-foot-long sections could be welded back together to form longer lengths by others rather easily. There are many other uses for salvaged pipe besides illegal culverts (e.g., horizontal and vertical casing, support of large signs and other structures, water transfer pipe for wetlands restoration, cattle feeders, scrap metal). Ultimately, the future use of the pipe sections is beyond Northwest's control and the FERC staff does not believe Northwest should be held accountable for potential illegal activities conducted by others.

SA1-205 See the response to comment SA1-204.

SA1-206 The crossover at MP 1421.3 is needed based on the results of Northwest's geohazards assessment report titled *Capacity Replacement Project Geohazards, Whatcom, Skagit, Snohomish, Pierce, and Thurston Counties, Washington* (Golder, 2004b).[4] Northwest proposes an alignment on the west side of the right-of-way at this location to minimize impacts on and associated with the Arlington Landslide. The topography falls off quickly and sharply on the west side of the existing right-of-way, which precludes Northwest's ability to install the 36-inch-diameter loop using the standard offset proposed for the project. As a result, the existing 26-inch-diameter pipeline must be removed at this location. Temporary extra workspaces MV-TEWS-58 and MV-TEWS-59 are needed to: 1) provide a location for equipment to turn around and access the construction right-of-way; 2) provide a staging area for the crew performing the waterbody crossing; 3) provide a location for the 26-inch-diameter pipeline to be moved to and cut into smaller sections; and 4) provide a storage area for the spoil that would be removed while performing the crossover. In an effort to reduce impacts associated with the temporary extra workspaces, Northwest was able to reduce the sizes of both workspaces during negotiations with the landowners. Temporary extra workspace MV-TEWS-58 has been reduced

[4] This report is too voluminous to include in this EIS. It is available for public inspection at the FERC's Public Reference Room in Washington, DC (call (202) 502-8317 for instructions) and at the WDOE's regional offices. If you reside in Whatcom, Skagit, Snohomish, or King Counties, you can access this document at the WDOE's Northwest Regional Office in Bellevue by calling the Public Disclosure Coordinator at (425) 649-7190 or (425) 649-7239. If you reside in Pierce, Thurston, Lewis, Cowlitz, or Clark Counties, you can access this document at the WDOE's Southwest Regional Office in Lacey by calling the Public Disclosure Coordinator at (360) 407-6365.

SA1-206 (cont'd) from 4,500 square feet (30 feet by 150 feet) to 3,540 square feet (20 feet by 177 feet). Temporary extra workspace MV-TEWS-59 has been reduced from 6,000 square feet (40 feet by 150 feet) to 3,280 square feet (20 feet by 164 feet) and would be located more than 175 feet from the waterbody crossing. The reductions of these temporary extra workspaces would significantly reduce the number of trees cleared in this location. Landowner stipulations also specify additional savings of specific trees. The trees that would be removed would be used as LWD for this and other waterbody crossings.

SA1-207 Both of these orchards are included in table 4.8.4-1 but are identified by different names. Table 4.8.4-1 has been revised to clarify the names of these special interest areas.

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	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-208	98	pg 4-182	5	2	Mention the proposed aerial crossing for Colin Creek - Bear Cr. trib in Snohomish Loop. Recommend burial of this new crossing, and burial of the existing aerial section.	Please add that Colin Creek is also proposed as an aeril crossing.
SA1-209	99	4-183	5	1	Novelty Hill Road trees. This mature forested habitat type is becoming rare in this rapidly urbanizing area. In the EIS there should be justification why these trees must be removed.	please describe why tree removal is necessary.
SA1-210	100	4-193	4	5	solid waste. Previous comment about 14 miles of 26 inch pipe being recycled. Before the pipe leaves right of way, it should be crushed, and/or be cut into pieces less than 20 feet long. Otherwise it will show up in creeks as private culverts, barriers to fish passage.	Please see comment number 94
SA1-211	101	4-202	3		There should be some provision that would preclude the preferential targeting of EJ properties as potential mitigation sites.	Consider including that the mitigation plan will also comply with executive order 12898 as appropriate.
SA1-212	102	4-249	3		There should be mention here of the Everson blow-out of this line in the 1990's. It is within the Sumas Loop.	Please add mention of this event.
SA1-213	103	4-253	Tabl 4.13-1	WSDOT	The Innis Creek fish passage project of WSDOT is unknown to anyone in WDFW. It is certainly not scheduled, and permitted, for 2005 construction. Also mentioned on pg 4-256.	Ecology will verify this with WSDOT
SA1-214	104	4-255	1	15	Multiple comments above, about on-going negative impacts to streams and fish from some existing stream crossings. The impacts are cumulative. The construction impacts from this new project will not be temporary if the status quo is maintained at these crossings. They must be improved, or they will create worse long-term impacts, both on and off right of way.	Please state that past practices used in crossigns and maintenance have a cumulative impact that Northwest must consider as the construct new crossings.
SA1-215	105	4-259	4	4.13.9	Cumulative impacts to streams and wetlands will not be minor, and only of temporary nature. The statement of the long term benefits because of new wetland creation is puzzling. Little emphasis has been made on the creation of new wetlands. These specific works should be referenced here, and re-capped. Otherwise the statement is largely unsupported.	Please delete reference to benefits of wetland creation until a final mitigation plan that includes such creation has been provided.

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SA1-208 Section 4.8.6 has been revised to clarify that the two waterbody crossings Northwest proposes to install using the aerial span installation method are Colin Creek and the Centralia Canal. Northwest evaluated removing the existing aerial crossing at Colin Creek and installing the new loop and existing 30-inch-diameter pipeline beneath the waterbody; however, Colin Creek is located in a deep ravine within a residential subdivision. The homes located on both sides of the waterbody at the crossing location, as well as the existing 30-inch-diameter pipeline, preclude the use of sufficient amounts of temporary extra workspace needed to trench through the deep ravine and comply with depth of cover requirements specified by the DOT. In addition, the existing 30-inch-diameter pipeline is the only operating pipeline in this area because the 26-inch-diameter pipeline is idle in this location. Northwest would have to remove the 30-inch-diameter pipeline from service in order to install it beneath the waterbody, which would disrupt service to all customers downstream of this location.

SA1-209 Northwest would be required to conduct a conventional bore to install the proposed loop beneath Novelty Hill Road, which would require that Northwest leave the existing 26-inch-diameter pipeline in place beneath the roadway and offset the proposed loop. Northwest reduced the offset for the new loop to the 26-inch-diameter pipeline to 10 feet to minimize the amount of workspace required to complete this crossing and the amount of associated tree clearing required. The temporary extra workspaces at this location are required to safely dig the bore pits on either side of the road, store spoil associated with the excavation of the bore pits, and to gain access to the road bore from Novelty Hill Road.

SA1-210 See the response to comment SA1-204.

SA1-211 As discussed in sections 4.3.2.3 and 4.4.4, Northwest contacted various agencies, Native American tribes, organizations, conservation groups, and trusts in the various basins crossed by the project to identify potential mitigation opportunities. Because any mitigation sites would be chosen in consultation with the COE, the WDOE, and other applicable agencies, it is assumed that those agencies would consider environmental justice issues before giving final approval of any mitigation site.

SA1-212 Section 4.12.3 has been updated with information from the Everson pipeline failure that occurred in February 1997 as a result of land movement. In addition, section 4.1.3 includes a discussion of the Everson Landslide area.

SA1-213 Table 4.13-1 incorrectly identified the Washington Department of Transportation as the project sponsor for the Innis Creek Fish Passage Project. Table 4.13-1 has been revised to indicate that the project is being sponsored by the Whatcom County Department of Public Works.

SA1-214 Section 4.13.2 has been revised to include past pipeline construction and maintenance practices in the cumulative impacts discussion.

SA1-215 Section 4.13.2 has been revised to clarify that wetland creation is not proposed by Northwest.

Capacity Replacement Project

	Comment #	Page #	Para #	Line	Comment	Recommendation
SA1-216	106	pg 5-1	2		previous comments above. Streams and wetlands being kept in a substandard condition by pipeline maint. Stream channels and fish undergoing on-going long-term damage due to channel shortening, constriction, scour, incision, and maint. repair activities. These impacts extend off right of way.	WDFW would ask that a sentence be added stating that "Pipeline mainteance has a long term impact by removing vegetaton and impacting soil stability."
SA1-217	107	pg 5-4	after bullets		The rationalization in this statement icould be improved. "Primary resouces" listed include soil, crop production, land use, special status species (mortalities during construction, and on-going maint.), vegetation, visual resources, wildlife habitat, wetlands (fill, and conversion of forested wetlands to scrub shrub and emergent), and cultural resources. "Primary resources" would "be irretrievably lost" ... but that seems to be ok because ..."The project would transport significant volumes of natural gas to customers in Washington. Its operation would be consistent with federal policies encouraging competitive natural gas transportation services. For these reasons, the FERC staff considers the irreversible and irretrievable resource commitments to be acceptable."	FERC may wish to reconsider how to describe the balance struck between impacts of the project and the service provided by the project.
SA1-218	108	pg 5-5	bull 5		Comments above. There is a need to modify these charts to include proper identification of streams and wetlands. There are minor errors.	please comments above adding detail to tables.
SA1-219	109	pg 5-6	bull 6		Mitigation measures. As discussed above, there is a need for more multi-agency coordination on the topic of mitigation measures. This is a good beginning.	No change to FEIS
SA1-220	110	pg 5-8	bull 16		As discussed above, there is need for modest modification of the maps, regarding springs and wells.	see previous comments.

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SA1-216 Section 5.3 acknowledges that right-of-way maintenance activities would result in the permanent conversion of vegetation. Section 4.3.2.4 has been revised to include a discussion of the WDFW's comments regarding the substandard condition of some of the waterbody crossings and to state that Northwest is working with the WDFW to identify areas where repairs are necessary and, where feasible, would attempt to complete the repairs concurrently with the work associated with the Capacity Replacement Project.

SA1-217 Section 5.3 has been revised to clarify the FERC's rationale for concluding that the irreversible and irretrievable resource commitments that would be associated with the proposed project are acceptable.

SA1-218 Northwest has provided revisions to the list of waterbodies and wetlands crossed by the Sumas Loop, which have been incorporated into the final EIS. The FERC staff expects that Northwest will continue to refine its project materials before construction.

SA1-219 Section 2.5 has been revised to describe the third-party compliance monitoring program that would be implemented by the FERC during construction of the project. Under this program, full-time third-party compliance monitors would be present on the construction spreads to monitor and document compliance with project mitigation measures and requirements. The FERC intends to work with Northwest and applicable agencies to coordinate these compliance efforts before construction. In addition, the FERC staff and the third-party compliance monitors would participate in Northwest's training program (see mitigation measure number 6 in section 5.4). Other federal, state, and local agencies would be invited to participate in the training program as well.

SA1-220 Northwest is currently working to identify the locations of all wells, seeps, and springs within 200 feet of the construction work area. In accordance with the FERC staff's recommendation in section 4.3.1.3, Northwest would provide this information and proposed mitigation measures to the FERC and the WDOE before construction (see also mitigation measure number 15 in section 5.4). Northwest has stated that wells, seeps, and springs that have been identified by the WDFW would be included on the list.