

ISSUES AND GOALS

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. Some key issues are:

Lack of Adequate Water Supply

- ◆ Uncertainty in ability to meet year-to-year demand for irrigation water
- ◆ Farming income reduced during dry years and perennial crops at risk
- ◆ Water rights in most of the basin are over appropriated; water rights for future municipal and domestic water demand uncertain
- ◆ Allocated surface water flows lost to groundwater pumping, including permit-exempt wells -- potentially makes groundwater rights junior to most surface water uses

Decline of Fish Population in the Basin

- ◆ Artificially high and low flows throughout the year adversely affect fish habitat, food sources, passage and migration
- ◆ 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 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
- ◆ Plan for increased demand, variability of supplies, and climate change uncertainties
- ◆ Provide reliable 70-percent supply for proratable users in drought years
- ◆ Maintain reliable and efficient power generation

Increase Fish Populations

- ◆ Sustain a healthy riverine environment
- ◆ Restore aquatic habitat
- ◆ Restore fish passage
- ◆ Address instream flows

WHAT IS A PROGRAMMATIC EIS?

A “programmatic” environmental impact statement (PEIS) is a broad analysis of a proposal and its alternatives. This document is then followed by a narrower analysis that covers site-specific actions. This approach is referred to as a “tiered environmental review” because it relies on different levels of analysis at different stages, moving from a broad initial focus to greater detail in subsequent documents. The two tiers are:

Tier I – Programmatic EIS

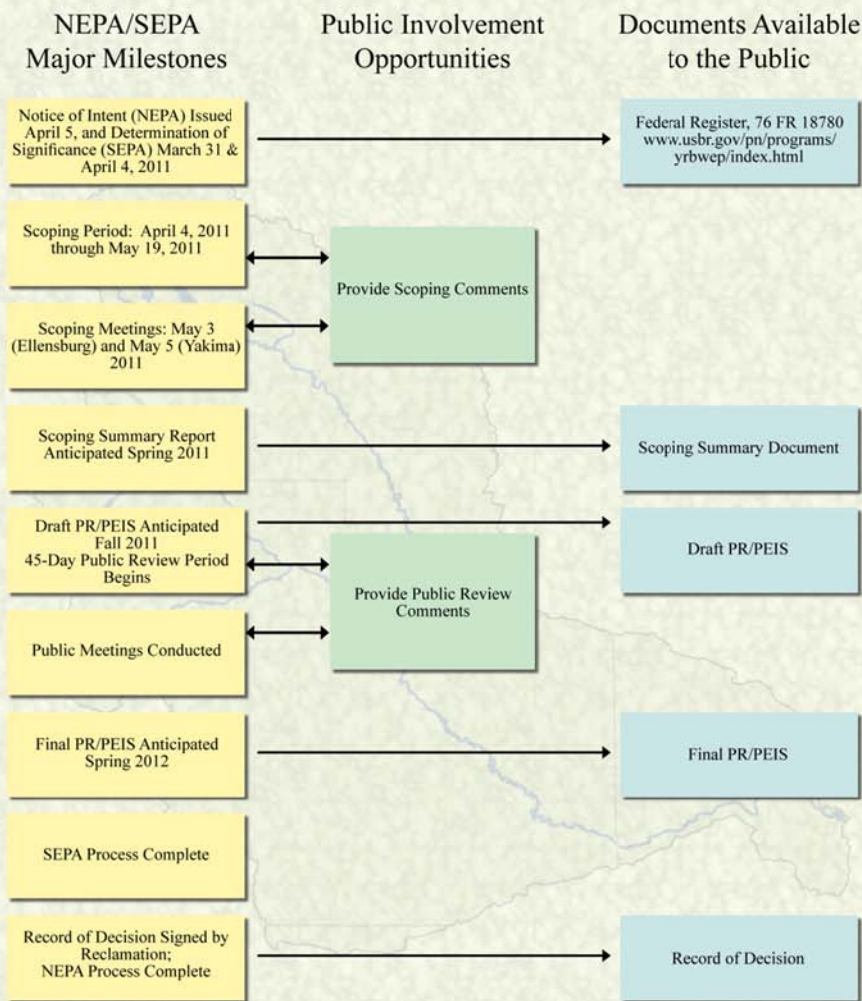
- ◆ Considers broad proposals containing a wide range of elements
- ◆ Considers proposals covering a long timeframe and/or large geographic area
- ◆ Effective in addressing cumulative effects of other past, present, and foreseeable actions
- ◆ Identifies mitigation strategies

Tier II – Site-Specific, EIS

- ◆ Analyzes site-specific effects of a proposed project or element arising from a Tier I review
- ◆ Identifies specific mitigation measures
- ◆ Enables detailed studies to be conducted closer in time to project implementation
- ◆ Expands opportunities for public and agency input



Yakima River Basin Integrated Water Resource Management Planning Report/Programmatic Environmental Impact Statement (PR/PEIS)



YAKIMA RIVER BASIN INTEGRATED WATER RESOURCE MANAGEMENT PLAN

Structural & Operational Changes

1. Raise the Cle Elum Pool by three feet to add 14,600 ac-ft in storage capacity.
2. Modify Kittitas Reclamation District canals to provide efficiency savings.
3. Construct a pipeline from Lake Keechelus to Lake Kachess to reduce flows and improve habitat conditions during high flow releases below Keechelus and to provide more water storage in Lake Kachess for downstream needs.
4. Decrease power generation at Roza Dam and Chandler power plant to support outmigration of juvenile fish.
5. Make efficiency improvements to the Wapatox Canal.

Fish Passage

Provide fish passage at:

1. Clear Lake
2. Cle Elum
3. Bumping
4. Tieton (Rimrock)
5. Keechelus
6. Kachess

Enhanced Water Conservation

1. Implement an agricultural water conservation program designed to conserve up to 170,000 acre-feet of water in good water years.
2. Create a fund to promote water use efficiency basin-wide using voluntary, incentive-based programs. Focus on outdoor uses as top priority.

Habitat Protection & Enhancement

1. Protect ~70,000 acres of land by acquiring high elevation portions of the watershed and forest and shrub steppe habitat.
2. Evaluate potential Wilderness Area and Wild and Scenic River designations to protect critical habitat.
3. Create a fish habitat enhancement program to address reach-level floodplain restoration priorities and restore access to key tributaries.

Market Reallocation

Employ a water market and/or a water bank to improve water supply in the Yakima River basin. Market reallocation would be conducted in two phases:

The near-term phase would continue existing water marketing and banking programs in the basin, but take additional steps to reduce barriers to water transfers.

The long-term program would focus on facilitating water transfers between irrigation districts. This would allow an irrigation district to fallow land within the district and lease water rights for that land outside the district.

Surface Water Storage

1. Build a 162,500 ac-ft off-channel surface storage facility at Wymer on Lmuma Creek.
2. Access an additional 200,000 ac-ft of water by tapping into inactive storage at Lake Kachess.
3. Construct a new dam at Bumping Reservoir to increase capacity to 190,000 ac-ft.
4. Begin appraisal work on potential projects to transfer water from the Columbia River to the Yakima Basin.

Groundwater Storage

1. Construct pilot projects to evaluate recharging shallow aquifers via groundwater infiltration. Full scale implementation may follow.
2. Build an aquifer storage and recovery facility allowing Yakima City to withdraw water from the Naches River during high flow periods and store it underground for use during low flow periods.



ENHANCED WATER CONSERVATION ELEMENT

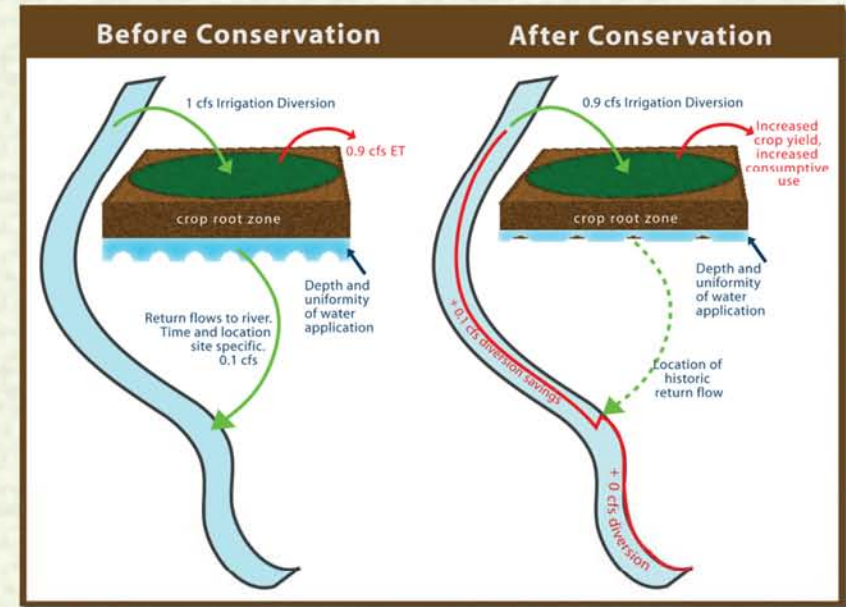
Consists of additional agricultural conservation actions not included in the current Yakima River Basin Water Enhancement Project implementation plans, along with municipal and domestic water conservation programs.

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



RECLAMATION
Managing Water in the West



FISH PASSAGE ELEMENT

◆ 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. This would have the 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

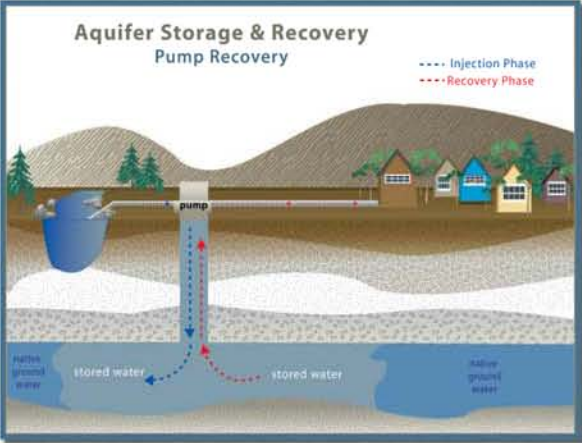
◆ Improve upstream and downstream passage for bull trout at **Clear Lake Dam** by modifying the existing fishway or building a new one



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

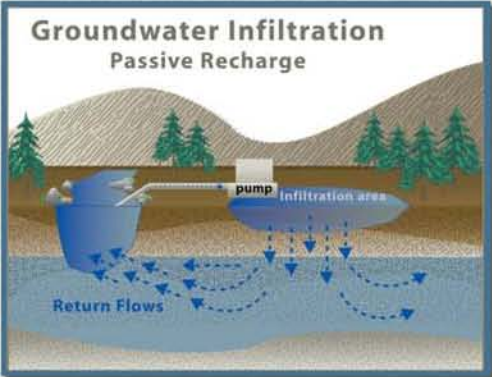
Aquifer Storage and Recovery

- ◆ New aquifer storage and recovery facility for City of Yakima



Groundwater Infiltration

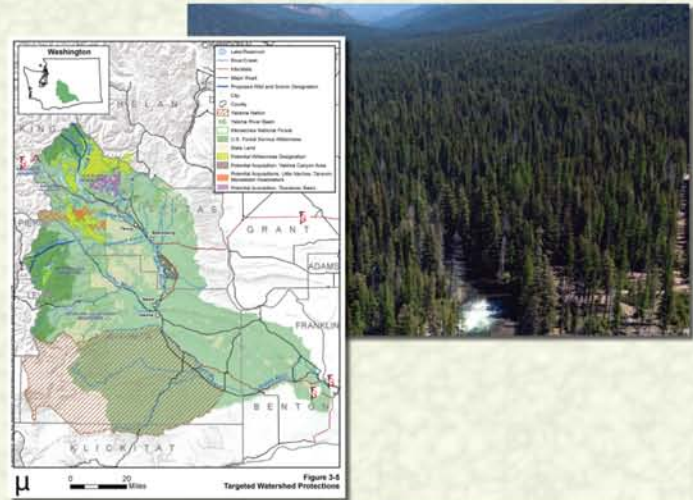
- ◆ Diverts water into designed ground infiltration systems (ponds, canals) during periods of excess runoff
- ◆ Proposed pilot-testing in Kittitas Reclamation District and Wapato Irrigation Project (1-2 acres)



HABITAT PROTECTION AND ENHANCEMENT ELEMENT

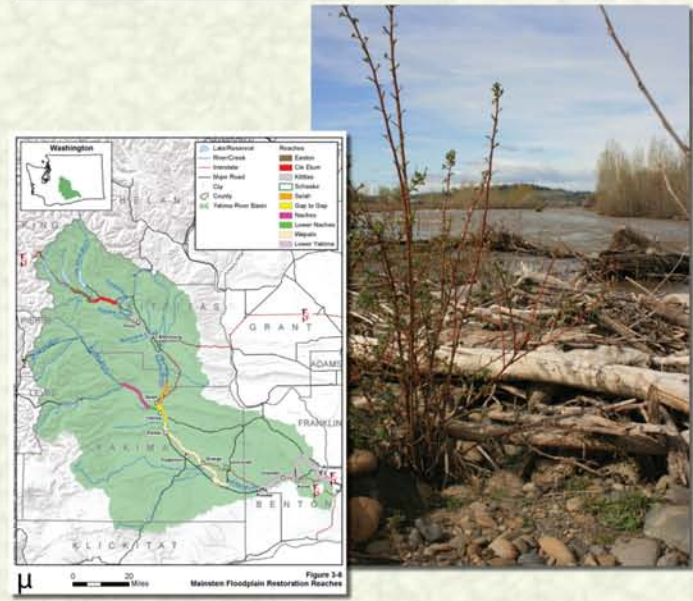
Targeted Watershed Protections and Enhancements

- ◆ 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

- ◆ Habitat enhancement – stable wood and other large organic debris
- ◆ 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
- ◆ Create improved spawning, incubation, rearing, and migration conditions
- ◆ Mainstem floodplain improvements – channel and habitat restoration
- ◆ Toppenish Creek Corridor Restoration Project



MARKET REALLOCATION ELEMENT

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:
 - Near-term effort
 - » Would build on existing water market programs
 - » Take steps to reduce barriers
 - Longer-term effort
 - » Focus on water transfers between districts
 - » Allow following within district; leases to outside district
 - » Would require substantial changes to existing laws/policies.

The image shows a map of the Yakima River Basin with several water rights reallocation elements highlighted in blue. Overlaid on the map are three 'Water Bank Application' forms, which are detailed documents for applying for water rights. The forms include sections for 'GENERAL INFORMATION ABOUT THE WATER RIGHT', 'PROVIDING INFORMATION ABOUT THE WATER RIGHT', and 'PROVIDING INFORMATION ABOUT THE WATER RIGHT'. The forms are tilted and overlapping, showing various fields for applicant information, water right details, and signatures.

STRUCTURAL AND OPERATIONAL CHANGES ELEMENT

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

Lake Keechelus to Lake Kachess Pipeline and new power generation facility

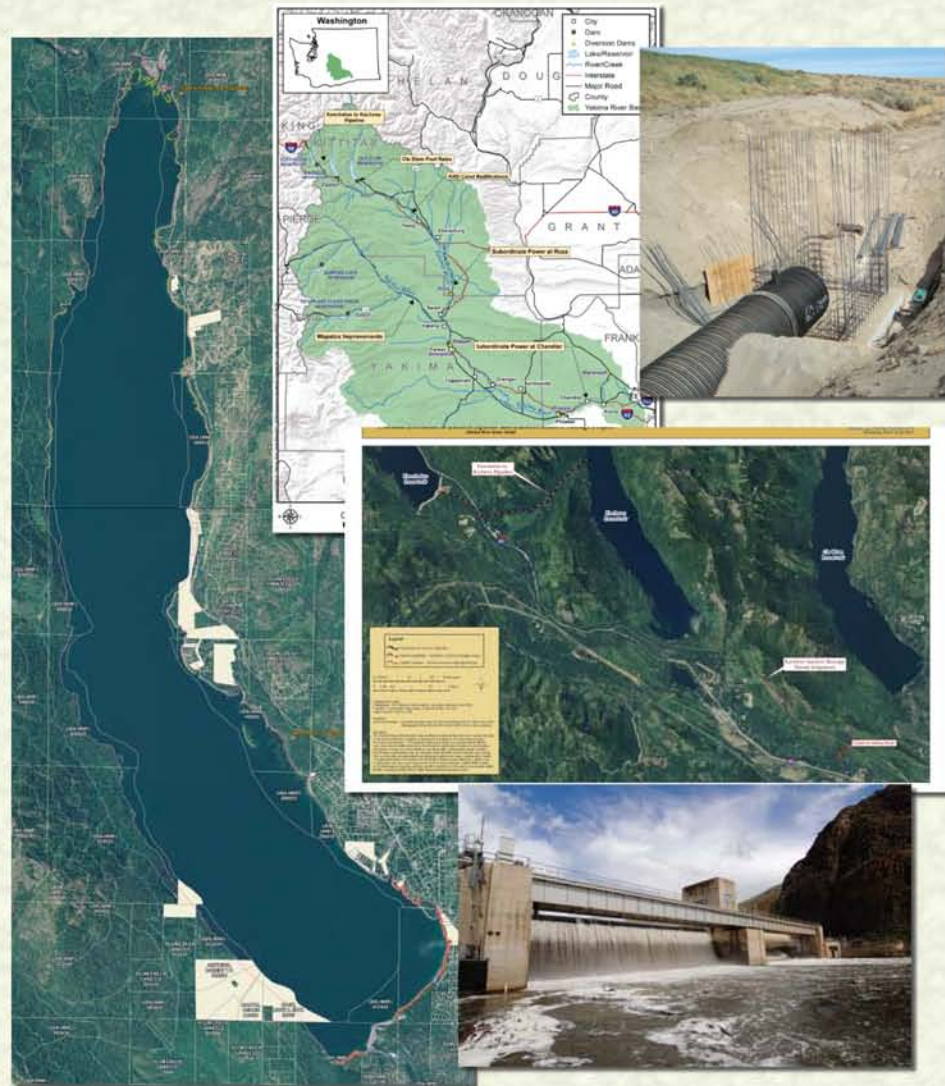
Kittitas Reclamation District canal modifications

- ◆ 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

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



RECLAMATION
Managing Water in the West



SURFACE WATER 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

