

YAKIMA BASIN INTEGRATED PLAN

Yakima River Basin Integrated Water Resource Management Plan

In June 2009, the Washington State Department of Ecology's Office of Columbia River (OCR) and the U.S. Bureau of Reclamation (Reclamation) brought representatives from the Yakama Nation, irrigation districts, environmental organizations, and federal, state, county, and city governments together to form a workgroup to develop a consensus-based solution to the Basin's water problems. Previous attempts to address water related issues were so narrowly focused that they couldn't garner the support of a wide range of Basin stakeholders. The approach was to develop a comprehensive plan that would address the broad range of issues confronting the River Basin.

Issues

The Yakima River Basin is affected by a variety of water resource imbalances that affect agriculture, anadromous and resident fish, and municipal and domestic water supply. Water shortages are an ongoing critical problem as demand outstrips supply.

Some key issues are:

- Lack of Adequate Water Supply
 - Farming income reduced and perennial crops at risk due to frequent drought events
 - Water rights in most of the basin are already fully appropriated - water rights for future municipal and domestic water demand uncertain
 - Hydraulic connectivity between groundwater and surface water results in reduced surface water flows and has the potential affect existing water rights

- Decline of Fish Population in the Basin
 - Typically, spring flows in the middle and lower Yakima River are not sufficient for outmigrating smolts
 - High summer flows in the upper Yakima and Cle Elum Rivers adversely affect rearing habitat for juvenile salmonids and has negative impacts to aquatic insect populations
 - Low winter flows in the upper Yakima and Cle Elum Rivers potentially impact over-wintering juvenile salmonids
 - Low summer flows from Prosser Diversion Dam to Chandler Power Plant negatively affect salmonid passage and riparian function
 - Dams block fish passage to upstream tributaries and spawning grounds
 - Floodplain functions are impeded by diking, channelization, wetland draining, gravel mining, and road construction

Goals

The **Integrated Water Resource Management Plan** addresses many of the problems in the Yakima River Basin. The plan will implement an adaptive management approach, utilizing climate change information, to provide sustained economic viability to the Yakima River Basin.

Goals of the Integrated Plan:

- Enhance Water Supply
 - Improve availability and reliability of irrigation, municipal, and domestic water supplies

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- Plan for increased demand, variability of supplies, and climate change uncertainties
 - Provide 70-percent supply for proratable users in drought years
 - Implement enhanced water conservation measures
 - Implement additional water market reallocation measures
 - Maintain reliable and efficient power generation
- Increase Fish Populations
- Achieve aquatic habitat improvements
 - Sustain health of river environment
 - Restore aquatic habitat
 - Restore fish passage
 - Address instream flows

The Proposed Integrated Water Resource Management Plan

The Workgroup issued a preliminary integrated water resource plan for the Yakima Basin in December 2009. Over the next year, the workgroup refined the plan. On March 9, 2011, the workgroup unanimously voted to support the final element of the Proposed Integrated Water Resource Management Plan.

OCR and Reclamation released the Final Programmatic Environmental Impact Statement for the Yakima River Basin Integrated Water Resource Management Plan (PEIS) on March 2, 2012. A PEIS is a broad analysis of a proposal and its alternatives. More focused analyses will be conducted for each site-specific action.

The proposed plan includes seven elements:

1. Reservoir Fish Passage

Restore access to habitat above five existing reservoirs -- Cle Elum, Bumping, Kachess, Keechelus, and Rimrock (Tieton Dam) -- and provide upstream and downstream passage to salmon, bull trout, and other fish. Restoring access would have the following benefits:

- Increase anadromous species abundance throughout the system
- Allow reintroduction of sockeye runs
- Provide greater genetic interchange for bull trout and other native fish
- Help fish cope with climate change impacts by providing access to high quality habitat at higher elevations

Additionally, upstream and downstream passage for bull trout at Clear Lake Dam would be achieved by modifying the existing fishway or building a new one.

2. Structural and Operational Changes

Modify existing structures and operations to improve flows, fish bypass, and smolt outmigration.

Activities include:

- Lake Keechelus-to-Lake Kachess Pipeline
- Kittitas Reclamation District canal Modifications
 - Pipe irrigation laterals along KRD main canal and south branch canal
 - Construct re-regulation reservoir to capture operational spills at Manastash Creek
 - Construct pump station on Yakima River to deliver flows to Manastash Creek water users

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- Reduce diversions for power generation at Roza and Chandler Dams to provide instream flows for fish outmigration
- Wapatox Canal – pipe or replace lining; consolidate diversions
- Raise maximum water level of Cle Elum Lake by 3 feet to add 14,600 acre-feet and improve instream flows

3. Surface Storage

Additional water storage would supply instream and out-of-stream flows to meet agricultural, municipal, and domestic needs. The three projects described below focus on in-basin solutions to address water supply and aquatic resource problems. Power generation is being considered for each facility.

- Wymer Dam and Pump Station
 - Construct a new dam and 162,500-acre-foot-capacity reservoir
 - Options for pump station at Thorp or upstream of Lmuma Creek
 - Provides fish, drought relief benefits
- Lake Kachess Inactive Storage
 - Pump additional 200,000 acre-feet from inactive storage for drought years
- Bumping Lake Enlargement:
 - Construct new dam downstream from existing dam for an additional 164,500 acre-feet storage
 - Provide carryover storage for irrigation, instream flows, flood control, fish passage.
- Investigate Inter-basin Transfer
 - Study the potential for transferring water from the Columbia River to a storage facility in the Yakima Basin

4. Groundwater Storage

Groundwater storage actions would use surface water to recharge aquifers and store water for later withdrawal and use:

- Aquifer Storage and Recovery - New aquifer storage and recovery facility for City of Yakima
- Shallow Aquifer Recharge:
 - Diverts water into designed ground infiltration systems (ponds, canals) during periods of excess runoff
 - Proposed pilot-testing in Kittitas Reclamation District and Wapato Irrigation Project (1-2 acres)

5. Habitat/Watershed Protection and Enhancement

Targeted Watershed Protections and Enhancements:

- Three key areas targeted for land acquisition actions, if available (or equivalent habitat type/size):
 - 46,000 acres in middle and lower Teanaway River Basin
 - 15,000 acres in Yakima River Canyon from Yakima River to I-82
 - 10,000 acres at Little Naches River headwaters and lands surrounding Taneum and Manastash Creeks headwaters
 - Consider potential Wilderness and Wild and Scenic River designations
- Mainstem Floodplain and Tributaries Fish Habitat Enhancement Program:
 - Flow restoration through irrigation system improvements
 - Fish barrier removal; restore fish passage in tributaries
 - Screening of diversions
 - Reconnect side channels and off-channel habitat to stream channels

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- Create improved spawning, incubation, rearing, and migration conditions
- Mainstem floodplain improvements – channel and habitat restoration
- Toppenish Creek Corridor Restoration Project

6. Enhanced Water Conservation

Consists of additional agricultural conservation actions not included in the current Yakima River Basin Water Enhancement Project implementation plans, along with municipal and domestic water conservation programs.

- Agricultural Conservation - up to 170,000 acre-feet:
 - Line or pipe existing canals or laterals
 - Construct re-regulation reservoirs
 - Install higher efficiency sprinklers
 - Reduce seepage, evaporation, and spills
- Municipal and Domestic Conservation Program:
 - Assess opportunities to improve efficiency for residential, commercial, industrial, and urban recreational uses
 - Promote efficient landscape irrigation practices
 - Expand education, incentives, and other measures to encourage voluntary efficiency
 - Establish best practice standards for accessing new water supplies

7. Market Reallocation

Market Reallocation is a process by which water resources would be reallocated through a “water market” and/or “water bank.”

- Water rights could be bought, sold, or leased
- Would improve water supply and instream flow conditions
- Two phases:
 - a. Near-term effort:
 - Build on existing water market programs
 - Take steps to reduce legal/regulatory barriers
 - b. Longer-term effort:
 - Focus on water transfers between districts
 - Allow fallowing within district; leases to outside district
 - Requires substantial changes to existing laws/policies

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