1. Project Title

Lewis River Alcove/Side Channel and Old Side Channel near 90480 Road

2. Project Manager

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3. Identification of problem or opportunity to be addressed

Problem:
Minimal high quality side channel spawning and rearing habitat exists in the Upper North Fork Lewis River. This habitat is essential for species listed under the Endangered Species Act (ESA) that use the Lewis River Basin and include coho and Chinook salmon, steelhead trout, and bull trout. These species have endured many effects that threaten the survival of the species. Effects to their habitats include past land management activities such as logging, road building, and development of hydro-resources, which until recently has blocked all anadromous species access into the Upper North Fork Lewis River. To ensure reintroduction efforts of salmon and steelhead into the watersheds above the dams are successful, the Forest Service has worked with PacifiCorp on a variety of projects including acclimation ponds for juvenile spring Chinook salmon, road decommissioning, replacement of migration blocking culverts with bridges, and various streambank and instream fish habitat restoration projects.

Opportunity:
This project proposal develops the opportunity to ensure fish reintroduction efforts into the upper North Fork Basin are successful. This project has two components. The first is to restore instream fish habitat in an alcove with an associated side channel, and the second is to restore habitat in an old side channel of the Lewis River. This will restore these habitats to their full potential, and prioritizes opportunities for ESA listed fish species. Enhancement and restoration of instream habitat will increase the overall abundance of functional habitat in the upper basin.

The Forest Service proposes to place approximately 60 pieces of Large Woody Material (LWM) with rootwads in the Alcove/Side Channel, and approximately 200 pieces of LWM with rootwads in the Old Side Channel. Both of the projects are in the Lewis River, are located downstream of Spencer Creek, and are less than 1 mile downstream of the future Crab Creek acclimation pond. Research has shown that side channels provide preferred summer and overwintering habitat for juvenile coho (Everest et al. 1985; Everest et al. 1986). Each structure will contain an average of 8-12 pieces of large wood, and be strategically located to maximize summer and winter rearing habitat for coho and spring Chinook salmon, winter steelhead, and possibly bull trout. The project will improve an existing alcove with 350 feet of associated side channel, and another 700 feet in an old side channel. The Forest Service will hire a contractor to haul LWM to the site, and use an excavator and skidder to place wood in strategic locations. A tracked

excavator and skidder will access the area via an abandoned road, and will build the instream structures. Wood for this project will come from USFS lands Peppercat unit 21 and/or from Swift Reservoir cleaning operations.

4. Background

Reconnaissance surveys conducted for this project occurred during September and December 2013. Currently water flows year round through the Alcove/Side Channel location on the east side of the river. The amount of flow is controlled by an island at the head of the channel. Side channel flows vary with river flows. An outlet to the river is always flowing, providing easy access into and out of the side channel. The inlet is located approximately 2,700 feet downstream from the confluence of Spencer Creek. The side channel width varies between 20 and 30 feet, and the location is stabilized by an island vegetated with alder trees.

The Old Side Channel is located on the east side of the river and is no longer functional due to the lack of flow. The inlet and outlet are both blocked by sediment deposits, about 20 feet in width. This 4- 5 foot deep side channel will provide excellent habitat once LWM and flow is reestablished. The inlet for this channel is approximately 500 feet downstream from Spencer Creek. The outlet of this channel is approximately 1300 feet upstream from the Alcove/Side Channel. This side channel width varies from 12 to 20 feet and the location is stabilized by a large gravel bar. The inlet is approximately 4,000 feet downstream from the Crab Creek Acclimation Pond. This location will directly benefit juvenile fish released from the acclimation pond, and lead to overall success of both the acclimation pond and the alcove and side channels restoration project.

Presently, habitat in the Alcove/Side Channel is limited due to lack of cover and large woody material. Some hiding cover in the form of depth is present in the alcove. Large woody material will provide additional cover in the side channel allowing full use of the channel by juvenile salmonids. In addition to cover, gravels will be sorted during high flow events increasing spawning opportunities.

The 2009 Lower Columbia Salmon Recovery Plan Six Year Habitat Work Schedule identifies this as a Tier 2 (Medium priority) reach (reach 23). Ecosystem Diagnosis and Treatment (EDT) analysis identifies Medium production potential for spring Chinook, high for winter steelhead, and low potential for coho. EDT results suggest that off channel and side channel habitat and channel structure restoration are high multi-species priorities in the reach. The ACC Synthesis Matrix rated this section of the river as having low restoration potential and as a Primary coho population area, and a low rating for coho reach potential. Habitat needs in this reach were identified as low instream LWM, high competition and predation. It has a Primary population designation for Chinook, coho, and a contributing population designation for winter steelhead.

5. Project Objective(s)

GOAL:
Enhance the quality of fish habitat in the Lewis River by:

- Improving habitat complexity and diversity in the alcove and side channels using LWM
- Providing refugia during winter flows for juvenile salmonids.

- Providing rearing opportunities for juvenile salmonids during summer months.
- Providing increased spawning opportunities for adult salmonids.

This project addresses the following Aquatic Fund priorities.

Priority 1: *Benefit fish recovery throughout the North Fork Lewis River, with priority to federal ESA-listed species.*
Chinook, coho, and steelhead trout are listed as a threatened species under the ESA. This project will contribute to the recovery of these species by increasing the amount and quality of rearing pools in side channels. In addition, spawning areas will be associated with the log complexes.
Lower Columbia ESU coho salmon are listed as a threatened species under the ESA
Lower Columbia ESU steelhead trout are listed as a threatened species under the ESA
Lower Columbia ESU Chinook Salmon are listed as a threatened species under the ESA

Priority 2: *Support the reintroduction of anadromous fish throughout the basin.*
Juvenile anadromous salmonids will have a quality rearing and refugia area when this project is complete, thus ensuring survival and promotion of the various species during reintroduction efforts.

Priority 3*: Enhance fish habitat in the Lewis River Basin-, with priority given to the North Fork Lewis River.*
This project is located in the North Fork Lewis River basin. This project consists of large woody material placed instream in an alcove and side channels, designed specifically to enhance and restore fish habitat. This project will increase instream habitat diversity, and in turn it is expected that this project will contribute to increasing fish production in this area.

6. Tasks:

Task 1: NEPA and required permits.

1) Complete NEPA documentation. Field work for this NEPA document would be accomplished during the summer and fall of 2014. The final document should be completed and signed by May 2015, and the project would be implemented July 2015.

2) Instream restoration activities are covered within the WDFW-MOU, and the Regional Permit with the Army Corps of Engineers.

3) The Forest Service is the landowner and project sponsor, and permission has been obtained to do this project.

Task 2: Project Design.

1) Finalize project design and project preparation details. Preliminary designs were completed during reconnaissance visits in 2013.
2) A laser level will be used to obtain a longitudinal profile and cross-sectional information as we finalize designs.
3) Secure materials. We have a 35 acre Peppercat timber sale unit set aside to use for fish habitat restoration activities over the next ten years. We will layout an area within this stand to thin and prepare for harvest operations. Additional material may be acquired from PacifiCorp Swift Reservoir Cleaning operations.

Task 3: Project Implementation

1) Develop equipment and logging contract. A standard RFQ contract will be developed specifying the scope of the project and project requirements. We will use an equipment rental contract to perform the actual work, which will allows us the flexibility to make changes to the project as implementation is occurring.
2) Administer contract. A Fish Biologist or Fisheries Technician will administer the contract to ensure contract compliance and project specifications are met.

Task 4: Monitoring

1) Perform baseline monitoring. This monitoring will occur prior to project implementation and include a longitudinal profile, cross-sections, pebble counts, photo-documentation and snorkel surveys. Mount St. Helens Institute (MSHI) will provide two interns and volunteers including urban youth to perform monitoring work, they will perform most aspects of the monitoring with supervision and training from the Forest Service. Snorkel surveys will be conducted by the Forest Service
2) Perform after project monitoring. This monitoring will occur following project implementation and will continue on an annual basis for several years following project completion. MSHI will provide two interns and volunteers for this portion of the work supervised by the Forest Service
3) Monitoring Report. A monitoring report will be written each year following project implementation. MSHI will provide raw data in excel format, provide analysis of data and will complete the report with USFS assistance.

7. Methods:

The Mt. St. Helens Fisheries department will oversee all phases of this project including project design, implementation and monitoring.

Approximately 260 pieces of LWM would be harvested during thinning operations from a nearby timber sale unit which would allow us to use long stems (60+ feet) with attached rootwads. Woody material will be trucked via Forest Road 9039 and the reopened 90480 road. Wood will be stockpiled at the end of the 90480 Road. From there, the wood will be transported to the river using a skidder, and the skidder will continue up or down river to deliver the wood to structure locations. Once at the site the logs will be moved and placed by an excavator. The excavator would gain access to the Lewis River using the closed (and reopened for this project) 90480 road, and then on a skid trail created through the woods to access the Lewis River. Wood for this project would primarily come from USFS lands; however any opportunity to acquire large wood from Swift Reservoir cleaning operations will also be pursued.

Approximately 8 to 12 pieces of LWM will be used at each structure location to form complex habitat. Structures will protrude 1/2 to 1/3 of the way into the channel to minimize water shear stress and create a meandering thalweg. Key pieces of wood at each location will be anchored into the streambanks using an excavator to dig trenches up to 30 feet long, and to bury the wood. Other pieces of LWM will be interwoven into these key pieces and riparian vegetation. The overall design will appear natural and meet scenery management objectives.

The FR 90480 will be re-closed after all activities are completed, by re-establishing drainage and blocking vehicular access.

8. Specific Work Products

Deliverable 1: Completed project.

Deliverable 2: A report describing the project. Report to include project narrative, financial information, and photographs of completed projects.

Deliverable 3: Monitoring Report.

9. Project Duration

Monitoring for this project would begin during the summer of 2015. Project implementation would occur July 15th 2015 and is expected to take two weeks to complete. 'As built' documents will be completed by December 31st, 2015. An initial report documenting fish response to the structures will be completed by December 31st, 2016. The first monitoring report with pre and post project data will be available December 31, 2016. If funding or LWM supply becomes an issue, project dates would be delayed by one year from above.

A project closeout meeting would occur at an ACC meeting following project completion.

10. Permits

NEPA- Field work will be completed during the summer and fall of 2014, NEPA document will be completed Spring 2015.

The Gifford Pinchot National Forest has a Memorandum of Agreement with the Washington State Department of Ecology (DOE). The agreement recognizes the Forest Service will ensure that 1) all waters on National Forest lands meet or exceed water quality laws and regulations (Sections 301, 302, 303, 306 and 307) of the Clean Water Act and 2) activities on those lands are consistent with the level of protection of the Washington Administrative Code relevant to state and federal water quality requirements. This agreement is neither a fiscal nor a funds obligation document.

The Gifford Pinchot National Forest has a Memorandum of Understanding (MOU) with the Washington State Department of Fish and Wildlife Regarding Hydraulic Projects conducted by USDA Forest Service Northwest Region (2005). Compliance with the instream restoration provisions within this MOU replaces the need for an individual hydraulic project approval (HPA). This fish habitat enhancement project will be conducted within the provisions set forth in this MOU.

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

The US Forest Service has a state wide Regional General Permit (RGP) with the Army Corps of Engineers to perform aquatic restoration activities in waterways. Permit

CENWS-OD-RG-RGP-8 authorizes the USFS to perform 13 restoration activities including Large Wood, Boulder and Gravel Placement on National Forest Lands.

Land ownership in this section of the Lewis River is comprised of public lands administered by the Forest Service. The project is wholly on public lands.

11. Matching Funds and In-kind Contributions

Partner	**Contribution**	**Funds**
Forest Service	Project development, Contracting, Permitting, Monitoring	$29,000 In-kind
Materials from USFS	Trees with rootwads	$52,000 In-kind
Mt. St. Helens Institute	Monitoring	$3,000 In-kind

12. Professional Review of Proposed Project

This project proposal was reviewed by Gifford Pinchot National Forest (GPNF) Soil and Water program manager, Ruth Tracy, Mt St. Helens Institute Science and Education Programs Manager, Abi Groskopf, and acting Forest Fisheries program manager Ken Wieman.

13. Budget

		NEPA	Final designs	Project Mgmt	Construction	Monitoring/Labor /Reporting/Coord.
Personnel Costs						
FS - Zone Team or Contract		$12,000 (IK) $12,000 (ACC)				
FS –Fish Bio and Hydrologist			$3,000 (IK) $3,000 (ACC)			
FS - Fish Bio and Bio technician				$5,000 (IK) $5,000 (ACC)		$1,000 (IK) $1,000 (ACC)
FS - Contract administrator -					$5,000 (IK) $5,000 (ACC)	
FS - Contract Specialist					$2,000 (IK)	
Mt St. Helens Institute						$3,000 (IK)
Mt. St. Helens Institute Community Education						$3,000 (ACC)
Travel				$1,000 (IK) $1,000 (ACC)		
Materials						
Forest Service 260 Pieces of LWM with rootwads					$52,000 (IK)	
Contract Payables						
Excavator Contract					$18,000 (ACC)	
Logging and hauling of trees					$35, 000 (ACC)	
Materials and Supplies				$ 1,000(ACC)		
Total ACC Funds	**$84,000**	**$12,000**	**$3,000**	**$7,000**	**$58,000**	**$4,000**
Total FS Funds	*$81,000*	*$12,000*	*$3,000*	*$6,000*	*$59,000*	*$1,000*
Total Partner Funds	*$3,000*					*$3,000*
Project Total	***$168,000***					

FS personnel estimated as $400/day.

Lewis River Side Channel IV expanded budget 2014

Item	**Personnel**	**Estimated Days/units***	**Cost Per Unit**	**Total***
NEPA Environmental Assessment required by Federal Law	Fish Biologist Wildlife Biologist Hydrologist Botanist Archeologist Soil Scientist Recreation NEPA Coordinator	10 6 5 8 10 3 3 15	$400 per day per person	$12,000 (ACC) $12,000 (IK)
Final Designs	Fish Biologist Hydrologist Fish Technician	7 2 6	$400 per day per person	$3,000 (IK) $3,000 (ACC)
Project Management	Fish Biologist Fish Technician Mileage	15 10	$400 per day per person	$5,000 (IK) $5,000 (ACC)
Travel	½ ton PU	Fleet Cost 2000 miles	$500 $0.75/mile	$1,000 (IK) $1,000 (ACC)
Construction	Contract Administration/Prep Logging contract Equipment contract	30	$400 per day per person	$7,000 (IK) $5,000 (ACC) $35,000(ACC) $18,000 (ACC)
Materials & Supplies	Field Equipment, Notebooks, Misc Supplies			$1,000 (ACC)
Trees with rootwads		260		$52,000 (IK)
Monitoring *MSHI*	Supervisor Assistant Volunteers Travel *USFS* Fish Biologist Fish Technician	25 20 500 2.5 2.5	$300 per day per person $100/EA 1.00/mile $400/day	$1,000 (IK) $2,500 (ACC) $2,000 (IK) $500 (ACC) $1,000 (IK) $1,000 (ACC)
Total				**$168,000**

*Values are rounded up or down as need to display whole number and days

Lewis Side Channel IV Equipment Budget 2014

Item	Cost per unit	Number of units	ACC cost	Total Cost
Excavator/Skidder Operator/Fuel/ Supplies, misc.	$125 hour	132	$16,500	$16,500
Equipment Move in/out	$1,500	1	$1,500	$1,500
Logging and Hauling cost: Based on Previous Contract	$35,000	1	$35,000	$35,000
Total			**$53,000**	**$53,000**

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

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

    a. Include general views and close-ups showing details of the project and project area, including pre- and post-construction.
    b. Label each photo with date, time, project name, photographer's name, and documentation of the subject activity.

15. Insurance. All qualifying applicants shall comply with PacifiCorp's insurance requirements set forth in Appendix E. The policy limits are deemed sufficient by PacifiCorp for project activities involving significant risk, including placement of large woody debris in navigable waterways, and are presumed to be sufficient for all activities likely to be funded under this RFP.

Should applicant's insurance program not meet these requirements, bid pricing should include any additional costs applicant would incur to comply with these requirements.

Questions from ACC members

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

Lewis River Alcove near 90480 Road

LCFRB: The proposal says it will address two life stages: overwintering and rearing. For overwintering: will alcove be protected from high flows? For rearing: are there any temperature or low flow issues that need to be addressed? Are overwintering and rearing life stages limiting production at this time? Will juveniles have access in and out of alcove at all river flow conditions? The proposal should provide information regarding the current habitat status and how much will the habitat in this location be improved as a result of this project. A similar question from the previous project applies here in terms of is this the best place to invest Aquatic Fund dollars. This project appears to be situated in a location where other work is already occurring so it appears that the project is well located, but proposal should justify why a project should be implemented at this location. Additionally, we suggest that the proposal would benefit from incorporating the side channel also. This appears to be a good project very good price, but is this the best location?

Both the Alcove/Side Channel and the Old Side Channel are protected from high flows by islands, and by the morophology of the terrain. Rearing- on the ground observations indicate that the Alcove/Side Channel currently has adequate flow into the project area during summer periods. The Alcove/Side Channel is well shaded by terrain and older fir trees, this coupled with flow directly from the Lewis River will keep temperatures the same as the mainstem. The Old Side Channel has a young alder componet on both sides of it that will help keep summer temperatures cool, in addition the location is on the east side of the river, so shade from older conifers will also play a contributing role. Flow through the side channel is expected to be similar to the Alcove/Side Channel portion when completed. Both the Alcove Side Channel and the Old Side Channel will allow juvenile access in and out at all river flow conditions. Current habitat status is described in detail in the body of the proposal. The habitat will be improved to its full potential in this area. This projected is well located for several reasons, it takes advantage of natural conditons such as old growth conifers and existing habitat features to ensure success. In addition the Crab Creek Acclimation pond is located only 4,000 feet upstream so juvenile Chinook from the ponds will have a protected rearing habitat to transition into.

Utilities: It should be made clear that the benefits are to juveniles - not necessarily adults. Contractors have observed considerable amounts of coho spawning in upper Lewis side channels this year. Contingent on receiving GPS points of this year's spawner surveys, this project may directly enhance coho spawning habitat.

These habitat restoration features will provide the greatest benefit to juvenile salmonids. Adults may use the restored areas to escape from high flows, and spawn in gravel that may accumulate.

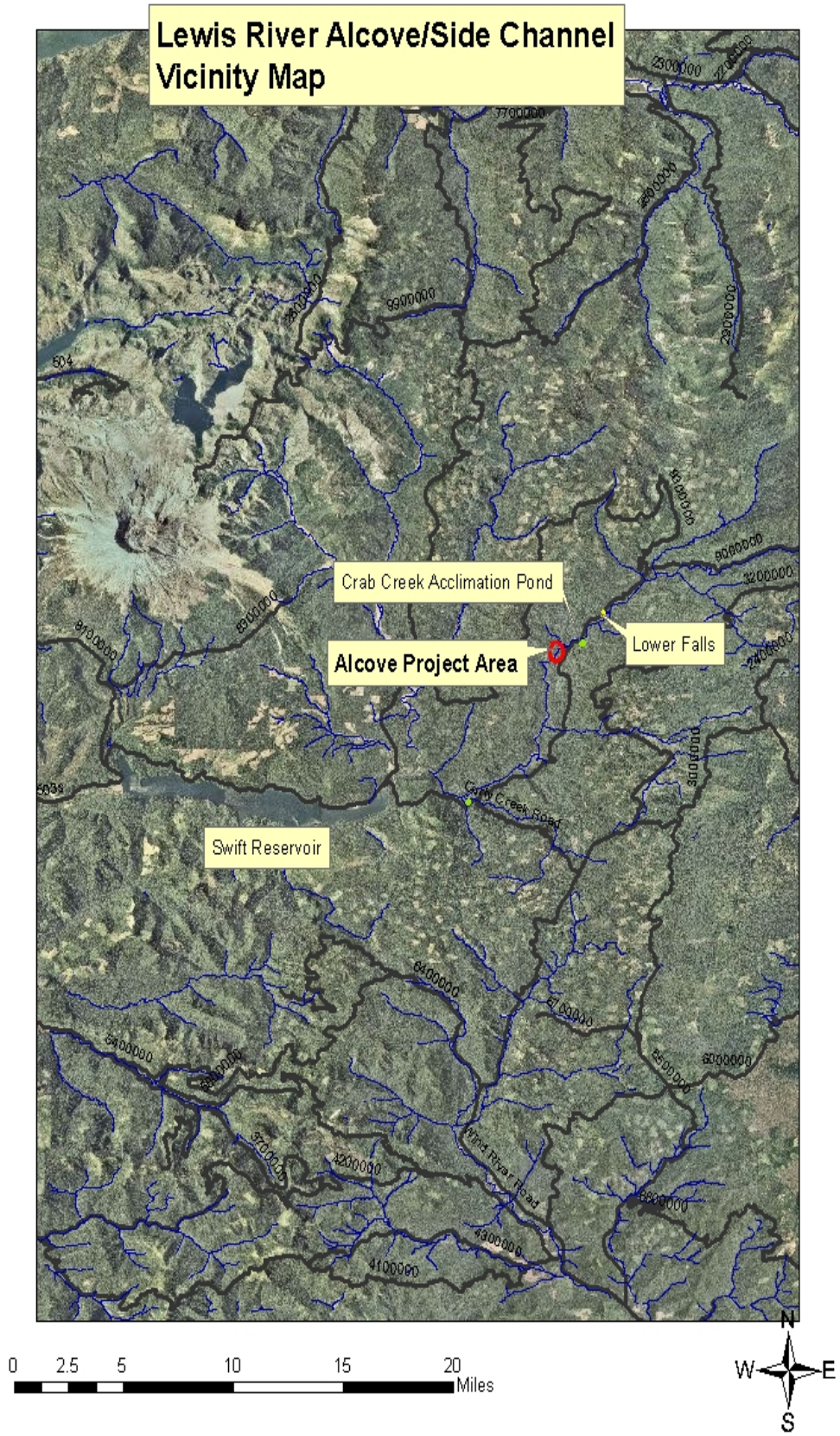

Figure 1. Map displays project location in relation to other known features

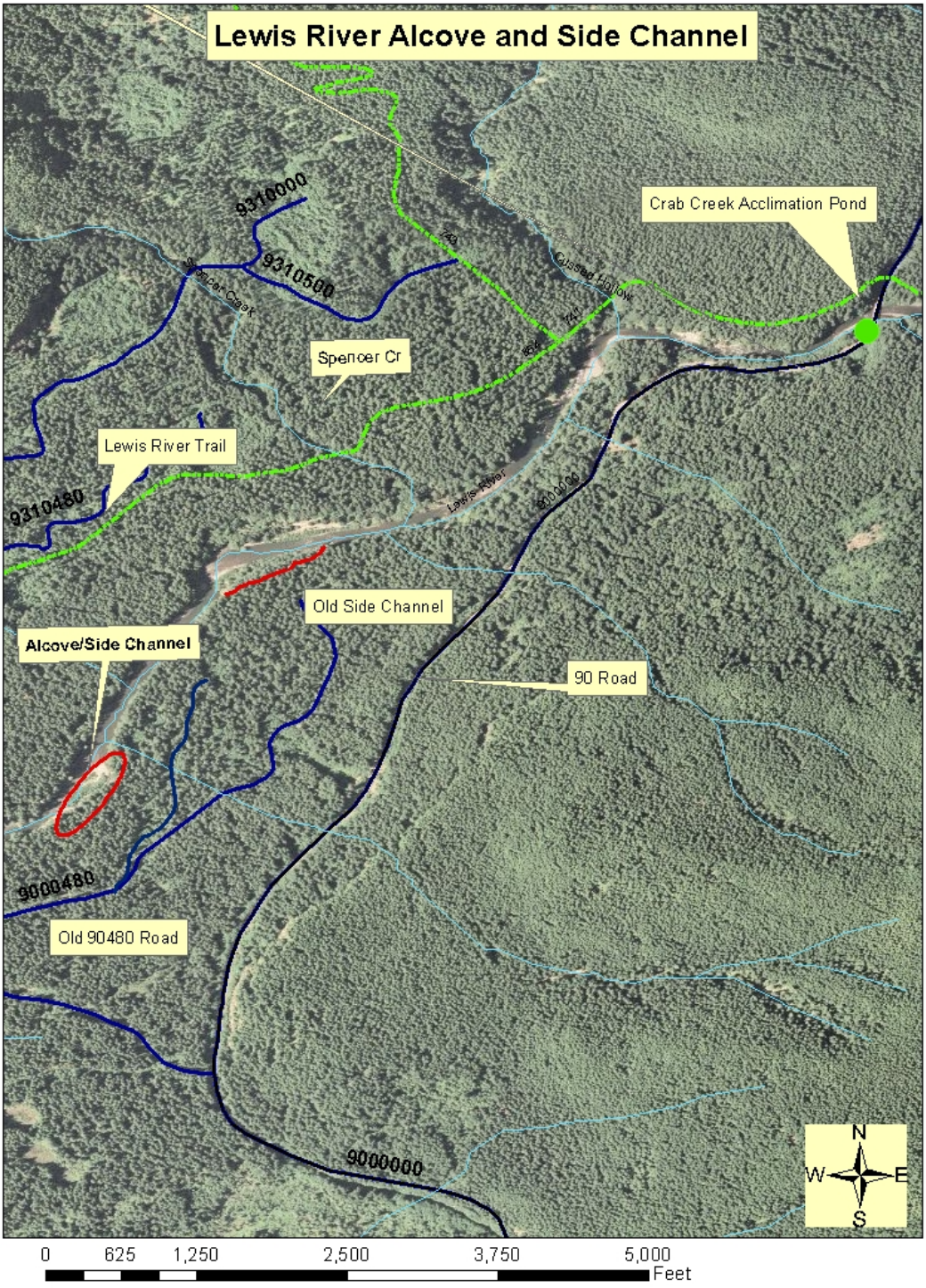

Figure 2. Map displays the location of the project

Figure 3. Map displays a close up view of the Alcove/ Side Channel

Figure 4. Map displays close up view of the Old Side Channel

5. Old Side Channel, looking upstream

6. Close up of old side channel

7. Upper end of Alcove/Side Channel looking downstream-Alcove is on the left

8. Alcove

9. Back End of Alcove

10. Alcove/Side Channel-Looking at the Side Channel -Downstream of the Alcove

11. Upper End of Alcove/Side Channel -Upstream of Alcove

References

Everest, Fred, James Sedell, John Wolfe, 1985. “Fisheries Enhancement in the Fish Creek Basin”, Project No. 1984-01100, 234 electronic pages, (BPA report DOE/BP-16726-1)

Everest, Fred H. Gordon H. Reeves, James R. Sedell, Pacific Northwest Forest and Range Experiment Station 1986. Abundance, Behavior, and Habitat Utilization by Coho Salmon and Steelhead in Fish Creek, Oregon as Influenced by Habitat Enhancement 1985 Annual Report.