Lewis River Hydroelectric Projects

FERC Project Nos. 935, 2071, 2111, 2213

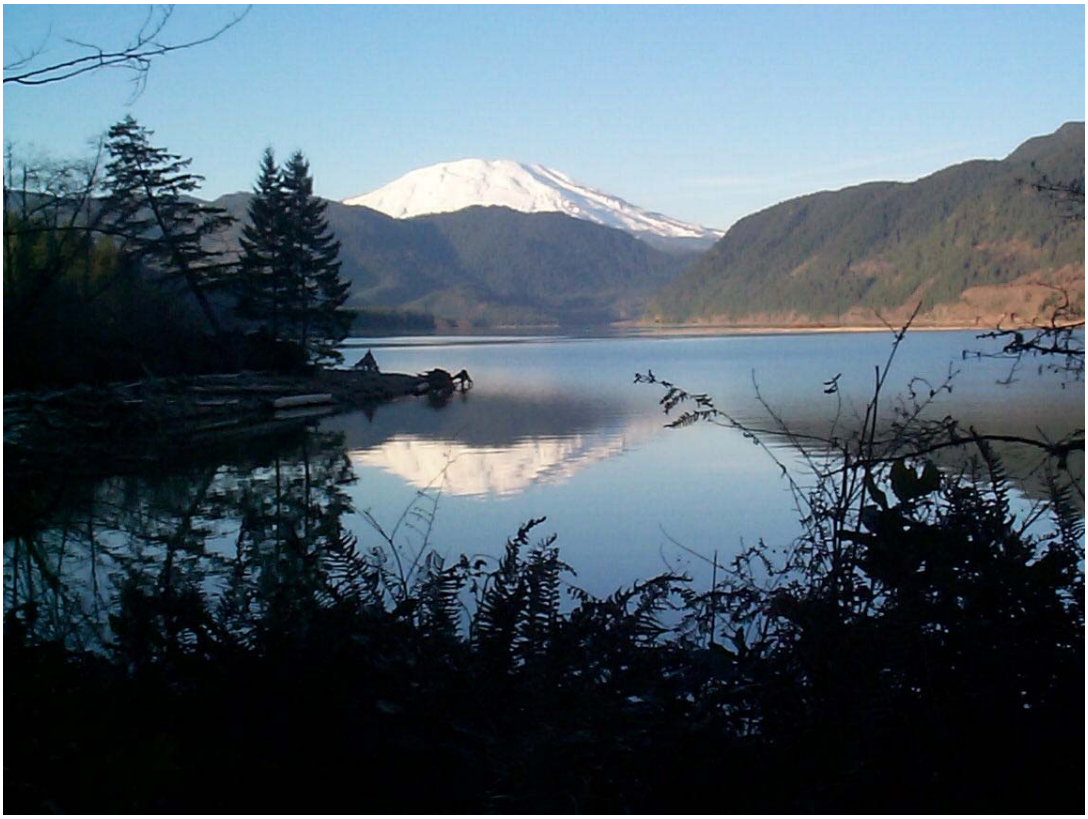


Photo courtesy of Paht MacDaniels

2009 Annual Report

Lewis River Aquatic Fund Projects

COWLITZ COUNTY PUD
"CUSTOMER-OWNED for CUSTOMER BENEFIT"

PACIFICORP ENERGY
A DIVISION OF PACIFICORP

April 2009

Introduction

This 2009 Annual Report prepared by PacifiCorp Energy and the Public Utility District No. 1 of Cowlitz County, Washington ("Cowlitz PUD") (collectively the "Utilities") is provided to the Lewis River Settlement Agreement Parties to fulfill the reporting requirement in Article 7.5.3.2 (5) of the Settlement Agreement (SA). This report identifies the actions and selection of Aquatic Resource Projects (Resource Projects) to be funded from the Lewis River Aquatic Fund established under terms of the SA (Article 7.5, see **Appendix A**). Although the funding process was managed by the Utilities, the Aquatic Coordination Committee (ACC) provided final approval of funded projects. This report includes only Resource Projects selected from the 2008/2009 funding process, additional projects are expected to be selected and funded annually following the process established by the ACC.

This 2009 report is available to the Public on PacifiCorp Energy's website at http://www.pacificorp.com/Article/Article85128.html. Copies of this report are available from PacifiCorp Energy.

Background

PacifiCorp Energy owns the Merwin, Yale, and Swift No. 1 hydroelectric projects on the Lewis River in southwest Washington. Cowlitz PUD owns the Swift No. 2 hydroelectric project, also located on the Lewis River. These projects are operated as a coordinated system by PacifiCorp Energy. On November 30, 2004, the Lewis River Settlement Agreement established the Lewis River Aquatics Fund (Fund). The purpose of the Fund is to support resource protection measures through funding aquatic related projects in the Lewis River basin.

As identified in the SA:

> "*Resource Projects may include, without limitation, projects that enhance and improve wetlands, riparian, and riverine habitats; projects that enhance and improve riparian and aquatic species connectivity that may be affected by the continued operation of the hydroelectric projects; and projects that increase the probability for a successful reintroduction program upstream of Merwin Dam. Species that are targeted to benefit from Resource Projects include Chinook, steelhead, coho, bull trout, chum, and sea-run cutthroat.*"

Under the direction of the SA, the Utilities in Consultation with the ACC developed the "Aquatics Fund -- Strategic Plan and Administrative Procedures" (September 2005 – Revised January 2009). This strategic plan provides: (a) a guide to Resource Project development, solicitation, and review; and (b) provides administrative procedures to guide implementation of the Aquatics Fund. The strategic plan is available to the Public on PacifiCorp Energy's website at http://www.pacificorp.com/Article/Article85128.html.

On September 5, 2008, PacifiCorp announced the availability of calendar year (CY) 2009 funds for aquatic related projects in the Lewis River Basin (Letter to interested parties from T. Olson, PacifiCorp, see **Appendix B**). The letter requested that individuals or parties interested in obtaining project funding submit a Pre-Proposal to PacifiCorp. Pre-Proposals were due by October 6, 2008.

In response to the announcement letter, three entities provided eight different project Pre-Proposals. They include:

USDA Forest Service	Pine Creek Instream Nutrient Enhancement
USDA Forest Service	East Fork Lewis River Instream Structures Steelhead
USDA Forest Service	Clear Creek Instream Habitat Restoration
USDA Forest Service	Pepper Creek Instream Habitat Restoration
Lower Columbia Fish Enhancement Group	North Fork Lewis River RM 13.5 Habitat Enhancement
Cowlitz Indian Tribe	Plas Newydd RM 2.0 Off-Channel Habitat Enhancement
Cowlitz Indian Tribe	Plas Newydd RM 0.5 Bar Plantings and LWD Structures
USDA Forest Service	Spencer Peak Road Decommission

Following the Aquatics Fund – Strategic Plan and Administrative Procedures, PacifiCorp and Cowlitz PUD reviewed and evaluated the Pre-Proposals and, on November 7, 2008, provided the ACC with a list of projects recommended for further consideration (Memo to ACC from Shrier – PacifiCorp and Gritten-MacDonald – Cowlitz PUD, **see Appendix C**). In general the Utilities evaluation suggested that while additional information is needed before a commitment of funds should be given, the following projects be solicited to provide complete Proposals:

- Pine Creek Instream Nutrient Enhancement
- East Fork Lewis River Instream Structures Steelhead (project withdrawn via email by USDA Forest Service on 1/27/09)
- Clear Creek Instream Habitat Restoration
- Pepper Creek Instream Habitat Restoration
- North Fork Lewis River RM 13.5 Habitat Enhancement
- Plas Newydd RM 2.0 Off-Channel Habitat Enhancement
- Plas Newydd RM 0.5 Bar Plantings and LWD Structures (project withdrawn by the Cowlitz Indian Tribe on 1/30/09)
- Spencer Peak Road Decommission

On December 11, 2008 the ACC concurred with the Utilities evaluation.

Shortly thereafter PacifiCorp notified the project sponsors and requested full Proposals by January 30, 2009. Upon the due date, six proposals were submitted. The East Fork Lewis River Instream Structures Steelhead was withdrawn by the USDA Forest Service

on January 27, 2009 and the Plas Newydd RM 0.5 Bar Plantings and LWD Structures submitted by the Cowlitz Indian Tribe was withdrawn by the Tribe on January 30, 2009.

Following receipt of the proposals the Utilities' Subject Matter Experts evaluated and scored the above proposals. Evaluations were conducted as outlined in the *Aquatic Fund – Strategic Plan and Administrative Procedures* document. On February 20, 2009, the ACC was provided a memo (Subject: Review of CY 2009 Aquatic Fund Final Proposals, see **Appendix D**) providing a description of the proposed Resource Projects, the Utilities evaluation of projects, and the Utilities basis for recommending or not recommending a project for funding.

Consultation with the ACC began on February 12, 2009 with visual presentations of project proposals to include an opportunity for ACC questions and comments. Following a review period the ACC met on March 12, 2009 and determined that additional information was needed on a number of projects. A memorandum to the ACC dated April 2, 2009 (Memo to ACC from McCune – PacifiCorp, see **Appendix E**) provided the requested additional information and the evaluation matrix seven days prior to the Funding Selection meeting on April 9, 2009 at which time funding the above aquatic projects were formally considered for funding. At this meeting and in a follow up conference call on April 15, 2009, consensus was reached on a final Resource Project list as follows:

Projects Selected for Funding:

Applicant	Approved Funding	Proposed Project
USDA Forest Service	$ 41,000	Pine Creek Instream Nutrient Enhancement
USDA Forest Service	$106,000	Clear Creek Instream Habitat Restoration
USDA Forest Service	$46,000	Pepper Creek Instream Habitat Restoration
*Lower Columbia Fish Enhancement Group	$190,000	North Fork Lewis River RM 13.5 Habitat Enhancement
Cowlitz Indian Tribe	$50,000	Plas Newydd RM 2.0 Off-Channel Habitat Enhancement
USDA Forest Service	$33,000	Spencer Peak Road Decommission

* final consensus received during conference call on April 15, 2009

On April 20, 2009 the Utilities notified all ACC Participants of the selected 2008/2009 Aquatic Funding projects approved for full funding (email dated April 20, 2009 - ACC Funding Approvals Matrix , SA 7.5.3.2 - 2008/2009 Aquatic Fund Evaluation Matrix, see **Appendix F**)

Projects Not Selected for Funding:
None

Projects Selected for Funding

The following is a summary description of the individual Resource Projects selected to be funded by the Aquatics Fund. All of such projects are expected to promote the recovery of anadromous fish post re-introduction upstream of the Lewis River dams, and the federally listed bull trout which spend a portion of their life history in the Lewis River hydroelectric project reservoirs. Included for each project is an overview of the original proposal, any ACC modifications to the project, and identification of Resource Project nexus to the hydroelectric projects. Final Resource Project Plans are provided as appendices to this document.

1) Pine Creek Instream Nutrient Enhancement
This USDA Forest Service sponsored project includes the addition of nutrients to Pine Creek and tributary P8 in the form of fish carcasses to increase primary and secondary production, leading to enhanced feeding opportunities for bull trout.

The ACC selected Method A which includes the use of a helicopter to distribute carcasses to Pine Creek and P8 as a complement to the 2006 and 2008 Nutrient Enhancement projects previously funded by the ACC. A typical carcass is good for approximately 3.5 weeks, at that time the nutritional value and remains of the carcass is gone. Carcass distribution would be implemented in early December 2009.

ACC representatives agreed to fund this project as proposed in Method A and granted funding of $41,000.

The final Resource Project Plan is provided in **Appendix G**.

2) Clear Creek Instream Habitat Restoration
This USDA Forest Service sponsored project includes the creation of rearing pools for juvenile salmonids, to improve spawning opportunities and increase habitat complexity in the lower 1.3 mile of Clear Creek. Clear Creek is a tributary to the Muddy River which is a tributary to the Lewis River upstream of Swift reservoir.

The project includes adding 900 pieces of Large Wood Material (LWM) to the reach to create pool habitat and provide complex structure to the stream. This would create and improve rearing opportunities for juvenile chinook, coho salmon and steelhead trout. In addition, it would improve spawning opportunities for returning adults. LWM for this project would come from USFS lands and from Swift Reservoir debris cleaning operations. Most of the LWM will be placed downstream of the 93 road bridge to avoid potential problems with both the bridge and the proposed juvenile fish acclimation pond.

It is expected that the LWM will directly enhance and increase fish habitat in the North Fork Lewis River Basin for re-introduced anadromous fish. LWM will create pools, provide stream structure and diversity, and create optimal spawning locations.

This project has a clear nexus to the hydropower projects. It is upstream of all projects and is a tributary to the Muddy River. Prior to dam construction the Muddy River Watershed was a major producer of anadromous salmonids in the Lewis River.

ACC representatives agreed to fund this project as proposed and granted funding of $106,000.

The final Resource Project Plan is provided in **Appendix H** and would be completed in accordance with the schedule below:

NEPA-Summer	2009/Winter 2010
Project Implementation	July 2010
Project site visit	August 2010
Pre-Project Monitoring	July 2009 & July 2010
Post Project Monitoring	July 2011 and beyond.
Project Close-out visit	August 2011

3) Pepper Creek Instream Habitat Restoration

Proposed by the USDA Forest Service, this project includes adding 150 pieces of Large Wood Material (LWM) in Pepper Creek starting from the mouth to 300 feet upstream from the culvert located on Forest Service 9039 to create pool habitat and provide complex structure to the stream. Pepper Creek is a tributary to the Lewis River. This project would create and improve rearing opportunities for, coho salmon and steelhead trout. In addition, it would improve spawning opportunities for reintroduced adult fish. LWM for this project would come from USFS lands and from Swift Reservoir debris cleaning operations.

This project has a nexus to the hydropower projects. It is upstream of all projects and is a tributary to the Lewis River. Prior to dam construction the Upper Lewis River Watershed was a major producer of salmonids in the Lewis River.

ACC representatives agreed to fund this project as proposed and granted funding of $46,000.

The final Resource Project Plan is provided in **Appendix I** and would be completed in accordance with the schedule below:

NEPA-Summer	2009/Winter 2010
Project Implementation	July 2010
Project site visit	August 2010
Pre-Project Monitoring	July 2009 & July 2010
Post Project Monitoring	July 2011 and beyond.
Project Close-out visit	August 2011

4) North Fork Lewis River RM 13.5 Habitat Enhancement

This project, proposed by Lower Columbia Fish Enhancement Group entails construction of large woody debris (LWD) and boulder structures along a reach of the Lewis River that is devoid of complex habitat necessary to provide cover, velocity refuge, sediment sorting, and a source for food production. The proposed statement of work and budget assumes the placement of 4 to 8 habitat structures comprised of LWD, boulders, and slash material. The specific size and location of structures will be determined as part of project design. The general area for habitat enhancements is included in Figure 1 (see Exhibit I). The project area falls within reach Lewis 5, a Tier 1 reach according to the Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin Plan (LCFRB 2004). Habitat will be created for ESA-listed Chinook, coho, steelhead, and chum.

The enhancement features in the project reach will benefit juvenile fish originating from upstream spawning grounds. The project will improve juvenile rearing and adult holding habitat, and will provide benefits to spawning habitat through substrate storage and sorting.

ACC representatives approved funding this project as proposed and granted funding of $190,000.

Project duration is targeted at 15 months, which includes construction in 2009 and completion of post-implementation monitoring in July/August 2010. Duration may extend longer if construction does not occur in 2009.

The final Resource Project Plan is provided in **Appendix J**.

5) Plas Newydd RM 2.0 Off-Channel Habitat Enhancement

This Cowlitz Indian Tribe sponsored project includes planting a shrub/tree complex of 3,200 willows, cottonwood, and red-osier dogwood along the water's edge and secondly the project includes the addition of up to 1140 kilograms of salmon carcasses into the off-channel itself.

The goals of the project include enhancing riparian function; related goals include reduced water temperatures, increased water quality, and the preservation of habitat quality and function in the mainstem and off-channel habitat. Also, the enhanced riparian function will increase organic inputs to the system, which will in turn boost nutrient levels in both the mainstem and proximal downstream off-channel habitat. Bankfall of large trees from a mature riparian forest will eventually serve as source of large woody debris to the river, which may further enhance nutrient loads, create structure and habitat, and armor both the riverbank and the off-channel habitat. The ultimate goal of this portion of the project is to further enhance the habitat quality of this key off-channel area, which will directly benefit both out-migrating juvenile and immigrating adult ESA-listed salmonids.

Salmon carcasses will be introduced into the off-channel to provide a localized pulse of nutrients. By adding carcasses, the project will provide a direct source of nutrient-rich organic matter; flesh and eggs (in particular, lipids) for direct consumption by juvenile salmon, The addition will also promote a pulsed increase in the abundance of macro-invertebrates using a different feeding ecology (shredders/collectors/scrapers rather than just filter feeders), which are important prey for juvenile salmonids.

ACC representatives approved funding this project as proposed and granted funding of $50,000.

Final project design will occur in the summer of 2009, vegetation planting will occur in late summer/early fall 2009, and fish carcasses will be introduced during late fall/early winter 2009. Stakes and Vexar will be removed early spring 2010. Monitoring of plant survivorship will be conducted in spring 2010, spring 2011 and spring 2012. Monitoring of macroinvertebrate diversity/density measures will be conducted in fall 2009 prior to carcass placement, in fall 2009 some weeks after carcass placement, and in fall 2010. The monitoring report will be completed in Spring 2012.

The final Resource Project Plan is provided in **Appendix K**.

6) Spencer Peak Road Decommission

Proposed by the USDA Forest Service, this project includes decreasing the risk of catastrophic sediment delivery to Clear Creek and therefore preventing the degradation of fish habitat. Clear Creek is a tributary to the Muddy River which is a tributary to the Lewis River upstream of Swift reservoir Spencer Peak road has one perennial road/stream crossing that is about one mile from the confluence of Clear Creek at RM 1.8. The perennial tributary confluence with Clear Creek provides refugia for fish utilizing Clear Creek. This confluence is about a half mile above both the proposed juvenile fish acclimation pond on Clear Creek and the relatively flat gradient reach proposed by the USFS for adding large wood to restore pools and habitat diversity for juvenile fish, primarily coho and steelhead (Clear Creek Instream Habitat Full Proposal 2009). This road decommission project will eliminate chronic sediment delivery and the sediment delivery risk of culvert failures which will improve the aquatic limiting factor of quality rearing habitat for coho in the lowest two miles of Clear Creek.

ACC representatives approved funding this project as proposed and granted funding of $33,000.

Contract preparation is expected to occur in June 2009 and could be awarded in July 2009 if all funds are secured. The project can be implemented in one field season.

The final Resource Project Plan is provided in **Appendix L**.

Conclusion

This report provides the final CY2009 Resource Project descriptions and plans for aquatic projects to be funded from the Lewis River Aquatics Fund. Distribution of funds to these projects will reduce the current Aquatic Fund by $466,000. Of the projects selected by the ACC, the Pine Creek Instream Nutrient Enhancement project can be attributed to bull trout enhancement.

Per SA article 7.5.3.2 (5), any ACC member may initiate the Alternative Dispute Resolution Procedures to resolve disputes relating to Resource Projects 30 days after receiving this final report. If no disputes are identified, PacifiCorp and Cowlitz PUD will provide funds to the identified project owners to implement Resource Projects per SA article 7.8.

APPENDIX A

Appendix A

Lewis River Settlement Agreement Article 7.5:

7.5 Aquatics Fund. PacifiCorp and Cowlitz PUD shall establish the Lewis River Aquatics Fund ("Aquatics Fund") to support resource protection measures ("Resource Projects"). Resource Projects may include, without limitation, projects that enhance and improve wetlands, riparian, and riverine habitats; projects that enhance and improve riparian and aquatic species connectivity that may be affected by the continued operation of the Projects; and projects that increase the probability for a successful reintroduction program. The Aquatics Fund shall be a Tracking Account maintained by the Licensees with all accrued interest being credited to the Aquatics Fund. PacifiCorp shall provide $5.2 million, in addition to those funds set forth in Section 7.1.1, to enhance, protect, and restore aquatic habitat in the Lewis River Basin as provided below. Cowlitz PUD shall provide or cause to be provided $520,000 to enhance, protect, and restore aquatic habitat in the Lewis River Basin as provided below; provided that Cowlitz PUD's funds may only be used for Resource Projects upstream of Swift No. 2, including without limitation the Bypass Reach. The Licensees shall provide such funds according to the schedules set forth below.

7.5.1 PacifiCorp's Contributions.

a. PacifiCorp shall make funds available as follows: on each April 30 commencing in 2005, $300,000 per year until 2009 (a total of $1.5 million).

b. For each of the Merwin, Yale, and Swift No. 1 Projects, PacifiCorp shall make one-third of the following funds available as follows after the Issuance of the New License for that Project: on each April 30 commencing in 2010, $300,000 per year through 2014 (a total of $1.5 million); on each April 30 commencing in 2015, $100,000 per year through 2018 (a total of $400,000); and on each April 30 commencing in 2019, $200,000 per year through 2027 (a total of $1.8 million); provided that, for any New License that has not been Issued by April 30, 2009, the funding obligation for that Project shall be contributed annually in the same amounts but commencing on April 30 following the first anniversary of Issuance of the New License for that Project.

c. PacifiCorp shall contribute $10,000 annually to the Aquatics Fund as set forth in Section 7.1.1.

7.5.2 Cowlitz PUD's Contributions. Cowlitz PUD shall make or cause to be made funds available as follows: $25,000 per year on each April 30 following the first anniversary of the Issuance of the New License for the Swift No. 2 Project through the April 30 following the 20th anniversary of the Issuance of the New License for the Swift No. 2 Project (a total of $500,000); and a single amount of $20,000 on the April 30 following the 21st anniversary of the Issuance of the New License for the Swift No. 2

Project.

7.5.3 Use of Funds. Decisions on how to spend the Aquatics Fund, including any accrued interest, shall be made as provided in Section 7.5.3.2 below; provided that (1) at least $600,000 of such monies shall be designated for projects designed to benefit bull trout according to the following schedule: as of April 30, 2005, $150,000; as of April 30, 2006, $100,000; as of April 30, 2007, $150,000; as of April 30, 2008, $100,000; and on or before the April 30 following the fifth anniversary of the Issuance of all New Licenses, $100,000; and such projects shall be consistent with bull trout recovery objectives as determined by USFWS; (2) fund expenditures for the maintenance of the Constructed Channel (Section 4.1.3) shall not exceed $20,000 per year on average; (3) if studies indicate that inadequate "Reservoir Survival," defined as the percentage of actively migrating juvenile anadromous fish of each of the species designated in Section 4.1.7 that survive in the reservoir (from reservoir entry points, including tributary mouths to collection points) and are available to be collected, is hindering attainment of the Overall Downstream Survival standard as set forth in Section 3, then at least $400,000 of such monies shall be used for Resource Projects specifically designed to address reservoir mortality; and (4) $10,000 annually shall be used for lower river projects as set forth in Section 7.1.1. Projects shall be designed to further the objectives and according to the priorities set forth below in Section 7.5.3.1.

7.5.3.1 Guidance for Resource Project Approval and Aquatics Fund Expenditures.

a. Resource Projects must be consistent with applicable Federal, State, and local laws and, to the extent feasible, shall be consistent with policies and comprehensive plans in effect at the time the project is proposed. These may include, but are not limited to, Washington's Wild Salmonid Policy, the Lower Columbia River Bull Trout Recovery Plan, and the Lower Columbia River Anadromous Fish Recovery Plan.

b. The Aquatics Fund shall not be used to fund Resource Projects that any entity is otherwise required by law to perform (not including obligations under this Agreement or the New Licenses for use of the Aquatics Fund), unless by agreement of the ACC.

c. The Licensees shall evaluate Resource Projects using the following objectives:

(1) benefit fish recovery throughout the North Fork Lewis River, with priority to federal ESA-listed species;

(2) support the reintroduction of anadromous fish throughout the Basin; and

(3) enhance fish habitat in the Lewis River Basin, with priority given to the North Fork Lewis River.

For the purposes of this Section 7.5, the North Fork Lewis River refers to the portion of the Lewis River from its confluence with the Columbia River upstream to the headwaters, including tributaries except the East Fork of the Lewis River.

The Licensees shall also consider the following factors to reflect the feasibility of projects and give priority to Resource Projects that are more practical to implement:

(i) Whether the activity may be planned and initiated within one year,

(ii) Whether the activity will provide long-term benefits,

(iii) Whether the activity will be cost-shared with other funding sources,

(iv) Probability of success, and

(v) Anticipated benefits relative to cost.

7.5.3.2 Resource Project Proposal, Review, and Selection.

(1) By the first anniversary of the Effective Date, the Licensees shall develop, in Consultation with the ACC, (a) a strategic plan consistent with the guidance in Section 7.5.3.1 above to guide Resource Project development, solicitation, and review; and (b) administrative procedures to guide implementation of the Aquatics Fund. Both may be modified periodically with the approval of the ACC.

(2) Any person or entity, including the Licensees, may propose a Resource Project. In addition, the Licensees may solicit Resource Projects proposals from any person or entity.

(3) The Licensees shall review all Resource Project proposals, applying the guidance set forth in Section 7.5.3.1. The Licensees shall provide an annual report describing proposed Resource Project recommendations to the ACC. The date for submitting such report shall be determined in the strategic plan defined in subsection 7.5.3.2(1) above. The report will include a description of all proposed Resource Projects, an evaluation of each Resource Project, and the basis for recommending or not recommending a project for funding.

(4) The Licensees shall convene a meeting of the ACC on an annual basis, no sooner than 30 days and no later than 60 days after distribution of the report set forth in Section 7.5.3.2(2), for Consultation

regarding Resource Projects described in the report.

(5) Licensees shall modify the report on proposed Resource Projects, based on the above Consultation, and submit the final report to the ACC within 45 days after the above Consultation. Any ACC member may, within 30 days after receiving the final report, initiate the ADR Procedures to resolve disputes relating to Resource Projects. If the ADR Procedures are commenced, the Licensees shall defer submission of the final report on Resource Projects to the Commission, if necessary, until after the ADR Procedures are completed. If the ADR Procedures fail to resolve all disputes, the Licensees shall provide the comments of the ACC to the Commission. If no ACC member initiates the ADR Procedures, the Licensees shall submit the final report to the Commission, if necessary, within 45 days after submission of the final report to the ACC.

APPENDIX B

Appendix B

Memorandum dated September 5, 2008
Letter to interested parties from T. Olson, PacifiCorp
Availability of Funds for Aquatic Related Projects

PACIFICORP ENERGY
A DIVISION OF PACIFICORP

825 NE Multnomah, Suite 1500
Portland, Oregon 97232

September 5, 2008

Subject: Availability of Funds for Aquatic Related Projects in the Lewis River Basin

Dear Interested Party,

PacifiCorp owns the Merwin, Yale, and Swift No. 1 hydroelectric projects on the Lewis River in southwest Washington. Public Utility District No. 1 of Cowlitz County, Washington (Cowlitz PUD) owns the Swift No. 2 hydroelectric project, also located on the Lewis River. These projects are operated as a coordinated system. On November 30, 2004, the Lewis River Settlement Agreement established the Lewis River Aquatics Fund (Fund). On June 26, 2008, the Federal Energy Regulatory Commission acknowledged this fund as a stipulation of project operating licenses. The purpose of the Fund is to support resource protection measures via aquatic related projects (Resource Projects) in the Lewis River basin. The projects are evaluated for funding according to their:

(1) Benefit to fish recovery throughout the North Fork Lewis River, with priority to federal ESA-listed species;

(2) Support of the reintroduction of anadromous fish throughout the Basin; and

(3) Enhancement to fish habitat in the Lewis River Basin, with priority given to the North Fork Lewis River.

Species that are targeted to benefit from Resource Projects include Chinook, steelhead, coho, bull trout, chum, and sea-run cutthroat.

This letter is to provide you the opportunity to submit proposals for Resource Project funding. The total Fund amount available per year is limited ($300,000) and a portion of it is to be used for bull trout recovery projects. The selection of Resource Projects will be conducted in two phases. To be considered, applicants must submit a completed Pre-Proposal Form (see attachment A for Form) **by close of business October 6, 2008**. Pre-Proposals will be evaluated with some projects appropriately selected for further consideration (see attachment B for evaluation criteria). If selected, applicants will be notified in early December, and be requested to submit a formal proposal by mid-January. The Utilities and representatives of the Lewis River Aquatic Coordination Committee will finalize the list of successful projects in early April 2009 and submit that list to the Federal Energy Regulatory Commission for approval shortly thereafter.

Please give attention to this excellent opportunity. If you should have any questions feel free to contact Mr. Frank Shrier, PacifiCorp, (503) 813-6622. We look forward to your response in early October.

Sincerely,

<Todd Olson>

Todd Olson
Implementation Program Manager

cc: Diana Gritten-MacDonald, Cowlitz PUD
Mailing List
Attachments

Mailing List – September 2, 2008

Bill M. Bakke
The Native Fish Society
P.O. Box 19570
Portland, OR 97280

Bob Nelson
Rocky Mountain Elk Foundation, Inc.
45 Overmeyer Rd
Raymond, WA 98577

Salley Sovey
United States Bureau of Land Mgmt.
915 Walla Walla Ave
Wenatchee, WA 98801

Claire Lavendel
USDA Forest Service
10600 NE 51st Circle
Vancouver, WA 98682

Kathryn Miller
Trout Unlimited
227 SW Pine Street, Suite 200
Portland, OR 97204

Michelle Day
NMFS
1201 NE Lloyd Blvd., Suite 1100
Portland, OR 97232-2778

Brett Swift
American Rivers
320 SW Stark St Ste 412
Portland, OR 97204-2634

Ken S. Berg
United States Fish and Wildlife Service
510 Desmond Drive SE, Ste. 102
Lacey, WA 98503-1263

John Clapp
Lewis River Citizens at-Large
9315 NE Etna Road
Woodland, WA 98674

Steve Branz
City of Woodland
100 Davidson, Box 9
Woodland, WA 98674

Clifford Casseseka
Yakama Nation
P.O. Box 151
Toppenish, WA 98948

Ryan Lopossa
Cowlitz County Department of Public Works 207 4th Ave North
Kelso, WA 98626

Josh Kling
jkling@westernrivers.org

Ilene L. Black
North County Emergency Medical Svc.
227 Frasier Rd.
Amboy, WA 98601

Darlene G. Johnson
Woodland Chamber of Commerce
P.O. Box 1808
Woodland, WA 98674

Mariah Stoll-Smith Reese
Lewis River Community Council
14900 Lewis River Rd.
Ariel, WA 98603

Jim Eychaner
Washington Recreation and Conservation Office
P.O. Box 40917
Olympia, WA 98504-0917

Susan Rosebrough
National Park Service
909 First Avenue
Seattle, WA 98104-1060

Curt Leigh
Washington Dept. Fish & Wildlife
600 Capitol Way North
Olympia, WA 98504-0001

James Malinowski
Fish First
PO Box 127
Amboy, WA 98601

Ruth Tracy
USDA Forest Service
10600 NE 51st Circle
Vancouver, WA 98682

Diana M. Gritten-MacDonald
PUD #1 of Cowlitz County, WA
PO Box 3007
Longview, WA 98632-0307

Noel Johnson
Lewis River Citizens at-Large
6412 NW Amidon Road
Woodland, WA 98674

Nathan Reynolds
Cowlitz Indian Tribe
PO Box 2547
Longview, WA 98632

Don Stuart
Cowlitz-Skamania Fire Dist. No. 7
11670 Lewis River Road
Ariel, WA 98603

Pat Spurgin
Yakama Nation
P.O. Box 151
Toppenish, WA 98948

Betty Sue Morris, Chair
Clark County, 1013 Franklin Street
PO Box 5000
Vancouver, WA 98666-5000

Mailing List – September 2, 2008

William Iyall
Cowlitz Indian Tribe
PO Box 2547
Longview, WA 98632

Jeff Breckel
Lower Columbia River Fish Recovery
2127 8th Avenue
Longview, WA 98632

Gary Stuart
Cowlitz-Skamania Fire District No. 7
11310 Lewis River Road
Ariel, WA 98603

George Lee
Yakama Nation
P.O. Box 151
Toppenish, WA 98948

Adam Haspiel
USDA Forest Service
10600 NE 51st Circle
Vancouver, WA 98682

Ken Hogan
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Steve Vigg
Washington Dept. Fish & Wildlife
600 Capitol Way North
Olympia, WA 98501

Joel Rupley
Clark County
PO Box 5000
Vancouver, WA 98666

Shannon Wills
Cowlitz Indian Tribe
PO Box 2547
Longview, WA 98632

LouEllyn Jones
US Fish & Wildlife Services
510 Desmond Drive SE, Suite 102
Lacey, WA 98503-1263

Paul J. Pearce
Skamania County
PO Box 790
Stevenson, WA 98648

Dave Burlingame
Cowlitz Indian Tribe
PO Box 2547
Longview, WA 98632

Bernadette Graham Hudson
Lower Columbia River Fish Recovery
2127 8th Avenue
Longview, WA 98632

Tony Pranger
ANE/Elkhorn Forestry, Inc
PO Box 1864
Oregon City, OR 97045

Cherie Kearney
ckearney@columbialandtrust.org

Olympic Resource Management
321 Maurin Road
Chehalis, WA 98520

Gardner Johnston
gjohnston@interfluve.com

cwfish@comcast.net (Tony Meyer)

Attachment A

PRE-PROPOSAL FORM

Lewis River Aquatic Fund

Form Intent:
To provide a venue for an applicant to clearly indicate the technical basis and support for proposed project. Specifically the project's consistency with recovery plans, Settlement Agreement Fund objectives, technical studies and assessments which support the proposed action and approach.

Proposal format:
Please complete the following form for each proposal. Maps, design drawings and other supporting materials may be attached. The request is to be brief in response with a total completed form length of no more than 3 pages of text.

The deadline for Pre-Proposal Form submission is **October 6, 2008**. Please submit materials to:

Frank Shrier
PacifiCorp – LCT 1500
825 NE Multnomah
Portland, OR 97232

1. Applicant organization.

2. Organization purpose

3. Project manager (name, address, telephone, email, fax).

Note: Please attach a resume or other description of the education and experience of the persons responsible for project implementation.

4. Project Title

5. Summary of Project proposal

Note: Please include description of how project addresses Lewis River Aquatic Fund priorities and identify any impacts to other resource areas (e.g. wildlife, recreation, etc.).

6. Project location (including River/Stream and Lat/Long coordinates if available).

7. Expected products and results (Please attach any drawings).

8. Benefits of proposed Project

9. Project partners and roles.

10. Community involvement (to date and planned).

11. Procedure for monitoring and reporting on results.

12. Project schedule (anticipated start date, major milestones, completion date).

13. Funding requested (estimated cost for project design, permitting (including necessary resource surveys), construction, and monitoring).

14. Type and source of other contributions (Identify cash (C) and/or in-kind (IK), and status, pending (P) or confirmed (Co)).

15. If you have technical assistance needs for this project, please briefly describe such needs.

Attachment B

Lewis River Aquatics Fund – Individual Project Evaluation Sheet

For each Evaluation Criteria listed below, a determination of "meets" or "does not meet" or a score of 1 to 5 is assigned by project evaluator. If during the Pre-Proposal review the project receives a "does not meet" response to any "Consistency with Fund Objectives and Priorities" component, the proposal will be dropped from further evaluation and funding. A 1 is the lowest score (does not or very unlikely to meet objectives), a 5 the highest score (greater likelihood of meeting objectives). Scores are multiplied by the assigned weighting then totaled for a single project score.

A. Consistency with Fund Objectives and Priorities (Meets or Does not meet): 1. Benefit fish recovery throughout the North Fork Lewis River, priority to federal ESA-listed species (Bull Trout, Chinook, Steelhead, and Chum) 2. Support the re-introduction of anadromous fish throughout the Basin (Spring Chinook, Winter Steelhead, Coho, and Sea-run Cutthroat) 3. Enhance fish habitat in the Lewis River Basin, with priority given to the North Fork Lewis River.	
B. How does the project benefit priority fish species and stocks? (Spring Chinook, Winter Steelhead, Coho, Bull Trout, and Sea-run Cutthroat) (40 % weight): ▪ Does the proposal clearly describe the expected fish benefits of the project? ▪ Does the proposal clearly identify the salmonid species and stocks that would benefit from the project? ▪ Does the project address a limiting factor(s) to the target species, a limiting life history stage, or an important habitat process or condition? ▪ Will the project provide long-term benefits? Does the project provide tangible, on-the-ground benefits? ▪ Is the project generally consistent with the intent (strategies, measures, actions, and priorities) of applicable recovery and planning documents (e.g. Lower Columbia Salmon Recovery Plan)?	Score = _____ multiplied by 4.0 = _____

C. Scientific validity and technical quality of proposed project (40% weight): • Is the problem to salmonids and the associated objectives of the proposed project clearly described? • Does the proposal employ appropriate techniques, adequate design and proper siting? • Is it clear how the proposed project will meet its intent and purpose? • Is it likely that the project will achieve stated objectives? • Does the project provide for implementation monitoring? If so what monitoring protocols will be used? Are the benefits or outcomes from the project measurable (e.g. number of trees planted or amount of structure placed)? • Have watershed processes and a larger global aspect been considered in developing the proposal? • How does the project fit within the fish needs as identified through watershed planning documents, recovery plans, etc? • Has the project proposal received professional review? • Does the proposal identify any negative or positive impacts to other resource areas (e.g. wildlife, recreation, etc.)?	Score = _____ multiplied by 4.0 = _____
D. Ability for the project proponent to successfully implement proposed project (10% weight) • Does proposal include both appropriate numbers of personnel and experienced team members? • Has the applying party submitted proposals in previous years? If their proposal received funding, has it been successfully implemented? • Will the project be able to obtain the necessary permits in a timely manner?	Score = _____ multiplied by 1.0 = _____
E. Cost effectiveness and timeliness (10% weight) • Does the project have matching funding or in-kind participation? Is there collaboration between numerous parties? • Is the project budget identified by work effort (administration, materials, labor, etc.) and is it appropriate? • Does the project have a reasonable cost relative to the anticipated benefits? • Is the project self-maintaining once completed? If not, how will maintenance be achieved? • Can the project activities be planned and initiated in one year?	Score = _____ multiplied by 1.0 = _____
Total Weighted Score	**XX**

APPENDIX C

Appendix C

Memorandum dated November 7, 2008
Memo to ACC from Shrier – PacifiCorp and Gritten-MacDonald – Cowlitz PUD
Review of CY 2009 Aquatic fund Pre-Proposals

November 7, 2008

To: Memo to Lewis River Aquatics Coordination Committee representatives

From: Frank Shrier – PacifiCorp Energy and Diana Gritten-MacDonald – Cowlitz PUD

Subject: Review of CY 2009 Aquatic Fund Pre-Proposals

On September 5, 2008 PacifiCorp Energy announced the availability of funds for aquatic related projects in the Lewis River Basin (letter to interested parties from T. Olson). The letter requested that individuals or parties interested in obtaining project funding submit a Pre-Proposal to PacifiCorp Energy. Pre-Proposals were due by October 6, 2008. At that time and in following the Aquatics Fund – Strategic Plan and Administrative Procedures, PacifiCorp Energy and Cowlitz PUD reviewed the Pre-Proposals and, with this memo are providing the ACC with a recommended project list for further consideration. Following ACC review and agreement with this project list, PacifiCorp Energy will request complete proposals from selected project proponents. The schedule for proposal request is early December with complete proposals due in late-January 2008.

In response to the announcement letter, 3 entities provided 7 different project Pre-Proposals. They include:

USDA Forest Service	Pine Creek Instream Nutrient Enhancement
USDA Forest Service	East Fork Lewis River Instream Structures Steelhead
USDA Forest Service	Clear Creek Instream Habitat Restoration
USDA Forest Service	Pepper Creek Instream Habitat Restoration
Lower Columbia Fish Enhancement Group	North Fork Lewis River RM 13.5 Habitat Enhancement
Cowlitz Indian Tribe	Plas Newydd RM 2.0 Off-Channel Habitat Enhancement
Cowlitz Indian Tribe	Plas Newydd RM 0.5 Bar Plantings and LWD Structures

PacifiCorp Energy and Cowlitz PUD subject matter experts have evaluated and scored the above proposals. Evaluations were conducted as outlined in the Aquatic Fund – Strategic Plan and Administrative Procedures document. For ACC review, the Utilities have attached to this memo an Evaluation matrix (Attachment 1). Costs for each project are also included. Individual Pre-Proposals have been attached for reference (Attachments 2-8).

The utilities evaluation suggests that while additional information is needed before a commitment of funds should be given, we propose that the following projects be solicited to provide complete Proposals:

- Pine Creek Instream Nutrient Enhancement
- East Fork Lewis River Instream Structures Steelhead
- Clear Creek Instream Habitat Restoration
- Pepper Creek Instream Habitat Restoration
- North Fork Lewis River RM 13.5 Habitat Enhancement
- Plas Newydd RM 2.0 Off-Channel Habitat Enhancement
- Plas Newydd RM 0.5 Bar Plantings and LWD Structures

In addition, PacifiCorp has included a financial reporting on the Aquatics Resource and Bull Trout (7.5) tracking accounts (Attachment 9) as of 10/31/08.

The utilities are submitting this document and attachments for review in hopes of reaching concurrence on projects for further consideration. If, in your review of the Pre-proposals, you have comments or questions to ask the Project proponent, please provide us such and we will include in the formal Proposal request.

To meet the Funding Process Timeline as included in the Aquatics Fund – Strategic Plan and Administrative Procedures, **ACC representatives should provide comments and their project selection by Monday, December 8, 2008**. On December 11, 2008, project selection will be finalized during the ACC meeting. Soon after, the Utilities will request formal Proposals from identified project proponents.

Lewis River Aquatic Fund - Utilities' Evaluation of 2008/2009 Project Proposals

No.	Applicant	Project Title	Project Schedule	Benefit	Bull Trout	Project Partners	Funding	Cost Share?	Consistency with Fund Objectives	Benefit to x4 Priority Fish	Scientific Validity x4	Success Potential x1	Cost Effectiveness x1	Total Score	Selected by Utilities for Full-Proposal	Comments
1	USDA Forest Service	Pine Creek Instream Nutrient Enhancement	2009/2010	This project would enhance nutrients in five miles of Pine Creek and two miles of Pine Creek tributary P8 using either salmon carcasses or analog style fish nutrient bricks.	Yes	Potential Partners: Fish First, Clark Skamania Fly Fishers, WDFW	$45,000	Yes	1. yes 2. yes, eventually 3. yes, eventually						Y	Bare minimum proposal; need more details/justification. This should be the last year. No long term benefit. Wondering why carcasses are being planted so low in Pine mainstem when bulk of fish production is high in the system. Also a worry that low planted carcasses may get blown out of the system.
2	USDA Forest Service	East Fork Lewis River Instream Structures Steelhead	2009/2010	To enhance the quality of fish habitat in the Upper East Fork Lewis River by creating instream structure. Objectives: • Improve the quality and amount of pool habitat • Improve the quality and amount of spawning gravel	No	USDA FS, Fish First, Mt. St. Helens Institute	$45,650	Yes	1. yes 2. yes 3. push						Y	Missing arguments for scientific validity. WDFW redd surveys have shown no WSTHD spawn this high in the EFT, only SSTHD which are not a reintroduced species, therefore benefit connection to North Fork Lewis is weak.
3	USDA Forest Service	Clear Creek Instream Habitat Restoration	2009/2011	This project would install large woody material (LWM) in Clear Creek starting from the mouth to 300 feet upstream from the bridge located on Forest Service 93, an area covering approximately 1.3 miles.	No	Gifford Pinchot National Forest, USFS, Mt. St. Helens Institute	$112,000	Yes	1. yes, eventually 2. yes, eventually 3. yes, eventually						Y	Needs to address positive or negative impacts on other resources. 900 pieces of large woody material may create safety hazard and could impact FR93 bridge. What does the habitat look like now? Current fish use? Pictures helpful.
4	USDA Forest Service	Pepper Creek Instream Habitat Restoration	2009/2011	This project would install large woody material (LWM) in Pepper Creek starting from the mouth to 300 feet upstream from the culvert located on Forest Service 9039, an area covering approximately 0.5 miles.	No	Gifford Pinchot National Forest, USFS, Mt. St. Helens Institute	$42,000	Yes	1. yes, eventually 2. yes, eventually 3. yes, eventually						Y	Amount of large woody material seems high for such a small reach. Limited benefit, but may be of longer duration. Concern is with this amount of LWD in such a small stream, if not placed correctly could create barrier.
5	Lower Columbia Fish Enhancement Group (LCFEG)	North Fork Lewis River RM 13.5 Habitat Enhancement	2009/2010	The ACC portion is to install approx. six large wood and rock structures along the left bank whereas the SRFB portion of this project will install engineered logjams and riparian plantings on the right bank.	No	LCFEG, Lower Columbia Fish Recovery Board (LCFRB), Sam Kysar, Bill Sheretz, Inter-Fluve	$189,938	Yes	1. yes 2. yes 3. yes						Y	Proposed area is extremely shallow. Limited if any benefit to rearing. One concern is left bank margins are heavily used by wild WSTHD for redd construction per Spring 2008 NFL mainstem WDFW and PacifiCorp redd surveys.
6	Cowlitz Indian Tribe	Plas Newydd RM 2.0 Off-Channel Habitat Enhancement	2009/2010	Plant a shrub/tree complex of 3,200 willows, cottonwood and red-osier dogwood along the water's edge and add 600 kilograms of salmon carcasses into the off-channel itself.	No	Plas Newydd, Cowlitz Indian Tribe	$50,000	No	1. yes 2. yes 3. yes						Y	Unsure of the true benefit; monitoring is essential. How do tidal and flow stages effect project success? Data suggest that juveniles do not remain in this area for more than 24 hours = little to no benefit for juveniles, thus the carcasses should be eliminated from project.
7	Cowlitz Indian Tribe	Plas Newydd RM 0.5 Bar Plantings and LWD Structures	2009/2010	Implement a multi-faceted riparian enhancement plan which includes enhance the pioneering layer of site-appropriate tree and shrub species and install six LWD structures between the high-elevation know and true left bank of the river.	No	Plas Newydd, Cowlitz Indian Tribe, PacifiCorp Energy	$75,000	Yes - FS No - EL	1. yes 2. yes 3. yes						Y	Documenting benefits is essential. Disagree that the location is "key" refugia.
						Totals	**$ 559,588**									
						Bull Trout Funds	**$ -**									

Fund Objectives:
1. Benefit fish recovery throughout the North Fork Lewis River, priority to federal ESA-listed species
2. Support the re-introduction of anadromous fish throughout the basin
3. Enhance fish habitat in the Lewis River Basin, with priority given to North Fork Lewis River

APPENDIX D

Appendix D

Memorandum dated February 20, 2009
Memo to ACC from Shrier – PacifiCorp and Gritten-MacDonald – Cowlitz PUD
Review of CY 2009 Aquatic fund Proposals

PACIFICORP ENERGY
A DIVISION OF PACIFICORP

825 NE Multnomah, Suite 1500
Portland, Oregon 97232

February 20, 2009

Memo to Lewis River Aquatics Coordination Committee representatives

From: Frank Shrier – PacifiCorp Energy and Diana Gritten-MacDonald – Cowlitz PUD

Subject: SA 7.5.3.2 - Review of CY 2008 Aquatic Fund Proposals

In September 2005 the Lewis River Aquatics Coordination Committee (ACC) established the Aquatics Fund – Strategic Plan and Administrative Procedures to meet obligations of the Lewis River Settlement Agreement. Since that time PacifiCorp Energy and the Public Utility District No. 1 of Cowlitz County (Cowlitz PUD) (collectively the Utilities) have been working under the Plan and with the ACC to identify and select aquatic resource projects for funding.

On December 11, 2008 the ACC selected eight aquatic project proposals for additional consideration. Shortly thereafter PacifiCorp Energy notified the project sponsors and requested full proposals by January 30, 2009 On January 27, 2009 the USDA Forest Service withdrew the East Fork Lewis River Instream Structures Steelhead project and on January 30, 2009 the Cowlitz Indian Tribe withdrew the Plas Newydd RM 0.5 Bar Plantings and LWD Structure project. Upon the due date, six full proposals were submitted. On February 3, 2009 PacifiCorp Energy provided copies of each final project proposal to the ACC. In addition, each applicant presented a PowerPoint at the ACC meeting on February 12, 2009 to present further project detail and address ACC questions and comments, if any. The proposed projects include:

Applicant	Proposed Project
USDA Forest Service	Pine Creek Instream Nutrient Enhancement
USDA Forest Service	Clear Creek Instream Habitat Restoration
USDA Forest Service	Pepper Creek Instream Habitat Restoration
Lower Columbia Fish Enhancement Group	North Fork Lewis River RM 13.5 Habitat Enhancement
Cowlitz Indian Tribe	Plas Newydd RM 2.0 Off-Channel Habitat Enhancement
USDA Forest Service	Spencer Peak Road Decommission

The Utilities subject matter experts have evaluated and scored the above proposals. Evaluations were conducted as outlined in the Aquatic Fund – Strategic Plan and Administrative Procedures (PacifiCorp and Cowlitz PUD, September 2005 – Revised January 2009). For ACC review, the Utilities have attached an Evaluation Matrix to this memo which identifies the average total score of the Utility reviewers for each Proposal and comments/questions (Attachment 1). Costs for each project are also included.

Individual Proposals have been previously provided to the ACC and are available upon request. They are also available for viewing on the Lewis River website at the following link: http://www.pacificorp.com/Article/Article85126.html

By this memo the Utilities provide the ACC with a list of the projects and our recommendation for funding in order of evaluation ranking.

1. **Clear Creek Instream Habitat Restoration** – Funding request is for $106,000. Utilities recommend: Funding

2. **Pepper Creek Instream Habitat Restoration** – Funding request is for $46,000. Utilities recommend: Funding

3. **Pine Creek Instream Nutrient Enhancement** – Funding request is for $41,000. Utilities recommend: Funding

4. **North Fork Lewis River RM 13.5 Habitat Enhancement** – Funding request is for $190,000. Utilities recommend: Funding

5. **Spencer Peak Road Decommission** – Funding request is for $33,000. Utilities recommend: Funding

The **Plas Newydd RM 2.0 Off-Channel Habitat Enhancement** is not recommended for funding by the Utilities, however, should the ACC select to fund the project the Utilities will not stand in objection.

The next step in the process is for the ACC to review and provide input on selection of projects to be funded. The Utilities welcome review and your comments including your agreement or disagreement with the Utilities evaluation, and ask that you provide them to PacifiCorp **by March 4, 2009.** This timing is so we may compile results and distribute the ACC's evaluation for discussion at our March 12, 2009 ACC meeting. To continue to meet the Funding Process Timeline as included in the Plan, the ACC should reach agreement on projects by mid-March.

Thank you for your attention to this matter, we look forward to receiving your input.

Lewis River Aquatic Fund - Utilities' Evaluation of 2008/2009 Project Proposals

No.	Applicant	Project Title	Project Schedule	Benefit	Bull Trout	Project Partners	Funding	Cost Share?	Consistency with Fund Objectives	Benefit to x4 Priority Fish	Scientific Validity x4	Success Potential x1	Cost Effectiveness x1	Total Score	Selected by Utilities for Full-Proposal	Comments
1	USDA Forest Service	Pine Creek Instream Nutrient Enhancement	2009/2010	This project would enhance nutrients in five miles of Pine Creek and two miles of Pine Creek tributary P8 using either salmon carcasses or analog style fish nutrient bricks.	Yes	Potential Partners: Fish First, Clark Skamania Fly Fishers, WDFW	$41,000	Yes	1. yes 2. yes, eventually 3. yes, eventually	14	10.66	2.66	1.83	29.16	**Y**	
2	USDA Forest Service	East Fork Lewis River Instream Structures Steelhead	2009/2010	To enhance the quality of fish habitat in the Upper East Fork Lewis River by creating instream structure. Objectives: • Improve the quality and amount of pool habitat • Improve the quality and amount of spawning gravel	No	USDA FS, Fish First, Mt. St. Helens Institute	$45,650	Yes	1. yes 2. yes 3. push						**Y**	
3	USDA Forest Service	Clear Creek Instream Habitat Restoration	2009/2011	This project would install large woody material (LWM) in Clear Creek starting from the mouth to 300 feet upstream from the bridge located on Forest Service 93, an area covering approximately 1.3 miles.	No	Gifford Pinchot National Forest, USFS, Mt. St. Helens Institute	$106,000	Yes	1. yes, eventually 2. yes, eventually 3. yes, eventually	14.66	14	3.33	2.17	34.16	**Y**	
4	USDA Forest Service	Pepper Creek Instream Habitat Restoration	2009/2011	This project would install large woody material (LWM) in Pepper Creek starting from the mouth to 300 feet upstream from the culvert located on Forest Service 9039, an area covering approximately 0.5 miles.	No	Gifford Pinchot National Forest, USFS, Mt. St. Helens Institute	$46,000	Yes	1. yes, eventually 2. yes, eventually 3. yes, eventually	12	14.66	2.84	2.5	32	**Y**	
5	Lower Columbia Fish Enhancement Group (LCFEG)	North Fork Lewis River RM 13.5 Habitat Enhancement	2009/2010	The ACC portion is to install approx. six large wood and rock structures along the left bank whereas the SRFB portion of this project will install engineered logjams and riparian plantings on the right bank.	No	LCFEG, Lower Columbia Fish Recovery Board (LCFRB), Sam Kysar, Bill Sheretz, Inter-Fluve	$190,000	Yes	1. yes 2. yes 3. yes	12.66	10.66	2.34	2	27.66	**Y**	
6	Cowlitz Indian Tribe	Plas Newydd RM 2.0 Off-Channel Habitat Enhancement	2009/2010	Plant a shrub/tree complex of 3,200 willows, cottonwood and red-osier dogwood along the water's edge and add 600 kilograms of salmon carcasses into the off-channel itself.	No	Plas Newydd, Cowlitz Indian Tribe	$50,000	No	1. yes 2. yes 3. yes	8	10	2.83	2	22.83	**N**	Utilities do not recommend project for funding; however would not stand in the way should the ACC select for funding.
7	Cowlitz Indian Tribe	Plas Newydd RM 0.5 Bar Plantings and LWD Structures	2009/2010	Implement a multi-faceted riparian enhancement plan which includes enhance the pioneering layer of site-appropriate tree and shrub species and install six LWD structures between the high-elevation know and true left bank of the river.	No	Plas Newydd, Cowlitz Indian Tribe, PacifiCorp Energy	$75,000	Yes - FS No - EL	1. yes 2. yes 3. yes						**Y**	
8	USDA Forest Service	Spencer Peak Road Decommission	2009	Decrease the risk of sediment delivery to Clear Creek and therefore prevent the degradation of fish habitat in the mainstem Clear Creek.	No	Gifford Pinchot National Forest, Gifford Pinchot Task Force	$33,000	Yes Relatively good cost share	1. yes, eventually 2. yes, eventually 3. yes	9.34	10.66	3	3	26	**Y**	
						Total Resource	**$ 425,000**									
						Bull Trout Funds	**$ 41,000**									
	Fund Objectives:	1. Benefit fish recovery throughout the North Fork Lewis River, priority to federal ESA-listed species														
		2. Support the re-introduction of anadromous fish throughout the basin														
		3. Enhance fish habitat in the Lewis River Basin, with priority given to North Fork Lewis River														

APPENDIX E

Appendix E

Memorandum dated April 2, 2009
Memo to ACC from McCune – PacifiCorp
CY 2008/2009 Lewis River Aquatic Fund Proposals – Additional Information Requests

PACIFICORP ENERGY
A MIDAMERICAN ENERGY HOLDINGS COMPANY

MEMORANDUM

DATE: April 2, 2009

TO: Aquatic Coordination Committee

FROM: Kim McCune

SUBJECT: CY 2008/2009 Lewis River Aquatic Fund Proposals – Additional Information Requests

The following is documentation of follow-up actions related to the Lewis River Aquatic Coordination Committee (ACC) March 12, 2009 meeting – discussion of calendar year 2008/2009 Aquatic Fund Proposals. This memo includes responses from the Lower Columbia River Fish Enhancement Group and the USDA Forest Service (specific to the Spencer Peak Road Decommission project). A response from the Cowlitz Indian Tribe and the Forest Service specific to the remaining projects is pending as of the date of this memorandum.

USDA Forest Service

To: Ruth Tracy, USDA Forest Service
From: Kimberly McCune, PacifiCorp Energy

Re: Spencer Peak Road Decommission

I've provided an additional question/clarification below that the ACC would like addressed prior to rendering a decision next month:

1. Several ACC Reps: Did this make it into the stimulus package award list?

I would be happy to collect your response and distribute to the ACC.

<u>USDA Forest Service Response: Spencer Peak Road Decommission</u>

In response to Kim's email of March 23rd copied below, here is the US Forest Service's response.

1. Did this make it into the stimulus package award list?
This road did not make the stimulus package.

Lower Columbia River Fish Enhancement Group

To: Gardner Johnston, InterFluve
Tony Meyer, Lower Columbia River Fish Enhancement Group (LCRFEG)
From: Kimberly McCune, PacifiCorp Energy

Re: North Fork Lewis River RM 13.5 Habitat Enhancement

Dear Gardner:

I've provided an additional question/clarification below which the ACC would like addressed prior to rendering a decision next month:

1. Several ACC Reps: Can project costs be reduced if LWD was available, and by how much?

I would be happy to collect your response and distribute to the ACC.

LCRFEG Response: North Fork Lewis River RM 13.5 Habitat Enhancement

In response to Kim's email of March 23rd copied below, here is the LCRFEG's response.

1. Can project costs be reduced if LWD was available, and by how much?
In response to your budget query, we feel the proposed budget could be reduced 25% if we utilize donated wood rather than purchasing it on the market. In fact, I have already secured some wood from Merwin Reservoir and from a Clark County parks project. Assuming we can gather more wood from Swift later this spring we should be fine.

Just to clarify, that would be a 25% reduction of the $90,000 for wood placement.

APPENDIX F

Appendix F

Email dated April 20, 2009
SA 7.5.3.2 - 2008/2009 Aquatic Fund Evaluation Matrix (dated April 15, 2009) - ACC Funding Approvals

McCune, Kimberly

From: McCune, Kimberly

Sent: Monday, April 20, 2009 9:41 AM

To: (michael_hudson@fws.gov); Adam Haspiel (ahaspiel@fs.fed.us); Athena Sanchez (pebbles@yakama.com); Bernadette Graham Hudson (bghudson@lcfrb.gen.wa.us); Bighouse, Donna (DFW); Bill Bakke; 'Brett Swift'; Bryan Nordlund; Clifford Casseseka; Curt Leigh; 'Darlene Johnson'; David Hu; Diana MacDonald; Doyle, Jeremiah; Eli Asher (easher@lcfrb.gen.wa.us); Eric Kinne (kinneebk@dfw.wa.gov); 'George Lee'; James Dixon (dixonjfd@dfw.wa.gov); 'Jeff Breckel'; Jim Byrne (byrnejbb@dfw.wa.gov); Jim Eychaner; 'Jim Malinowski'; 'Joel Rupley'; 'John Clapp'; John Weinheimer; Kathryn Miller (kmiller@tu.org); Lesko, Erik; LouEllyn Jones; Mariah Stoll-Smith Reese (M.Reese@tds.net); Maynard, Chris (ECY); Melody Tereski; Michelle Day; Nathan Reynolds; Neil Turner (turnenet@dfw.wa.gov); Olson, Todd; Pat Frazier (frazipaf@dfw.wa.gov); Paul Pearce (pearce@co.skamania.wa.us); Rich.Turner@noaa.gov (Rich.Turner@noaa.gov); Rudy Salakory (rsalakory@cowlitz.org); 'Ruth Tracy'; 'Ryan Lopossa'; Shannon Wills; Shrier, Frank; Steve Branz [branzs@ci.woodland.wa.us]; Steve Manlow (smanlow@lcfrb.gen.wa.us); Susan Rosebrough; Taylor Aalvik (taalvik@cowlitz.org); Timothy_Whitesel@fws.gov

Cc: 'Tony Meyer'; 'Gardner Johnston'

Subject: RE: SA 7.5.3.2 - 2008/2009 Aquatic Fund Evaluation Matrix (UPDATED), ACC Funding Approvals

Follow Up Flag: Follow up

Flag Status: Red

Attachments: 04152009 LR - ACC Lewis River AQ Fund final evaluation - 2008_2009.xls

Attn: ACC Participants & interested parties:

In accordance with Section 7.5.3.2 of the Lewis River Settlement Agreement PacifiCorp Energy and Public Utility District No. 1 of Cowlitz County (Cowlitz PUD) are pleased to announce the approval of the following 2008/2009 Lewis River aquatic fund projects:

Projects Selected for Funding:

Applicant	Approved Funding	Proposed Project
ᴀ Forest Service	$ 41,000 (BT) *	Pine Creek Instream Nutrient Enhancement
ᴀ Forest Service	$ 106,000	Clear Creek Instream Habitat Restoration
ᴀ Forest Service	$ 46,000	Pepper Creek Instream Habitat Restoration
ʳ Columbia Fish ıcement Group	$ 190,000	North Fork Lewis River RM 13.5 Habitat Enhancement
tz Indian Tribe	$ 50,000	Plas Newydd RM 2.0 Off-Channel Habitat Enhancement
ᴀ Forest Service	$ 33,000	Spencer Peak Road Decommission

* Bull Trout funds

In summary, the Aquatic Coordination Committee (ACC) selected to provide a total funding of $466,000 to four U.S. Forest Service projects, one Cowlitz Indian Tribe project and one Lower Columbia Fish Enhancement Group project.

The Utilities will proceed with submitting the *Aquatics Fund – Strategic Plan and Administrative Procedures - September 2005 and revised January 2009* and the *Lewis River Aquatic Fund Projects 2009 Annual Report* to the Federal Energy Regulatory Commission for their approval.

Thank you for your participation in the selection process and interest in Aquatic Fund Projects.

Kimberly L. McCune - PacifiCorp Energy
Hydro Resources Project Coordinator
Phone: 503-813-6078
Fax: 503-813-6633
kimberly.mccune@pacificorp.com

Lewis River AQ Fund ACC Evaluation for Funding 2008-09
April 15, 2009

ACC Decision 4/9/09 & 4/15/09		Applicant	Project Title	NMFS	WDFW	Fish First	LCFRB	Yakama Nation
Yes	1	USDA Forest Service	Pine Creek Instream Nutrient Enhancement	Favors Carcasses: if not available she will support analogs. **Supports project funding**.	Worthwhile project. Forest Service needs to provide monitoring to show response of macro invertebrate populations. We do have a concern about lack of structure to keep carcasses from remaining in desired location. Need to consider tethering in place. Favors analogs; can't move carcases between basins; can't use filet fish; analogs will provide more ability to add nutrients. Favors the use of analogs first but **will support funding either way**.	**Support the project**, however, how does this project fit in with the SA requirements? Favors use of analogs.	This project is located in Pine Creek and P8. Portions of Pine Creek are rated Tier 2 according to LCFRB's Habitat Strategy, and LCFRB recognizes the importance of nutrient enhancement as a Medium priority project type. We recommend that nutrient enhancement projects mimic natural processes as closely as possible. Thus, we recommend the use of carcasses, rather than analogs, until results of more detailed carcass analog studies have been obtained. Also, we recommend carcass treatment in the fall when fish would normally be returning. Dependent on further ACC discussion. Prefers closely mimicking natural process is of particular interest to LCFRB. Prefers use of carcasses and distribution in the Fall. **Tentatively support funding this project. 4/9/09: Supports Funding**	Prefers natural nutrient supply therefore project should use carcasses (after 3-week holding period from treatment of antiobiotics) and not analogs. **Supports funding this project.**
Project withdrawn 1/27/09	2	USDA Forest Service	East Fork Lewis River Instream Structures Steelhead					
Yes - but would like emphasis on reduction of costs	3	USDA Forest Service	Clear Creek Instream Habitat Restoration	**4/9/09: Does not support funding but will not stand in the way.**	Primary concern is whether or not we are addressing the key limiting factor in this reach. EDT highlights siltation as highest problem for most species in this basin. Production has generally been less than expected for the quality of habitat that exists in this basin. May be a water quality issue (e.g. heavy metal, copper). Should test water quality before implementing this project. Other concern is high cost of the project. Large part of the cost of this project is hauling of wood. WDFW would be more supportive if there was at least a 50% match for wood hauling costs. Finite funding source; perhaps wait a couple of years. 4/9/09: **Does not support funding but will not stand in the way**.	Cost is a concern. Large woody debris is beneficial to the system. FF **supports funding this project**.	This project is located in Clear Creek, a Tier 2 reach according to LCFRB's Habitat Strategy. The placement of large wood is rated as a High priority project type. We have some concerns over the size of wood and stability of the project over time. We also have some concerns over the source of large wood as it relates to project funds. Dependent on further ACC discussion of these issues. **Tentatively support funding this project. 4/9/09: Supports funding this project.**	Concerned about cost, timing and the species of large woody debris to be used for this project; however, **supports funding at this time.**
Yes - but need response to Yakaman Nation question	4	USDA Forest Service	Pepper Creek Instream Habitat Restoration	**4/9/09: Neutral but will not stand in the way of funding.**	Valuable project, especially for low costs.**Supports funding this project.**	**Supports funding this project.**	This project is located in Pepper Creek, a Tier 4 reach according to LCFRB's Habitat Strategy. The project also may have benefits to fish in the downstream each, Lewis 20, a Tier 1 reach, as off-channel habitat. The placement of large wood is rated as a High priority project type in Pepper Creek, and enhancement of off-channel habitat is rated a High priority project type in Lewis 20. We have some concerns over the source of large wood as it relates to project funds. Dependent on further ACC discussion of this issue, we tentatively support the funding of this project.**4/9/09: Supports funding this project.**	If it helps bring more spawning habitat into the system then **supports funding this project.**
Yes - 4/15/09	5	Lower Columbia Fish Enhancement Group (LCFEG)	North Fork Lewis River RM 13.5 Habitat Enhancement	Concerned about hight cost; undecided at this time. **4/9/09: Supports funding**	Valuable project that complements other projects utilizing other funding sources, such as SRFB. Multiple projects working in coordination increases value of this project. WDFW is concerned about the high cost of this project also. Again the bulk of the cost is associated with purchasing wood for this project. WDFW believes that PacifiCorp should actively manage the wood bank to provide wood for this project so as to lower costs. WDFW would consider this a top priority for the wood bank. Tentatively supports funding this project if it can find reduction in wood expenses. **4/9/09: Concerns about high price even with wood expense reduction but will support funding.**	Do not support funding this project due to high costs. **4/9/09: Do not support funding but will not stand in the way.**	This project is located in Lewis 5, a Tier 1 reach according to LCFRB's Habitat Strategy. The placement of large wood structures is rated a High priority project type. This project was reviewed by the LCFRB TAC during the 2008 SRFB funding cycle, and was recommended for SRFB funding. We feel the potential benefits of this project are sound, but would like the ACC to discuss the high cost of this project in relationship to available funds. Dependent on further ACC discussion,we tentatively support funding of this project.**4/9/09: Supports funding.**	Do not support funding this project due to high costs. **4/9/09: Do not support funding a lower river project at this time. 4/15/09: Concerned with high cost of project and prefers priority given to upper basin projects; however will not stand in the way of funding.**
Yes - reduction of costs where possible is strongly encouraged	6	Cowlitz Indian Tribe	Plas Newydd RM 2.0 Off-Channel Habitat Enhancement	**4/9/09: Supports funding**	Valuable project. Side channel habitat is extremely limited in this section of river, which makes this project even more valuable. Will support a variety of species at different life stages. Other similar projects in the area have provided positive results. Tribe will need to monitor changes in macroinvertebrate populations and salmonid usage of the area. Tentatively supports funding this project. **4/9/09: Neutral but will not stand in the way of funding.**	Concern about lack of protections for plantings. The landowner is a good land steward which will help the project**. Supports funding this project.**	This project is located in Lewis 1B Tidal, a Tier 4 reach according to LCFRB's Habitat Strategy. Riparian projects are a High priority project type in this reach, but the reach has Low potential for all NF Lewis populations. We feel the potential benefits of this project to NF Lewis populations are minimal, given its location in the tidally- influenced portion of the system. Temperature conditions in the side channel are not likely to be influenced by plantings, and the applicant noted that temperature is a concern in the side channel. The side channel would not function as winter refuge, as it is inundated under high flow conditions. Based on the information provided, we do not support the funding of this project. **4/9/09: Do not support but will not stand in the way of funding.**	**4/9/09: Supports funding**
Project withdrawn 1/30/09	7	Cowlitz Indian Tribe	Plas Newydd RM 0.5 Bar Plantings and LWD Structures					
Yes	8	USDA Forest Service	Spencer Peak Road Decommission	**4/9/09: Supports funding**	Will support this project, but are concerned about the number of decommissioning projects the ACC should fund. Commitment by Forest Service to search for other funding for road decommissioning projects reduced WDFW's concern on funding of this project. This is a valuable project and it addresses the most important need in the basin, reducing siltation.**Supports funding this project due to benefits for Clear Creek. 4/9/09: In the future WDFW would like FS to take care of own roads.**	Considerable in-kind contributions and project will reduce siltation. **Strongly supports funding this project.**	This project is aimed at benefitting Clear Creek, a Tier 2 reach according to LCFRB's Habitat Strategy. The project would be considered a 'Watershed Conditions and Hillslope Processes' type project, which is a High priority project type. In addition, Integrated Watershed Assessment (IWA) completed for the Recovery Plan indicates sediment conditions in downsteram subwatersheds are moderately impaired. Although there is no map included with the application, assuming the road and its failing culverts re in proximity to Clear Creek, the potential benefits of this project are sound. Dependent on further ACC discussion. **Supports funding this project after viewing location of the road.**	**4/9/09: Supports funding**

USFS	Cowlitz Indian Tribe	USFWS	Trout Unlimted	Utilities	Next Step
This project will provide increased nutrients to improve bull trout watershed conditions until reintroduction efforts begin. Prefer carcasses; not analogys. Concern about loss of carcasses since not staked in place. **Recommend funding in full.**	Prefers use of carcasses in the Fall; Concern about loss of carcasses during first high flow event. Prefers recreating the natural process. **Supports full funding.**	Strongly prefers carcasses; **if beneficial showing results in prior years of nutrient enhancement USFWS supports funding this project.**	What are plans for monitoring? TU does not have a preference of carcasses vs. analogs. **Support funding whether analog or carcasses.**	Prefer use of carcasses; tethering would not happen naturally and increase costs. Utilities**support funding this project.**	**Fish First**: How does this project fit in with the SA requirements. **Trout Unlimited**: What are plans for monitoring?
					1/27/09 - US Forest Service withdrew project to give them opportunity to monitor the current Rosgen style cross vane project they installed on the East Fork Lewis River in 2008. ACC informed via email on 1/27/09.
This project will provide improved rearing habitat for re-introduced juvenile salmonids, and will increase and enhance spawning opportunities for reintroduced adult salmonids. Intent is to restore ecosystem process, scope of project is large; timing is right for environmental compliance**Recommend funding in full.**	**4/9/09: Has not produced resident fish as expected. Neutral but will not stand in the way if others approve funding.**	Discussion of potential problems with water chemistry in system is worrisome but leaning toward supporting funding this project. **4/9/09: Supports funding.**	**Undecided at this time.**	The Utilities rated this project the highest of the projects; **support funding**	**WDFW** - would like completion of water quality study first. ACC should consider WQ testing of this stream before proceeding as a condition to project moving forward. 4/9/09: WDFW confirmed that no heavy metal testing on the project; high cost for testing; no considerable temperature issues. The bridge repair should be funded by whoever owns the bridge. ACC requests that project owner take efforts to reduce the actual cost of the project.
This project will provide improved rearing habitat for re-introduced juvenile salmonids, and will increase and enhance spawning opportunities for reintroduced adult salmonids - **Recommend funding in full**	**Supports funding this project.**	**Supports funding this project.**	**Tentatively favoring funding this project.**	**Supports funding this project.**	**Yakama Nation**: Is there a barrier? 4/9/09: Lee would like more information on the barrier including a description and photos.
This project is costly and the project proposal does not appear to demonstrate significant cost leveraging and partnership involvement. There is currently a high quality steelhead spawning area on the left bank in the project area and there is concern of damage to these spawning areas due to failure of proposed log structures under high flow conditions. The Forest Service recommends that the installation and resiliency of logjams to be installed under a separate LCFRB award in the right bank area of the project are monitored for stability under high flow conditions before additional significant funds are invested in this high risk area - Recommend partial funding.**4/9/09: Mild support but will not stand in the way of funding.**	Fits in with the big picture; approves funding if reduction in wood costs can be found. **4/9/09: Supports funding**	Concern about costs but with this type of project if does not seem outlandish. **Supports funding this project.**	**Absent**	**Supports funding this project in part** due to large nearby aquatic projects already receiving outside non-ACC funding. This project will enhance the other projects.	**Several ACC reps:** Can project costs be reduced if LWD was available, and by how much? Yakama Nation: Clarify if project will move forward without ACC funding. LCFEG: In response to ACC budget query, we feel the proposed wood placement budget could be reduced 25% if we utilize donated wood rather than purchasing it on the market. In fact, I have already secured some wood from Merwin Reservoir and from a Clark County parks project. Assuming we can gather more wood from Swift later this spring we should be fine. Just to clarify, that would be a 25% reduction of the $90,000 for wood placement.
USFS agrees with PacifiCorp and believes this project should have more in-kind cost sharing and include partners. Good project but not a high priority. Not decided at this time. **4/9/09: Neutral but will not stand in the way of funding.**	Good project; side channel habitat limited.**Supports funding this project.**	**4/9/09: Neutral but will not stand in the way of funding.**	**Absent**	Not confident this project wil provide much benefit to fish **Do not support funding this project but will not stand in the way**.	Document results of other projects success. Project owner should work to reduce the actual costs of the project.
This project will decrease sediment in Clear Creek watershed -**Recommend funding in full.**	Suggest putting this off for one year until determination of stimulus package which may provide funding for this decommission. Tentatively approve funding this project.**4/9/09: Supports funding. In the future Cowlitz Tribe would like FS to take care of own roads.**	Good project. **Supports funding.**	**Absent**	Coupled with the Clear Creek project it will compliment restoration in the area; would prefer not to use aquatic funds if on the stimulus package award list.**Approve funding this project.**	Did this make it into the stimulus package award list?4/9/09: USDA FS confirmed that this road did not make it into the stimulus package.

APPENDIX G

Appendix G

Pine Creek Instream Nutrient Enhancement

1. Project Title

2009 Nutrient Enhancement on Pine Creek

2. Project Manager

Adam Haspiel
Mt. St. Helens National Volcanic Monument
42218 NE Yale Bridge Road
Amboy, WA 98604
360-449-7833
360-449-7801 (fax)
ahaspiel@fs.fed.us

3. Identification of problem or opportunity to be addressed

Pine Creek was affected by the eruption of Mount St. Helens in 1980 when a lahar scoured the length of it, eventually depositing sediment into Swift Reservoir. As a result of the eruption, nutrient levels decreased due to loss of allochthanous materials and decreased primary production (Lower Lewis River Watershed Analysis (WA) 1995). Additionally, the floods of 1996 removed much of the river's newly established riparian vegetation. Dams built in the 1930's prevented anadromous fish from returning to spawn in the Upper Lewis River System, including Pine Creek. This greatly decreased the nutrient levels in affected streams over time by eliminating contributions of carcasses and eggs.

Nutrients added to Pine Creek and P8 in the form of carcasses would increase primary and secondary production, leading to increased feeding opportunities for bull trout. The areas along Pine Creek and P8 that could be reached by vehicles would be treated by hand, while inaccessible areas would be treated by helicopter. A total of six miles in Pine Creek, and two miles in P8 are available to be treated depending upon partnership funding. The project will benefit bull trout and all species of introduced anadromous fish.

This project compliments the 2006 and 2008 the Nutrient Enhancement projects funded by the ACC.

There are two methods that can be selected this year:

Method A is to use a helicopter to distribute carcasses to Pine Creek and P8 as in past projects. A typical carcass is good for approximately 3.5 weeks, at that time the nutritional value and remains of the carcass is gone. Carcasses would be distributed in early December.

Method B is to use carcass analogs. A helicopter would still be used to distribute nutrients, but we could distribute them during early spring when bull trout fry are emerging from gravel. Analogs will last 10 days before they are gone (personal comm.. with Mendy Harlow), so it would take two applications to make the product emulate carcasses. The analogs are produced by Skretting fish food company using a pacific whitefish. The nutritional value is similar to salmon carcasses or analogs. One pound of

analog material is equivalent to 5 lbs of carcass material. Current price is approximately $1.00 per lb. for analogs. The 16 mm size of the analogs could be distributed using a helicopter and hopper developed for aerial application of fertilizer pellets. This would greatly reduce personnel time.

One method should be chosen. I wrote the proposal up this way and wish the ACC group to decide which method (analogs or carcasses) we want to use.

4. Background

Provide information related to how this project fits into greater watershed objectives and any previously collected information at the project site (e.g. fish surveys, habitat delineation, etc)

The Lower Lewis River Watershed Analysis (WA) (1995), and "A study of ecological responses to the 1980 eruption of Mount St. Helens (2005), have identified Pine Creek and its associated floodplains and riparian areas as containing high priority restoration needs.

Coho salmon fry from adult live plants in Swift Reservoir in 2005 were located in Pine Creek and P8 by WDFW during 2006 bull trout surveys.

In December 2006, approximately 3,300 coho carcasses (26,400 lbs) were distributed in Pine Creek and Tributary P8 using a helicopter, and 100 carcasses were distributed by Fish First using a truck. Approximately 4.5 miles of stream were treated with carcasses. The helicopter was able to distribute them fairly evenly with most of them landing instream near the stream edge, some inadvertently landed on the stream bank and in the water. The helicopter distributed them so the majority of carcasses were in slower water areas (i.e. stream margins). Approximately 0.3kg/m² were placed. (Studies performed on streams on the Mt. Hood National Forest that were treated at a rate of 0.4kg/m² showed increases in biofilm production and coho fork lengths.) In December 2008 approximately 2,600 coho carcasses were placed in Pine Creek and P8 using a helicopter, and 100 carcasses were distributed by hand using a truck. 800 of the carcasses were placed in the first two miles of P8 and the 2,000 were placed in Pine Creek above the Forest Boundary.

5. Project Objective(s)

State the objectives of your proposal including how the project is consistent with Aquatics Fund objectives and recovery plans. Describe the technical basis for the objectives including the identification of any supporting technical references.

GOAL:

Enhance the quality of fish habitat in Pine Creek by:

- Improving the nutrient levels in Pine Creek and associated floodplains and riparian areas using carcasses.

Based on ACC direction in 2006, carcasses will be targeted for instream distribution only. Riparian vegetation may benefit slightly from this activity as nutrients are dispersed via animal activity, and helicopter misplacement.

Increased nutrient availability instream will provide increased primary production - leading to increased secondary production of aquatic macroinvertebrates, which juvenile bull trout and other salmonids feed upon. Pine Creek and especially P8 are important spawning tributaries for bull trout in the Upper Lewis River Sub basin. It is one of only a few streams (Rush Creek and possibly sections of Muddy River) with cold enough summer water temperatures to allow for successful bull trout spawning and egg incubation.

As an option carcass analogs could be used instead of or in conjunction with instream placement of carcasses.

This project addresses the following Aquatic Fund priorities.

Priority 1: *Benefit fish recovery throughout the North Fork Lewis River, with priority to federal ESA-listed species.*
Bull trout are listed as a threatened species under the ESA.
Steelhead trout are listed as a threatened species under the ESA
Coho salmon are listed as a threatened species under the ESA

Priority 2: *Support the reintroduction of anadromous fish throughout the basin.*
Nutrients will enhance the growth and production of anadromous fish.

Priority 3*: Enhance fish habitat in the Lewis River Basin-, with priority given to the North Fork Lewis River.*

WDFW has produced a report titled, (*Pacific Salmon and Wildlife Ecological Contexts, Relationships, and Implications for Management*); the report states that there is a 50% increase in the size of coho in streams enriched with salmon carcasses. The assumption is made that bull trout and steelhead juveniles will respond in similar fashion.

6. Tasks:
State the specific actions which must be taken to achieve the project objectives.
1) secure funding;
2) acquire required permits;
3) secure carcasses and/or carcass analogs;
4) enlist volunteer groups to help distribute carcasses by truck/hand where applicable; and,
5) contract to secure helicopter for distribution of carcasses and/or analogs to areas inaccessible to trucks or hand distribution.

Pre-project monitoring has already been occurring as part of the 2006 and 2008 project. Current monitoring includes analysis of macroinvertebrate samples. Monitoring could be expanded and follow a number of protocols including ones used by the BPA under a contract titled, "Assessment of Three Alternative Methods of Nutrient Enhancement on Biological Communities in Columbia River Tributaries."

7. Methods:
Describe methods to be used. When using Best Management Practices (BMPs) identify sources of BMPs and how they will protect resource values.

Several methods can/will be used to meet project objectives:

Adult carcasses from various hatchery reared and collected salmonids species will be distributed by hand in areas accessible to vehicles, inaccessible areas would be seeded by helicopter. The Gifford Pinchot National Forest completed a nutrient enhancement project in 2006 and 2008 using a helicopter. Many of the logistical problems were worked out at that time, which makes this proposal solid. Mt. Hood National Forest completed a similar project using a helicopter (see attached write-up from Mt. Hood), carcasses distributed in streams with wood floated less than ¼ mile before lodging up, in streams devoid of wood, carcasses floated further lodging around boulders or in slack waters or pool eddies. WDFW guidelines from their draft nutrient supplementation paper "Protocols and guidelines for distributing salmonids carcasses, salmon carcass analogs, and delayed release fertilizers to enhance stream productivity in Washington State" allow up to 1.9 kg/m². We are proposing to seed at the rate of 0.4 kg/m², this equates to approximately four tons per mile, or about 1000 fish per mile.

Carcass analogs are in an experimental stage and have been studied by a USGS research team in the Wind River Drainage (Analogs for this study were produced from salmon carcasses). Another study of analogs by Mendy Harlow with the Hood Canal Salmon Enhancement Groups using the Skretting Analogs is ongoing. The use of carcass analogs is an emerging technology. Fish carcasses and other fish processing waste materials are converted into a solid cake. The cake would be treated to kill associated fish pathogens. The advantage of the analog is that they are lighter in weight per unit of nutrient (when compared to carcasses) and they would present a much lower risk of pathogen transfer. The technology is currently in development and testing, and may be useful in meeting Proposal objectives if analogs can be obtained and permitted for use. If analogs are used there would be two applications approximately 10 days apart to emulate the amount of time carcasses are in the system. A personal conversation with Hal Michaels of WDFW revealed that they would prefer to use analogs if possible.

The project would take place in December of 2009 if carcasses are used and in April or May of 2010 if analogs are used. The December time period mimics natural coho spawning periods. Literature has shown increased benefits to fry may occur if nutrients are placed in spring, prior to fry emergence. This however, does not mimic natural spawning behavior in coho, and may cause other unforeseen problems in the ecosystem.

Species that occurred in Pine Creek prior to Dam construction include coho salmon, steelhead trout, and possibly chinook salmon. At this time due to WDFW restrictions, and/or tribal concerns, the only species available for nutrient enhancement are coho salmon.

Carcass use for Pine Creek is limited to Lewis River stocks. This may cause availability problems because other projects in the Lewis River Basin need carcasses too.

8. Specific Work Products

Identify specific deliverable results of the project. Project managers will be required to provide status updates with submission of project invoices.

The preferred method to measure deliverables is number/pounds of carcasses/carcass analogs distributed per stream segment. For project assessment purposes, stream segments can be ½ mile increments based on river miles. To verify amounts distributed, hatchery forms documenting numbers of carcasses supplied for the project would be on file at the Mt. St. Helens Ranger District. Invoices for purchases of carcass analogs, if used, will also be on file at Mt. St. Helens Ranger District.

9. Project Duration

a. Identify project duration. Note that duration of a project funded from Fiscal Year 20xx appropriations may extend beyond the end of the fiscal year.
b. Provide a detailed project schedule to include:
- Initiation of project.
- Completion date for each milestone or major task.
- Project close-out site visit (with PacifiCorp, Cowlitz PUD, and ACC representatives)

The duration of this project under the current Proposal would continue for one season. The Proposal would build on efforts from 2006 and 2008. It could continue for several more years, depending on the results and ACC funding. If the project continues for several years, it would be similar in scope and size to this years project; however, it would include minor changes as needed on an annual basis.

The project would take 7 to 21 days to complete. Nutrients would be distributed by helicopter over 4 to 5 miles of stream over a 2-5 day period. Hand distribution would concurrently with or just after helicopter distribution and should be completed by the end of January.

Access may be limited during the months of December and January due to snow, if this is the case, helicopter distribution may occur in areas that were initially identified for hand distribution.

A project closeout meeting would occur at the soonest ACC meeting following project completion and access is available.

10. Permits

NEPA- The Forest Service completed NEPA for this project in 2006. NEPA documents allow us to continue this as an ongoing project for another 5 years.

WDFW- An approval form to distribute both carcasses and carcass analogs will be submitted to WDFW when funding is secured. WDFW coordinates with Department of Ecology (DOE) as part of the approval process.

DNR- A Land Use License from Washington DNR will need to be obtained to use Swift Reservoir boat launch parking area as a helicopter landing and staging area. Both of these permits were secured for the 2006 and 2008 project, and should be easily obtainable for an ongoing project.

Identify any applicable permits and resource surveys required for project. Please include timeline for obtaining and any action taken to-date. Applicant will be responsible for securing all such necessary permits. Landowner permission is required prior to finalization of a Funding Agreement with PacifiCorp. On-the-ground (dirt moving) projects will be required to be in compliance with Sections 401 and 404 of the Clean Water Act, Sections 7 and 10 of the Endangered Species Act, and the National Historic Preservation Act of 1966, as well as Department of the Interior regulations on hazardous substance determinations. Project site surveys may be required in order to comply with these and other regulations.

Land ownership in Pine Creek is comprised of federal and private lands. The Forest Service manages approximately 2 miles of stream in the area proposed for carcass seeding. Olympic Resources Management owns approximately 4 miles of stream in the proposed project area, and Three Rivers Recreational Area owns about 1 mile of stream near the mouth of Pine Creek. Olympic Resources Management and Three Rivers Recreational Area landowners have been contacted and wish to participate in the project.

11. Matching Funds and In-kind Contributions

If applicable, describe any matching funds and/or in-kind contributions that you have secured or have requested through other means. Matching funds are those funds contributed to the project from other funding sources. In-kind contributions may include donated labor, materials, or equipment. Please be specific in your description of contributions and use of volunteers (e.g. ACE construction is donating 8 hours of backhoe operation including operator).

Partner	**Contribution**	**Funds**
Forest Service	Project development, Contracting, Permitting, Monitoring	$12,000 In-kind
Clark Skamania Fly Fishers	Labor for carcass collection, Nutrient distribution, Vehicle use 200 miles	$2,000 In-kind
Mt. St. Helens Institute	Monitoring	$3,000 In-kind
Olympic Resource Management	Agreements, road use	$1,000 In-kind

12. Professional Review of Proposed Project

It is encouraged that the proposal be reviewed by an applicable resource professional prior to submission for funding. Focus of such review should be on biological value and proposed methodology. Please note who completed the review and contact information. This does not have to be a third party review, and can come from someone associated with the sponsoring organization.

This project proposal was reviewed by Gifford Pinchot National Forest (GPNF) Hydrology program manager, Ruth Tracy.

13. Budget

Provide a detailed budget for the project stages (Final design, Permitting, Construction, Monitoring/Reporting). Include:
Personnel costs
Labor and estimated hours
Operating expenses
Supplies and materials
Mileage
Administrative overhead
If in-kind contributions have been acquired, please note contributions according to project stage within the budget.

Pine Creek Nutrient Enhancement
Helicopter **CARCASS**

	Total	NEPA	Final designs	Project Mgmt.	Construction	Monitoring/Labor /Reporting
Personnel Costs						
FS - Zone Team or Contract						
FS –Fish Bio and Hydrologist			$5,000 (IK)			
FS - Fish Bio and Hydrologist				$2,000(IK) $2,000 (ACC)		$5,000 (ACC)
FS - Contract administrator -					$3,000 (IK)	
FS - Contract Specialist					$2,000 (IK)	
Clark Skamania FlyFishers						$2,000 (IK)
Pope & Talbot Timber (ORM)						$1,000 (IK)
Mt. St. Helens Institute						$3,000 (IK) $2,000 (ACC)
Contract Payables						
Helicopter Contract,					$28,600 (ACC)	
Refrigerated Trailer Rental and mobilization					$1,400 (ACC)	
Forklift Rental and mobilization					$1,000 (ACC)	
Supplies					$ 1000 (ACC)	
Administrative Overhead		$3,500(IK)	$1,500 (IK)			
Total ACC Funds	**$41,000**			**$2,000**	**$32,000**	**$ 7,000**
Total FS Funds	*$12,000*		*$5,000*	*$2,000*	*$5,000*	
Total other Partner Funds	*$8,000*					*$8,000*
Project Total	***$60,000***					

FS personnel estimated as $300/day.

This project can be implemented with funds solely acquired from the ACC and Forest Service in kind contributions allowing for four to five miles of carcass seeding, if funds from other groups such as LCFRB come through we can treat up to eight miles. Any other funds acquired will be used to extend the area of distribution.

PINE CREEK NUTRIENT ENHANCEMENT HELICOPTER COST SHEET for CACRCASS

Prepared by R. Pankratz / Helicopter Manager

Assumptions:

1) Approximately 4 tons of fish carcasses per mile to be distributed along Pine Creek by air for four river miles.
2) Calculations based upon utilization of Northwest Helicopters Jet Ranger (206 B-III) with custom fish bucket
3) No cost factors considered for delivery of fish to operations site
4) No cost factors considered for any personnel other than those required to accommodate safe and effective helicopter delivery of fish. Positions considered are helicopter manager, helitack, road guards, streamside safety monitors, forklift operators, fish loaders.
5) Two weathered out days have been factored in.
6) Swift boat launch will serve as the heliport and staging area for fish carcasses

7) Average weight per fish carcass is ten pounds
8) It's an approximate 1 mile flight from the Swift boat launch heliport to the confluence of the Pine Creek and Lewis River
9) Personnel salary will include necessary aviation safety and logistical planning
10) Helicopter rates derived from Region 6 light helicopter contract with cost modifications addressing this operation
11) During proj. imp. phase 12 hour days are accounted for to allow for daily prep time, travel times, daily clean-up, contract docs etc. Objective is to effectively use aircraft resource during available windows with salary costs secondary to aircraft logistics
12) Helicopter mobilization calculated from Olympia, Washington
13) Mobilization, recon and operational flight time are all accounted for in separate line items
14) A scale is identified for use at heliport as required by regional aviation oversight
15) No vehicle costs assumed for project support equip.-will need type 6 engine, several pickups, forklift, equip. trailer and tow rig
16) No cost listed for rental of refer trailer to hold fish

Estimated costs are developed below. . .

COST ITEM	UNIT	# OF UNITS	COST PER UNIT	COST ITEM TOTAL
Helicopter Manager developing project aviation safety plan and logistical planning	day	6	$271.00	$1,626.00
Helicopter Manager daily implementation oversight	day	5	$271.00	$1,355.00
Helicopter manager overtime	hour	20	$42.00	$840.00
Helicopter manager hazard pay for actual flying days	hour	24	$6.97	$167.28
Helitack for daily operations = one GS-6	day	4	$199.00	$796.00
GS-6 overtime	hour	16	$24.44	$391.04
GS-6 hazard pay for actual flying days	hour	24	$4.07	$97.68
Helitack for daily operations = two GS-5	day	8	$130.00	$1,040.00
GS-5 overtime	hour	32	$21.21	$678.72
GS-5 hazard pay for actual flying days	hour	48	$3.54	$169.92
Streamside monitoring personnel = two GS-5	day	8	$130.00	$1,040.00
GS-5 overtime	hour	32	$21.21	$678.72
Road guards for 25 road = two GS-5	day	8	$130.00	$1,040.00
GS-5 overtime	hour	32	$21.21	$678.72
Fork lift operator GS-9	day	4	$271.00	$1,084.00
GS-9 overtime	hour	16	$42.00	$672.00
Fish handlers/loaders two GS-9	day	4	$271.00	$1,084.00
GS-9 overtime	hour	32	$42.00	$1,344.00
Helicopter mobilization flat fee	ea	1	$555.00	$555.00
Helicopter demobilization flat fee	ea	1	$555.00	$555.00

Helicopter hourly cost project recon	hour	0.5	$865.00	$432.00
Helicopter hourly cost project implementation	hour	12	$865.00	$10,380
Helicopter daily guarantee	day	1	$1,000.00	$1,000.00
Fuel truck mileage fee	mile	620	$1.40	$868.00

$
$28,573.00

Total cost estimate for aviation component of fish carcass placement / Pine Creek

Personnel Budget CARCASS				
Item	**Personnel**	**Estimated Days/units**	**Cost Per Unit**	**Total**
Project Management	Fish Biologist Fish Technician	2 4.6	$300 per day per person	$2,000
Materials & Supplies	Field Equipment, Notebooks, Misc Supplies			$1,000
Monitoring	Fish Biologist Fish Technician Transportation Macroinvertebrate analysis	3 4.3 600 $2,500	$300 per day per person $0.50	$2,200 $300 $2,500
MSHI Monitoring	Supervisor Assistant Volunteers Transportation	1 2 5 2,000	$300 per day per person $20 $0.50	$900 $100 $1,000
Total				**$10,000**

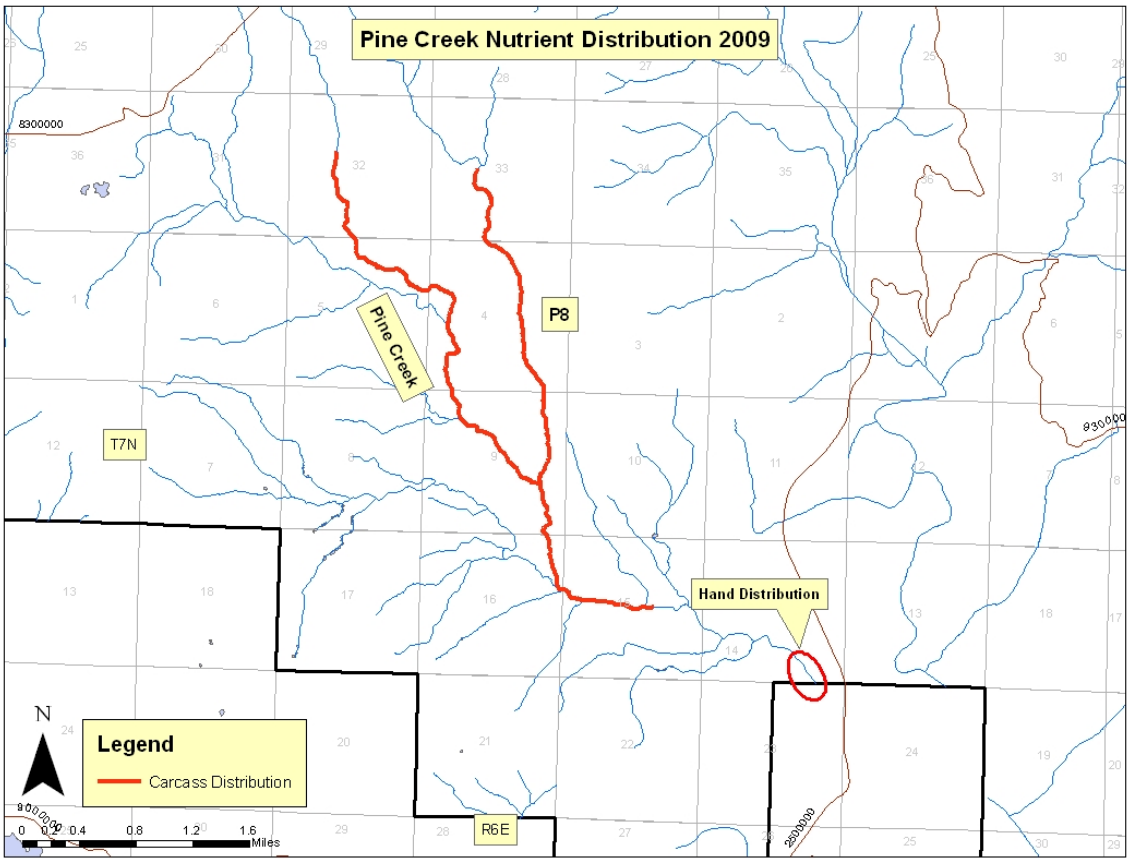
Pine Creek Nutrient Enhancement
Helicopter **ANALOGS**

	Total	NEPA	Final designs	Project Mgmt.	Construction	Monitoring/Labor /Reporting
Personnel Costs						
FS - Zone Team or Contract						
FS –Fish Bio and Hydrologist			$5,000 (IK)			
FS - Fish Bio and Hydrologist				$2,000(IK) $2,000 (ACC)		$5,000 (ACC)
FS - Contract administrator -					$3,000 (IK)	
FS - Contract Specialist					$2,000 (IK)	
Clark Skamania FlyFishers						$2,000 (IK)
Pope & Talbot Timber (ORM)						$1,000 (IK)
Mt. St. Helens Institute						$2,000 (IK) $2,000 (ACC)
Contract Payables						
Helicopter Contract with analogs					$20,000 (ACC)	
Refrigerated Trailer Rental and mobilization						
Forklift Rental and mobilization						
Supplies					$ 1,000 (ACC)	
Administrative Overhead		$3,500(IK)	$1,500 (IK)			
Total ACC Funds	**$30,000**			**$2,000**	**$21,000**	**$ 7,000**
Total FS Funds	*$12,000*		*$5,000*	*$2,000*	*$5,000*	
Total other Partner Funds	*$8,000*					*$8,000*
Project Total	***$48,000***					

FS personnel estimated as $300/day.

EQUIPMENT Budget ANALOG			
Item	**Cost per unit**	**Number of units**	**Total**
Helicopter	$865	8	$6,920
Fuel Truck	2.10 mile	600	$1,260
Laborers	$20/hour	59	$1,180
Analogs	$2,128 ton	5	$10,640
Total			**$19,940**

Personnel Budget ANALOG				
Item	**Personnel**	**Estimated Days/units**	**Cost Per Unit**	**Total**
Project Management	Fish Biologist Fish Technician	2 4.6	$300 per day per person	$2,000
Materials & Supplies	Field Equipment, Notebooks, Misc Supplies			$1,000
Monitoring	Fish Biologist Fish Technician Transportation Macroinvertebrate analysis	3 4.3 600 $2,500	$300 per day per person $0.50	$2,200 $300 $2,500
MSHI Monitoring	Supervisor Assistant Volunteers Transportation	1 2 5 2,000	$300 per day per person $20 $0.50	$900 $100 $1,000
Total				**$10,000**


Pine Creek Nutrient Distribution 2009
8300000
P8
Pine Creek
T7N
R6E
Hand Distribution
N
Legend
Carcass Distribution
0 0.2 0.4 0.8 1.2 1.6
Miles

APPENDIX H

Appendix H

Clear Creek Instream Habitat Restoration

1. **Project Title**

Clear Creek Instream Habitat Restoration

2. **Project Manager**

Adam Haspiel
Adam Haspiel
Fish Biologist
Mt. St. Helens National Volcanic Monument
42218 NE Yale Bridge Road, Amboy WA 98601
ahaspiel@fs.fed.us
360-449-7833

3. **Identification of problem or opportunity to be addressed**

The lower 1.3 miles of Clear Creek lacks large woody material and provides minimal structure for fish habitat. 900 pieces of Large Wood Material would be added to the lower 1.3 miles to create pool habitat and provide complex structure to the stream. This would create and improve rearing opportunities for chinook, coho salmon and steelhead trout. In addition it would improve spawning opportunities for reintroduced adult chinook and coho salmon and steelhead trout. Wood for this project would come from USFS lands and from Swift Reservoir cleaning operations. Most of the woody material will be placed downstream of the 93 road bridge to avoid potential problems with both the bridge and the proposed acclimation pond.

4. **Background**

Clear Creek is 14.2 miles long and is a class II tributary to Muddy River. It enters the Muddy River at RM 4.8 (see map). It has a watershed size of 22,720 acres. A level II FS stream survey was performed on the lower two miles in August 1996 following the floods of January of that year. In 1996, 24.8 pieces of Large Woody Debris (LWD) per mile was documented, well below the regional FS standard of 80 pieces per mile. The pool count was 11.9 pools per mile, also below the regional FS standard of 96 pools per mile, however the pools tended to be long scour pools. Pools made up 24% of total channel area, an ideal pool riffle ratio is 50-50. Electrofishing was conducted as part of the survey and only rainbow trout were documented, however earlier surveys documented cutthroat trout as well. On September 16th, 2008 Forest Hydrologist Ruth Tracy and District Fisheries Biologist Adam Haspiel performed an ocular survey of the lower 1.3 miles of Clear Creek. A lack of LWD was confirmed, however the few pools that were present were formed by deposits of LWD. Juvenile coho salmon were observed in each of the existing pools. In August 2007 the Forest Service TEAMS Enterprise unit conducted a multidisciplinary riparian and stream channel corridor assessment of the mile located upstream of the bridge crossing the 93 road. As part of this survey they also walked the lower mile of Clear Creek and documented the need to implement stream restoration activities including LWD placement, road removal and riparian planting and thinning.

This project would fit into restoration objectives for the Clear Creek watershed which includes restoring watershed functionality. The Forest Service recently completed an EA to allow for removal of roads affecting riparian areas, removal of roads creating a risk of sediment delivery to Clear Creek, and closure of dispersed campsites that affect fish habitat and riparian values. A Forest Service Stewardship timber sale know as Wildcat is currently being planned for this watershed. This type of timber sale can allow for some of the restoration work to be performed

as part of the sale and provide us with an opportunity to leverage funding to get the most bang for our buck.

PacifiCorp is proposing an acclimation pond for juvenile chinook within this project area. These juveniles will benefit from increased pool habitat and complexity as they migrate downstream.

Current fish use of Clear Creek includes low numbers of rainbow trout (FS Stream Survey 1996). Juvenile coho salmon were observed in this reach of Clear Creek by Adam Haspiel in September 2008

The Lewis River Synthesis tool developed by the Aquatic Coordination Committee (ACC) gave this section of Clear Creek a medium rating for habitat restoration potential for coho and steelhead and listed the following concerns: High concern for lack of habitat diversity and quantity, sediment load and low availability of food. Moderate concern for stream flow (Environmental Diagnosis and Treatment (EDT). The Lower Columbia Fish Recovery Board (LCFRB) Salmon Recovery Plan rated this as a Primary stream for coho population recovery and also thought the restoration potential was high. For steelhead LCFRB rated this as a Continuing population recovery and having low restoration potential.

Community Involvement.
The Mount St. Helens Institute (MSHI) is currently creating a Youth Stream Team program consisting of students interested in the environment. These students come from diverse backgrounds, some are at risk youths, and others are from urban environments. This is part of the overall goal of getting "Kids Back in the Woods" program developed at both a National and State level. This proposal includes a request for $4,000 to help with transportation and on the ground supervision and guidance of these students. They will help with the monitoring of the project, including using survey equipment and photo documentation. In addition two college level interns from the MSHI will assist in project monitoring and implementation.

Nexus to the Projects: This project has a clear connection to the hydropower projects. It is upstream of all projects and is a tributary to the Muddy River. Prior to dam construction the Muddy River Watershed was a major producer of anadromous salmonids in the Lewis River.

Fund Objectives: This project meets the funds objectives in the following manner.
Priority 1: *Benefit fish recovery throughout the North Fork Lewis River, with priority to federal ESA-listed species.*
Lower Columbia River Chinook Salmon are listed as a threatened species under the ESA.
Lower Columbia River Steelhead Trout are listed as a threatened species under the ESA
Lower Columbia River Coho Salmon are listed as a threatened species under the ESA

Priority 2: *Support the reintroduction of anadromous fish throughout the basin.*
Large woody material will increase pools, providing rearing opportunities for juveniles, and enhanced spawning opportunities for adult anadromous fish. This project will increase the chances for success when anadromous fish are reintroduced into the basin. Small numbers of juvenile coho salmon from habitat preparation activities are already using this section of creek for rearing.

Priority 3*: Enhance fish habitat in the Lewis River Basin, with priority given to the North Fork Lewis River.*

Large woody material will directly enhance and increase fish habitat in the North Fork Lewis River Basin for re-introduced anadromous fish. LWD will create pools, provide stream structure and diversity, and create optimal spawning locations.

Provide information related to how this project fits into greater watershed objectives and any previously collected information at the project site (e.g. fish surveys, habitat delineation, etc)

5. Project Objective(s)

The main objectives of this project are to create rearing pools for juvenile salmonids, to improve spawning opportunities and increase habitat complexity in the lower 1.3 mile of Clear Creek. Many studies have documented that restoration projects using LWD increase habitat complexity and biomass throughout the restored reach. Cederholm found an increase in pool area of 33% to 74 % following restoration activities in North Fork Porter Creek, a coastal tributary to the Chehalis River, WA. Fish were frequently found spawning near treated sites, and coho winter density increased 20-fold in the engineered sites (Cederholm et al 1997). A paper by Roni, et al reviewing numerous stream restoration projects using LWD found that juvenile coho salmon often had a significant increase in numbers following restoration projects. In addition spawning gravel associated with engineered log jams in Lobster Creek increased suitable spawning habitat by 115%. Sixty percent of the steelhead and 56% of coho salmon adults in East Fork Lobster Creek spawned within 5 meters of structures (Roni, et al 2002).

State the objectives of your proposal including how the project is consistent with Aquatics Fund objectives and recovery plans. Clearly describe the biological benefits and expected outcome of your project. Describe the technical basis for the objectives including the identification of any supporting technical references. Identify biological metrics to help quantify the benefit of the project.

6. Tasks

Finalize project design
Complete NEPA compliance on project
Secure Wood (Wildcat TS and Swift Reservoir)
Develop contract
Implement project
Pre and Post project monitoring-longitudinal profile, cross sections, photo points, pebble counts, snorkel or electrofishing surveys.

State the specific actions which must be taken to achieve the project objectives.

7. Methods

Trees will be transported to the site leaving them as long as possible.
Log trucks will deliver trees to the site.
A front end loader will be used to transport trees from road to structure locations in the creek. An excavator will be used to excavate pools and place the trees. Ends of trees will be buried in streambanks and substrate to anchor them. Best Management Practices (BMPs) listed in the Gifford Pinchot National Forest Plan will be used along with Design Criteria identified in the 2007 NOAA and USFWS Programmatic Biological Opinions, and the USFS and WDFW MOU. These BMPs swill protect resource values by ensuring we follow instream work windows, minimize sediment input during implementation, provide oil sorbent booms to capture oil spills, eliminate the risk of spreading noxious weeds, etc.

Describe methods to be used. When using Best Management Practices (BMPs) identify sources of BMPs and how they will protect resource values.

8. Specific Work Products

Deliverables include:
Number of trees placed
Number of pools created
Number of structures created

Identify specific deliverable results of the project. Project managers will be required to provide status updates with submission of project invoices.

9. Project Duration

a. Monitoring for this project will begin during the summer of 2009, project implementation will occur in 2010, and post project monitoring will occur for several years on annual basis after that. As-built documents will be completed by December 31st, 2010. An initial report documenting fish response to the structures will be completed by December 31st 2011, and then amended on an annual basis thereafter.

Identify project duration. Note that duration of a project funded from Fiscal Year 20xx appropriations may extend beyond the end of the fiscal year.

b. Provide a detailed project schedule to include:

NEPA-Summer	2009/Winter 2010
Project Implementation	July 2010
Project site visit	August 2010
Pre-Project Monitoring	July 2009 & July 2010
Post Project Monitoring	July 2011 and beyond.
Project Close-out visit	August 2011

Initiation of project.
Completion date for each milestone or major task.
Project close-out site visit (with PacifiCorp, Cowlitz PUD, and ACC representatives)

10. Permits

Once NEPA is complete our MOU with WDFW precludes us from securing any other state permits. Our Forest Service Regional Programmatic Restoration Biological Opinions cover this type of work. We will notify USFWS and NOAA when NEPA is complete and coordinate activities with them. The USFS is the landowner for the Clear Creek Project.

Identify any applicable permits and resource surveys required for project. Please include timeline for obtaining and any action taken to-date. Applicant will be responsible for securing all such necessary permits. Landowner permission is required prior to finalization of a Funding Agreement with PacifiCorp.

On-the-ground (dirt moving) projects will be required to be in compliance with Sections 401 and 404 of the Clean Water Act, Sections 7 and 10 of the Endangered Species Act, and the National Historic Preservation Act of 1966, as well as Department of the Interior regulations on hazardous substance determinations. Project site surveys may be required in order to comply with these and other regulations.

11. Matching Funds and In-kind Contributions

Matching Funds-

USFS will contribute materials for the project in the form of Large Woody Material

	$90,000 Trees
Ecotrust	**$40,000 Cash**

In-Kind-

USFS	**$15,000**
MSHI	**$4,000**

If applicable, describe any matching funds and/or in-kind contributions that you have secured or have requested through other means. Matching funds are those funds contributed to the project from other funding sources. In-kind contributions may include donated labor, materials, or equipment. Please be specific in your description of contributions and use of volunteers (e.g. ACE construction is donating 8 hours of backhoe operation including operator).

12. Peer Review of Proposed Project

This proposal was reviewed by David Hu, Gifford Pinchot Forest Fish Biologist and Ruth Tracy, Gifford Pinchot National Forest Hydrologist prior to submittal.

13. Budget

Clear Creek Instream Habitat Restoration Budget

	Total	NEPA	Final designs	Project Mgmt	Construction	Monitoring/Labor /Reporting/Coord.
Personnel Costs						
FS - Zone Team or Contract		$8,000 (ACC)				
FS –Fish Bio and Hydrologist			$4,000 (IK) $20,000(ET)			
FS - Fish Bio and Hydrologist				$3,000 (ET)		$7,000 (ET)
FS - Contract administrator -					$5,000 (IK) $10,000 (ET)	
FS - Contract Specialist					$2,000 (IK)	
Mt St. Helens Institute						$4,000 (IK)
Mt. St. Helens Institute Community Education						$4,000 (ACC)
Materials						
Forest Service 900 Pieces of LWM					$90,000 (IK)	
Contract Payables						
Excavator/Front End Loader Contract					$22,000 (ACC)	
Logging and hauling of trees					$60,000 (ACC)	
Skidder Contract					$8,000 (ACC)	
Materials and Supplies				$ 2,000 (ACC)	$2,000 (ACC)	
Administrative Overhead		$3,500(IK)	$1,500 (IK)			
Total ACC Funds	**$106,000**	**8,000**		**2,000**	**$92,000**	**$4,000**
Total FS Funds	*$106,000*	*$3,500*	*$5,500*		*$97,000*	
Total Ecotrust funds	*$40,000*		*$20,000*	*$3,000*	*$10,000*	*$7,000*
Total other Partner Funds	*$4,000*					*$4,000*
Project Total	***$256,000***					

FS personnel estimated as $300/day.

Clear Creek expanded budget 2008

Item	Personnel	Estimated Days/units	Cost Per Unit	Total
NEPA Environmental Assessment required by Federal Law	Fish Biologist Wildlife Biologist Hydrologist Botanist Archeologist Soil Scientist Recreation Forester NEPA Coordinator	5 2 5 5 5 1 0.5 0.5 2.6	$300 per day per person	$8,000
Materials & Supplies	Field Equipment, Notebooks, Misc Supplies			$2,000
MSHI Monitoring	Supervisor Assistant Volunteers Transportation	3 3 10 4,000	$300 per day per person $20 $0.50	$1,800 $200 $2,000
Total				**$14,000**

Item	Cost per unit	Number of units	Total cost
Excavator	$200/hour	100	$20,000
Excavator Move in/out	$2000	1	$2,000
Skidder	$150/hour	40 hours	$6,000
Skidder Move in/out	$2,000		$2,000
Logging and Hauling cost: Estimate from Chilton Logging	$60,000	1	$60,000
Materials and Supplies			$2,000
Equipment Total			**$92,000**

From Chilton Logging
Ball Park Estimate Received on January 21, 2009

900 trees will take:
11.5 days to log
Logging costs are $3,900 per day
They can log 4 loads per day
The can haul about 20 pieces per load
Total of about 45 loads
They will need to use a skidder to move trees from road to Clear Creek
$44,800 to Log
$15,200 to haul from unit (Wildcat Timber Sale Unit) 1 mile to Clear Creek
$60,000 Total

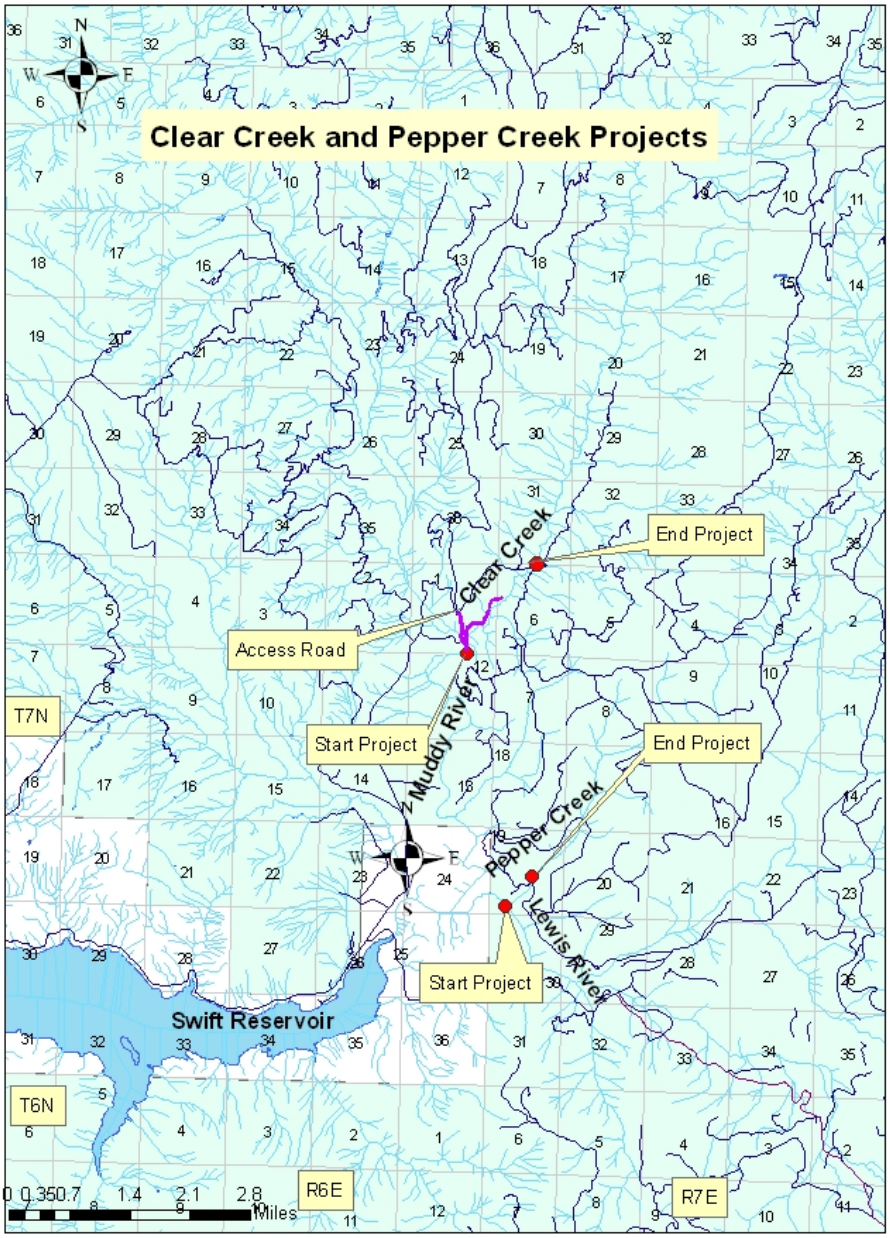
14. Photo Documentation (<u>Per National Marine Fisheries Service's Biological Opinion for Relicensing of the Lewis River Hydroelectric Projects):</u>

Photo-documentation is included as part of the monitoring process, it will include all items listed below.

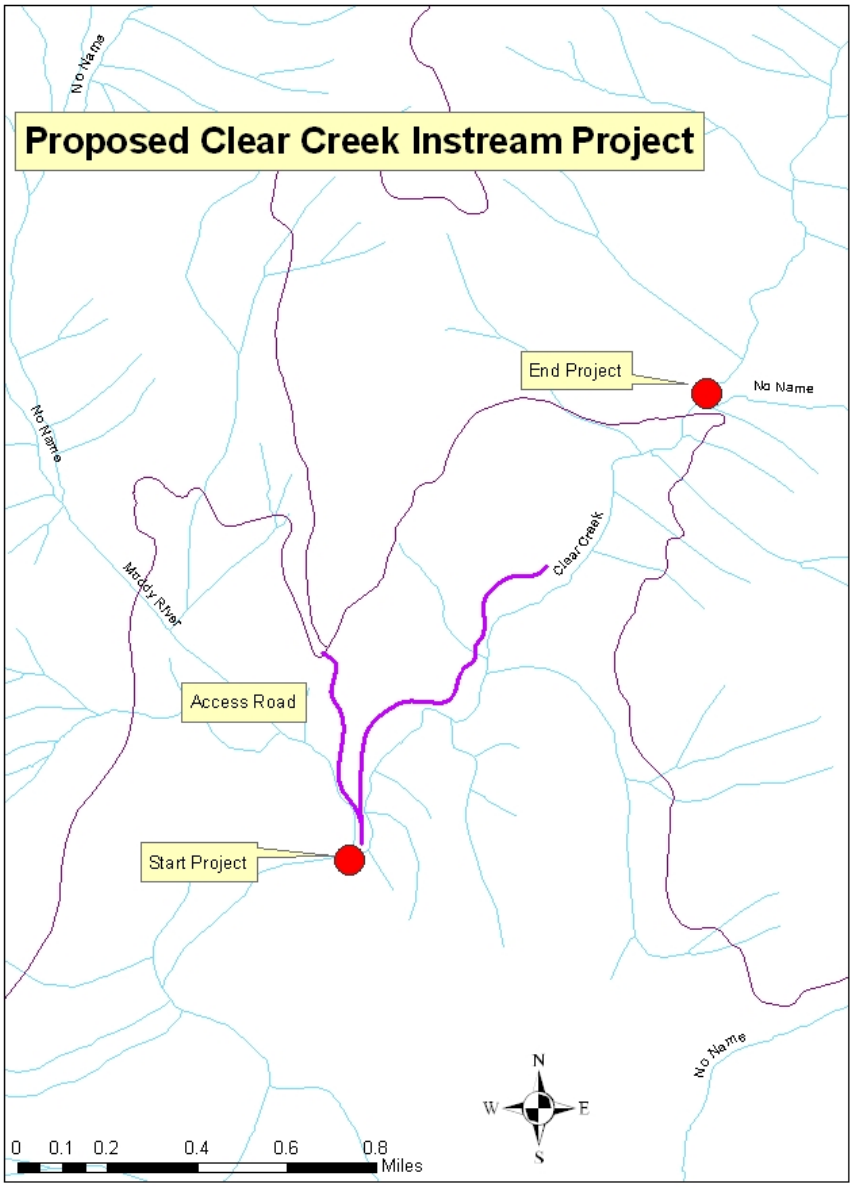
a. *Include general views and close-ups showing details of the project and project area, including pre- and post-construction.*

b. *Label each photo with date, time, project name, photographer's name, and documentation of the subject activity.*

Photos of existing LWD in Clear Creek. Notice pools forming from LWD.



Map 1: Project Vicinity Map



Map 2: Project location Map

Bibliography.

Abbe, T. B. and D. R. Montgomery. 1996. Large woody debris jams, channel hydraulics and habitat formation in large rivers. Regulated Rivers: Research and Management 12:201-221.

Cederholm, C.J. , R.E. Bilby, P.A. Bisson, T.W. Bumstead, B.R. Fransen, W.J. Scarlett, and J.W. Ward. 1997. Response of juvenile coho salmon and steelhead to placement of large woody debris in a coastal Washington stream. North American Journal of Fisheries Management 17:947-963, 1997.

Ronni, Phillip, T. J. Beechie, R.E. Bilby, F.E. Leonetti, M. M. Pollock, and G. R. Pess. 2002. A review of restoration techniques and a hierarchical strategy for prioritizing restoration in pacific Northwest Watersheds. North American Journal of Fisheries Management 22:1-20, 2002.

Attachment

ACC Comments and Questions on Pre-Proposals
USDA Forest Service - Pine Creek Instream Nutrient Enhancement, East Fork Lewis River Instream Structures Steelhead, Clear Creek Instream Habitat Restoration and Pepper Creek Instream Habitat Restoration

Note: Comments and questions that follow are directly from emails and discussions by the ACC.

All projects: Proposals should demonstrate that the project is scientifically supported, has a clear nexus to the Lewis River hydroelectric projects, and clearly supports the Aquatic Fund objectives. Please prepare the document with the assumption that the reader is not familiar with the Lewis River basin, its issues, or its resources.

Clear Creek Instream Habitat Restoration
Recommend USFS include a stronger description of benefiting species and limiting factors from the Recovery Plan and improve description of current and proposed habitat.

Recommend the USFS include a stronger description of benefiting species and limiting factors from the Recovery Plan; include description of community involvement specific to this project; and improve description of current and proposed habitat.

Need to address positive or negative impacts on other resources. 900 pieces of large woody material may create safety hazard and could impact Forest Road 93 bridge. What does the habitat look like now? Current fish use? Inclusion of pictures would be helpful.

APPENDIX I

Appendix I

Pepper Creek Instream Habitat Restoration

1. **Project Title**

Pepper Creek Instream Habitat Restoration

2. **Project Manager**

Adam Haspiel
Fish Biologist
Mt. St. Helens National Volcanic Monument
42218 NE Yale Bridge Road, Amboy WA 98601
ahaspiel@fs.fed.us
360-449-7833

3. **Identification of problem or opportunity to be addressed**

The lower 0.5 miles of Pepper Creek lacks large woody material and provides minimal structure for fish habitat. 150 pieces of Large Wood Material would be added to the lower 0.5 miles to create pool habitat and provide complex structure to the stream. This would create and improve rearing opportunities for, coho salmon and steelhead trout. In addition it would improve spawning opportunities for reintroduced adult coho salmon and steelhead trout. Wood for this project would come from USFS lands and from Swift Reservoir cleaning operations.

4. **Background**

Pepper Creek is approximately 3.5 miles long and is a class II tributary to Lewis River. It enters the Lewis River approximately 2.5 miles upstream from the end of Swift Reservoir (see map). It has a watershed size of 2,023 acres. A level II stream survey was performed on it in July 2008, and July of 1989. In a 2008 FS stream survey 39 pieces of LWD per mile was documented, well below the regional FS standard of 80 pieces per mile. The pool count was 44 pools per mile, also below the regional standard of 96 pools per mile, and the pools tended to be short plunge pools. Pools made up 16% of total channel area, an ideal pool riffle ratio is 50-50. The bankfull channel width in the first reach (1.4 miles) averaged 23 feet. Temperatures were taken at 30 minute intervals throughout the day from July 23 to July 29th, 2008. Temperatures were taken during daylight hours by hand and were consistently between 50 and 52 degrees F. Electrofishing was conducted as part of the survey and juvenile coho salmon from experimental releases were documented in the first 1/10 mile of stream. Cutthroat and rainbow trout were also documented throughout the survey.

This project would fit into restoration objectives for the watershed which includes restoring watershed functionality. The Forest Service upgraded the culvert on the 9039 road to allow fish passage following the 1996 floods. A Forest Service Stewardship timber sale know as Wildcat is currently being planned for portions of this watershed. This type of timber sale can allow for some of the restoration work to be performed as part of the sale and provide us with an opportunity to leverage funding to get the most bang for our buck.

The Lewis River Synthesis tool developed by the Aquatic Coordination Committee (ACC) gave this section of Pepper Creek a medium rating for habitat restoration potential for coho and steelhead and listed the following concerns: High sediment and key habitat quantity concerns. Moderate need for channel stability and habitat diversity (Environmental Diagnosis and Treatment, EDT), low flow and high temperature. The Lower Columbia Fish Recovery Board (LCFRB) Salmon Recovery Plan rated this as a Primary stream for coho population recovery and also thought the restoration potential was medium. For steelhead LCFRB rated this as a Continuing population recovery and having low restoration potential.

Current Fish use of Pepper Creek includes rainbow, cutthroat trout and juvenile coho salmon (FS Stream Survey 2008).

Community Involvement.
The Mount St. Helens Institute (MSHI) is currently creating a Youth Stream Team program consisting of students interested in the environment. These students come from diverse backgrounds, some are at risk youths, and others are from urban environments. This is part of the overall goal of getting "Kids Back in the Woods" program developed at both a National and State level. This proposal includes a request for $2,000 to help with transportation and on the ground supervision/guidance of these students. They will help with the monitoring of the project, including using survey equipment and photo documentation. In addition two college level interns from the MSHI will assist in project monitoring and implementation.

Nexus to the Projects: This project has a clear connection to the hydropower projects. It is upstream of all projects and is a tributary to the Lewis River. Prior to dam construction the Upper Lewis River Watershed was a major producer of salmonids in the Lewis River.

Fund Objectives: This project meets the funds objectives in the following manner:

Priority 1: *Benefit fish recovery throughout the North Fork Lewis River, with priority to federal ESA-listed species.*
Lower Columbia River Steelhead Trout are listed as a threatened species under the ESA
Lower Columbia River Coho Salmon are listed as a threatened species under the ESA

Priority 2: *Support the reintroduction of anadromous fish throughout the basin.*
Large Woody Material will increase pools and pool quality, providing rearing opportunities for juveniles, and enhanced spawning opportunities for adult anadromous fish. This project will increase the chances for success when anadromous fish are reintroduced into the basin. Small numbers of juvenile coho salmon from prior habitat preparation activities are already using this section of Pepper Creek for rearing.

Priority 3*: Enhance fish habitat in the Lewis River Basin, with priority given to the North Fork Lewis River.*
Large woody material will directly enhance and increase the diversity and structure of fish habitat in the North Fork Lewis River Basin for re-introduced anadromous fish.

Provide information related to how this project fits into greater watershed objectives and any previously collected information at the project site (e.g. fish surveys, habitat delineation, etc)

5. **Project Objective(s)**

The main objectives of this project are to create rearing pools for juvenile salmonids, to improve spawning opportunities and increase habitat complexity in the lower 0.5 miles of Pepper Creek. Cederholm found an increase in pool area of 33% to 74 % following restoration activities. Fish were frequently found spawning near treated sites, and coho winter density increased 20-fold in the engineered sites (Cederholm et al 1997). A paper by Roni, et al. reviewing numerous stream restoration projects using LWD found that juvenile coho salmon often had a significant increase in numbers following restoration projects. In addition spawning gravel associated with engineered log jams in Lobster Creek increased suitable spawning habitat by 115%. Sixty percent of the steelhead and 56% of coho salmon adults in an Oregon Coastal stream, East Fork Lobster Creek spawned within 5 meters of structures (Roni, et al 2002).

State the objectives of your proposal including how the project is consistent with Aquatics Fund objectives and recovery plans. Clearly describe the biological benefits and expected outcome of your project. Describe the technical basis for the objectives including the identification of any supporting technical references. Identify biological metrics to help quantify the benefit of the project.

6. Tasks

Finalize project design
Complete NEPA Compliance on project
Secure Wood (Wildcat TS and Swift Reservoir) (should be described in project description)
Develop contract
Implement project
Pre and Post project monitoring-longitudinal profile, cross sections, photo points, pebble counts, snorkel or electrofishing surveys.

State the specific actions which must be taken to achieve the project objectives.

7. Methods

Trees will be transported to the site by log truck, leaving them as long as possible.
A mobile yarder will fly trees into the creek from FS road 9039330 located near the mouth and from strategic locations off the 9039 road.
An all terrain excavator (Spyder) will be used to excavate pools and place trees instream. Ends of trees will be buried in streambanks and substrate to anchor them.
Best Management Practices (BMPs) listed in the Gifford Pinchot National Forest Plan will be used along with Design Criteria identified in the 2007 NOAA and USFWS Programmatic Biological Opinions, and the USFS and WDFW MOU. These BMPs will protect resource values by ensuring we follow instream work windows, minimize sediment input during implementation, provide oil sorbent booms to capture oil spills, eliminate the risk of spreading noxious weeds, etc.

Describe methods to be used. When using Best Management Practices (BMPs) identify sources of BMPs and how they will protect resource values.

8. Specific Work Products

Deliverables include:
Number of trees placed
Number of pools created
Number of structures created

Identify specific deliverable results of the project. Project managers will be required to provide status updates with submission of project invoices.

9. Project Duration

a. Monitoring for this project will begin during the summer of 2009, project implementation will occur in 2010, and post project monitoring will occur for several years on annual basis after that. As-built documents will be completed by December 31st, 2010. An initial report documenting fish response to the structures will be completed by December 31st 2011, and then amended on an annual basis thereafter.

b. Provide a detailed project schedule to include:
NEPA-Summer 2009/Winter 2010

Project Implementation	July 2010
Project site visit	August 2010
Pre-Project Monitoring	July 2009 & July 2010
Post Project Monitoring	July 2011 and beyond.
Project Close-out visit	August 2011

Initiation of project.
Completion date for each milestone or major task.
Project close-out site visit (with PacifiCorp, Cowlitz PUD, and ACC representatives)

10. Permits

Once NEPA is complete our MOU with WDFW precludes us from securing any other state permits. Our Forest Service Regional Programmatic Restoration Biological Opinions cover this type of work. We will notify USFWS and NOAA when NEPA is complete and coordinate activities with them. The USFS is the landowner for the Pepper Creek Project.

Identify any applicable permits and resource surveys required for project. Please include timeline for obtaining and any action taken to-date. Applicant will be responsible for securing all such necessary permits. Landowner permission is required prior to finalization of a Funding Agreement with PacifiCorp.

On-the-ground (dirt moving) projects will be required to be in compliance with Sections 401 and 404 of the Clean Water Act, Sections 7 and 10 of the Endangered Species Act, and the National Historic Preservation Act of 1966, as well as Department of the Interior regulations on hazardous substance determinations. Project site surveys may be required in order to comply with these and other regulations.

11. Matching Funds and In-kind Contributions

Matching Funds- USFS will contribute $15,000 worth of materials for the project in the form of Large Woody Material

In-Kind-

USFS	$8,000
MSHI	$2,000

If applicable, describe any matching funds and/or in-kind contributions that you have secured or have requested through other means. Matching funds are those funds contributed to the project from other funding sources. In-kind contributions may include donated labor, materials, or equipment. Please be specific in your description of contributions and use of volunteers (e.g. ACE construction is donating 8 hours of backhoe operation including operator).

12. Peer Review of Proposed Project

This proposal was reviewed by David Hu, Gifford Pinchot Forest Fish Biologist and Ruth Tracy, Gifford Pinchot National Forest Hydrologist prior to submittal.

13. Budget

Pepper Creek Instream Habitat Restoration Budget

	Total	NEPA	Final designs	Project Mgmt	Construction	Monitoring/Labor /Reporting/Coord
Personnel Costs						
FS - Zone Team or Contract		$4,000 (ACC)				
FS –Fish Bio and Hydrologist			$2,000 (IK) $2,000 (ACC)	$3,000 (ACC)		
FS - Fish Bio and Hydrologist						$1,000 (ACC)
FS - Contract administrator -					$4,000 (IK) $4,000 (ACC)	
FS - Contract Specialist					$2,000 (IK)	
Mt St. Helens Institute						$2,000 (IK)
Mt. St. Helens Institute Community Education						$2,000 (ACC)
Materials						
Forest Service 900 Pieces of LWM					$15,000 (IK)	
Contract Payables						
Mobile Yarder					$4,000 (ACC)	
Logging and hauling of trees					$16,000 (ACC)	
All Terrain Excavator Contract					$8,000 (ACC)	
Materials and Supplies				$2,000 (ACC)		
Administrative Overhead		$2,000(IK)				
Total ACC Funds	**$46,000**	**$4,000**	**$2,000**	**$5,000**	**$32,000**	**$3,000**
Total FS Funds	*$24,000*	*$2,000*	*$3,000*		*$19,000*	
Total other Partner Funds	*$2,000*					*$2,000*
Project Total	***$72,000***					

FS personnel estimated as $300/day.

Pepper Creek expanded budget 2008

Item	Personnel	Estimated Days/units	Cost Per Unit	Total
NEPA Environmental Assessment required by Federal Law	Fish Biologist Wildlife Biologist Hydrologist Botanist Archeologist Soil Scientist Recreation Forester	3 1 1 3 3 1 0.25 0.25	$300 per day per person	$4,000

	NEPA Coordinator	1		
Final Designs	Fish Biologist Hydrologist Fish Technician	3 2 5	$300 per day per person	$2,000
Project Management	Fish Biologist Fish Technician Mileage	4 4.1 1000 miles	$300 per day per person $0.50	$2,500 $500
Construction	Contract Administration Transportation	12 800 miles	$300 per day per person $0.50	$3,600 $400
Materials & Supplies	Field Equipment, Notebooks, Misc Supplies			$2,000
Monitoring	Fish Biologist Fish Technician Transportation	1 2 200	$300 per day per person $0.50	$900 $100
MSHI Monitoring	Supervisor Assistant Volunteers Transportation	1 2 10 1,800	$300 per day per person $20 $0.50	$900 $200 $900
Total				**$18,000**

Item	**Cost per unit**	**Number of units**	**Total cost**
All Terrain Excavator	$200/hour	30	$6,000
Excavator Move in/out	$1200	1	$2,000
Logging an Hauling cost: Estimate from Chilton Logging	$16,000	1	$16,000
Mobile Yarder	$1,500/Day	3	$4,000
Equipment Total			**$28,000**

From Chilton Logging
Ball Park Estimate Received on January 21, 2009

100 (150 logs) trees will take:
2 days to log
Logging costs are $3,900 per day
They can log 4 loads per day
The can haul about 20 pieces per load
Total of 7.5 loads
$7,800 to Log
$8,200 to haul from unit (Wildcat Timber Sale Unit) 8 miles to Pepper Creek
$16,000 Total

*Provide a **detailed** budget for the project stages (Final design, Permitting, Construction, Monitoring/Reporting) by work task. Include:*

Personnel costs

Labor and estimated hours for each project employee

Operating expenses

Supplies and materials

Mileage

Administrative overhead

If in-kind contributions have been acquired, please note contributions according to project stage within the budget.

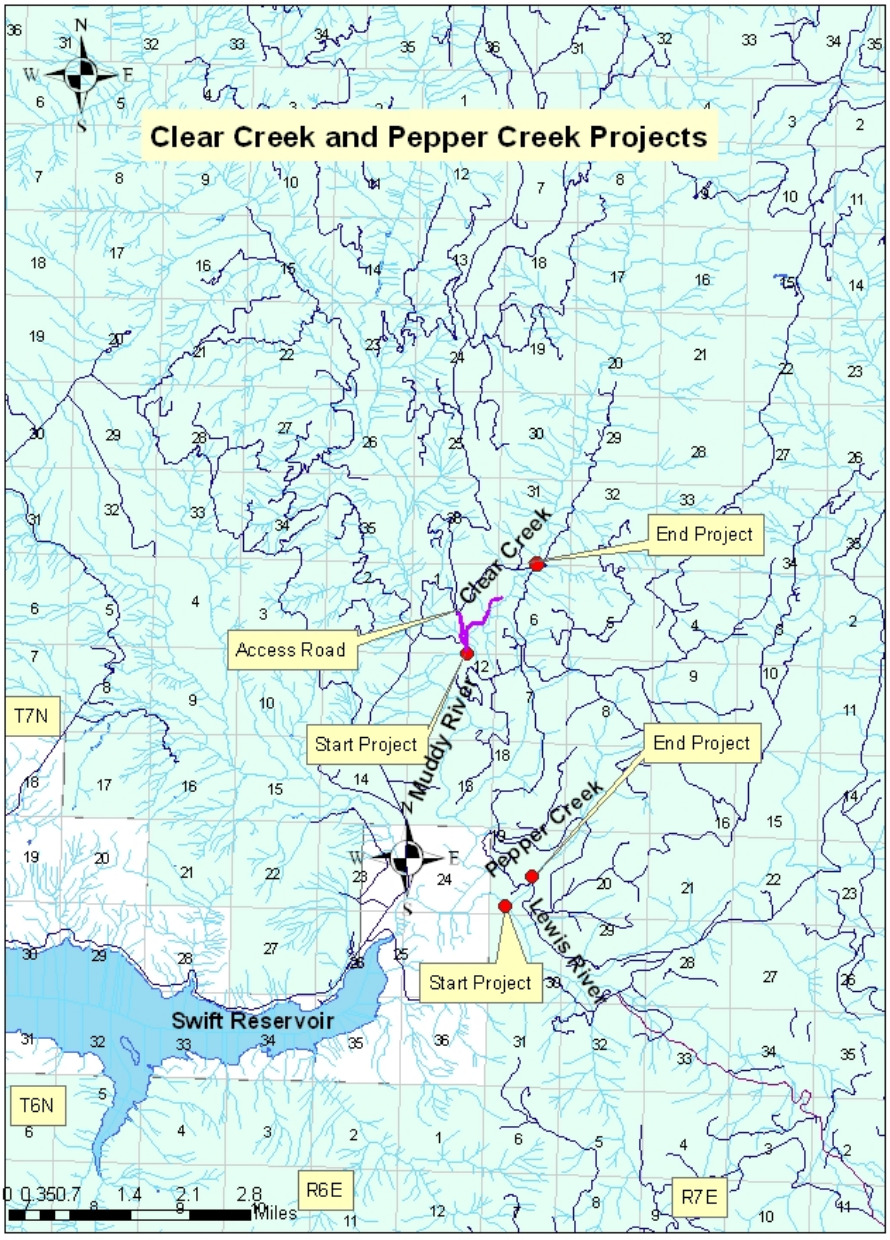
14. Photo Documentation (<u>Per National Marine Fisheries Service's Biological Opinion for Relicensing of the Lewis River Hydroelectric Projects):</u>

Photo-documentation is included as part of the monitoring process, it will include all items listed below..

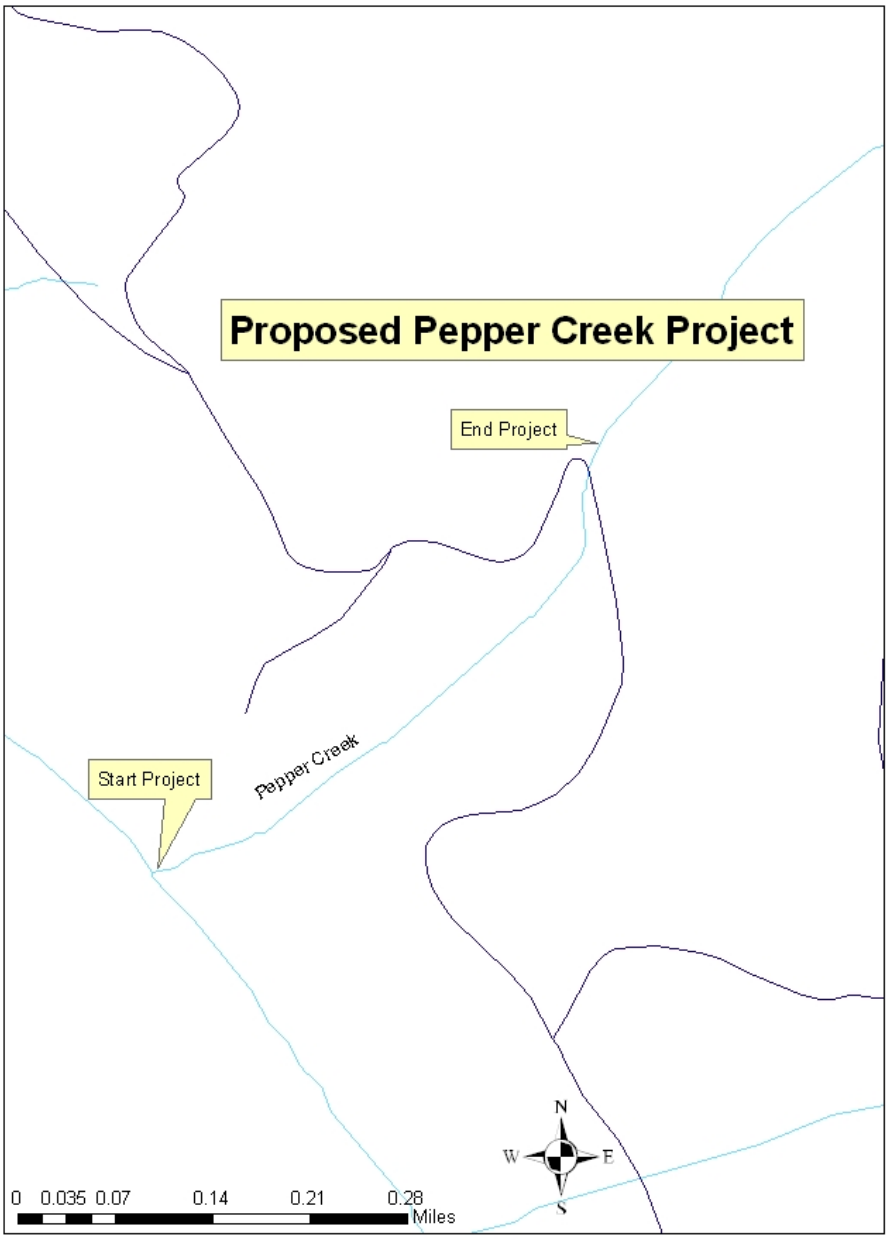
Identify process or methodology project will include photo documentation of habitat conditions at the project site before, during, and after project completion.

a. Include general views and close-ups showing details of the project and project area, including pre- and post-construction.

b. Label each photo with date, time, project name, photographer's name, and documentation of the subject activity.



Map1: Project Vicinity Map



Map 2: Project Location Map

Bibliography

Abbe, T. B. and D. R. Montgomery. 1996. Large woody debris jams, channel hydraulics and habitat formation in large rivers. Regulated Rivers: Research and Management 12:201-221.

Cederholm, C.J. , R.E. Bilby, P.A. Bisson, T.W. Bumstead, B.R. Fransen, W.J. Scarlett, and J.W. Ward. 1997. Response of juvenile coho salmon and steelhead to placement of large woody debris in a coastal Washington stream. North American Journal of Fisheries Management 17:947-963, 1997.

Ronni, Phillip, T. J. Beechie, R.E. Bilby, F.E. Leonetti, M. M. Pollock, and G. R. Pess. 2002. A review of restoration techniques and a hierarchical strategy for prioritizing restoration in pacific Northwest Watersheds. North American Journal of Fisheries Management 22:1-20, 2002.

Attachment

Pepper Creek Instream Habitat Restoration

Recommend USFS include a stronger description of benefiting species and limiting factors from the Recovery Plan and improve description of current and proposed habitat.

Recommend the USFS include a stronger description of benefiting species and limiting factors from the Recovery Plan; include description of community involvement specific to this project; and improve description of current and proposed habitat conditions.

Amount of large woody material seems high for such a small reach. Limited benefit, but may be of longer duration. Concern is with this amount of LWD in such a small stream, if not placed correctly could create barrier.

Concern with the cost of the project versus its biological benefit.

APPENDIX J

Appendix J

North Fork Lewis River RM 13.5 Habitat Enhancement

Lewis River Aquatic Fund – Proposal

Project: North Fork Lewis River RM 13.5 Habitat Enhancements
Submitted by: Lower Columbia Fish Enhancement Group

ACC and PacifiCorp reviewers:

Enclosed below is our proposal for habitat enhancement work on the mainstem Lewis River near River Mile 13.5. We believe this site offers great opportunity for habitat enhancements that will benefit ESA-listed species that have been affected by hydro-system operations and other impacts. Habitat improvements will also benefit from the high degree of collaboration and cost-sharing with other funding entities (Salmon Recovery Funding Board / LCFRB) and landowners at this site.

We appreciate the review and comments conducted by the Aquatic Coordination Committee (ACC) on our pre-proposal submission. These comments influenced the final submittal and will be helpful for guiding project development if the proposal is accepted. We have chosen to respond directly to the ACC comments at the outset of our proposal, to make sure the reviewers' comments are explicitly and clearly addressed. Some comments are addressed further in the proposal form itself. The original ACC comments and our responses are included below, followed by the Proposal Form.

Thank you for the opportunity to submit our proposal for habitat enhancement on the mainstem Lewis River. We look forward to the opportunity to work with you further on these efforts.

Sincerely,

Tony Meyer
Lower Columbia Fish Enhancement Group

ACC Comments and Responses

The use of log jams is a concern, these are often not successful; please document support for this technique.

The use of log structures (jams and smaller accumulations) has had widespread success in restoring key habitat conditions for salmonids throughout the Pacific Northwest. The LCFEG has successfully implemented many habitat projects in the region using large wood and log jams. The consultant on this project has over 25 years experience enhancing fish habitat on over 500 projects in the Pacific Northwest and worldwide, and has found that additions of large wood are repeatedly successful in improving habitat and providing benefits to fish. This experience is supported by academic research (e.g. see Roni 2001) and by standards and guidelines that have been developed for implementing these types of projects (e.g. Saldi-Caromile et al. 2004). There is little debate within the scientific research community that properly located and constructed habitat structures consisting of large woody debris can persist for long periods and provide important benefits to fish. This is especially the case in the lower mainstem Lewis River, where hydroregulation and stream channel manipulations have had a severe detrimental impact on LWD quantities, LWD jam formation, channel complexity, and stream habitat features.

Concern with the cost of the project versus its biological benefit.

Based on the contributions from other funding sources, in-kind contributions from landowners, and the existing condition of the reach, we anticipate being able to accrue high biological benefit given the cost of the project. This reach currently has 0% pool habitat and is almost completely devoid of large wood. There is no habitat complexity or cover to provide velocity refuge and protection from predators. We anticipate constructing 4-8 habitat structures throughout this reach, but the actual number may be higher if multiple smaller structures are utilized. Even moderate-sized large woody debris jams on a stream the size of the Lewis River can easily cost in excess of $50,000 apiece. Our construction budget assumes the construction of an average of 6 habitat structures consisting of between 10 and 15 logs each. We assumed a cost of $15,000 per structure. Depending on the site analysis, structures may consist of smaller or larger accumulations, or a variety of structure sizes.

Recommend strengthening the description of project benefits related to hydro project impacts.

The proposal was amended to emphasize the benefit of the project with respect to hydro project impacts. In general, it is recognized that hydro-regulation has interrupted wood transport from upstream, thus reducing LWD numbers in the project area. Hydro-regulation has also decreased moderate intensity flood flows, which are important for creating habitat complexity. Hydro-regulation has also *increased* flows during summer and fall, which is expected to have impacts on juvenile fish bio-energetics, thus emphasizing the benefits of velocity refuge habitat.

Recommend the LCFEG strengthen the description of project benefits as they relate to hydro impacts; and describe any potential cost efficiencies that could reduce the requested funding amount, as the requested funding is a large portion of available funding.

See above response with respect to hydro impacts.

It is possible that cost efficiencies can be found that will reduce the cost required to construct habitat structures or that will increase the amount of habitat structures that can be created for a given cost. These savings may come from savings in material costs (i.e. if wood is donated), construction costs (i.e. depending on contractor bid amounts), or if additional cost-sharing can be obtained from landowners or other cooperators. It would also be possible to construct the project in phases; conducting project design as an initial phase and then constructing habitat features as a subsequent phase. Furthermore, the construction itself could also be phased, with construction of a subset of features initially, followed by construction of additional features in subsequent years. We are happy to discuss phasing alternatives further with the ACC.

Details of structure placement and function should be provided to assure the structures will persist and function during high flow events and in concert with the other planned large wood structures on the opposite bank.

It is recognized that it is necessary to design structures to persist and function during high flow events and to act in concert with other planned large wood structures. These considerations are of utmost importance for project design in this reach and will be incorporated into the set of criteria that will guide the design process. Details of structure placement and function depend on a number of considerations including fish use of the project area, scour conditions, seasonal inundation extents, substrate conditions, and feasibility/access conditions. This information will be provided

through survey data, hydraulic modeling and analysis, and geomorphology analysis. For this reason, we have not specifically identified the location of structures and will rely on the analysis and design to make the final determination.

Proposed project area is extremely shallow. Project appears to have limited if any benefit to juvenile fish rearing. One concern is left bank margins are heavily used by wild Winter steelhead for redd construction per Spring 2008 North Fork Lewis River mainstem WDFW and PacifiCorp redd surveys.

Seasonal inundation extents and water depths will be determined through hydraulic analysis as well as interviews with landowners and others familiar with seasonal flow conditions at the site. This information will assist in the final determination of structure placement.

The benefit to juvenile fish rearing is a primary emphasis of the project and we therefore welcome more specifics from ACC members regarding their concerns about the benefit to this life-stage. This project targets juvenile fish rearing, especially for transient spring/early summer rearing of Chinook that originate in upstream spawning reaches as well as year-round steelhead and coho rearing. Cover, complexity, and velocity refuge will be provided for juvenile fish rearing throughout the year. Species use of structures will vary depending on time of year, flow conditions, size of fish, and competition with other species for habitats. Juvenile seining by WDFW in June/July shows significant use of this reach for the early-rearing life-stage of Chinook and some use by other species (WDFW seining data 2004-2008). This seining effort targets juvenile Chinook in June and July; juvenile fish use at other times of the year has not been investigated to our knowledge. However, based on steelhead spawning within this reach (WDFW data 2008), we expect habitat enhancements will benefit 0-age rearing of local-origin steelhead. Enhancements are also expected to benefit rearing of age-1 steelhead that originate elsewhere in the basin. Features will also provide habitat for coho summer and winter rearing and have the potential to enhance early rearing habitat for chum.

WDFW steelhead redd survey data was obtained in response to this comment. The locations of 2008 redds are included in Figure 1. This comment is very pertinent to project design. Considerations for steelhead spawning will be incorporated directly into project design criteria and will be one of the factors used to determine structure sizes and locations. Depending on objectives, structures can be configured to enhance substrate storage and sorting to provide benefits to spawning. Structures can also be located in proximity to spawning areas in order to enhance the limited habitat diversity that is available following emergence – at the fry colonization and 0-age active rearing life-stages (habitat diversity is the primary limiting factor for these high priority life stages according to the 2004 Recovery Plan). It is also possible to altogether avoid structure placement in or near steelhead spawning areas if this is determined to be the best approach. Project designers anticipate working with the ACC and other technical reviewers to develop design criteria that will address these and other issues.

PROPOSAL FORM -
Lewis River Aquatic Fund

1. Project Title
   North Fork Lewis River RM 13.5 Habitat Enhancements

2. Project Manager
   Tony Meyer
   12404 SE Evergreen Hwy
   Vancouver, WA 98683
   360-882-6671 cwfish@comcast.net

3. Identification of problem or opportunity to be addressed

This project enhances fish habitat conditions along the mainstem Lewis River near River Mile (RM) 13.5. The project entails construction of large woody debris (LWD) and boulder structures along a reach of river that is devoid of complex habitat necessary to provide cover, velocity refuge, sediment sorting, and a source for food production. The proposed statement of work and budget assumes the placement of 4 to 8 habitat structures comprised of LWD, boulders, and slash material. The specific size and location of structures will be determined as part of project design. The general area for habitat enhancements is included in Figure 1.

The project area falls within reach Lewis 5, a Tier 1 reach according to the Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin Plan (LCFRB 2004). Habitat will be created for ESA-listed Chinook, coho, steelhead, and chum. These runs have experienced significant drops in abundance and productivity compared to historical conditions (LCFRB 2004). The fall Chinook run is regarded as one of the most important runs in the Lower Columbia region. The majority of spawning for this population occurs just upstream of the project reach. Enhancement features in the project reach will benefit juvenile fish originating from these upstream spawning grounds. The project will also improve juvenile rearing and adult holding habitat for other species and will provide benefits to spawning habitat through substrate storage and sorting.

The hydropower system, as well as other local and watershed-scale factors, have impacted habitat conditions in the study reach. This reach is currently composed of a long glide with little cover, complexity, or pools. The area has experienced past clearing and snagging, past gravel mining, residential development, blockage of LWD transport due to the dams, and flow regulation. These impacts have reduced LWD loading, reduced channel complexity, and have reduced habitat-forming processes (e.g. floods and LWD recruitment) necessary for creating and maintaining complex habitats. Erosion at the site contributes fine sediment to the project reach and to Tier 1 downstream reaches that have sediment as a primary limiting factor (Lewis 3, Lewis 4A, Lewis 4B, and Lewis 4C).

The project will design and construct LWD/boulder structures along portions of the left and right banks throughout the project area. Final locations and scale of structures will be determined through analysis and design. Structures will provide important velocity refuge, pool formation, and cover habitat that will benefit adult holding and juvenile rearing for chum, coho, winter steelhead, and fall Chinook. Structures constructed along the eroding right bank will reduce persistent inputs of fine sediment into the channel. This project will re-introduce wood quantities to within the range of what would be expected under historical conditions prior to hydroregulation, riparian timber harvest, and river manipulations. Riparian restoration will remove invasive plant species and will include planting of native riparian species throughout the project area.

4. Background

This project is part of a larger cooperative effort along this reach that will enhance off-channel and in-channel habitat. Salmon Recovery Funding Board (SRFB) funds have been awarded to the LCFEG to design and construct 2-4 log jams along a portion of the right bank. SRFB funding has also been obtained to design side-channel, off-channel, and tributary habitat enhancements within the left-bank floodplain area. Funds requested by the Aquatic Coordination Committee (ACC) will be used to complete comprehensive habitat treatments in this area that compliment and enhance the SRFB-funded activities and provide the greatest potential habitat benefit.

Past reach assessments, watershed assessments, and data collection efforts support the implementation of fish habitat enhancements in the project reach. This reach supports multiple salmon and steelhead species life-stages, including spawning, rearing, migration, and adult holding. Reach-scale data on the lower NF Lewis has been recorded as part of re-licensing assessments, WDFW monitoring, LCFRB habitat studies, and assessments conducted by private landowners. In general, these studies have found a lack of quality pool habitat, a lack of off-channel habitat, low LWD quantities, and significant impacts related to recreation, land-use, and hydro-regulation.

Pool habitat, riparian shade, off-channel habitat, and LWD quantities were all in poor condition in this reach according to the 2004 habitat assessment commissioned by LCFRB (R2 Resource Consultants 2004). Habitat unit composition was rated as 0% pool habitat, 48% riffle habitat, and 52% glide habitat. Very little LWD was observed in the reach. Similar results for LWD quantities were obtained as part of re-licensing studies (WTS-3 Relicensing Report, PacifiCorp 2004) and as part of the 2007 LWD assessment (Johnston et al. 2008), which observed only 3 “key”pieces throughout the entire 3 mile reach in which the project area is located. The LWD study noted not only a lack of LWD quantities, but an almost non-existent supply of large wood pieces of the size necessary to self-anchor within the mainstem Lewis and initiate jam formation. This was attributed to blockage of wood transport by the dams, a lack of riparian trees of sufficient size, and channel modifications along the lower river. This condition has resulted in a reach of river that is almost completely devoid of complex habitat structure.

The 2007 LWD study recommended installation of large woody debris structures along this segment of stream. This project will help to accomplish this recommendation and will bring LWD quantities back into target ranges for the reach (e.g. >67 pieces per 100m, from LWD Study).

Other past work at this site provides a basis for project implementation. A site survey and hydraulic model are available from a 2005 study at this location conducted by Interfluve. This data will need to be updated but can be used to streamline data collection and analysis. There has also been coordination conducted with landowners by the Lower Columbia Fish Enhancement Group (sponsor) as well as Inter-Fluve. LCFEG and Inter-Fluve have identified this area as a potential project site in the past and have developed a working relationship with the landowners in order to move the project forward.

5. Project Objective(s)

Project objectives will be refined in coordination with technical stakeholders and landowners. Preliminary project objectives include:

1) Increase channel complexity and velocity refuge along channel margins to benefit adult holding and juvenile rearing

2) Promote development of high quality scour pool habitat with wood cover to benefit adult holding and juvenile rearing

3) Increase wood quantities to greater than 67 pieces/100 meters, which is the mean historical value based on empirical equations used to estimate historical wood loading for this reach (from Johnston et al 2008).

4) Restore the native riparian plant community. Riparian areas will be planted with site-adapted native riparian species. Invasive/noxious species will be removed. A long-term riparian maintenance plan will be developed.

This project addresses the following Aquatics Fund objectives (Lewis River Hydroelectric Projects Settlement Agreement, 2004):

Objective 1: Benefit fish recovery throughout the North Fork Lewis River, with priority to federal ESA-listed species. This project benefits fish recovery in the NF Lewis River, with priority given to federal ESA-listed species. Habitat diversity will be increased throughout the project reach and critical habitat will be created for ESA-listed Chinook, coho, steelhead, and chum.

Objective 2: Support the reintroduction of anadromous fish throughout the Basin. Habitat enhancements in this reach will improve migration, holding, and juvenile rearing condtions for fish populations that are reintroduced throughout the basin. Enhancements will have particular benefit to steelhead and spring chinook that are reintroduced to the upper basin. Steelhead juveniles that originate in the upper basin would be expected to rear in the lower river as age-1 fish. Spring Chinook originating in the upper basin would be expected to utilize enhancements for transient rearing during outmigration.

Objective 3: Enhance fish habitat in the Lewis River Basin, with priority given to the North Fork Lewis River. Proposed habitat improvements are located on the NF Lewis River and are configured to benefit multiple species, including Chinook, chum, steelhead, and coho.

This project also addresses the following Aquatics Fund project feasibility considerations (Lewis River Hydroelectric Projects Settlement Agreement, 2004):

Whether the activity may be planned and initiated within one year. This project will be designed this Spring and is targeted for construction in Summer 2009.

Whether the activity will provide long-term benefits. This project will provide long-term habitat enhancements in the form of LWD/boulder habitat structures and a restored riparian community along a reach that currently lacks the habitat features and appropriate diversity for multiple lifestages of ESA-listed fish.

Whether the activity will be cost-shared with other funding sources. This project will compliment and be highly coordinated with SRFB-funded design and construction projects within the project area. Cooperating landowners are contributing $30,000 to habitat enhancements and the LCFEG is providing $20,000 in cost-share.

Probability of success. Project design will be conducted by engineers, habitat biologists, hydrologists, and fluvial geomorphologists who have been successfully designing and constructing similar habitat enhancement features in the Pacific Northwest for decades. The design process will be guided by a set of established design criteria to ensure all objectives are met. These factors, along with a proven track record of experience and past project success, will result in meeting or exceeding the above stated goals and objectives for this project.

Anticipated benefits relative to cost. This project will accrue large benefits per cost due to: 1) the large potential for significantly improving habitat quantity and quality in the reach, 2) efficiency in design and construction due to cooperative landowners, ease of access, complimentary projects, and experience of designers, and 3) cost-sharing with landowners, LCFEG, and the SRFB.

This project addresses the following Recovery Plan Objectives/Measures (LCFRB 2004):

Restore riparian conditions throughout the basin. Riparian restoration will be conducted in association with habitat enhancments and will include invasive species management, re-planting, and maintenance.

Restore channel structure and stability. LWD jams will restore channel structure and stability

Create/restore off-channel and side-channel habitat. Depending on results of the analysis and design, habitat structures may be located within existing off-channel areas along channel margins. All structures will compliment proposed side-channel and off-channel enhancements on the left bank.

This project addresses "stream channel habitat structure and bank stability" and "riparian conditions and functions", both of which are considered a High priority according to the LCFRB 6-year Habitat Work Schedule and Lead Entity Habitat Strategy (LCFRB 2008).

The following species-specific list presents the primary life-stage limiting factors that will be addressed by the project (from EDT limiting factors analysis, LCFRB 2004):

- Chinook –Habitat Diversity, Channel Stability, and Flow (velocity refuge) for fry colonization
- Winter steelhead – Habitat Diversity for summer and winter rearing
- Coho – Habitat Diversity, Channel Stability, and Key Habitat Quantity for juvenile rearing
- Chum – Habitat Diversity and Key Habitat Quantity for prespawning holding. Habitat Diversity, Channel Stability, and Flow (velocity refuge) for fry colonization.

Physical and biological criteria will be used to guide project design and to evaluate project benefits. The following metrics will be included, and possibly others as determined during development of final design criteria:

- Wood pieces (cover) and LWD jams per 100m
- Pool frequency, composition, and quality (i.e. residual depths)
- Velocity refuge/reduction
- Riparian tree canopy cover and species diversity

6. Tasks

Task 1: Coordination, Management, and Reporting

LCFEG will provide project management and will be the primary liason with PacifiCorp and the ACC. Regular progress reporting will be conducted as requested by the ACC and PacifiCorp. Periodic project review meetings will be held with PacifiCorp, the ACC, LCFEG, LCFRB, and Inter-Fluve as appropriate to ensure project milestones are being met.

Deliverables:

- 3 Meetings with landowners, contractors, consultants, and other stakeholders

- Regular progress reporting to PacifiCorp, ACC, and LCFRB TAC
- Coordination and administration of contracts

Task 2: Site Survey

This task will be conducted by Inter-Fluve with cooperation from and coordination with LCFEG staff. Site survey will rely partially on work conducted as part of the SRFB-funded side-channel design project. Additional survey will be conducted to site and design habitat structures and to conduct hydraulics analysis.

Deliverables:

- Topopgraphic survey of habitat structure locations using a total station instrument
- Contour map of project area

Task 3: Analysis and Design

This task will be conducted by Inter-Fluve Inc. with cooperation from and coordination with LCFEG staff. Analysis and design will focus on determining specific designs and locations of habitat structures in the project area. This will require hydraulics analysis, seasonal inundation analysis, examination of seasonal fish distribution, and determination of machinery access locations.

Preliminary designs will be reviewed prior to carrying them forward to final design. The final design package will include final design drawings, material estimates, specifications, a contractor bid-package, and an engineers cost estimate.

Deliverables:

- Preliminary review drawings
- Final design drawings
- Material quantities, cut and fill quantities, and design specifications
- Contractor bid package
- Engineers cost estimate

Task 4: Permitting

This task will be performed by Inter-Fluve Inc. with support from LCFEG. Permit requirements are included below in Section 10 of this proposal. Permit-specific drawings will be created in order to satisfy agency requirements. Cut and fill quantities and a grading plan will be included as necessary. Inter-Fluve will work in collaboration with LCFEG to complete the narrative portions of permit applications.

Deliverables:

- Permit drawings
- Materials quantities and unit estimates as required by permit agencies
- Collaboration with LCFEG on completing narrative sections of permits

Task 5: Construction

Construction details, including specific number, size, and location of structures will be determined through the design process. A contractor will be selected to perform construction activities according to the LCFEG and granting agency requirements. Materials may be sourced from cooperators, purchased outright, or contracted through the machinery contractor.

Riparian planting will follow construction in Fall 2009 and/or Spring 2010 (assuming 2009 construction).

Deliverables:

- Constructed project features according to final design
- Riparian restoration completed

Task 6. Construction Oversight

Construction oversight will be provided by Inter-Fluve to verify conformance with project designs and to instruct contractors on habitat structure construction. Oversight also covers construction oversight for LWD jams constructed as part of SRFB-funded project. Oversight assumes that at least one staff member is on-site for the duration of construction.

Deliverables:

- Oversight of construction activities (includes oversight for construction of SRFB-funded LWD jams on right bank)

Task 7: Monitoring

Project monitoring will occur pre-implementation, during implementation, and post-implementation. Monitoring will include a habitat survey of the project reach that will include measurement of habitat attributes including LWD counts, pool frequency, pool quality, erosion, riparian cover, and others. The project site will be photo-documented to track changes in condition pre- to post-implementation. Consistent photo points will be established and repeat photographs will be taken over time. See Section 14 for additional information. Snorkel surveys will also be conducted pre- and post-construction in order to document fish use of structures. Specific sampling times and frequency will be determined in conjunction with stakeholders.

Deliverables:

- Monitoring report including pre- and post-implementation habitat surveys, photo-documentation results, and results of snorkel surveys.

7. Methods

The project includes the design and installation of large woody debris structures anchored along lateral channel margins and ballasted through burial, wood piling ballast, and boulder ballast. Specific locations of structures will be determined as part of the design and will depend on the following considerations: 1) channel hydraulics, 2) seasonal inundation extents, 3) specific species life-stage usage in the reach, and 4) access, landowner, and feasibility considerations. Inter-Fluve Inc will perform project design, permitting, and construction oversight. The project sponsor will work closely with the Lewis River ACC and other cooperators to ensure restoration objectives are met.

Methods for design and construction will follow established protocols that have a proven track record for successfully improving habitat conditions in Pacific Northwest rivers. Construction techniques and benefits of wood and rock structures for fish habitat enhancement are well-established (Saldi-Caromile et al. 2004). Furthermore, the project sponsor and project consultants have extensive experience designing these types of enhancement features. Project design will be conducted by engineers, habitat biologists, hydrologists, and fluvial geomorphologists who have

been successfully designing and constructing similar habitat enhancement features for decades. Inter-Fluve has over 25 years of experience designing habitat structures made up of combinations of large wood and rock material. Inter-Fluve has designed and constructed hundreds of these projects, encompassing a range of various structure types depending on objectives and river conditions. LCFEG also has a proven track record of successfully constructing these types of structures throughout the Lower Columbia region. The design process will be guided by a set of established design criteria to ensure all objectives are met.

Riparian restoration will occur throughout the project area in conjunction with other project components. Riparian restoration will utilize local, native species to rebuild the natural riparian plant community and to reduce the incidence of invasive species.

8. Specific Work Products

The following products will be produced:

- Regular progress reports to accompany invoices
- Periodic progress and review meetings
- Survey and analysis results
- Preliminary and final designs
- Design justification narrative
- Contractor bid package
- Permit documents and drawings
- Construction of habitat structures
- Riparian restoration
- Monitoring data and summary reports

9. Project Duration

Project duration is targeted at 15 months, which includes construction in 2009 and completion of post-implementation monitoring in July/August 2010. Duration may extend longer if construction does not occur in 2009.

Target Schedule:

Milestone	**Target Date**
Project initiation:	April/May 2009
Survey:	April/May 2009
Analysis and Design:	April to July 2009
Permitting:	April to July 2009 (May be able to get permit process underway as part of SRFB-funded project).
Construction of habitat structures:	Completed by October 2009 (depending on ability to acquire permits in time for 2009 construction)
Completion of riparian restoration:	Fall 2009 and/or Spring 2010
Completion:	Fall 2009 or 2010, depending on construction timing
Monitoring:	June/July 2009 and June/July 2010

10. Permits

The list below includes potential permitting requirements. The Washington State Joint Aquatic Resource Permit Application (JARPA) would be used to apply for several of these permit requirements with one application process. The permits covered by JARPA are noted. The US Army Corps of Engineers in-water work window for this location is August 1 to August 31.

- Aquatic Lands Use Authorization – Dept of Natural Resources (JARPA)
- Dredge/Fill Permit (Section 404) – US Army Corps of Engineers (JARPA)
- Hydraulics Project Approval (HPA) – Dept of Fish & Wildlife (JARPA)
- Water Quality Certification (Section 401) – Dept of Ecology (JARPA)
- Fish Habitat Enhancement Projects – Dept of Fish & Wildlife (JARPA) – If project fits within this category then permitting can be streamlined to avoid SEPA and local permits.
- Archeological & Cultural Resources – Dept of Archeology and Historic Preservation
- Endangered Species Act Compliance (ESA) – US Fish & Wildlife Service/NMFS. ESA compliance can be streamlined through LCFEG's 10a1a permit.
- No rise certification – Federal Emergency Management Agency (FEMA) - The design will need to satisfy a no-rise condition of the FEMA base flood water surface elevation.
- Local permits (e.g. Shorelines Conditional Use, Shorelines Substantial Development) – Clark and/or CowlitzCounty
- SEPA/NEPA – Habitat enhancement projects are often exempted. If not, review typically takes the form of a checklist that is reviewed and approved by the lead agency.

Permit applications (i.e. JARPA) will be submitted as soon as possible to ensure approvals are obtained prior to the desired start date for implementation.

11. Matching Funds and In-kind Contributions

- Lower Columbia Fish Recovery Board (LCFRB) / Salmon Recovery Funding Board (SRFB) – SRFB funds have been awarded for construction of 2-4 log jams on the right bank and for design of side-channel and off-channel habitat within the left bank floodplain. The LCFRB staff and TAC have assisted with review of the proposed treatments and will be important cooperators throughout project implementation.
- Lower Columbia Fish Enhancement Group: LCFEG has agreed to provide $20,000 of in-kind services and materials as part of the SRFB-funded project. The LCFEG has conducted numerous stream habitat projects in the region and will play an active role in design and implementation of enhancements.
- Sam Kysar (left bank landowner): Sam is very supportive of this effort and will play an active role in project planning, implementation, maintenance, and monitoring. Sam owns and operates a heavy-machinery company and has indicated his interest in providing project support in the form of labor and materials and long-term maintenance and monitoring.

- Bill Sheretz (right bank landowner): The Sherertz family will be contributing an in-kind contribution ($30,000) for streambank treatments on the right bank along their property. The Sherertz family commissioned an initial study of project alternatives at this site in 2005 that was conducted by Inter-Fluve Inc. Data collection and analysis performed as part of this study will provide an initial basis for project design.

12. Peer Review of Proposed Project

We believe the high degree of technical experience and local knowledge of ACC members and PacifiCorp staff will allow for an adequate independent peer review of this proposal. We welcome any comments, input, or questions about the proposal and are happy to provide any additional information that is requested.

13. Budget

The budget is included as Figure 2.

14. Photo Documentation (Per National Marine Fisheries Service's Biological Opinion for Relicensing of the Lewis River Hydroelectric Projects):

Photo documentation will be performed throughout the project area. Photo points will be established that provide both general and close-up views of the project area and specific project components. Photos will be taken prior to construction, during construction, and post-construction. Each photo will be labeled with date, time, project name, photographer's name, and documentation of the subject activity.

References:

Johnston, G., M. Fox, and J. Lando. 2008. Lewis River Large Woody Debris Assessment. Prepared for PacifiCorp, Portland, OR.

LCFRB (Lower Columbia Fish Recovery Board). 2004. Lower Columbia Salmon and Steelhead Recovery and Subbasin Plan. Prepared for Northwest Power and Conservation Council.

PacifiCorp. 2004. Stream channel morphology and aquatic habitat study (WTS-3 Study). Final Licensees' 2001 Technical Studies Status Report for the Lewis River Hydroelectric Projects.

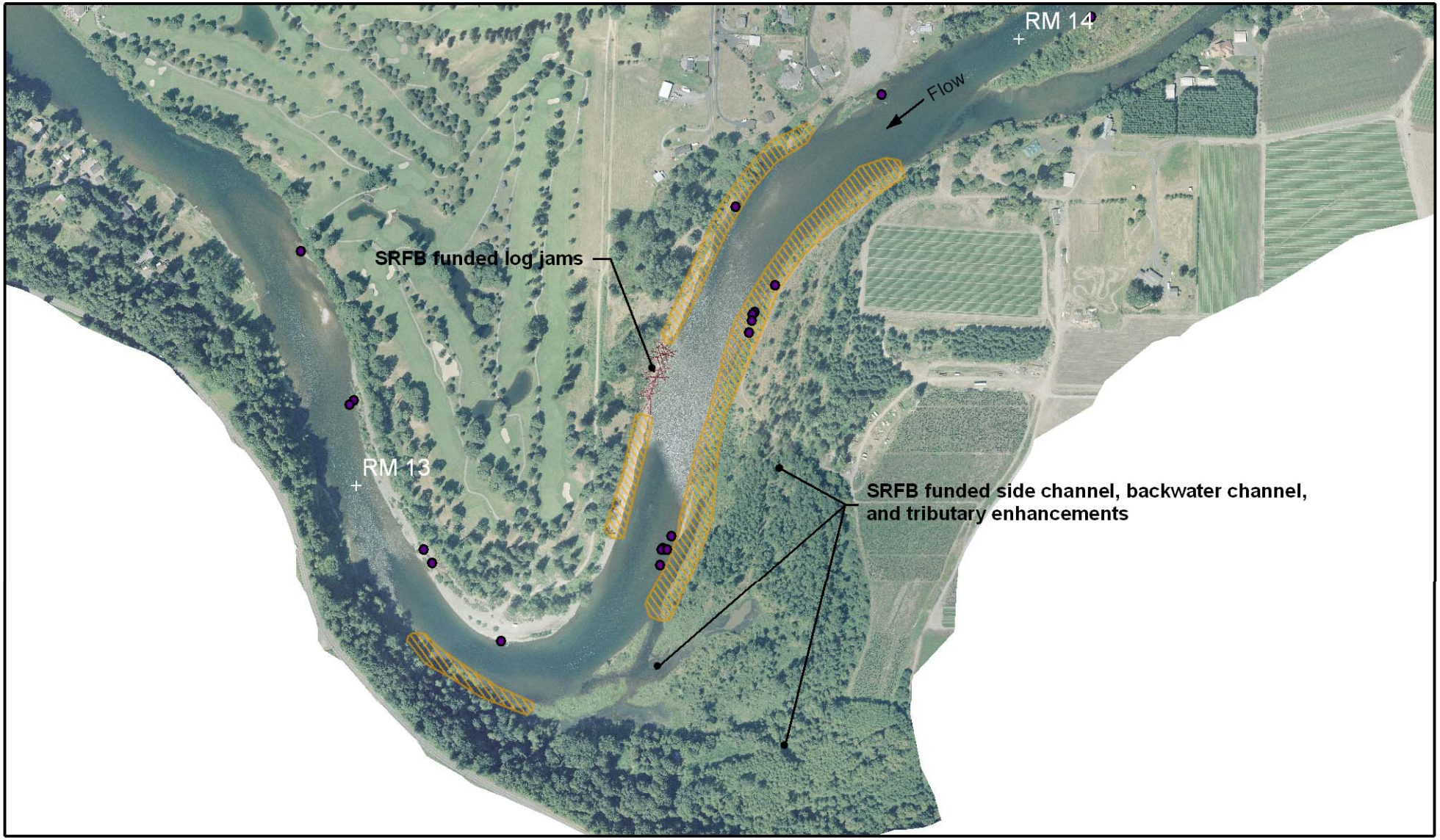
R2 Resource Consultants. 2004. Kalama, Washougal and Lewis River Habitat Assessments Chapter 3: The North Fork Lewis River Basin.

Roni, P. 2001. Responses of fishes and salamanders to instream restoration efforts in western Oregon and Washington. Project Completion Report. National Marine Fisheries Service – Northwest Fisheries Science Center, Seattle, WA.

Saldi-Caromile, K., K. Bates, P. Skidmore, J. Barenti, D. Pineo. 2004. Stream Habitat Restoration Guidelines: Final Draft. Co-published by the Washington Departments of Fish and Wildlife and Ecology and the U.S. Fish and Wildlife Service. Olympia, Washington.

Figure 1: Lewis River Aquatic Fund - Proposal

Plan View for: North Fork Lewis River RM 13.5 Habitat Enhancements



Legend

- Potential locations for habitat structures
- 2008 Winter Steelhead redd locations (WDFW data)
- SRFB-funded log jam placements

0 125 250 500 750 1,000 Feet

N

2005 aerial photography obtained from PacifiCorp

LOWER COLUMBIA FISH ENHANCEMENT GROUP

inter·fluve

Figure 2: Budget

Lewis River Aquatic Fund proposal - Lewis River (River Mile 13.5) Habitat Enhancement

Lower Columbia Fisheries Enhancement Group

	ESTIMATED HOURS BY RESOURCE				LABOR COSTS BY RESOURCE					DIRECT COSTS BY ITEM			
	Executive Director	Project Manager	Staff	Operations Director	Executive Director $50.00	Project Manager $50.00	Staff $50.00	Operations Director $50.00	Total	Trans.	Supplies	Contractual	Total
Task 1: Coordination, Management, and Reporting													
Coordination and oversight (Tony Meyer)	100				$5,000	$0	$0	$0	$5,000				$0
Project management (Pete Barber)		130			$0	$6,500	$0	$0	$6,500				$0
Contract administration and reporting (Tammy Weisman)				30	$0	$0	$0	$1,500	$1,500				$0
SUB TOTAL	100	130	0	30	5,000	6,500	0	1,500	13,000	0	0	0	0
TASK 1.0 ESTIMATE $13,000									$13,000				$0
Task 2: Site Survey													
Consultant Services					$0	$0	$0	$0	$0			$7,000	$7,000
SUB TOTAL	0	0	0	0	0	0	0	0	0	0	0	7,000	7,000
TASK 2.0 ESTIMATE $7,000									$0				$7,000
Task 3: Analysis and Design													
Consultant Services					$0	$0	$0	$0	$0			$17,000	$17,000
SUB TOTAL	0	0	0	0	0	0	0	0	0	0	0	17,000	17,000
TASK 3.0 ESTIMATE $17,000									$0				$17,000
Task 4: Permitting													
Consultant Services					$0	$0	$0	$0	$0			$8,000	$8,000
SUB TOTAL	0	0	0	0	0	0	0	0	0	0	0	8,000	8,000
TASK 3.0 ESTIMATE $8,000									$0				$8,000
Task 5: Construction													
Contractor + materials					$0	$0	$0	$0	$0			$110,000	$110,000
LCFEG construction assistance			160		$0	$0	$8,000	$0	$8,000				$0
SUB TOTAL	0	0	160	0	0	0	8,000	0	8,000	0	0	110,000	110,000
TASK 3.0 ESTIMATE $118,000									$8,000				$110,000
Task 6: Monitoring													
Consultant Services					$0	$0	$0	$0	$0			$11,000	$11,000
SUB TOTAL	0	0	0	0	0	0	0	0	0	0	0	11,000	11,000
TASK 3.0 ESTIMATE $11,000									$0				$11,000
Task 7: Construction Oversight													
Consultant Services					$0	$0	$0	$0	$0			$16,000	$16,000
SUB TOTAL	0	0	0	0	0	0	0	0	0	0	0	16,000	16,000
TASK 3.0 ESTIMATE $16,000									$0				$16,000
TOTAL ESTIMATE **$190,000**									**$13,000**				**$169,000**

APPENDIX K

Appendix K

Plas Newydd RM 2.0 Off-Channel Habitat Enhancement

Cowlitz Indian Tribe

Natural Resources Department

Frank Shrier
PacifiCorp – LCT 1500
825 NE Multnomah
Portland, OR 97232

RE: Lewis River Aquatic Fund Proposal 2009

January 31st, 2009

Frank,
I am pleased to provide to PacifiCorp the Cowlitz Indian Tribe's full proposal for the *Plas Newydd RM 2.0 Off-Channel Habitat Enhancement*, intended to benefit ESA-listed salmonid species in the watershed of the Lewis River. Our rounded request from the Lewis River Aquatic Fund to implement this proposal totals **$50,000.** Thank you for the opportunity to submit this request, as well as the upcoming opportunity to present in person before the ACC on February 12th 2009.

The Tribe has decided not to submit a full proposal for the *Plas Newydd RM 0.5 Bar Plantings and LWD Structures* project we proposed during the initial round of 2009 applications. The landowner is exploring multiple opportunities at that site and requested we not develop that project within this funding cycle. It remains a future opportunity.

The mission of the Natural Resources Department of the Cowlitz Indian Tribe is to preserve, protect and restore the culturally-relevant habitats and species in our ancestral homelands. This mission arises from the deeply-held connection to the lands and waters, and the Cowlitz Cascadia landscape is the living connection to our ancestors and their way of life.

The Tribe looks forward to learning the decision of the ACC regarding our submittal.
Regards,

/Nathan/

Nathan Reynolds
Ecologist
Cowlitz Indian Tribe
Natural Resources Department
360-575-6226 (direct)
nreynolds@cowlitz.org

PROPOSAL FORM -

Lewis River Aquatic Fund 2009

1. Project Title: **Plas Newydd RM 2.0 Off-Channel Habitat Enhancement**

2. Project Manager
Rudy Salakory, Biologist
Cowlitz Indian Tribe
Natural Resources Department
PO Box 2547
Longview, WA 98632
Phone: 360.508.6039
Email: rsalakory@cowlitz.org

Grant Writer:
Nathan Reynolds, Ecologist
Cowlitz Indian Tribe
Natural Resources Department
PO Box 2547
Longview, WA 98632
Phone: 360.575 6226
Email: nreynolds@cowlitz.org

3. Identification of Problem or Opportunity to be addressed:

Problem:
In the lower mainstem of the Lewis River, there is scarce off-channel habitat, which is essential for:

- Chinook salmon, Lower Columbia River ESU, listed as *Threatened*
- Chum salmon, Columbia River ESU, listed as *Threatened*
- Coho salmon, Lower Columbia River ESU, listed as *Threatened*
- Steelhead trout, Lower Columbia River DPS, listed as *Threatened*

These species have endured significant impacts which threaten their persistence in the watershed. These impacts, which arise from various sources, include: alteration of natural flow regimes, degradation of riparian habitat function, loss of floodplain and off-channel habitat areas, inputs of point source and non-point source pollution, and impacts of urbanization.

***Opportunity*:**
The opportunity to restore off-channel habitat addressed in this project proposal will benefit fish recovery throughout the North Fork Lewis River, with priority for federal ESA-listed species. In the short term, this project will increase the abundance of functional habitat in the lower river, an area of great need. The habitat will benefit and be utilized by both returning adults and out-migrating juveniles. Ultimately this project will allow the Lewis River to support larger populations of anadromous fish.

4. Background:
The North Fork Lewis River habitat assessment (Keefe et al. 2004) prepared for the Lower Columbia Fish Recovery Board (LCFRB) identifies several opportunities (section 3.3.3) that have the greatest potential to benefit salmonid production in the basin. Item 2 on this list includes the preservation of "small areas of intact forest within this area of the Lewis River", and specifically identifies a portion of intact forest "on the south bank between river mile 2.0 and 2.7." Maps and aerial photos also indicate the area supports approximately 900 linear feet of intact, functional off-channel habitat. Therefore, this

small, undiked portion of forested floodplain habitat is a significant and important remnant of scarce off-channel habitat once common in the lower river.

The habitat assessment (Keefe et al. 2004) also points to the need to preserve or restore the ecological function of off-channel habitats in the lower Lewis River, stating: "[p]reservation/restoration of floodplain habitats in this area is given a relatively high priority due to the scarcity of functional habitat throughout the first 7.3 miles of Lewis River mainstem channel."

The *Plas Newydd RM 2.0 Off-Channel Habitat Enhancement* site includes a significant component of this scarce floodplain habitat. The enhanced riparian quality achieved though this off-channel enhancement project will ensure the persistence of key habitat by stabilizing the riverbank and reducing erosion. In the absence of stabilization, the river may eventually deposit sediment into the off-channel, filling it in and making it unsuitable for use by salmonid species.

Other relevant planning documents produced for the Lewis River support the need to enhance or preserve off-channel habitat in the lower river area. The Executive Summary of the *Habitat Limiting Factors, Water Resource Inventory Area 27 (Kalama, North Fork Lewis River, And East Fork Lewis River)* states that the second most important recommendation to address limiting factors in the Lewis River is: "Increase and/or enhance off-channel and rearing habitat within the lower Lewis River."(WCC 2005).

Section 7 of the WRIAs 27 and 28 Watershed Management Plan states, "Restoring lowland floodplain function, riparian conditions, and stream habitat diversity" is a priority action in the lower Lewis River. In table 7.1 of that document, it prescribes, "Within authorities, conduct floodplain restoration where feasible along the [lower Lewis] mainstem and in major tributaries that have experienced channel confinement. Build partnerships with landowners and agencies and provide financial incentives." Implementation of this prescription will result in "restoration of floodplain function, habitat diversity, and habitat availability", with a "high" level of certainty (LCFRB 2006).

This proposal is consistent with Recovery Plans because it takes its shape, structure and impetus directly from recent North Fork Lewis River technical assessment and planning documents (Keefe et al 2004, WCC 2005, LCFRB 2006).

Several previous projects have been implemented by the Cowlitz Indian Tribe along the Lower Lewis River. The 2007 ACC award to the Tribe funded the planting of 990 Red-Osier Dogwood, 950 Black Cottonwood, 450 Oregon Ash, and 1100 Willow; 3490 plants total. As well, Tribal staff cut and planted roughly 400 willow-pole plantings. Planting were installed at three locations along the lower Lewis River: Martin Access, Two Forks and Plas Newydd East and West sites.

A 2007 award to the Tribe from the Lower Columbia River Estuary Partnership (LCREP) funded planting of a total of 2580 Willow, 297 Black Cottonwood, 240 Red-Osier

Dogwood and 140 Oregon Ash (3257 plants total) at the same three sites along the lower mainstem Lewis River where the PacifiCorp plantings were implemented.

The 2008 PacifiCorp ACC award to the Tribe funding the installation of seven fish habitat structures composed of anchored large woody debris (LWD) near the mouth Mud Creek. The LWD piles have created a complex of refugia and shelter for juvenile salmonids at the entrance to the Plas Newydd off-channel and the entrance to Mud Creek, one of the only tidal slough habitat areas in the lower Lewis River left undiked. These structures have also created refuge/resting habitat for adult salmonids ascending the system towards headwater spawning habitat.

The 2007 PacifiCorp ACC award was $75,000 plus $10,000 of in-kind value. The LCREP award was $33,200. The 2008 PacifiCorp ACC award was $43,500 plus $8,000 in-kind value. Total restoration funds delivered to Tribally-organized habitat enhancement projects along the lower Lewis River now total $169,700.

5. Project Objective(s):

Plantings:

We propose to enhance the Plas Newydd RM 2.0 Off-channel Habitat in two ways: first, we will plant a shrub/tree complex of 3200 willows, cottonwood, and red-osier dogwood along the water's edge. Second, we will add up to 1140 kg kilograms of salmon carcasses into the off-channel itself.

The shrub/tree complex will consist of a densely planted gallery of 2400 willows (*Salix spp*.), 400 cottonwoods (*Populus trichocarpa*), and 400 red-osier dogwoods (*Cornus stolonifera*). These plants will be placed in a hex grid with sides 0.5 meters in length along the water edge. Installing plants in this density provides multiple utility. Planting at higher densities allows shrubs and tree to outcompete reed-canary grass (*Phalaris arundinacea*) by beating it to canopy, thus shading it out. Another function of this dense planting strategy is to maintain shading function of the shrub/tree complex even in the event of high mortality of plantings (greater than 20%, but less than 60%). Plantings will be installed in the early fall of 2009, prior to the onset of the rainy season.

The tree and shrub species selected are appropriate to the highly-disturbed and frequently-inundated sandy banks of the lower Lewis River. The species have been selected to accomplish multiple goals, including: rapid growth for summer shade to shelter other plantings (Black Cottonwood *Populus balsamifera* ssp.*trichocarpa*), hardiness to withstand inundation and predation, and creation of complex and dense shrub layers (Red-osier Dogwood *Cornus stolonifera,* Sitka Willow *Salix sitchensis*, and Scouler's Willow *Salix scouleriana*). In the long term, these plantings will vegetatively armor and anchor the now-transient sandy landforms and enhance their persistence. Vegetation will help capture and retain river-carried large woody debris, further armoring the landforms. Planting stakes, tubes, weedcloth or other cages will not be used to increase survivorship as inundation will rapidly remove these items.

An intermediate goal of the project is enhanced riparian function; related goals include reduced water temperatures, increased water quality, and the preservation of habitat quality and function in the mainstem and off-channel habitat. Also, the enhanced riparian function will increase organic inputs to the system, which will in turn boost nutrient levels in both the mainstem and proximal downstream off-channel habitat. Bankfall of large trees from a mature riparian forest will eventually serve as source of large woody debris to the river, which may further enhance nutrient loads, create structure and habitat, and armor both the riverbank and the off-channel habitat.

The ultimate goal of this portion of the project is to further enhance the habitat quality of this key off-channel area, which will directly benefit both out-migrating juvenile and in-migrating adult ESA-listed salmonids.

Nutrient Addition:
Salmon carcasses will be introduced into the off-channel to provide a localized pulse of nutrients. Though the lower Lewis River is not a nutrient-poor system, nutrients within the system are waterborne and are not readily available for salmonid consumption because they must be entrained through primary production, die and decompose. Only then are they available as fixed organic nutrients in the lower river, and they are available principally to filter-feeding macro-invertebrates, which typically dominate broad, low-gradient reaches that occur low in river systems. By adding carcasses, we will provide a direct source of nutrient-rich organic matter; flesh and eggs (in particular, lipids) for direct consumption by juvenile salmon, The addition will also promote a pulsed increase in the abundance of macro-invertebrates using a different feeding ecology (shredders/collectors/scrapers rather than just filter feeders), which are important prey for juvenile salmonids.

The availability of a ready food source (both the carcasses themselves and the macro-invertebrate populations that will benefit from them), combined with a source of shade and temperature regulation (the tree/shrub complex) and shelter (the LWD structures) will provide quality rearing habitat for juvenile salmonid species.

Carcasses will be wrapped in durable Vexar mesh, which will then be staked down to prevent the carcasses from exiting the site. Carcasses will be planted in the system in late fall or early winter of 2009; stakes and Vexar will be removed in early spring of 2010.

Washington Department of Fish and Wildlife has prepared protocols and guidelines for nutrient supplementation projects, including salmonid carcasses, since excessive nutrient will negatively affect water quality. WDFW allows carcasses to be delivered at a volume up to 1.9 kg/m². We calculate the area of the off-channel habitat to be 600 m^2. Our estimate is that fall coho carcasses weigh, on average, 5 kg. Therefore, we could stake up to 1140 kg of carcasses (roughly 228 carcasses) in the Plas Newydd RM 2.0 off-channel habitat, without exceeding standards established by Washington Department of Fish and Wildlife and Washington Department of Ecology. We anticipate, however, staking half that, roughly 110 carcasses within the site. Carcasses will be obtained from WDFW

hatchery surplus within the Lewis River system. A carcass placement permit will be required from WDFW.

This proposal is consistent with the Aquatics Fund objectives because the implementation of our project will meet the priorities of the Fund by:

Priority 1: *Benefit fish recovery throughout the North Fork Lewis River, with priority to federal ESA-listed species.*

1. The project site is low in the Lewis River system at RM 2.0 and will provide benefits to the Lower Columbia River ESU of Chinook salmon, the Columbia River ESU of chum salmon, the Lower Columbia River ESU of coho salmon, and the Lower Columbia River DPS of steelhead trout, all listed under the ESA

Priority 2: *Support the reintroduction of anadromous fish throughout the basin.*
The quantity and quality of refugia habitat available to salmonids in the lower river directly affects the number of in-migrating adult salmonids that will survive to ascend further upstream, and thus re-colonize tributaries. The higher carrying capacity and increased habitat quality provided by this project will also translate into increased survivorship of out-migrating juvenile salmonids, which may result in higher returns of adult salmon to the Lewis River system in future years.

Priority 3*: Enhance fish habitat in the Lewis River Basin, with priority given to the North Fork Lewis River.*
This project will directly increase the quantity and quality of key refugia and rearing habitat along the Lewis River.

Finally, the Executive Council of the Cowlitz Indian Tribe has certified resolutions allowing the Tribe's Natural Resource Department to seek and apply for funding from the *Aquatics Fund Program* of the Lewis River Aquatic Coordination Committee to conduct on-the-ground habitat restoration along the lower Lewis River; to benefit juvenile salmonids in the Lewis River Watershed, and to do so in a respectful and honorable manner consistent with Native Culture.

6. Tasks
Task 1: Landowner coordination and whole-project scheduling
Task 2: Apply for necessary permits, (water right, carcass placement)
Task 3: Coordinate purchase and delivery of plant materials and carcasses
Task 4: Install of plantings
Task 5: Assess planting installation success/ prepare short report
Task 6: Prepare as-built plans
Task 7: Install of carcasses
Task 8: Assess carcass installation success/ prepare short report
Task 9: Conduct monitoring to assess survivorship of plantings
Task 10: Conduct monitoring to assess biological success of carcass placement
Task 11: Prepare monitoring report

7. Methods

The Tribe's Project Manager (PM) will coordinate and oversee all aspects of the project. The PM will be responsible for accomplishing all tasks identified in Section 6 above.

In the office, the PM will schedule the overall workflow, purchase materials, coordinate with subcontractors, convey financial information to the accounting dept., and conduct all business necessary to implement the project.

In the field, the PM will identify and layout the project work areas, including needs for planting site preparatory work (invasive species treatment and removal) and planting design. The PM will perform physical fieldwork such as site preparation, planting, and watering of plants. The PM will supervise and oversee the work of subcontractors. The PM will supervise Tribal biotechnicians

The PM will host the Year-1 project closeout site visit for the ACC, prepare as-built plans, and assemble and submit the Year 1 Project monitoring report.

Project administration will be overseen by the Director of the Natural Resources Department of the Cowlitz Indian Tribe. Financial reporting and accounting will be conducted by the Cowlitz Indian Tribe Accounting Dept.

8. Specific Work Products

- Work product 1 will be the completed enhancement plantings and carcass installation

- Work product 2 will be the short reports detailing those installation efforts, which will include staff performance, financial reports, as-built drawings and photographs of the completed enhancement projects.

- Work product 3 will be the monitoring report containing the survivorship assessment of plantings over years 1 and 2. The monitoring report will also evaluate the biological effects of the carcass placement, by comparing macro-invertebrate diversity/density measures in the project site and in a reference site.

9. Project Duration

Final project design will occur in the summer of 2009, planting will occur in late summer/early fall 2009, carcasses will be introduced during late fall/early winter 2009. Stakes and Vexar will be removed early spring 2010. Monitoring of plant survivorship will be conducted in spring 2010, spring 2011 and spring 2012. Monitoring of macro-invertebrate diversity/density measures will be conducted in fall 2009 prior to carcass placement, in fall 2009 some weeks after carcass placement, and in fall 2010. The monitoring report will be completed in Spring 2012.

10. Permits

Only two permits are expected for this project: One is a temporary water withdrawal permit from the Washington Department of Ecology that will allow the Tribe to water

plantings directly from the Lewis River. The Tribe has applied for and received this permit in previous years. The second is a carcass placement permit to allow us to stake carcasses into the site.

The Plas Newydd RM 2.0 Off-Channel Enhancement shoreline and bed are owned by the Plas Newydd Farm LLC through a pre-1885 chain of title. Plas Newydd Farm is jointly managed by Rhidian Morgan and David Morgan. Road access to the off-channel enhancement site is achieved through the Plas Newydd Farm. Written rights of entry have been obtained in the past for previous projects. A verbal right-of-entry has been offered by David Morgan for this project; written confirmation is pending final award of funds

11. Matching Funds and In-kind Contributions
No in-kind is expected to be delivered to this project. As previously noted, however, this project builds on $167,000 of previously completed projects in the same reach of the lower Lewis River.

12. Peer review of Proposed Project

The full proposal presented here was principally developed by Cowlitz Indian Tribal Ecologist Reynolds, but was substantially improved by conversations with David Morgan, (Plas Newydd Farm, Manager/Landowner) as well as Shannon Wills and Rudy Salakory (Cowlitz Tribal Biologists). The proposed budget has been reviewed and approved by the accounting department of the Cowlitz Indian Tribe. The Cowlitz Tribal Council and Executive Council have passed resolutions supporting the Natural Resources Department's scope of work and focus on the Lewis River.
Mr. Reynolds will give a PowerPoint presentation regarding this proposal on February 12th 2009 to members of the ACC, representatives from PacifiCorp, and other professionals in attendance, including individuals from USFWS, WDFW, and USFS.

13. Budget
See attached MS Excel spreadsheet

14. Photo Documentation
Photo documentation will be a significant component of the short report detailing the installation of the planting and the carcasses. It will also be an important component of the final monitoring report.

References:
Keefe et al 2004, Keefe, M., R Campbell, P. DeVries, S. Madsen, D. Resier; *Kalama, Washougal and Lewis River Habitat Assessments, Chapter 3: The North Fork Lewis River Basin*, prepared for the Lower Columbia Fish Recovery Board Dec 2004, Accessed online at: http://www.lcfrb.gen.wa.us/Watershed%20Assessmsent%20Report%20Chps/LCFRB_Chapter3_NFLewisBasin_FINAL_12.31.04.PDF

LCFRB 2006, *Salmon-Washougal & Lewis Watershed Management Plan WRIAS 27-28*, Lower Columbia Fish Recovery Board, 2006 Accessed online at: http://www.lcfrb.gen.wa.us/pdf/WRIA%2027_28%20Watershed%20Management%20Plan.pdf

WCC 2005, *Habitat Limiting Factors, Executive Summary, Water Resource Inventory Area 27, Kalama, North Fork Lewis River, And East Fork Lewis River*, Washington Conservation Commission, Accessed online at: http://salmon.scc.wa.gov/reports/wria27sum.shtml

Figure One: Proposed Off-Channel Enhancement Site

Plas Newydd West Backchannel Enhancement Budget

rs/ndr

ACC Funding Request FY2009

Personnel	FTE	Weeks	Hrs/Wk	Annual Hours	Hourly Rate	Personnel Cost	Total Amount
NRD Director	0.01	32	0.5	16	$ 45.00	$ 720	
Accountant	0.01	32	0.5	16	$ 45.00	$ 720	
NRD Ecologist/Project Manager	0.31	32	20	640	$ 20.00	$ 12,800	
NRD Sci-Tech	0.08	4	40	160	$ 15.00	$ 2,400	
NRD Sci-Tech	0.08	4	40	160	$ 15.00	$ 2,400	
					Year 1 Gross Wages		**$ 19,040**

Payroll Taxes & Benefits					%	Amount
Year 1					36.08%	$ 6,870
					Payroll Taxes & Benefits	**$ 6,870**

Travel	Rate/Mile		Miles/R. trip	Trips/ Week	weeks	Travel Cost
Trips to Plas Newydd	0.550		57	3	10	$ 941
						$ -
					Travel	**$ 941**

Supplies				Qty	Unit	Total
Willows	Dpot			2400	$ 2.55	$ 6,120
Red-osier dogwood	Dpot			550	$ 2.55	$ 1,403
Black Cottonwood	T1			550	$ 2.85	$ 1,568
Oregon Ash	T1			50	$ 2.85	$ 143
salmon carcasses				110	$ 0.40	$ 44
vexar				5	$ 220.00	$ 1,100
wood stakes				220	$ 0.50	$ 110
					Supplies	**$ 10,487**

Other Program Costs				Qty	Unit	Total
Photcopying/Printing				1	$ 100.00	$ 100
Office supplies				1	$ 100.00	$ 100
Nextel phone				0	$ 50.00	$ -
Nextel service (month)				5	$ 40.00	$ 200
Administrative and staging space at the Cowlitz Tribal Offices				5	$ 200.00	$ 1,000
					Other Program Costs	**$ 1,400**

Contractual Services				Qty	Quote	Total
Anderson Earth and Environmental	Planting			3550	$2.50	$ 8,875
Anderson Earth and Environmental	Site prep			1	$1,200	$ 1,200
Anderson Earth and Environmental	Site maintenance			1	$1,200	$ 1,200
					Contractual Total:	$ 11,275
					Total Request	**$ 50,000**

In-Kind				Qty	Unit	Total
						$ -
						$ -
					In-kind	**$ -**
					Total Project Cost	**$ 50,000**

APPENDIX L

Appendix L

Spencer Peak Road Decommission

Attachment 1

PROPOSAL FORM -
Lewis River Aquatic Fund

Form Intent:
To provide a venue for an applicant to clearly indicate the technical basis and support for proposed project. Specifically the project's consistency with recovery plans, SA Fund objectives, technical studies and assessments which support the proposed action and approach.

Proposal format:
Please complete the following form for your proposal. Maps, design drawings and other supporting materials may be attached.

The deadline for Proposal Form submission is January 30, 2009. Please submit materials to:

Frank Shrier
PacifiCorp – LCT 1500
825 NE Multnomah
Portland, OR 97232

1. Project Title

Spencer Peak Road Decommission – Forest Road 9300150 and spurs

2. Project Manager

Adam Haspiel
Mount Saint Helens National Volcanic Monument
42218 NE Yale Bridge Road
Amboy, WA 98601
360-449-7833
360-449-7801-FAX
ahaspiel@fs.fed.us- e-mail

3. Identification of problem or opportunity to be addressed

Summarize information about the problem or opportunity addressed by your proposal.

Clear Creek is a tributary to the Muddy River and currently has habitat suitable for the Lower Columbia River ESU coho and steelhead trout. Small numbers of juvenile coho salmon from habitat preparation activities for reintroduction are already using this section of creek for rearing. A few existing roads in the lower Clear Creek Watershed are identified to have high potential for risk of sediment delivery to lower Clear Creek. The lowest two miles of Clear Creek lack quality pool habitat for rearing and overwintering juvenile salmonids. The proposed road decommission addresses one of these roads with high risk of failure which could result in sediment delivery to limited rearing habitat in the lowest 2 miles of Clear Creek.

This road decommission will decrease the risk of catastrophic sediment delivery to Clear Creek and therefore prevent the degradation of fish habitat in the mainstem Clear Creek. The one perennial road/stream crossing is about 1 mile from the confluence of Clear Creek at RM 1.8. The perennial tributary confluence with Clear Creek, provides refugia for fish utilizing Clear Creek. This confluence is about a half mile above both the proposed acclimation pond on Clear Creek and the relatively flat gradient reach proposed by the USFS for adding large wood to restore pools and habitat diversity for juvenile fish, primarily coho and steelhead (Clear Creek Instream Habitat Full Proposal 2009). This road decommission project's elimination of chronic sediment delivery and the sediment delivery risk of culvert failures will improve the aquatic limiting factor of quality rearing habitat for Coho in the lowest two miles of Clear Creek.

Currently, road drainage at one stream crossing is eroding the road tread and delivering sediment to one intermittent tributary of Clear Creek (See photos in Section 14.). Two other stream crossings are at risk of plugging and failure, one of which is on a perennial tributary. This 2.6 mile road decommission project includes removing three stream culverts and all ditch relief culverts, leaving the streams in a stable configuration (channel width and stream banks), and revegetating all disturbed areas. Vehicle access will be eliminated.

4. Background

Provide information related to how this project fits into greater watershed objectives and any previously collected information at the project site (e.g. fish surveys, habitat delineation, etc)

The watershed objectives addressed are to maintain and enhance the sediment regime under which aquatic ecosystems evolved and to maintain and restore habitat to support well distributed populations of aquatic species (Aquatic Conservation Strategy Objectives of the Northwest Forest Plan. Specifically, road decommissions reduce road miles with chronic sediment delivery and high risk of sediment delivery from culvert failures to anadromous fish bearing streams.

The Forest Service is the designated management agency for meeting the Clean Water Act requirements on National Forest Lands. The Gifford Pinchot NF recognizes the need to remediate road crossing failures and has completed an Environmental Analysis which covered about 20 miles of roads considered to be a high aquatic risk. This high aquatic risk rating was based on six aquatic related criteria, of which three assess the risk of sediment delivery (sediment delivery, mass wasting potential and number of stream crossings).

The Clear Creek Roads Project Environmental Analysis focused mainly on roads with the risks of direct sediment delivery to fish bearing waters of Clear Creek and the Muddy River. Project scoping of the community and interested parties occurred during the Environmental Analysis which was completed in September 08. The Forest Service maintains active community involvement by scheduling regular events with legislators, scientists, members, and key individuals for continual program and

project development along with cultivating strong ties with agencies, academia, and local citizen groups.

This project is not a required action for the Forest Service. The Forest Service is not appropriated enough funds to remediate all failed road/stream crossings nor the road/stream crossings that are at a high risk of failure. Consequently, the Gifford Pinchot NF looks for partners with similar goals of minimizing sediment delivery to streams, giving near term priority to fish bearing streams, and special emphasis to streams with federal ESA-listed fish species.

The Gifford Pinchot NF has secured some funding for this project from the Gifford Pinchot Task Force. They had received their funding from two grants for three road decommissions (Ecotrust and Fish Conservancy Grants) of which $34K from ACC funds previously approved for the FR2575 road decommission project was included as matching funds and contributed to their success of attaining the grant funds. Road decommisioning is a high priorty action to ensure that the risk of sediment delivery to the stream channel due to road failure/existence is minimized.

5. Project Objective(s)

State the objectives of your proposal including how the project is consistent with Aquatics Fund objectives and recovery plans. Clearly describe the biological benefits and expected outcome of your project. Describe the technical basis for the objectives including the identification of any supporting technical references. Identify biological metrics to help quantify the benefit of the project.

The objectives of this road decommission is to remove failed or at risk culvert crossings which could deliver large quantities of sediment to the lower 1.8 miles of Clear Creek. The objective of eliminating road related sediment delivery to rearing and spawning habitat is consistent with the Aquatics Fund objectives by benefiting the recovery of fish that will utilize the rearing and anadromous spawning habitat of Clear Creek, in the Muddy River Watershed of the North Fork Lewis River Subbasin. Small numbers of juvenile coho salmon from habitat preparation activities for reintroduction are already using this section of creek for rearing. Eliminating road related sediment from the 9300150 road will protect the existing rearing and spawning habitat in Clear Creek which will support the reintroduction of anadromous fish (spring Chinook, coho and winter steelhead) above the uppermost reservoir. This project will increase the chances for success when reintroduced fish are utilizing the habitat by eliminating the risk of sediment delivery from the road thereby protecting the limited rearing habitat.

The project outcome is the elimination of chronic sediment delivery and the elimination of the risk of sediment delivery to a tributary of Lower Clear Creek. The biological benefit of this project is to keep the sediment regime similar to that which the aquatic species evolved. Decommissioning unneeded high aquatic risk roads is one primary activity to attain this biological benefit. The biological metric would be the number of road culverts removed from stream courses and the quantity of course road sediment removed from the three tributaries. The risk to the spawning and rearing habitat can be quantified as the quantity of sediment that could be directly

delivered to live streams and estimated as the amount of road fill to be removed at the three stream culvert crossings, which is 2235 cu yds for the one perennial culvert and about 1000 cu yds for the other two culverts.

The Lower Columbia Salmon Recovery Six-Year Habitat Work Schedule and Lead Entity Habitat Strategy (April 2006) designates Clear Creek as a Tier 2 reach (page L-2) and lists restoration of sediment processes as having a high potential for benefiting Upper Lewis Coho in Clear Creek (page L-4). In this plan, habitat factor analysis lists primary habitat factors affecting population performance. For Upper Lewis Coho egg incubation sediment and channel stability are listed, and for Upper Lewis Winter Steelhead egg incubation sediment is listed. Project benefits were listed as High for the project category Watershed Conditions and hillslope processes.

6. Tasks

State the specific actions which must be taken to achieve the project objectives.

This road decommission will remove all culverts along the last 2.6 miles of Forest Road 930015 (Attachment B - Map). At each stream crossing, culverts will be removed, channel will be reconstructed to bankfull width and stream banks contoured to 1.5:1, or to match the natural stream banks slopes, dependent upon site conditions. The perennial stream crossing bankfull width is 30 feet and the two intermittent stream crossing bankfull widths are 15 feet. Site evaluation and project design were completed in September 2009.

Re-vegetation with native species of the disturbed areas will be implemented at a time that will best assure the survival of the plants. Revegetation will include applying weed-free straw and mulch immediately after earth disturbing activities are complete. Native seed mix will be applied towards the end of September to maximize germination and growth success (earlier months are too dry). The Gifford Pinchot NF has a native seeding prescription and planting guideline and has developed a seed bank of preferred native species. The generally recommended seed mixture includes blue wild rye, mountain brome and slender hair grass, and is available from the Gifford Pinchot National Forest. Seed will be applied at a rate of 25.5 pounds of live seed/acre. During the spring following completion of earth disturbing activities, 10-12 trees (willow, alder or cedar) will be planted at the three stream crossings to re-vegetate the areas with plants providing root strength to keep the soil in place.

The Gifford Pinchot NF Effectiveness Monitoring Protocol will be conducted and consists of evaluating stream crossings for stable configurations and ground cover for vegetation establishment. Monitoring would occur one year following implementation and again 5 years later.

7. Methods

Describe methods to be used. When using Best Management Practices (BMPs) identify sources of BMPs and how they will protect resource values.

An excavator will remove the culverts and road fill from the stream crossing and then reconstruct the bankfull width and recontour the streambanks. The road fill material will be placed on the existing road outside of the floodable area. Road access will be eliminated.

Best Management Practices include the following:

1) Where work necessitates the operation of heavy equipment within the bankfull width of stream crossings, the timing and extent of this work will be conducted to minimize negative impacts to downstream fish bearing streams. Accumulations of soil or debris shall be removed from drive mechanisms and undercarriage of all heavy equipmenht prior to its working within the bankfull width. Every effort wil be made to avoid stream crossing with heavy equipment.

2) The perennial stream crossing will be dewatered or isolated from flowing waters prior to removal of the culvert to prevent generation of sediment and minimize turbidity.

3) A waterbar will be constructed across the road with an outlet onto the forest floor on any upgrade side of the stream crossings to prevent the existing road ditch flow to access the newly established stream banks.

4) Large wood and/or appropriately sized rock, where available on-site, may be placed within the reestablished streambed to mimic the natural streambed characteristics and/or prevent erosion of the new streambed and banks.

5) Control of invasive weeds will occur where deemed necessary, prior to and after earth disturbing activities.

6) Erosion control measures will be implemented and at a minimum include a heavy application of mulch immediately after work is completed. Seeding will occur and will be delayed until late September when cooler, moister weather conditions aid seed germination and seedling survival.

7) Riparian vegetation such as willow, alder, and cedar trees will be planted at the three crossings to provide shade and future source of large wood (10-12 trees per stream crossing). Planting will be delayed until the following spring to aid the survival of the young trees.

8. Specific Work Products

Identify specific deliverable results of the project. Project managers will be required to provide status updates with submission of project invoices.

Deliverables include: Culverts removed and quantities of material removed from culvert crossings and crossing bankfull widths and stream banks configured to required specifications. Notice of contract award date, project start date, contract completion date, and

tree planting date will be provided. A final project report will be submitted upon project completion.

9. Project Duration

   a. *Identify project duration. Note that duration of a project funded from Fiscal Year 20xx appropriations may extend beyond the end of the fiscal year.*

   b. *Provide a detailed project schedule to include:*
   - Initiation of project.
   - Completion date for each milestone or major task.
   - Project close-out site visit (with PacifiCorp, Cowlitz PUD, and ACC representatives)

   Contract preparation is expected to occur in June and could be awarded in July if all funds are secured. Implementation is expected to occur in the dry season prior to October 1, 2009. The contract for this project is expected to take 10-15 days to complete and implemented in one field season.

   The following is a tentative schedule of milestones. A project close-out site visit with ACC representatives will be provided upon project completion.

   Project Inititiation – The NEPA Environmental Assessment was completed in July 2008 the design for this project was completed in September 08.
   Contract Implementation is proposed for July 2009 if all funds are secured.
   Completion Date for all activities except the tree plantings is September 2009.
   Completion Date for tree plantings is July of the following year.
   Project close out site visit – Field Season one year after construction contract is complete (2010).

10. Permits

    Identify any applicable permits and resource surveys required for project. Please include timeline for obtaining and any action taken to-date. Applicant will be responsible for securing all such necessary permits. Landowner permission is required prior to finalization of a Funding Agreement with PacifiCorp.

    The Gifford Pinchot National Forest has a Memorandum (MOU) with the Washington State Department of Fish and Wildlife Regarding Hydraulic Projects conducted by USDA Forest Service Northwest Region (2005). This MOU allows road decommission on the Gifford Pinchot without an individual hydraulic project approval if the project complies with the provisions of the MOU. This road decommission will be conducted within the provisions set forth in this MOU.

    The Clean Water Act (as amended by the Water quality Act of 1987, Public Law 100-4) authorizes the states to regulate the “fill and removal” activities of Federal agencies. In Washington, the Forest Service has authorization for its fill and removal projects through the MOU with WDFW when the projects comply with the provisions of the MOU.

This project will be in compliance with the requirements found in US Fish and Wildlife Service Biological Opinion for Fish and Wildlife and NOAA Fisheries Biological Opinion for Programmatic Culvert Replacement Activities in Washington and Eastern Oregon (2003/00676).

11. Matching Funds and In-kind Contributions

If applicable, describe any matching funds and/or in-kind contributions that you have secured or have requested through other means. Matching funds are those funds contributed to the project from other funding sources. In-kind contributions may include donated labor, materials, or equipment. Please be specific in your description of contributions and use of volunteers (e.g. ACE construction is donating 8 hours of backhoe operation including operator).

Partial funding for this project has been secured with Gifford Pinchot Task Force and Legacy Roads Funds.

Gifford Pinchot National Forest	$ 20,000	(In-kind) (Co)
Gifford Pinchot Task Force	$ 40,000	(Cash) (Co)
Lewis River Aquatics Fund	$ 33,000	(Cash)

12. Peer Review of Proposed Project

It is encouraged that the proposal be reviewed by an independent resource professional prior to submission for funding. Focus of such review should be on biological value and proposed methodology. Please note who completed the review and contact information. This does not have to be a third party review, and can come from someone associated with the sponsoring organization.

The Lower Columbia Fish Enhancement Group (Nello 360-882-6671), Washington State Fish and Wildlife (Donna Bighouse 360-906-6738), and Mt. Baker Snoqualmie NF (Amy Leib 425-783-6032) reviewed a similar completed project (FR8322700 included ACC funds) in Fall of 08 (Pictures provided in Appendix A). They are willing to comment on this completed decommission project.

13. Budget

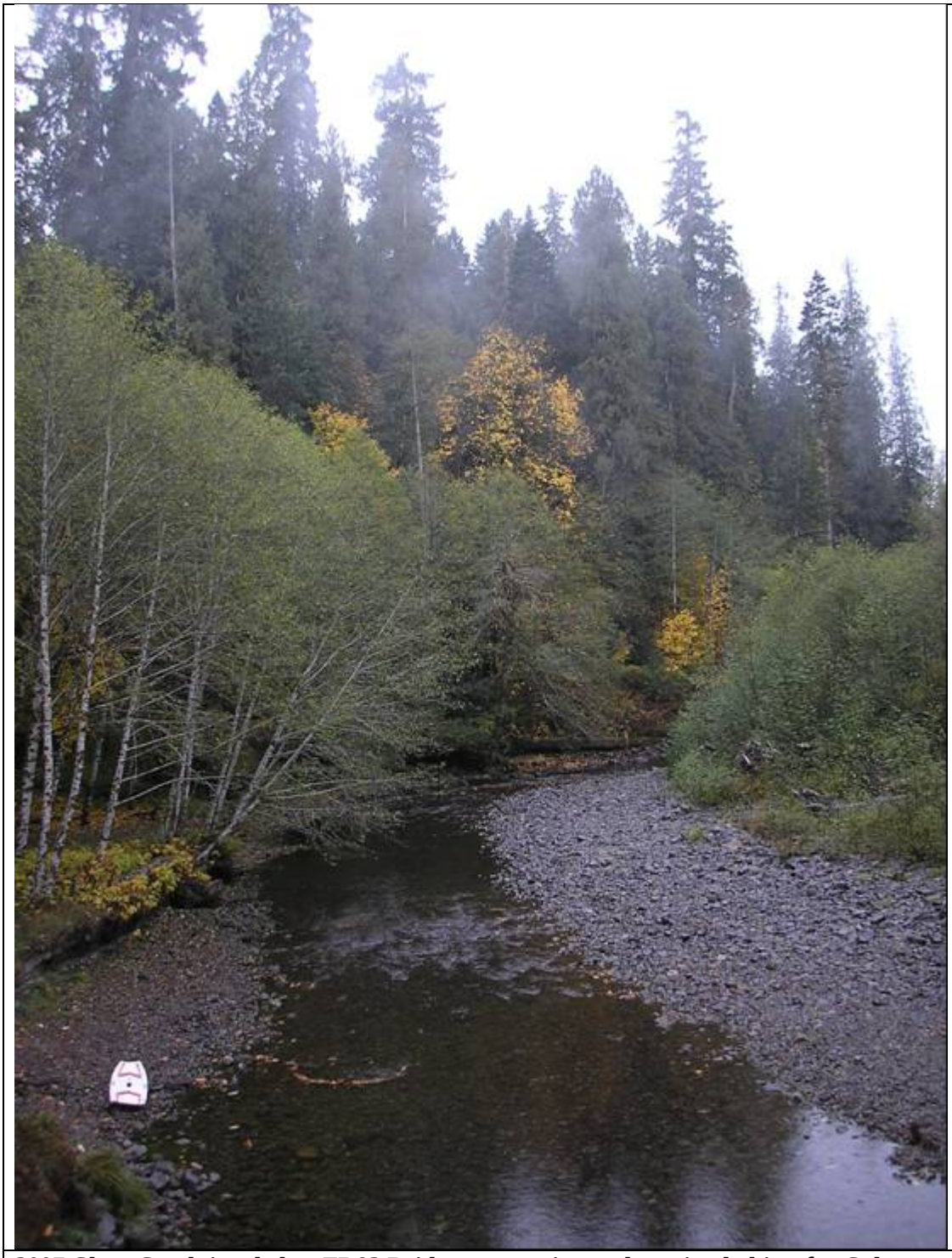
Provide a **detailed** budget for the project stages (Final design, Permitting, Construction, Monitoring/Reporting) by work task. Include:

- Personnel costs
  - Labor and estimated hours for each project employee
- Operating expenses
  - Supplies and materials
  - Mileage
  - Administrative overhead

If in-kind contributions have been acquired, please note contributions according to project stage within the budget.

Project Stage	**Personnel Cost**	**Contract Cost**
NEPA and Preliminary Design	$10,000 – GP Inkind (08) Interdisciplinary Team 30 8-hour days	
Final Design	$3,500 – GP Inkind (Engineer 10 8-hour days and includes mileage)	
Permitting and Project Management	$6,000 – GP Inkind (Hydro & Fish 20 8-hour days and includes mileage)	
Contract		$ 36,000 Gifford Pinchot Task Force **$ 30,000 Aquatic Fund**
Contract Administration and Administrative Overhead	$3,000 GP Task Force $3,000 GP Inkind (Engineer – 15 8-hour days and include mileage)	
Trees	**$1,000 Aquatics Fund** (Technician – Five 8-hour days and includes mileage)	$ 500 Mileage, Materials and Supplies GP In Kind
Monitoring Reporting	**$2,000 Aquatics Fund** $1,000 GP Task Force (Hydro & Fish – 10 8-hour days and included mileage)	

14. Photo Documentation (Per National Marine Fisheries Service's Biological Opinion for Relicensing of the Lewis River Hydroelectric Projects):



2007 Clear Creek just below FR93 Bridge – spawning and rearing habitat for Coho. Tributary, with road crossing sediment risk, confluence with Clear Creek is about 1 mile above this location.

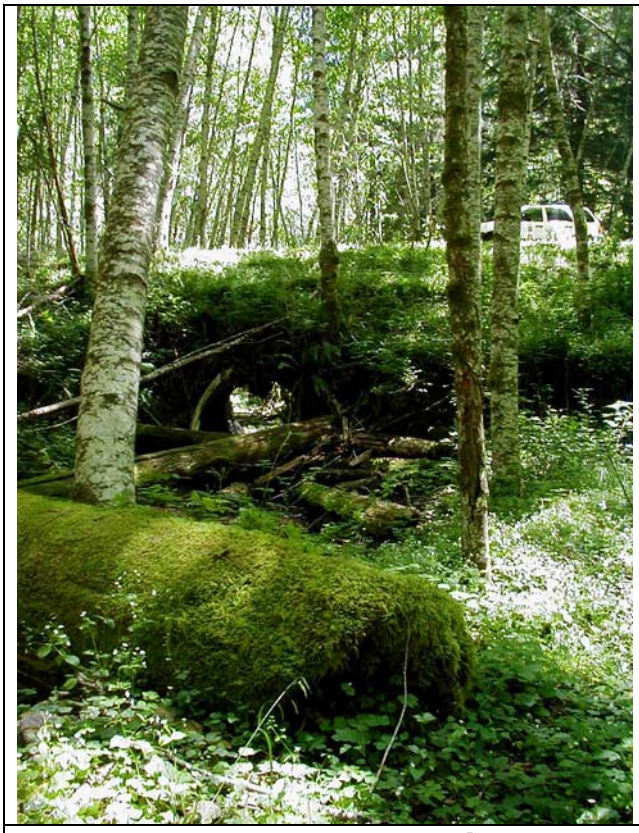
Blocked Culvert Inlet on FR9300150.

Surface erosion from blocked culvert on FR9300150.

Collapsing culvert on FR930015.

Blocked Culvert on FR9300150.

Appendix A. Photos of Completed Road Decommission project – FR8322700.



2006 Pre - Project FR 8322700 Road Decommission – Blocked Inlet, 1 foot drop at outlet. Low gradient tributary to the Muddy River.

2008 Post – Project FR 8322700 Road Decommission – Road Fill Removed, Stream banks match adjacent natural slopes. Available large wood placed into stream and along stream bank, Trees still to be planted. Low gradient tributary to Muddy River.

Spencer Peak Road Decommission

Gifford Pinchot NF

R. 6E R. 7E

T. 8N

T. 7N

Proposed Activity

- Road proposed for Decommission (FR 9300150 & spurs)

Unaffected Areas

- Major road
- Other open road
- Currently Closed Road (not decommissioned)
- Stream
- Spencer Ridge Roadless Area
- Section

NW Forest Plan Mgmt

- Administratively Withdrawn Area
- Late Successional Reserve
- Matrix
- Other Ownership

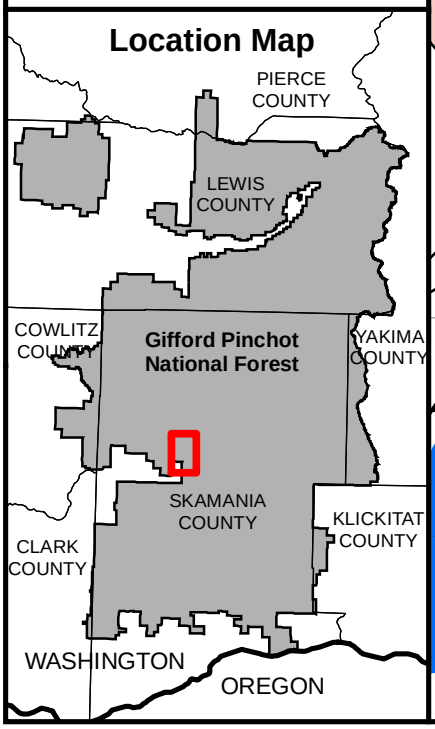
2586000 Road Number

36 Section Number

0 0.3 0.6 Miles

Created on 10/3/08

Location Map



Muddy River

Clear Creek

Muddy River

Pine Creek

Swift Reservoir

Lewis River

2500840

2500910

2500

2500970

9039624

9039626

9039620

9039

9039350

9039250

9039250s

9000

9300157

9300153

9300151

9300150

9300154

9300

26 25 30 29 35 36 31 32 2 1 6 5 12 7 8 13 18 17 16 19 24 20 25 30 29