Project Name: Big Sheep/Buhler Diversion Replacement

Applicant:

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Participating Landowner(s) and Agencies:

Participant	Contact	Role	Address	Phone	Email
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Anderson Perry	Chas Hutchins	Design & Engineering	PO Box 1107 La Grande, Or. 97850	541.963.8309	chutchins@andersonperry.com
Landowner	Buhler Family Trust	Landowner	PO Box 46 Joseph, Or. 97846	541.463.0426	

Project Contact(s):

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Project Location:

The project area is located on Big Sheep Creek at river mile 6.4 approximately 3 miles above the confluence with Little Sheep Creek, is on private land owned by the Buehler Ranch, and is near Imnaha, Oregon.

1. Legal – T1S R48E Section 8 SE ¼
2. Lat/Lon – 45.4841 116.8409

Project Objectives:

1. Provide year round passage for all life stages of aquatic organisms.
2. Reduce sedimentation from periodic structure maintenance activities.
3. Promote natural bedload transport through this stream channel.

Relation to Imnaha Subbasin Plan:
Imnaha Subbasin Plan Supplement: 5.3.2.1 Natural Production Objectives and Strategies, page #7, bullet 13. **Increase passage efficiency of in-stream obstructions including culverts, bridges, diversion structures, and unscreened diversions.** Fish passage barriers should be corrected wherever they exist. However, if this is not feasible, a prioritization of the known barriers should be developed to account for life history stage impacted, miles of habitat reopened, and quality of reopened habitat. Problem 10 (p 35) lists the known passage problems; however, this is not a comprehensive list for all obstructions to migration in the Imnaha subbasin. It is recommended that the fish passage inventory, analysis and prioritization currently being conducted by the Nez Perce Tribe be utilized to further clarify/define the areas needing mitigation.

5.3.2.1 Natural Production Objectives and Strategies, page #7, bullet 14. Structural fixes installed to provide fish passage over irrigation dams, etc. require maintenance to operate within design criteria. All fish passage facilities should be maintained to provide optimal passage conditions.

Project Description

Introduction

With the cooperation of the Buhler Family, technical assistance from ODFW, and engineering services of Anderson Perry (AP) the GRMW will complete this diversion structure replacement project during the instream work window in the summer and fall of 2011. Design has been completed by AP and topographic survey was done by the ODFW survey crew. Removal/fill permits will be acquired by AP and the GRMW will accomplish all other environmental compliance requirements. The GRMW is the project sponsor and responsible for all contracting and AP will supply construction engineering. The resulting project will be a diversion structure that requires minimal annual instream maintenance, results in reduced erosion and sedimentation, and improves aquatic passage conditions.

Existing condition

It is apparent that sometime in the past a large log, approximately 2 feet in diameter, was placed just downstream of the diversion intake in an effort to increase the water depth in the forebay area. Over time the forebay area has been filled in with sediment and the streambed in the forebay is now level with the top of the log. On the downstream side of the log there is a vertical drop in the streambed of approximately 5 feet and then the creek continues at a relatively constant grade. The drop on the downstream side of the log creates a fish passage barrier, particularly when the creek is experiencing low flows. Photos of the existing condition are shown at the end of this proposal.

Occasionally, a hole is developed upstream of the log and water begins to flow underneath the log. When this occurs irrigators enter the stream and place material in the hole to repair the check structure. This causes disturbance in the streambed and turbidity in the creek.

Specific Actions

1. Coordination – Initial coordination is complete between the GRMW, the Buhler Family, and ODFW. GRMW is the project sponsor, the Buhler Family is willing to participate in the project, and ODFW has provided topographic survey and technical assistance.
2. Design & Engineering – GRMW contracted AP to complete initial design concept and final engineering complete with construction specification. The deliverable is final design with construction specification and is complete as of December 2010.
3. Environmental compliance –ESA Section 7 Consultation will be completed with USFWS through the Partners for Wildlife Programatic process that covers consultation for both USFWS and NMFS. GRMW will contract with AP to complete removal/fill permit applications. The first deliverable is biological clearance for the project as stated in the letter of concurrence from USFWS complete with terms and conditions of project construction. The second deliverable is removal/fill permits from both Oregon DSL and Army Corps' of Engineers complete with terms and conditions of project construction. Cultural resources consultation was initiated in November of 2010. This specific action will be complete by March 15th, 2011.
4. Contracting – GRMW will contract with BPA for funds to implement the project. GRMW will also advertise for and retain a construction contractor and materials provider assistance to build the project. All contracts will be in place by June 15th, 2011.
5. Construction – The project will be constructed during the in-stream work window for this reach of the Imnaha River during the summer of 2011. Anticipated work includes mobilization, delivery of rock & large wood material, installation of the roughened channel, site clean-up and final grading, and demobilization. The instream work window is between July 1st and October 15th with instream extensions possible. The construction phase of this project is expected to last no longer than the instream work window. The project will be complete by October 15, 2011.

Benefits

When complete this project will have addressed a multitude of instream parameters of concern in Big Sheep Creek at the project site. Aquatic passage is the primary concern especially in the summer months when Big Sheep can experience warm stream temperatures. More than 30 miles of habitat exists above this diversion on Big Sheep alone and tributary streams offer many miles more. Habitat conditions upstream are variable but cool water is characteristic further upstream. While not common the current diversion does need to be fixed periodically. This activity disturbs the channel and causes sedimentation. The new structure will be more stable and maintenance activities will be eliminated or reduced.

Project Maintenance

As demonstrated by several similar diversion structures in Wallowa County large rock diversions require very little if any maintenance while maintaining aquatic passage. Examples include the Tully-Hill diversion on the Lostine River, the Chamberlain diversion in Bear Creek and the Lower Valley diversion on the Wallowa River. If maintenance becomes necessary the GRMW will assess with the MLRA, ODFW, and AP to determine appropriate maintenance actions.

Permits

As discussed in specific actions, bullet #3, environmental compliance will be completed cooperatively by the GRMW and AP by March 15th, 2011.

Monitoring Plan

1. Project completion report 60 days following project completion. Report will follow GRMW/BPA report guidelines.
2. Monitoring report at years 1, 3, & 5 following project completion. These reports will focus on project objectives and document structure stability, erosion, sedimentation and aquatic passage. Cross-sections and a longitudinal profile will be installed to measure lateral and vertical.
3. Photo points will be installed at each cross section and photos will be taken both upstream and downstream on an annual basis for the 5 year monitoring duration. Photos will also be taken pre, post and during construction.

Work Dates

Coordination of this project began in the fall of 2009 and the project will be complete by September 15th, 2011. We are requesting the BPA contract begin on May 1, 2011 and end December 31, 2011.