

**YAKIMA RIVER BASIN STUDY
PLAN OF STUDY SUMMARY
For YRBWEP Work Group
DRAFT: 11/23/09**

Reclamation and Ecology have secured funding to conduct a Basin Study to establish the technical basis and decision support for the Yakima River Basin Integrated Water Resource Management Package (Integrated Management Package). The Integrated Management Package is being developed under authority provided to Reclamation by the existing Yakima River Basin Water Enhancement Project (YRBWEP) Act (P.L. 103-434, October 31, 1994, as amended by P.L. 105-62, October 13, 1997, and P.L. 106-372, October 27, 2000). This effort, in effect, constitutes the next phase of YRBWEP. The study will supplement information provided through previous efforts to evaluate water supply and aquatic resource problems as well as to identify potential remedies.

Purpose and Need

In June 2009, the WA State Dept of Ecology released its Final Environmental Impact Statement, Yakima River Basin Integrated Water Resource Management Alternative (Ecology Publication #09-11-012). The preferred alternative (Alternative 2) stated:

“This alternative includes a package of elements to improve water supply and fish habitat. The elements in the package include both surface and groundwater storage, structural and operational changes to facilities, fish passage and fish habitat improvements as well as enhanced water conservation and market-based reallocation of water resources. These elements are described individually below; however Ecology intends that, if selected, this alternative would be implemented in an integrated manner. Enhanced conservation, market-based reallocation, storage and fish passage and habitat enhancement projects would be completed as part of a total package, not as separate projects to maximize benefits to fish and water supply.”

On June 30, 2009 the WA State Department of Ecology and the US Bureau of Reclamation convened the Yakima River Basin Water Enhancement Project (YRBWEP) 2009 Work Group and invited a wide range of stakeholders to participate.

The Work Group met in regular open meetings between June 30 and December 9, 2009 to discuss the alternatives available to address the objectives of YRBWEP.

Realizing Ecology’s objectives will require sound technical support and the participation and endorsement of fully empowered public officials capable of making decisions and

recommending them into the legislative, administrative and legal processes of the affected counties, Washington State, Tribal and Federal governments. In order to gain the support of the Washington Legislature, Congress and the public, it will be necessary to find consensus on a Final Integrated Package acceptable to all the stakeholders.

At this time, full consensus between the stakeholders on the integrated package cannot be achieved due to lack of adequate means to evaluate and compare individual actions for integrated benefits to compose a package. The hydrologic and operational restrictions from project introduction affect subsequent actions in an Integrated package. For example, Naches, Yakima and Columbia Rivers have more independence than actions on the Yakima stem alone. Precise information regarding the benefits, costs and timing of potential programs, projects and actions and the effectiveness of conservation programs in meeting basin goals is required. Full consensus also cannot be achieved at this time due to the lack of identification, characterization and cost analysis of water supply and storage proposals. Resolution of policy and management issues, not yet delineated, must precede and guide technical analysis.

The Basin Study and Final Integrated Management Package are intended to accomplish the following objectives:

- 1) Achieve stakeholder consensus around a well defined set of strategies for resolving water supply and stream flow imbalances as well as other aquatic resource issues,
- 2) Delineate a clear pathway for Integrated Management Package implementation, and
- 3) Provide the basis for a request by Ecology and stakeholders for Congressional and State Legislative authorization and appropriations for the Integrated Management Package.

Findings

Drought is a regular occurrence in the Yakima River Basin, and appears to be increasing in frequency. Droughts negatively affect the economy and the environment of the Yakima Basin, and management of the water supply system can and has also had negative effects on the environment. Numerous past plans and studies in the basin have addressed the issue of drought, water supply and management of the water resource to improve the productivity of the aquatic ecosystem but none have been fully implemented. The basin will face additional constraints on its water supply from many sources, including growth of the human population, decreasing groundwater supplies and, as Ecology stated in the above-cited EIS:

“The effects of climate change could alter run-off and precipitation in the Yakima River basin and affect water management throughout the region. Changes in run-off and precipitation would require Ecology, Reclamation and other agencies to adapt water management to respond to changing conditions as they occur.”

Significant conservation improvements have been made in the Yakima River Basin pursuant to the authority of the YRBWEP and more conservation projects should be pursued and /or completed. The Work Group has identified a partial list of potential projects that collectively address water supply, habitat and fish passage and begins to identify means by which those projects can be integrated into an implementation program. (See Attachment 1)

It will be necessary to develop or construct at least 800,000 acre-feet of new water supply, at least 2/3rds of which should be accomplished through delivery of additional water supplies from the Columbia River mainstem into its Yakima River tributary and development of new storage facilities within the Yakima River Basin.

Actions to improve water supply must be coupled with changes in water supply management, guided by new policies. In addition to the actions currently under consideration by the work group, the integrated package should also contain the following management and administrative elements in development of the package and implementation of the package into the future. The Final Integrated Management Package should:

- Establish a Management Committee whose members and role in supervision of the Final Integrated Package over time should be defined.
- Be designed to provide flexibility and adaptability in the face of climate variability.
- Integrate management of the Yakima River and Columbia River. The package should maximize the contribution of Yakima River water and habitat to restoration of the fishery resources of the Columbia River Basin. It should create a means by which Upper Columbia River water can supplement the water supply of the Yakima River Basin without environmental degradation. It should integrate US Bureau of Reclamation's and US Corps of Engineers' decision making regarding the Yakima and Columbia Rivers. Integrated management should include a broadly accepted, reasonably calibrated hydrological model for the Yakima River system and Columbia River system that can be used and trusted to analyze various management regimes of the two river systems in a coordinated and mutually beneficial manner.
- Consider, pursue and develop contemporaneously of all the components of all the elements of the Package. The pace of consideration and development of any component of any element should not be an impediment to the pace of consideration and development of any other.
- Establish and fund a "water court" to adjudicate conflicts pertaining to water supply, fisheries or the environment related to the elements of the package.
- Establish a means to update the anticipated water supply needs of the Yakima and Columbia River Basins in conjunction with required updates to local governmental growth management ordinances.

- Develop all elements on a reasonably equitable schedule so as permit system integration and to accomplish all elements of the plan within reasonably comparable deadlines.
- Integrated with existing and ongoing management of growth, natural resources, and water use in the Yakima Basin under existing and potentially new federal, tribal, state and local authorities. Elements of the package should include implementing agencies for each action, and be accompanied by commitments from those agencies to for further cooperation.
- Be a component of the growth management policies and programs and the shoreline management policies and programs of Benton, Kittitas and Yakima Counties.
- Be funded on an integrated basis. Funds should be solicited and spent in such a manner so as to permit integrated development of the plan.
- Develop a Memorandum of Agreement that provides that no component of any element of the plan should be constructed or otherwise put in place without the subsequent consensus of the Work Group on the Final Integrated Package

A Final Integrated Package should not be adopted until each component of each element of the plan has been fully characterized as to costs, authorizations or fiscal resources necessary to effectuate each component, thereby permitting the Work Group to prioritize components of the Plan.

Basin Study Process and Scope

The Basin Study will be performed by a Technical Committee formed by The YRBWEP Work group with Reclamation and Ecology as co-leads.

The scope of the Basin Study is summarized as follows, with Tasks 6, 11 and 12 conducted by the YRBWEP Work Group, and the remainder by the technical Committee with consultation from Work Group:

Task 1 Characterize and quantify the water resources of the basin, including those available from transfer from the Columbia River.

Task 2 - Determine the current and future water needs for out-of-stream uses for the next 100 years (or longer?). This includes the following water use components: municipal and industrial uses, domestic (exempt) well uses, and demand for irrigated agriculture, particularly focusing on quantifying additional supplies needed to provide dry year/drought relief for proratable or junior irrigation districts or irrigators. Future irrigation needs will be predicated on no increase in irrigated acreage, which is consistent with YRBWEP legislation.

Task 3 – Quantify instream resource needs by major reach, by season.

Task 4 – Develop detailed descriptions for elements and projects identified in the preliminary Integrated Management Package.

Task 5– For each element and project, conduct an analysis of potential environmental, engineering, and/or legal barriers to implementation and estimated costs. At the completion of this task, the YRBWEP Work Group may decide to modify the preliminary Integrated Management Package before proceeding to subsequent tasks.

Task 6 – Develop draft or interim rules and policies for the distribution and management of new water supplies or changes in infrastructure as these actions come on-line. These rules and policies should include the distribution of new water between in-stream and out of stream uses, the need for alteration or modification of management points on the Yakima River (i.e. Parker), potential drought trigger points for accessing inactive, carryover, or Columbia River supplies.

Task 7 – Using models such as Yakima RiverWare and other analytical tools that can incorporate the rules and policies as they affect operation and the availability of the proposed benefits, evaluate the efficacy of various strategies for meeting out-of-stream and instream needs, including both storage (above ground and aquifer storage) and non-storage options (demand reduction, agricultural and municipal conservation measures, and water banking/marketing). Evaluations will consider the cumulative effect of multiple water supply options implemented in combination, and will do so under different operation scenarios to optimize the Integrated Management Package and establish the availability of proposed benefits. Operational scenarios will be based on the interim rules and policies developed in task 6.

Task 8 - Using models and other analytical tools, evaluate the total ecosystem benefits of implementing instream water supply strategies in conjunction with efforts to achieve other aquatic resources objectives, including fish passage at major Reclamation reservoirs in the Basin and habitat restoration.

Task 9 – Using models and other analytical tools, evaluate the manner in which potential climate impacts might affect the selection, sequencing, and timing of elements and projects that may be included in the Final Integrated Management Package. Such evaluations will also address means by which flexible approaches and adaptation to climate change and other uncertainties could be built into the Integrated Management Package.

Task 10 – Based on the evaluations conducted as part of Tasks 7-9, develop technical recommendations for timing and sequencing of projects.

Task 11 – Assist the YRBWEP Work Group in developing final recommendations for the Final Integrated Management Package. The Integrated Management Package elements and projects may be adjusted by the YRBWEP Work Group based on analytical outputs related to the sensitivity of the elements and projects to environmental and socioeconomic concerns and uncertainties.

Task 12 – Prepare Basin Study Report and Final Yakima River Basin Integrated Water Resource Management Package in conjunction with the development of an agreement by the Work Group

that reflects acceptance of, and commitment to, implementation of the elements of the final Package by all Work Group participants.

Milestones for Workgroup Meetings:

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| Meeting 1 – Report on quantified needs out-of stream and instream by reach. | March 2010 |
| Meeting 2 – Detailed description component projects. | April 2010 |
| Meeting 3 – Engineering/Environmental/Legal/ constraints to implementation. | May 2010 |
| Meetings 4-8 (as needed) – Analytical Outputs, Optimization– modeling and combination of alternatives synergy and linkages – resulting in most effective package –
2010 | June – Sept |
| Meeting 9 – Formal Recommendation.
November 2010 | October – |

Attachment 1

REVIEW DRAFT

Recommendation to Advance a Preliminary Yakima Basin Integrated Water Management Package

Yakima River Basin Water Enhancement Project 2009 Work Group

(For Consideration on December 7, 2009)

Recommendation:

The YRBWEP 2009 Workgroup finds that the plan outlined in the attached report provides a balanced mix of projects and actions and offers substantial promise for improving water supply and fish habitat in the Yakima River Basin. **The plan to be successful shall be developed as one integrated package and not in two or three phases.** We support the elements listed below as the preliminary foundation for restoration of fisheries and improving water supply in the Yakima Basin.

Water Supply

1. A program to reduce water demand through extensive Water Conservation measures for agricultural and municipal water users.
2. Additional water supply through, Cle Elum Dam (Pool Raise), Kachess Reservoir (Inactive Storage), water storage at Wymer Dam enlarged Bumping Lake (annual and carryover storage) and direct pumping from the Columbia River with or without associated storage. Potential storage sites exist at Wymer, Burbank, and Selah Creek.
3. Conjunctive use of groundwater storage including infiltration prior to the irrigation season, management and use of the surficial aquifer during the irrigation season, and municipal Aquifer Storage and Recovery.
4. Market-based reallocation of water rights through modifications of existing laws and regulations.

Modification to Existing Operations

5. Potential modification of existing facilities and operations including completion of the Wapatox Project, subordination of the Roza and Chandler power plants and improvement of the Kittitas Reclamation District South Branch Canal to improve flow in tributaries.
6. Modify existing facilities and their operation to work in cooperation with the operation of new facilities and revised basin operations.

Fish Passage

7. Fish Passage at all six Yakima Project reservoirs.

Habitat Enhancement

8. Habitat enhancement program addressing reach-level floodplain restoration priorities; tributaries with emphasis on passage and screening; upper and middle Yakima tributaries restoration.

Further steps should be taken to confirm the content of a specific proposal for state and federal funding. These steps should include:

- Update and validate in and out of stream water needs to be met by the Integrated Package;
- Improve comparable cost estimates for the major construction projects identified;
- Improved understanding of the joint effects of the various projects and actions combined (benefits and impacts); and,
- Utilize a scorecard to rank or prioritize projects.

Using this information, an updated draft of the Integrated Package should be prepared, with a view to proposing for Legislative and/or Congressional authorization.

The Workgroup recommends it continue to meet in 2010 at key milestones to provide input to Ecology and Reclamation as these further investigations are carried out, and prior to submittal of a final request for authorization of the Integrated Package to the State Legislature and United States Congress.