

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426
September 21, 2005

OFFICE OF ENERGY PROJECTS

Project No. 2244-012
Packwood Lake Hydroelectric Project
Energy Northwest

J.W. Baker, Vice President
Energy Northwest
P.O. Box 968, Mail Drop 1035
Richland, WA 99352

Subject: Study Plan Determination for the Packwood Lake Hydroelectric Project and Contingent Approval of Waiver of Article 37

Dear Mr. Baker:

Pursuant to 18 CFR § 5.13(c), this letter contains our study plan determination for the Packwood Lake Hydroelectric Project. Additionally, this letter grants a waiver of Article 37, contingent on the Commission's approval of two resource protection plans, as discussed below and in Appendix B.

Background

On April 26, 2005, Energy Northwest filed its proposed study plan for gathering information on the following resources: geology and soils, water, fish and aquatic, wildlife, botanical, recreation and land use, aesthetic, and cultural and tribal. During May, June, and July 2005, Energy Northwest held several study plan meetings and study-specific site visits to informally resolve differences between the proposed study plan and stakeholders' study requests.¹ Attendees at these meetings included staff from the Federal Energy Regulatory Commission (Commission), Energy Northwest, U.S. Forest Service (Forest Service),

¹ The following entities submitted study requests: Federal Energy Regulatory Commission, Washington Department of Fish and Wildlife, U.S. Forest Service, U.S. Fish and Wildlife Service, Washington Department of Ecology, and the National Oceanic and Atmospheric Administration – National Marine Fisheries Service.

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Washington Department of Fish and Wildlife, U.S. Fish and Wildlife Service (Fish and Wildlife Service), Washington Department of Ecology (Ecology), National Oceanic and Atmospheric Administration – National Marine Fisheries Service (NOAA Fisheries), the Yakama Nation, and Cowlitz Tribe. Comments on the proposed study plan were filed by the Commission, Forest Service, Ecology, Washington Department of Fish and Wildlife, and Fish and Wildlife Service.

After the study plan meetings, Energy Northwest filed a revised study plan on August 22, 2005. The revised study plan consists of 23 studies addressing geology and soils, water, fish and aquatic, wildlife, botanical, recreation and land use, aesthetic, and cultural and tribal resources.

Study Plan Determination

The revised study plan and comments on the proposed study plan have been reviewed. Nearly all study issues have been resolved. Energy Northwest's revised study plan filed August 22, 2005, is approved, with the following modifications. The basis for the findings is attached as Appendix A and a Study Plan Summary and Schedule is in Appendix C.

Fish Distribution and Species Composition Study Plan

Section 5.2.6 *Genetic Analysis* of the revised *Fish Distribution and Species Composition Study Plan* is not required because information obtained from a genetic analysis is not needed for the licensing of this project or to accomplish the goals of the study.

Tailrace Slough Use by Anadromous Study Plan

The *Tailrace Slough Use by Anadromous Salmonids Study Plan* schedule (section 8.0) is modified to reflect a draft report due in September 2007 and a final report is due December 2007.

Tailrace Barrier Replacement

The Fish and Wildlife Service, NOAA Fisheries, and the Washington Department of Fish and Wildlife request the Commission include a requirement that Energy Northwest construct a temporary fish barrier upon completion of the feasibility study identified in section 5.6 of the revised *Engineering Study Related to Barrier Replacement on the Project Tailrace*.

Because section 5.5 and 5.6 of the revised *Engineering Study Related to Barrier Replacement on the Project Tailrace* provide for interim measures to be

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implemented prior to any new license issued for the project and would take effect under the existing license, these specific issues will be addressed by our Division of Hydropower Administration and Compliance.

Request for Waiver of Article 37

With the filing of the revised study plan, Energy Northwest also requests a waiver of the requirements under Article 37 of the current license. The waiver would allow for spill flows at the dam, to facilitate four flow dependent studies in accordance with Energy Northwest's revised study plan. On September 8, 2005, Energy Northwest supplemented that request with a clarifying letter (discussed in Appendix B). Based on staff's analysis of potential environmental effects of providing a waiver of Article 37 (see Appendix B), I am granting the waiver of Article 37 contingent on the Commission's approval of: (1) a ramping rate plan for the down ramping of flows in Lake Creek, and (2) a Packwood Lake drawdown plan (see Appendix B). Additionally, upon the Commission's approval of these two plans, the *Recreation Resources Study Plan* shall be modified, as proposed by Energy Northwest in its September 8, 2005 letter, to reschedule a recreation survey date and replace it with a similar day (weekday or weekend day) in June 2006 if surveys were originally scheduled for a day spill flows will occur.

Energy Northwest should submit the requested plans within 120 days from the date of this letter (See Appendix B). Please file an original and 8 copies of the requested information with: Magalie R. Salas, Secretary, Federal Energy Regulatory Commission, 888 First Street, NE, Washington, D.C. 20426.

The plans may be filed electronically via the Internet in lieu of paper. See 18 CFR 385.2001(a)(1)(iii) and the instructions on the Commission's web site (<http://www.ferc.gov>) under the "e-Filing" link. The Commission strongly encourages electronic filings. For assistance, please contact FERC Online Support at FERCOnlineSupport@ferc.gov; call toll-free at (866) 208-3676; or, for TTY, contact (202) 502-8659.

If you have any questions regarding this letter, please contact Kenneth Hogan at (202)502-8434.

Sincerely,

J. Mark Robinson
Director
Office of Energy Projects

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Enclosed: Appendix A, Study Request Issues
Appendix B, Request for Waiver of Article 37
Appendix C, Table 1, Study Plan Summary and Schedule

cc: Service List
Mailing List
Public Files

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APPENDIX A – STUDY REQUEST ISSUES

Staff’s Response to Comments on Revised Study Plan

The following discusses comments on the revised study plan, filed on August 22, 2005, including the basis for requiring or not requiring certain modifications to the revised study plan.

Comments on Revised Study Plan and Staff’s Response/Findings

Fisheries and Aquatic Resources

Fish Distribution and Species Composition Study Plan - Section 5.2

Methodology: The Forest Service *Fish Distribution Study Request* filed with the Commission on March 11, 2005, and their comment letter on the revised study plan filed on September 6, 2005, recommended that fish sampling account for variations in observed salmonid densities and adjust for measured differences in sampling efficiency due to gear types and habitat characteristics. To accomplish this, the Forest Service requested that protocols for snorkeling and electrofishing attain an 80-95% detection probability for juvenile and resident adult salmonids as described by Peterson et. al. (2002).

To sample fish, Energy Northwest proposes to conduct snorkel and electrofishing surveys in Lake Creek and its tributaries. Techniques will follow the methodology outlined by Dolloff et. al (1996), as requested by the Forest Service and sampling efforts will generally follow the approach described by Bonar et. al. (1997). For stream habitats that are too shallow and would not be conducive to snorkeling, electrofishing will be employed. For these stream segments, a representative reach will be blocked with two block nets, one at the upstream end and the other at the downstream. Energy Northwest did not include the Forest Service’s recommended 80%-95% detection probability in its sampling methodology. Energy Northwest plans to conduct two electrofishing passes in an upstream direction, within each representative reach. Data collected will include species, length, approximate weight, associated habitat variables, and approximate location of capture by river mile.

The Forest Service’s requested 80-95% detection probability applies specifically to Peterson et. al.’s *Protocol for Determining Bull Trout Presence* (2002). The Forest Service request is puzzling as they have not requested that Energy Northwest specifically search for bull trout and have not identified bull trout to be a concern for the Lake Creek watershed. In fact, in their comments on the proposed study plan (filed March 11, 2005) they acknowledge that bull trout

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are not present in the Upper Cowlitz basin, a statement that is supported by the Washington Department of Fish and Wildlife (WDFW, 1998).

We estimate that to employ the Forest Service's 80% - 95% probability of detection, Energy Northwest would have to conduct between 78 and 836 fifty meter, single pass snorkel samples and/or 21 to 59 fifty meter, double pass electrofishing samples.² The extraordinary level of effort for the 80% - 95% bull trout detection probability is likely driven by the bull trout's desired habitat with complex forms of cover and the fact that bull trout are rare and difficult to find.

Energy Northwest, in addressing study criteria 1, (goals and objectives), of the *Fish Distribution and Species Composition Study Plan* is to "...gain a better understanding of fish species composition and abundance in waters associated with, and potentially impacted by, the Packwood Lake Hydroelectric Project." This goal is consistent with the Forest Services goal of "...identifying species composition and to enumerate their relative abundance..." as stated in study criteria 1 of its requested *Fish Distribution and Species Compositions study* request. We conclude the *Fish Distribution and Species Composition Study Plan* as filed by Energy Northwest will identify species composition and reliably enumerate their relative abundance consistent with its study goals and objectives.

Requiring Energy Northwest to adopt an 80-95% detection probability protocol for bull trout is inappropriate and inconsistent with study criteria 7 (Level of Effort and Cost)³ given: (1) the absence of bull trout from the Cowlitz River basin; and (2) energy Northwest's proposed alternative study will provide the needed information and accomplish the goals and objectives of both the Forest Service and Energy Northwest, without the unnecessary additional effort and associated cost. Therefore, we do not recommend that section 5.2 of the *Fish Distribution and Species Composition Study Plan* be modified to include a protocol that will attain an 80-95% detection probability as requested by the Forest Service.

Fish Distribution and Species Composition Study Plan - Section 5.2.6 Genetic Analysis: The Forest Service states that 100 tissue samples of rainbow trout from lower Lake Creek and its tributaries (Hall and Snyder creeks) should be collected for comparison with samples previously collected by the Washington Department

² Assuming water temperatures below 9 degrees Celsius, a mean channel width greater than 3.5 meters and various habitat conditions as identified by Peterson et. al.

³ Study Criteria 7 states that parties are to "Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs."

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of Fish and Wildlife, from Packwood Lake rainbow trout and hatchery rainbow trout. The Forest Service questions whether 50 samples, as proposed by Energy Northwest, will allow for statistical inferences. The Forest Service points out that Energy Northwest does not address the appropriateness of 50 tissue samples rather than the 100 samples as requested. However, Energy Northwest's failure to address the Forest Service's concern is understandable given that the Forest Service had accepted the content of this study in its July 26, 2005, comment letter.

Energy Northwest, in addressing study criteria 1 (goals and objectives), state that the goal and objective of the *Fish Distribution and Species Composition Study Plan* is to "...gain a better understanding of fish species composition and abundance in waters associated with, and potentially impacted by, the Packwood Lake Hydroelectric Project." This goal is consistent with the Forest Service's goal of "...identifying species composition and to enumerate their relative abundance..." as stated in study criteria 1 of its requested *Fish Distribution and Species Composition study request*.

Notwithstanding the Forest Service's request for the genetic analysis of 100 tissue samples, we question the need for any genetic analysis as part of the *Fish Distribution and Species Composition Study Plan*. Energy Northwest's study plan, absent section 5.2.6 *Genetic Analysis*, would meet the stated goals, set forth by both the Forest Service and Energy Northwest. Further, the Forest Service has failed to identify how the genetic analysis component (section 5.2.6) of the study plan, will be used to inform potential license requirements (study criteria 5).⁴

The Forest Service has characterized the rainbow trout populations in Lake Creek and Packwood Lake as viable and self sustaining.⁵ The Packwood Lake rainbow trout population is an adfluvial population, migrating to tributary streams for spawning where juveniles will hatch and rear before migrating to the lake as adults and sub-adults. The Packwood Lake and lower Lake Creek trout populations are genetically isolated from one another; except for the occasional spill flows which may allow recruitment to the lower Lake Creek population from the Packwood Lake population.

⁴ Study Criteria 5 states that parties are to "Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements."

⁵ U.S. Forest Service Comments on PAD and SD1 and Study Requests, dated March 11, 2005.

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Information on the genetic relationships between the two populations of rainbow trout (above and below the dam) would more likely be used to determine if the two populations would benefit from the exchange of genetic material; a strict resource management decision. We fail to see why the licensee should be required to provide information for a decision that has little to do with the formulation of license requirements and more to do with the actual management of the fish populations; typically a responsibility of the state fish and wildlife agency. Therefore, we have not been able to identify a project-related effect that could be resolved by the collection of genetic information to inform potential license conditions.

Based on the study criteria in section 5.9 of the Commission's regulations, staff concludes that removing Section 5.2.6 *Genetic Analysis* from Energy Northwest's revised *Fish Distribution and Species Composition Study Plan*, and denying the Forest Service's recommendation for 100 genetic samples is appropriate for the following reasons: (1) the Forest Service does not indicate how the genetic sampling will be used to inform the development of license requirements (study criteria 5); and (2) given that the information from genetic sampling is not needed to achieve the goals and objectives of the *Fish Distribution and Species Composition Study Plan*, the additional cost of \$7,500, as estimated by the Forest Service, is not justified pursuant to study criteria 7.

Fish Distribution and Species Composition Study Plan - Section 8.0 Schedule:

The Forest Service states that conducting the *Fish Distribution and Species Composition Study* for a single field season as proposed by Energy Northwest in the revised study plan may not be satisfactory and that dependent on the Aquatic Resources Committee's review of the first year's study results, additional sampling may be necessary.

Because one year of studies will be sufficient to collect the necessary information identified in the goals and objectives of the study (study criteria 1), unless the study is not conducted as provided for in the revised study plan, or anomalous environmental conditions prevail, we do not see the need to modify section 8 of the revised *Fish Distribution and Species Composition Study Plan*. We note that the Commission's regulations, section 5.15, allow for modifications to studies following the first field season for the following reasons: (1) the approved studies were not conducted as provided for in the approved study plan; and (2) the study was conducted under anomalous environmental conditions or that environmental conditions have changed in a material way. Therefore, we do not recommend modifying section 8 of the revised *Fish Distribution and Species Composition Study Plan* to allow the Aquatic Resources Committee to require additional years of study.

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Tailrace Slough Use by Anadromous Salmonids Study Plan - Section 8.0

Schedule: In reviewing the revised study plan schedule, we note that the schedule for the *Tailrace Slough Use by Anadromous Salmonids Study Plan* may not facilitate the incorporation of collected data into the preliminary licensing proposal. The preliminary licensing proposal is due on October 1, 2007, 150 days before the application is due on February 28, 2008.

Section 8.0 *Schedule* of the *Tailrace Slough Use by Anadromous Salmonids Study Plan*, states “A draft report will be issued by November 15, 2007.”

Because the preliminary licensing proposal will be due October 1, 2007, it is unlikely that information collected during the study will be available for inclusion in the preliminary licensing proposal. Therefore, it would be appropriate that a draft report be prepared following the July 2006 – July 2007 study period and circulated September 2007. A final report, which is not discussed in section 8.0 of the study plan, should be completed by December 2007 to allow for its consideration in the development of the license application. Therefore, we recommend that the section 8.0 *Schedule* of the *Tailrace Slough Use by Anadromous Salmonids Study Plan* be modified to reflect a draft report due September 2007 and a final report due December 2007.

LITERATURE CITED

- Bonar, S. A., M. Divens, and B. Bolding. 1997. Methods for sampling the distribution and abundance of bull trout/dolly varden. Research Report RAD97-05. Washington Department of Fish and Wildlife, Olympia, WA.
- Dollof A., Kershner J and Thurow J. 1996. Underwater observations. Pages 533 – 551. *in* Murphy, B.R., and Willis D.W., editors. 1996. Fisheries techniques 2nd edition. American Fisheries Society. Bethesda, MD.
- Peterson, J. Dunham, J. Howell, P. Thurow, R. Bonar, S. 2002. Protocol for determining bull trout presence. American Fisheries Society. Bethesda, MD.
- WDFW. 1998. 1998 Washington salmonid stock inventory, Appendix bull trout and dolly varden. Washington Department of Fish and Wildlife. Olympia, WA

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Appendix B

REQUEST FOR WAIVER OF ARTICLE 37

With their August 22, 2005 filing of the revised study plan, Energy Northwest requested a waiver of Article 37 for May and June 2006, for the purpose of conducting four of the studies in the revised study plan. Those studies are: (1) Fish Passage Barrier, (2) Gravel Transport, (3) Lake Creek Instream Flow, and (4) Large Wood. On September 8, 2005, Energy Northwest filed a letter clarifying their Article 37 waiver request.

Article 37 of the current license reads as follows: *“Licensee shall operate the project so that the maximum operation water surface level shall be at elevation 2,858.5 feet and the minimum operating water surface level shall be at elevation 2,849.0 feet. During the period each year between May 1 and September 14, the Licensee shall maintain the water surface level at elevation 2,857 feet, unless conditions prevail that are beyond the control of the Licensee.”* As written, Article 37 only allows for a spill event to occur if: (1) the project was already operating at full hydraulic capacity and inflows exceeded the project hydraulic capacity; or (2) if the project was not able to be operated at full hydraulic capacity (i.e. the project was shut down for maintenance or repair) and inflows needed to be bypassed.

Each of the four above mentioned studies would necessitate a spill event that would exceed the limits required by Article 37. It is for this reason that Energy Northwest has requested a waiver of Article 37.

On August 24, 2005, the Commission issued a letter requesting comments on Energy Northwest’s Article 37 waiver request. The Fish and Wildlife Service, Washington Department of Fish and Wildlife, and the Forest Service provided comments supporting the request for waiver of Article 37. The Fish and Wildlife Service and the Washington Department of Fish and Wildlife requested that Energy Northwest consult with the resource agencies, tribes and interested parties on the details of the spill event; specifically, duration, magnitude, and Lake Creek and Packwood Lake ramping rates.

Because flows to be spilled would not exceed those that would occur naturally in the Lake Creek system and the reservoir elevation would naturally increase in May and June, we have not identified any environmental consequences as a result of increased flows in lower Lake Creek or with the increased surface elevation of Packwood Lake if Article 37 were waived. We have, however, identified a potential conflict between the Article 37 waiver and the *Recreation Resources Study Plan*. The proposed spill event is scheduled for June 2006, when the recreation surveys are to occur; a spill event could unduly bias survey results.

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The Revised *Recreation Resources Study Plan* has scheduled survey dates on lower Lake Creek on June 10, June 13, June 21, and June 25, 2006. Energy Northwest in their clarification letter, filed September 8, 2005, acknowledged the potential for spill flows to bias recreation survey data and proposed that, if a spill event and a recreation survey date were to coincide, they would reschedule the survey date and replace it with a similar day (weekday or weekend day) in June 2006. With this proposal, we anticipate no effect on the *Recreation Resources Study* as a result of a waiver of Article 37.

Although we did not identify any environmental concerns with providing increased flows in lower Lake Creek and raising Packwood Lake's water surface elevation, we have however, identified potential environmental concerns with returning to typical project operations in compliance with Article 37, following the waiver. They are: (1) sudden discontinuation of temporary spill flows in lower Lake Creek could lead to stranding of fish; and (2) rapid draw down of Packwood Lake, at the end of the waiver period, could leave fish stranded on the banks of the lake.

Therefore, Energy Northwest shall implement the following measures, to protect against the fish stranding concerns identified above: (1) Energy Northwest shall file a ramping rate plan for the down ramping of flows in Lake Creek when discontinuing each spill event, and (2) Energy Northwest shall file a Packwood Lake drawdown plan, the plan shall describe how Energy Northwest proposes to return lake levels compliance with Article 37 no later than July 15, 2006 and prevent the stranding of aquatic species in Packwood Lake.

Each of the above mentioned plans shall be developed in consultation with the U.S. Fish and Wildlife Service, the Washington Department of Ecology, NOAA Fisheries, the U.S. Forest Service, and the Yakama and Cowlitz Tribes and filed with the Commission for approval 120 days from the date of this letter. Energy Northwest shall include with the plans, documentation of consultation, copies of comments and recommendations from each consulted agency and Tribe, on the plans, and specific descriptions of how the agencies' and Tribes' comments are accommodated by the plans.

Energy Northwest shall allow a minimum of 30 days for the agencies and Tribes to comment and to make recommendations prior to filing the plan with the Commission for approval. If Energy Northwest does not adopt a recommendation, the filing shall include their reasons, based on project-specific information. The Commission reserves the right to require changes to the plan.

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A temporary waiver of Article 37 for the period of May 1, 2006 through June 30, 2006, and July 1, 2006, through July 15, 2006, will be contingent upon the Commission's approval of the Lake Creek ramping rate plan and the Packwood Lake drawdown plan. The July 1 – 15, 2006, time frame is provided as a transition period to return the project back into compliance with the requirements of Article 37.

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Appendix C

Table 1: Study Plan Summary and Schedule

Study Plan Name	Study Period (detail-date)	2005	2006	2007
<p>General Comment: Energy Northwest will draft reports to interested parties for a 30 day comment period, hold Water Quality and Aquatic Resources Committee meetings, and file and distribute an Initial Study Report to interested parties within one year of study plan approval and an Updated Study Plan Report within two years of study plan approval.</p>				
<p>NOTE: Italicized text represents potential additions or changes to study plans, as appropriate.</p>				
GEOLOGY AND SOILS				
Gravel Transport	gravel survey and deployment of painted rocks	September 2005	X	
	planned overtopping of drop structure	June 2006		X
	preliminary draft report	September 2006		X
	final results reported	2007		X
WATER RESOURCES				
Water Quality	water quality monitoring	April 2004-March 2006	X	X
	model development and application	October 2005	X	
	Phase I report	June 2006		X
	draft report	August 2006		X
FISH AND AQUATIC RESOURCES				
Geomorphology and Habitat of the Tailrace Slough	survey of tailrace slough	low flows in 2006		X
	draft report	Nov-06		X
Anadromous Salmonid Habitat and Spawning Survey	one year data collection	2005-2006	X	X
	review results with parties	2006		X
	<i>second season studies</i>	2006		X
	draft report	Nov-06		X
Engineering Study Related to Barrier Replacement on the Project Tailrace	engineering study and upstream migrant barrier design	2007		X
Fish Distribution and Species Composition	<i>installation of juvenile traps and weirs, if permits obtained</i>	September 2005	X	
	spawner surveys	May-July 2006		X
	snorkeling and electrofishing	July-August 2006 (2005 for Lake Creek)	X	X
	netting at Packwood Lake	February-June 2006		X
	installation of juvenile traps and weirs	March-October 2006		X
	draft report	April 2007		X
Fish Passage Barriers	data collection	2005-2006	X	X
	overtopping of drop structure	June 2006		X
	draft report	September 2006		X
Fish Population Characterization Near the Drop Structure	data collection	2006-2007		X
	electrofishing	August and October 2006, 2007		X
	seining of stilling basin	1year		X
	draft report	November 2006		X

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Lake Creek Instream Flow and Habitat Assessment	hydraulic data collection	2004			
	data collection for preference curve development and verification	ongoing	X		
	model calibration	Fall/Winter 2006- Spring 2007		X	X
Large Wood Study	large wood tagging	September 2005	X		
	planned overtopping of drop structure	June 2006		X	
	preliminary draft report, feasibility study, wood management plan	mid-September 2006		X	
	final results reported and final report, feasibility study, wood management plan	2007			X
Packwood Lake Entrainment	finalize study protocol	Summer 2005	X		
	calibrate ADCP to screens	2005	X		
	data collection	March-September 2006		X	
	draft report	Nov-06		X	
Packwood Lake Drawdown	data collection	Fall 2005-Summer 2006	X	X	
	draft report	July 2006		X	
	<i>second season studies (unless first season sufficient)</i>	<i>September 2006-May 2007</i>		X	X
	final report	August 2007			X
Stream Connectivity in Packwood Lake Tributaries	data collection	late September 2005 or 2006	X	X	
	draft report	end of field effort 2005 or 2006	X	X	
	final report	60 days from draft	X		
Tailrace Slough Instream Flow	streamflow measurements	September 2005	X		
	commence study	2006		X	
	draft report	2007			X
	final report	September 2007			X
Tailrace Slough use by Anadromous Salmonids	continued snorkeling and additional electroshocking	July 2006-July 2007		X	X
	<i>additional surveys, if needed</i>	<i>September 2007</i>			X
	draft report	September 2007			X
	final report	December 2007			X
WILDLIFE RESOURCES					
Amphibian Survey	review existing habitat information		X		
	reconnaissance	July or August 2005	X		
	surveys	Summer 2006		X	
	aquatic amphibian surveys	July-October 2005 or 2006	X	X	
	draft report	mid-September 2006		X	
	<i>additional surveys, if needed due to dry weather</i>	<i>Spring 2007</i>			X
	<i>develop interim measures, if needed due to dry weather</i>	<i>Fall/Winter 2007</i>			X

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Bald Eagle and Osprey Nest Survey	incubation/nesting surveys	April 2006		X	
	<i>nesting/fledging surveys, if nest found in April</i>	June - July 2006		X	
	draft report	mid-September 2006		X	
BOTANICAL RESOURCES					
Noxious Weed Survey	noxious weed surveys	Summer 2005 and Spring-Summer 2006	X	X	
	data analysis and report writing	by September 2006		X	
	draft report	mid-September 2006		X	
Rare Plant Survey	pre-field review	completed			
	surveys	Summer 2005 and Spring-Summer 2006	X	X	
	data analysis and report writing	by September 2006		X	
Vegetation Cover Type Mapping	draft report	mid-September 2006		X	
	initial data review and assessment	Summer 2005	X		
	fieldwork	Summer 2006		X	
	draft report	November 2006		X	
RECREATION RESOURCES					
Recreation Resources	data collection	Late 2005-Fall 2006	X	X	
	on-site inventory and field surveys/observations/traffic counter recordings	Spring-Fall 2006		X	
	draft report	mid-January 2007			X
	final report	2007			X
	Recreations Needs Analysis preparation	2007			X
	Recreations Needs Analysis	2007			X
CULTURAL RESOURCES					
Cultural Resources	background research	Spring-Early Fall 2005	X		
	meetings and field visits with Cowlitz Indian Tribe and Yakama Nation	Spring-Early Fall 2005	X		
	data analysis	Mid-Late Fall 2005	X		
	technical report	end 2005	X		
	HPMP	mid-2006		X	
OTHER RESOURCES					
Engineering Needs for Access Routes	on-site inventory and field surveys	April-November 2006		X	
	evaluation of maintenance and reconstruction needs	Summer-Fall 2006		X	
	fieldwork	by October 2006		X	
	draft report	early 2007			X