

Yakima River Basin Integrated Water Resource Management Alternative

- Package of elements designed to improve water supply and fish habitat
 - Fish passage
 - Structural and operational changes
 - New or expanded storage reservoirs
 - Ground water storage
 - Fish habitat enhancements
 - Enhanced water conservation
 - Market-based reallocation

Structural and Operational Changes

- Projects
 - Operational changes to existing facilities
 - Structural changes to existing facilities
 - Kittitas Reclamation District canal modifications
 - Complete Wapatox project

Operational Changes

- Increase out-migration flow below Roza Dam by subordinating Roza Power Plant
 - Reduce/eliminate power diversions during smolt out-migration period (April-June)
 - Instream flow targets need to be determined
 - Power not generated needs to be replaced by BPA grid
 - \$54,600 revenue lost per 100 cfs increase in Yakima River flow from Roza power plant subordination annually
 - Irrigation diversions would not be affected

Operational Changes

- Increase flows in Chandler reach during smolt migration (April-June) by subordinating Chandler Power Plant
 - Generation currently reduced whenever Yakima River below Chandler drops below 1,000 cfs

New Minimum Flow below Prosser Dam (Apr-Jun) (cfs)	Reduction in Revenue Generated			
	April	May	June	Total
1,100	\$1,600	\$1,700	\$2,700	\$6,000
1,200	\$3,300	\$3,700	\$3,900	\$10,900
1,300	\$4,200	\$6,200	\$5,100	\$15,500
1,400	\$4,700	\$8,700	\$8,500	\$19,900
1,500	\$5,300	\$11,300	\$8,400	\$25,000
1,600	\$6,300	\$13,900	\$10,400	\$30,600
1,700	\$7,500	\$16,500	\$12,300	\$36,300
1,800	\$8,700	\$19,300	\$14,200	\$42,200
1,900	\$10,300	\$22,000	\$15,900	\$48,200
2,000	\$12,300	\$24,400	\$17,700	\$54,400

Note: Current minimum flow below Prosser Dam is 1,000 cfs for April to June time period.

Structural Changes

- Wapato Irrigation Project improvements
 - Move point of diversion for Satus division
 - From Wapato Dam to new pump station near Granger
 - Leave 50 cfs water in Yakima River for additional 25 miles
 - Improve mainstem flows below Parker during irrigation season
 - Improve water delivery for irrigators

Structural Changes

- Kennewick Irrigation District Pump Exchange Project
 - Construct new pump station and change diversion from Yakima River to Columbia River
 - Increase Yakima River flow by 411 cfs for 11 miles between Prosser Dam and Chandler Power Plant
 - Increase Yakima River flow by 138 cfs below Columbia Irrigation District diversion at Wanawish Dam

Structural Changes

- Chandler juvenile bypass outfall changes
 - Current configuration concentrates predators that prey on fish as they exit bypass
 - More diffuse outfall
 - Additional cover or safe recovery area
 - Studies required for Wanawish, Parker, Wapato, and Roza Dams to determine if similar situation exists

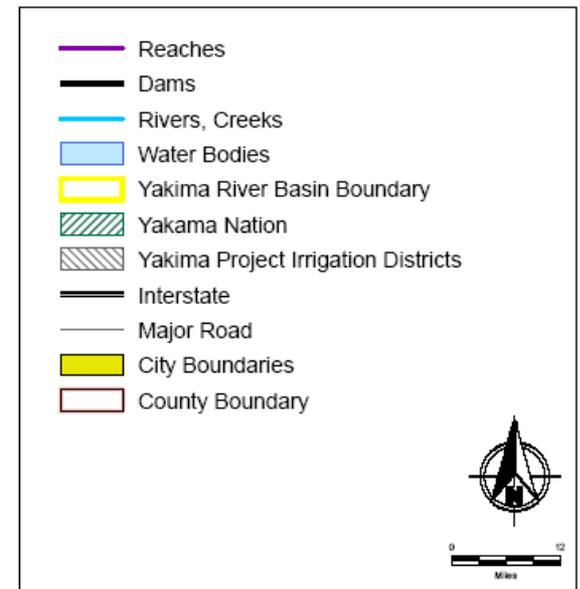
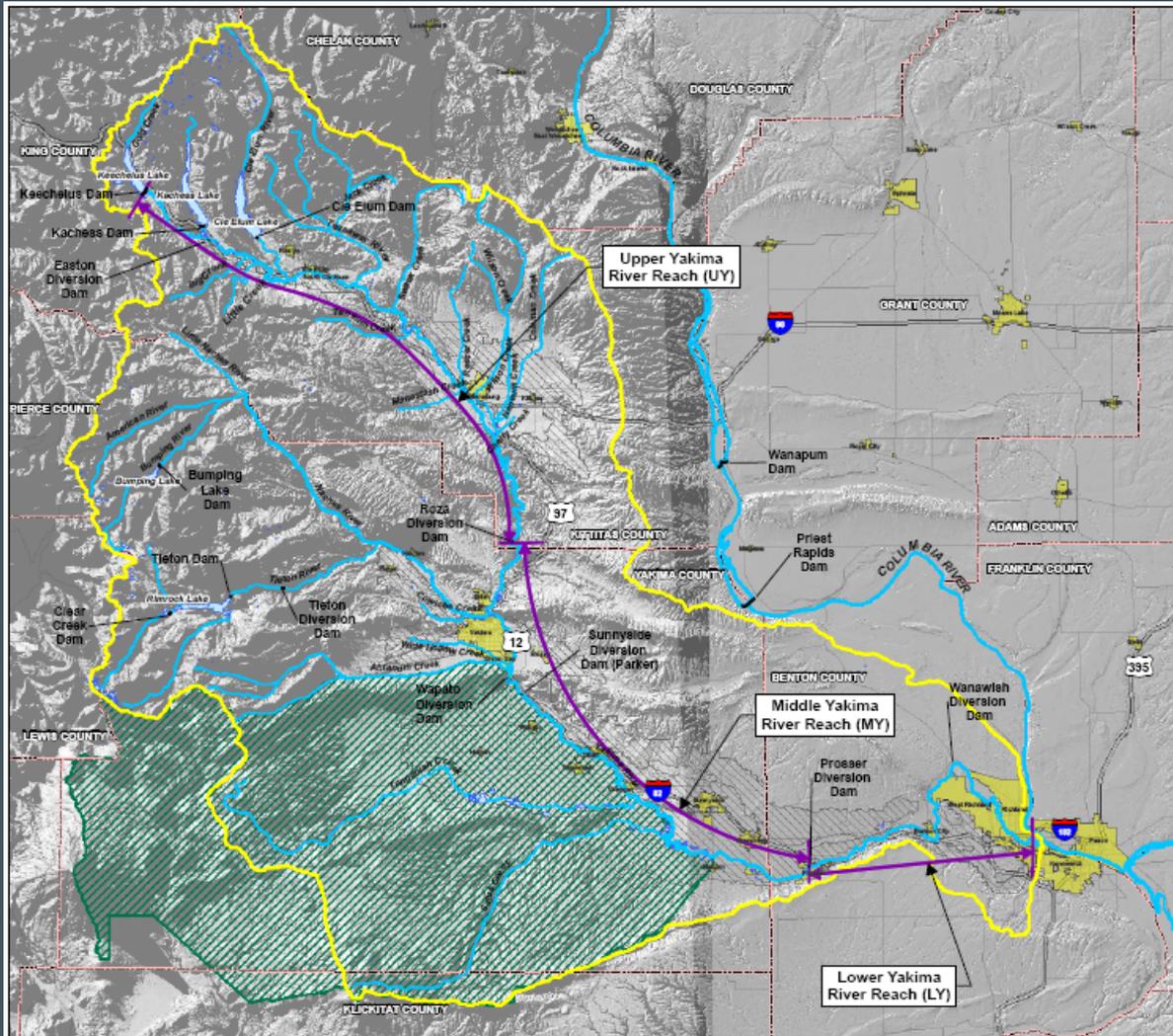
Structural Changes – KRD Canal Modifications

- Purpose is to increase flows in Taneum, Manastash, Big, and Little Creeks
 - Lateral piping along Main Canal and South Branch Canal
 - Convert ten laterals to pressurized pipe deliveries
 - 14.9 cfs freed capacity to supply to creeks during irrigation season
 - Pumping near tail end of South Branch Canal
 - Install pump station and install pressurized pipe system
 - 25 cfs freed capacity to supply to creeks during irrigation season
 - Pumped water could be supplied to KRD water users or Manastash Creek water users

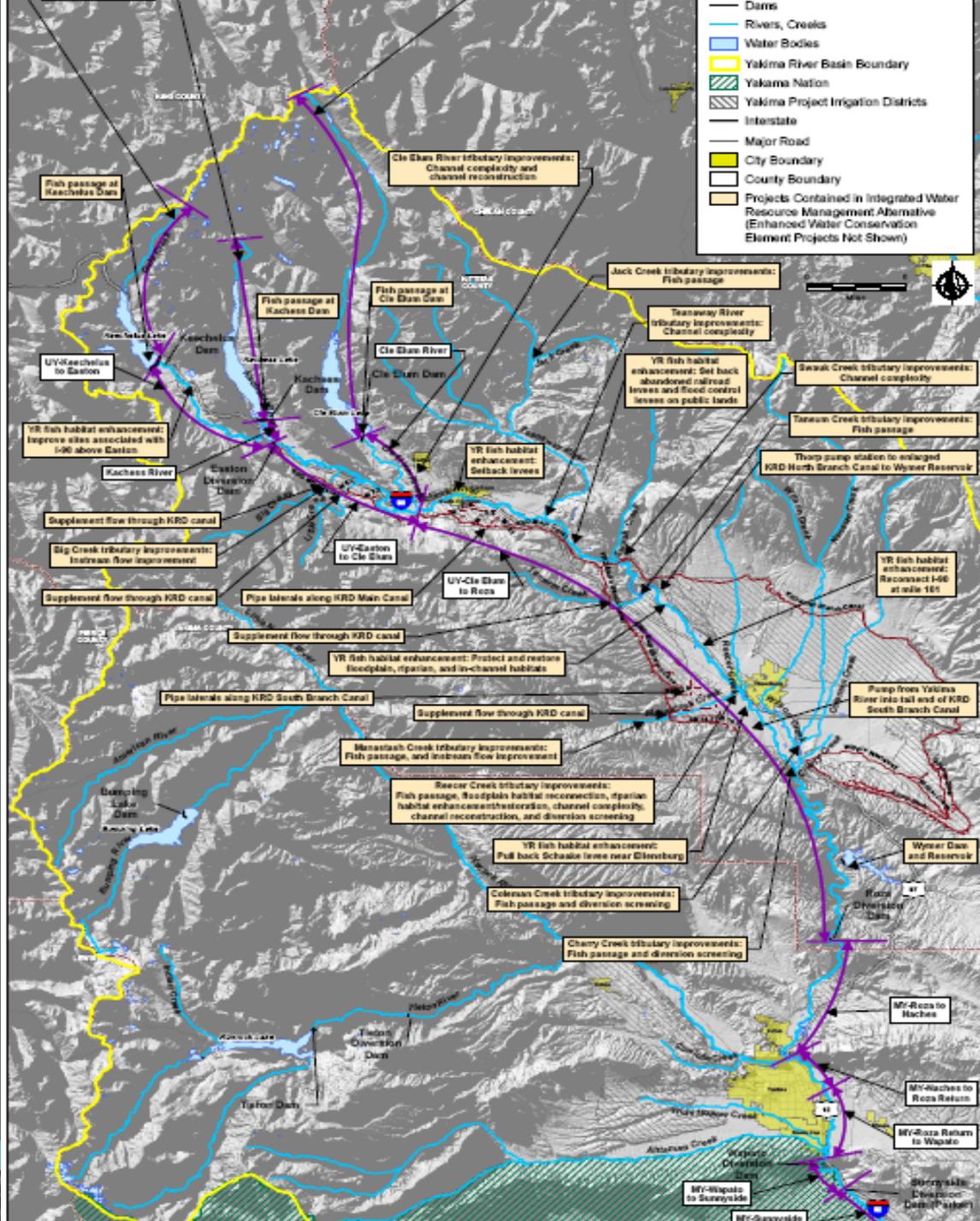
Structural and Operational Changes – Complete Wapatox Project

- Modify conveyance system for Wapatox diversion
 - Eliminate extra canal carriage water but supply current water users
 - Increase instream flow in Naches River for 7.4 miles by 110 cfs if supply to water users is pumped from Naches River
 - Wapatox and Naches-Selah diversions may be consolidated
 - Increase instream flow in Naches River for 1.3 miles by 100 cfs

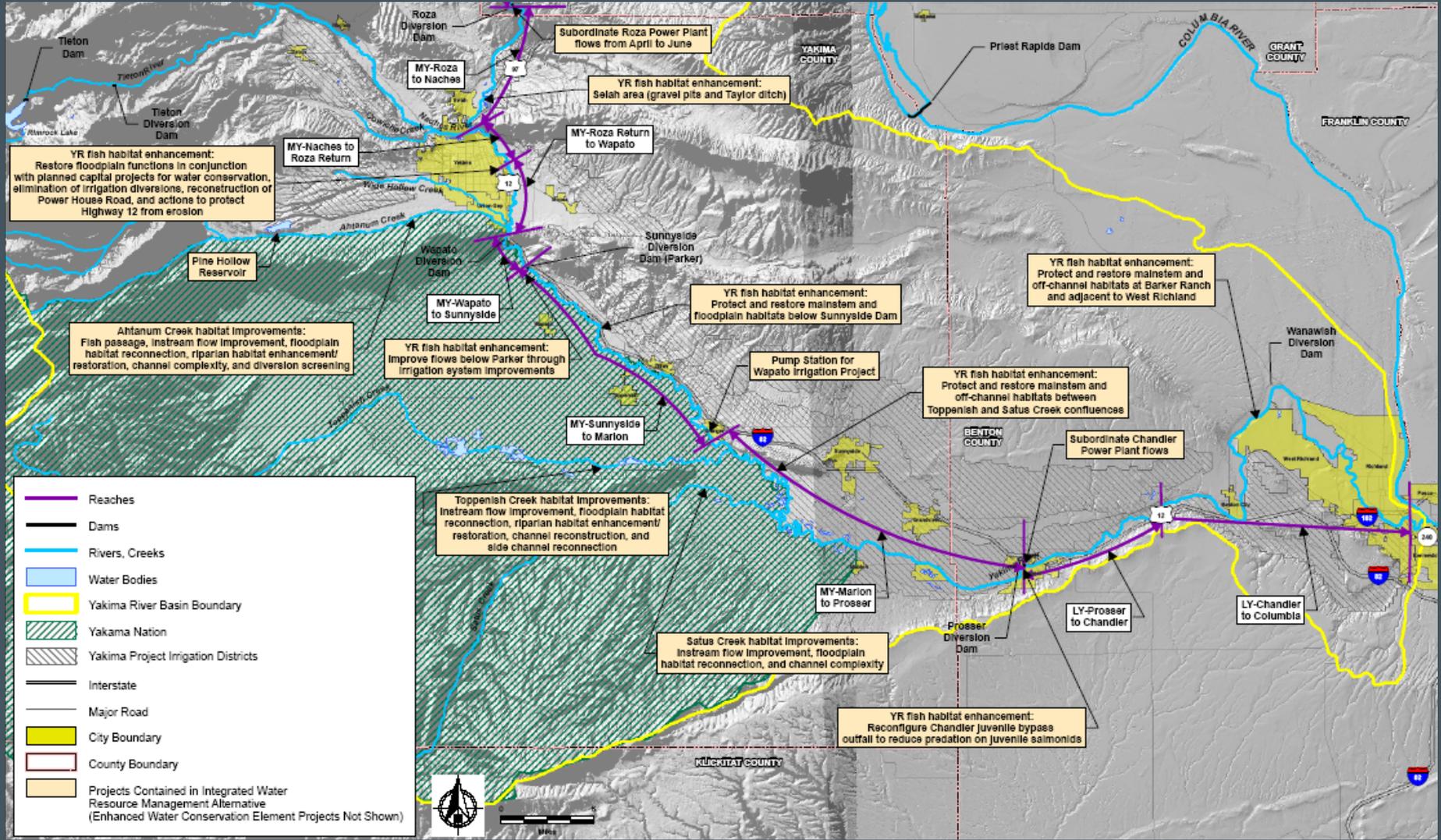
Yakima River Basin



Upper Yakima River Basin



Middle and Lower Yakima River Basin



Naches River Basin

