Prospectus of Proposed Project Opportunity

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Opportunity Title

Lostine River/TulleyHill Fish Passage Improvement

Opportunity Lead

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Landowners

Perry Johnston
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Woody Wolfe
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Contacted: Yes
Supportive: Yes
Contribution: There is no contribution required on the part of the landowner for this opportunity.

River

Name: Lostine River
Mile: 2
Tributary: Wallowa River

Restoration Atlas

BSR:
Tier:
Initial Score:
Proposed Score:

Restoration Activities

2. Channel Reconstruction
4. Riffle Construction
23. Structural Passage (Diversions)
25. Rock Weirs
27. LWD Placement

Species Affected

Focal: Snake River Spring Chinook Salmon, Snake River Summer Steelhead
Other: Bull Trout, Lamprey

Description

The TulleyHill Diversion is located on the Lostine River just 1.6 miles upstream of its confluence with the Wallowa River (Exhibit 1). The ditch supplies 119 acres with adjudicated water rights established in 1879. It is used during the Wallowa Valley irrigation season, which starts on May 1st and ends on September 30th. An ODFW operated fish screen composed of two paddle wheel operated drums is located below the diversion and in the irrigation ditch. This diversion site includes a series of steps including rock weirs at the bottom, leading up to two log weirs the upper most providing the water elevation for the diversion headgate (Exhibit 2). The structures were installed in 1998 to provide fish passage through the thalweg of the stream through gaps between the logs. Since the installation, considerable scour pools have formed below each step of the weir.

This diversion structure is an upstream velocity barrier to all fish at high flow, juvenile upstream movement at low flows due to jump height, and adult Chinook at low flow during the spawning time of year, again due to jump height. The elevation difference between steps at low flows is greater than 12 inches, which exceeds fish passage criteria. The jump height barrier is exacerbated by dewatering in the later part of the irrigation season. There is also concern as the structure ages that extreme high water events brought on by rain on snow events related to climate change could cause catastrophic failure at the diversion. Such an event has the potential to impede upstream migration to the detriment of an already imperiled stock of Chinook salmon and steelhead. Fish native to the Lostine River include spring Chinook, summer steelhead, rainbow trout, and bull trout as well as other resident species. Design criteria to pass spring Chinook, bull trout, and steelhead are the most stringent and will be used for design purposes. Spring Chinook migrate through the Lostine system to their spawning areas between July and midSeptember. Summer steelhead migrate to their spawning areas in late winter and spring. Bull trout are very sparse in the area and mainly forage during winter and early spring. However, bull trout use this reach as a migration corridor to access

spawning areas in the upper Lostine River from June through September.

The overall goal of the Project is to restore fish passage and improve habitat conditions for ESAlisted fish species and other focal species of concern while maintaining access and management of irrigation, farming and ranching operations for landowners and irrigators. The Project goal can be accomplished by restoring hydraulic and geomorphic processes, while enhancing instream, stream bank and riparian habitat.

Objectives

The Project proposes to achieve the aforementioned goal, address factors limiting fish production, and identify restoration actions based on the following objectives: Ensure yearround fish passage at the existing diversion that meets or exceeds state and federal requirements for salmonids and resident fish species of all life stages; Construct a durable, lowmaintenance structure that can withstand the effects from winter icing and minimizes the risk of channel aggradation or degradation; Provide unimpeded sediment transport; Incorporate habitat elements (large wood, pools) to increase channel complexity to the extent feasible, taking into consideration known constraints; Maintain or improve bank stability in order to enhance riparian habitat and to protect private property and infrastructure such as roads, fences and the existing fish screens, and; Improve riparian function using siteappropriate native vegetation.

Major Risks

Project constraints that were identified for the project include: The existing TulleyHill Diversion intake located at the upstream end of the Project must be maintained; Minimize disturbance to existing roads, fences and the ODFW fish screen the extent practical; Construction must be done during the ODFW fish inwater window (July 15 to August 15) and restrictions may apply to the total number of days that instream work can be done within that window; Presence of Chinook salmon redds downstream of the Project prior to construction may place further restrictions on timing of work; Irrigation water cannot be shut off for periods exceeding 10 days, and must be coordinated with the water right owner, and; Any work in the vicinity of the fish bypass structure needs to allow safe reentry of fish into the stream channel.

Permits and Consultation

ESA Section 7 USFWS: Applicable
ESA Section 7 NMFS: Applicable
COE or DSL Permit: Applicable
Cultural Resources Section 106: Applicable
DEQ 401 Water Quality Permit: Applicable

Project Schedule

Year: 2017

Monitoring: Bonneville Power Administration is implementing an effort in the Columbia River Basin to assess restoration action effectiveness. This monitoring effort known as AEM is intended to quantify habitat restoration benefits for a multitude of habitat improvement actions. The Sheep Ridge project has been chosen as a monitoring

site to help access effectiveness of partial barrier projects. The monitoring protocol is CHaMP, developed using a combination of existing protocols, is repeatable and easily implemented by diverse field crews. For the Sheep Ridge project a modified BACI (before after control impact) program is being used, relies on longitudinal profiles, cross sections, and juvenile fish sampling above and below the project site. A control reach has been established above the project area and the CHaMP trained Nez Perce Tribe monitoring crew is implementing the protocol. The monitoring plan is as follows:

1. Channel cross sections have been installed in the action and control reaches to assess channel development over time. Cross section measurements will occur twice pre project and twice post project including both the action and control reaches. CHaMP's protocol.

2. Habitat conditions will be measured using longitudinal profile surveys (thalweg profile from top to bottom) in both the action and control reaches. The longitudinal profile measurements will occur twice pre project and twice post project including both the action and control reaches. CHaMP's protocol.

3. Juvenile fish populations will be sampled twice preproject and twice post project in both the action and control reaches. CHaMP's protocol.

4. Annual redd surveys will be completed for Chinook as part of the annual Chinook salmon spawning survey on the Lostine River.

5. Baseline photo points have been established throughout the project area. Additional photo points will be established at each crosssection where photos will be replicated annually looking both upstream and downstream of the crosssections.

6. Passage timing of adult Chinook salmon has been monitored by Nez Perce Tribe Fisheries staff for 3 seasons prior to construction. Passage will be monitored for additional two seasons after construction.

As the CHaMP data becomes available it will be supplied to partners and funding sources in the completion and monitoring reports. A final write up with results and conclusions will be included in the final monitoring report.

Project Relations

Multi-phase Effort: No

Preliminary Cost Estimate

Total: 356000
BPA Funding: 175000
OWEB Funding:

Design Funding

Design Funds Requested: No