R & E Grant Application 11-13 Biennium

Project #: 11-114

Ames Creek Fish Passage Restoration

Project Information

R&E Project Request:	$42,323.00
Match Funding:	$157,073.00
Total Project:	$199,396.00
Start Date:	7/1/2012
End Date:	10/15/2012
Project Email:	sswc@centurytel.net
Project Biennium:	11-13 Biennium
Organization:	South Santiam Watershed Council (Tax ID #: 91-1787357)

Fiscal Officer

Name:	Nancy Gilmore
Address:	4431 Highway 20 Sweet Home, OR 97386
Telephone:	541-367-5564
Email:	sswc@centurytel.net

Applicant Information

Name:	Eric Hartstein
Address:	4431 Hwy 20 Sweet Home, OR 97386
Telephone:	541-367-5564
Email:	sswc@centurytel.net

Past Recommended or Completed Projects

This applicant has no previous projects that match criteria.

Project Summary

This project is part of ODFW's 25 Year Angling Plan.

Activity Type:	Passage
Summary:	Ames Creek flows through a steep, bedrock lined section immediately upstream of the confluence with the South Santiam River. Regulation of the South Santiam River has caused this section of Ames Creek to be inundated by backwater less frequently than during the pre-regulation period, limiting fish passage to approximately 18.5 miles of potential fish habitat. The proposed solution is to enhance fish passage through this reach with the installation of a combined rock ramp and step pool structure. Species that will benefit from the project include ESA-listed winter

steelhead and resident cutthroat trout.

Objectives: The project objective is to restore consistent fish passage into Ames Creek through the construction of a natural rock ramp and step pool structure.

Fishery Benefits: The South Santiam River provides angling opportunities for anadromous and resident salmonids. The reach between Foster Dam and and the Pleasant Valley bridge is among the most popular for fishing on the river. This project is located at the Pleasant Valley bridge and would benefit recreational fisheries for steelhead and cutthroat trout as it would provide more consistent spawning and rearing habitat in the Ames Creek sub-basin for these species.

Watershed Benefits: The Ames Creek Fish Passage Restoration Project will restore consistent fish passage into Ames Creek, a tributary to the South Santiam River. Restoring consistent fish passage into Ames Creek is a project explicitly stated in the ODFW Upper Willamette Chinook and Steelhead Recovery Plan. Approximately 18.5 miles of potential steelhead and resident fish habitat is available above the mouth in the Ames Creek sub-basin, including areas of extensive restoration efforts that have improved fish habitat conditions in the urban reach of Ames Creek through the city of Sweet Home. Habitat conditions in Ames Creek are generally considered good. According to the South Santiam Watershed Assessment (2000), Ames Creek has a desirable pool frequency and gravels in riffles. Riparian areas are considered fair to good, with the lower ranking areas occurring in the urban areas of Sweet Home. Riparian vegetation classes for Ames Creek show 73% characterized as mature-dense conifer and mixed hardwoods, with only 8% characterized as urban. This should allow for future recruitment of large woody debris into the creek and the myriad of benefits that accompany it.

Current Situation: The South Santiam Watershed is home to Upper Willamette winter steelhead, listed as “threatened” under the federal Endangered Species Act. The South Santiam River is one of only two rivers in the Willamette Basin that supports a core genetic legacy steelhead population according to the Draft Upper Willamette Recovery Plan. Prior to the construction of Green Peter and Foster Dams in the 1960s, this run numbered in the several thousands. Today, that number has fallen to the hundreds. Fish passage at Foster Dam is marginal, and non-existent at Green Peter, above which as much as 85% of the historical spawning area for winter steelhead once existed (Willamette Subbasin Plan, pg 372). Access to quality spawning and rearing habitat below the dams is limited, and ensuring consistent passage at Ames Creek can only be beneficial to this species.

Ames Creek enters the South Santiam River three miles downstream of Foster Dam and is thus one of the last tributaries utilized by migrating fish as they move up the lower South Santiam River. The mouth of Ames

Creek is confined within steeply graded bedrock, and flows through two adjacent barriers to the mainstem South Santiam River. The upper barrier is a narrow cascade that exhibits extremely high velocities throughout the year, and generates turbulence in a pool immediately below during high flows. The second barrier is a ~6 ft. falls located directly below the cascade that presents a significant jump throughout the year. The site contains an average gradient of 17% over ~80 ft., limiting passage for winter steelhead and cutthroat trout into Ames Creek. Including tributaries, 18.5 miles of potential fish spawning and rearing habitat exists above the mouth of Ames Creek.

Though at first glance this appears to be a natural barrier, there is a need to improve passage at the site to mitigate the effects of flow regulation. Prior to 1967 and the construction of Foster Dam, the level of the South Santiam River was allowed to fluctuate according to the seasons, and high flows during winter caused regular backflooding into Ames Creek. This allowed fish to access Ames Creek over the steep and confined channel at the mouth. Under current conditions, this site is passable only during rare peak flows that occur for limited duration, mostly during non-migratory periods. It is likely that at no time is the site passable for juvenile upstream movement. Due to the jump height and velocities present for all but a few occasions, the site is a complete barrier for adult winter steelhead and Spring Chinook salmon. Cutthroat trout regularly attempt to enter Ames Creek from the South Santiam River in the fall months, a two minute video of this activity is found here:
http://www.youtube.com/watch?v=_ITdUOD21ck.

The presence of the dam has also greatly modified normal sediment transport systems and lowered the elevation of the South Santiam River. Historically, the river below Foster Dam was a depositional reach, and bedload from the upper watershed supplied sufficient material to maintain a higher stream bed. The presence of the dam has transformed this section of the river into a transport reach, as bedload now settles in Foster Reservoir instead of traveling downstream. Over time the river has scoured the channel of sediments, leaving primarily large, immovable cobble and bedrock laced with deep channels. This accentuated scour has lowered the elevation of the river, further preventing flows from reaching levels high enough for optimum passage.
According to the South Santiam Watershed Assessment, conditions above the mouth of Ames Creek are good, with a relatively large intact riparian zone, moderate water quality, and good habitat conditions. Approximately 18.5 miles of potential fish habitat exists on Ames Creek. Using the watershed assessment, the SSWC has prioritized Ames Creek as Priority One for restoration, as activities have a high probability for success.

Alternatives: Design alternatives that were considered during the development of the OWEB technical assistance phase of the project and further refined during the current final design phase included: 1) do nothing, 2) technical fishway, and 3) natural fishway (the selected alterative). The 'do nothing' alternative was considered but not selected as the fish passage limitation at the mouth of Ames Creek is the crux of enhancing fish presence and use through the rest of the Ames Creek watershed, a priority watershed for the South Santiam basin. The technical/concrete fishway / fish ladder alternative was considered but also not selected because of concerns over high maintenance requirements, creation of an 'attractive' nuisance leading to human impacts on fish, creating conditions that might facilitate passage of non-native fish into Ames Creek, cost, and aesthetic characteristics that depart from the natural amenity of the site. The natural fishway alternative (rock ramp and step pool structure emulating alluvial fan feature) was selected by project stakeholders due to relatively lower long-term maintenance requirements, creation of a variety of passage pathways and diversity of flow patterns that could be utilized by aquatic species to navigate the barrier, reliance on 'natural' channel characteristics to achieve the project goal of enhanced fish passage, character and aesthetics that are more consistent with the natural amenity of the site, and cost. It should be noted that the natural fishway approach is somewhat more experimental than the technical fishway approach, but project stakeholders felt the other attributes outweighed this factor in their selection of the preferred project approach

Designer: Project design is being conducted by Inter-fluve, Inc., with Michael Burke, P.E., as project manager.

Methods: The proposed project will consist of excavation, fill and streambed construction that will result in a rock ramp and step pool structure emulating a tributary alluvial fan. A primary passage channel will be constructed as a step pool channel, with a secondary overflow channel that will distribute discharge during high flow events. The average channel gradient for the primary passage channel will be 7.6%, leading to the design for the passage channel as a series of step pools (typical slope range for step pools is 3% to 10%). The steps will be formed by large 'nucleus' boulders for stability and will be supplemented by smaller boulders. The balance of the installed bed will be a mixture of bedrock, cobble, gravel, sand and fines. Concrete grout will be utilized to fill in voids in the structure and maintain project stability. The streambed material mixture will have a wide gradation of sizes similar to what is found in natural stream courses, to maximize biological productivity and keep water flowing over the surface of the structure during low flow periods. The project will be constructed with a combination of salvaged and imported materials. Limited riparian plantings will be included in the project on the margins of the installation.

Inspector:	Mike Burke, P.E., Inter-fluve, Inc.
Funding Elements:	R&E funds will be used for project construction activities. These include engineering oversight, mobilization, channel and bed excavation, flood terrace construction, and step pool construction. The South Santiam Watershed Council is not including staff time in this proposal.
Partners:	Yes Oregon Watershed Enhancement Board: Funding Federal Payments to Counties, Title II: Funding ODFW: Monitoring US Forest Service, Sweet Home Ranger District: Monitoring Albany Chapter of the Northwest Steelheaders: Monitoring

Existing Plan: Yes

The ODFW Upper Willamette Chinook and Steelhead Recovery Plan Management Strategies and Actions states that restoring or improving fish passage and connectivity to habitats where connectivity is blocked or impaired by artificial barriers as a critical management strategy to recover steelhead in the South Santiam Watershed. Explicitly stated in the Draft Recovery Plan, ”ensuring consistent fish passage into Ames Creek” is a priority 2 action for recovering winter steelhead populations in the South Santiam Watershed (chapter 7 pg. 28; chapter 9 pg. 107).

The NWPCC Willamette Subbasin Plan states that obstructions are a key limiting factor in the lower South Santiam Watershed and includes partial and complete barrier correction as high priority for restoration (pg 387).

The OWEB Willamette Basin Priorities lists both fish passage in the South Santiam and restoration work in the Ames Creek sub-basin as high priorities (pg. 85).

Affected Contacted: Yes

Affected Supportive: Yes

Affected Comments: Both the City of Sweet Home and the private adjacent landowner are aware of the project and are supportive of restoring consistent fish passage into Ames Creek.

Project Schedule/Participants/Funding

Activity	Date	Participants
Permit applications	3/15/2012	South Santiam Watershed Council
Contractor Bid Solicitation	6/1/2012	South Santiam Watershed Council
Contractor Selection	7/2/2012	South Santiam Watershed Council
Project Construction	9/3/2012	Contractor (R&E, OWEB, Title II $)

Affected Species:

Cutthroat Trout
Rainbow Trout
Steelhead

Project Permits

Name	Issued By	Secured?	Date Secured	Date Expected
Remove/Fill	U.S. Army Corps of Engineers	No	1/1/0001	6/15/2012
Remove/Fill	Oregon Department of State Lands	No	1/1/0001	6/15/2012

Project Monitoring

Organization	Address	Activity	Frequency
South Santiam Watershed Council	4431 Hwy 20 Sweet Home, OR 97386	Fish presence/absence with stationary hoop trap	Years 1, 3, and 7

Project Maintenance

Organization	Address	Activity	Frequency
South Santiam Watershed Council	4431 Hwy 20 Sweet Home, OR 97386	Periodic monitoring of completed project for structure stability, following 1st high flow season, on as-needed basis afterwards. Monitoring to consist of surveying, measurements and qualitative inspections, as needed. Requirement for maintenance actions to be determined based on monitoring results.	2 x/year

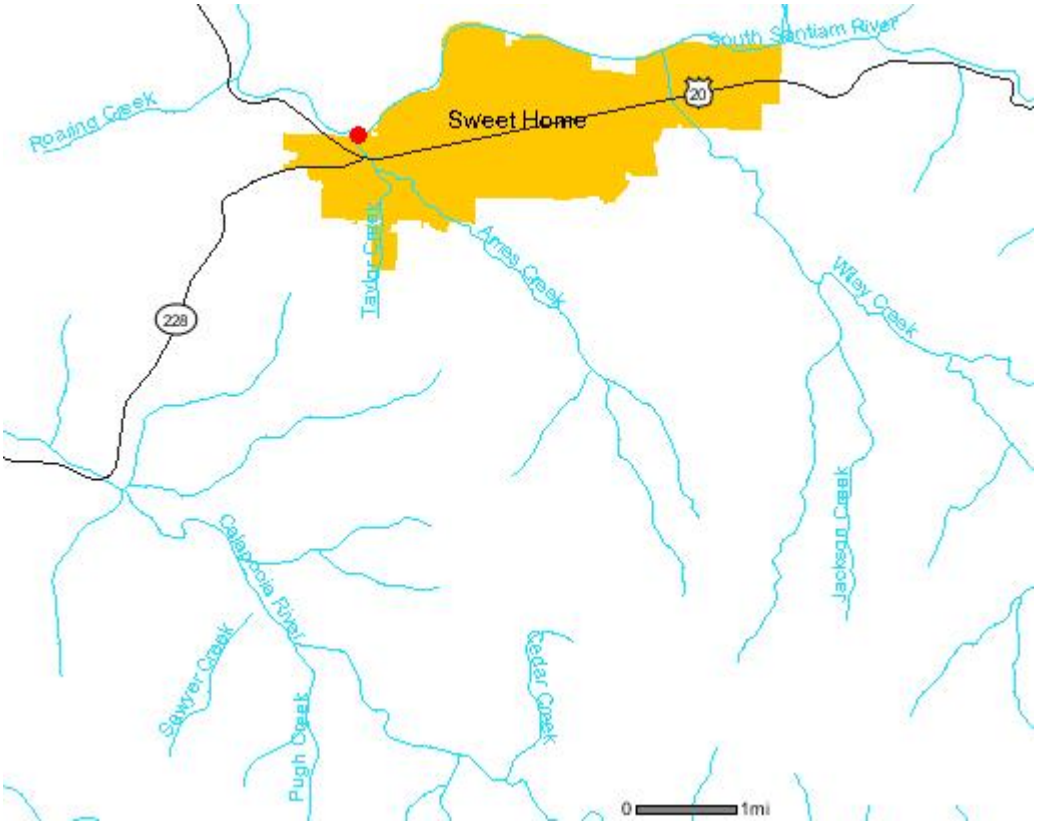
Project Match Funding

Funding Source	Cash	In-Kind	Other	Description	Total	Secured?	Conditions?	Comments
R&E Request	$42,323.00	$0.00	$0.00		$42,323.00	No	No	
Oregon Watershed Enhancement Board	$117,969.00	$0.00	$0.00		$117,969.00	Yes	No	
Albany Chapter of the NW Steelheaders	$0.00	$3,600.00	$0.00	Assistance in fish presence/absence monitoring	$3,600.00	Yes	No	
ODFW	$0.00	$775.00	$0.00	Assistance in fish presence/absence monitoring	$775.00	Yes	No	
U.S. Forest Service Title II	$33,730.00	$0.00	$0.00		$33,730.00	Yes	No	
U.S. Forest Service	$0.00	$999.00	$0.00	Assistance in spawning surveys	$999.00	Yes	No	
				Total Match Funding:	$199,396.00			

Project Budget

Item	Item Type	Units	Unit Cost	R&E Funds	Match Funds	Total
Fiscal Administration	Administration	1	$13,698.00	$0.00	$13,698.00	$13,698.00
Bank Construction	Contracted Services	50	$46.00	$0.00	$2,300.00	$2,300.00
Channel and Bed Excavation	Contracted Services	520	$184.00	$24,505.00	$71,175.00	$95,680.00
Concrete	Contracted Services	20	$600.00	$0.00	$12,000.00	$12,000.00
Construction Oversight	Contracted Services	110	$130.00	$4,300.00	$10,000.00	$14,300.00
Flood Terrace Construction	Contracted Services	135	$5.00	$675.00	$0.00	$675.00
Mobilization and Demobilization	Contracted Services	1	$10,000.00	$1,143.00	$8,857.00	$10,000.00
Site Prep and Management	Contracted Services	1	$13,844.00	$0.00	$13,844.00	$13,844.00
Step Pool Construction	Contracted Services	260	$90.00	$11,700.00	$11,700.00	$23,400.00
Fish Presence Monitoring	Personnel	3	$1,200.00	$0.00	$3,600.00	$3,600.00
Post Project Monitoring and Reporting	Personnel	5	$200.00	$0.00	$1,000.00	$1,000.00
Project Management	Personnel	160	$40.00	$0.00	$6,400.00	$6,400.00
Spawning Surveys	Personnel	3	$333.00	$0.00	$999.00	$999.00
Riparian Trees and Shrubs	Supplies/Materials /Services	500	$3.00	$0.00	$1,500.00	$1,500.00
					Total Budget:	$199,396.00

Project Map


South Santiam River
Roaring Creek
Sweet Home
20
228
Taylor Creek
Ames Creek
Wiley Creek
Calapooia River
Sawyer Creek
Pugh Creek
Cedar Creek
Jackson Creek
0
1mi

Additional Files

Click a link to view that particular file.

Ames Creek Engineering Drawings

Ames Creek Site Map

Ames Creek Site Photos

Landowner support letter

ODFW Letter of Support

OWEB funding extension

OWEB funding proof

SSWC Signature Authorization

SSWC Tax Exempt Status

Title II funding proof