

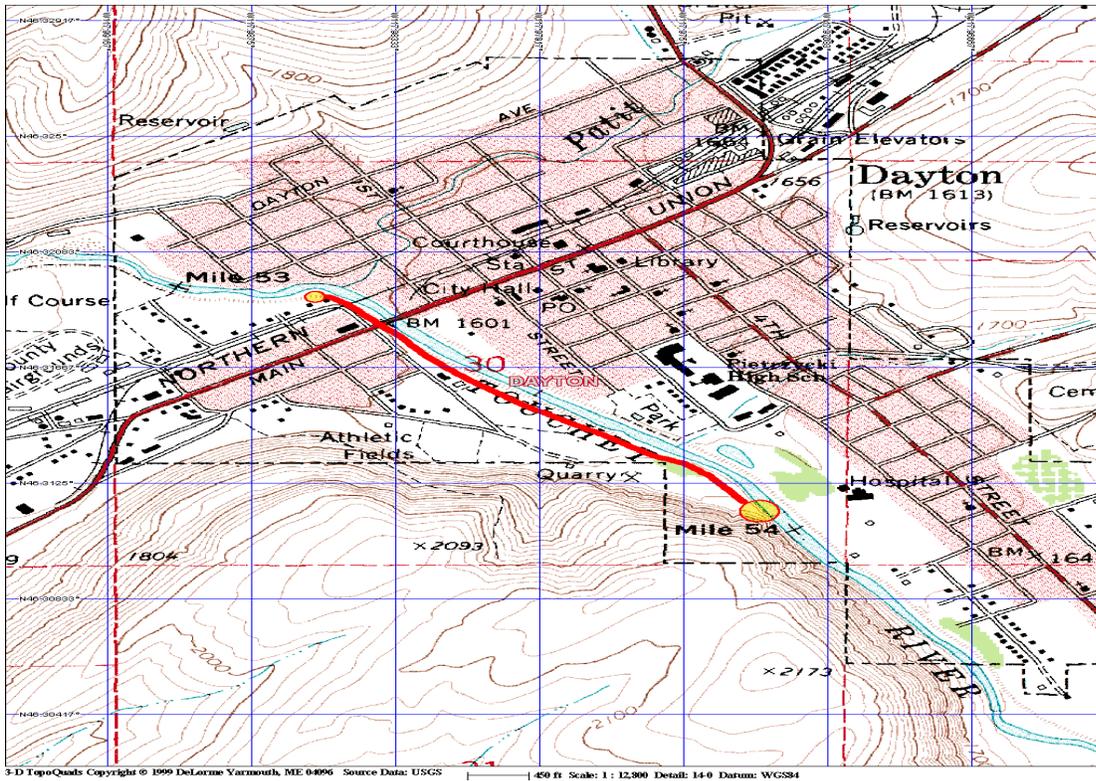
# Touchet River Consolidation and Fishway Project Description

## Introduction

The Dayton Intake Dam is located on the Touchet River in Dayton Washington in the foothills of the Blue Mountains. The Touchet River is a major tributary of the Walla Walla River, and supports populations of ESA listed Mid-Columbia Basin Steelhead and Bull Trout. The project is in a reach of the Touchet R. that is identified as a “Priority Area” in both the Walla Walla Sub Basin Plan and The Snake River Salmon Recovery Plan.

## Project Area Description

The Touchet River Screen Consolidation and Fishway Project are located on the Touchet River in Dayton, WA. The intake dam is located about ¾ mi on the Touchet River upstream from the Highway 12 Bridge in Dayton. The pipeline will run from the dam to approximately 300 feet below the Highway 12 Bridge (map 1). The legal location of the intake dam is Township 10N, Range 39E, Sections 29 & 30 at Latitude N46.31149 and Longitude W117.97260. The fishway will open habitat to over 75 miles of stream habitat for juvenile steelhead, migrating bull trout and other native species.



**Map 1. Map of the project area, the large yellow circle at RM 54 is the location of the intake dam and all of the instream work for the project. The red line shows the pipeline alignment and the small yellow circle represents the terminal end of the project.**

## **Problem Statement**

The intake dam was built in the early 1980's to supply water for an acclimation pond for mitigation under the Lower Snake River Compensation Plan (mitigation for the four lower Snake River Dams). The intake for the acclimation pond diverts water from March through April each year. When it was built the dam was constructed to allow for adult steelhead migration and apparently no consideration was given for other salmonids or life history stages. Of course, at the time of construction neither Bull Trout nor Mid Columbia Basin Steelhead were listed under the Endangered Species Act ESA. Consequently, the intake dam creates a fish passage barrier to juvenile salmonids including steelhead and smaller migrating bull trout, as well as other native species like Mountain Whitefish and Bridgelip Suckers. The screens at the current intake do not meet current screening guidelines and need to be updated to provide better protection for fish life.

Within one mile downstream of the Dayton Intake Dam there are two irrigation ditches that use annual push-up dike berms to deliver water to their intakes. These berms are typically built between May and June every year and have several negative impacts on the stream habitat and ESA listed salmonids. Irrigators divert water from the river between May and November each year. The push-up berms are an imminent take on both ESA Focal Species in the Touchet River. There are both migrating Bull Trout (that over-winter in this section of the river) and spawning/rearing Steelhead during the construction window for the push up berms.

Berming practices continue, in some part, because the water diversions are located within a flood control channel through the city of Dayton. Building hard structures to deliver water within the flood control area does have major liability issues. WDFW has been working with irrigators to find a solution to eliminate the practice of push-up berms.

Another problem created by the push up berms, is that they loosen naturally armored stream substrate, which in turn gets washed downstream and deposits cobbles upstream of the Highway 12 Bridge in Dayton. This causes the City of Dayton additional flood maintenance concerns and costs for the removal of the built-up cobbles, as well as creating more impacts to fish and the stream habitat when the city removes the cobbles.

## **Project Objective Overview**

This project is designed to utilize the formal intake dam to divert water for all three diversions. Traveling belt fish screens will be installed to provide better protection for fish life. The belt screens meet all current Federal and State fish screening criteria. The water will be diverted into pipes that will convey the irrigation water to the original Points of Diversion (POD) for the irrigators. The irrigators are then responsible to pipe their irrigation systems from the original POD to the last user, ultimately resulting in a "closed" irrigation system. A closed system is the most efficient way to irrigate, because when irrigators are not using water, the water stays in the river. This will help improve flows and water temperatures in the Touchet River.

A Pool and Chute Fishway will be installed where the current intake structure sits. The fishway will be attached to the dam at the same point the current intake structure is attached to the dam. A Pool and Chute Fishway was chosen for its ability to function in the Touchet River, a stream with highly variable flow regimes. The fishway is also designed with a holding area with increased capacity and a trap that will provide fisheries managers with an improved facility to monitor salmon recovery in the Touchet River.

The consolidation project will have immediate and cumulative positive results on the stream habitat and the aquatic life in the area by removing in-stream activities associated with these diversions. The fishway will provide improved fish passage for Juvenile Mid-Columbia Basin Steelhead, Bull Trout, Mountain Whitefish, Bridgelip Suckers, and other native species. The capacity for movement and migration of all native species will promote a healthy stream environment. Benefits for this project include; more efficient irrigation, increased in-stream flow, improved fish passage, improved habitat conditions, ESA compliant fish screens, modern fish monitoring facility, better flood control, and reduced impact on ESA listed steelhead and bull trout in the Touchet River.

## **Proposed Action**

The objectives of the proposed action are:

- Construct a Pool and Chute Fishway that provides fish passage under highly variable flow regimes.
- Provide safe fish passage for native resident and anadromous fish species at all life stages.
- Reduce negative impacts to stream habitat and ESA focal species spawning and rearing in the Touchet River
- Install ESA compliant fish screens to eliminate take associated with poorly screened surface water diversions.
- Improve irrigation efficiencies to provide increased stream flows and better water quality.

The proposed action includes equipment mobilization to the project area, construction of a temporary river access ramp, excavation of the temporary diversion channel and diversion of the Touchet River, fish removal and relocation, Demolition of the existing concrete intake structure, installation of temporary dam support structures, construction of the Pool and Chute Fishway, Intake, and fish screens, removal of the temporary diversion structure and restoration of the original stream channel, removal of the stream access ramp and restoration, installation of the pipeline, and rehabilitation of the entire site, including revegetation. All these activities are described in detail below.

Project construction would begin in July of 2006, with instream work starting from July 15<sup>th</sup> and the instream components of the project completed by September 30<sup>th</sup>, 2006.

## **Access to the Project Site**

No new roads will be constructed to access the Dam and Intake facility. All construction traffic will use existing State and County-owned roads. The gravel access road that runs from the Snake River Lab to the intake facility will be modified to allow tanker trucks to turn around.

## **Equipment Staging and Refueling**

The action will require mobilization/demobilization of necessary heavy equipment to implement the project. Hand tools and heavy equipment such as dump trucks, loaders, track mounted excavators, concrete forming, pouring, and pumping equipment, and submersible pumps will be used for construction. Large track equipment will be used to excavate the temporary by-pass channel and in stream work to prepare the site for the intake and fishway construction. Refueling will take place at a designated site located away from the river in an area where spills could be easily contained. The contractor will be required to prepare a Spill Response Plan and

Spill Prevention Control/Countermeasures Plan for petroleum products and other hazardous material.

### **Vegetation and Ground Clearing**

Only a small amount of riparian vegetation will be disturbed as a result of this project. The intake and fishway will be located within the footprint of the existing intake structure. All areas disturbed by the project will be replanted with native plants and grasses. The project area will follow established BMPs for erosion control (straw bales, silt fences, grass seeding). WDFW will monitor the erosion control efforts during construction and provide monitoring and maintenance of the site reclamation.

### **Stream Access Ramp Installation**

Site access will be limited to two stream access ramps. One access upstream of the dam and one downstream of the dam will be constructed to minimize the impacts to the stream and riparian habitat during construction of the temporary channel bypass, intake, and fishway. The ramps will be built using natural materials (e.g. basalt rock) and will be removed during reclamation of the project area. There is very little existing riparian in the areas designated for access; those areas will be planted heavily with native woody vegetation during the reclamation of the site.

### **Temporary Diversion Channel Construction and Fish Removal**

Construction of the temporary diversion channel will be accessed via the temporary access ramps described above. The temporary channel will be created to divert water towards the right bank so that in-stream work for the project can be done "in the dry" (dry as possible). The temporary diversion channel will be approximately 180 feet long and roughly 30 feet wide. The channel will be lined with ecology blocks with a heavy plastic liner layered over the eco-blocks. Stream cobble would then be pushed up onto the plastic and ecology block, creating a lined berm. The entire temporary channel will be constructed before water is diverted into it.

Once the channel is completed, fish removal will begin upstream of the dam. A block net will be installed and electrofishing will be accomplished from upstream to downstream over the dam. After two passes, the water will be diverted into the temporary channel. Additional fish removal will be done after the water is diverted into the bypass channel.

The pool below the dam will have standing water and a seine will be used to remove large fish from the pool to protect them from electrofishing. The pool will then be electrofished from the pool working downstream. After two passes to remove fish a cobble berm will be constructed at the downstream end of the construction area to isolate the construction area from the stream flow and to eliminate the possibility of fish moving upstream into the work area. Using berms to isolate the construction area from the stream will also help to reduce sedimentation from the project area getting into the river. A pump with an approved fish screen will be used remove water from the pool and work site, as the pool water is pumped away additional electrofishing will be done until all fish and water have been removed from the construction site.

### **Demolition of existing concrete intake**

The contractor will provide an approved demolition plan. Included will be a detailed description of the demolition and removal of the existing concrete structure. All demolition work will be completed in "the dry" within the construction area. All debris from the demolition will be removed and disposed of at an approved off site location.

## **Fabrication**

The contractor will provide an approved construction plan prior to construction. The plan will follow the conservation measures listed below and all terms and conditions in the regulatory permits and other official project authorizations that must be followed to eliminate or reduce adverse impacts to any endangered, threatened, or sensitive species or their critical habitats. The plan will be submitted to all permitting agencies for approval prior to construction.

The sequencing of the project will generally follow: Prior to demolition of the existing intake structure, supports for the dam will be installed to secure the dam from shifting. After demolition, the dam will be inspected to determine what if any rehabilitation work will be required for the dam. The Pool and Chute Fishway, Intake, and other concrete work will be formed and poured and the dam attached to the new structure. All concrete mixing will occur off-site and concrete pouring and curing will occur in the dry within the coffered construction area. The fish screens, trash racks, pipeline, etc. will be installed after the concrete has cured.

Any water accumulating in the construction site will be pumped through the Snake River Lab acclimation pond to capture sediment and allow for clean water to be returned to the river.

## **Monitoring**

WDFW staff will monitor the project closely during construction to ensure the best sequencing and practices are used to minimize disturbance to the environment. WDFW Engineers will inspect the project as it is constructed and after each phase of the project is completed.

## **Pipeline**

The pipeline will be constructed above and outside of the Ordinary High Water Line OHWL of the Touchet River. The pipeline will be buried on the outside edge of the existing dike road and therefore will not negatively effect riparian or stream habitat. Construction of the pipeline will have no effect on ESA listed species.

## **Reclamation**

Reclamation of the entire construction site will occur immediately after construction is completed. The construction area within the stream channel will be restored and the temporary bypass channel will be removed below the dam. The construction area upstream of the dam will be restored and the bypass will be partially removed to redirect the stream flow into the original channel. Next, the remaining sections of the temporary channel will be removed and the area will be restored to pre-project conditions. Access ramps will be removed and disturbed areas will be treated to minimize/eliminate any short-term erosion. The project area will be replanted with appropriate native vegetation in the fall 2006 and Spring 2007 to optimize plant survival rates.

## **Analysis of Potential Effects**

Temporary increases in sedimentation may occur in proximity to the construction site. Instream construction activity will disturb the streambed, which may temporarily increase the amount of sediment in the water. Excavation and the placement of structures in the stream will cause existing sediments to become suspended and mobilized, temporarily increasing downstream turbidity levels and sedimentation rates. Every effort will be made to minimize sediment fines through re-routing or pumping around affected areas, the use of cofferdams, and the use of sediment blankets. Disturbances to bank and riparian areas will be replanted to match the

complexity and species of the indigenous ecosystem. WDFW will monitor all projects permitted through the Washington State Hydraulics code. Project timing will be primarily done during the work window July 15<sup>th</sup> to September 30<sup>th</sup>.

**Conservation Measures** The following conservation measures will be a requirement for the proposed project.

1. The work window will be July 15<sup>th</sup> through September 30<sup>th</sup>. Project will be done during an optimum time (during the work window) to reduce the potential impact on all fish species.
2. Best management practices (BMPs) will be incorporated to reduce the potential impacts of staging, onshore construction, and instream construction activities.
3. Work will take place in the dry or quasi-dry. In-stream work will be done during low flow periods. Appropriate construction timing restrictions will be in place.
4. During construction of the project, fish passage conditions through the project area shall be maintained or improved.
5. Disturbed areas will be revegetated with native plants and grasses.
6. Sediment leaching created by construction of a screen will be minimized, and if necessary, removable sediment traps will be used to trap fines. Sedimentation due to riparian disturbances will be controlled through the use of revegetation, erosion matting, and mulch. Native seedlings and plants will be used exclusively for revegetation of disturbed areas.
7. Any water seepage into the construction area during excavation will be collected in catchments and pumped to a dry downstream location that is not directly connected to the flowing channel.
8. A qualified biologist, as identified by the action agency, shall monitor construction activities during implementation of the project. This individual shall be present during any activities that "May affect" listed salmonids in fish bearing waters. For example, during fish removal or salvage this individual would be responsible to oversee those activities. In addition, WDFW district fish manager will be consulted and included in fish removal plan. The salvage shall also be reported to NMFS and USFWS within one working day. Any fish captured as a result would be released immediately into nearby suitable habitat, which would minimize possible predation. Capture and transportation of fish shall follow commonly accepted techniques for salmonid field sampling. If electro-fishing is used, NMFS guidelines shall be followed. All methods used for capture, handling, or retention of fish shall be done at times that would avoid temperature related stress to the fish.
9. Sedimentation and erosion controls (i.e., hay bales, silt fence, de-watering, etc.) must be implemented on all project sites where restoration activities are implemented, materials or equipment is staged or stockpiled, or fill is placed, to minimize the release of fines into the aquatic environment.
10. Every effort will be made to minimize or eliminate the use of heavy machinery when possible. Machinery shall be refueled away from the stream and outside of riparian areas. A spill prevention and response plan shall be in place for all projects that require machinery.

11. All equipment shall be free of petroleum based or other hazardous fluids, noxious weeds, and/or debris before entering the stream channel.
12. WDFW and individuals authorized to work under this consultation will ensure that these conditions are strictly adhered to: any non-compliance with these terms and conditions or any accidental injury or killing of listed species will be reported to WDFW, USFWS and NMFS within 2 working days of occurrence.
13. All regulatory permits and official project authorizations (e.g., National Environmental Policy, National Historic Preservation Act, Level I Contaminants Survey, WDFW's Hydraulic Project Approvals and permits from the Army Corps of Engineers, etc.) must be secured before project implementation. All terms and conditions in these regulatory permits and other official project authorizations must be followed to eliminate or reduce adverse impacts to any endangered, threatened, or sensitive species or their critical habitats.
14. Modifications to an approved work plan must be reviewed and approved by WDFW, USFWS, NMFS, the project biologist and the cooperators and/or landowner(s) before the work can be carried out or continued. This would include changes requiring modifications of permits, or alterations to the scope, design, or intent of the project.
15. Use existing roadways or travel paths for access to project sites, where feasible.
16. Avoid the use of heavy equipment and techniques that will result in excessive soil disturbances or compaction of soils, especially on steep or unstable slopes.
17. Use of heavy equipment in or adjacent to streambeds and stream banks, and ingress/egress points will be minimized to reduce sedimentation rates, channel instability, and aquatic habitat impacts. Vehicles and machinery must cross streams at right angles to the main channel whenever possible. Ingress/egress points will be minimized. Heavy equipment will be cleaned (e.g., power washed, steamed, etc.) prior to use below the ordinary high water mark. Machinery will be inspected for leaks of hydraulic fluid or fuel after cleaning and prior to entering sensitive areas.
18. Excavation or transport equipment/machinery will be limited in capacity, but sufficiently sized to complete required restoration activities.
19. Streams, riparian zones, and wetlands must not be used as equipment staging or refueling areas. Equipment must be stored, serviced, and fueled away from aquatic habitats or other sensitive areas.
20. In the riparian area, entry and disturbance by equipment will be minimized. Undisturbed vegetated buffer zones must be retained along stream channels to reduce sedimentation rates, channel instability, and aquatic habitat improvements. Cable systems will be used, where appropriate, to eliminate or reduce the need for ground-based equipment.
21. Native vegetation must be planted on disturbed sites (including project site, disposal and staging areas, and access roads), when necessary to reduce soil erosion, establish cover, provide shade, and prevent non-native plant colonization. The use of nonnative vegetation will be strictly limited and will apply to situations where native vegetation (i.e., grasses) is not commercially available. All nonnative vegetation must be a close subspecies or variety to native species or reproductively altered (i.e., sterilized) to avoid future ecological complications with

native species. Vegetative planting techniques must not cause major disturbances to soils and slopes.

22. Excavated materials removed during the completion of a restoration activity must be salvaged and/or disposed of properly and/or stabilized to eliminate future environmental problems.

23. All garbage from work crews must be removed from the project site daily and disposed of properly. All waste from project activities must be removed from the project site before project completion and disposed of properly.

24. Structures containing concrete or wood preservatives must be cured or dried before they are placed in streams, riparian zones, or wetlands. Creosote treated wood will not be used. Wet concrete or runoff from cleaning tools that have wet concrete slurry or lye dust must never enter aquatic habitats. Runoff control measures must be employed, such as hay bales and silt fences, until the risk of aquatic contamination has ended.

25. Inspection will be performed within 1 year following project completion to ensure that restoration activities implemented at individual project sites do not create unintended consequences to fish, wildlife, and plant species, and their critical habitats. Corrective actions, as appropriate, must be taken for potential or actual problems.

26. Soil and/or slope disturbances along stream channels should be eliminated or reduced wherever possible. Undisturbed vegetated buffer zones will be retained along stream channels to the greatest extent possible to reduce sedimentation rates, channel instability, and aquatic habitat impacts.

27. Fill material used on project sites must be from non-streambed and non-wetland sources that are free of fines.

28. Traveling Belt Fish Screens designed for the project will be consistent with National Marine Fisheries Service's *Juvenile Fish Screen Criteria*.

29. Where trash/debris racks are installed to prevent blockage or damage to culverts or fishways, they must be installed and maintained in such a manner that fish are easily able to pass through them at any time.

