Fly Creek Stream Restoration Project

I. PROJECT NAME: Fly Creek Stream Restoration Project

Note: Fly Creek Stream Restoration Project is a combination of Phase II and Phase III. Phase II of the project was approved by the GRMW Board in February of 2008.

II. APPLICANT: La Grande Ranger District, Wallowa-Whitman National Forest, 3502 Highway 30, La Grande, OR 97850. (541) 963-7186

III. PARTICIPATING LANDOWNER (S) AND AGENCIES

Agency	**Address**	**Phone Number**
BPA	905 NE 11th Ave., Portland, OR	(503) 230-3371
United States Forest Service La Grande Ranger District	3502 Hwy. 30, La Grande, OR 97850	(541) 963-7186

IV. PROJECT CONTACTS:

Technical Contacts:		
Paul Boehne	W/W Forest Fish Biologist	(541) 962-8521
Administrative Contact:		
Kurt Wiedenmann	District Ranger	(541) 962-8582

PROJECT LOCATION:

The Fly Creek Restoration Project is located in Fly Creek, a tributary to the Grande Ronde River in the Upper Grande Ronde River Watershed located in Union County, Oregon. Fly Creek enters the Grande Ronde River approximately 3.5 miles upstream from the town of Starkey. The project on Fly Creek is located from the mouth to approximate stream mile 5.8 at T5S-R35E Sections 4, 8, 9, and T4S-R35E Sections 23, 27, 34 (see attached map).

V. PROJECT OBJECTIVES and PROJECT DESCRIPTION:

Introduction/Existing Conditions:

Lower Fly Creek, where the project is located, is a Rosgen B type channel with substrate dominated by cobble and small boulder (see attached photos). The valley bottom is forested, and riparian vegetation consists of shrub species, primarily alder, with grasses and scattered sedges. Conifers consist of lodgepole pine, fir, larch, and some ponderosa pine. Historic timber harvest has removed the large conifers from the valley bottom greatly reducing the future recruitment of large wood to Fly Creek. An abandoned road that runs the length of

lower Fly Creek was used to harvest and transport trees out of the area in the 1970s. The road is barricaded and grown over and is not feasible for transport of logs into the project area. In addition, a splash dam from the early 1900s was located on Fly Creek at approximate river mile 2.0. This was likely the beginning of the removal of large conifers from the valley bottom.

In the 1980s, log weirs were constructed perpendicular to the stream flow in lower Fly Creek to create pool habitat. Pools that were created are shallow with very little cover and complexity, and have created passage barriers to juvenile salmonids during periods of low flow.

A stream survey of lower Fly Creek was conducted in 2004. Stream survey results indicate that there are few pieces of large wood and very few pools in lower Fly Creek (see Table 1 below for stream survey results). This lack of channel structure has resulted in simplified habitat consisting primarily of riffle habitat with little habitat complexity. Key pieces of wood are especially lacking from the stream channel. Average bankfull width within the project area is approximately 32 feet. Average stream gradient is 3%.

Table 1. Results of stream habitat survey for lower Fly Creek.

Stream/Year Surveyed	Pools Per Mile	W/D Ratio	% Stable Banks	%Pool Habitat	%Riffle Habitat	*LWD Large (pieces/mile)	**LWD Medium (pieces/mile)
Lower Fly Creek 2004	8	76	94	6	92	6	15

*Large LWD: Pieces >20 inches dbh and >35 feet in length.

**Medium LWD: Pieces >12 inches dbh and >35 feet in length.

Note: 2% of the habitat in Lower Fly Creek is side channels.

Lower Fly Creek is within the McCarty Allotment, which is a sheep allotment. There are no obvious signs of sheep use.

Project Objectives:

- **Provide juvenile fish passage at low flow**
- **Create habitat complexity in pools**
- **Add large wood to the stream for channel structure**

Project Description:

Bonneville Power Administration Funds will be used for design and planning, completion of NEPA including cultural surveys, GIS support, a helicopter contract to transport large trees (key pieces) to sites, and an excavator contract to place large wood at selected sites.

This project will add large wood to a **minimum** of 60 sites within the project area. A **minimum** of 180 trees (key pieces) will be transported by helicopter from surrounding ridges to selected sites. Additional sites will be identified and large wood added to these

sites (beyond the 60 site minimum) depending on helicopter time. In general, selected sites are pools with little cover and low habitat complexity (includes weir sites). These are sites where habitat complexity will enhance rearing habitat for spring Chinook and summer steelhead. Placement of wood could potentially create scour and result in the formation of additional pool habitat. Large wood transported by helicopter will act as key pieces. Size of trees will be greater than 18 inches dbh and at least 50 feet in length with rootwad attached or at least 65 feet without the rootwad. Preliminary site designs for the upper two miles of the project area are attached.

After helicopter transport, a tracked excavator will place trees, and will place additional smaller sized material for habitat complexity. Woody debris will not be keyed in or cabled into place. Stability of trees to remain on site will depend on size of the tree and configuration of placement. A minimum of three additional pieces with average dbh of 10 inches and average length of 30 feet will be added for habitat complexity, although larger trees will be used if available. Smaller size material is fairly abundant within the valley corridor and will be obtained from down material (depending on integrity of the material), from thinning of lodgepole pine stands, and thinning of non-desirable trees that do not contribute to stream shade or other stream or riparian functions. Large wood will be added to additional sites (beyond the minimum of 60 sites) while the excavator is on site depending on the availability of large wood and excavator access. Branches and rootwads will be retained on large wood used to the maximum extent possible to add stability as well as entrapment of additional material transported during higher flows that will add to habitat complexity. The abandoned road that runs the length of lower Fly Creek can be opened up enough to allow access for an excavator and service truck. This road will be reclosed after use and seeded with native grasses as needed. Key piece trees cannot be transported into the project site by this road. Extensive work and funds would be needed to reconstruct the road to allow large truck travel for log haul into the project site including a turn around point. This would also result in considerable ground disturbance and vegetation removal as well as the requirement of extensive funds to restore the reconstructed roadbed.

Equipment will operate under dry conditions. Wet areas will be avoided. No wetlands will be affected by this project, and no riparian vegetation will be removed. It is anticipated that the project can be implemented by operation of the trackhoe from one side of the stream without having to cross. If crossings are needed, these will be designated to avoid damage to streambanks and riparian vegetation.

Based on helicopter specifications (attached) and tree size this project may require at least a Vertol 107-II or helicopter with similar lift capacity. Columbia Helicopter was contacted in February of 2008 for an hourly rate (see budget). Trees (key pieces) will be located on surrounding ridgetops, and will require no more than a 10 minute turn around time (maximum distance for cost effectiveness), which includes ferrying time. If turn around times are less than 10 minutes, trees can be transported to additional sites. Every effort will be made to locate concentrations of trees as close to the project site as possible. Target distance for trees is one to one half air miles from the project site although up to three air miles distance is the maximum distance that will be considered.

In addition to large wood placement, log weirs will be either partially removed or modified, depending on site conditions, to provide passage for juvenile salmonids during periods of low flow. Modification of log weirs consists of cutting out a much larger notch to provide juvenile fish passage and aid in centering flow while maintaining pool habitat. Partial removal entails completely cutting out and removing a section of the log weir leaving the ends keyed into the streambank. The keyed in log ends will act as wings centering flow and acting as a scour mechanism to maintain pool habitat. This work will be done by hand with chainsaws using vegetable oil for bar oil to protect water quality. An excavator may be required to remove the center of the weir during partial removal. Any disturbed areas will be seeded with native grasses as prescribed by the District Botanist.

The Oregon Department of Fish and Wildlife Recommended In-stream Work Window for the upper Grande Ronde River and tributaries (including Fly Creek) upstream of Highway 244 is July 1 to July 31.

Species Occurrence:

Lower Fly Creek is spawning and rearing habitat for Snake River Basin summer steelhead, and rearing habitat for Snake River Basin spring Chinook salmon. Both are federally listed under ESA as threatened species.

Relationship of Proposed Projects to the Oregon Snake River Recovery Plan

Fly and Beaver Creeks (UGC3)
The Chinook-bearing tributaries to the Middle Grande Ronde River include Fly and Beaver creeks. Limiting factors in this reach include lack of habitat quantity and diversity (pool frequency), poor water quality (high summer stream temperatures), excess fine sediment, and degraded riparian condition.

Addresses Recovery Plan Limiting Factor(s):

Lack of habitat quantity/diversity (as defined by the recovery plan): Quality and quantity of physical habitat. This includes reduced summer rearing habitat, degraded spawning habitat, and reduced diversity. These are caused by: a lack of structure (wood, boulders, etc.); poor hydrologic function; inadequate quantity or depth of pools; inadequate spawning substrate; and lack of instream roughness, channel morphology, and habitat complexity.

The addition of large woody material to Fly Creek will increase habitat quality, quantity, and habitat complexity enhancing rearing habitat for Chinook salmon and steelhead, and provide structure and roughness to the stream channel.

Benefits:

The addition of large wood can maintain and/or increase pool habitat, provide structure to the stream channel, sort gravels for spawning, and create cover and habitat complexity in pools. Other benefits to large wood additions include trapping and routing of sediment, building and stability of streambanks, and narrowing of the stream channel.

Permits: The USFWS and NOAA fisheries issued a letter of Concurrence in 2001 with a determination of Not Likely to Adversely Affect. NEPA, including a cultural survey, will be completed by November of 2008. A joint fill removal permit will be obtained from the Division of State Lands and the Army Corp of Engineers by May of 2009.

Monitoring Plan:

- The WWNF- La Grande Ranger District will monitor disturbed ground for invasion of noxious weeds and control when necessary.
- At least one photo will be established at each placement site. Photo points will be taken once a year for five years.
- A Hankin and Reeves stream habitat survey, as modified by Region 6 of the USFS, was conducted on lower Fly Creek in 2004 (pre project). Included in the survey is Phase I of the Fly Creek Restoration Project, completed in 2006, and the remainder of lower Fly Creek planned for implementation in 2009. A post project Hankin and Reeves survey will be conducted on both phases of the project area at year three of this proposal (2011). The Hankin and Reeves stream habitat survey collects a variety of habitat variables including: amount and type of habitat, number of pieces of large wood associated with the stream channel, streambank stability, width to depth ratio, and bankfull width. This approach allows assessment of habitat conditions over the entire stream reach treated and enables a "big picture approach" to project assessment.

Activity Schedule – Fly Creek Stream Restoration

Specific Actions	Time line
Site Survey (site selection, weir evaluation, access reconnaissance, preliminary site design)	July-October 2008
Locate Sources of Trees	July-October 2008
Site Plan Designs Complete	October 2008
NEPA Completed (Including Cultural)	November 2008
Contract Preparation	November 08-February 09
Submit Contract Packet to Contracting	March 2009
Contract Award	April 2009
Obtain ACOE 404 Permit	May 2009
Obtain DSL Fill/Removal Permit	May 2009
Implement Helicopter/Excavator contract	July 2009
Seed Area With Native Seed as needed	October 2009
Noxious Weed Survey and Control	2009-2013
Monitoring	2009-2013

VII. PROJECT BUDGET

MATERIALS AND SUPPLIES	QUANTITY	COST/UNIT	SUBTOTAL	TOTAL COST
Native Grass Seed	250 lb.	$12/lb	$3,000	$3,000
Large Wood (minimum of 360 pieces)	360 pieces	Avg. $60/piece	$21,600	$21,600
TOTAL MATERIALS AND SUPPLIES				**$24,600**
MONITORING & REPORTS				
Pre Project Stream Survey	6 miles	$3,000 per mile	$18,000	$18,000
Post Project Stream Survey (1 at year 3)	6 miles	$3,000 per mile	$18,000	$18,000
Photo Points (one per yr. for five yrs.)	5 years	$600 per year	$3,000	$3,000
Status Reports (one per yr. for five yrs.)	5 years	$400 per year	$2,000	$2,000
TOTAL				**$41,000**
PERSONNEL				
GS-9 Cultural Specialist (NEPA)	10 days	$281/day	$2,810	$2,810
GS-9 Botanist (NEPA)	10 days	$281/day	$2,810	$2,810
GS-9 Wildlife Biologist (NEPA/Plan)	14 days	$297/day	$4,158	$4,158
GS-9 NEPA Writer	5 days	$281/day	$1,405	$1,405
GS-9 Hydrologist (NEPA/Plan/Implement)	30 days	$281/day	$8,430	$8,430
GS-9 Fish Bio (NEPA/Plan/Implement)	30 days	$297/day	$8,910	$8,910
GS-9 GIS Specialist (Plan)	5 days	$281/day	$1,405	$1,405
Contract Preparation GS-9	8 days	$297/day	$2,376	$2,376
GS-9 DSL & ACOE Fill/Removal Permits	5 days	$281/day	$1,405	$1,405
GS-4 Project Implementation (3 personnel)	5 days	3 @ $124/day	$1,860	$1,860
TOTAL PERSONNEL COSTS				**$35,569**
TRAVEL				
Vehicle Cost	4 month	275/month	$1,100	$1,100
Mileage	2,500 miles	0.38/mile	$950	$950
TOTAL TRAVEL COSTS				**$2,050**
CONTRACTS				
Helicopter Contract (Vertol 107-II)	30 hours	$4,570/hour	$137,100	$137,100
Excavator Contract	200 hours	$120/hour	$24,000	$24,000
TOTAL CONTRACTS				**$161,100**
SUBTOTAL				**$264,319**
TOTAL ADMINISTRATIVE COSTS				**$21,146**
TOTAL ESTIMATED COSTS				**$285,465**

COOPERATIVE FUNDING PLAN

FINANCIAL PARTICIPATION				
WORK ITEM	**TOTAL COST**	**BPA**	**USFS**	
MATERIALS AND SUPPLIES			**In-Kind**	**Cash**
Native Grass Seed	$3,000		$3,000	
Large Wood (minimum of 150 pcs)	$21,600		$21,600	
TOTAL	**$24,600**		**$24,600**	
MONITORING & REPORTS				
Pre Project Stream Survey	$18,000		$18,000	
Post Project Stream Survey	$18,000		$18,000	
Photo Points	$3,000		$3,000	
Status Reports	$2,000		$2,000	
TOTAL	**$41,000**		**$41,000**	
PERSONNEL				
GS-9 Cultural Specialist (NEPA)	$2,810	$2,810		
GS-9 Botanist (NEPA)	$2,810	$2,810		
GS-9 Wildlife Biologist (NEPA/Plan)	$4,158	$4,158		
GS-9 NEPA Writer	$1,405	$1,405		
GS-9 Hydrologist (NEPA/Plan/Implement)	$8,430	$8,430		
GS-9 Fish Bio (NEPA/Plan/Implement)	$8,910	$8,910		
GS-9 GIS Specialist (Plan)	$1,405		$1,405	
Contract Preparation GS-9	$2,376		$2,376	
GS-9 DSL & ACOE Fill/Removal Permits	$1,405		$1,405	
GS-4 Project Implementation (3 personnel)	$1,860	$1,860		
TOTAL PERSONNEL COSTS	**$35,569**	**$30,383**	**$5,186**	
TRAVEL				
Vehicle Cost	$1,100	$1,100		
Mileage	$950	$950		
TOTAL TRAVEL COSTS	**$2,050**	**$2,050**		
CONTRACTS				
Helicopter (Vertol 107-II)	$137,100	$137,100		
Excavator	$24,000	$12,000		$12,000
TOTAL CONTRACTS	**$161,100**	**$149,100**		**$12,000**
TOTAL ADMIN. COSTS	**$21,146**	**$21,146**		
TOTAL ESTIMATED COSTS	**$285,465**	**$202,679**	**$70,786**	**$12,000**