DRAFT Meeting Notes
Lewis River License Implementation
Aquatic Coordination Committee (ACC) Meeting
February 10, 2011
Merwin HCC, Ariel, WA

ACC Participants Present (14)

Adam Haspiel, USDA Forest Service
David Hu, USDA Forest Service
Eli Asher, Fish Recovery Board
Diana Gritten-MacDonald, Cowlitz PUD
Shannon Wills, Cowlitz Indian Tribe
Nathan Reynolds, Cowlitz Indian Tribe
LouEllyn Jones, USFWS (teleconference)
Pete Barber, Lower Columbia Fish Enhancement Group
Michelle Day, NMFS (teleconference)
Eric Kinne, WDFW (teleconference)
Frank Shrier, PacifiCorp Energy
Beth Bendickson, PacifiCorp Energy
Jeremiah Doyle, PacifiCorp Energy
Erik Lesko, PacifiCorp Energy

Calendar:

March 10, 2011	ACC Meeting	Merwin Hydro
April 14, 2011	ACC Meeting	Merwin Hydro

Assignments from February 10, 2011 Meeting:	**Status:**
Crab Creek - Frank Shrier will e-mail McMillen Engineering draft technical memo - *Crab Creek Net Pen Evaluation* to ACC.	**Pending**
Merwin Upstream Trap & Transport – Frank Shrier will schedule conference call with NMFS and WDFW to discuss.	**Complete**

Assignments from December 9, 2010 Meeting:	**Status:**
Acclimation Pond Plan – Shannon Wills will convey the importance of the Yakama Nation weighing in on this issue to Bob Rose this afternoon.	**Complete**

Opening, Review of Agenda and Meeting Notes

Frank Shrier (PacifiCorp Energy) called the meeting to order at 9:20 a.m., reviewed the agenda for the day and requested any changes/additions. No changes or additions were recommended.

Shrier requested comments and/or changes to the ACC Draft 1/13/11 meeting notes. No changes were requested. The meeting notes were approved.

2011 Aquatic Fund Proposal Presentation, USDA Forest Service – Adam Haspiel
- Lewis River Side Channel Habitat Restoration (Attachment A)

Adam Haspiel presented a PowerPoint illustrating project location, detailing project description, target species and project length. Haspiel discussed in detail the methods for timber harvest, tree transport, and the plan to bury trees for key anchor points to create LWM clusters.

Haspiel also provided a typical structure drawing and a detailed project budget. Fund request is $42,000.

2011 Aquatic Fund Proposal Presentation, USDA Forest Service – Adam Haspiel
- Muddy River Side Channels Habitat Restoration (Attachment A)

Haspiel continued his PowerPoint presentation for a second Forest Service project proposal and discussed project location, project description, target species and project length. Haspiel discussed salmon plans and methods for timber harvest, tree transport, and the plan to bury trees for key anchor points to create LWM clusters.

Haspiel also provided a typical structure drawing and a detailed project budget. Fund request is $39,000.

2011 Aquatic Fund Proposal Presentation, USDA Forest Service – Adam Haspiel
- Muddy River Mainstem Habitat Restoration (Attachment A)

Haspiel continued his PowerPoint presentation for a third Forest Service project proposal and discussed project location, project description, target species and project length. Haspiel discussed in salmon plans and methods for timber harvest, tree transport, and the plan to bury trees for key anchor points to create LWM clusters

Haspiel also provided a typical structure drawing and a detailed project budget. Fund request is $43,000.

2011 Aquatic Fund Proposal Presentation – Lower Columbia Fish Enhancement Group - Pete Barber
– North Fork Lewis River (RM 13.5) Side Channel Enhancement Project (Attachment B)

Pete Barber presented a PowerPoint illustrating project objectives which include increasing the abundance of off-channel and side-channel habitat, increasing LWD quantities, and stream bank, riparian, wetland, and flood plain vegetation restoration. Some of the expected outcomes include the creation of 50,000 square feet of side-channel habitat and restoration of fish passage into the perennial tributary.

Barber provided a detailed project budget and discussed Salmon Recovery Funding Board (SRFB) match requirements. Barber stated that the current SRFB required project

match is $122,000, of which only $8,000 has been acquired so far. Fund request options include 1) $40-75K for sorting/transport of stockpiled gravel (3-6k cubic yards), and 2) $48K LWD (match); SRFB to sort/truck gravels (if wanted).

2011 Aquatic Fund Proposal Presentation, Cowlitz Indian Tribe – Nathan Reynolds

- **Eagle Island Habitat Enhancement, Sites B and C (Attachment C)**

Nathan Reynolds presented a PowerPoint which provided the project setting, along with project purpose and need which included increasing large woody debris, increasing habitat complexity, enhancing riparian forest structure, and increasing quality and abundance of shallow water rearing habitat for juvenile salmonids. Reynolds provided illustrations of a cross section of a typical bar apex log jam and typical lateral scour pool jam. Funding request is $85,000*

*If SERF Board (SRFB) does not grant the additional needed funding the ACC funds will be returned to PacifiCorp. SRFB makes decision in December 2011; however, project owners will have a good idea of probability by June/July 2011.

ACC Decisions Needed

Allow the 2011 Aquatic Fund Proposal Presentation by Lower Columbia Fish Enhancement Group to resubmit a revised proposal on February 11, 2011, as what was presented (gravel) was different than their pre-proposal (wood).

- WDFW – No
- Cowlitz Tribe – Yes
- NFMS – No
- Cowlitz PUD – No
- USDA-Forest Service – No
- USFWS – Neutral
- LCFRB – No
- PacifiCorp – No

The consensus for the future was it should be made clear that everyone submitting fund proposals needs to follow the rules. The group also discussed to need to always do what is best for the fish.

Acclimation Pond Plan

The group discussed Crab Creek site alternatives and the following are overall notes:

- Net pen option is high on the preferred list.
- PacifiCorp said McMillen Engineering did a site visit to determine where it would be best do this option and what the structure would look like. Cons: crane pad, bridge turbulence, wave action (potential for system wear/tear). Recommendation: net pen not a good idea - crane would have to be bigger, pen could be lost, potential logistical problems.

The group discussed alternatives:

- WDFW asked about a modular net pen
- NFMS encouraged by this, rather than going to the next alternative (direct release)
- USDA Forest Service – would like to maintain adaptive management style NEPA analysis and review alternatives
- PacifiCorp – There will be problems for those who raft or canoe/kayak the river plus there will be some visual impacts (such as anchor structures) that will remain year-round.

Merwin Upstream Trap and Transport Status

The contractors have set up the original plan for the interim trap shut down from July 15 to August 15. The plan is to close the trap and install two new pumps that will supply to the existing trap and work in the ladder area. With all the steps and procedures and not knowing when the final permits will arrive, the schedule will have to be pushed out. The County Permits (shoreline) are now projected to be received by April 4. They are asking for an interim trap closure for September 3 to October 6 and will open sooner if they can. Frank Shrier is requesting input on that. Most of the alternatives don't look good due to safety constraints (high flows, etc.). We won't be able to collect coho for a 4-week span.

Group discussion was as follows:

- NMFS said it's important to keep the schedule moving forward, but having said that - asked if there were other ways to keep to the original schedule, but minimize impacts.
- WDFW regarding spawning expressed concerns about doing it this fall and then next fall as well. We will lose the opportunity to remove hatchery coho from the spawning grounds.
- USDA Forest Service asked about a temporary trap. Can something be put in place?
- PacifiCorp replied that a temporary trap would be difficult and would require complicated infrastructure for a month (too costly).

PacifiCorp asked this question: Do we slide the closure to September 3, or see if there is anything to keep the current window. It's not an option to push to next year with all the current programs in place.

LCFRB – asked about mobilization work to which PacifiCorp replied that it's already factored in. The contractor will not risk his reputation by missing deadlines they commit to. PacifiCorp is holding fast to the December 2012 completion date.

The group consensus is, "It is what it is; keep moving forward. We don't need descriptions of any other alternatives." However, Day requested an additional conversation between NMFS, WDFW and PacifiCorp. Shrier committed to set something up as soon as possible.

Study Updates

Erik Lesko and Frank Shrier (PacifiCorp Energy) provided the following study updates:

Hatchery Upgrades –

Speelyai Hatchery –

Hatchery & Supplementation Plan - PacifiCorp Energy noted that four steelhead are in the hatchery awaiting genetic assignment.

Swift Downstream Collector - Work is scheduled to begin in March 2011. Activities planned for 2011 include: mobilization to project area, construct barge shell (this is moved to dam in the summer of 2012), and construct trestle. Project is on schedule.

Release Ponds Status

Approval has been received from the land owner to do the survey work. FERC has extended the deadline for final design to the end of March 2011.

New Topics

- None

Agenda items for March 10, 2011

- Review February 10, 2011 Meeting Notes
- Aquatic Project Proposal Discussion Meeting
- Upper Release and Constructed Channel Flows
- Crab Creek Update discussion
- Study/Work Product Updates

Public Comment

None

Next Scheduled Meetings

March 10, 2011	April 14, 2011
Merwin Hydro Control Center	Merwin Hydro Control Center
Ariel, WA	Ariel, WA
9:00am – Noon	9:00am – Noon

Meeting Adjourned at 12:30pm.

Handouts/Summary Attachments

- Final Agenda 02/10/11
- Final ACC Meeting Notes 01/13/11
- Attachment A – USFS Aquatic Fund Proposal Presentation
- Attachment B – LCFEG Aquatic Fund Proposal Presentation
- Attachment C – Cowlitz Tribe Aquatic Fund Proposal Presentation

Lewis River Hydroelectric Projects Settlement Agreement
Aquatics Coordination Committee (ACC)
Meeting Agenda

Date & Time: **Thursday, February 10, 2011**
9:00 a.m. – 12:00 p.m.

Place: **Merwin Hydro Control Center**
105 Merwin Village Court
Ariel, WA 98603

Contacts: **Lore Boles: (360) 225-4412**
Frank Shrier: (503) 320-7423

Time	Discussion Item
9:00 a.m.	Welcome ➢ Preview Agenda ➢ Review and comments on 1/13/11 meeting notes ➢ Adopt 1/13/11 Meeting Notes
9:20 a.m.	Aquatic Fund Presentations
10:30 a.m.	**Break**
11:00 a.m.	Crab Creek Update
11:20 a.m.	Study/Work Product Updates
11:50 a.m.	➢ New topics/issues ➢ Next Meeting's Agenda ➢ Public Comment Opportunity Note: all meeting notes and the meeting schedule can be located at: http://www.pacificorp.com/es/hydro/hl/lr.html#
Noon	**Adjourn**

To attend a Voice Conference: Call 503-813-5600 (toll free #800-503-3360), follow the instructions provided and enter Mtg ID **110010** and password: **607810** when prompted.

New security procedure: Upon arrival at the Merwin Hydro Control Center the gate will be closed and you will be required to use the call-in box on the left side of the gate; please announce who you are and the reason for your visit.

FINAL Meeting Notes
Lewis River License Implementation
Aquatic Coordination Committee (ACC) Meeting
January 13, 2011
Ariel, WA

ACC Participants Present (12)

Adam Haspiel, USDA Forest Service
David Hu, USDA Forest Service (teleconference)
Eli Asher, Fish Recovery Board (teleconference)
Diana Gritten-MacDonald, Cowlitz PUD (teleconference)
Michelle Day, NMFS (teleconference)
Eric Kinne, WDFW
Jim Malinowski, Fish First (teleconference)
Todd Olson, PacifiCorp Energy
Frank Shrier, PacifiCorp Energy
Arianne Poindexter, PacifiCorp Energy
Jeremiah Doyle, PacifiCorp Energy
Erik Lesko, PacifiCorp Energy

Calendar:

February 10, 2011	ACC Meeting	Merwin Hydro
March 10, 2011	ACC Meeting	Merwin Hydro

Assignments from December 9, 2010 Meeting:	**Status:**
Aquatic Fund 2010/2011 Proposals - The modified matrix will be sent to the ACC members	**Complete**
Aquatic Fund 2010/2011 Proposals - A request for full proposals will be sent to the applicants no later than December 15, 2010	**Complete**
Aquatic Fund 2010/2011 Proposals – Get comments from the Yakama Nation, Cowlitz Indian Tribe and Fish First	**ACC decided to move forward.**
Acclimation Pond Plan - Shannon Wills will convey the importance of the Yakama Nation weighing in on this issue to Bob Rose this afternoon.	**Pending**
Acclimation Pond Plan - PacifiCorp will identify 1-2 alternatives with pros and cons and will send via email.	**Complete**

Assignments from November 18, 2010 Meeting:	**Status:**
New Information Regarding Fish Transport into Lake Merwin and Yale Lake - Todd Olson/Frank Shrier will follow-up with Michelle Day, NOAA Fisheries, to discuss the diversion at Speelyai and need for fish passage.	**Complete**
New Information Regarding Fish Transport into Lake Merwin and Yale Lake – PacifiCorp to provide information collected as part of relicensing.	**Complete**

Merwin Upstream Trap and Transport - Frank Shrier will rewrite the October 13, 2010, email directly to the services describing the project delay and requesting approval	**Complete**
Aquatic Fund 2010/2011 Proposals - ACC comments on pre-proposals due	**Complete**
Aquatic Fund 2010/2011 Proposals – Utilities will notify recipients that full proposals will be due in January 2011.	**Complete**
Speelyai Diversion Design – The project engineer will discuss the design with the ACC at the December 9, 2010 meeting	**Complete**

Assignments from October 14, 2010 Meeting:	**Status:**
Adam Haspiel will follow-up with John Weinheimer about any regulation changes regarding adding Rush Creek to law enforcement routes. Adam will also discuss regulation changes for Rush Creek and Pine Creek with John to better protect bull trout.	**Complete**
PacifiCorp Energy will send those Aquatic Fund pre-proposals selected for consideration to the ACC group by early November	**Complete**
Eric Kinne will follow-up with Aaron Roberts regarding the *Swift Net Pens* and when the last possible date would be required for their use.	**Complete**

Assignments from April 8, 2010 Meeting:	**Status:**
Haspiel: Present more detailed design of the Pine Creek Instream aquatic fund project to the ACC when available.	**Complete**

Opening, Review of Agenda and Meeting Notes

Frank Shrier (PacifiCorp Energy) called the meeting to order at 9:10 a.m., reviewed the agenda for the day and requested any changes/additions. No changes or additions were recommended.

Shrier requested comments and/or changes to the ACC Draft 12/09/10 meeting notes. No changes were requested. The meeting notes were approved.

ACC Decisions Needed

Merwin In-Water Work Extension

- USFWS – OK
- NMFS – will get back to Frank Shrier this afternoon
- WDFW – has not responded

Swift In-Water Work Extension

- USFWS – OK
- NMFS – will get back to Frank Shrier this afternoon

Crab Creek

- USFWS – Neutral
- NMFS – OK with the alternatives laid out during the meeting
- Cowlitz Tribe - has not responded
- Yakama Nation - has not responded

Acclimation Pond Plan

The group discussed Crab Creek site and the following are overall notes:

- Access the Crab Creek site is challenging
- Taking more than 50% of the flow from Crab Creek, at any given time, is objectionable to USDA Forest Service
- Fall flows in Crab Creek are minimal
- WDFW is concerned that if Crab Creek is abandoned there will be no site in the mainstem Lewis River.

The group discussed alternatives as follows:

- Fall release on the mainstem North Fork Lewis River near Crab Creek via net pen structure with 33,000 fish
    - USDA Forest Service is OK with this idea as long as the aesthetics are not affected
    - What size?
    - How to anchor?
    - How to prevent debris loading?
- Direct Planting into the mainstem North Fork Lewis River in Spring
    - Monitoring would be required
    - This is not the preferred option for WDFW
- Original Crab Creek design for Fall release with 15,000 fish
- Original Crab Creek design for Spring release with 15,000 fish

All four options will be included in the Environmental Assessment (EA) for review. PacifiCorp Energy, NMFS, USDA Forest Service, WDFW, Fish First and Fish Recovery Board all voted in favor of including all four options in the EA. Prior to today's meeting, USFWS informed PacifiCorp by email that they would go with whatever the ACC group decides. Cowlitz PUD defers to PacifiCorp Energy.

Speelyai Intake Engineering Design

PacifiCorp Energy needs to move forward with the design work. NMFS has expressed that passage is required, not necessarily now, but in the future. NMFS wonders about any effects to the hatchery. Eric Kinne reported the following issues for the hatchery:

- Passage requirement may trigger a rebuild of the intake which currently may not meet NMFS criteria for screening.
- Passage would require bypass flow which would reduce available water to the hatchery thereby reducing production.
- Passage would introduce fish diseases into the source water requiring water treatment.

The first opportunity for HPP fish to be introduced in Merwin Reservoir is June 2020. The first opportunity for fish to pass over Speelyai dam is June 2024.

The current work proposed (upgrade to wing wall) would make allowances in the design for future fish passage facilities.

PacifiCorp Energy, NMFS, WDFW and USDA Forest Service all voted to move forward with current work as proposed with the inclusion that current design and construction will not limit or preclude upstream and downstream fish passage at some later date. Prior to today's meeting, USFWS informed PacifiCorp Energy by email that they were neutral on the issue.

Nutrient Enhancement

Update provided regarding the meeting with PacifiCorp Energy, WDFW and Fish First. The existing state contract with the Fish Buyer expires this summer. New contracts will be out for bid in the next couple of months and will allow for more competition and for more ingenuity.

Merwin Upstream Trap and Transport Status

The HPA has been received. Preliminary work is schedule to start this summer. PacifiCorp Energy will verify the shut down schedule.

Study Updates

Erik Lesko and Frank Shrier (PacifiCorp Energy) provided the following study updates:

Hatchery Upgrades –

Lewis River Hatchery

Lewis River Hatchery Ponds 13, 14 Pond 13 and 14 are complete and watered up.

Pond 16 – Work is scheduled to start in April but likely not until May.

Intake Pipe Testing and Repair – This project should move forward in May 2011 as scheduled.

Merwin Hatchery

Rearing Ponds – The last two of the four ponds will be completed by September of this year.

Ozone Upgrades and Switching: The ozone PLC is scheduled for completion this year as is the evaluation of emergency switching for the ozone plant to improve reliability.

Speelyai Hatchery

Kokanee Trap – Project is scheduled to start in May of 2011. Construction should be completed by August 30.

Hatchery & Supplementation Plan – Erik Lesko submitted a final 2011 AOP to the ACC in early January. Lesko is working on submitting a draft 2010 Annual Report to the ACC for review and comments (60 days) by January 31. PacifiCorp Energy will begin wild winter steelhead collection during the week of January 24. FERC approval of the H&S plan has been received.

Swift Downstream Collector – Work is scheduled to begin in March 2011. Activities planned for 2011 include: mobilization to project area, construct barge shell and move to dam in the summer of 2012, and construct trestle. Project is on schedule.

Cougar Creek – Erik Lesko has received video from 2009 which shows coho entering the creek. These coho are from natural production (from hatchery plants – HPP fish) upstream of Swift dam. The video data will also be evaluated for 2010. After this, Lesko will consolidate the results and present a report for the ACC. The primary purpose of this work is to validate an adult-per-redd ratio for bull trout during the fall.

Release Ponds Status

FERC has extended the deadline for final design to the end of March 2011. PacifiCorp located a new potential piece of property for this project near the junior high school and is working with the realtor to secure an option with the landowner. The option should carry through the summer. Once the option is secured the designs will be finalized and submitted to FERC. Upon FERC's approval, the property will be purchased assuming that price is comparable to assessed value.

New Topics

- None

Agenda items for February 10, 2011

- Review January 13, 2011 Meeting Notes
- Aquatic Fund Presentations
- Crab Creek Update discussion
- Study/Work Product Updates

Public Comment
None

Next Scheduled Meetings

February 10, 2011	March 10, 2011
Merwin Hydro Control Center	Merwin Hydro Control Center
Ariel, WA	Ariel, WA
9:00am – Noon	9:00am – Noon

Meeting Adjourned at 10:56 a.m.

Handouts/Summary Attachments

- Final Agenda
- Draft ACC Meeting Notes 12/9/2010
- Email from LouEllyn-USFWS to PacifiCorp

-----Original Message-----
From: LouEllyn_Jones@fws.gov [mailto:LouEllyn_Jones@fws.gov]
Sent: Wednesday, January 05, 2011 3:28 PM
To: Shrier, Frank
Subject: My input for the ACC meeting next week

FRank - I went back to your notes about Crab Creek (the email), the evaluation on flows, and the notes from the meeting. From what I'm seeing, it looks like I'd be okay with your suggestion of focusing the acclimation pond efforts at Clear Creek. That said, I don't have a clear preference. Others at the meeting may have very good alternate ideas. I have no strong preferences and would go along with what the ACC members come up with.

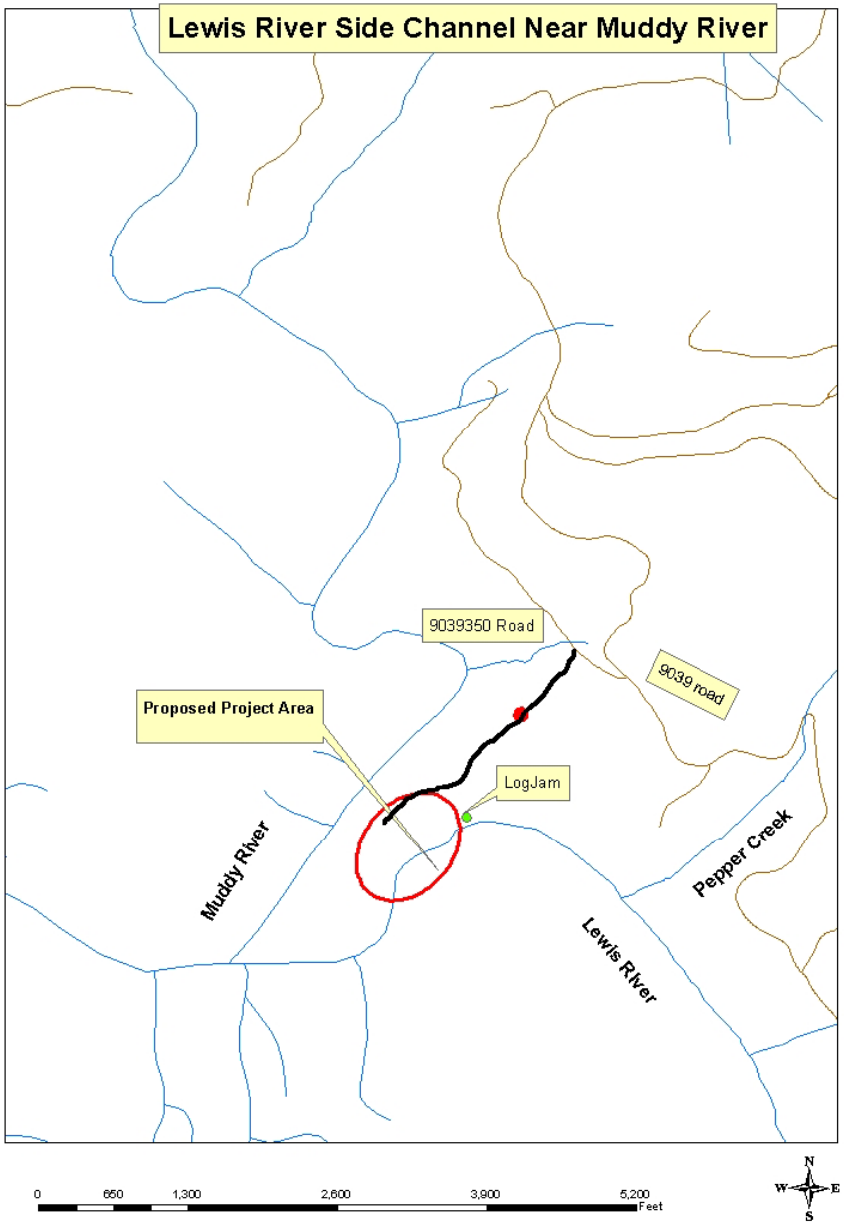
I do not have a comment about the Speelyai issue, and will go along with whatever the ACC decides.

"Dreams are answers to questions
we haven't yet figured out how to ask."

-X-Files

Forest Service Projects

Lewis River Side Channel Habitat Restoration


Lewis River Side Channel Near Muddy River
9039350 Road
9039 road
Proposed Project Area
LogJam
Muddy River
Pepper Creek
Lewis River
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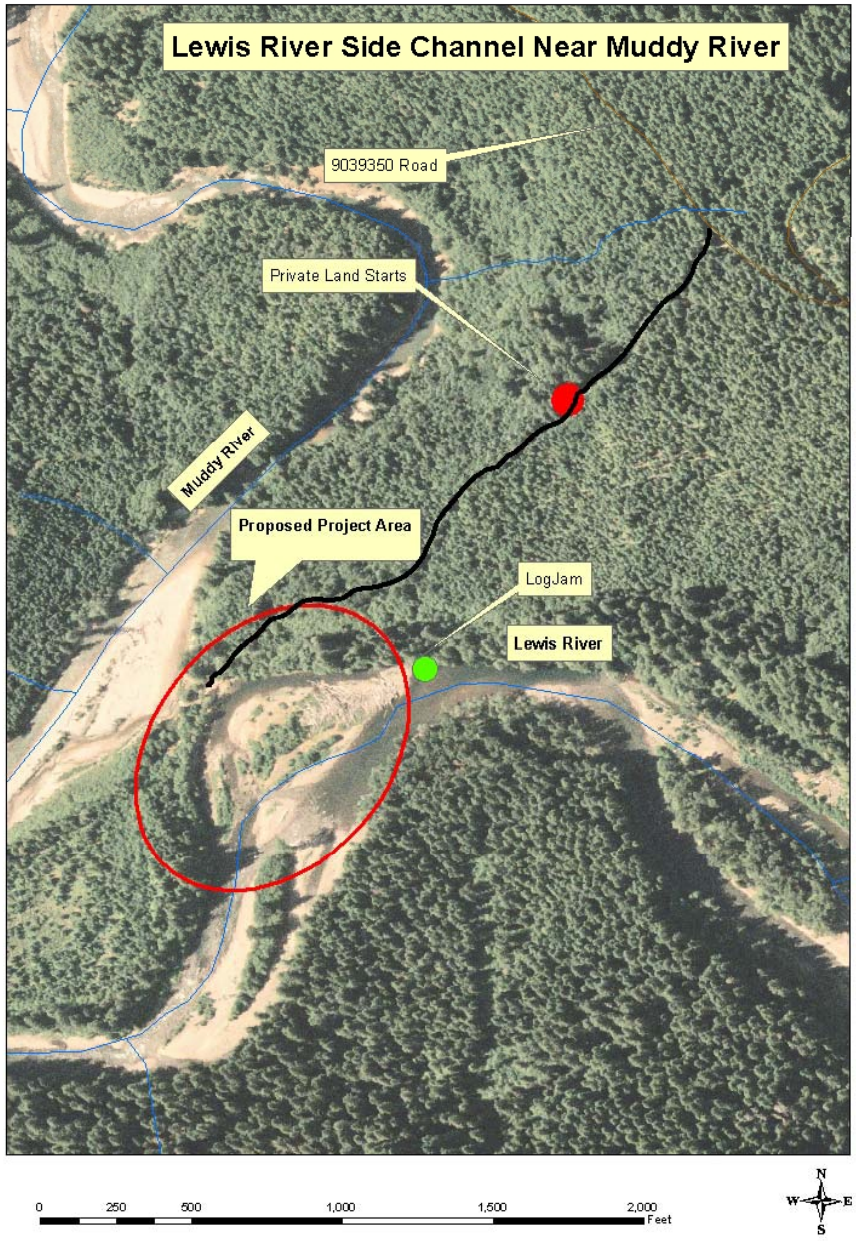
Lewis River Side Channel Near Muddy River
9039350 Road
Private Land Starts
Muddy River
Proposed Project Area
LogJam
Lewis River
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Lewis River Side Channel Near Muddy River
Proposed Project Area
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Project Description

- Restore a side channel with Large Woody Material
- Target Species-Coho Salmon
- Project Length- 1000 feet
- Approximately 16 structures composed of 160 pieces of LWM with rootwads
- Separated from mainstem by a huge log jam and a stable island.
- This side channel is located on private property and is approximately ¼ mile downstream of the Pepper Lewis Side channel.

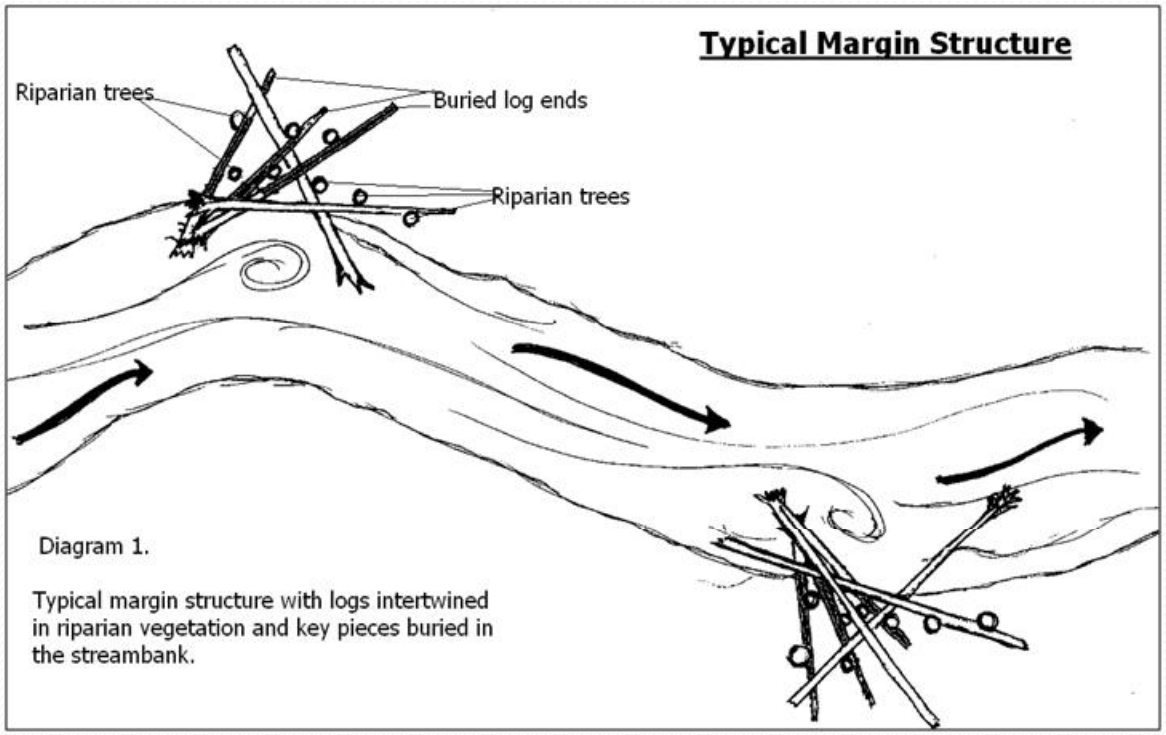
Salmon Plans

- EDT analyses concludes habitat diversity and side channel habitat is one of the highest concerns in this reach and it should respond well to restoration activities.
- Concerns include high habitat diversity, moderate hatchery fish competition, food availability, and sediment concerns.
- The ACC Synthesis Matrix rated this section of the river as having medium restoration potential and as a Primary coho population area.

Methods

- Thin a timber harvest unit from Pepper Cat to get trees with rootwads.
- Truck trees as long as possible from unit to confluence of Muddy River and Lewis River via Forest Service and Private Roads.
- Transport trees up Lewis River side channel using skidder and excavator.
- Bury some trees for key anchor points and put others on the bank to create LWM clusters

Typical Structure



Project Budget

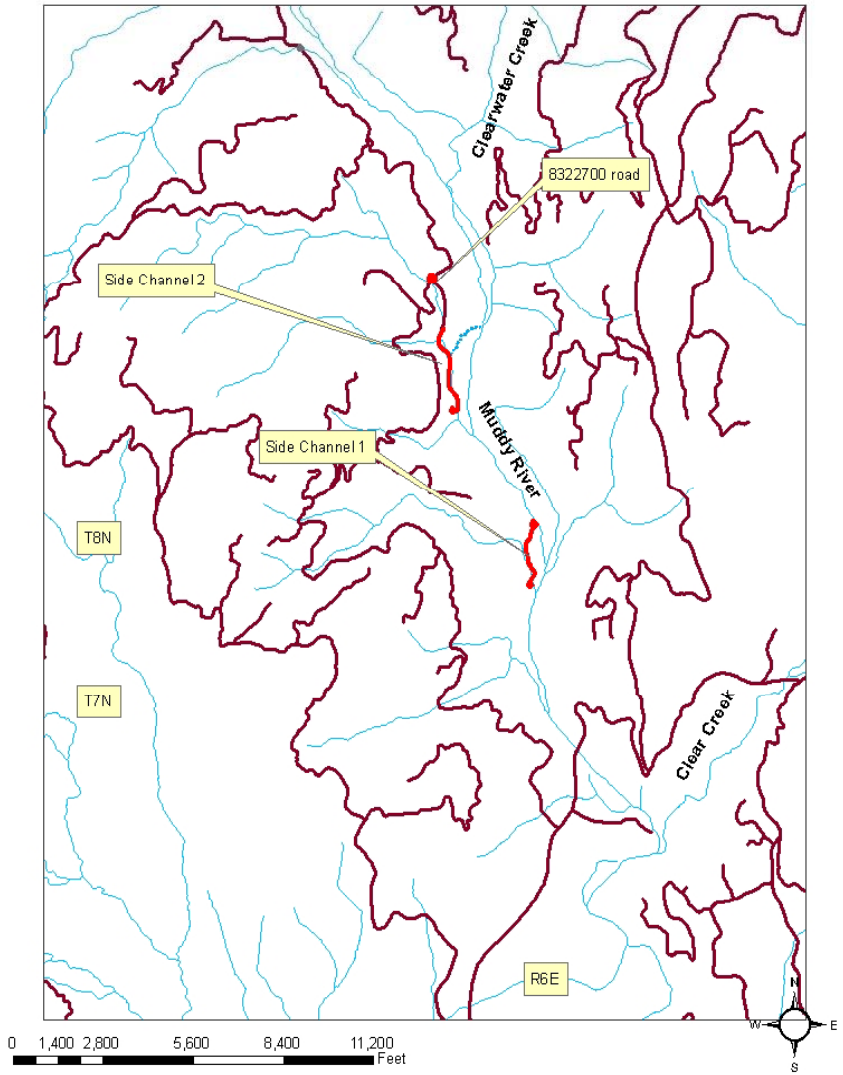
Action	ACC Funds	Partner Funds
NEPA	$8,000	
Final Designs and Project Mgmt and Contract Administration	$8,000	$14,000
Equipment Contract	$22,000	$3,000
Materials	$1,000	$16,000
Monitoring	$3,000	$2,000
Total	**$42,000**	**$35,000**

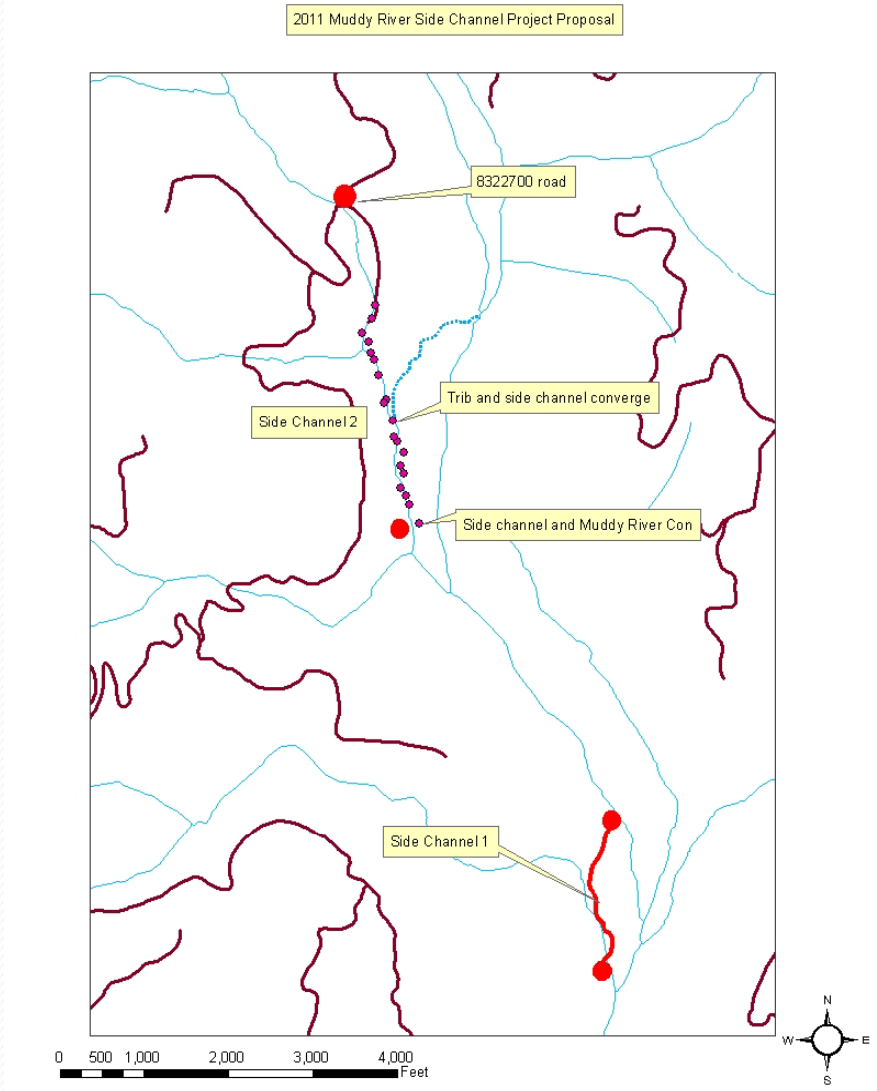
Project Partners

Partner	Contribution	Funds
Forest Service	Project development, Contracting, Permitting, Monitoring Trees	$14,000 In-kind $16,000 In-kind
Mt. St. Helens Institute	Monitoring	$2,000 In-kind
Swift Community Action Team (SCAT)	Machine Time	$1000
Fish First	Machine Transport	$1000
Equipment Rental Services	Machine Time	$1000

Muddy River Side Channels

2011 Muddy River Side Channel Project Proposal




2011 Muddy River Side Channel Project Proposal
8322700 road
Trib and side channel converge
Side Channel 2
Side channel and Muddy River Con
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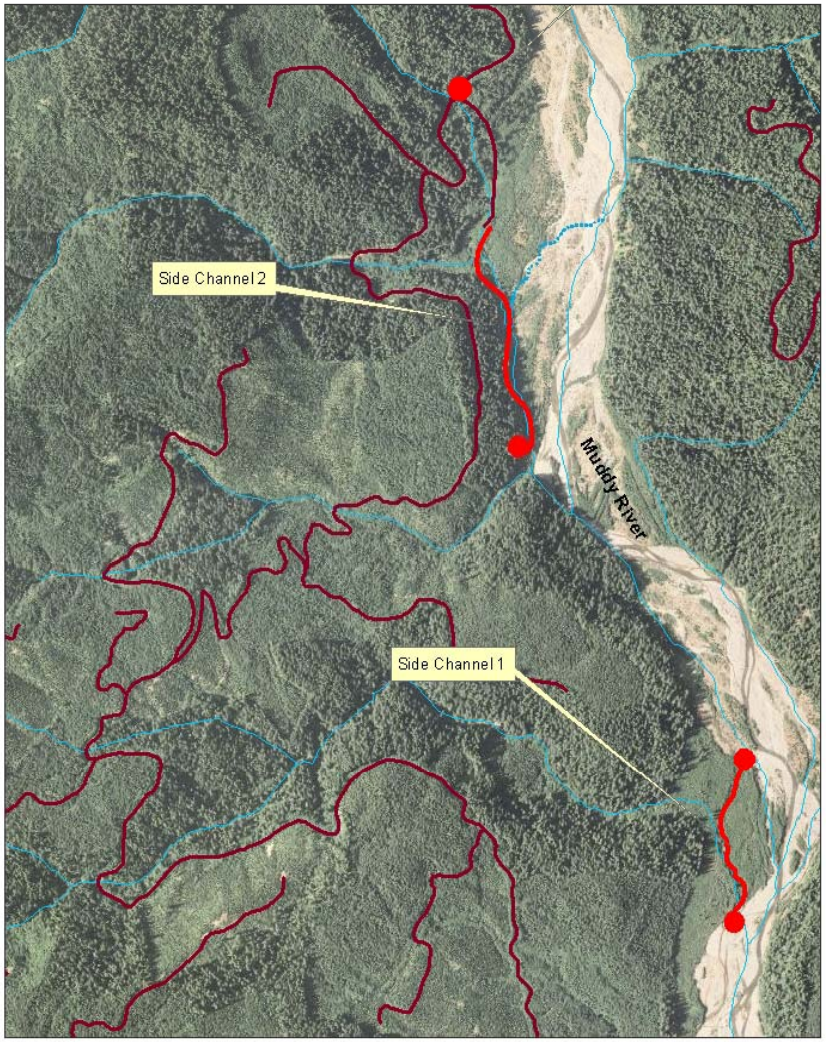
2011 Muddy River Side Channel Project Proposal



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Side Channel

Side Channel 2 in October 2010

Project Description

- Restore two side channels with Large Woody Material
- Target Species-Coho Salmon
- Project Length- Side Channel 1-2000 feet
  Side Channel 2-3000 feet
- Side Channel 1-Approximately 12 structures composed of 80 pieces of LWM with rootwads
- Side Channel 2- 1-Approximately 18 structures composed of 120 pieces of LWM with rootwads

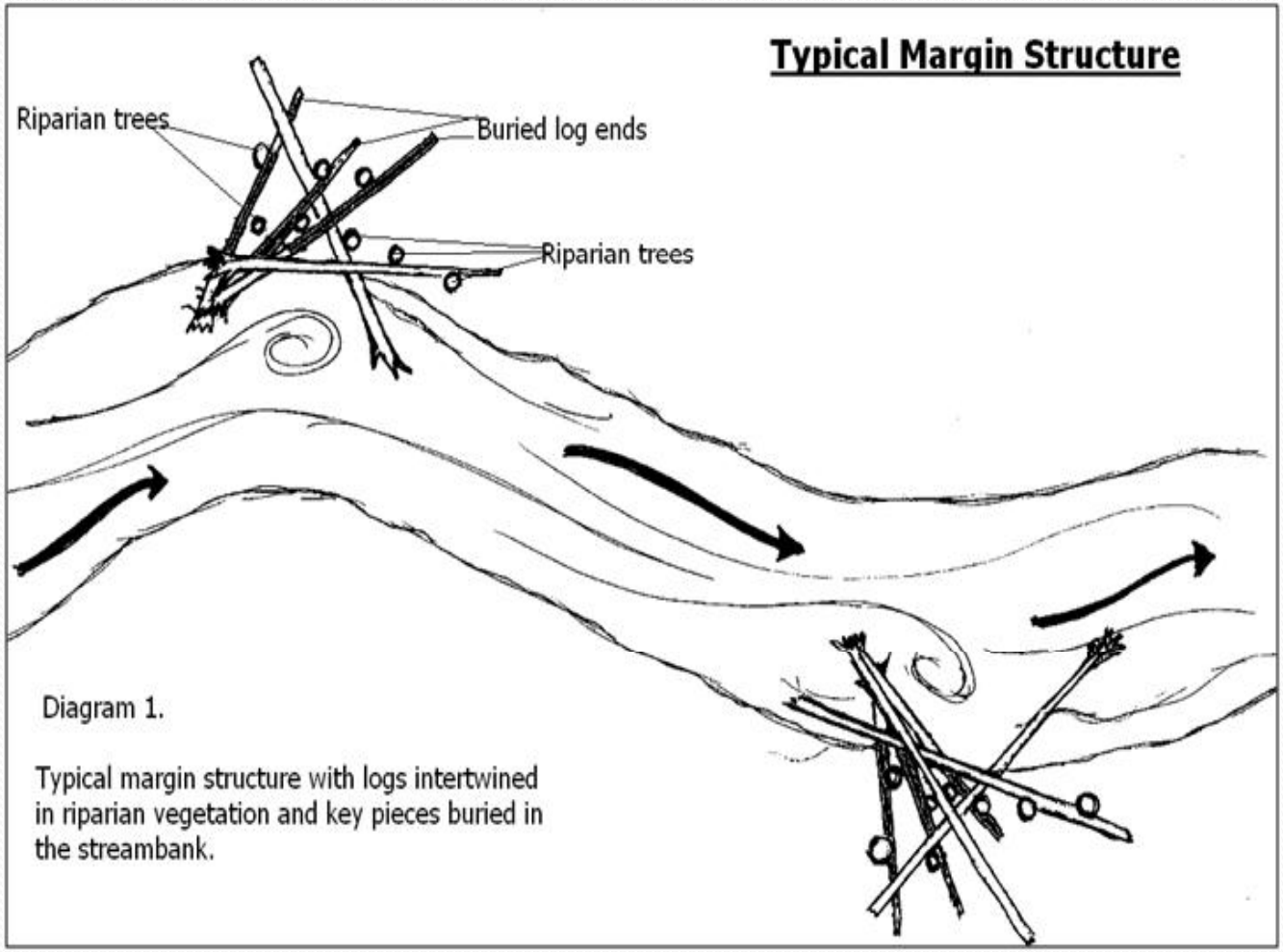
Salmon Plans

- The Lower Columbia Fish Recovery Boards Salmon Recovery Plan specifically cites side channel habitat and stream channel habitat structure as high priority restoration needs.
- EDT Ranks this area as “high” for coho reach potential and as a Primary coho reach.
- The top three critical life stages identified in the plan are egg incubation and 0-age active rearing, and, 0-age inactive rearing (overwintering).
- The ACC Synthesis Matrix rated this section of the river as having medium/high restoration potential and as a Primary coho population area.

Methods

- Thin a timber harvest unit from Pepper Cat to get trees with rootwads.
- Truck trees as long as possible from unit to Muddy River using Forest Service Roads 25 and 8322.
- Transport trees up Muddy River to side channel 1 using skidder and excavator.
- Transport trees down Muddy River to side channel 2 using skidder and excavator.
- Bury some trees for key anchor points and put others on the bank to create LWM clusters

Typical Structure



Project Budget

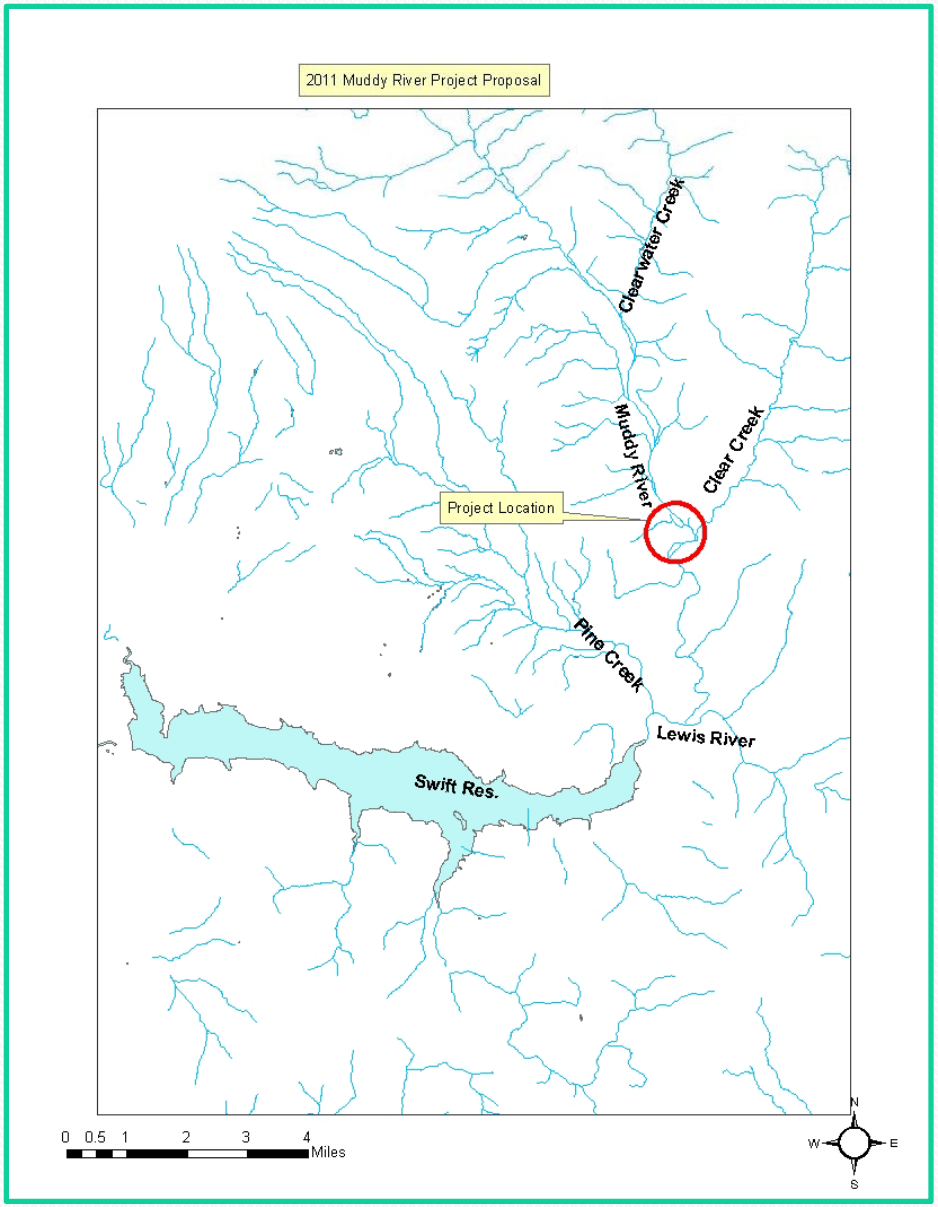
Action	ACC Funds	Partner Funds
NEPA		$8,000
Final Designs and Project Mgmt and Contract Administration	$8,000	$14,000
Equipment Contract	$26,000	
Materials	$1,000	$10,000
Monitoring	$4,000	$2,000
Total	**$39,000**	**$34,000**

Project Partners

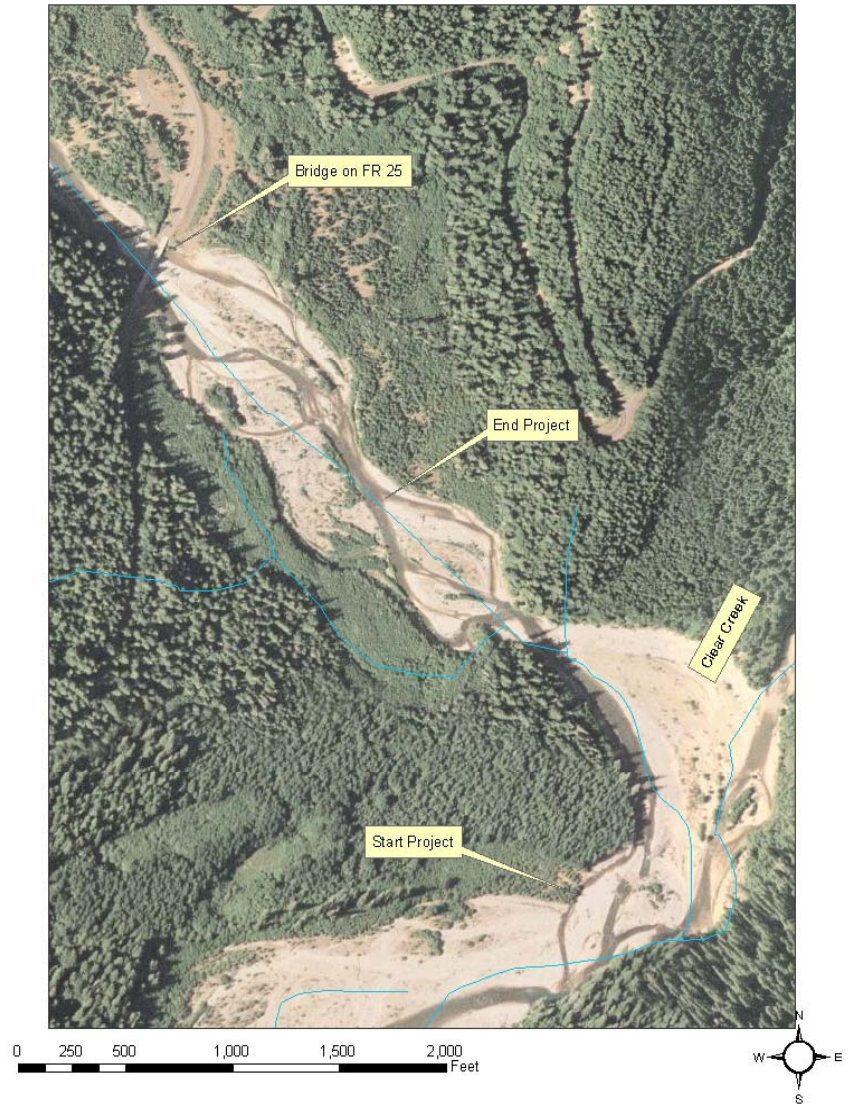
Partner	Contribution	Funds
Forest Service	Project development, Contracting, Permitting, Monitoring Trees	$14,000 In-kind $10,000
Mt. St. Helens Institute	Monitoring	$2,000 In-kind

Muddy River Mainstem

Muddy River Vicinity Map



2011 Muddy River Project Proposal



Project Description

- Large woody material will be placed in the Muddy River to increase bank stability, enhance and restore juvenile salmonid rearing habitat, and create adult spawning habitat.

- Target Species- Primary-Coho salmon,
  - Secondary -Chinoook

- Project Length- ½ mile

- Approximately 300 pieces of large woody material will be placed in this section to create 20 complex clusters along the stream margins using a large excavator.

Salmon Plans

- EDT Ranks this area as “high” for coho reach potential and as a Primary coho reach.

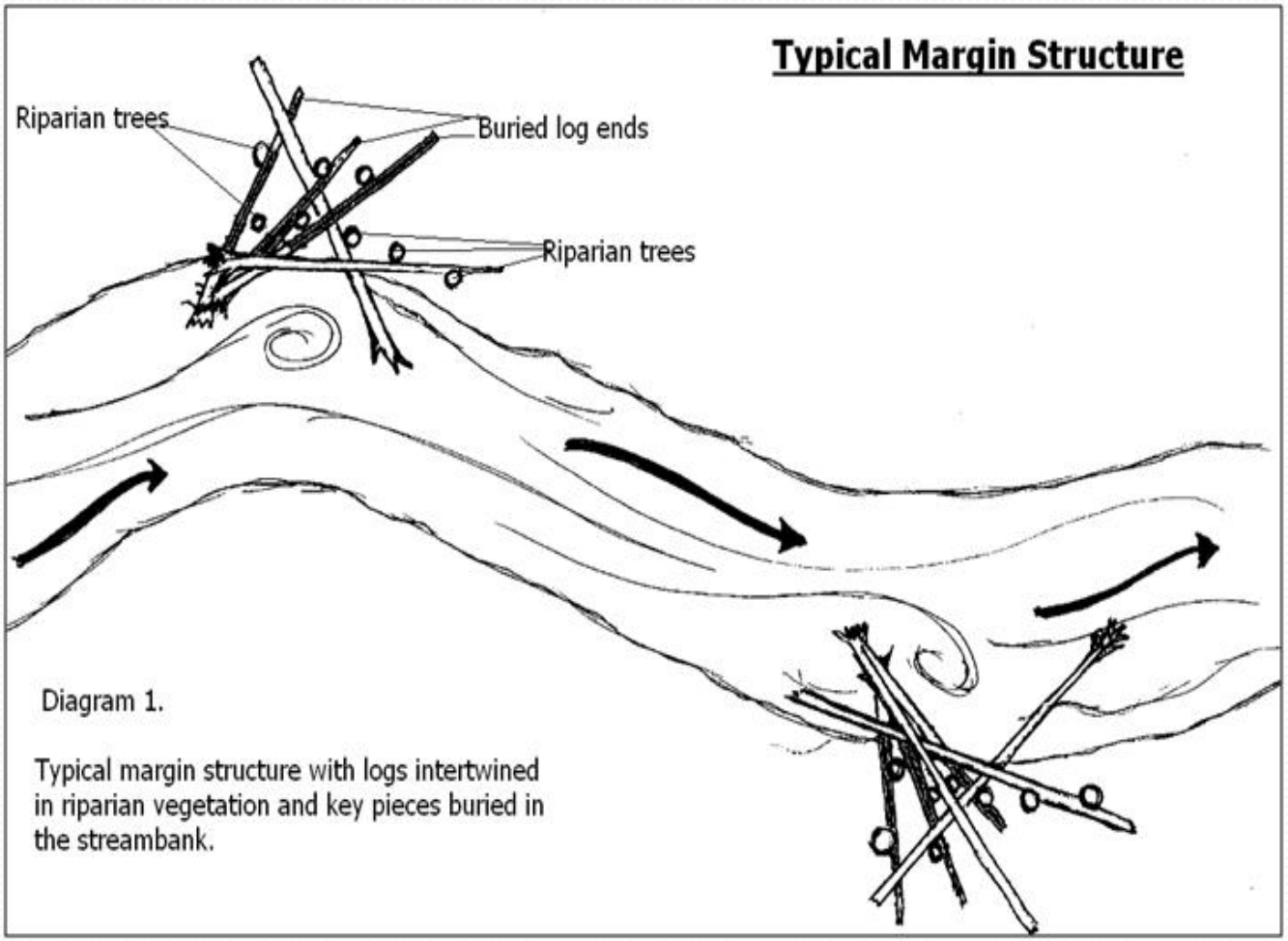
- The top three critical life stages identified in the plan are egg incubation and 0-age active rearing, and, 0-age inactive rearing (overwintering).

- The ACC Synthesis Matrix rated this section of the river as having medium restoration potential and as a Primary coho population area.

Methods

- Thin a timber harvest unit from Pepper Cat to get trees with rootwads.
- Truck trees as long as possible from unit to Muddy River using Forest Service Roads.
- Transport trees down Muddy River to project site from bridge crossing near 25 road, and up from spur road near confluence of Clear Creek using a skidder.
- Use a large excavator to bury some trees for key anchor points and put others on the bank to create LWM clusters

Typical Structure



Project Budget

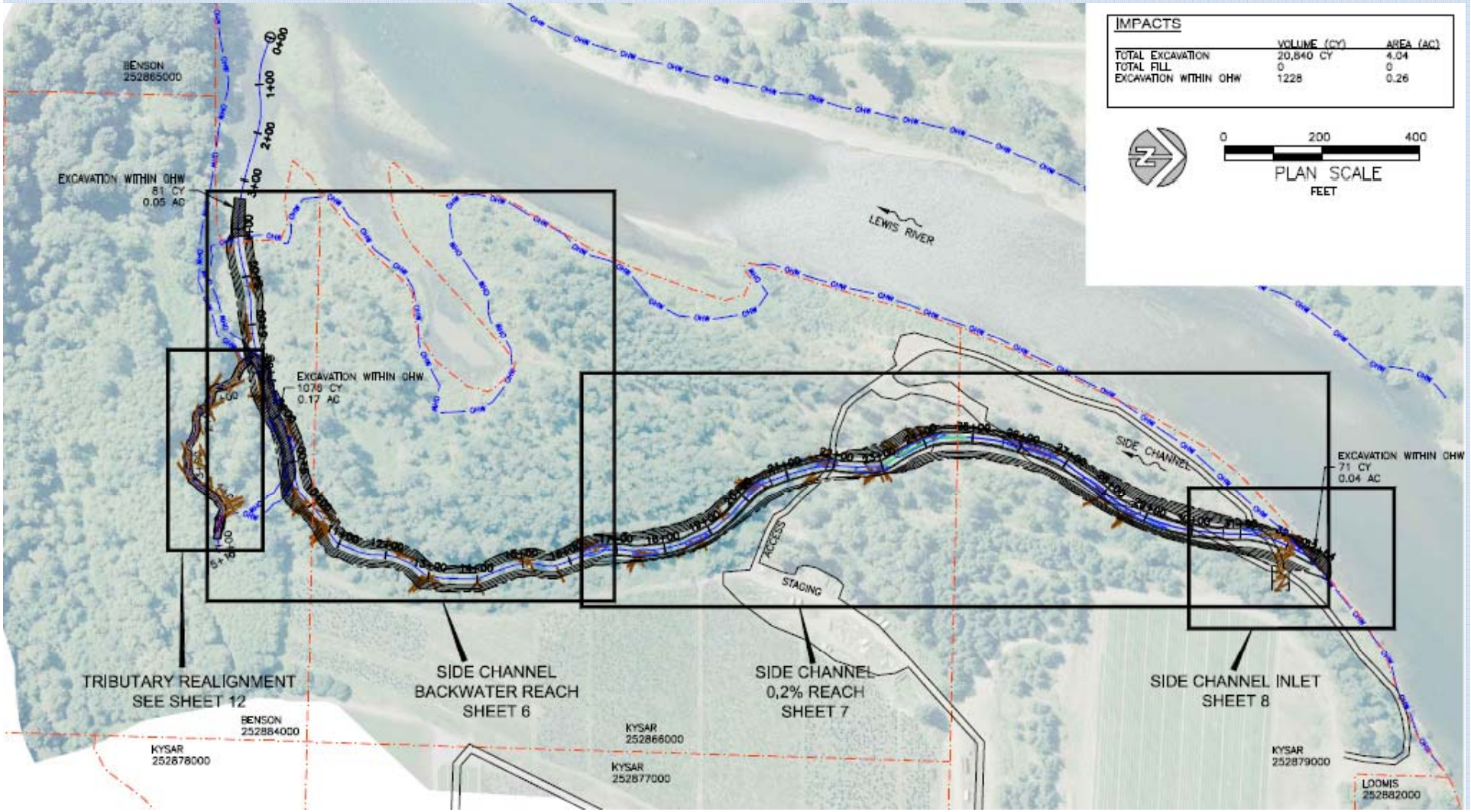
Action	ACC Funds	Partner Funds
NEPA		$8,000
Final Designs and Project Mgmt and Contract Administration	$8,000	$14,000
Equipment Contract	$31,000	
Materials	$1,000	$15,000
Monitoring	$3,000	$2,000
Total	**$43,000**	**$39,000**

Project Partners

Partner	Contribution	Funds
Forest Service	Project development, Contracting, Permitting, Monitoring Trees	$14,000 In-kind $15,000 In-kind
Mt. St. Helens Institute	Monitoring	$2,000 In-kind

End

NF Lewis River (RM 13.5) Side Channel Enhancement Project



Project objectives:

- Promote channel complexity and habitat-forming processes.
- Increase the abundance and complexity of off-channel and side-channel habitat.
- Increase pool habitat quality and quantity.
- Increase LWD quantities to increase the availability of rearing and holding cover, complexity, and velocity refuge.
- Restore a native stream bank, riparian, wetland, and floodplain vegetation community to provide stability, shade, wildlife habitat, and future LWD recruitment.
- Restore passage and habitat complexity to a perennial spring-fed tributary

Expected Outcomes

- Creation of 50,000 square feet of side-channel habitat .
- Elimination of existing stranding risk.
- Creation of a floodplain velocity refuge and forage habitat.
- Restoration of fish passage into the perennial tributary.
- Restoration of the native riparian plant community.

SRFB funded NF Lewis (RM 13.5) Side Channel Project $531,520

- Project Match = $122,000
  - 8k Equipment (known LCFEG equip packages)
  - 66k labor (Unknown status of Larch DOC crews)
  - 48k LWD (Unknown)
- Change in SRFB Match Requirements

$122k match required only $8k is accounted for.

Wood Budget = $105k

Description	Unit	Quantity	Unit Cost	SRFB Funds	Match	Sales Tax	Total Cost
LWD - large logs>18" diameter x 35' long	EA	50	$350	$0	$17,500	$0	$ 17,500
LWD - small logs>12" x 30' long	EA	100	$300	$0	$30,000	$0	$ 30,000
LWD - logs with roots	EA	75	$500	$37,500	$0	$3,000	$ 40,500
LWD - Pilings	EA	225	$65	$14,625	$0	$1,170	$ 15,795

SRFB purchase = $57k
Unknown donation = $48k

Riparian Budget = $62k

Riparian- Site Preparation	AC	4	$0	$11,000	$0	$875	$ 11,875
Riparian- Plant materials	EA	5,000	$3	$15,000	$0	$1,230	$ 16,230
Riparian- Plant Installation	HR	1,000	$13	$0	$13,000	$0	$ 13,000
Riparian- Site Maintenance	HR	1,620	$13	$0	$21,060	$0	$ 21,060

SRFB = $28k

DOC Installation/maintenance = $34k

SRFB Match Requirements

- Project Match = $122,000
  - $8k Equipment (known LCFEG equip packages)
  - $66k labor (Unknown status of Larch DOC crews)
  - $48k LWD (Unknown)

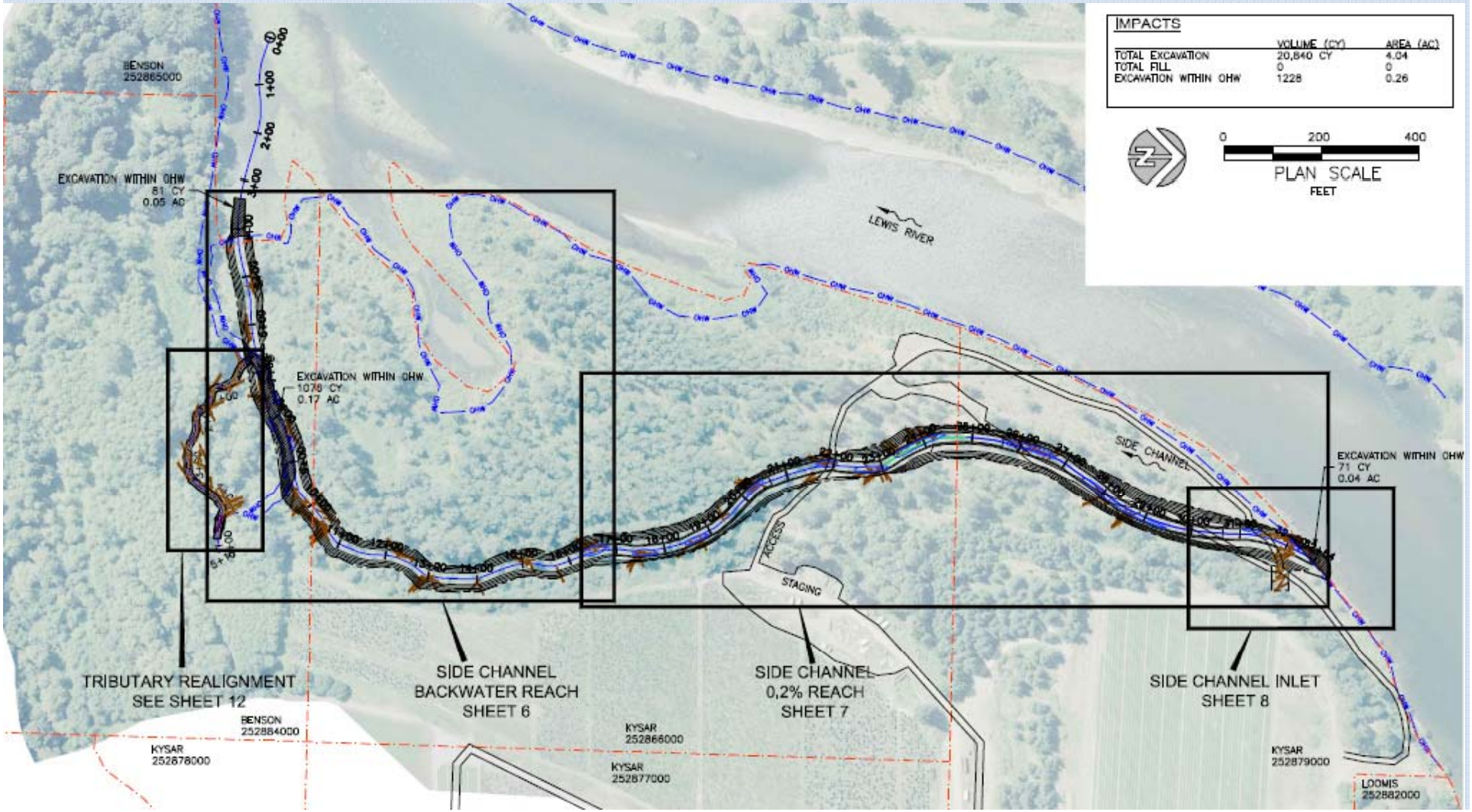
- Options -

Match Options

1.) Stockpile future Lewis gravels. ACC fund sorting/trucking costs. $40-75k for 3-6k cu/yds.

2.) ACC fund $48k LWD (match), SRFB funds to sort/truck gravels (if wanted).

Thank you.


IMPACTS
VOLUME (CY)
AREA (AC)
TOTAL EXCAVATION
20,840 CY
4.04
TOTAL FILL
0
0
EXCAVATION WITHIN OHW
1228
0.26
0
200
400
PLAN SCALE
FEET
BENSON
252865000
EXCAVATION WITHIN OHW
81 CY
0.05 AC
EXCAVATION WITHIN OHW
1078 CY
0.17 AC
LEWIS RIVER
SIDE CHANNEL
ACCESS
STAGING
EXCAVATION WITHIN OHW
71 CY
0.04 AC
TRIBUTARY REALIGNMENT
SEE SHEET 12
SIDE CHANNEL
BACKWATER REACH
SHEET 6
SIDE CHANNEL
0.2% REACH
SHEET 7
SIDE CHANNEL INLET
SHEET 8
BENSON
252884000
KYSAR
252878000
KYSAR
252866000
KYSAR
252877000
KYSAR
252879000
LOOMIS
252882000

Eagle Island Sites B and C:
PacifiCorp ACC 2011 Funding Round

Cowlitz Indian Tribe Natural Resources Dept.

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Rudy Salakory
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Project Setting:

- ~RM 11, Eagle Island South Channel, RB

Project Purpose and Need:

- Current Site Conditions = Need
  - Lack of wood in system
  - Limited habitat complexity
  - Diminished riparian forest
  - Low quality juvenile salmonid rearing habitat

- Purpose of project is to enhance side channel habitat at Sites B and C:
  - Add Large Woody Debris (LWD)
  - Increase habitat complexity
  - Enhance riparian forest structure
  - Increase quality and abundance of shallow water rearing habitat for juvenile salmonids

ESA-Listed Species Present in Area:

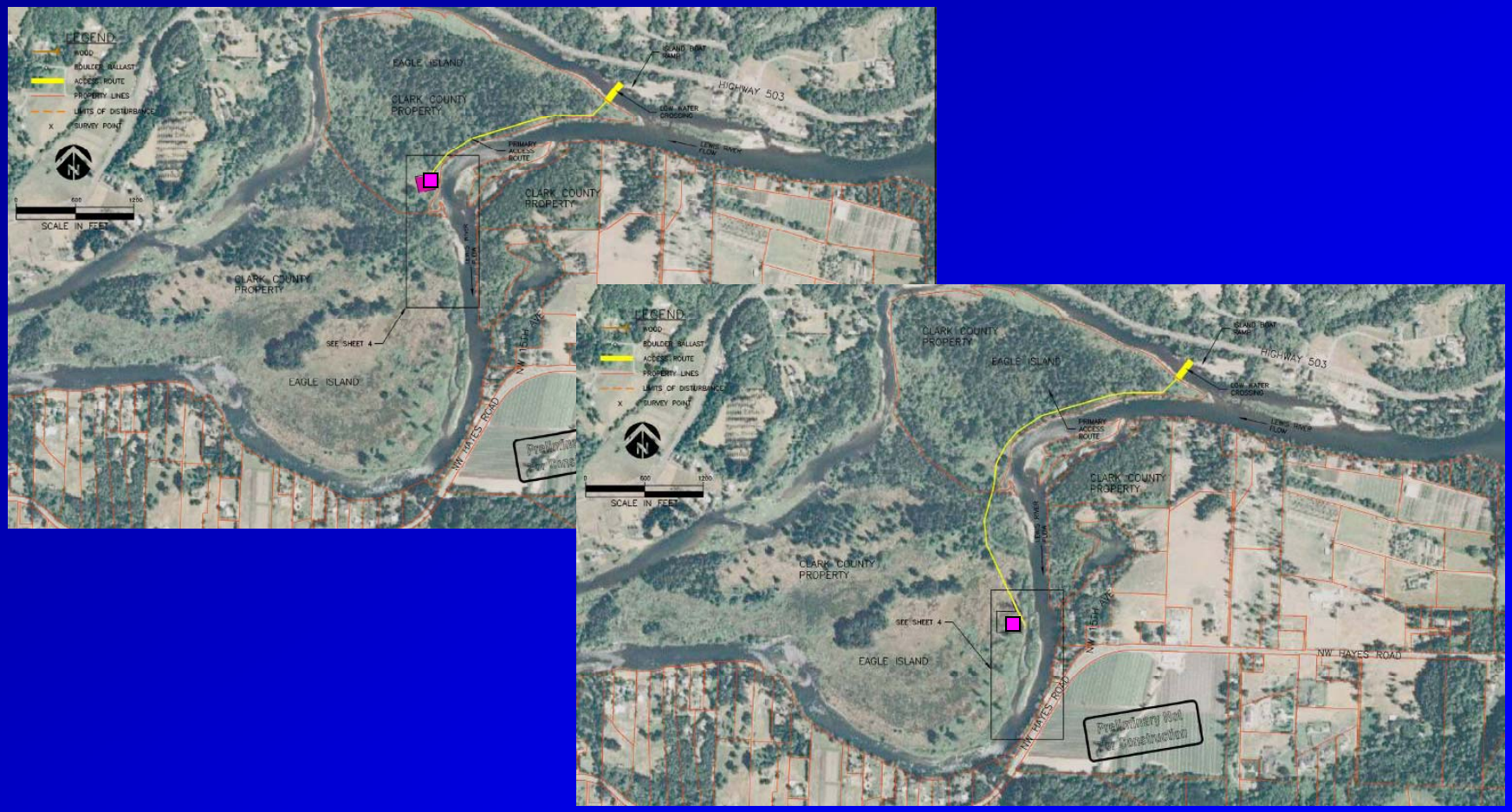
1. Lower Columbia River Chinook salmon
   - "Threatened", Lewis River is designated critical habitat
2. Columbia River Chum salmon
   - "Threatened", Lewis River is designated critical habitat
3. Lower Columbia River Steelhead
   - "Threatened", Lewis River is designated critical habitat
4. Lower Columbia River Coho salmon
   - "Threatened", Lewis River is proposed as critical habitat
5. Bull Trout
   - "Threatened", Lewis River is designated critical habitat
6. Eulachon
   - "Threatened", Lewis River is proposed as critical habitat

Sites B and C work completed to date:

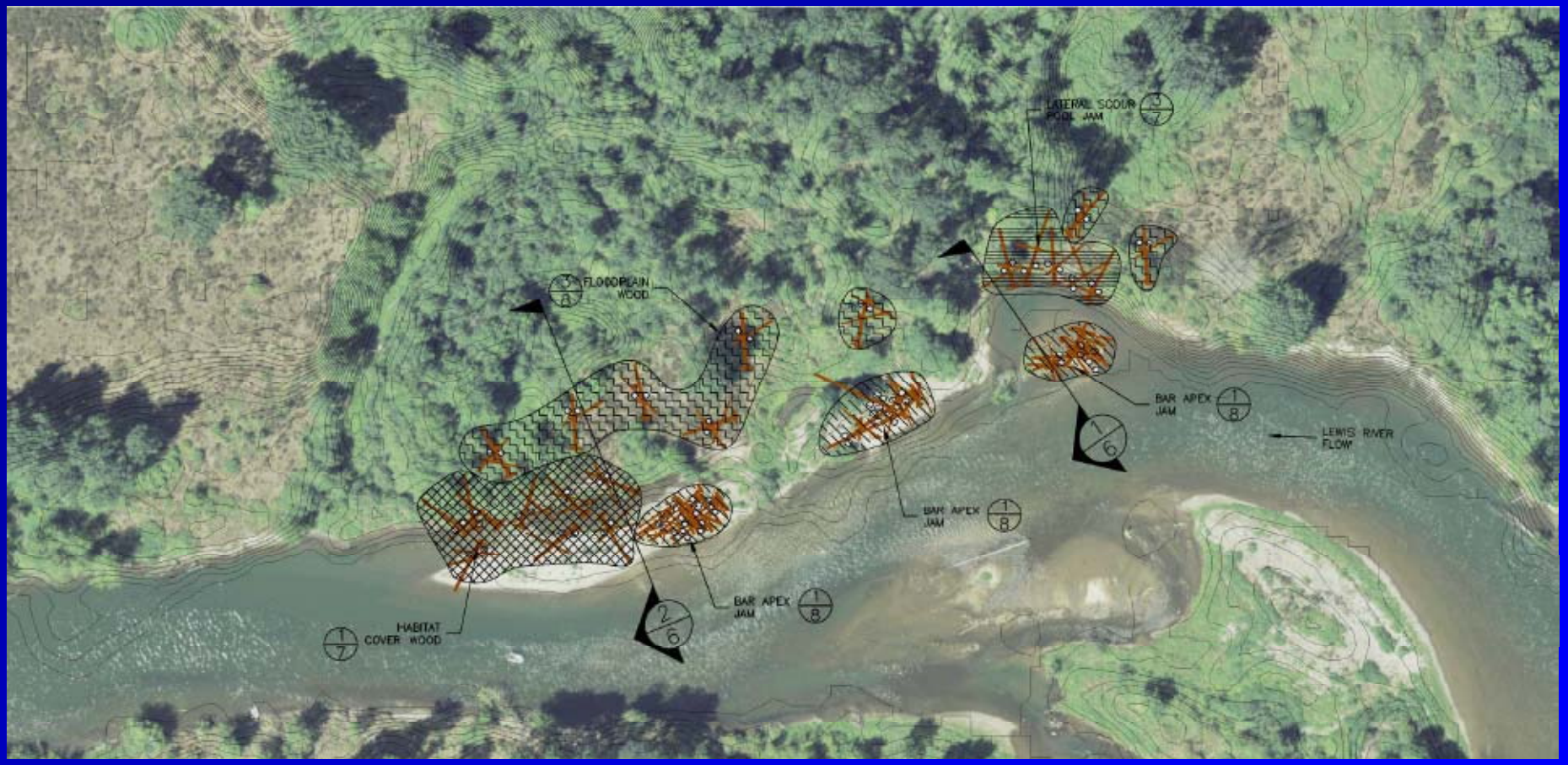
- Eagle Island Tech Memo 1 (Interfluve, Jul 2009)
  - Previous Surveys and Analysis/Existing Reach Conditions
  - Project prioritization methods
- Eagle Island Tech Memo 2 (Interfluve, Aug 2009)
  - Preliminary project opportunities (14)
- Eagle Island Tech Memo 3 (Interfluve, Nov 2009)
  - 30% designs for high-priority sites: A, B and C
- All ranking, review and development of projects has been administered by LCFRB and the Eagle Island Technical Oversight Group

Integrated Approach:

Access/Staging (as proposed in 30%):

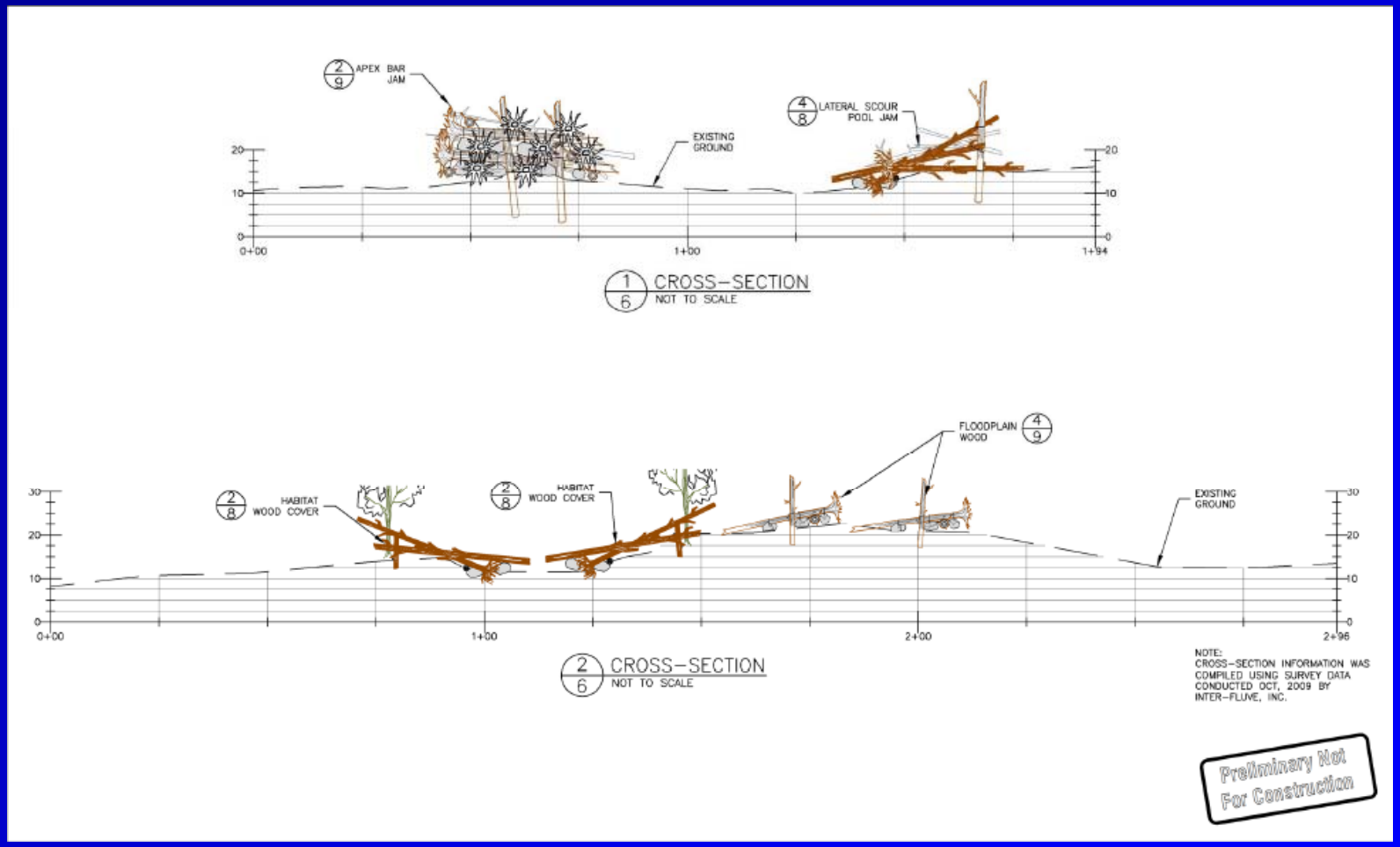


Site B Project

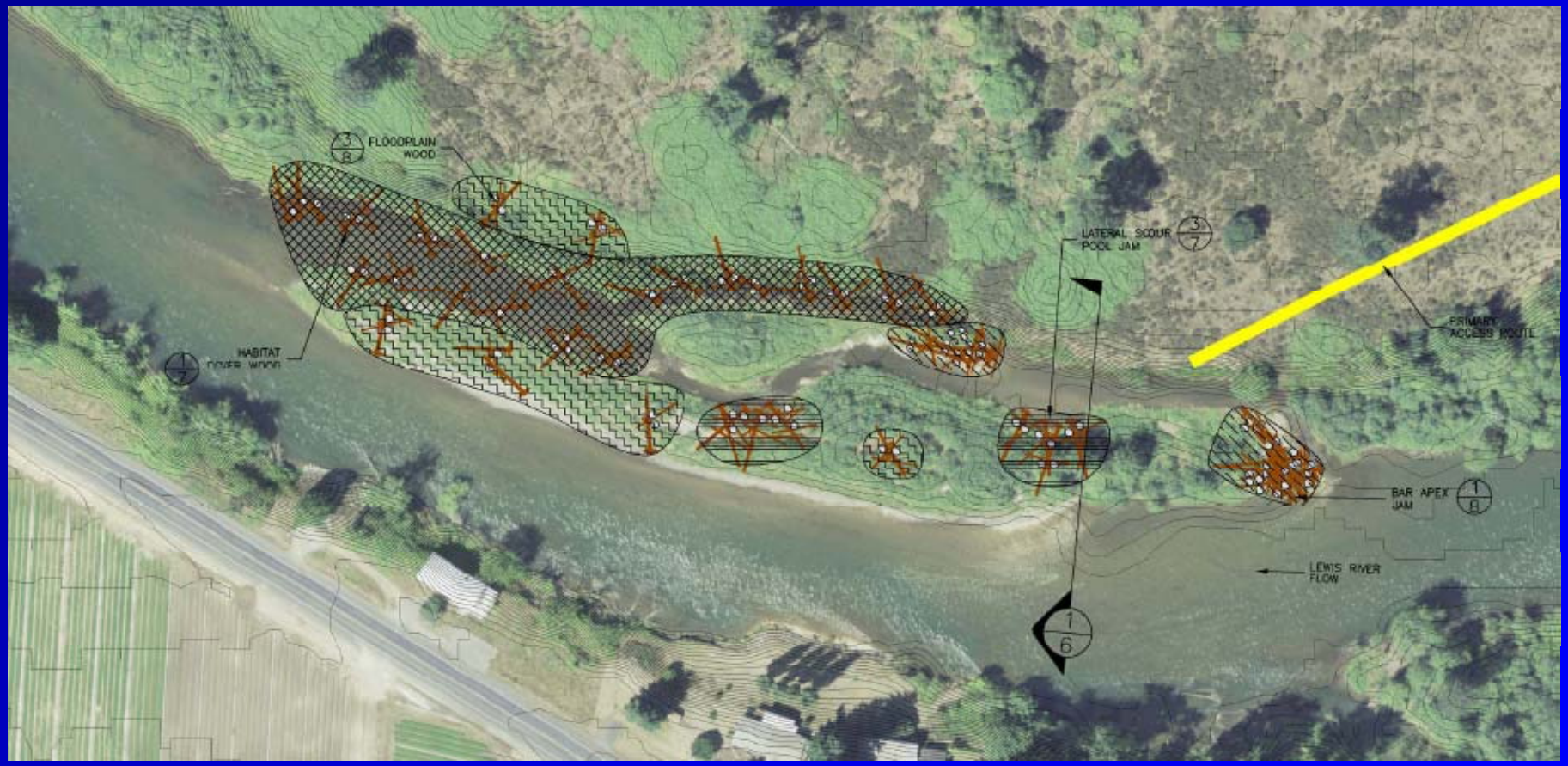


Site B Project Area

Site B Cross Sections

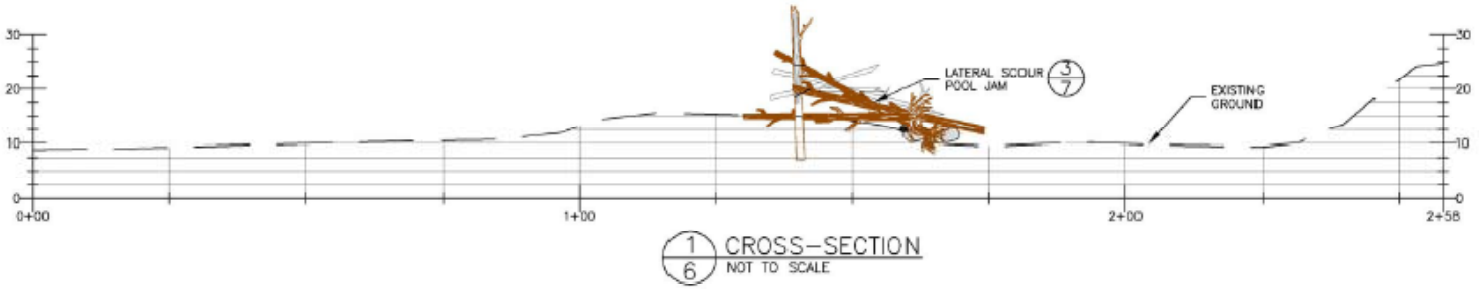


Site C Project

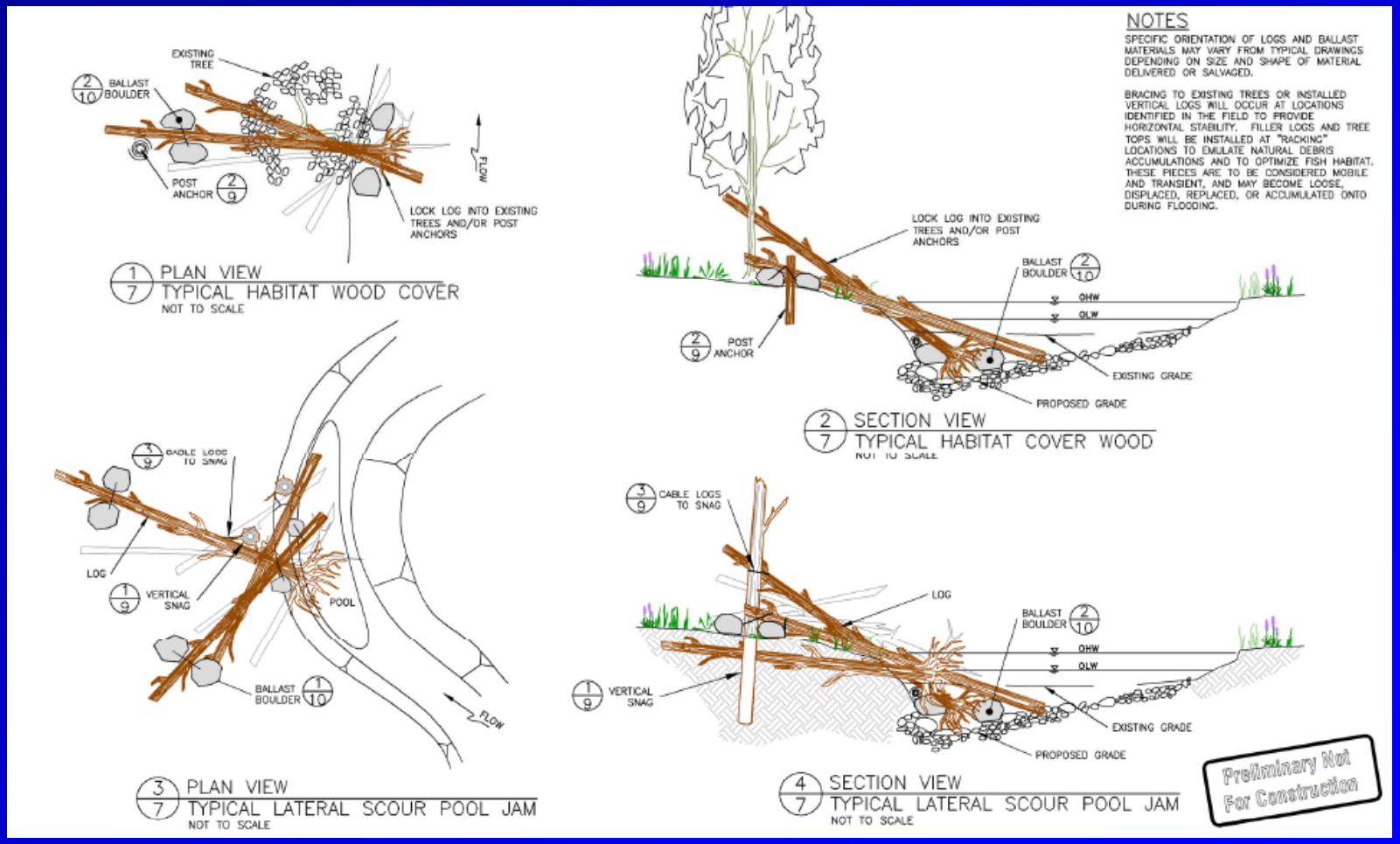


Site C Project Area

Site C Cross Section

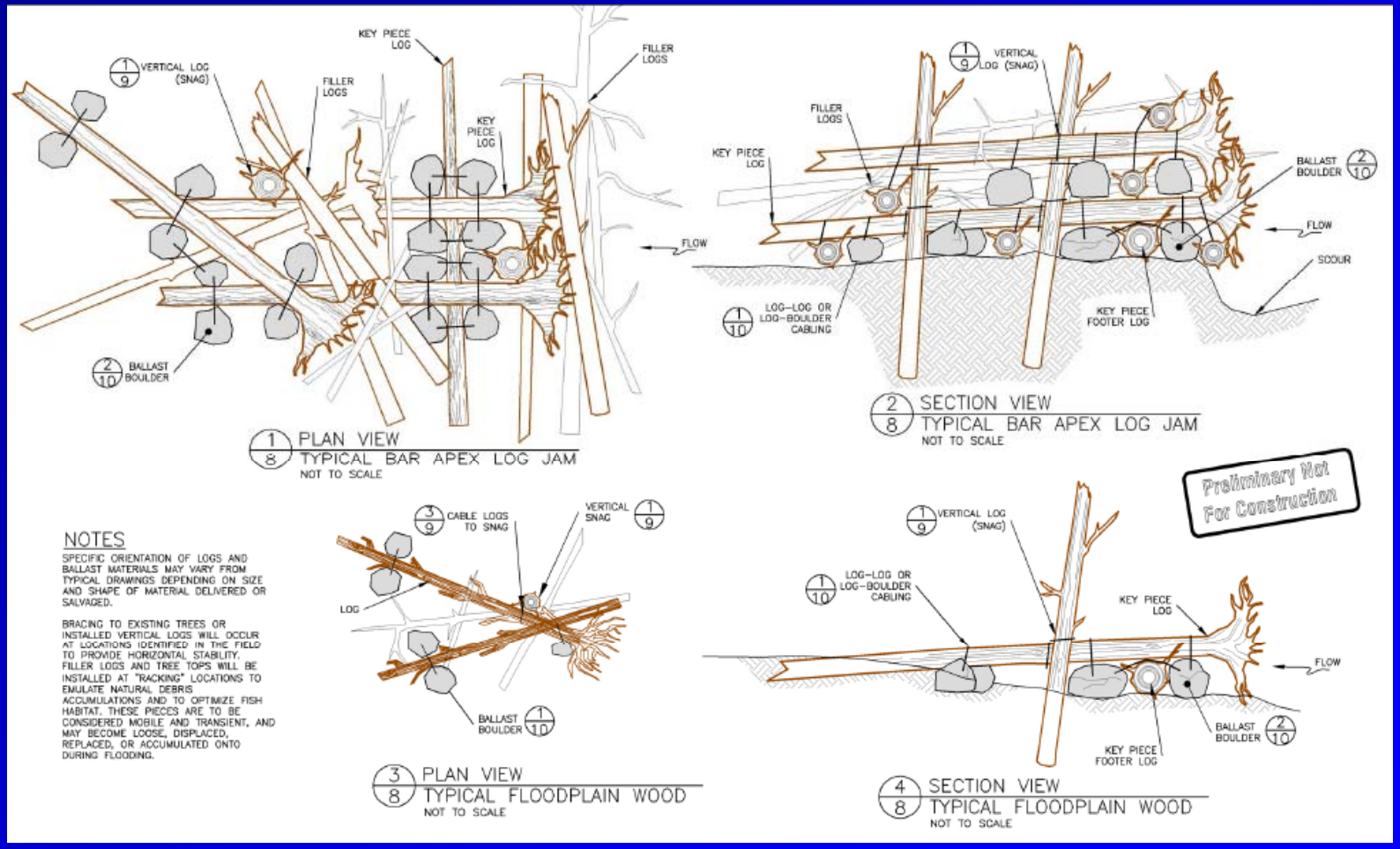


Both Sites: Typical Habitat Wood and Lateral Pool Scour Jams

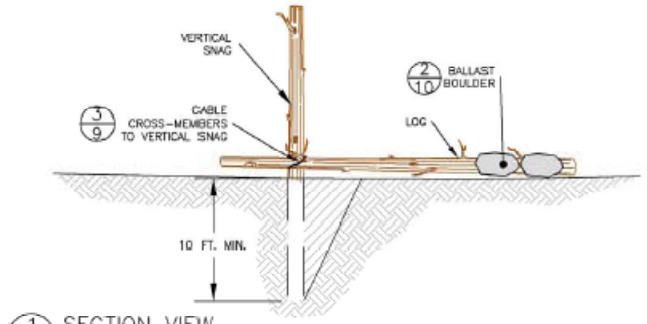


Cowlitz Indian Tribe
ACC Presentation 2011, Eagle Island Sites B and C

Both Sites: Typical Bar Apex Jam and Floodplain Wood

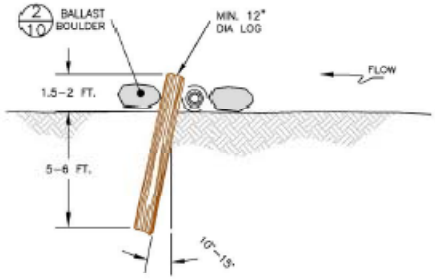


Both Sites: Typical Anchor, Securing and Cabling

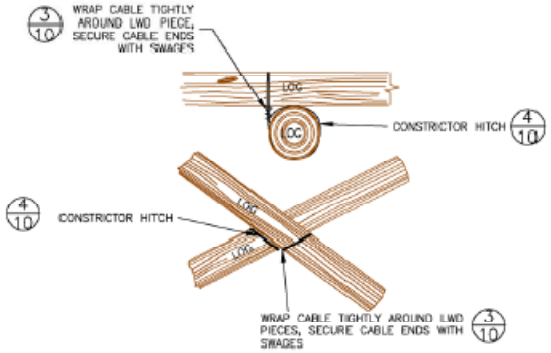


1/9 SECTION VIEW
TYPICAL LOGS SECURED AT VERTICAL SNAG
NOT TO SCALE

CABLING
USE 1/2 INCH GALVANIZED CABLE. CABLE SHALL BE CONSTRICTOR HITCHED AROUND VERTICAL SNAG WRAPPED ONCE AROUND OTHER LOG BEFORE ENDS ARE FASTENED TOGETHER. THERE SHALL BE NO SLACK IN THE CABLE AFTER IT IS FASTENED.



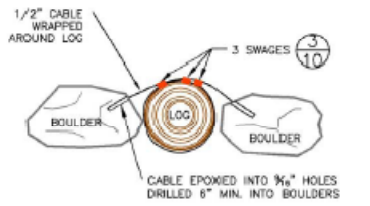
2/9 SECTION VIEW
TYPICAL LWD POST ANCHOR
NOT TO SCALE



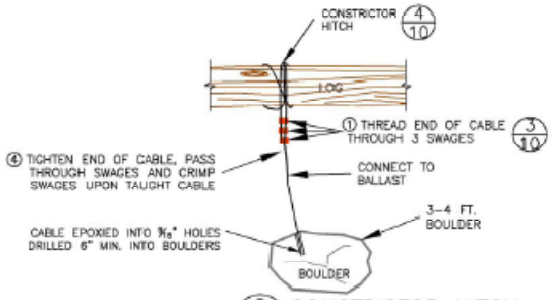
3/9 DETAIL VIEWS
TYPICAL LOG CABLING
NOT TO SCALE

Preliminary Not For Construction

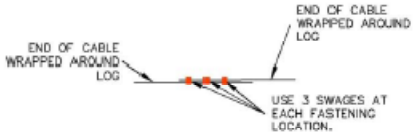
Both Sites: Typical Ballast Boulders, Cabling and Constrictor Hitches



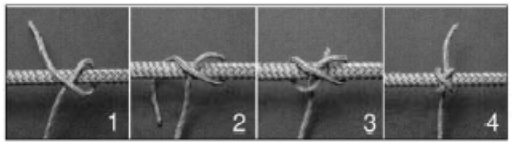
1/10 LWD INSTALLATION DETAILS



2/10 CONSTRICTOR HITCH CABLE WRAP



3/10 SWAGES CABLE SPLICE DETAIL



4/10 CONSTRICTOR HITCH CABLE KNOT DETAIL

Log Wood Buoyancy Force in Pounds Assumes Wood Specific Gravity =0.5	
DBH X Log Length (feet)	Safety Factor 1.5
1 x 30	1104
2 x 30	4416
3 x 30	9936
1 x 40	1472
2 x 40	5887
Additional Root Wad Buoyancy Force in Pounds.	
Estimate Based on 35% Void Space	
Adjust as needed based on void space in each root wad.	
2 X 2 Foot Diameter RW	64
3 X 3 Foot Diameter RW	215
4 X 4 Foot Diameter RW	510
5 X 5 Foot Diameter RW	997
6 X 6 Foot Diameter RW	1722

NOTE:
THE NUMBER OF ANCHOR ROCKS PER ANCHORED LOG STRUCTURE SHALL BE AS SHOWN ON THE TABLES PROVIDED ON THIS SHEET USING APPROPRIATE NUMBER OF BOULDERS AND THE SIZE OF LOGS.

Submerged Boulder Ballast in Pounds. Assumes Rock Density of 2.65 and lift @ 6fps	
Boulder Diameter	Ballast
3 Foot	1289
2 - Boulder Configuration	2579
4 - Boulder Configuration	3868
3.5 Foot	2085
2 - Boulder Configuration	4171
4 - Boulder Configuration	6256
4 Foot	3156
2 - Boulder Configuration	6311
4 - Boulder Configuration	9467

Preliminary Not For Construction

BOULDER BALLAST AND WOOD CABLING:

BOULDER BALLAST NOTES

DESCRIPTION
THIS WORK CONSISTS OF INSTALLING LOGS WITH ROOT WADS INTO ANCHORED LOG STRUCTURES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE OWNERS REPRESENTATIVE.

MATERIALS
ANCHORS FOR THIS WORK WILL CONSIST OF CABLED BOULDERS. BOULDERS SHALL BE NON-FRACTURED BASALT WITH A MINIMUM SPECIFIC GRAVITY OF 2.65.

CABLE SHALL BE GALVANIZED, STEEL CORE, AND SHALL HAVE A MINIMUM DIAMETER OF 1/2 INCH.

SWAGES SHALL BE ZINC PLATED COPPER AND SHALL MEET THE PERFORMANCE REQUIREMENTS OF MILITARY STANDARD MS-51844, REV. C, SLEEVES, SWAGING-WIRE ROPE. MINIMUM OF 3 SWAGES PER CONNECTION.

EPOXY FOR ANCHORING SHALL BE HILTI HIT RE 500 ADHESIVE OR APPROVED EQUAL.

CONSTRUCTION

FINAL POSITIONING OF THE ANCHORED LOG STRUCTURES SHALL BE IN THE APPROXIMATE LOCATION AS SHOWN ON THE PLANS AND AS APPROVED IN THE FIELD BY THE OWNERS REPRESENTATIVE.

GENERAL NOTES , CONT'D

FINAL POSITIONING OF THE ANCHORED LOG STRUCTURES SHALL BE IN THE APPROXIMATE LOCATION AS SHOWN ON THE PLANS AND AS APPROVED IN THE FIELD BY THE OWNERS REPRESENTATIVE.

BALLAST BOULDERS SHALL BE SECURED AS SHOWN ON THE PLANS.

DRILL HOLES IN SOLID ROCK AND AVOID ANY CRACKS OR FRACTURES. HOLES SHALL BE 9/16 INCH IN DIAMETER. HOLES MUST BE DRILLED 6 INCHES, MINIMUM, INTO ROCK. HOLES MUST BE CLEANED OF LOOSE ROCK FRAGMENTS AND POWDER WITH A BRUSH AND WATER. HOLES MUST BE CLEAN OF ALL DUST, DEBRIS, OIL, AND SOAP RESIDUES. THE HOLES MUST FLUSH CLEAR TO INSURE NO MATERIAL EXISTS BETWEEN THE CABLE, EPOXY, AND ROCK SURFACE. INSTALL EPOXY PER MANUFACTURER'S RECOMMENDATIONS.

CABLE SHALL BE WRAPPED ONCE AROUND LOG BEFORE ENDS ARE INSERTED INTO THE DRILLED HOLES FILLED WITH EPOXY. WIPE CABLE WITH CLEAN ACETONE SOAKED RAG TO REMOVE OILS AND GREASES PRIOR TO INSERTION INTO EPOXY FILLED HOLE. FILL DRILL HOLES ENOUGH TO ENSURE COMPLETE COVERAGE WITH EPOXY. INSERT CABLE INTO HOLE SO THAT END OF CABLE HITS THE BOTTOM OF THE HOLE. EXCESS EPOXY SHOULD COME OUT OF THE TOP OF THE HOLE AS CABLE IS SEATED IN DRILL HOLE.

MINIMUM 3 SWAGES PER CONNECTION. SWAGES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION, SPACING AND SWAGE TOOL DIAMETER FOR THE SIZE AND LOAD RATING OF THE CABLE BEING USED. SWAGING TOOL SHALL BE CHECKED FOR PROPER COMPRESSION, ACCORDING TO MANUFACTURER'S RECOMMENDATIONS, USING A GAUGE PROVIDED BY THE MANUFACTURER OF THE SWAGE FITTINGS BEING INSTALLED.

Proposal:

Estimate combined projects

- $535,000

Request from PacifiCorp ACC 2011

- $85,000 (~15%)

Will request balance of project funding via LCFRB/SRFB. If additional funding not secured, will return ACC award

Conclusions:

- Demonstrated ecological need for the project
- Demonstrated benefits to ESA-listed salmonids
- Willing landowner
- Complements other projects proposed in the reach
- Highly ranked in technical assessment

Proposal is Consistent w/ Aquatic Fund 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.

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

Questions?