

Final Completion Summary

Couse Creek is a tributary of the Walla Walla River, located upstream from the town of Milton-Freewater, in Umatilla County, Oregon. This stream is used by ESA listed Mid-Columbia summer steelhead, spring Chinook salmon, and redband trout. This project corrected a fish passage issue near the confluence of Couse Creek and the Walla Walla River. The project removed a concrete headwall and concrete grade control sill that was built decades ago to protect a municipal water pipe that has since been buried under the creek. These concrete structures had been severely constricting the Couse Creek channel creating a steep drop that was a fish passage problem. BPA funded the project design. Permitting work was completed and construction occurred during the summer of 2019. Construction included removal of the concrete structures, excavating a new creek channel, installing 8 step pool structures, and installation of an engineered riffle over the city water pipeline. Tree planting and grass seeding work continued in the fall. Flood impacts to the site occurred from the 100 plus year flood event in February 2020, but repairs were completed. The site is currently functioning as designed. The new Couse Creek channel slope is fish passable.

Background

Couse Creek is a tributary of the Walla Walla River, approximately 2.5 miles upstream from the town of Milton-Freewater, in Umatilla County, Oregon. This stream is currently used by ESA listed Mid-Columbia summer steelhead, spring Chinook salmon, redband trout, and occasionally by ESA listed bull trout. Prior to the completion of this OWEB and Bonneville Power Administration (BPA) funded fish passage restoration project, there had been a fish passage issue near the confluence of Couse Creek and the Walla Walla River during lower flows when there are still returning steelhead adults and Chinook salmon adults seeking their spawning areas. Where Couse Creek discharges into the river, a concrete wall and grade control sill created a barrier, and from that point Couse Creek transitions from a bedrock-controlled bed onto the gravel bed of the Walla Walla River. A three to four foot, slanted, bedrock drop had existed at this transition point. From this point, the Creek continues upstream as a steep, shallow, bedrock controlled bed before gravels and cobbles dominate the bed. Steelhead could not navigate this drop in late winter and early spring when discharges from the Creek are relatively high. Fish passage was also an issue at this location as Couse Creek flow declines in late spring and early summer.

Work Done

An engineering assessment, survey, project alternatives, and final designs to improve fish passage at this location were completed with state, Federal, and CTUIR fisheries staff input. BPA funds have covered the costs of initial project design work with technical support provided by ODFW, CTUIR, BPA's engineer, and Federal fisheries staff and the WWBWC staff. With the

assistance of BPA Environmental Compliance staff, Federal ESA permitting work was completed. Corps of Engineers 404 and 408 permits were secured by WWBWC staff, along with permits from the state of Oregon (fish passage and removal/fill), and county and city permits were also secured. In channel and floodplain project construction was completed during the instream work window during the summer of 2019 following an ODFW-led fish salvage and an on-site cultural resource training. Construction costs were cost shared with a grant from BPA and OWEB. Follow up tree planting and grass seeding work continued in the fall. Additional tree planting and grass seeding work was completed in the winter and into the spring of 2020, utilizing the cost share funding from OWEB. There were some flood impacts to the site resulting from the 100 plus year flood event in February 2020, but repairs were completed utilizing OWEB cost share dollars. The site is currently functioning as designed and the concrete fish passage barrier has been removed. The new Couse Creek channel slope is now fish passable for steelhead and resident trout and has improved pools and pocket water habitat. Tree planting and grass seeding has occurred on and alongside the disturbed streambanks.

The contracted services work consisted of removal of a concrete wall and concrete sill and riprap berm that was originally installed to protect a municipal water pipe that historically crossed Couse Creek at the project location, construction of a new Couse Creek channel that is longer and lower gradient than the channel that had existed below the concrete structure. Construction included associated floodplain excavation and in channel stream bed stabilization elements such as roughened riffles; construction of step pools; and installation of habitat boulders in the Walla Walla River, and revegetation and planting of disturbed areas, and noxious plant removals. Prior to construction, work areas were isolated from water and any fish and wildlife, including a frog and a snake were salvaged and moved to safer areas. An old irrigation ditch channel was reshaped into creek bottom, streambank, and floodplain, and an obsolete fish screen structure was removed for salvage by ODFW. After construction, disturbed areas within the project area were decompacted and revegetated using a mixture of native trees, shrubs, and grasses to stabilize the disturbed areas.

Couse Creek was described in the Walla Walla Subbasin Plan EDT analysis as a Priority Protection Area. The Walla Walla Subbasin Plan identifies addressing fish passage barriers as a priority action. Recent restoration investments in Couse Creek have included fish passage work at the Konen rock quarry culvert replacement bridge project. Also, fish habitat investments have occurred along the Shumway-Banks property.

Changes from Proposed

Physical construction of the project was successfully completed in the summer of 2019.

However, during the week of February 6, 2020 the Walla Walla watershed experienced a 100 year plus flood event. An attached photo shows the breaching of the berm that separated Couse Creek and the Walla Walla River washing out from both sides during the flood. The ODFW district fish biologist visited the site post flood and said the site will be a fish passage barrier at many flows and should be repaired, see attached aerial image. The flood also eroded away 1100 feet of the U.S. Army Corps of Engineers Milton-Freewater Flood Control Levee that had been constructed along the Walla Walla River in the 1950s immediately upstream of the fish passage site. During emergency repair work of the Levee, the Corps' contractor damaged the Couse Creek Confluence Fish Passage project, removing 3 logs with rootwads, some rocks, and some existing trees, and some recently planted trees. Permitting agencies were contacted and permission was granted to complete a repair of the breach and then replanting will be completed. The Corps contractor did some initial repair work of their damage, however the Corps did not want the three logs reinstalled near their levee. The WWBWC then completed a competitive bid process and selected a contractor to complete the rest of the repair work. That contracted repair work including repairing the breached streambank, reestablishing the Couse Creek channel's shape, and tree planting. Follow up tree planting and grass seeding work was completed by WWBWC staff immediately after the construction work prior to the May 15 OWEB grant deadline. An adult steelhead was observed in the Couse creek channel along with several juvenile salmonids this spring.

Public Awareness or Education

Project presentations have occurred at WWBWC Board meetings and will also be shared with project partners and at community outreach events.

Lessons Learned

Engineered projects need to be designed to handle 100 year flood events. Most of this project did, but some structural repairs were still needed, along with follow up tree planting.

Recommendations

Keeping some funds in reserve for additional tree planting and grass seeding after the first winter and spring freshet is a good idea.

Aquatic Habitat

The Project complies with the Oregon Aquatic Habitat Restoration Guide's recommendations for fish passage, channel reconstruction, and riparian tree planting. A fish passage barrier was removed, the channel was reconstructed with step pools to enable fish passage and maintain proper stream bed slopes and provide improved habitat. Site appropriate native species of trees,

shrubs, and grass were selected for tree and shrub and grass planting.

Special Conditions

Before and after photo points will be uploaded as part of this completion report along with a map of photo point locations. Also, the uploaded project designs and as built survey plan view will both show all project elements.

<i>Funding Sources</i>				
Source	Identifier	Cash	Inkind Type	Inkind
Bonneville Power Administration (BPA)	BPA	\$192,993.00		\$0.00
OWEB	219-6029-16709	\$116,878.42		\$0.00

<i>Totals</i>					
OWEB Amount	Non OWEB Cash	Inkind Total	Non OWEB Amount	OWEB Match	Total Project Cost
\$116,878.42	\$192,993.00	\$0.00	\$192,993.00	165.0%	\$309,871.42

<i>Uploaded Files</i>		
Image Type	File Name	Description
Exhibit B	EXHIBIT B 16709.pdf	
Project Design	Couse Creek Confluence Implementation Plan final.pdf	Project Implementation Plan, with Design sheets starting on page 16
Survey Data	Couse As-built Record Drawings.pdf	Post project construction as built survey
Photo (other)	IMG_20200206_135219864_HDR.jpg	Project damage during 100 year flood event. Couse Creek on left, Walla Walla River on right. Project breach in foreground.
Photo (other)	Couse Ck Confluence post construction and planting.JPG	Couse Ck Confluence post construction and tree planting taken 12/30/2019 (pre-flood)
Photo (other)	CouseCreekMouth.jpg	Aerial drone image of Couse Ck confluence project site post flood. Breach of Couse creek is visible, along with three step pools in couse creek
Photo (other)	mid repair work both channels.jpg	Project site conditions mid repair work to retain the longer gradual slope of Couse creek just before the confluence.
Photo (other)	Couse Ck Confluence old dam site is now pools river in background.jpg	Couse Ck Confluence old dam site is now pools, river in background

Photo (other)	IMG_20190814_Concrete dam removed from Couse Ck.jpg	Concrete dam removed from Couse Creek
Photo (other)	IMG_20190814_134122308_HDR[1].jpg	concrete dam being removed from Couse Creek
Photo Point	IMG_20200420_131614745_HDR.jpg	New Couse Creek channel is long gradual slope with step pools, river is on right
Photo Point	IMG_20200413_143157801_HDR.jpg	Looking upstream at old site of concrete sill and concrete headwall, now a series of pools
Photo Point	IMG_20200515_143316448_HDR.jpg	New Couse Creek Confluence with Walla Walla River after old irrigation ditch berm removed
Photo Point	IMG_20200702_124423460_HDR.jpg	Looking downstream on Couse Creek at old dam site
Photo Point	IMG_20200702_125359809_HDR.jpg	Site where old fish screen was removed and abandoned Milton irrigation canal was reshaped into floodplain, and new Couse Creek channel and confluence with Walla Walla River is in the background
Photo Point	shpimg_3699.jpg	Looking downstream in Couse Creek at the old concrete headwall dam
Photo Point	IMG_20190419_Couse Confluence from levee.jpg	Couse Creek Confluence pre-construction taken from end of levee, river just visible in upper right through vegetation
Photo Point	Couse Ck old fish screen and abandoned milton ditch.jpg	Couse Ck Confluence old fish screen and abandoned milton ditch
Photo Point	Couse Ck photo point 5 proposed new confluence.png	Looking north at Walla Walla River across old berm protecting abandoned ditch at proposed new confluence site of Couse Creek and Walla Walla River
Photo Point	shpimg_3696.jpg	Looking upstream in Couse Creek at the concrete dam jutting out from the left and the concrete grade control berm across the bottom of the creek. Much of the dam is obscured by blackberries.
Federal Lobbying Certificate	Couse Ck Confluence Federal Lobbying Certificate.pdf	Couse Ck Confluence Grant Federal Lobbying Certificate