

## WWRID Eastside Ditch Project

This project was created to help restore summer flows for 2.5 miles of habitat used by ESA-listed steelhead and bull trout. By cooperating with farmers willing to improve the efficiency of their irrigation systems, the project helps maintain the economic viability of the valley while conserving water and improving fish passage. Water that was previously lost to evaporation or seepage is now conserved in the mainstem of the Walla Walla River. The project included two main elements: 1. Conversion of the WWRID Eastside Ditch into a pipeline including consolidation of an additional diversion to eliminate an annual push up dam; 2. On-farm conservation and conversion projects by landowners within WWRID boundaries. (For detail about the restoration of flows in the Walla Walla River, please see [www.wwbwc.org](http://www.wwbwc.org))



All portions of the project were successfully completed during 2001-2003. The project proposed to increase stream flows from anywhere between 1 and 7 CFS (cubic feet per second) with an expected return of 3.5 CFS. The actual total water going to instream flows from all portions of the project is 4.743 CFS (This number may change slightly following final OWRD injury review of Conserved Water Applications). The \$290,482 of OWEB funds were matched by \$520,306 from other sources including: a grant from Bonneville Power Administration, fish screens for Eastside from ODFW, and labor and time from WWRID, individual landowners, and WWBWC. The results will be monitored for a minimum of five years.

### WWRID Eastside Ditch Conversion to Pipeline

The Walla Walla River Irrigation District (WWRID) converted 3.6 miles of earthen irrigation canal to 3.32 miles of buried pipeline to serve 258 acres of Senior (summer) water rights. The pipeline operates as an on-demand system diverting water equaling the use along the pipe, greatly reducing the acre-foot total removed from the river. WWRID was able to consolidate turnouts and straighten the ditch as the pipeline was installed in order to increase efficiency. New fish screens, measurement devices and headgates were installed at the diversion point on the Walla Walla River improving fish passage and monitoring capability. WWRID developed a landowner and water rights database of patrons served by the pipeline and signed new easements with the landowners. A new magnetic flow meter was installed at the Point of Diversion to measure and monitor the amount of water used. Additional meters were placed on user turnouts over 2" in diameter to allow the district to better manage water rights and collect individual water use information.



Diversion rates during the summer prior to the installation of the pipeline typically were 9.6 CFS. After the installation of the pipe, the typical diversion rate was 6 CFS for a savings of 3.6 CFS for all of Eastside. An

application is being prepared to submit to OWRD for the Instream protection of the water under the Allocation of Conserved Water program.

There is the potential that additional water may be kept instream at any given moment as the Pipeline is on-demand and only diverts the amount of water needed (up to the legally established water right). The piping of the system has allowed WWRID water users to utilize the pressure generated by elevation differences in the pipeline to reduce their pumping requirements and save electricity. The end user on the system was able to convert to a gravity pressure system eliminating the need for a pump and electricity.

The Eastside Ditch conversion also included consolidating the diversion for Schmidt Nursery downstream to the Eastside point of diversion. In addition to making their system more efficient by installing a new pumping station protected by Eastside's fish screens, the consolidation eliminated the need for an annual push-up dam, thereby improving fish habitat and passage along the 0.4-mile section of the Walla Walla River between the old Schmidt diversion point and the consolidated Eastside diversion point.



The original grant proposal contained funding for 53 acres of water savings from on-farm projects in addition to the ones listed by name. WWRID developed an outreach program to assist individual landowners in converting from flood to sprinkler irrigation and from high impact to more efficient micro sprinklers. WWRID required that acres and rights to be funded be summer fed rights resulting in increased instream summer flows. WWRID signed cooperative agreements with individual landowners that provided for a minimum 50/50 cost share up to a maximum of \$1,000 of OWEB funds per acre of conserved water to be used for materials. Landowners were responsible for system design and installation.

The landowner itemized in the original grant proposal successfully completed their projects on a total of 90.22 acres of land. One farmer converted from using flood irrigation ditches to a gravity pressure sprinkler system serving 27.25 acres. One farmer converted from flood irrigation to a pump and sprinkler system serving 5.6 acres. A larger farming operation installed two bulges (reservoirs) to consolidate pumping and delivery sites, and to assist in water management on 95.53 acres. This operation also converted 62.78 of these acres from high impact sprinklers to more efficient micro sprinklers.

The effort to convert additional acreage was even more successful than expected. For the dollars provided, it was possible to make irrigation efficiency improvements on 113.86 acres of land resulting in a total water savings of 1.004 CFS. Applications are being prepared to submit to OWRD for Instream protection of the conserved water from all of these projects under the OWRD Allocation of Conserved Water program. (The number may change slightly following final OWRD injury review.)

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No major changes of the original proposal were made. Minor changes occurred in order to meet the original goals of the project. Services to be provided by Oregon Water Trust were not needed due to the fact that the Bonneville Power Administration grant funded a Walla Walla Basin Watershed Council staff position to complete conserved water applications. Landowners who were named as project cooperators in the original application who were not able to complete an efficiency project during this project time period were replaced with other landowners who were able to go ahead within the grant timeframe. Funding has been secured from BPA for additional on-farm efficiencies that will include these projects.

Converting ditches to piped demand systems appears to be an effective method of water conservation. It has the benefit of also reducing electrical costs and saving more water than originally expected. The Instream flow benefits are greater than just the CFS becoming an instream right. The District must keep a water right for the highest demand period but most of the time demand is lower than peak resulting in additional water left instream.

This project was a cooperative effort among Landowners, Walla Walla River Irrigation District, Oregon Watershed Enhancement Board, Bonneville Power Administration, Confederated Tribes of the Umatilla, Oregon Department of Fish & Wildlife, Oregon Water Resources Department, Oregon Water Trust, and Walla Walla Basin Watershed Council.

