

# 2008 FINAL Annual Report – Lewis River Aquatic Fund Projects

## Lewis River Hydroelectric Projects FERC Nos. 935, 2071, 2111, 2213



Submitted by PacifiCorp Energy and Public Utility District  
No. 1 of Cowlitz County



May 21, 2008

## Introduction

This 2008 Final 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 2007/2008 funding process, additional projects are expected to be selected and funded annually following the process established by the ACC.

This 2008 report is available to the Public on PacifiCorp Energy’s website at <http://www.pacificorp.com/Article/Article78696.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). 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/Article49203.html>.

On September 5, 2007, PacifiCorp announced the availability of funds for aquatic related projects in the Lewis River Basin (Letter to interested parties from T. Olson, PacifiCorp).

The letter requested that individuals or parties interested in obtaining project funding submit a Pre-Proposal to PacifiCorp. Pre-Proposals were due by October 5, 2007.

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

Cowlitz Indian Tribe	Mud Creek Enhancement
Cowlitz Indian Tribe & WDFW	Two Forks Off-Channel Habitat Reconnection
USDA Forest Service	Muddy River Riparian/Floodplain Improvement
USDA Forest Service	Clear Creek Road Decommission (2575200)
USDA Forest Service	Muddy River Riparian Brushing and Thinning
USDA Forest Service	East Fork Lewis River Instream Structures for Steelhead
USDA Forest Service	Pine Creek Nutrient Enhancement
USDA Forest Service	Bull Trout Restoration and Management Plan for the Lewis River
PacifiCorp Energy	IP (Yale Wetland) Road Culvert Replacement
PacifiCorp Energy	Woodland Park Culvert Replacement
PacifiCorp Energy	Panamaker Creek Road Closure and Culvert Removal

Following the Aquatics Fund – Strategic Plan and Administrative Procedures, PacifiCorp and Cowlitz PUD reviewed and evaluated the Pre-Proposals and, on November 1, 2007, provided the ACC with a list of projects recommended for further consideration (Memo to ACC from Shrier – PacifiCorp and Gritten-MacDonald – Cowlitz PUD). 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:

- Two Forks Off-Channel Habitat Reconnection
- Muddy River Riparian/Floodplain Improvement
- Clear Creek Road Decommission (2575200)
- Muddy River Riparian Brushing and Thinning
- Pine Creek Nutrient Enhancement (project withdrawn via email by USFS on 11/15/07)
- Panamaker Creek Road Closure and Culvert Removal

The following Pre-Proposals were not selected for further consideration by the Utilities given either geographic location or minimal immediate benefit to instream aquatic habitat.

- Mud Creek Enhancement
- Bull Trout Restoration and Management Plan for the Lewis River
- East Fork Lewis River Instream Structures for Steelhead
- IP (Yale Wetland) Road Culvert Replacement
- Woodland Park Culvert Replacement

On December 13, 2007 the ACC concurred with the Utilities evaluation, however, the ACC also included the Mud Creek Enhancement project. Therefore the following project proposals were selected for additional consideration.

- Two Forks Off-Channel Habitat Reconnection
- Mud Creek Enhancement
- Muddy River Riparian/Floodplain Improvement
- Clear Creek Road Decommission (2575200)
- Muddy River Riparian Brushing and Thinning
- Panamaker Creek Road Closure and Culvert Removal

Shortly thereafter PacifiCorp notified the project sponsors and requested full Proposals by January 31, 2008. Upon the due date, five proposals were submitted. The Pine Creek Nutrient Enhancement Project was withdrawn by the USDA Forest Service on November 15, 2007 and the Two Forks Off-Channel Habitat Reconnection Project submitted by the Cowlitz Indian Tribe was withdrawn by the Tribe on January 10, 2008.

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 8, 2008, the ACC was provided a memo (Subject: Review of CY 2007 Aquatic Fund Proposals) 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 (Memo to ACC from Shrier – PacifiCorp and Gritten-MacDonald – Cowlitz PUD).

Following a review period the ACC met on March 13, 2008 and determined that additional information was needed on a number of projects, which the Utilities requested on March 19, 2008. A memorandum dated April 4, 2008 (**Appendix B**) detailing the requested additional information was provided to the ACC on April 10, 2008 at which time funding the above aquatic projects was discussed. Consensus was reached on a final Resource Project list as follows:

**Projects Selected for Funding:**

<b>Applicant</b>	<b>Approved Funding</b>	<b>Proposed Project</b>
Cowlitz Indian Tribe	\$43,500	Mud Creek Enhancement
USDA Forest Service	\$117,000	Muddy River Thinning/Brushing/Invasive Plant Project ( <i>combined with Muddy River Riparian/Floodplain, Brushing and Thinning</i> )
USDA Forest Service	\$34,000	Clear Creek Road Decommission (2575200) – <i>modified to 2575000</i>
USDA Forest Service	\$60,000	* East Fork Lewis River Instream Structures for Steelhead
PacifiCorp Energy	\$25,000	Panamaker Creek Road Closure and Culvert Removal

*\* Full funding is contingent on the following: 1) structures are not to be placed in areas of known spawning, thus spawning surveys will be conducted this year to determine if spawning is occurring at the large pool at site B. If so, no structure will be placed at this site; 2) at least one structure will be left without the addition of spawning gravel (in hopes of informing decisions on future projects and the levels of gravel available in the system).*

**Projects Not Selected for Funding:**

- Two Forks Off-Channel Habitat Reconnection (project withdrawn by Cowlitz Indian Tribe 1/10/08)
- Bull Trout Restoration and Management Plan for the Lewis River
- IP (Yale Wetland) Road Culvert Replacement
- Woodland Park Culvert Replacement
- Pine Creek Nutrient Enhancement

The ACC and project proponents elected to modify some of the projects from their original proposal. Projects include: Muddy River Riparian/Floodplain Improvement, Muddy River Riparian Brushing and Thinning and Clear Creek Road Decommission (2575200). Changes are identified in the following project descriptors and will be further memorialized in project contracting between PacifiCorp Energy and project owner. All changes are acceptable to the respective project owners.

On April 11, 2008 the Utilities notified all absentee ACC Participants of the approved 2007/2008 Aquatic Funding projects for full funding and in accordance with the *Terrestrial and Aquatic Coordination Committees Structure and Ground Rules* document provided a 7-day response period (see below) prior to proceeding with final funding.

***Decision Making.*** *To account for the absence of a Representative during a decision making process, decisions will be considered “informal” for a period of 7-continuous days post-decision, unless extended by the Committee. If all committee Representatives are present or have provided a proxy, the informal period is not needed. The Coordinators will notify absent parties of the “informal” decision via email promptly after the TCC or ACC meeting and request a decision response by the end of the 7 day*

*period. If a Representative fails to respond in the 7-day period, their silence will be considered as no objection to the decision.*

On April 14, 2008, the NMFS's representative Michelle Day noted objection to the selection of two projects: the East Fork Lewis River Instream Structures for Steelhead Project and the Muddy River Thinning/Brushing/Invasive Plant Project.

On May 8, 2008 the ACC discussed the NMFS's concerns expressed during the 7-day response period regarding the East Fork Lewis River Instream Structures for Steelhead Project. Ms. Day expressed that the aquatic funds should be saved for work on items known clearly to be a limiting factor, or is necessary to help with reintroduction of salmon in the North Fork Lewis River. She expressed that the ACC should wait to do projects once salmon are reintroduced and that NMFS does not support the East Fork Lewis River Instream Structures for Steelhead Project. In discussing the East Fork Project, the ACC representatives had varying views and varying levels of support for the Project. In result of discussion, the USDA Forest Service representative noted that considering the ACC input and potential FERC response, the Forest Service is withdrawing the East Fork Lewis River Instream Structures for Steelhead Project for the 2008 funding cycle.

### **Projects Selected for Funding**

The following is a summary description of the individual Resource Projects to be funded by the Aquatics Fund. All of such projects are expected to promote the recovery of anadromous fish post re-introduction above 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) Mud Creek Enhancement**

Proposed by the Cowlitz Indian Tribe this project will include placement of a minimum of 30 small structures of large woody debris (LWD) within the channel of Mud Creek. These structures will be designed to concentrate flow, so as to increase scour in the streambed. Second, they will also serve to armor the banks of the creek, hardening highly erodible portions of the recently deposited sediments. Third, these materials will increase refugia function of the habitat and allow juvenile and mature salmonids using the creek to have more hiding opportunities to escape from predators. The area where enhancement actions will be implemented are in the middle reach of the creek, which is owned by Plas Newydd LLC. In summary, the Tribes intent is to enhance the creek, in order to accelerate the natural restoration processes already at work.

This project requested \$43,500 and would be implemented during low-water conditions of August with structure installation complete by the end of August 2008, followed by the Biological report completed by August 2009.

This project was approved by the ACC and granted funding of \$43,500.

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

The project will directly benefit anadromous fish by reducing sediment loads in the lower Lewis River, and re-establishing fish passage in Mud Creek.

2) 2008 Muddy River Thinning/Brushing/Invasive Plant Project

This USFS sponsored project is to enhance growth and vigor of conifers and dominant hardwoods in the Muddy River floodplain and riparian areas to provide shading to cool summer water temperatures in the river, and to provide a long term source of large woody material. The project also includes removal of invasive plant species to allow more natural recruitment of conifers and other trees and place large woody debris in portions of the floodplain to create nurse logs for planted seedlings. The end result is areas that are overstocked with conifers resulting in unhealthy stands of saplings and small trees. Project treatments would include cutting alder and brush around existing conifers to reduce competition for sunlight, nutrients, and water. Stands near the Muddy River Picnic site would be thinned of smaller conifers reducing competition for sunlight, nutrients and water for dominant conifers and planting of alder or brush thickets with no natural conifers; conifers would be planted after clearing an area of brush to promote growth.

This project will be combined with the brushing and thinning projects and save NEPA, monitoring and administrative costs of approximately \$25,000. Also, this project has similar components to it as the thinning project and additional savings of \$5,000 to \$10,000 in contract costs could be expected by having this contract awarded as combined projects.

The ACC requested USFS combine Muddy River Riparian Brushing & Thinning and Muddy River Riparian/Floodplain Improvement as the final proposal.

This project was approved by the ACC and granted funding of \$117,000.

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

<b>Action</b>	<b>Start Timeline</b>	<b>End Timeline</b>
NEPA	Spring/Summer 2008	Spring/Summer 2008
Contract Development	Summer 2008	Summer 2008
Contract Award	Summer 2008	Summer 2008
Project implementation	Summer/Fall 2008 or 2009 based on fund availability	Fall 2013
Monitoring	Summer 2008	Fall 2013
Establish partnership with Mt. St. Helens Institute Community Education Coordinator.	Summer 2008 or 2009	Fall 2011 or 2012

This project is a measure for protecting and restoring stream habitats by restoring riparian conditions. Invasive species is identified as a limiting factor for the NF Lewis subbasin plan, which includes areas where the reintroduction of anadromous fish will take place. Restoring the natural riparian plant community and placing large wood on the floodplain along the Muddy River is a means of supporting the overall success of reintroduction efforts. Reintroduction of anadromous fish over the long-term will be supported by the establishment of native vegetation on the Muddy River floodplain. Native vegetation establishment will assist the development of shade, off-channel stabilization and long-term development of future sources of coarse woody debris that will benefit the aquatic system. Bull trout may utilize more of the Muddy River system as habitat improves temporally and spatially. In addition, large woody material in floodplains will create refugia areas during floods for juvenile salmonids. The Muddy River is a main tributary to the mainstem of the North Fork Lewis River above the Swift Reservoir dam.

### 3) Clear Creek Road Decommission (2575200 modified to 2575000)

Proposed by the USFS, this project was originally intended to decommission road 2575200, however, a timber sale unit is proposed in the future using the 2575200 road. The timber sale will be able to pay for the decommissioning of the 2575200 road when it is completed. The 2575000 road is in equally bad condition and is in the same road system and the same drainage as the 2575200 road. The USFS proposes to decommission the lower portion of road 2575000 as it will complement the closure of the 2575200 road, resulting in a more thorough closure of roads in the Clear Creek Drainage.

This project includes removal of culverts that could fail, resulting in sediment delivery to Clear Creek, stabilizing erosional areas, re-vegetate disturbed areas, reduction of the number of roads in the Clear Creek Subwatershed, and elimination of vehicle access.

The project requested \$34,000 and would be completed in 10-15 days during the 2008 field season.

ACC representatives agreed to fund this project as revised and granted funding of \$34,000.

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

The primary benefit of the proposed project is the risk elimination of excessive sediment delivery from the road to Clear Creek. The Intrinsic Potential Habitat Model indicates that Clear Creek has good Steelhead habitat from the confluence of this tributary upstream for three miles.

### 4) Panamaker Creek Road Closure and Culvert Removal

This project, proposed by PacifiCorp Energy, is intended to improve a portion of the Panamaker drainage impacted by past logging operations in the area. The decommissioning of roads in the area will stabilize slopes and restore the natural function in the area. PacifiCorp has already removed over a mile of road in this watershed including numerous culverts that were compromised in the 1996 rain on snow event in

this drainage. Other roads have been re-graded, ditched and resurfaced to reduce sediment delivery to both Cougar and Panamaker Creeks. Lastly, gates have been established on roads (including the 2050) to reduce un-authorized access that created wildlife habitat disturbance and increased sediment delivery to streams from roads.

The cost to complete the project is \$25,000. Project implementation will occur in August and September 2008; completion of final grass seeding prior to Fall rains.

ACC representatives approved funding this project as proposed and granted funding of \$25,000.

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

Project implementation will result in a reduction in stream sedimentation, eliminate potential mass failure from blocked culverts, eliminate or at least reduce vehicular use and restore habitat connectivity for aquatic invertebrates.

This project benefits bull trout that spawn and rear in Cougar Creek and other fish and aquatic organisms that inhabit Panamaker and Cougar creeks through reduction in sediment inputs and reduction in vehicular access.

### **Projects Not Selected for Funding**

The following is a summary description of the individual Resource Projects proposed but not selected to be funded by the Aquatics Fund as part of the 2007/08 funding cycle. Justification for not funding these projects is provided.

- Two Forks Off-Channel Habitat Reconnection (project withdrawn by Cowlitz Indian Tribe 1/10/08)
- Bull Trout Restoration and Management Plan for the Lewis River
- IP (Yale Wetland) Road Culvert Replacement
- Woodland Park Culvert Replacement
- Pine Creek Nutrient Enhancement (project withdrawn via email by USDA FS on 11/15/07)
- East Fork Lewis River Instream Structures for Steelhead (project withdrawn by USDA FS on 5/8/08)

#### 1) Two Forks Off-Channel Habitat Reconnection

Proposed by the Cowlitz Indian Tribe and Washington Department of Fish and Wildlife, this project was designed to reconnect a portion of intact forest on the left bank of the river between RM 3.7 and 3.5 off-channel area (an area owned and managed by the Washington Department of Fish and Wildlife), and to restore the habitat within the off-channel area. The off-channel area is the project site.

1. The entrance to the project site will be excavated to remove sediment, reconnecting the site to regular inundation.

2. Reed Canary Grass within the project site will be mowed and soils will be tilled to break up rhizome structure. Best management practices (BMPs) for RCG control have been developed by the Nature Conservancy of Oregon. RCG control methods will be elaborated if this project is selected for full funding.

Nathan Reynolds informed the ACC attendees on January 10, 2008 that the Two Forks project has been withdrawn. During full project development after the Tribes initial proposal, they determined that the Two Forks project would be an extensive and expensive project that would likely return only limited ecological benefits.

#### 2) Bull Trout Restoration and Management Plan for the Lewis River

Proposed by the USDA Forest Service, the goal of this project was to develop a bull trout management and restoration plan for the Upper Lewis sub-basin. A contractor would develop and write the plan based on input from the ACC. Agencies would closely with each other and the contractor as the plan is developed. Funding request was for \$30,000.

With the exception of the USDA Forest Service, responding ACC representatives selected a do not solicit full proposal response for this project in light of the fact that the Habitat Synthesis Tool is ready for use and the US Fish & Wildlife Service is preparing a Bull Trout Action Plan specifically for the Lewis River. The USDA Forest Service elected to not oppose this response.

#### 3) IP (Yale Wetland) Road Culvert Replacement

Proposed by PacifiCorp Energy, this project will replace a culvert that becomes perched when Yale Lake is drawn down for the winter. The culvert will be placed in such a way that the culvert is accessible under any lake level. This will require constructing an approach channel with small weirs that allow fish movement up to the new culvert. This unnamed tributary contains cutthroat trout. A new culvert and approach will open up access to some quality habitat above the culvert and the IP road. Another option would be to install a bridge that would allow natural access to this tributary. In this case it is possible to install a pedestrian-style bridge that would reduce vehicular traffic on a portion of the IP Road. The costs between a culvert replacement and approach channel and a pedestrian-style bridge may be comparable. Funding request was for \$100,000.

With the exception of the USFWS, responding ACC representatives selected to not solicit a full proposal for this project. The Utilities indicated that benefits to anadromous fish would not be realized until year 13 of FERC license.

#### 4) Woodland Park Culvert Replacement

Proposed by PacifiCorp Energy, this project will remove and replace an old log culvert on an unnamed creek that runs through Woodland Park and empties into Lake Merwin. The purpose of this task is to provide connectivity and to provide better drainage during high run-off periods. By allowing for higher run-off, future habitat damage due to debris flows could be prevented. This unnamed creek is a non-fish bearing stream.

The ACC determined that this project does not enhance or provide access to historic habitat, it does not benefit fish habitat directly or ESA listed or anadromous reintroduction. Responding ACC representatives selected a do not solicit full proposal response for this project. Funding request was for \$10,000.

5) Pine Creek Nutrient Enhancement

Proposed by the USDA Forest Service, Adam Haspiel informed the ACC on November 15, 2007 that the Pine Creek Nutrient Enhancement project approved in the 2007 funding cycle will be postponed one year and due to the postponement the Pine Creek Nutrient Enhancement Pre-proposal project for the 2008 funding cycle will be withdrawn.

6) East Fork Lewis River Instream Structures for Steelhead

Proposed by the USDA Forest Service, Diana Perez informed the ACC on May 8, 2008 that the East Fork Lewis River Instream project originally approved by the ACC would be withdrawn and resubmitted to the ACC for review and considering during the 2009FY funding cycle.

**Conclusion**

This report provides the final 2007/2008 Resource Project descriptions and plans for aquatic projects to be funded from the Lewis River Aquatics Fund. Consistent with Consultation with the ACC, certain Resource Projects have been modified and those modifications have been accepted by the Project owners. Distribution of funds to these projects will reduce the current Aquatic Fund by \$219,500. Of the projects selected by the ACC, the Panamaker Creek Road Closure and Culvert Removal project can be attributed to bull trout enhancements.

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

### 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 20<sup>th</sup> 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 21<sup>st</sup> 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

Memorandum dated April 4, 2008  
CY 2007/2008 Lewis River Aquatic Fund Proposals  
Additional Information Requests

## MEMORANDUM

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**DATE:** April 4, 2008

**TO:** Aquatic Coordination Committee

**FROM:** Kim McCune and Todd Olson

**SUBJECT:** CY 2007/2008 Lewis River Aquatic Fund Proposals – Additional Information Requests

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The following is documentation of follow-up actions related to the Lewis River Aquatic Coordination Committee (ACC) March 13, 2008 meeting – discussion of calendar year 2007/2008 Aquatic Fund Proposals. This memo includes responses from the Cowlitz Indian Tribe, USDA Forest Service, and PacifiCorp.

### **Cowlitz Indian Tribe**

To: Nathan Reynolds, Cowlitz Indian Tribe

From: Todd Olson, PacifiCorp Energy

*Re: Mud Creek Enhancement*

Dear Nathan,

On March 13, 2008, the Lewis River Aquatic Coordination Committee (ACC) met to discuss the 2007/2008 Aquatic Fund proposals of which the above project was considered. The ACC had the following information requests that require your response prior to any approval of project funding. We would appreciate your response by March 31, 2008.

1. Please provide information that the culverts located at the mouth of Mud Creek meet fish passage guidelines/criteria. The ACC is interested in design specifications such as culvert size, length, grade, condition, min/max water flow, etc.
2. Please provide a budget breakdown of costs related to Contractual Services, how was the cost of "Equipment staging and use - \$20,000" determined?
3. Although David Morgan supports the project, please confirm that Rhidian Morgan (project land owner) is also supportive and note how the Morgan's will be part of the design of the final project.

Thank you for your attention to the above, the responses you provide will be distributed to the ACC. In early April the committee will make final selections and notify project proponents.

#### Cowlitz Indian Tribe Response: Mud Creek Enhancement

In response to Todd's email of March 19th copied below, here are the Cowlitz Tribe's responses.

1. The 2 culverts at the mouth of Mud Creek are made of concrete and have a 6' inner diameter; are 40' long; have no slope or grade, and are in excellent condition. They do not have tide gates or any obstructions; they are on a base of crushed rock and the streambank slopes through which the culverts protrude (on either side of the road bed) are armored with riprap and gabions. The only fish passage/connectivity issue that might occur is a natural tidal disconnection during periods of low creek flow. I have attached a picture I took this morning of the downstream ends of the culverts. This picture was taken at ~9:00AM, and the corresponding tide chart for the Columbia River at St. Helens, OR, demonstrates that the river height on that gauge was 3.18 ft at 9:00 AM. Recent tidal fluctuation has been varying between 2 and 5'. See attached chart. In particular, note the high water line visible on the interior of the culverts; I assume this line represents the previous 5AM high tide of just under 5' elevation. Please remember that the landowner originally desired to put a bridge in this location, but permitting agencies forced the landowner to install culverts.

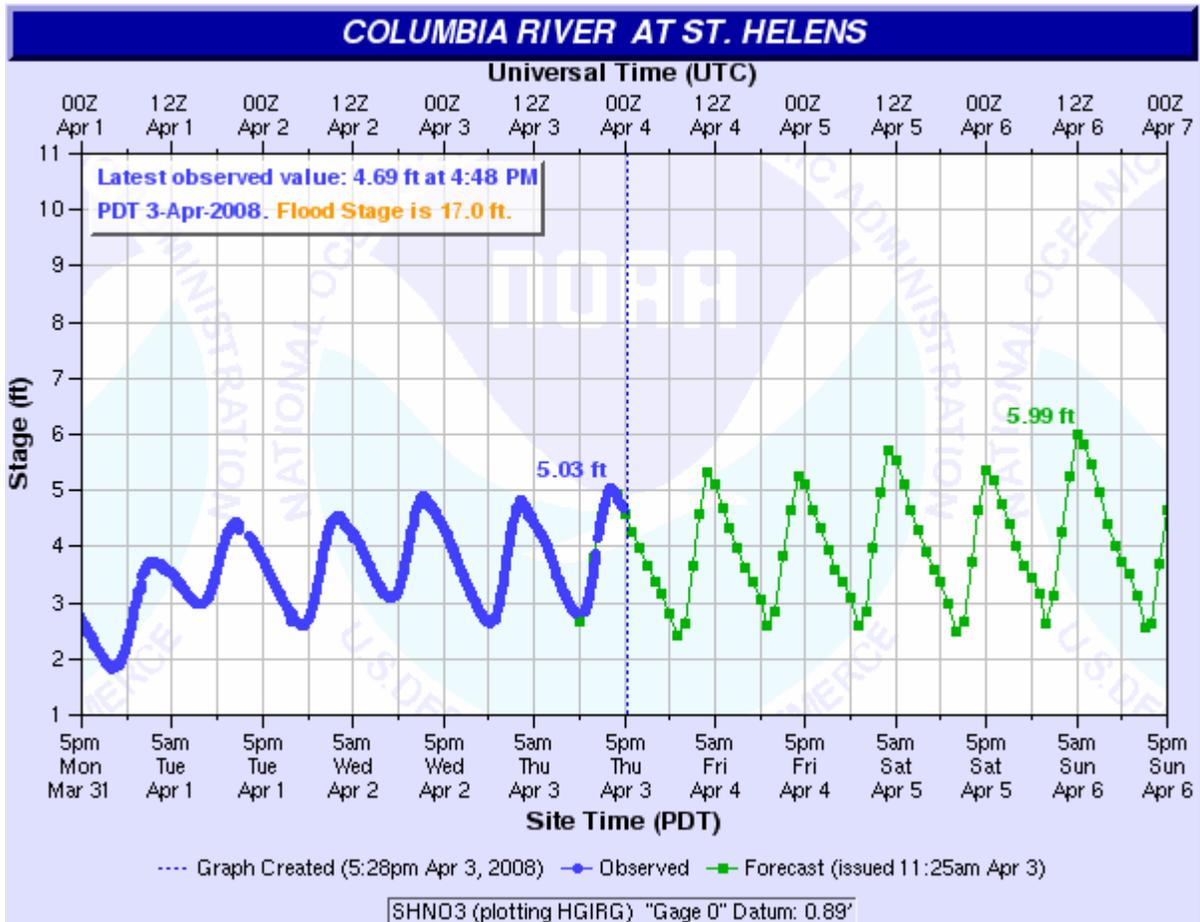
2. The \$20,000 contractor fee has been broken down by the contractor as follows:  
Mobilization to get equipment to the project site and back: \$4,000  
330 Excavator and operator: \$1,500/day for 5 days = \$7,500  
D-8 Cat and operator: \$1,500/day for 5 days = \$7,500  
Incidentals: \$1,000

3. A recent phone conversation (2-Apr-2008) that Cowlitz Tribal Biologist Shannon Wills had with Rhidian Morgan confirms both that Rhidian supports the project, and that Rhidian has delegated the landowner's project coordination to his son David -- therefore David Morgan remains the correct landowner point of contact for the Tribe's proposed project. David Morgan will have significant structure design and structure siting input with the final design team; the team will need to consider various factors: ease of access, type and shape of LWD materials obtained, and hydrology of the creek project sites. I foresee that many of these final designs will be developed onsite, with the tribal project manager, a consulting hydrologist, the equipment contractor and the landowner. The landowner will have ultimate veto authority. The Tribe shall not, and does not desire to, implement ANY action or structure without full approval and acceptance from the landowner.

If the answers I have provided here are unsatisfactory to PacifiCorp, or any member of the ACC, I will be pleased to prepare a further response.



Mud Creek Culverts



## **USDA Forest Service**

To: Adam Haspiel, USDA Forest Service

From: Todd Olson, PacifiCorp Energy

*Re: 2008 Muddy River Thinning/Brushing/Invasive Plant Project, 2008 Clear Creek Road Decommission (2575), and 2008 East Fork Lewis River Instream Structures for Steelhead*

Dear Adam:

On March 13, 2008, the Lewis River Aquatic Coordination Committee (ACC) met to discuss the 2007/2008 Aquatic Fund proposals of which the above project was considered. The ACC had the following information requests that require your response prior to any approval of project funding. We would appreciate your response by March 31, 2008.

### 2008 Muddy River Thinning/Brushing/Invasive Plant Project

1. Please provide a budget breakdown of costs related to Contractual Services, how was the cost of "Thinning, brushing and invasive eradication Contract - \$73,000 and herbicide Contract - \$10,000" determined?
2. Given concerns that this project will most likely take effort beyond the proposed three year period, please identify the opportunities available to obtain additional funds in future years to continue the eradication-restoration work.

### 2008 Clear Creek Road Decommission (2575)

1. Please provide a budget breakdown of costs related to Contractual Services, how was the cost of "Contract ACC - \$34,000" determined?

### 2008 East Fork Lewis River Instream Structures for Steelhead

1. Please provide a budget breakdown of costs related to Contractual Services, how was the cost of "Excavator Contract - \$40,000 and the Supplies and materials - \$16,000" determined?
2. Please meet with LCFRB to discuss the technical aspects and merits of this project. If possible and needed, rescope project to gain LCFRB approval. Provide revised project proposal to ACC.
3. Please provide information on the selection of sites for the instream structures, and if possible identify the specific locations.

Thank you for your attention to the above, the responses you provide will be distributed to the ACC. In early April the committee will make final selections and notify project proponents.

## **USDA Forest Service Response: Muddy River expanded budget 2008**

### 2008 Muddy River Thinning/Brushing/Invasive Plant Project

1. Please provide a budget breakdown of costs related to Contractual Services, how was the cost of "Thinning, brushing and invasive eradication Contract - \$73,000 and herbicide Contract - \$10,000" determined?

2. Given concerns that this project will most likely take effort beyond the proposed three year period, please identify the opportunities available to obtain additional funds in future years to continue the eradication-restoration work.

**Brushing/thinning**

The costs for items shown in this table are derived from past contracts awarded on Mount St. Helens National Volcanic Monument (MSHNVM) for similar types of work. An adjustment of 50% was made to the costs of those contracts to account for specialized requirements of this contract. Brush piling has cost anywhere from \$250 to \$1000 per acre on MSHNVM depending upon the amount and complexity of the brush piling. We chose to take a more conservative figure of \$450 per acre because some areas are sparse and some are dense.

We have done some preliminary map work from aerial photographs and drew polygons around stands that look like they need work. We went out 340 feet from the edge of the river because that is the length of two site potential trees (Forest Service standard Riparian Area). We came up with a total of 266 acres of brushing and thinning, 76 acres of which is primarily scotch broom dominated. Piling of Scotch broom will occur on 29 of those acres so we can burn on site.

**Herbicide**

The cost derived for the herbicide contract comes from estimates developed on the Mt. Hood National Forest. Their costs averaged \$340 acre based on manual treatment using a backpack sprayer. We wanted to treat about a third of the worst known scotch broom areas, so for \$10,000 we could treat approximately 29 acres.

**Nurse Logs & seedlings**

The costs derived for nurse logs and seedlings is based upon acquiring wood from Swift Reservoir and transporting it to Muddy River floodplains. We are estimating the cost for this based on known excavator costs from the East Fork Lewis River Project. We then estimated that each log will take 30 minutes to place. \$200/hour multiplied by 50 logs divided by ½ (30 minutes) = \$5,000, move in and out of equipment will be about \$1200.

We got quotes for self loading log trucks for \$85/hour.

We will plant 6 seedlings per nurse log.

Item	Cost per unit	Number of units	Total cost
Excavator	\$200/hour	25	\$5,000
Excavator Move in/out	\$1200	1	\$1,200
Nurse Log transport	\$85/hour	12 hours	\$1,020
Seedling purchase and planting	\$10/tree	300 trees	\$3,000
<b>Total</b>			<b>10,000</b>

<b>Item</b>	<b>Estimated cost per unit</b>	<b>Estimated Units</b>	<b>Total cost</b>
Brushing/thinning/ Scotch broom cutting	\$200/acre	250/acres	\$50,000
Brush Piling	\$450/acre	29/acres	\$13,050
Nurse logs and seedlings	\$200/log/seedling	50 log/seedling	\$10,000
<b>Total</b>			<b>\$73,050</b>
Herbicide	\$340/acre	29 acres	\$9,860
<b>Total</b>			<b>\$9,860</b>

### **Future Funding**

We expect the thinning and brushing to be completed over a three year time span for this project, however invasive weeds (scotch broom) need to be controlled and monitored for a number of years following initial control methods. It is nearly impossible to eradicate an invasive weed without multiple attempts. Maybe a better term is a controlled population. In any case after the initial three year time span that we have to use ACC funds we will need to find additional funds. The Forest Service will have a stewardship timber sale in the Muddy River basin in 2009 or 2010. Funds generated from this sale will enable us to continue monitoring and eradicating/controlling scotch broom initially treated by this project. Another funding source would be Forest Service Challenge Cost Share Funds, Invasive weed program management funds, or other grants. The Forest Service will make a commitment to continue invasive weed control in this area after the three year period for the ACC project runs out.

### **USDA Forest Service Response: Clear Creek Road Decommission (2575)**

The estimate was made based on knowledge gained from previous road decommissions including the 8322700 decommission. An engineer reviewed the culvert sizes, inlet and outlet depths, and stream types, and approximated the cost. I have updated the spreadsheet to show the engineer's cost estimates for culvert removals from the previous ACC project - Muddy River Tributary Road Decommission. The Muddy River Tributary Road Decommission final bid was very close to the engineer's cost estimate. For the Clear Creek FR 2575 Decommission, the engineer will go out once the snow melts, to survey each culvert removal area so that exact quantities of fill to be removed can be determined and put into the contract. If the final engineer's cost are significantly higher, we are not planning to request additional funds from ACC.

Clear Creek Road Decommission Contract Budget Breakdown

Road 2575 MP 1.9 - 3.9

MP	Culvert size	Stream Class	Outlet depth	Comments	Estimated Costs \$K
2.5	18	Road Ditch Relief	6		2
2.8	18	Perennial non-fish	50	Inlet obstructed	20
2.9	36	Perennial non-fish	13		5
3	24	Perennial non-fish	25		10
3.1	36	Perennial non-fish	13		5
3.3	48	Intermittent	15		5
3.5	24	Perennial non-fish	15		5
3.7	24	Perennial non-fish		Fill gone	
3.9	24	Ephemeral	12		5
Total					57

\$4K Move In Move Out = \$61K for design and Contract

Partner came forward with \$40K some of which was needed for Contract Admin

Requested the remainder from ACC

Previous ACC Funded Project - Road 8322700 Cost Estimates for various size culverts with varying fill depths

Outlet Depth	Engineer Cost Estimate
29	\$22,986
24	\$21,659
23	\$11,486
18	\$12,685
18	\$6,942
17	\$8,355
14	\$3,645
14	\$3,645
13	\$2,613

**USDA Forest Service Response: East Fork Lewis River expanded budget 2008**

2008 East Fork Lewis River Instream Structures for Steelhead

1. Please provide a budget breakdown of costs related to Contractual Services, how was the cost of "Excavator Contract - \$40,000 and the Supplies and materials - \$16,000" determined?
2. Please meet with LCFRB to discuss the technical aspects and merits of this project. If possible and needed, rescope project to gain LCFRB approval. Provide revised project proposal to ACC.
3. Please provide information on the selection of sites for the instream structures, and if possible identify the specific locations.

2008 Excavator and Marooka Estimate

<b>Item</b>	Estimated Hours	Estimated unit cost	Total cost
Excavator with operator	128	\$200/hour	\$25,600
Tracked dump truck with operator	64	\$170/hour	\$10,880
Move in/out of Excavator	1	Lump Sum	\$2000
Move in/out of Tracked Dump truck	1	Lump Sum	\$1500
<b>Total</b>			<b>\$39,980</b>

Cost Estimate Worksheet  
for East Fork Lewis River Restoration Project by Excavator 2007

<b>Item</b>	Estimated Hours	Estimated unit cost	Total cost
Excavator with operator	64	\$145/hour	\$9,280
Tracked dump truck with operator	32	\$165/hour	\$5,280
Move in/out of Excavator	1	Lump Sum	\$750
Move in/out of Tracked Dump truck	1	Lump Sum	\$750
<b>Total</b>			<b>\$16,060</b>

Actual Contract Cost-as awarded  
for East Fork Lewis River Restoration Project by Excavator 2007

<b>Item</b>	Estimated Hours	Estimated unit cost	Total cost
Excavator with operator	64	\$190/hour	\$12,160
Tracked dump truck with operator	32	\$155/hour	\$4,960
Move in/out of Excavator	1	Lump Sum	\$2000
Move in/out of Tracked Dump truck	1	Lump Sum	\$1500
<b>Total</b>			<b>\$20,620</b>

## Supply Cost Estimate Form

Supply Item	Cost per Unit	Number of Units	Total Cost
Boulders	\$30 ton	200	\$6,000
Boulder Delivery	\$30 ton	200	\$6,000
Spawning Gravel	\$17 ton	100	\$1,700
Spawning Gravel Delivery	lump sum	1	\$1,500
Large Wood and Delivery	12 clusters worth	1	\$8,00
TOTAL			\$16,000

### **Excavator Contract, with Marooka off road dump truck.**

The cost for this contract was developed using a combined source. In 2007 we advertised a similar contract to install boulder cross weirs and large woody material clusters in the Upper East Fork Lewis River in Site A. The original cost estimate was developed using criteria developed by Fish First for similar projects they had implemented on Cedar Creek. Then we called local equipment rental companies (United Rentals and a company specializing in caterpillar rentals) Using this information we developed a contract and went put it out for bid. We awarded this contract for \$20,620 to build two to three cross weirs with large wood complexes. We ran this contract as an equipment rental contract, and are expecting to use 64 hours of excavator time and 32 hours of Marooka time. In addition, it included on move in and move out.

We used known prices from the 2007 awarded contract to estimate prices for this contract. For purposes of this contract we doubled the hours involved to 128 hours of excavator time and 64 hours of Marooka time. The move in and move out was estimated to be the same as the actual 2007 contract (not the cost estimate). We added some money for inflation due to the cost of fuel. This led us to a final estimated cost of \$39,980 for the excavator contract that included the Marooka as well for this proposal. We rounded the cost up to \$40,000 to make it a simple figure for the purpose of the ACC proposal.

### **Boulder Cost Estimate**

We purchased boulders for the 2007 project from a Tower Rock, a rock pit in Castle Rock Washington that has square sided boulders that helps immensely to construct the boulder cross weirs. We purchased 200 tons, enough boulders for three to four cross vanes and anchor boulders for the large wood clusters for \$6,000. The cost for delivery of these boulders was \$30 ton for another \$6,000. We had some year end money left at the end of 2007 and we purchased additional boulders for \$7,272 to help offset costs on a future project in the East Fork. The price came out to approximately \$60 a ton for delivered boulders.

We used these known prices to develop a cost estimate this proposal.

**Spawning Gravel Estimate**

We purchased spawning gravel for the 2007 project from Groat Brothers rock pit in la Center Washington. We purchased 120 tons (about 100 cubic yards) of spawning gravel for \$17 a ton in 2007. Delivery was another \$1,522 dollars.

We used these known prices to develop a cost estimate this ACC proposal.

**Large Woody Material estimate**

We were fortunate enough to have some wood stockpiled for the 2007 contract and did not need to purchase wood. For this ACC proposal we estimated a cost.

PART I—THE SCHEDULE  
 SECTION B—SUPPLIES OR SERVICES AND PRICES/COSTS

ITEM NO.	SECTION B SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Hydraulic Excavator, (with hydraulic thumb) Track Mounted. Minimum Bucket = 1.0 cubic yard toothed bucket and a 48" wide grading or muck bucket without teeth Minimum Operating Weight <del>45,000</del> lbs 60,000 lbs.	64	HR	\$ 190.00	\$ 12,160.00
2	Mobilization (in and out) Adjusted for larger excavator	1	EA	\$ 2,000.00	\$ 2,000.00
3	Tracked dump truck Minimum payload 10,000 lb (Morooka MST 1100 or equivalent)	32	HR	\$ 155.00	\$ 4,960.00
4	Mobilization (in and out)	1	EA	\$ 1,500.00	\$ 1,500.00
				TOTAL PRICE	\$ 20,620.00

DUNS #: 141 065 701

TIN #: 56-2385215

002/002  
p.1

WESTHELDONIANVM Kount Bqs  
360-835-0288

08/20/2007 11:44 FAX 3604497801  
 Moneyly Excavating, Inc.  
 Aug 20 07 11:52

**STATEMENT**

464344

DATE Aug 17, 2007

TO  
 Mount St. Helens Nat. Vol. Monument  
 Photo Office  
 42218 N.E. Yale Bridge Rd.  
 Ambury, OR 98601-4909

TERMS

IN ACCOUNT WITH  
 Red's Rock  
 6626 N.E. 244th St  
 Battle Ground, OR 98604  
 East Fork Lewis River Project

Material hauled from  
 Groat Bros. Piz - Ridgefield  
 Wash. to 5 miles above Sunnyside  
 Campground -

8/13/07	7 1/2 hr Haul	105/hr	787.50
8/14/07	3 1/2 " "	105/hr	367.50
8/14/07	3 1/2 " "	105/hr	367.50

Total \$1522.50

Thank you  
 [Signature]

SERVICES/SUPPLIES REC'D

DATE

JOB CODE

odtms 25812

FAKED 8/17/07

**GROAT BROTHERS, INC.**  
 • WOODLAND, WA 98674  
 (360) 225-8868 • (360) 887-4600



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Invoice No: 2619  
 Page No.:  
 Date: 8/31/07

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 42218 NE YALE BRIDGE ROAD  
 AMBOY WA 98601

ROCK

DATE	YOUR NO.	UNITS	RATE	AMOUNT
8/17/07	4692	27.97	17.00	475.49
		-----		
		27.97		
			Invoice Total:	475.49

GROAT BROTHERS, INC.  
 P.O. Box 1630  
 Woodland, WA 98674

SERVICES/SUPPLIES RECEIVED  
*[Signature]*  
 DATE 9/10/07  
 JOB CODE NDWFO3

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 GUILD RD • WOODLAND, WA 98674  
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*Ridgefield Wood waste*  
 DBA → GROAT BROTHERS, INC.  
 P.O. Box 1630  
 Woodland, WA 98674



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 Page No.:  
 Date: 8/15/07

Sold To: MT ST HELENS NAT VOL MON  
 42218 NE YALE BRIDGE ROAD  
 AMBOY WA 98601

ROCK

DATE	YOUR NO.	UNITS	RATE	AMOUNT
8/13/07	4664	49.18	17.00	836.06
8/14/07	4672	22.46	17.00	381.82
		-----		-----
		71.64		Invoice Total: 1,217.88

*pd 8-28-07  
 VISA*

SERVICES/SUPPLIES REC'D  
*AG*  
 DATE *8/17/07*  
 JOB CODE *NEWFO3*

*You can pay By  
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## **Accomplished East Fork Lewis River Restoration Items**

- Conifer release contract in selected stands from Slide Creek to Green Fork
- Seedling Plantings in riparian areas from Slide Creek to Green Fork in selected areas.
- Closed 16 dispersed camping areas along the East Fork with large boulders
- Issued a no camping closure along 8 miles of the East Fork from Sunset Falls Campground upstream past the Green Fork.
- Closed 4 roads with boulders that were direct access roads to the East Fork 1.3 miles
- Closed 1 road and turned it into a trail that followed the Upper East Fork for 2 miles starting at the Green Fork and Ending near Poison Gulch Creek.
- Installed 360 full length trees with a heavy lift helicopter to form 12 engineered logjams.
- Will Install 300 more trees with secured RAC title II funds for \$85K
- Replaced 1 migration problem culvert with open bottom arch culvert
- Upgraded the main 42 road to reduce sediment inputs to the East Fork Lewis. This is the main gravel road that follows the East Fork starting at Sunset Falls. Also Paved the worst ¼ mile near Sunset Falls.
- Held 3 community cleanup days to clean up trash thrown in the river, and trash from dispersed campground to the dump.

### **USDA Forest Service Response: Addendum to East Fork Lewis Instream Structure Proposal**

This addendum provides clarification and additional information about the instream project on the East Fork Lewis River.

The final proposal as written and submitted to ACC was unclear in several aspects, and contained some misleading information. The East Fork project is spread out over two sites, “A” & “B”. Site “A” is 650 feet long and Site “B” is 500 feet long. Site “A” has two structures #1 & #2 that are actually associated with a 2007 contract that has been awarded with Title II funds, but has not been implemented yet. Structures 3, 4, and 5 are part of this year’s proposal with ACC (see attached maps). On site “B” all three structures proposed are for this 2008 ACC proposal. There are two large wood clusters with root wads associated with each cross vane weir. Each cluster is composed of two or three pieces of wood, some with attached root wads. These large wood clusters are placed on the margins of the stream to allow kayaks to pass safely over these structures. This project is part of a series of ‘other projects’ in the East Fork that allows for total ecosystem integration (see attached “other projects” description).

The expected outcome or “Desired Future Condition” is as follows. A restored stream system that allows for spawning and rearing success of steelhead in the Upper East Fork Lewis River. Based on observations in Cedar Creek, each cross vane has the potential to create successful spawning for five to eight pairs of steelhead. This project therefore has the potential to create quality spawning opportunities for 30 to 48 pairs of steelhead. Steelhead fry tend to use slow moving, shallow margin habitat. This project provides margins with increased complexity because of the large wood clusters. In addition, older juvenile

steelhead will have increased complexity in the pools from the large wood clusters. We expect an increase in juvenile steelhead directly proportional to spawning adults.

Stream surveys conducted in the East Fork Lewis on National Forest Lands show there is a low percentage of quality pools in the section from Sunset Falls to Green Fork. The attached table summarizes pool and large woody material data collected on the East Fork Lewis River (see attached table).

Our 2002 Watershed Analysis on the Upper East Fork Lewis River identified the following limiting factors:

Adult spawning sites and incubation success: Low amounts of quality and of spawning gravel areas.

Juvenile rearing and off-channel habitat or refuge areas: very little side channel and connected floodplain areas and complex channels near spawning sites.

Adult holding/security cover; lack of large pools with overhead cover and adequate depth to protect adult fish from predation during summer low flow periods, especially near spawning areas.

Elevated summer water temperatures: water temperatures in the mainstem of the East Fork have exceeded State water quality standards on numerous occasions, sometimes falling within the sub-lethal range for juvenile trout.

Also from the 2002 Upper East Fork Lewis River Watershed Analysis the following concerns were discussed in the "Interpretation Section"

### **Quantity and Quality of Key Habitat Attributes for Resident and Anadromous Salmonids and Instream Large Wood:**

Spawning-limited to due to inadequate supplies and storage of gravel-sized sediment within stream channels.

Loss of channel complexity, spawning and rearing habitat due to historic channel modifications including the Yacolt fire, road building, logging and stream cleanout activities.

Lack of Large Woody Material instream.

Lack of large old trees in riparian reserves and headwater areas, which are considered long-term sources of wood.

This project address the Limiting Factors identified in the Watershed Analysis in several ways. Fish habitat was severely degraded when roads were built adjacent to the creek, the riparian area was logged and the stream was "cleaned out" of large woody material. These actions allowed water velocity to increase, especially during flood events, flushing spawning

size gravel downstream into the lower river. Adding cross vane weirs, spawning gravel, and large woody material will address many of the limiting factors mentioned above.

**1. Spawning Gravel:** Spawning gravel is not readily recruitable to the stream system from headwater streams as a result of past flood events following the Yalcot fire, logging, and stream cleanouts. Flood events flushed stored gravels from the system. New gravels that may be recruited from slides in headwater streams will be rough and angular in size, and undesirable as spawning gravel. The proposed weirs will hold spawning gravel introduced into the system and keep gravel from moving downstream out of the system. Spawning gravel will be mixed to specific standards adopted by WDFW for summer steelhead. Natural gravel, if any, can also be held in these weirs as it moves downstream.

**2. Juvenile Rearing and Refuge Areas.** Large woody material installed in conjunction with cross vane weirs will increase juvenile hiding cover in pools and add to overall stream complexity.

**3. Adult Holding/Security cover.** Large woody material installed in conjunction with cross vane weirs will increase adult hiding cover in pools and will be located near newly created spawning areas to increase success of spawning fish.

**4. Elevated water temperatures.** Other projects (see other activities) in association with this project will increase large trees in the riparian areas by thinning, brushing and seedling planting of stands. Some thermal refugia will be created with this project as pool depths increase.

#### **Adult Spawner use in proposed project sites.**

**Spawning use in site A.** We have little information of actual use in this area. The present substrate size is of an undesirable large size, and does not lend itself to spawning. Spawning steelhead have been observed upstream and downstream of this location, and spawn for at least another 2.5 miles upstream.

**Spawning use in Site B.** Information on this location is better. For the four years prior to the 2006 flood there was no spawning in the section at all because the substrate was too large to use, that includes the large pool area identified below Cross Vane Weir #1. Spawning was occurring 500 feet downstream of this site. Ten to 15 redds were documented between here and Sunset Falls in 2006. This pool used to be 10 to 15 feet deep prior to 2001. Some unknown event caused this pool to partially fill and it is now only 6 to 7 feet deep. Spawning was associated with this pool in the past when it was deeper. Following the 2006 flood, small amounts of spawning gravel moved into this area. It is unknown if steelhead spawned here after the spawning gravel appeared. The gravel is only temporary because there is no structural or natural stream morphological conditions to hold it in place. There was concern that this project would cause a loss of spawning habitat associated with the large pool. This section of the East fork has 16.1 quality pools per mile (see attached table), so even if this project to increase spawning habitat has an unseen negative effect on spawning, it would represent a small percentage of spawning associated with quality pools above Sunset falls. A

pebble count (see attached pebble count) was performed in October 2006 directly below the large pool in this section. The average D-50 of the reach was very coarse gravel to small cobble.

### **Other Projects**

#### **Accomplished East Fork Lewis River Restoration Items**

- Conifer release contract in selected stands from Slide Creek to Green Fork
- Seedling Plantings in riparian areas from Slide Creek to Green Fork in selected areas.
- Closed 16 dispersed camping areas along the East Fork with large boulders
- Issued a no camping closure along 8 miles of the East Fork from Sunset Falls Campground upstream past the Green Fork.
- Closed 4 roads with boulders that were direct access roads to the East Fork 1.3 miles
- Closed 1 road and turned it into a trail that followed the Upper East Fork for 2 miles starting at the Green Fork and Ending near Poison Gulch Creek.
- Installed 360 full length trees with a heavy lift helicopter to form 12 engineered logjams.
- Will Install 300 more trees with secured RAC title II funds for \$85K
- Replaced 1 migration problem culvert with open bottom arch culvert
- Upgraded the main 42 road to reduce sediment inputs to the East Fork Lewis. This is the main gravel road that follows the East Fork starting at Sunset Falls. Also Paved the worst ¼ mile near Sunset Falls.
- Held 3 community cleanup days to clean up trash thrown in the river, and trash from dispersed campground to the dump.

**Table III-8.** Summary of stream survey data, Upper East Fork Lewis River Watershed.

Summary of Level II Stream Survey Data <sup>1</sup>										
Watershed	Stream	Year	Reach	Miles	Bankfull Width <sup>2</sup>	Pools/Mile	Quality Pools/Mile <sup>3</sup>	Large Wood <sup>4</sup> /Mile	Bankfull Width: Depth	Rosgen Type <sup>5</sup>
170800020501 East Fork Lewis River Headwaters	Head Waters East Fork Lewis River	1998	4	2.3	30.3	26.8	7.9	31.4	30.3	B
	Green Fork	1998	1	1.5	19.8*	33.3	5.1	7.2	28.9	B
	Poison Gulch	2001	1,2	1.8	10.5	35.9	2.7	10.7	12.4	A
170800020502 Upper East Fork Lewis River	Upper East Fork Lewis River	1998	1,2,3	5.3	35.7	23.4	16.1	14.6	35.7	B
	Snass Creek	1995	1	1.4	9.1	66.5	ND	14.3	8.8	A
	Slide Creek	1996	1	1.2	20.8	71.0	ND	13.0	ND	B
	Slide Creek	1995	1,2,3	3.4	27.0	77.3	ND	4.8	17.4	B
	Slide Creek T1	1995	1	1.1	19.5	65.8	ND	24.6	21.7	B
	McKinley Creek	2001	1,2	2.2	ND	22.8	4.8	6.1	12.5	A
	Little Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND
170800020503 Copper Creek	Copper Creek	1995	1-4	6.2	51.0	40.3	ND	17.3	23.1	B
	Bolin Creek	1979	1,2,3	0.55	15-25	ND	ND	ND	ND	ND
	Miners Creek	1978	1-4	1.45	ND	ND	ND	ND	ND	ND
	Summit Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Star Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND
170800020504 Middle East Fork Lewis River (King Creek)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
170800020505 Rock Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

1.

Surveys were conducted by Gifford Pinchot fisheries staff or contracted out from 1988 to 2001. Region 6 protocols were not followed until after 1990.

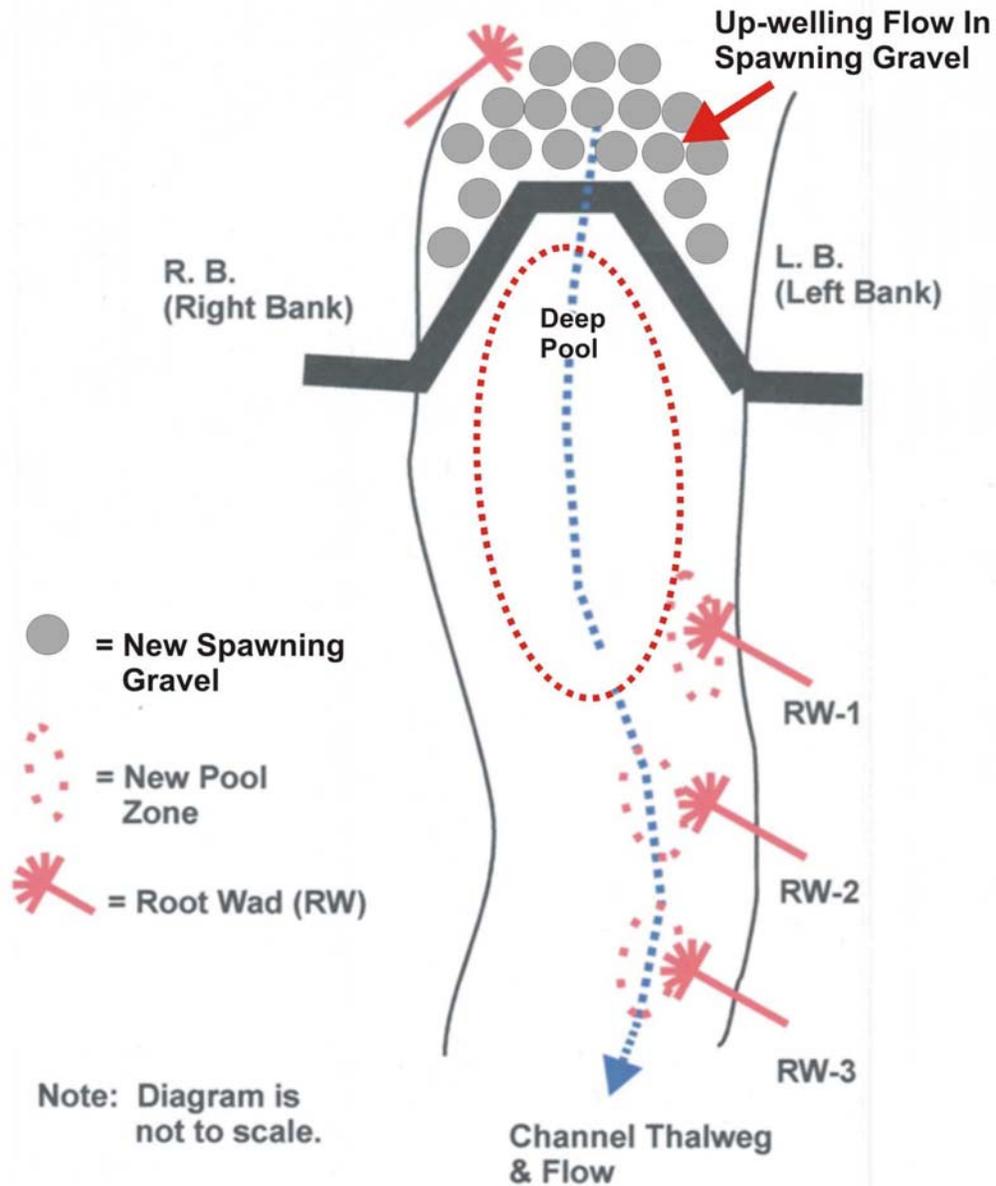
2. \* Only one bankfull width estimate for all reaches; wetted width data is available.

3. Quality or large pools are equal to or greater than 3 feet in depth.

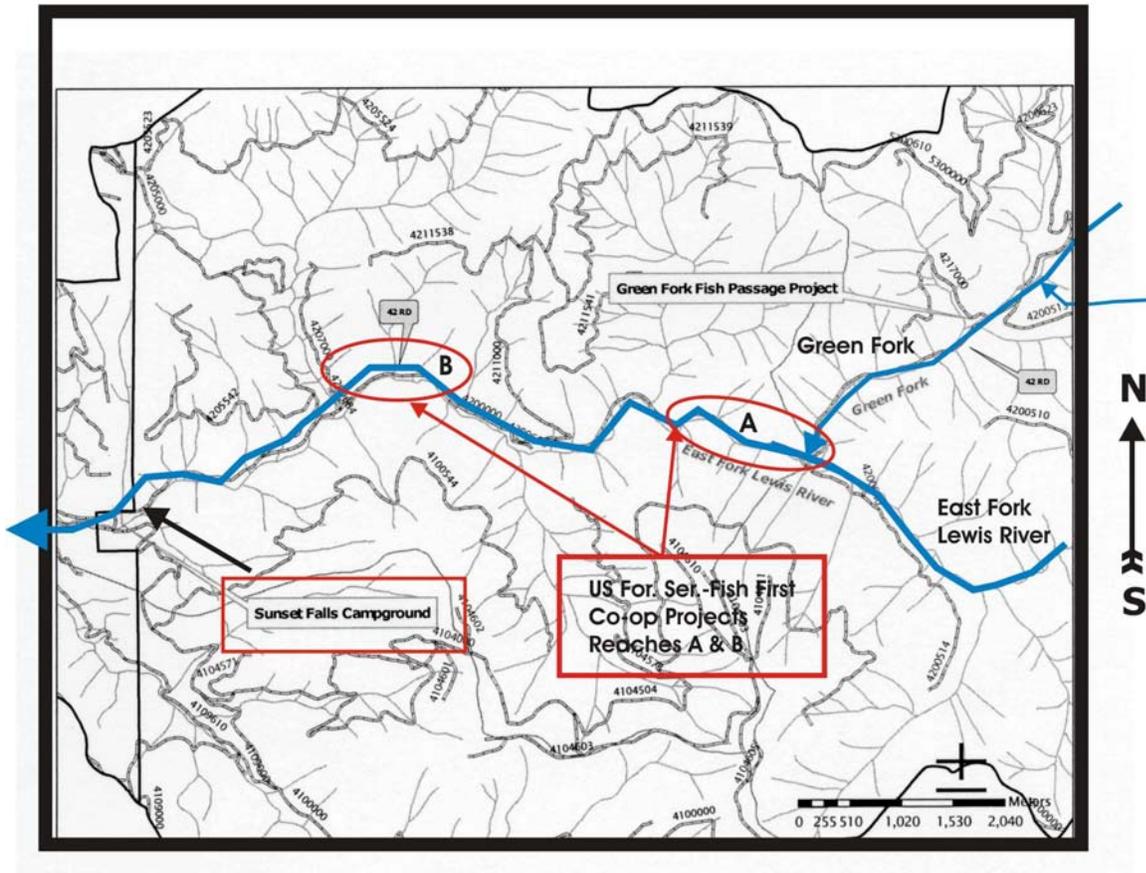
4. Value represents total of large (>24 inches diameter, 50 feet in length) and medium wood (>12 inches diameter, 50 feet in length).

5. A best estimate of Rosgen channel type based on available information about stream gradient, bankfull width to depth ratio and sinuosity (Rosgen 1994). \*Was labeled as type "A".

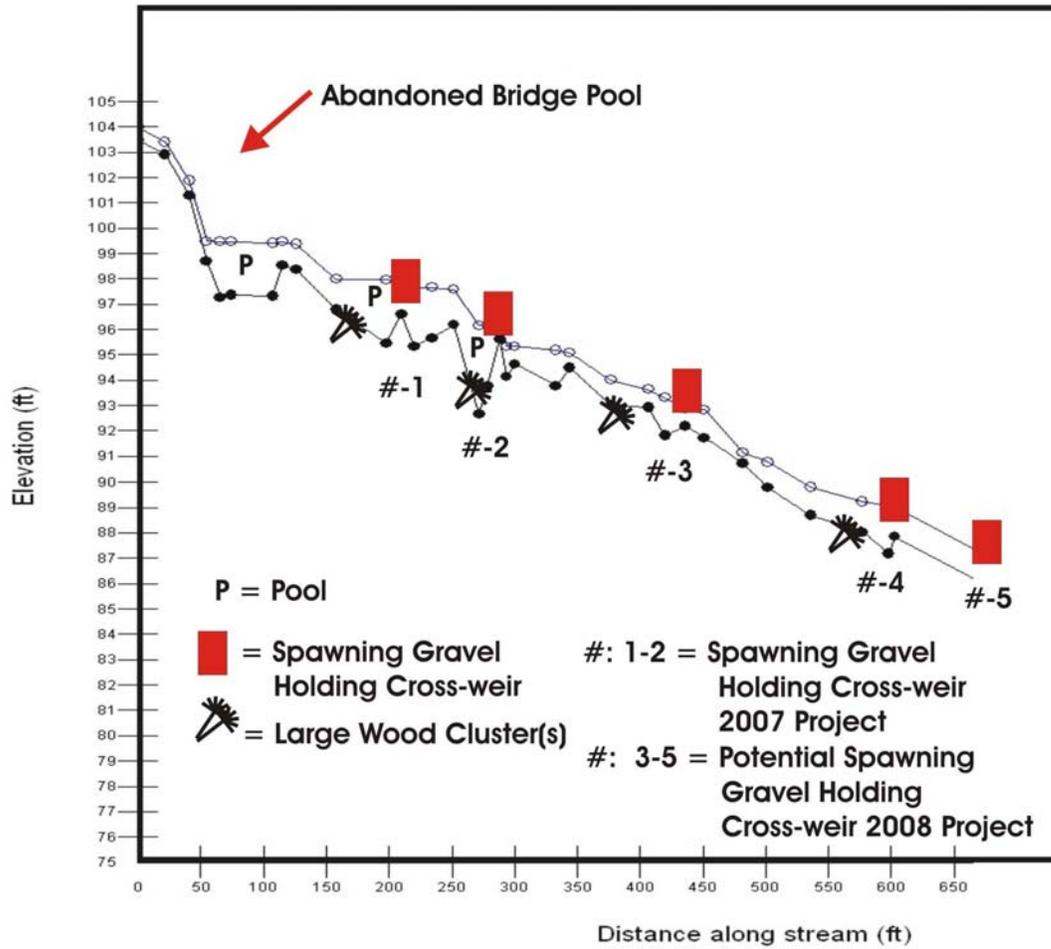
## Basic Diagram Of “CV” Weir With Spawning Gravel Placed Above Weir & Oxygenated Pool Formed Below



**Schematic Map Of Fish Habitat Project Sites - Upper East Fork Lewis River On Giffort Pinchot National Forest - 2008 Project Reaches "A" & "B"**

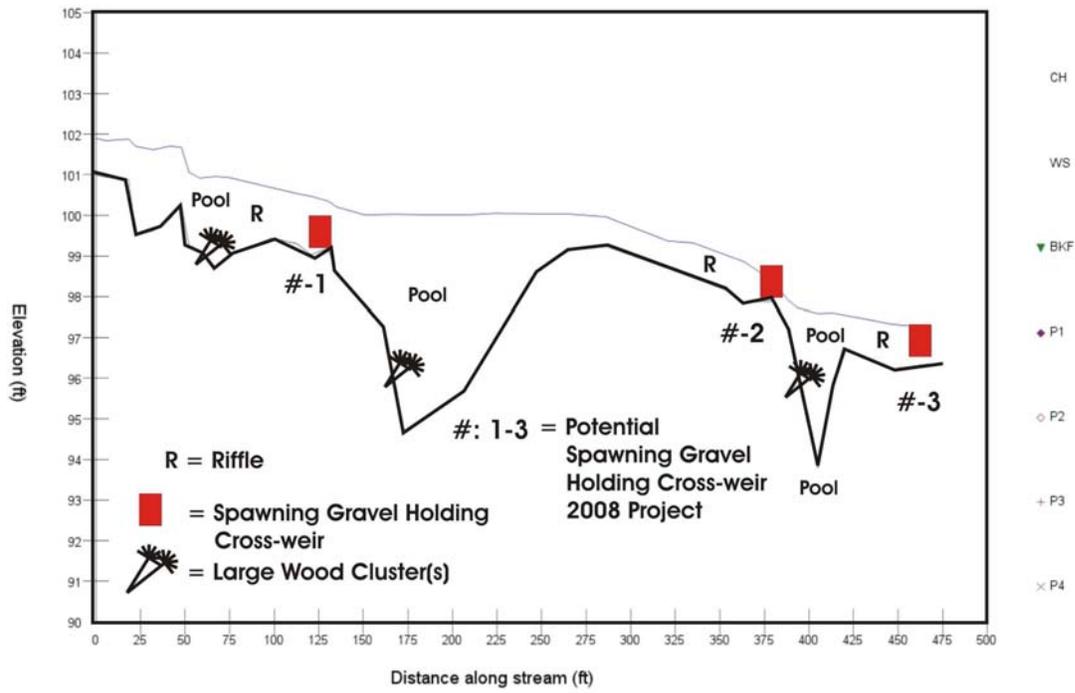


**US Forest Service Reach "A" Stream Profile & Restoration Treatments**  
 US Forest Service Field Data Profile 2006 & 2007



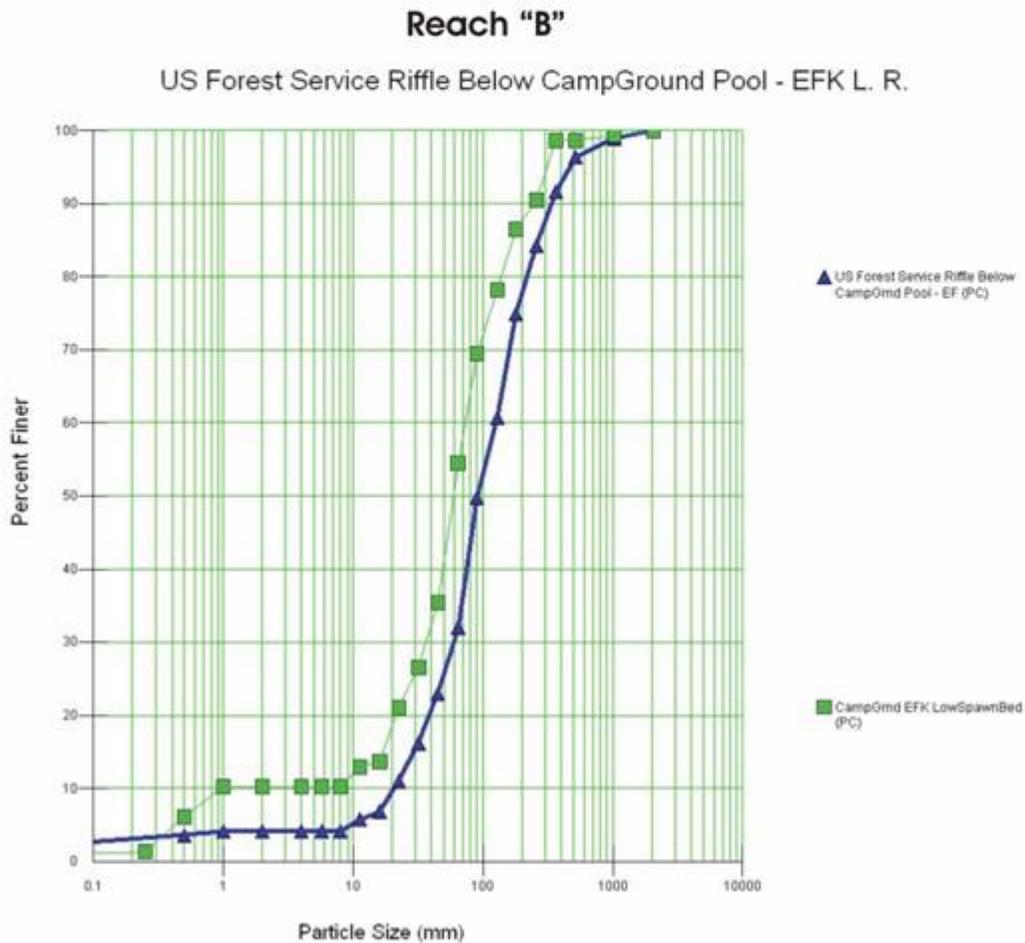
# US Forest Service Reach "B" Stream Profile & Restoration Potential Treatments

## US Forest Service Field Data Profile 2006-2007



## US Forest Service Project Site Analysis Data - Example Graph Riffle Particle Size Counts In Riffle Areas Reaches "A" & "B"

The D-50 Riffle Bed Materials Particle Size Ranged From Very Coarse Gravel (60 mm) to Predominantly Small Cobble (91mm) and Larger"



**PacifiCorp Energy**

To: Erik Lesko, PacifiCorp Energy

From: Todd Olson, PacifiCorp Energy

*Re: Panamaker Creek Road Closure and Culvert Replacement*

Dear Erik,

On March 13, 2008, the Lewis River Aquatic Coordination Committee (ACC) met to discuss the 2007/2008 Aquatic Fund proposals of which the above project was considered. The ACC had the following information requests that require your response prior to any approval of project funding. We would appreciate your response by March 31, 2008.

1. Please provide a budget breakdown of costs related to on the ground activities; how was the cost of "Backhoe w/Operator - \$4,000, Seeding and Stabilization Crew - \$7,800, and Materials - \$2000" determined?
2. The ACC stipulates for project approval, that PacifiCorp take measures to minimize the introduction of invasive plants brought in by the machinery. All equipment which could carry such plant sources should be washed and steam cleaned. Please acknowledge inclusion of such action into project.
3. Please consider the opportunity for cost reduction through an in-kind contribution of resources from PacifiCorp. If an in-kind contribution is made please identify the subject cost savings.

Thank you for your attention to the above, the responses you provide will be distributed to the ACC. In early April the committee will make final selections and notify project proponents.

**PacifiCorp Energy's Response:**

This is a revised response regarding the Panamaker project questions raised at the last ACC meeting. Total costs at the project remain unchanged.

Original Budget

<b>COSTS</b>	<b>Permitting</b>	<b>Construction</b>	<b>Monitoring and Reporting</b>
Personnel Costs			
Contract Supervisor	\$3000		
Biological Staff	\$1000	\$1500	\$1500
Backhoe w/Operator		\$4000	
Seeding and Stabilization Crew		\$7800	
Materials		\$2000	
Administrative Overhead		\$2200	\$2000
<b>TOTAL COSTS</b>	<b>\$4,000</b>	<b>\$17,500</b>	<b>\$3,500</b>

Revised Budget:

Based on the ACC request to provide a further budget breakdown a revised budget is being submitted based on further analysis of costs and contributed labor from PacifiCorp as an in-kind contribution. The original costs were estimated at \$24,500. Because monitoring and reporting will occur in subsequent years to the actual work, they are not included in the revised costs (these are in-kind cost savings of \$3,500.00). Additionally, there is no cost attributed to any oversight by PacifiCorp fisheries staff (potentially another \$1000.00 in staff time). Finally, if there is follow-up stabilization of the site, these costs are not captured. While the costs are redistributed, the original budget was an estimated not-to-exceed price that still seems reasonable. A contractor has not been to the site to confirm expected labor and materials because the site is still under snow at this time. Therefore, the recommendation is to maintain an estimated cost of \$25,000.00 to account for any underestimates and unknown conditions that may exist at the site requiring more labor than anticipated.

Invasive Weeds:

Invasive weed treatment was not spelled out in the original budget but is part of the monitoring that would occur to ensure weeds do not become established. Contractors will be required to ensure their equipment is clean and free of leaks per their established contracts.

Analysis of Costs:

The rates are determined using 2007 PacifiCorp contractor costs and the use of contractors and personnel with previous experience in this type of work. The work will be conducted based on time and materials and as such, the rates are only an estimate. The contract work of labor and equipment is re-apportioned in the analysis below.

## Panamaker Creek Budget Breakdown

### Equipment:

Backhoe: 45 hrs X \$95/hr	\$	4,275
Dump truck: 20 hrs X \$80	\$	1,600
Mobilization	\$	1,200
Mileage: 0.505/ mile X 700 miles	\$	353
Dumping fees for culverts	\$	750
	Subtotal	\$ 8,178

### Supervision:

20 hrs X \$106/hr (agency meeting, inspections)	\$	2,120
PacifiCorp fisheries staff	\$	-
PacifiCorp wildlife staff: 16 hrs X \$70	\$	1,120
	Subtotal	\$ 3,240

### Materials:

Erosion control matting (\$80/ roll X 10 rolls)	\$	800
Silt Fence	\$	300
Grass seed (\$2/lb X 120 lbs)	\$	240
	Subtotal	\$ 1,340

### Labor to stabilize and grass seed:

Foreman (\$45/hr X 24 hrs)	\$	1,080
Crew (\$27.00/hr X 120 hrs)	\$	3,240
Mileage (0.505/ mile X 700 miles)	\$	353
	Subtotal	\$ 4,673

### Permitting:

Preparation of Application	\$	3,000
Submittal and Coordination	\$	1,000
	Subtotal	\$ 4,000

AFUDC and Capital Surcharges	\$	1,982
Taxes (7.6%)	\$	1,078

Project Total \$24,491

Appendix C  
Mud Creek Enhancement

***Mud Creek Enhancement***  
*Proponent -- Cowlitz Indian Tribe*

**PROPOSAL FORM -**  
***Lewis River Aquatic Fund 2008***

**Form Intent:**

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

**Format:** Please complete the following form for each proposal. Maps, design drawings and other supporting materials may be attached.

The deadline for Proposal Form submission is **January 31, 2008**. Please submit materials to:

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

**1. Project Title: Mud Creek Enhancement**

**2. Project Manager:**

Nathan Reynolds, Ecologist  
Cowlitz Indian Tribe, Natural Resources Department  
PO Box 2547  
Longview, WA 98632  
Phone: 360.575.6226  
Email: [nreynolds@cowlitz.org](mailto:nreynolds@cowlitz.org)

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

The Cowlitz Indian Tribe proposes to install a minimum of 30 small structures of large woody debris in Mud Creek. This project will directly benefit anadromous fish by accelerating the naturally-occurring restoration processes in the lower reach of Mud Creek.

**4. Background:**

Mud Creek is the lowest tributary on the left bank of the mainstem Lewis River, entering at rivermile 2.0 (Fig. 1). Project coordinates are UTM 10 519625E 5078800N (NAD27). Mud Creek is a low-gradient stream, lying approximately 8' AMSL throughout its entire 0.5 mile length (Fig. 2), and arising from Mud Lake. The principal tributary to Mud Lake is Allen Canyon Creek. The outlet of Mud Lake is known by most as Mud Creek, but may alternatively be known as Allen Creek.

Since Mud Creek is a low-gradient stream, and is so low in the watershed, the riparian function of Mud Creek is not that of a high-gradient headwater stream typically used by

***Mud Creek Enhancement***  
*Proponent -- Cowlitz Indian Tribe*

salmonid species for spawning habitat. Rather, Mud Creek functions akin to a tidal slough habitat and provides significant refuge and over-wintering habitat for both juvenile and adult salmonids in the otherwise highly constrained floodplain of the lower Lewis River (Fig 3).

Mud Lake has recently received a significant sediment impact from an adjacent gravel quarry. Sediment detention structures at this quarry were poorly monitored and maintained, and the Department of Ecology documented significant violations of the quarry's permitted turbidity discharge level. On June 11th 2007 Ecology levied a \$160,000 against the operators of the quarry – that fine is currently in negotiation, but Ecology intends to deliver proceeds of the fine into restoration of Mud Lake. The continued input of sediments into Mud Lake is not expected (personal communication, Cary Armstrong, 21-Nov-2007).

However, Mud Creek is transmitting significant pulses of these sediments into the lower Lewis River, and the channel of Mud Creek has filled with clay-particle sized sediments, which has significantly decreased the integrity and function of the creek. The corresponding use of the creek by ESA-listed salmonid species has been compromised.

**5. Project Objective(s)**

In response to the compromised integrity of Mud Creek as refuge and over-wintering habitat for juvenile salmonids, the Cowlitz Indian Tribe proposes to place minimum of 30 small structures of large woody debris (LWD) within the channel of Mud Creek. These structures will be designed to concentrate flow, so as to increase scour in the streambed. Second, they will also serve to armor the banks of the creek, hardening highly erodible portions of the recently deposited sediments. Third, these materials will increase refugia function of the habitat and allow juvenile and mature salmonids using the creek to have more hiding opportunities to escape from predators. In summary, our intent is to enhance the creek, in order to accelerate the natural restoration processes already at work.

The area where enhancement actions will be implemented (Fig. 1) are in the middle reach of the creek, which is owned by Plas Newydd LLC (Fig. 4). Landowner permission and support has been obtained (Fig. 5). The higher reach, closer to the lake, is more likely to be affected by lake processes and is further from the primary areas of the creek that would be used by ESA-listed salmonids. The Tribe does not propose to work in that area. The Tribe also recently learned that the lower reach of the creek is actually owned by Burlington Northern RR; at the time of final submittal, we have not been able to coordinate with Burlington Northern to determine if they will allow restoration actions on their property. The Tribe will continue to pursue that option, but may need to focus restoration actions solely onto the lowest portion of Mud Creek owned by Plas Newydd LLC.

The Executive Council of the Cowlitz Indian Tribe has certified a resolution (Fig. 6) 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 at *Mud Creek*, to benefit juvenile salmonids in the

***Mud Creek Enhancement***  
*Proponent -- Cowlitz Indian Tribe*

Lewis River Watershed, and to do so in a respectful and honorable manner consistent with Native Culture.

**This project addresses the following priorities.**

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

1. The Lower Columbia River ESU of Chinook salmon are listed as a threatened species under the ESA.
2. The Columbia River ESU of chum salmon are listed as a threatened species under the ESA
3. The Lower Columbia River ESU of coho salmon are listed under the ESA
4. The Lower Columbia River DPS of steelhead trout are listed as a threatened species under the ESA

**Priority 2:** *Support the reintroduction of anadromous fish throughout the basin.*

The reduction of sediment and the establishment of LWD structures in Mud Creek will make the creek again available for use as refugial over-wintering habitat for anadromous fish. This will increase the survivorship of out-migrating juveniles and result in larger returns of mature spawners to the Lewis River watershed. In turn, this will support larger populations of re-introduced anadromous fish.

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

The reduction of sediment and the establishment of LWD structures in Mud Creek will make the creek again available for use as refugial over-wintering habitat for anadromous fish. This action will directly enhance fish habitat in the Lewis River Basin.

The project may also provide educational benefits as the site could be readily visited by schools or other groups who could learn about restoration by visiting the project.

**This project is consistent with Recovery Plans:**

The *Lower Columbia Salmon Recovery 6-Year Habitat Work Schedule And Lead Entity Habitat Strategy*, Chapter K. *Lower NF Lewis River Subbasin*, (LCFRB 2007) states that the mainstem reach *Lewis 1 Tidal* is Tier 4, but use of the reach by Winter Steelhead, Fall Chinook, Coho and Chum is noted (these are the species specifically called out in the priorities detailed above). Highly rated actions within this reach include projects that will enhance:

- Stream channel habitat structure and bank stability
- Off channel and side channel habitat
- Floodplain function and channel migration processes
- Riparian conditions and function

Mud Creek is not directly noted in the North Fork Lewis River Habitat Assessment (LCFRB 2004), However, section 3.3.1 *System Weaknesses* states:, “At the time of this assessment, forest covered only 14 percent of the current floodplain and less than 5 percent of the historic generalized floodplain for the lower 15.5 miles of the NF Lewis

***Mud Creek Enhancement***  
*Proponent -- Cowlitz Indian Tribe*

River” and, “The lower 15.5 miles of the NF Lewis River was associated with a constrained floodplain, reduced to only 12 percent of its historic area.”, and “There has been a severe loss of side channel habitat throughout the lower 15.5 mi of the river.”

Section 3.3.3 *Protection/Restoration Opportunities* states, “Future restoration of hydromodified habitats in the lower North Fork Lewis River basin should focus on preserving natural channel margins and areas with existing functional floodplain habitats”, and, “wood placement is occurring in the tributary reaches and should be encouraged at sites where the structures have a good likelihood of remaining during storm events.”

Section 3.3.3 *Protection/Restoration Opportunities* further provides a list of the highest priority opportunities

The second highest priority developed in this section is:

*2. Preservation/restoration: north and south banks, RM 2.0 to 3.1*

There are two small areas of intact forest within this portion of the Lewis River, one on the south bank between RM 2.0 and 2.7, and the other along the margin of a point bar located on the inside of a tight meander bend at RM 2.9 to 3.1. Historic maps suggest both of these areas may have supported overflow channels. As a consequence, they represent sites with some potential for development of off-channel habitat.

Preservation/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 eleventh highest priority developed in this section is:

*11. Restoration of tidal slough and floodplain habitats, RM 0.0 to RM 5.0*

Remnant slough, wetland and floodplain surfaces associated with the combined Lewis and Columbia River floodplains persist in the area north and west of the Lewis River between RM 0.0 and RM 5.0. A small amount of undeveloped floodplain also exists east of the river between RM 3.3 and RM 5.0. While these areas currently support relatively limited infrastructure, they are used extensively for agriculture and are separated from the river by a major levee system. Thus, restoration to fully functioning condition would be difficult and expensive. However, there may be opportunities for limited restoration of tidal slough habitat or possibly future conversion of agricultural lands to floodplain forest in this area. This restoration opportunity is given a low priority because of the high cost, degree of difficulty and extensive use of the area in question for agriculture. Similar functional habitats also exist south of the Lewis River in the Ridgefield National Wildlife refuge.

**6. Tasks:**

Task 1: Develop fully engineered project design, Landowner coordination

Task 2: Application for necessary permits, (HPA, JARPA, SEPA?)

Task 3: Identify and coordinate with excavation contractor, prepare subcontract

Task 4: Locate LWD materials, pilings

Task 5: Implement project

***Mud Creek Enhancement***  
*Proponent -- Cowlitz Indian Tribe*

- Task 6: Assess project implementation success
- Task 7: Prepare as-built plans
- Task 8: Conduct monitoring to assess biological success
- Task 9: Prepare monitoring report

**7. Methods:**

The Tribe's Ecologist/Project Manager (PM) will coordinate and oversee all aspects of the project will contract. The PM will be responsible for accomplishing tasks 1 through 9.

The Tribal PM will be responsible for applying for all necessary permits, and for stewarding the applications through the permit review process.

The Tribe's PM desires that as far as it is possible to obtain the appropriate materials, each of the minimum of 30 small structures of LWD will consist of a single tree bole with attached full rootwad. These LWD materials will be conifer species. Each bole will be attached to a 15' quick-drive piling to anchor it in place. In other projects, the Tribe has contracted with an excavation firm that is capable of installing quick drive pilings. This proposal has been developed in consultation with that same contractor. Anchoring is not intended to provide lateral stability to LWD; rather, anchoring is to prevent LWD from floating out of position during Lewis River flooding events that will backflood up the Mud Creek channel.

**8. Specific Work Products:**

The deliverables of the project will be:

- Project design documents and permits
- Installed LWD structures and the as-built plans
- The biological monitoring report.

**9. Project Duration:**

The Tribe intends the project to be implemented during low-water conditions of August of 2008. Therefore, permit application and engineering plans will be developed shortly after the award decision, and contract documents detailing the transfer of funds are finalized. Sourcing of LWD and piling materials will be next, followed by structure installation. The Tribe anticipates that structure installation will be complete by the end of August 2008. As-built documents will be compiled by the end of September 2008. Biological monitoring report will be conducted throughout the 2008 water year and the Biological report will be completed by August 2009.

**10. Permits:**

A Hydraulic Project Approval (HPA) will be required, so the Tribe will prepare a JARPA. Consultation with the appropriate agencies will reveal if the project will also be required to pass through SEPA review.

**11. Matching Funds and In-kind Contributions:**

***Mud Creek Enhancement***  
*Proponent -- Cowlitz Indian Tribe*

A preliminary request to PacifiCorp will determine if that agency will be able to provide rootwads/LWD from their reservoirs. Section 7.1 of the Settlement Agreement authorizes PacifiCorp to implement a Large Woody Debris Program. The Tribe will request a minimum of 30 pieces of LWD from PacifiCorp, estimated at \$200/per. The expected in-kind contribution from PacifiCorp in materials is equal to \$6,000

Plas Newydd LLC, landowner, supports the Tribe's proposal to enhance Mud Creek and has verbally indicated that it may also have 10 pieces of LWD available, estimated at \$200/per, for a total in-kind contribution equal to \$2,000.

**12. Professional 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 (Landowner), Tony Meyer (LCFEG), Mike Watters (Excavation contractor), and Shannon Wills, (Cowlitz Tribal Biologist).

Mr. Reynolds gave a PowerPoint presentation regarding this proposal to the ACC on January 10<sup>th</sup> 2008 to the agency and organization professionals in attendance, including individuals from USFWS, WDFW, and USFS.

**Mud Creek Enhancement**  
Proponent -- Cowlitz Indian Tribe

**13. Budget:**

**Mud Creek Enhancement Budget**  
ACC Funding Request FY2008

ndr

Personnel	FTE	Weeks	Hrs/Wk	Annual Hours	Hourly Rate	Personnel Cost	Total Amount
NRD Director	0.01	21	0.5	11	\$ 45.00	\$ 495	<hr style="width: 100%;"/>
Accountant	0.01	21	0.5	11	\$ 45.00	\$ 495	
NRD Ecologist/Project Manager	0.2	21	20	420	\$ 23.13	\$ 9,715	
NRD Sci-Tech	0	0	13.3	0	\$ 15.00	\$ -	
NRD Sci-Tech	0	0	13.3	0	\$ 15.00	\$ -	
<b>Year 1 Gross Wages</b>							

Section B: Payroll Taxes & Benefits				%	Amount
Year 1				30.38%	\$ 3,252
<b>Payroll Taxes &amp; Benefits</b>					<b>\$ 3,252</b>

Travel	Rate/Mile	Miles/R. trip	Trips/Week	weeks	Travel Cost
Trips to Mud Creek	0.505	57	3	10	\$ 864
					\$ -
<b>Travel</b>					<b>\$ 864</b>

Supplies	Qty	Unit	Total
Field Notebooks	5	\$ 10.00	\$ 50
Field vests	1	\$ 66.95	\$ 67
Misc Field Supplies	1	\$ 200.00	\$ 200
			\$ -
			\$ -
<b>Supplies</b>			<b>\$ 317</b>

Other Program Costs	Qty	Unit	Total
Photocopying/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
<b>Other Program Costs</b>			<b>\$ 1,400</b>

Contractual Services	Qty	Quote	Total
Mike Watters excavation	1	\$20,000	\$ 20,000
	30	\$200	\$ 6,000
	5	\$200	\$ 1,000
<b>Contractual Total:</b>			<b>\$ 27,000</b>
<b>Total Request</b>			<b>\$ 43,538</b>

In-Kind	Qty	Unit	Total
Pacificorp	30	\$ 200	\$ 6,000
Plas Newydd LLC	10	\$ 200	\$ 2,000
<b>In-kind</b>			<b>\$ 8,000</b>
<b>Total Project Cost</b>			<b>\$ 51,538</b>

***Mud Creek Enhancement***  
*Proponent -- Cowlitz Indian Tribe*

**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](http://www.lcfrb.gen.wa.us/Watershed%20Assessmsent%20Report%20Chps/LCFRB_Chapter3_NFLewisBasin_FINAL_12.31.04.PDF)

LCFRB 2007, *The Lower Columbia Salmon Recovery 6-Year Habitat Work Schedule And Lead Entity Habitat Strategy*, Chapter K. *Lower NF Lewis River Subbasin*, Accessed online at:

<http://www.lcfrb.gen.wa.us/2007%20Strategy/pdf/Lower%20NF%20Lewis%20Habitat%201-07.pdf>

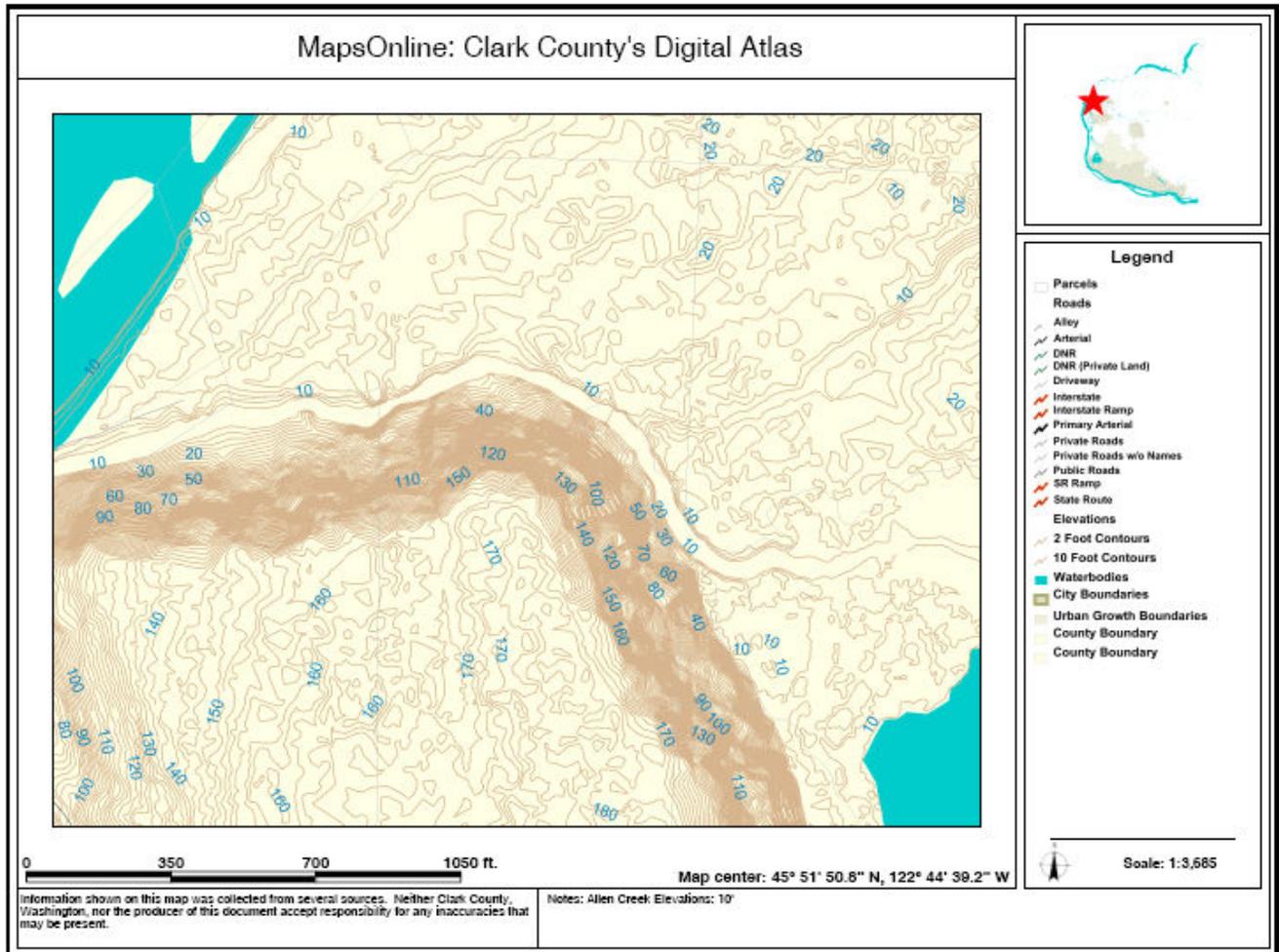
*Mud Creek Enhancement*  
*Proponent -- Cowlitz Indian Tribe*

**Figure 1: Mud Creek Enhancement**



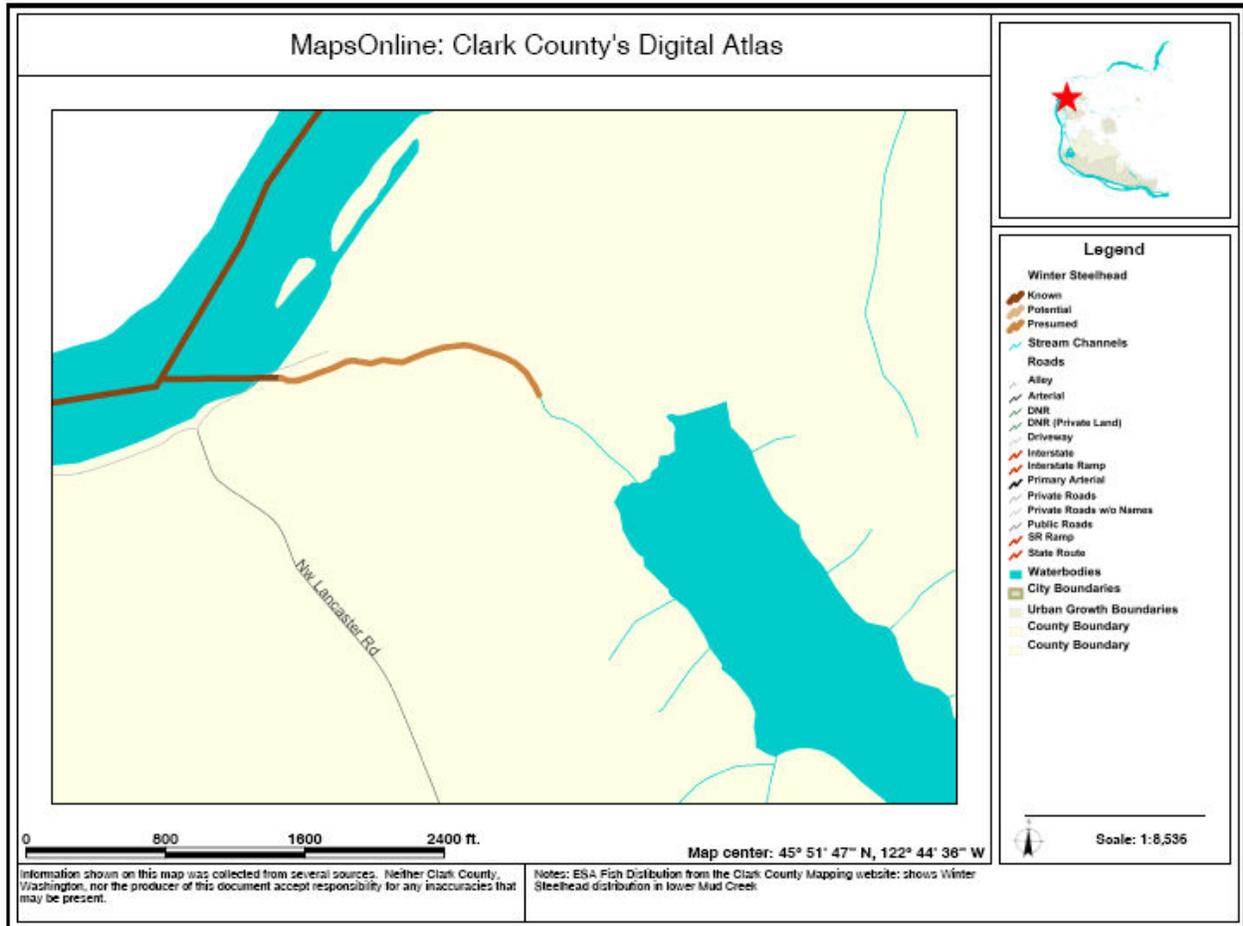
**Mud Creek Enhancement**  
 Proponent -- Cowlitz Indian Tribe

**Figure 2: 2' Elevation contours of the project area**



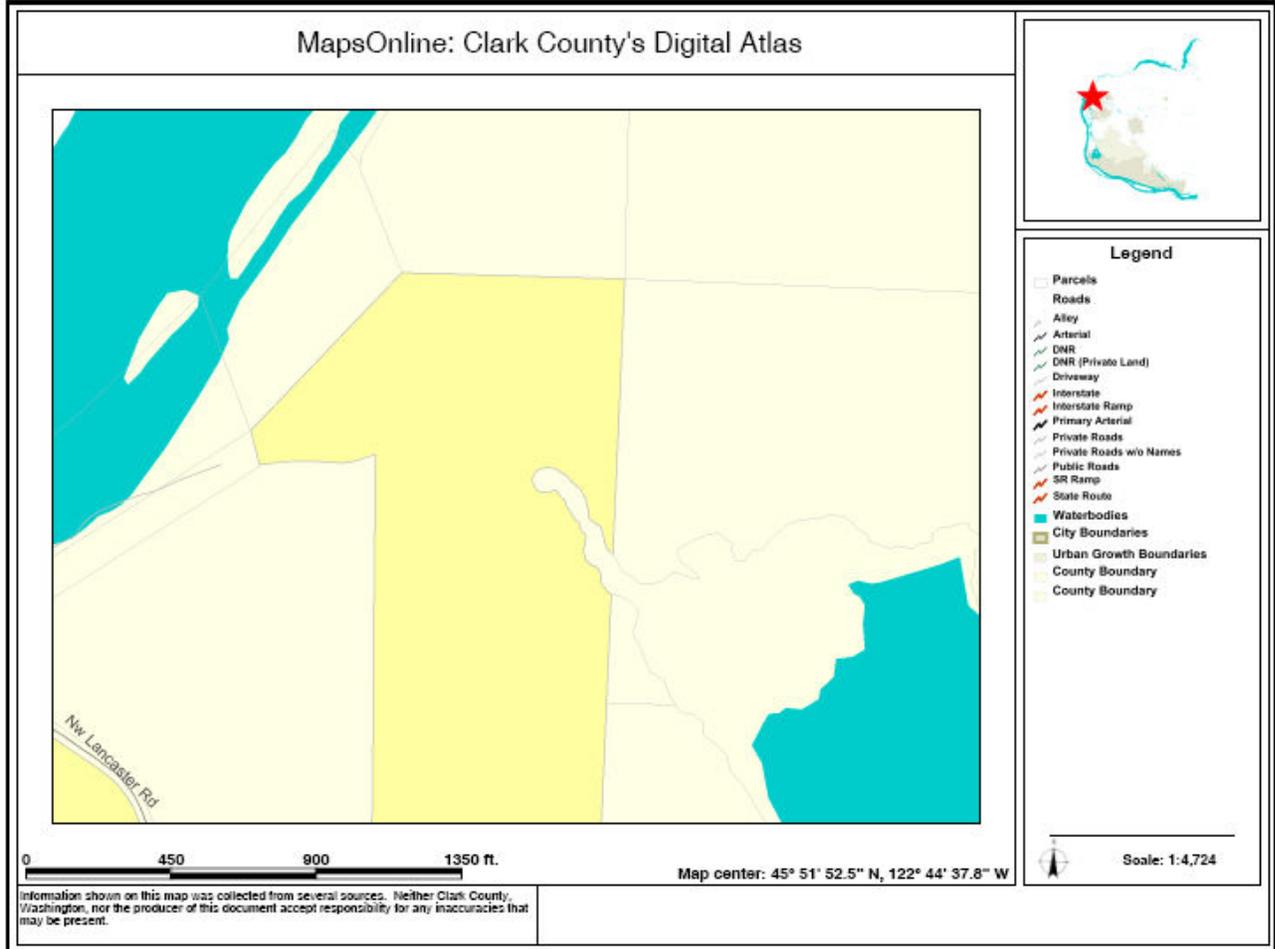
*Mud Creek Enhancement  
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**Figure 3: ESA-Listed Fish Distribution map  
showing presumed use of Mud Creek by “Winter Steelhead”**



*Mud Creek Enhancement  
Proponent -- Cowlitz Indian Tribe*

**Figure 4: Plas Newydd Ownership Map**



**Mud Creek Enhancement**  
*Proponent -- Cowlitz Indian Tribe*

**Figure 5: Scanned Email of support from Plas Newydd LLC.**

**Subject:** RE: note?  
**From:** "David Morgan" <charmedquark@plasnewydd.org>  
**Date:** Wed, 30 Jan 2008 21:40:08 -0800  
**To:** "Nathan Reynolds" <nreynolds@cowlitz.org>  
**CC:** <rmmorgan@plasnewydd.org>

Nathan,

Plas Newydd supports the Tribes proposal for doing restoration work on the lower creek draining mud lake. We need to be part of the design of the final project if approved.

Does that work  
David Morgan

-----Original Message-----

From: Nathan Reynolds [<mailto:nreynolds@cowlitz.org>]  
Sent: Wednesday, January 30, 2008 4:27 PM  
To: 'David Morgan'  
Cc: Shannon Wills  
Subject: note?

Hi David --  
Any opportunity for a quick note of support for the Tribe's proposal?  
Nothing fancy needed...  
Nathan

--  
Nathan Reynolds  
Ecologist  
Cowlitz Indian Tribe  
Direct Phone 360.575.6226  
[nreynolds@cowlitz.org](mailto:nreynolds@cowlitz.org)

*Mud Creek Enhancement*  
*Proponent -- Cowlitz Indian Tribe*

***Figure 6: Tribal Resolution of Support***



**Cowlitz Indian Tribe**

**Tribal Council**  
**Resolution No. 08- 08**

**Title: FY2008 Lewis River ACC Aquatics Fund Program Funding Request:**  
**Mud Creek Enhancement**

**WHEREAS**, the Cowlitz Indian Tribe is Acknowledged as a Sovereign Indian Nation by the United States Government, and

**WHEREAS**, the Cowlitz Indian Tribal Council is the governing body of the Cowlitz Indian Tribe as authorized by the tribe's Constitution and By-laws, and

**WHEREAS**, the Cowlitz Indian Tribe declares that plentiful clean water and abundant fish runs are important to the cultural identity of the Tribe, and

**WHEREAS**, these qualities have been significantly impaired by the establishment of three dams within the watershed of the Lewis River, and

**WHEREAS**, the Lewis River Aquatic Coordination Committee has an existing *Aquatics Fund* that funds on the ground habitat restoration projects within this watershed of Tribal interest, and

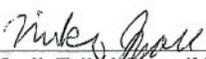
**WHEREAS**, the establishment of a enhancement project within *Mud Creek* along the lower Lewis River would further develop the individual skills of Tribal employees, expand the program delivery of the Natural Resource Department, and enhance the Tribe's role and participation within the technical agencies and organizations of Southwest Washington State, and

**WHEREAS**, such a project would advance scientific knowledge and protect natural resources which are cultural resources to Tribal members, and are pertinent to the Tribe's Native culture,

**NOW THEREFORE BE IT RESOLVED** by the Tribal Council of the Cowlitz Indian Tribe, to hereby authorize the 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 at *Mud Creek*, to benefit juvenile salmonids in the Lewis River Watershed, and to do so in a respectful and honorable manner consistent with Native Culture.

**CERTIFICATION**

The forgoing resolution was adopted this 30 day January 2008, at a duly called Tribal Council meeting by a vote of 5 For, 0 Against, and 11 Abstain.

  
Mike Iyall, Tribal Council Vice-chair

  
Nancy Osborne, Tribal Council Secretary

## Appendix D

### Muddy River Thinning/Brushing/Invasive Plant Project

**PROPOSAL FORM -**  
*Lewis River Aquatic Fund*

**1. Project Title**

**2008 Muddy River Thinning/Brushing/Invasive Plant Project**

**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](mailto:ahaspiel@fs.fed.us)

*20+ years of fish habitat restoration experience*

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

Warm summer water temperatures in the Muddy River create less than optimum conditions for existing salmonids, and soon to be reintroduced anadromous species. Although there are many factors that influence stream temperatures in Muddy River, the riparian ecosystem plays a key role in providing shade and bank stability. Vegetation in some riparian and floodplain areas in the Muddy River Drainage are in an unhealthy state due to dense stands of alder, brush or planted conifers. Some areas are also affected because invasive vegetation species such as Scotch Broom have established, interfering with the natural re-establishment of trees on the flood plain.

Two Goals for the project include:

**GOAL 1:**

Establish future shade providing trees and a cooler riparian corridor in the mainstem of Muddy river by enhancing growth and vigor of conifers and dominant hardwoods in floodplains and riparian areas.

**GOAL 2:**

Create and maintain community educational and volunteer opportunities

**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)*

Prior to the creation of dams in the 1930's the Muddy River was a stronghold for anadromous species such as coho and Chinook salmon, and steelhead trout.

Lahar flows in 1980 stripped floodplains and riparian areas of vegetation. Stands of red alder and invasive species colonized these areas. A few conifers also established themselves sparsely scattered in the alder or brush stands. Invasive non-native plants such as scotch broom became dominant in some areas, inhibiting the establishment of native vegetation.

Prior to 1980 Muddy River exceeded State water quality standards 16 times per year because of elevated stream temperatures. Following the eruption, with six years of observations it exceeded water quality standards 52 times per year, and is listed on the Washington State 303 (d) list (WA 1997).

These warm water temperatures are creating less than optimum conditions for existing salmonids, and will cause stress on juvenile anadromous fish when reintroduction efforts commence.

A stream survey in 2005 documented warm water conditions and less than optimum habitat for salmonids in Muddy River. The Gifford Pinchot National Forest Restoration Plan identifies the Muddy River as one of the top five priority areas for restoration on the Forest. In addition, it has been identified as a tier 2 and tier 3 stream for restoration under the 2004 Lower Columbia Salmon Recovery Plan. The ACC team identified this area as having “Medium to Medium/High” restoration potential for coho and steelhead, and “Medium” for Chinook. The Habitat matrix sheet developed by the ACC group lists the following concerns for the Muddy River.

*High concerns for lack of habitat diversity and current temperature regimes as well as competition from hatchery fish, sediment load, and low abundance of food. Moderate concerns for channel stability, predation, and water flow (EDT). High need for bank stabilization as well as concern for high water temperature. High sediment issues and need of in stream LWD. High need for greater riparian buffer (Muddy River Watershed Analysis, GPNF 1997).*

## **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 1:**

Enhance growth and vigor of conifers and dominant hardwoods in floodplains and riparian areas in the Muddy River

#### **Objectives:**

- ◆ Provide shade to Muddy River, cooling summer water temperatures. Unhealthy stands of existing vegetation will be thinned and brushed to create healthy stands of vegetation. As the riparian vegetation matures, shade will help reduce overall stream temperatures and provide for a long-term source of LWD.
- ◆ Provide a long-term source of Large Woody Material to the Muddy River
- ◆ Remove invasive plant species to allow more natural recruitment of conifers and other trees.
- ◆ Plant native conifers
- ◆ Place LWD in portions of the floodplain to create nurse logs for planted seedlings

### **GOAL 2:**

Create community educational and volunteer opportunities.

Objectives:

- ◆ Create a demonstration / service learning area in the vicinity of the Muddy River Picnic Area to foster student learning opportunities and community involvement.
- ◆ Partner with Mount St. Helens Institute by establishing a temporary Community Education coordinator position to set up treatment and education demonstration areas by working with students and other volunteer groups in the field (overseen by Mount St. Helens Institute).

The Muddy River Picnic Area is a great location for a demonstration / service learning area because there is ample parking, the site is low elevation and accessible during key seasons for student groups (spring and fall). The site already has a range of different vegetation types and management treatments available (established conifer plantation, red alder, Scotch broom, and open floodplain). This is a great opportunity to teach community and school groups about stream ecosystems and land ethics and to highlight the multi-agency partnerships and habitat restoration efforts being conducted by ACC. Our proposal includes partnering with Mount St. Helens Institute's Community Education Coordinator who will focus on learning opportunities. The Community Education Coordinator will help identify and layout project areas and demonstration plots, organize school field trips, and coordinate service projects.

This project address 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

Chinook Salmon are listed as a threatened species under the ESA

The Lower Columbia Salmon Recovery and Subbasin Plan (LCSRP) identifies non-native species as a limiting factor and threat to ecological interactions. The upper Lewis bull trout population is federally listed and has access to the Muddy River system. Bull trout have found in the lower reaches of the Muddy River (up to approximately RM 2). This indicates that bull trout may utilize more of the Muddy River system as habitat improves temporally and spatially (refer to Muddy River Watershed Analysis).

The reintroduction of federally listed Chinook, coho and steelhead above the Swift Reservoir dam in the Lewis River is scheduled for 2010. Addressing invasive species and placing large wood on the floodplain before reintroduction is a strategy for protecting and restoring stream habitat.

Re-establishment of native vegetation on the Muddy River floodplain scoured by 1980 mudflows is an important element of watershed health on the south side of Mount St. Helens. The control of non-native invasive plant species, such as scotchbroom, will allow native shrubs and trees to establish on the flood plain. Native shrubs and trees on the floodplain will help stabilize side and tributary channels, develop shade to help reduce stream temperatures, and improve habitat.

**Priority 2:** Support the reintroduction of anadromous fish throughout the basin.

Healthy riparian and floodplain vegetation is a critical component in a healthy stream ecosystem. Cooler summer water temperatures in Muddy River will increase the quality of rearing habitat and thus enhance the growth and production of juvenile anadromous fish. Large Woody Material will provide floodplain structure and create essential habitat components critical for juvenile salmon survival to weather out flood conditions.

This project is a measure for protecting and restoring stream habitats by restoring riparian conditions. Invasive species is identified as a limiting factor for the NF Lewis subbasin plan (LCSRP 2004), which includes areas where the reintroduction of anadromous fish will take place. Restoring the natural riparian plant community and placing large wood on the floodplain along the Muddy River is a means of supporting the overall success of reintroduction efforts. Reintroduction of anadromous fish over the long-term will be supported by the establishment of native vegetation on the Muddy River floodplain. Native vegetation establishment will assist the development of shade, off-channel stabilization and long-term development of future sources of coarse woody debris that will benefit the aquatic system.

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

Water temperature influences the metabolism, behavior and mortality of fish and other aquatic organisms. Warm water temperatures causes metabolic rates of salmonids to increase and most or all food must be used for maintenance instead of growth (Mihursky and Kennedy 1967). Large woody material in floodplains will create refugia areas during floods for juvenile salmonids. The Muddy River is a main tributary to the mainstem of the North Fork Lewis River above the Swift Reservoir dam.

**6. Tasks:**

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

- 1) secure funding.
- 2) validate stands of trees to be brushed and thinned
- 3) identify areas of invasive species for priority treatment
- 4) GPS floodplain areas in need of LWD for nurse logs
- 5) acquire required permits.
- 6) Mount St. Helens Institute Community Education coordinator will develop a schedule for implementing educational opportunities for community groups and schools.
- 7) enlist student groups and community volunteers to help establish a demonstration area and to remove scotch broom and other invasives.
- 8) develop contracts to thin and brush stands, plant seedlings, and to place LWD.
- 9) monitor health of stands and establish long term stream temperature monitoring plan.

**Monitoring**

Pre-project monitoring would begin when funding is secured. Water temperatures will be collected during summer months and at strategic locations throughout the basin. These areas will be monitored through time to determine if stream temperatures are decreasing. Research plots presently established in the Muddy River Basin will be sampled to determine how much growth is occurring in released stands vegetation vs. control plots.

**7. Methods:**

- **Brushing**- Alder and brush would be cut around existing conifers to reduce competition for sunlight, nutrients, and water. This would result in healthier, faster growing conifers. Dominant hardwoods would also be released in the same manner to promote healthier hardwoods within the stand.
- **Thinning**- Planted stands near the Muddy River Picnic site would be thinned of smaller conifers reducing competition for sunlight, nutrients, and water for dominant conifers.
- **Planting**- In alder or brush thickets with no natural conifers, conifers would be planted after clearing an area of brush to promote growth.
- **Eradication**- Invasive plants would be pulled from the ground and bagged for removal or piled for burning. This would be a multi year project because a seed bank exists in the soil
- **Planting**-Native trees would be planted and protected by in areas where invasives were removed.
- **Nurse logs**- Nurse logs would be placed near seedlings .

## **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 best way to measure deliverables are number of acres treated by stand type, number of trees planted, and number of nurse logs placed. Invoices for equipment purchases and contract awards, will be kept 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)*

NEPA for invasive species control and eradication will be completed in a forest wide document February 2008. The NEPA for the rest of this project will be completed during the spring/early summer 2008.

The duration of this project under the current proposal would last up to five seasons to ensure eradication or control of invasives and success of the tree plantings

Project initiation:

<b>Action</b>	<b>Start Timeline</b>	<b>End Timeline</b>
NEPA	Spring/Summer 2008	Spring/Summer 2008
Contract Development	Summer 2008	Summer 2008
Contract Award	Summer 2008	Summer 2008
Project implementation	Summer/Fall 2008 or 2009 based on fund availability	Fall 2013
Monitoring	Summer 2008	Fall 2013
Establish partnership with Mt. St. Helens Institute Community Education Coordinator.	Summer 2008 or 2009	Fall 2011 or 2012

## **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. 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.*

**NEPA-** The invasive plant NEPA will be completed February 2008

The Forest Service will need to complete the rest of the NEPA for this project in 2008.

Land ownership in Muddy River is comprised of federal and private lands. The Forest Service manages approximately 8 miles of stream in the proposed project area. Private landowners own approximately 1 mile of stream in the proposed project near the mouth of Muddy River. They will be contacted and permission received prior to any work on private lands.

## **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).*

<b>Partner</b>	<b>Contribution</b>	<b>Funds</b>
Forest Service _Gifford Pinchot National Forest	Invasive plant EIS, Project NEPA, Project development, Contracting, Permitting, Monitoring	\$99,000 In Kind
Forest Service Regional Challenge Cost Share Grant	Project Development and brushing/thinning/nurse log NEPA	\$10,000 Cash
Mt. St. Helens Institute over 3 years	Community Education Coordinator	\$39,000 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, The GPNF Fisheries program manager, Diana Perez, and Vegetative Management program manager Rocky Pankratz, Monument Scientist Peter Frenzen, Mount St. Helens Institute Executive Director Jeanne Bennett.

## **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.*

# Muddy River Thinning/Brushing Budget

	Total	NEPA	Final designs	Permitting	Construction	Monitoring/Labor /Reporting/Coordination
<b>Personnel Costs</b>						
FS - Zone Team or Contract		\$85,000 (IK)				
FS - Fish Bio and Hydrologist			\$5,000 (IK)			
FS - Fish Bio and Hydrologist				\$2,000 (IK)		\$6,000 (ACC)
FS - Contract administrator -					\$3,000 (IK)	
FS- Vegetation Specialist			5,000 (IK) 5,000 (ACC)			
FS - Contract Specialist					\$2,000 (IK)	
FS-Fire Crew- Burning Piled Brush/Weeds					\$2,000 (IK) \$2,000 (ACC)	
MSHI Community Education Coordinator (3 yrs @ 5K per year)						\$15,000 (ACC)
Mt. St. Helens Institute (3 yrs @ 13K per year)						\$39,000 (IK)
<b>Contract Payables</b>						
Thinning, brushing and invasive eradication Contract,					\$73,000 (ACC)	
Herbicide Contract					\$10,000 (ACC)	
Supplies					\$ 6,000 (ACC)	
<b>Administrative Overhead</b>		\$3,500 (IK)	\$1,500 (IK)			
<b>Total ACC Funds</b>	<b>\$117,000</b>		<b>\$5,000</b>		<b>\$91,000</b>	<b>\$21,000</b>
Total FS Funds	\$109,000	\$88,500	\$11,500	\$2,000	\$7,000	
Total other Partner Funds	\$39,000					\$39,000
<b>Project Total</b>	<b>\$265,000</b>					

FS personnel estimated as  
\$300/day.

**Total ACC Funds Requested**

**\$117,000**

**This project can be implemented with funds solely acquired from the ACC and Forest Service and partner in kind contributions allowing for four to seven miles of nutrient enhancement. Any other funds acquired will be used to extend the area of distribution.**

## Questions about the project from ACC partners

*How long will it take stands to naturally thin/brush themselves?* It will take between 100 and 300 years longer for stands to reach maturity through a natural thinning/brushing process. This is based on numerous special events such as wind or snow storms, etc that occur on the Gifford Pinchot National Forest (personal communication, Rocky Pankratz Vegetation Specialist).

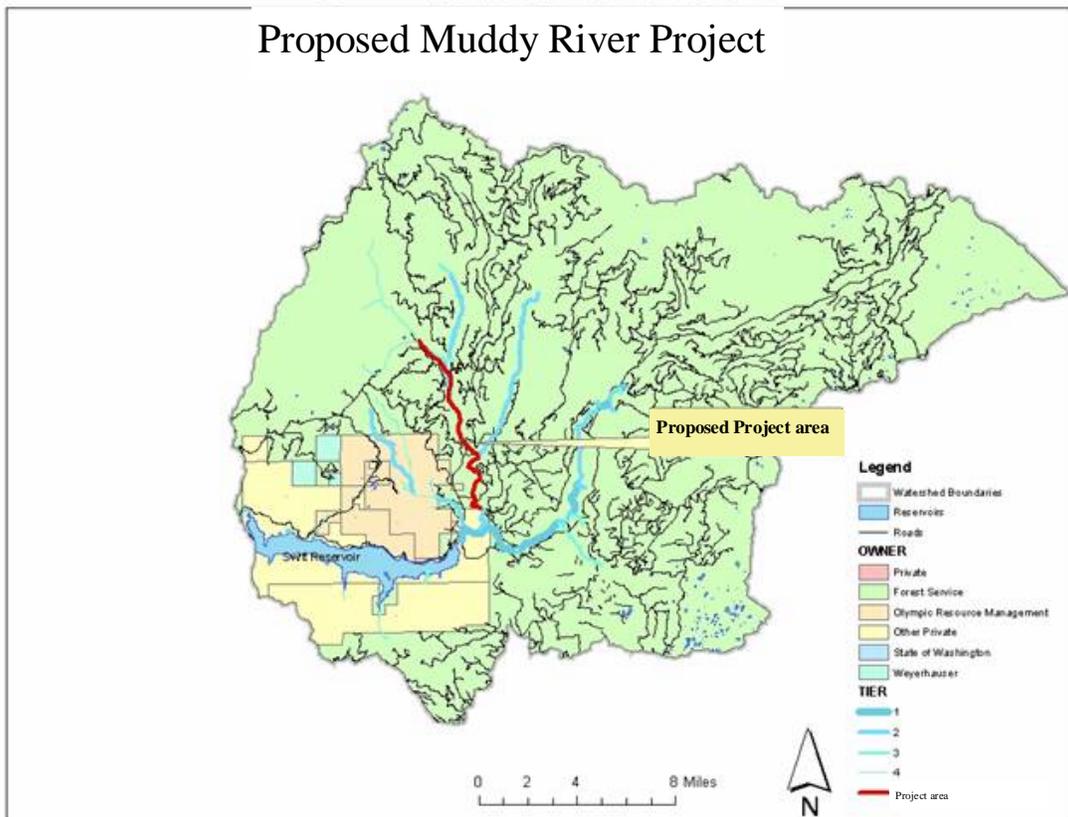
*In developing a formal proposal, please follow up with LCFRB regarding what is the distance/area to be treated? Will the entire riparian area be treated, or will portions of the reach described be prioritized for treatment? How will areas be prioritized?* A telephone conversation

with Bernadette Graham-Hudson of LCFRB on 1/24/08 took place for purposes of clarifying these questions.

*The USDA Forest Service expressed that this project and the Muddy River Riparian/Floodplain Improvement and Thinning has some overlapping planning and implementation components, which leads to the possibility of combining them. This application has merged the two projects.*

*LCFRB expressed that based on past ACC discussions, they recommend applicants include information detailing how their proposed work relates to an adopted or draft Recovery Plan. This information may include the target reach, target species, target life history stages, target limiting factors, desired outcomes, and how they relate to priorities identified in the Recovery Plan. Most of these questions are answered throughout the project proposal. To clarify however, target reaches will be those most likely to respond to treatment, target species are Chinook, coho and steelhead and bull trout, Life history stages are the juvenile stage. Limiting factors in this watershed are summer stream temperatures, sediment loads, and lack of habitat complexity. Desired outcomes are increased tree growth to shade the stream and cool water temperatures, to provide for a long term source of LWD and to reduce sediment inputs to the river. This most closely relates to key priority #3- Manage Forest Lands to Protect and Restore Watershed Processes. Limiting factors on the North Fork Lewis River include: flows, instream habitat, passage, riparian habitat and water quality.*

*WDFW would like more information relating to where in the basin the proposed project is located or does it extend into the tributary. At this point the project is proposed just in the mainstem Muddy River, the area most affected by the lahar flow. Our initial focus area will be near the Muddy River Picnic Site just off Forest Road 25. We may also treat scotch broom and place nurse logs up near the Smith Creek trailhead.*



## Appendix E

Clear Creek Road Decommission (2575200) – **modified to 2575000**

**PROPOSAL FORM -**  
***Lewis River Aquatic Fund***

**1. Project Title**

**2008 Clear Creek Road Decommission (2575)**

**2. Project Manager**

**Adam Haspiel**  
Mt. St. Helens National Volcanic Monument  
42218 NE Yale Bridge Road  
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360-449-7833  
360-449-7801 (fax)  
[ahaspiel@fs.fed.us](mailto:ahaspiel@fs.fed.us)

*20+ years of fish habitat restoration experience*

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

The Gifford Pinchot National Forest would like to address the problem of sediment delivery risk from the failure of a 3 foot blocked culvert at milepost 2.8 along Forest Road 2575 (Figure 1). Six other culverts crossing small streams also pose the risk of sediment delivery due to potential culvert blockages and consequential failures. The Gifford Pinchot Roads Analysis recommends this road to be decommissioned due to discontinued access needs. The Roads Analysis rated the section from milepost 1.9-3.9 as High Aquatic Risk due to greater than 2.5 stream crossings per mile of road and 25% of the road within riparian reserves. The Gifford Pinchot Maintenance Plan designates this as a Level II road with maintenance only when resource concerns are identified.

This two mile road decommission will eliminate the risk of sediment delivery from the failure of the blocked culvert to one tributary crossing and reduce the risk of similar sediment delivery of six other culvert failures from this non-maintained road. The quantity of potential sediment directly delivered to streams could be estimated as the amount of road fill needing to be removed at the seven stream/culvert crossings. The total quantity of sediment that would be removed from the seven stream crossing is approximately 10,000 cubic yards.

The Forest Service is the designated management agency for meeting Clean Water Act requirements on National Forest Lands. The Gifford Pinchot NF recognized the need to remediate the road conditions of this road and has started the Environmental Analysis required by the National Environmental Policy Act. The Gifford Pinchot NF has secured some partnership funding for the implementation of this project with funds secured by the Gifford Pinchot Task Force.

Decommissioning Forest Road 2575, located immediately adjacent to the Spencer Ridge Roadless Area, will result in a larger contiguous area without roads.

#### 4. Background

The watershed objectives are in line with the Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan Chapter G – NF and EF Lewis Habitat Measures. Measure 4 Restore Degraded Hillslope Processes has two sub measures, one of which is to Upgrade and remove problem forest roads (Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan Chapter G – NF and EF Lewis 2004, page G209). The reach of Clear Creek that is at risk of sediment delivery from this non-maintained road is prioritized as Tier 2 under the 2004 Lower Columbia Salmon Recovery Plan.

The Gifford Pinchot National Forest Restoration Plan identifies the Muddy River Watershed as the priority focus watershed for restoration on the Forest. The ACC team identified this area as having “Medium” restoration potential for coho and steelhead. The Habitat matrix sheet developed by the ACC group lists the sediment load as a high concern Clear Creek

#### 5. Project Objective(s)

##### GOAL:

The goal of this proposal is to reduce sediment delivery to Clear Creek by decommissioning Forest Road 2575.

##### Objectives:

- Remove culverts that could fail, resulting in sediment delivery to Clear Creek
- Reduce the amount of roads in the Clear Creek Subwatershed
- Eliminate vehicle access

This project address 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

Chinook Salmon are listed as a threatened species under the ESA

##### **Priority 2:** *Support the reintroduction of anadromous fish throughout the basin.*

This project will support the introduction of anadromous fish by preventing excessive sediment degradation of spawning and rearing habitat in Clear Creek from road failures caused by blocked or non-maintained culverts.

Removing culverts on this road will eliminate the risk of introducing 10,000 cubic yards of sediment into Clear Creek. Tributaries such as Clear Creek are important to the overall Muddy River Watershed because they did not have a lahar flow during the 1980 eruption of Mt. St. Helens which resulted in a large sediment load to the Muddy River system. The Clear Creek Subwatershed sediment load is much less, resulting in high quality water and substrate which supports greater survivability of anadromous fish eggs.

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

Removing the risk of introducing sediment into a refugia stream like Clear Creek will enhance habitat for spawning fish.

6. Tasks

The road decommission will remove all the culverts along the last 2.0 miles of Forest Road 2575. At each culvert removal site, a channel will be reconstructed to bankfull width and stream banks contoured to 1.5:1, or to match the natural stream banks slopes. Removed fill will be place in a stable configuration outside the bankfull area.

Re-vegetation with native species of the disturbed areas will implemented at a time that will best assure the survival of the plants. Long term re-vegetation will be monitored for successful native re-vegetation within five years.

7. Methods

An excavator will remove the culvert 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.

Best Management Practices include the following:

- Accumulations of soil or debris shall be removed from drive mechanisms and undercarriage of all heavy equipment prior to its working within the bankfull width. Every effort will be made to avoid stream crossing with heavy equipment.
- A waterbar will be constructed across the road with an outlet onto the forest floor on any upgrade side of the crossing to prevent the existing road ditch flow to access the newly established stream banks.
- 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.
- Control of invasive weeds will occur where deemed necessary, prior to and after earth disturbing activities.
- Erosion control measures will be implemented and at a minimum include a heavy application of mulch immediately after work is completed. Seeding may also occur and may be delayed until September when cooler, moister weather conditions would aid the survival of the seed.
- Riparian vegetation such as willow, alder, and cedar trees will be planted at the three crossings to provide shade and future sources of large woody debris. Planting may be delayed until the following spring, to aid the survival of the young trees.

## 8. Specific Work Products

Deliverables include quantities of material removed from culvert crossings and crossing bankfull widths and stream banks configured to required specifications.

## 9. Project Duration

This project will take 10-15 days to complete and will be implemented during the 2008 field season.

<b>Action</b>	<b>Start Timeline</b>	<b>End Timeline</b>
NEPA	October 2006	Spring/Summer 2008
Contract Development	Summer 2008	Summer 2008
Contract Award	Summer 2008	Summer 2008
Project implementation	After July 14, 2008 or 2009 based on fund availability	Fall 2010
Monitoring	Summer 2008	Fall 2011

## 10. Permits

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. The project will be consistent with the provisions of the Memorandum of Understanding with the Washington State Department of Fish and Wildlife.

## 11. Matching Funds and In-kind Contributions

<b>Partner</b>	<b>Contribution</b>	<b>Funds</b>
Forest Service _Gifford Pinchot National Forest	NEPA, Permitting and Monitoring	\$20,000 In Kind FY07 & 08 &09
Gifford Pinchot Task Force	Final Design, Contract Prep and Administration and Construction Contract	\$40,000 FY08
Mt. St. Helens Institute	Monitoring	\$5,000 In-kind FY09

## 12. Professional Review of Proposed Project

This project proposal was reviewed by Gifford Pinchot National Forest (GPNF) Soil and Water Program Manager, Ruth Tracy and Fisheries Program Manager, Diana Perez.

## 13. Budget

### Funding Sources

■ Gifford Pinchot National Forest – NEPA, Permit & Administration	\$20,000 (IK)
■ Mt. St. Helens Institute - Monitoring	\$5,000 (IK)
■ Gifford Pinchot Task Force –Design, Contract Prep & Contract	\$40,000(C)
■ ACC - Contract	\$34,000 (C)
■ TOTAL	\$99,000

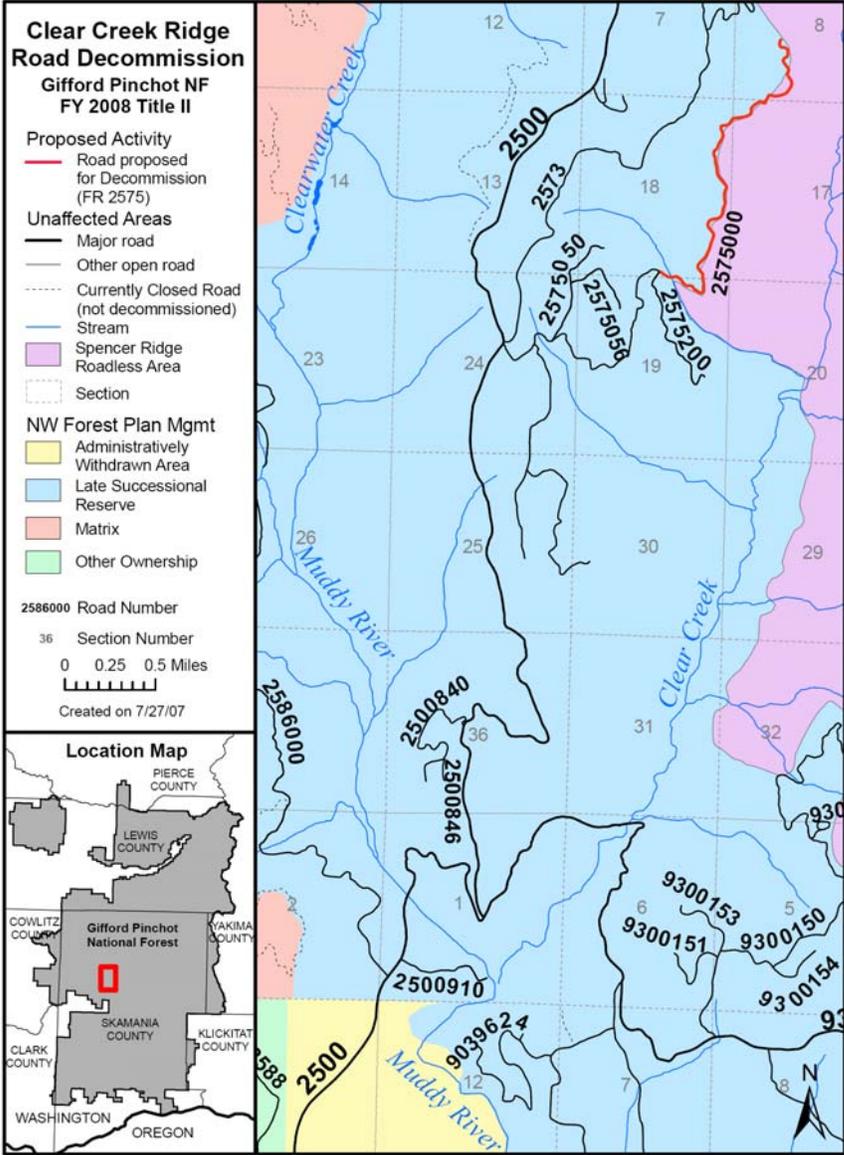
## Clear Creek Road Decommission Budget

	Total	NEPA	Final designs	Permitting	Construction	Monitoring/Labor /Reporting/Coordination
<b>Personnel Costs</b>						
FS - Zone Team		\$15,000 (IK)				
FS –Engineer includes contract preparation			\$6,000 (C- GPTF)			
FS - Hydrologist			\$3,000 (C-GPTF)			\$1,000 (IK)
FS – Fish Biologist				\$1,000 (IK)		\$1,000 (IK)
FS - Contract administrator -					\$3,500 (C-GPTF)	
Mt. St. Helens Institute						\$5,000 (IK)
<b>Contract Payables</b>						
Contract - ACC					\$34,000 (C)	
Contract - Gifford Pinchot Task Force (GPTF)					\$27,500 (C-GPTF)	
<b>Administrative Overhead</b>						
		\$2,000(IK)				
<b>Total ACC Funds</b>	<b>\$34,000</b>				<b>\$34,000</b>	
Total FS Funds	\$20,000	\$17,000		\$1,000		\$2,000
Total GPTF	\$40,000		\$9,000		\$31,000	
Total MSHI	\$5,000					\$5,000
<b>Project Total</b>	<b>\$99,000</b>					
FS personnel estimated as \$300/day.						

## **Questions about the project from ACC partners**

### **Clear Creek Road Decommission (2575)**

- 1) *US Fish & Wildlife requests better explanation of the benefits that would arise from the project for ESA listed species and anadromous reintroduction. Removing culverts on this road will eliminate the risk of introducing 10,000 cubic yards of sediment into Clear Creek. Tributaries such as Clear Creek are important to the overall Muddy River Watershed because they did not have a lahar flow during the 1980 eruption of Mt. St. Helens. The Clear Creek Watershed sediment load is much less, resulting in high quality water and substrate which supports greater anadromous fish egg survivability.*
- 2) *PacifiCorp needs additional information on the aquatic benefits. The greatest benefit to fish would be to decrease sediment delivery to Clear Creek spawning areas.*
- 3) *LCFRB expressed that based on past ACC discussions, they recommend applicants include information detailing how their proposed work relates to an adopted or draft Recovery Plan. This information may include the target reach, target species, target life history stages, target limiting factors, desired outcomes, and how they relate to priorities identified in the Recovery Plan. This is addressed in Sections 4 & 5.*



## Appendix F

### Panamaker Creek Road Closure and Culvert Removal

# **PROPOSAL FORM -**

## *Lewis River Aquatic Fund*

### **1. Project Title**

## **2008 Panamaker Creek Road Closure and Culvert Removal**

### **2. Project Manager**

**Erik Lesko**  
**825 NE Multnomah, 1500 LCT**  
**Portland, OR 97232**  
**(503) 813-6624**  
**(503) 813-6659**

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

PacifiCorp acquired the eastern half of the Panamaker Creek drainage in 1999 as part of an opportunity to protect bull trout habitat. A road that accesses the eastern half of the drainage (#2050) is built as a full-bench logging access road across 9 non-fish bearing seasonal tributaries to Panamaker Creek (a tributary to Cougar Creek). These culverts are on a steep side slope with shot-gun outlets (continued sediment delivery to fish bearing streams). Additionally, the elevation (snowpack) and remote location doesn't allow regular maintenance during storm events. Blockage of these culverts could lead to failure and result in considerable soil movement into Panamaker Creek. There is a history of such events in this drainage. Currently PacifiCorp's wildlife habitat management plans are being developed and do not anticipate future logging on such steep slopes in important watersheds and recommends abandoning the road.

PacifiCorp has experienced contractors and fish and wildlife biologists that have remediated numerous similar drainage problems.

This project will restore the natural stream channel at the water crossings on the last 5,000 feet of road 2050. Stream channels will be restored as much as practical to match the downstream channel width and gradient. Unstable fill material from the road construction and sediment and debris that have washed down from above will be removed and placed at stable waste sites. These waste sites will be located above the 100-year flood level and will be stabilized to prevent future sediment delivery into the streams. Existing culverts will be removed and hauled away, side slopes stabilized with bio-matting, and grass-legume seed mix applied (mix to be developed but likely the same mix of clover, perennial and annual rye grass and orchard grass that have successfully been used in the past).

This project will benefit bull trout and cutthroat trout that spawn and rear in Cougar Creek and other fish and aquatic organisms. Additionally it will eliminate motorized vehicle use and the reseeded road bed will provide temporary forage for elk and deer.

## 4. Background

Panamaker Creek is a tributary of Cougar Creek. Land in both drainages was purchased by PacifiCorp in 1999. The land, known as the Cougar-Panamaker covenant, was selected based, in part, on its exceptional habitat value and contribution in supporting bull trout spawning, rearing and migration. The goal of that purchase was to hold this land in perpetuity for the protection of wildlife and fish species that depend on its unique qualities.

This project is intended to improve a portion of the Panamaker drainage impacted by past logging operations in the area. The decommissioning of roads in the area will stabilize slopes and restore the natural function in the area.

PacifiCorp has already removed over a mile of road in this watershed including numerous culverts that were compromised in the 1996 rain on snow event in this drainage. Other roads have been re-graded, ditched and resurfaced to reduce sediment delivery to both Cougar and Panamaker Creeks. Finally, gates have been established on roads (including the 2050) to reduce un-authorized access that created wildlife habitat disturbance and increased sediment delivery to streams from roads.

## 5. Project Objective(s)

**Priority 1:** Benefit fish recovery throughout the North Fork Lewis River, with priority to federal ESA-listed species. Project focuses on bull trout rearing, spawning and migrating in Cougar Creek and resident cutthroat trout in both Panamaker and Cougar creeks. Benefits to these species include improved water quality and less sediment input through culvert removal and reduced vehicular traffic.

**Priority 2:** Support the reintroduction of anadromous fish throughout the basin. This project has limited benefit to supporting reintroduction efforts other than improved water quality.

**Priority 3:** Enhance fish habitat in the Lewis River Basin-, with priority given to the North Fork Lewis River. This project will reduce fine sediment input into Panamaker Creek and improve water quality (mainly turbidity) and spawning habitat in Panamaker and Cougar creeks.

## 6. Tasks:

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

- Culvert removal sites will need to be stabilized as quickly as possible to limit the potential for land slides and erosion.
- Road abandonment will need to effectively eliminate all forms of vehicular traffic to reduce the stated goal of reducing sediment input.
- Permitting will need to be planned for and completed to allow work to be completed in the mandated work window.

## **7. Methods:**

Using a track hoe, stream channels that currently have culverts will be restored as much as practical to match the downstream channel width and gradient. Unstable fill material from the culvert removal and sediment and debris that have washed down from above will be removed and placed at stable waste sites. These waste sites will be located above the 100-year flood level and will be stabilized to prevent future sediment delivery into the streams. Existing culverts will be removed and hauled away. Side slopes will be stabilized with bio-matting, and seeded with a grass-legume seed mix (mix to be developed but likely the same mix of clover, perennial and annual rye grass and orchard grass that have successfully been used in the past).

## **8. Specific Work Products**

This project will result in a reduction in stream sedimentation, eliminate potential mass failure from blocked culverts, eliminate or at least reduce vehicular use and restore habitat connectivity for aquatic invertebrates.

## **9. Project Duration**

- February 2008 - File internal APR for budget review (PacifiCorp)
- April/May 2008 – File FPA and discuss with WDFW area biologist
- May/June 2008 – Develop scope of work with contractor (anticipated to be conducted with existing contractor).
- August/September 2008 – conduct work
- Complete final grass seeding prior to Fall rains.

## **10. Permits**

This project will be reviewed and permitted through the Washington Department of Natural Resources Forest Practice Application process. Because all the streams are non-fish bearing and seasonal streams, no HPA will likely be required, but this will be reviewed with the WDFW area biologist. All streams will likely be dry when work is conducted. ACC and TCC members will also review the project plan and results will be reported as part of annual reports. PacifiCorp monitoring will include aerial observation of the area annually during other helicopter surveys. If additional seeding or hand work is required to ensure vegetation establishment and erosion control it will be scheduled as part of wildlife habitat maintenance procedures.

## **11. Matching Funds and In-kind Contributions**

PacifiCorp fish and wildlife biologists along with experienced contractors are managing this project. Their labor and experience provide cost effective implementation of this project.

## 12. Professional Review of Proposed Project

This project was developed and reviewed by senior level wildlife and fisheries biologists at PacifiCorp. External review will be accomplished through the ACC and TCC review and selection process. The contract supervisor for the project has experience with over 50 similar projects.

## 13. Budget

<b>COSTS</b>	<b>Permitting</b>	<b>Construction</b>	<b>Monitoring and Reporting</b>
Personnel Costs			
Contract Supervisor	\$3000		
Biological Staff	\$1000	\$1500	\$1500
Backhoe w/Operator		\$4000	
Seeding and Stabilization Crew		\$7800	
Materials		\$2000	
Administrative Overhead		\$2200	\$2000
<b>TOTAL COSTS</b>	<b>\$4,000</b>	<b>\$17,500</b>	<b>\$3,500</b>

### Questions about the project from ACC partners

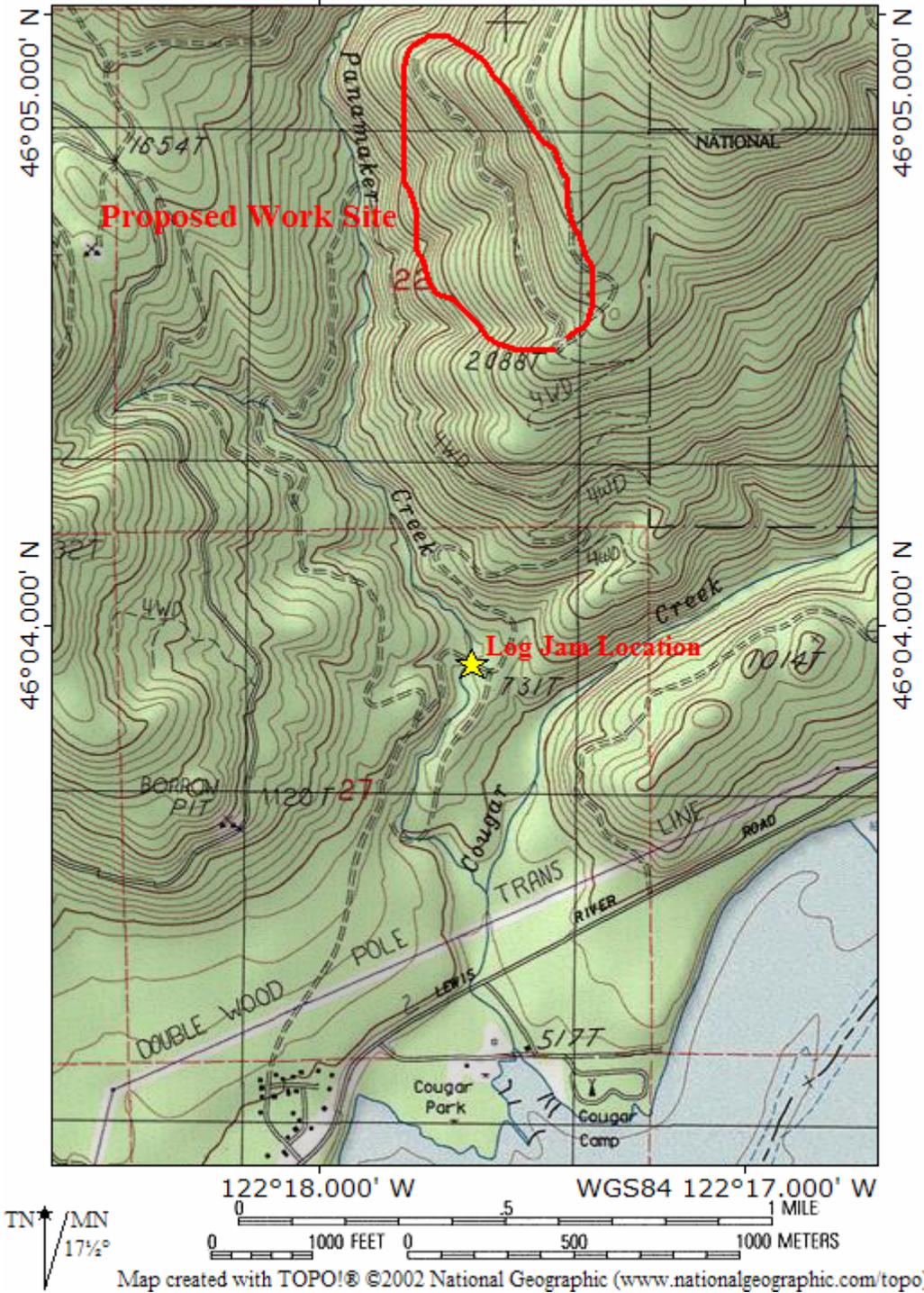
1. LCFRB expressed that based on past ACC discussions, they recommend applicants include information detailing how their proposed work relates to an adopted or draft Recovery Plan. This information may include the target reach, target species, target life history stages, target limiting factors, desired outcomes, and how they relate to priorities identified in the Recovery Plan.

Response: The work site has not been designated as critical habitat, therefore, no recovery plan exists. However, the project is intended to benefit salmonid species including bull trout - a federally protected species.

2. In developing a formal proposal, please follow up with LCFRB regarding where the large log jam is in relation to the proposed work.

Response: See map below

TOPO! map printed on 01/31/08 from "OREGON.TPO" and "Untitled.tpg"  
122°18.000' W WGS84 122°17.000' W



3. WDFW would like more information relating to additional cost detail and the consideration for cost sharing.

Response: Please refer to table presented under No. 13 Budget for more detailed cost information. Cost sharing opportunities are welcomed by the company and are actively pursued. Given the size of this particular project there are likely larger and more suitable projects in the basin for cost sharing opportunities.