

## An Integrated Approach to Managing Water in the Yakima River Basin

### Background

Water shortages are a chronic problem in the Yakima River Basin. Demand for water to irrigate crops, to provide drinking water and ensure the survival of salmon and steelhead fish is greater than supply.



In 2003, Congress authorized the US Bureau of Reclamation (Reclamation) to study storage options in the Yakima Basin, including a proposed reservoir at Black Rock in eastern Yakima County.

Seeing a need for more options, the Washington State Department of Ecology (Ecology) joined the study and provided funds to investigate other potential storage sites, (including Wymer), enhanced water conservation, water markets and aquifer storage as part of the study.

Building on these assessments, the Bureau and Ecology conducted a feasibility study and issued a draft planning report and environmental impact statement (PR/EIS). A draft version of the PR/EIS was released for public comment in January 2008.

Prompted by comments suggesting that an even wider range of storage and fish survival options needed to be explored, Ecology prepared a state-sponsored supplemental study to address these concerns.

In June 2008, Ecology released the Final Yakima Basin Environmental Impact Statement (EIS). It explores an integrated approach to meeting water supply needs in the Yakima River Basin.

### Office Vision

Preserve and enhance the standard of living for the people of Washington by strengthening the state's economy, and restoring and protecting the Columbia Basin's unique natural environment.

### Office Mission

Aggressively pursue development of water supplies to benefit both instream and out-of-stream water uses.

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## Integrated Water Resource Management Proposal

Ecology looks at an integrated water resource management alternative in the EIS. The alternative takes a holistic approach to addressing the Yakima Basin's water needs by integrating new storage, changes to existing facilities, fish habitat enhancement, and fish passage elements into a single plan. Enhanced water conservation, water markets and aquifer storage elements examined in earlier reports would also be folded into this plan.

### Fish Passage Element

Salmon and steelhead are no longer able to spawn in the upper reaches of the Yakima River Basin. Dams at Cle Elum, Keechelus, Kachess, Bumping, and Rimrock serve as barriers to migrating fish. The alternative would open up the waters above those dams by building fish ladders and trap and haul facilities (migrating fish are captured and transported around the dams). Downstream migration would be made easier by adjusting stream flows over the dams during critical periods and by building conduits and stepped falls (weirs and pools).



### Modifying Existing Structures and Operations Element

Proposed operational changes include reducing the amount of water diverted for power generation at the Roza and Chandler Power Plants in spring to increase instream flow and improve smolt out-migration. Structural changes include modifying spill gates, fish bypass systems, and canals, and moving points of diversion to increase flows in a reach of the Yakima River.

### Fish Habitat Enhancement Element

Salmon, steelhead, and other fish would benefit from habitat improvements on both the mainstem and the tributaries in the Yakima River Basin. Many of the projects included in this element are based on projects identified in the Yakima Steelhead Recovery Plan. They include:

- Reconnecting side channels and off-channel habitat to stream channels.
- Restoring wet meadows.
- Reconnecting floodplains to river channels.
- Relocating or improving infrastructure and roads built on floodplains.
- Placing stable wood and other large organic debris in streambanks.
- Restoring natural channel form.
- Restoring natural riverbank plants.
- Developing grazing strategies that promote riverbank recovery.



# Focus on the Yakima Basin

## Office of Columbia River

### New or Expanded Storage Element

A number of storage opportunities are considered in this element, including:

- Naches River basin storage options, including Bumping Lake expansion.
- Wymer reservoir including new reservoir fill options.
- Modification to river operations in conjunction with storage and direct pump projects.



Upper end of the Wymer Reservoir site

### Market-Based Reallocation Element

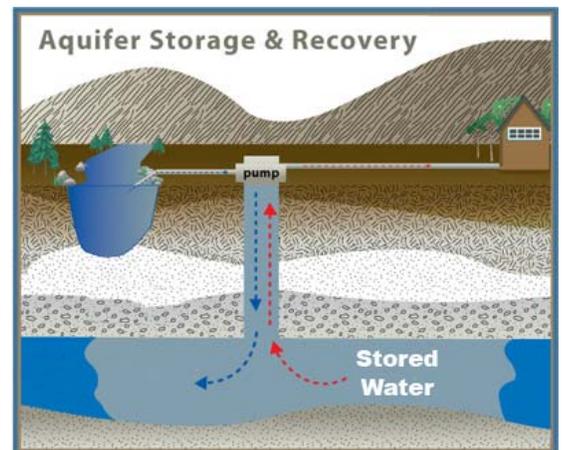
Market-based incentives would be used to reallocate water. This element includes options for water marketing (a willing seller sells or leases the right directly to a willing buyer) and water banking (willing sellers deposit rights in a water bank on a permanent or temporary basis and the bank makes water available to willing buyers).

The Office of Columbia River is studying a number of different ways to administer water marketing and banking, including:

- A water marketing clearinghouse for buyers and sellers.
- An open water market that would act as a clearinghouse and a brokerage for water.
- A water bank established within the Trust Water Program.
- A water bank administered by a private entity or non-regulatory agency.
- Irrigation district administered water banks for drought years.
- Irrigation district administered water banks for all years.

### Groundwater Storage Element

Surface water would be pumped into aquifers for storage, and retimed to for use to enhance stream flows, meet out-of-stream needs, and replenish aquifers. This element would require the construction of facilities to recharge and recover water, including injection wells, treatment facilities, infiltration basins, pump stations and conveyance lines.



## Enhanced Water Conservation Element

Funding formulas and instream/out-of-stream allocation requirements would be changed to provide a greater incentive for participation by water users. Funding would be available for on-farm, municipal, commercial, and industrial water projects, including:

- Canal lining or piping
- Reregulation reservoirs
- Installing pump-back stations,
- On-farm irrigation improvements
- Improvements to municipal water supply infrastructure.

## Learning more about the Integrated Water Resource Management Alternative

You can learn more about the Integrated Water Resource Management Alternative by viewing or downloading the EIS at Ecology's Yakima Basin Storage web site:

[http://www.ecy.wa.gov/programs/wr/cwp/cr\\_yak\\_storage.html](http://www.ecy.wa.gov/programs/wr/cwp/cr_yak_storage.html).

Detailed information about the water marketing and banking, groundwater storage, and enhanced water conservation elements is available at:

[http://www.usbr.gov/pn/programs/storage\\_study/reports/eis/chap3.pdf](http://www.usbr.gov/pn/programs/storage_study/reports/eis/chap3.pdf)