

Technical Memorandum

2010 Basin Study – Yakima River Basin



To: Keith Underwood, HDR
From: Andrew Graham, HDR
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Title: Timing, Triggers and Sequence, Yakima Basin Integrated Plan
CC: Ben Floyd, Anchor/QEA

The preliminary Integrated Water Resources Management Plan (Integrated Plan) for the Yakima River Basin issued in 2009 identified approximately 20 actions and projects designed to improve water supply and fish habitat.

This memorandum outlines a proposed schedule for carrying out the actions listed in the plan. The attached graphic contains a first draft of the implementation schedule. Colors are used in the graphic to show four stages of activity: 1.) Authorization; 2.) Studies; 3.) Project Environmental Review, Permitting and Design; and 4.) Project Construction or Program Activation.

All projects listed in the preliminary plan are included at this time (we will revise this sequence if any projects are added or deleted in the final YRBWEP Workgroup recommendation).

Programmatic Actions and Small Infrastructure Projects

One theme of the Integrated Plan is to make rapid progress in areas where this is feasible. The programmatic actions and small infrastructure projects are grouped together because they can be launched very quickly if authorized and funded.

The programmatic actions (labeled “P”) are those that will fund a variety of projects throughout the basin over a period of time. It is assumed these can be carried out in full over a 20-year time frame, with benefits growing over time. The implementation time frame, however, will be dependent on funding authorizations.

The Market Reallocation element is slightly different, in that completion of this element occurs when adopted reforms enable a freely-functioning market. It is shown as completed after 10 years, to allow for experience with at least one drought year that could be expected over that time period. Market transfers obviously would continue beyond the ten-year schedule to establish the market.

High Priority Infrastructure Projects

This category includes the large surface water storage and fish passage projects that were identified for early action in the preliminary Integrated Plan. Projects are staged so that storage and fish passage projects advance in parallel with each other.

In the fish passage category, the project sequence is based on preferences expressed by the Yakama Nation. Cle Elum Reservoir Fish Passage has been identified as the top priority, followed by Bumping Reservoir Fish Passage. Each of these projects would be constructed

concurrently with one of the major surface water storage projects. Fish passage at Bumping Reservoir would be constructed at the same time as reservoir construction at Bumping.

In the surface water storage category, any of the three large, in-basin projects could come first. As recommendations for a funding and authorization approach are developed, the sequence of projects in this category should be the same as those recommendations. I've shown Wymer first, followed by Bumping, followed by Kachess Inactive Storage (including Keechelus-to-Kachess Pipeline¹). The first surface storage project would be completed within ten years, and all three projects would be completed within fifteen years. This balances the interest in rapidly moving forward to improve supplies, with the reality that major construction projects require time to secure funding, plan, permit and execute, including mitigating environmental impacts.

Projects Requiring Further Study or Demonstration of Need

The 2009 preliminary Integrated Plan identified several projects in out-years or that require further study. These include projects requiring further study or piloting; fish passage projects that should be staged after Cle Elum and Bumping; and the Columbia River Pumping and Storage project that requires going outside the Yakima River Basin for water supply. Studies for these projects should be initiated in the first ten years, with ground water infiltration and Columbia River pumping and storage initiated first.

Fish passage projects in this category are shown in the 2020's, after the earlier fish passage projects and surface storage projects (Wymer, Bumping, and Kachess Inactive Storage). This maintains the balance between fish passage and surface storage.

After the initial studies are completed, the Columbia River and Roza Alternate Supply projects are shown as contingent on triggers for implementation. Triggers relate to need and feasibility. Need for using water from the Columbia River will depend on which of the earlier projects are completed and how effective they are, how the Basin economy develops over time, and whether and how fast climate change occurs. For example, if one or more of the in-basin surface water storage projects (Wymer, Bumping and Kachess Inactive storage) cannot be permitted or constructed, then the Columbia River Pumping and Storage Project could be needed relatively soon. If the other projects are completed, then the need for this project may depend more on the pace of climate change and development of the Basin economy.

It is suggested these triggers be assessed every five years, in conjunction with updated water needs assessments. If the need for the Columbia River project is demonstrated and the project is feasible, then request project funding and schedule implementation. Since the Columbia River project would provide the source for Roza alternate supply, the Roza project is given the same set of triggers relating to need and feasibility.

¹ I-90 crossing of K-to-K Pipeline to be constructed early (2012), in conjunction with WSDOT construction project.

Timing, Triggers and Sequence, Yakima Basin Integrated Plan

(Note: This draft shows all projects listed in 2009 Preliminary IWRMP. Any projects eliminated from final IWRMP will be removed from the schedule).

	2011-2020										2021-2030												
	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
Programmatic Actions and Small Infrastructure Projects																							
Market Reallocation (P)	█		█																				
Agricultural Conservation (P)	█		█																				
Municipal Conservation (P)	█		█																				
Tributaries Habitat Enhancement Program (P)	█		█																				
Mainstem Floodplain Restoration Program (P)	█		█																				
Fish Passage at Clear Lake	█		█				█																
Conveyance Improvements at Wapatox	█		█		█																		
Subordinate Power Diversions at Roza & Chandler	█		█																				
KRD Main Canal and South Branch Modifications	█		█		█																		
Raise Pool Level at Cle Elum Dam	█		█		█																		
High Priority Infrastructure Projects																							
Wymer Reservoir & Conveyance	█		█			█																	
Cle Elum Reservoir Fish Passage	█		█			█																	
Bumping Reservoir Enlargement	█		█							█													
Bumping Reservoir Fish Passage	█		█							█													
Kachess Inactive Storage with K-to-K Pipeline ¹	█		█							█													
Projects Requiring Further Study or Demonstration of Need (Implementation and Timing of These Projects will be Contingent on Study Results and Future Decisionmaking)																							
GW Infiltration Prior to Storage Control	█		█			█		█															
Municipal ASR Opportunities	█						█				█		█										
Fish Passage - Keechelus	█						█				█		█										
Fish Passage - Tieton	█						█				█		█										
Fish Passage - Kachess	█						█				█		█										
Update Water Needs Assessment					█						█						█						
Columbia River Pumping & Storage	█		█			T						T						T					
Roza Alternate Supply & Dam Removal ²	█		█			T						T						T					

(P) = Programmatic Actions

T = Assessment of triggers for possible implementation.

¹ I-90 crossing of K-to-K Pipeline to be constructed early (2012), in conjunction with WSDOT construction project.

² Roza alternate supply would come from the Columbia River pumping & storage.

Color Codes:

- █ Authorization
- █ Studies
- █ Project environmental review, permitting & design
- █ Project Construction or Program Activation