

**Discussion Draft Integrated Package  
YRBWEP 2009 Work Group  
Summary**

**PHASE I PROJECTS (Near-term = 0 to 10 Years)**

**Agricultural Conservation** - YRBWEP authorized conservation projects (listed in attached Appendix 1 Table)

**Municipal Conservation** - System efficiencies and reduced landscape irrigation demand through conservation projects and programs.

**Wymer Reservoir** – 162 KAF off-channel reservoir located on Lmuma Creek, filled by a pump station located near Thorp and a canal/pipeline around Kittitas Valley, and with power generation.

**Bumping Lake Enlargement** – Replace existing Bumping Lake Dam with a 200 KAF dam

**Reservoir Inactive Storage** - During drought years pump up to 100 KAF inactive storage from one existing reservoir

**Keechelus-to-Kachess Pipeline** - Transfer water from Keechelus reservoir to Kachess reservoir through approximately 5 miles of pipeline

**Complete Wapatox Project** - Modify the conveyance to reduce water needed to convey irrigation water

**Subordinate Power at Roza<sup>1</sup>** - Reduce or eliminate flows diverted from Roza Dam mid-March to May to supply Roza Power Plant during smolt migration. May also need to replace power for Roza pumping if BPA determines power generation no longer economically viable.

**Subordinate Power at Chandler** - Reduce or eliminate flows diverted from Prosser Dam mid-March to May to supply Chandler Power Plant during smolt migration. May also need to replace power for KID pumping if BPA determines power generation no longer economically viable.

**Raise Cle Elum Dam** - Raise dam 3 feet by modifying the spillway gates.

**Kittitas Reclamation District Main Canal and South Branch Modifications** - Replace lateral canals on the South Branch Canal with pressured pipe systems to allow water discharge directly to tributary creeks or to supply water users currently diverting from tributary creeks

**Institutional Improvements to Facilitate Market-Based Water Transfers** - Continue existing programs and policies and take additional steps to reduce impediments to transfers

**Municipal Aquifer Storage and Recovery** - Inject treated Naches River water into wells around the City of Yakima to replace current surface water diversions

**Groundwater Infiltration Prior to Storage Control** – Pilot and initiate groundwater recharge efforts in Kittitas, Toppenish and Roza areas prior to storage control: land

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<sup>1</sup> Roza Roller Gate project is not included because it is currently being implemented. This project may also help reduce a portion of the smolt outmigration flow need that would be met through subordination.

application and check structures on drains; increase return flows for downstream benefits and withdraw groundwater through wells and pump stations on drains

**Fish Passage at Cle Elum, Bumping, and Clear Lake Dams** - Install upstream passage for adult and downstream passage for juvenile fish

**Habitat Enhancement Package** - Workgroup recommendations being developed by the habitat subcommittee

### **PHASE I STUDIES/NEED VALIDATION AND DESIGN (partial list)**

- Yakima River Basin Study
  - Modeling – Detailed Benefits/Effects Analysis for 7 Elements
  - Need Validation/Timing
- Groundwater Recharge Preliminary Design, Pilot and Final Design
- Reservoir Inactive Storage Preliminary and Final Design
- Keechelus Fish Passage Preliminary and Final Design
- Clear Lake Fish Passage Design

### **PHASE II PROJECTS (MID-TERM = 11-25 YEARS)**

**Includes all elements of Phase 1, plus:**

**Additional Water Conservation** - Implement enhanced water conservation projects (listed in attached Appendix 1 and 2 Tables)

**Reservoir Inactive Storage** - During drought years pump up to 200 KAF inactive storage from one or more existing reservoirs

**Institutional Improvements to Facilitate Market-Based Water Transfers** - Continue programs developed in Phase 1 and take additional steps to reduce impediments to transfers between and out of irrigation districts

**Additional Groundwater Infiltration Prior to Irrigation Season** – Expand groundwater recharge efforts in Kittitas, Toppenish and Roza areas prior to storage control: land application and check structures on drains; increase return flows for downstream benefits and withdraw groundwater through wells and pump stations on drains

**Fish Passage at Keechelus Dam** - Install upstream adult and downstream juvenile passage

**Habitat Enhancement Package** - Workgroup recommendations being developed by the habitat subcommittee

### **PHASE II NEED VALIDATION/DESIGN (partial list)**

- Phases 2 and 3 Need/Timing Validation Update
- Groundwater Recharge Design
- Tieton and Kachess Fish Passage Preliminary and Final Design
- Columbia River Pump Exchange Preliminary and Final Design (With /without storage)

**PHASE III PROJECTS (Long-term = 26+ Years)**

**Includes all elements of Phases I and II, plus:**

**Columbia River Pump/Storage** - Pump water from the Columbia Basin to replace that quantity (options with storage or direct pump without storage).

**Fish Passage at Tieton and Kachess Dams** - Install upstream passage for adult and downstream passage for juvenile fish

**Habitat Enhancement Package** - Workgroup recommendations being developed by the habitat subcommittee