

**Yakima Basin Study
Modeling Scenarios**

No.	Scenario	Hydrology	Economics	Fish
1	No Action	Starts with Current Operations Model, as modified by the Reservoir Joint Operating Committee for Climate Change modeling.	Extend current or foreseeable economic trends, as forecasted by local and state governments, adjusted for foreseeable uncertainties, such as crop prices.	Fish habitat projects over 20 years based on current BPA and SRB Funding.
		Incorporate YRBWEP conservation projects as modeled in No Action Alternative from Storage Study EIS	Consumer-oriented demands for water, to improve the quality of life for residents and visitors, will grow faster than producer-oriented demands associated with irrigated agriculture.	
		No significant adjustment of flow targets or prorationing	Continue current water rights, with sufficient voluntary transfers from agriculture so water shortages do not constrain municipal/domestic growth. No additional transfers for instream flows.	
		Additional water is used according to YRBWEP guidelines.	Irrigators and municipalities do not expand their use of financial tools, such as markets and insurance, to reduce the impacts of droughts.	
		Represents about 20 years ahead, some funding unsecured	Current and foreseeable trajectories of ecosystem health continue, with increasing regulatory protections for water quality, at-risk species, and their habitats.	
		Increases flows below Parker by a couple hundred cfs		
		Municipal demand no change from today. Population growth will continue and will use the "low" growth scenario we developed.		
		Municipal/domestic conservation: "no-action scenarios" from the municipal/domestic water conservation potential TM. (some water savings under no-action.)		
		Agricultural demand no change from today		
2	Integrated Plan	Starts with No Action Scenario	Underlying economic trends and forces (population growth, etc.) are the same as in the No Action Alternative.	Fish passage at Cle Elum, Bumping and Clear Lake fish passage
		Incorporates 2030 Municipal and Agricultural demands	Continue current water rights but, within hydrological and operational constraints, expand the market-based reallocation of water from lower-value to higher-value uses, so the marginal value is roughly equal across uses.	Multiple habitat improvements in the flood plain and tributaries
		Incorporates Enhanced Agricultural Conservation projects	Expand opportunities for water users to receive payment for their provision of ecosystem services, such as fish habitat.	Flow augmented survival and spawning improvements
		Incorporates GW Infiltration projects		
		Additional water is used per Ecology EIS		

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		All water savings accrue to TWSA; TWSA controls flow targets		
		Use increased storage in average & wet years for increased summer flows or spring freshets		
		Sculpt remaining storage to better meet flow targets		
		Incorporates K-to-K Pipeline and Kachess Inactive Storage projects		
		Incorporates Wymer, with Thorp Pump Station project		
		Incorporates Enlarged Bumping and Cle Elum Raise projects		
		Additional water is used to reduce prorationing in 70% years		
		Additional water and storage/control used to reduce flip-flop		
		Additional water used to meet prioritized flow targets		
		Additional population growth and municipal/domestic demand (medium level, from water needs TM) (also see note above about moving this into the Economics column).		
		Additional municipal/domestic conservation (level to be determined by Workgroup, using "bookends" TM as context.		
2a	Integrated Plan with only Non-Structural Elements	Starts with Integrated Plan (remove storage and conveyance projects)	Same as in Integrated Plan.	Fish habitat projects over 20 years based on current BPA and SRFB Funding.
		Incorporates Enhanced Agricultural Conservation projects		Flow augmented survival and spawning improvements
		Incorporates GW Infiltration projects		
		Additional water is used per Ecology EIS		
		All water savings accrue to TWSA; TWSA controls flow targets		
		Use increased storage in average & wet years for increased summer flows or spring freshets		
		Sculpt remaining storage to better meet flow targets		
		Municipal demand change based on population growth over 20 years. Water supply constrained and limits population growth above the no-action scenario.		
		Agricultural demand no change		

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2b	Integrate Plan Adjusted	Starts with Integrated Plan Scenario	Same as in Integrated Plan.	Fish passage at Cle Elum, Bumping and Clear Lake fish passage
		Incorporates adjustments to be suggested by Work Group		Multiple habitat improvements in the flood plain and tributaries
				Flow augmented survival and spawning improvements
2c	Integrated Plan with Climate Change	Starts with Integrated Plan Scenario	Same as in Integrated Plan.	Fish passage at Cle Elum, Bumping and Clear Lake fish passage
		Uses hydrology associated with two climate change scenarios	Expect increased scarcity of water in late summer, with higher marginal values for all uses. Marginal values will increase more for uses that have less flexibility and fewer substitutes for water.	Multiple habitat improvements in the flood plain and tributaries
		Incorporate climate-impacted demand changes		Flow augmented survival and spawning improvements
		Adjust operations to minimize prorationing		
		Adjust operations to meet prioritized flow targets		
		Possible changes to flood control rule curves		
		Municipal demand change based on population growth over 20 years. Higher outdoor demands due to longer growing season and higher summer temperatures.		
		Agricultural demand Increased due to higher crop irrigation requirements and longer growing season.		