SHAW CREEK PASSAGE AND SEDIMENT IMPROVEMENT

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Completion Report

Performance Period
June 15, 2006 to September 30, 2006

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Introduction

Shaw Creek is a tributary to Ladd Creek which is a tributary to Catherine Creek, a major tributary to the Grande Ronde River. The Ladd Creek system is an historical producer of Snake River summer steelhead. At this time, steelhead are unable to access Shaw Creek because of the vertical barrier at the intersection of Ladd Creek and Interstate 84, approximately two miles below the confluence of Shaw Creek and Ladd Creek. The vertical barrier was planned for modification by the Oregon Department of Transportation at the time this project was proposed but due to the cost has been put on hold pending acquisition of cost-share funds, possibly BPA capital funding assistance. We anticipate that the vertical barrier will eventually be eliminated so decided to proceed with this project

Shaw Creek is paralleled closely by a privately owned road used for timber and livestock management. Public access is allowed during the majority of the year, the exception being the spring break-up. Excessive sediment from the road is entering the creek because of the proximity of the road to the stream, the surface of the road and the fact that the elevation of the road along some segments is only slightly higher than the elevation of the stream. In most locations, moving the road away from the stream and out of the draw bottom is not a practical option because the terrain immediately adjacent is extremely steep with hard rock rims. Moving the road would be prohibitively expensive.

Three culverts on Shaw Creek are presently fish passage barriers, based on standards in ODFW's Road Crossings Fish Passage Criteria. They are undersized, lack natural substrate, and exceed gradient standards.

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The project objectives are to reduce the sediment inputs into the system and eliminate the passage barriers. The proposed activities to reduce sediment are to elevate and place course rock on the surface the roadbed, and install or improve rolling dips. Replacing the culverts with channel-spanning bridges was proposed to address fish passage.

The project is located in the Upper Grande Ronde River Subbasin, Ladd Creek Watershed (1706104-19), Upper Ladd Creek sub-watershed 19E. Legal description is T.4S., R38E, Sections 27 & 35, and T5S., R 38E, Section 2.

Project Description

The project was planned and developed cooperatively by the Grande Ronde Model Watershed Program (GRMWP), Department of Forestry (ODF) and Forest Capital, LLC. The GRMWP Technical Committee and Board of Directors reviewed and approved the project for FY 2006 BPA Fish and Wildlife Mitigation Program funds.

Project tasks were:

- Replace road crossing structures at three sites (See Project Work Sites Attachment)
- Lift road with course aggregate at 18 sites (See Project Work Sites and Specific Actions attachments).

Methods, Results & Discussion

Project Management

The GRMWP managed the project and served as the fiscal agent. GRMWP and ODF staff planned the project. GRMWP obtained funding, acquired the necessary permits and subcontracted the cultural resource survey and Oregon SHPO clearance work. The Bureau of Reclamation Grande Ronde Basin Engineer completed the site survey, assisted in structure design and provided technical advice. ODF staff scheduled construction, supervised the on-the-ground work and served as the liaison between Forest Capital, LLC, the construction subcontractor and the GRMWP.

Construction

Delays in permitting and Oregon SHPO clearance delayed construction until early September, 2006. Bridge and arch material delivery, and on-site prefabrication began September 10 and was completed September 30. Road improvement work began concurrent with bridge fabrication. Bridge installation and road work was completed November 16, 2006.

Initially the plan was to replace all of the culverts with channel-spanning bridges. The upper-most culvert was instead replaced with an 84 inch open-bottom pipe arch anchored to ecoblock footings. Six to eighteen inch diameter rip-rap was placed throughout the arch and approximately 10 feet above and below the arch for grade control.

The middle and lower culverts were replaced with 16’ by 22’ free-span bridges. Bridges are steel I-beam super structure, steel decking and guard rails. The steel structures were placed on compacted, course pit-run rock. The channel above, through and below the structure was armored with 1-2 foot rip-rap to minimize risk of head-cutting .

Road work consisted of installing new or reshaping existing rolling dips, lifting and surfacing the roadbed with course pit-run rock, and installing relief culverts. Five new rolling dips were installed and four were reshaped. Four drainage relief pipes were installed. Total length of the road work was 13,200 feet. Forest Capital took the opportunity, while construction equipment was mobilized at the site, to complete additional road work beyond what was originally proposed. The additional rocking and drainage work extended for longer sections than described in the Specific Actions description in the Appendix. Additionally 1400 feet of road was realigned and moved out of the floodplain away from the stream channel. They felt the additional work was necessary to totally address drainage issues and ameliorate the influence of the road on the stream.

Financial

Shaw Creek Passage and Sediment Improvement				
Work Description				
	BPA Budget	**BPA Expenditures**	**Forest Capital Expenditures**	**Total Cost**
Contracted Services				
Culvert removal and bridge installation 3 sites @ $9750	$0		$29,250	**$29,250**
Road rocking 3000 yds @ $7	$10,000	$10,000	$14,620	**$24,620**
Install rolling dips 5 @ $1000	$5,000	$5,000		**$5,000**
Reshape existing dips 4 @ $500	$2,000	$2,000		**$2,000**
Services Subtotal	**$17,000**	**$17,000**	**$43,870**	**$60,870**
Environmental Compliance				
Biological assessment	$0		$0	**$0**
Cultural resources	$1,750	$1,692		**$1,692**
ACOE permit	$0		$0	**$0**
Oregon DSL permit	$0		$0	**$0**
Design and construction inspection	$0		$0	**$0**
EC Subtotal	**$1,750**	**$1,692**	**$0**	**$1,692**
Materials & Supplies				
Rock 3000 yds at $1	$0		$0	**$0**
Bridge materials -footings, stringers, decking and assembly 3@ $15,000	$45,000	$41,900	$0	**$41,900**
Materials Subtotal	**$45,000**	**$41,900**	**$0**	**$41,900**
				$0
Direct Project	**$63,750**	**$60,592**	**$43,870**	**$104,462**
Project Administration (2.5%)	**$1,594**	**$1,515**		**$1,515**
				$0
Project Total	**$65,344**	**$62,107**	**$43,870**	**$105,977**

Invoice #1 $1,734 Cultural Resources
Invoice #2 $60,373

Results, Discussion & Summary

The project was completed during a relatively short time-frame in advance of approaching winter weather. The decision was made to install a bottomless pipe arch at the uppermost culvert location because the size of stream at this location did not warrant a 16 foot span bridge. The 84" arch will easily accommodate the expected 50-year flow event at less cost. The arch replacement resulted in a net savings of approximately $3,000, off-setting increased cost per bridge for the two bridges (planned $15K ea. Vs actual $18.5K ea. The Oregon Department of Forestry on-site project management and construction supervision (in-kind service) was critical to accomplishing the work and project objectives.

Appendices

Specific Actions (Proposed)

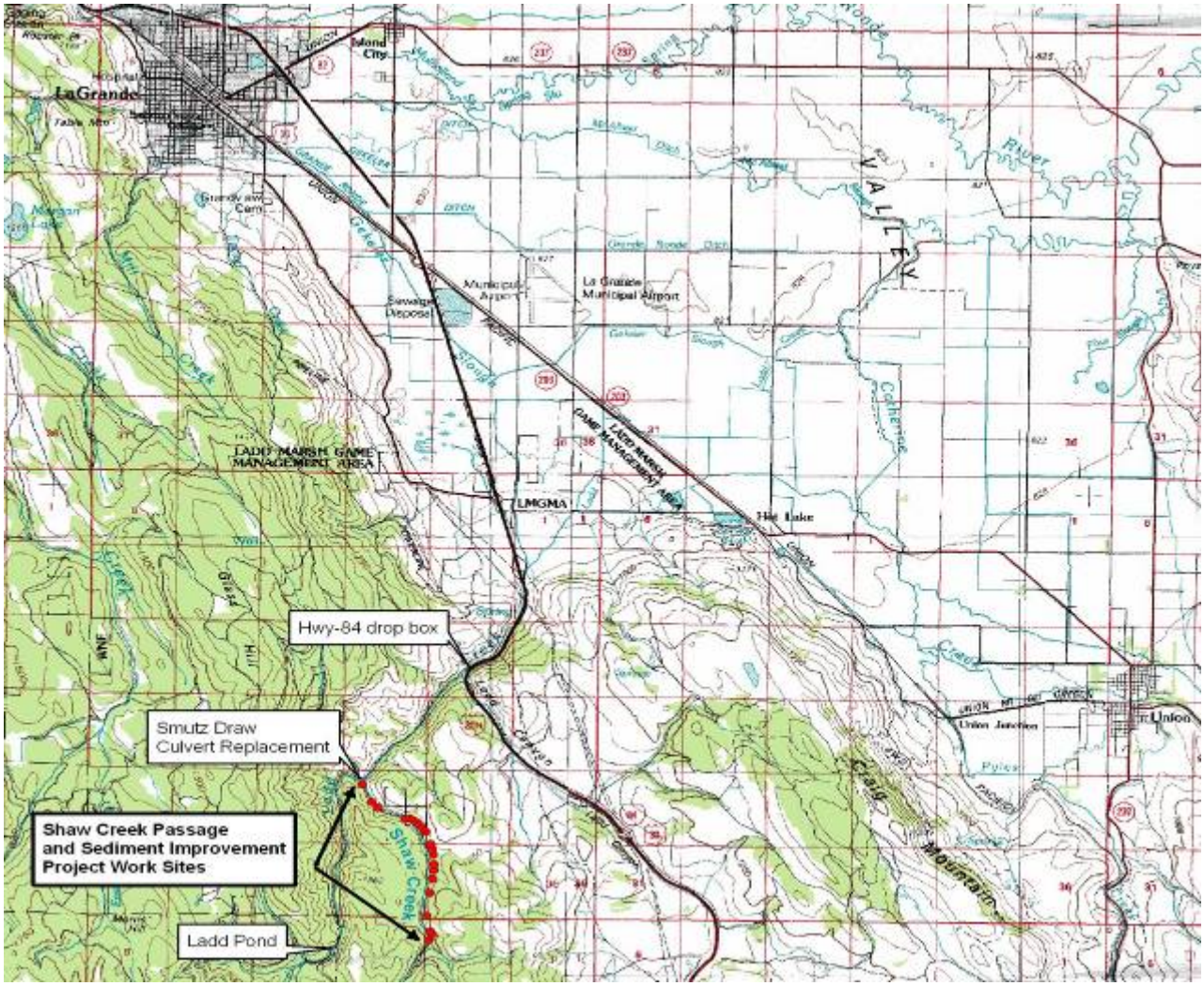
Site	Coordinates	Action
1	N.45*09.708; W.118*02.005 culvert # 1	Replace culvert, add rolling dip downstream of culvert
2	N.45*09.766; W.118*02.034	100’ X 18” rock lift
3	N.45*09.789; W.118*02.046	100’ X 18” rock lift
4	N.45*09.984; W.118*02.102	300’ X 24” rock lift
5	N.45*10.250; W.118*02.077	Reshape, rock existing dip; 100’ X 18” rock lift
6	N.45*10.414; W.118*02.028	Reshape existing rolling dip
7	N.45*10.529; W.118*02.012	Reshape existing dip+50’ X 18” rock lift
8	N.45*10.529; W.118*02.012 culvert #2	Replace 48” Culvert with bridge+125’ X 18” rock
9	N.45*10.650; W.118*02.025	Clean existing dip
10	N.45*10.767; W.118*02.050	Existing dip-no work
11	N.45*10.825; W.118*02.104	300’ X 18” rock lift, install new rolling dip
12	N.45*11.053; W.118*02.250	Install new rolling dip
13	N.45*11.060; W.118*02.280	250’ X 18” rock lift
14	N.45*11.085; W.118*02.350	Install new rolling dip
15	N.45*11.099; W.118*02.041	350’ X 24” rock lift
16	N.45*11.124; W.118*02.480	200’ X 18” rock lift
17	N.45*11.142; W.118*02.533	200’ X 18” rock lift
18	N.45*11.147; W.118*02.574 culvert # 3	150’ X 24” rock lift + new rolling dip; replace culvert with bridge
19	N.45*11.240; W.118*02.802	200’ X 18” rock lift
20	N.45*11.312; W.118*02.875	Install new rolling dip, continue down with 200” X 18” rock lift
21	N.45*11.510; W.118*02.985	400’ X 30” rock lift to new bridge

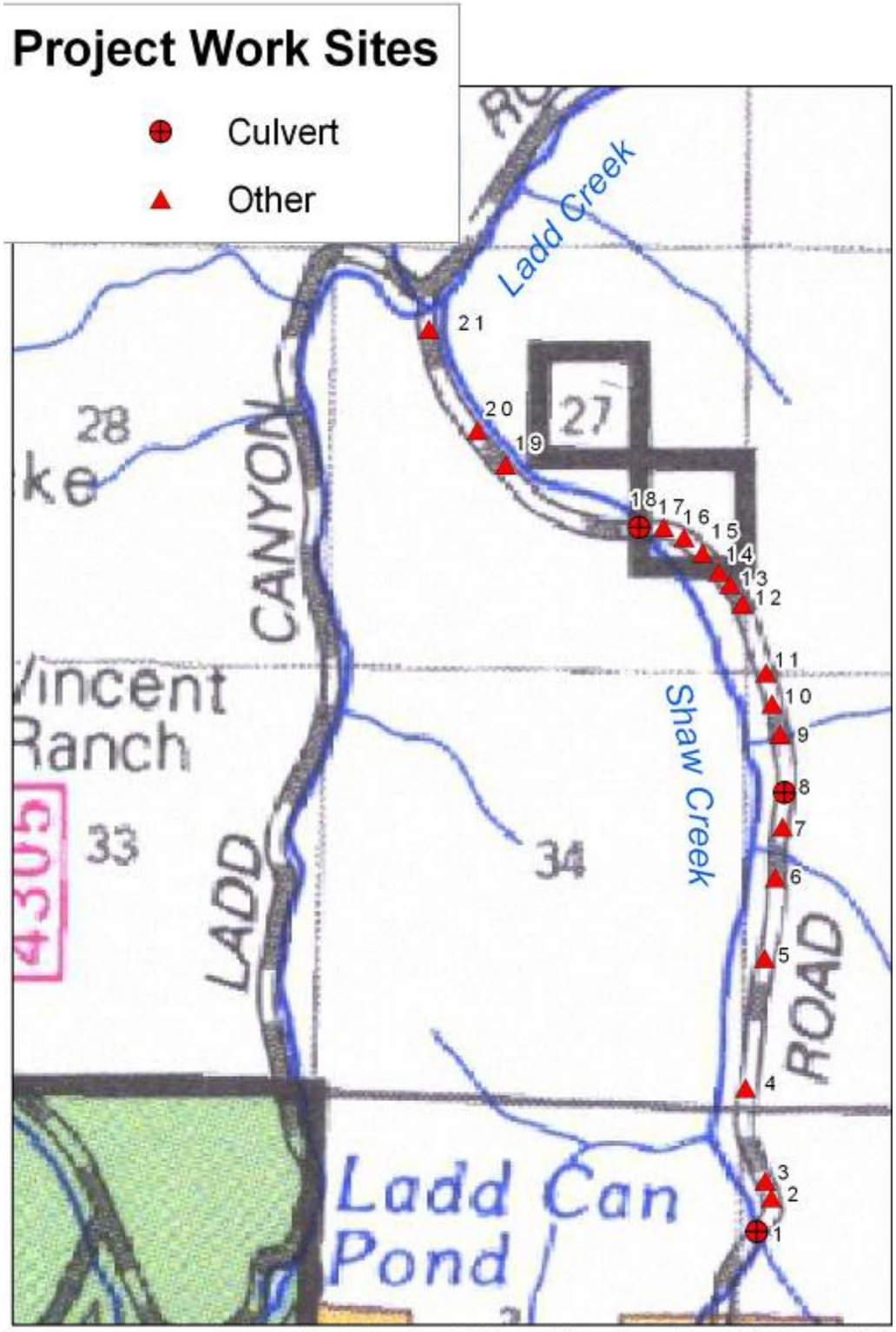
all actions start at listed coordinates, continue downstream; all sites are numbered starting at highest culvert and progressing downstream

2.6 miles of stream will be treated*
2.6 miles of road will be treated*

*See Project Work Sites Map

Vicinity Map





Map background is digital version of Wallowa Whitman Forest Map (2000): Source USFS

Culvert #1

Pre-Project

Post-Project

Culvert #2

Pre-Project

Post-Project

Culvert #3

Pre-Project

Post-Project