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Frequently Asked Questions about the Potential Black Rock Project and the Yakima River Basin Water Storage Feasibility Study (revised September 2005)

What is the Yakima River Basin Water Storage Feasibility Study?
In 2003, Reclamation was directed by the Congress to address the feasibility of constructing additional water storage facilities for the Yakima River Basin in Washington. While the Storage Study will investigate several alternatives, the congressional authorization directed that initial study activities examine storage of Columbia River water in an off-stream reservoir (the Black Rock alternative).

What are the Study objectives?
The Storage Study will identify storage options that could provide benefits to the (1) irrigation water supply for junior water rights holders in dry years; (2) flows in the Yakima River for fish; and (3) municipal water supply.

What alternatives will the Storage Study examine?
A potential Black Rock project is one alternative being assessed as part of a solution to water storage and fishery issues in the Yakima River Basin. Other alternatives being evaluated at this stage are in-basin storage opportunities--a Bumping Lake enlargement, a new Wymer dam and reservoir, and a Keechelus Reservoir to Kachess Reservoir pipeline.

What was included in the *Appraisal Assessment of the Black Rock Alternative,* dated December 2004 (*Appraisal Assessment*)?
This report addresses only the Black Rock alternative. It is limited to certain engineering and technical aspects of this potential project and is based on preliminary, appraisal-level information only.

What is not included in the *Appraisal Assessment*?
Economic, financial, environmental, cultural, and social evaluations of the Black Rock alternative have not yet been completed. This report is not a feasibility study.

What is Reclamation's conclusion about the Black Rock alternative?
Reclamation has concluded that a potential Black Rock project appears to be technically viable and would meet study objectives. Reclamation plans to carry this alternative forward in the plan formulation phase of the study.

How is the *Summary Report, Appraisal Assessment of the Black Rock Alternative,* different from previous reports about Black Rock?
This report summarizes information from six technical documents prepared by the Bureau of Reclamation and consultants. These documents were released in February 2005, and provide more detailed design and cost estimates than previous studies.

What facilities would a Black Rock alternative include?
The Black Rock alternative, as described in the *Appraisal Assessment*, would consist of:

- A pumping plant and tunnel through Umtanum and Yakima Ridges which would pump Columbia River water about 6 miles from Priest Rapids Lake to a new reservoir, requiring a total lift of about 1,400 feet.

A reservoir and dam. One alternative for a reservoir would have an active capacity of 1.3 million acre feet, while the other would have an active capacity of 800,000 acre feet.

At its largest option, the storage dam in the Black Rock Valley would be approximately 600 feet high and 6,000 feet long.

A 14-mile-long tunnel and a 3-mile-long pipeline that would carry water from the reservoir to Roza Canal, with a capacity as large as the current combined capacity of Roza and Sunnyside canals.

Two new hydropower generation plants at the Roza and Sunnyside delivery system discharge points to provide a combined capacity of 53 megawatts.

What is the cost estimate for the Black Rock alternative, and what does this include?

The preliminary total project construction cost estimate, based on appraisal-level analysis, is approximately $3.5 - $4 billion (June 2004 price levels). This includes field construction contract costs of $2.8 -3.0 billion, plus estimated additional, noncontract costs (such as construction management, land acquisition, regulatory compliance, environmental and cultural mitigation, etc.).

What are the most significant questions about the Black Rock alternative?

If the Black Rock alternative moves into the next phase of the storage study, economic, financial, environmental, cultural, social, and further technical analyses will be performed. These analyses will identify and answer many questions about the alternative. As the public engages in discussion and debate over the next few months, more questions will arise about the Black Rock alternative and the other three alternatives currently being studied. Questions will also likely emerge and be answered during the NEPA analysis of feasible alternatives.

Why are cost estimates in the *Appraisal Assessment of the Black Rock Alternative* so much higher than for Washington Infrastructure Services (WIS) report?

Washington Infrastructure Services (WIS) was commissioned by Benton County in 2001 to conduct a very preliminary analysis (or reconnaissance-level study) to determine if there were “fatal flaws” with the Black Rock concept. WIS's preliminary estimate of field construction costs was $1.7 billion. Reclamation’s appraisal is a more complete analysis, including new field work. Significant differences are described below:

The depth to foundation level (i.e., rock upon which to build a dam) was determined to be 200 feet instead of 20 feet as assumed by WIS;

Reclamation designed for a larger and more complete system to deliver the exchange water to the users, while WIS did not design a distribution system beyond the delivery point at the Roza Canal;

Reclamation designed for a more extensive water exchange of 869,000 acre-feet instead of 500,000 acre-feet as assumed by WIS;

Price inflation for materials has occurred since the consultant’s report was done, especially for cement and steel.

Who is paying for the Storage Study?

Reclamation requires non-Federal parties to pay 50 percent of the cost of feasibility studies unless the Congress directs otherwise. So far, the State of Washington has committed $4 million to the Storage Study and the Congress has appropriated a similar amount.

What is the total estimated cost of the Storage Study?

The feasibility study is expected to cost $8-12 million over a period of 5 years.

Who would pay for the cost of constructing a project?

Reclamation seeks up-front cost sharing from non-Federal parties to pay for a substantial portion of the cost of constructing a project. The balance of construction costs are funded from congressional appropriations received by Reclamation. Without satisfactory non-Federal financing, Reclamation could not recommend that the Congress authorize the construction of a project or appropriate monies for construction.
In addition, under Reclamation law, project beneficiaries repay the Federal construction costs of water projects that are allocated to irrigation, municipal and industrial water, and power generation. Construction costs allocated to fish and wildlife purposes, because they provide general public benefits, are not reimbursable.

What is the estimated annual cost of the operation and maintenance of the Black Rock alternative, and who would pay that?
Total annual O&M costs have not yet been determined. Project beneficiaries are required by Federal Reclamation law to pay O&M costs allocated to irrigation, municipal/industrial uses, and power generation unless the Congress directs otherwise.

What is the estimated annual cost of pumping the water from the Columbia River into the Black Rock Reservoir?
Annual pumping costs are estimated by the Bonneville Power Administration to be between $22 million and $121 million (average annual cost of $55 million - $62 million).

What are the engineering issues that require more study?
Technical questions that would be studied intensively for the Black Rock alternative are: (1) potential for leakage, some of which could affect groundwater at the Hanford site; and (2) seismic characteristics of the dam site, given that it is located in an area with earthquake potential.

Are there other issues that have not been addressed?
Yes. Economic, financial, environmental, cultural, and social aspects will be addressed in the next phase of the Storage Study.

What is necessary for a viable water exchange?
Meeting the objective of reducing Yakima River withdrawals will require willing exchange partners, situated in the right location on the river, and water available from the Columbia River. The Black Rock Assessment confirmed that Columbia River water would be available, but only when flows exceed the quantity necessary to meet obligations for fish under the Endangered Species Act. That is why it would be necessary to store the water in a reservoir, because water can be pumped from the Columbia River only during limited times, primarily during the winter.

What is the impact to the Columbia River of these withdrawals?
Part of the Black Rock Assessment was to determine the time of year during which withdrawals from the Columbia River could be made without adverse effects. Withdrawals would be made only when specific hydrologic conditions could be met to avoid negative impacts.

What are the major water rights issues?
Any diversion from the Columbia River would require the granting of a water right from the State of Washington, administered by the Department of Ecology. In accordance with State water law, Reclamation in 2004 initiated a water withdrawal in the event the exchange project is constructed. The effects of a potential water exchange on participants' existing Yakima River water rights must be examined further. There would be no net increase in the amount of water withdrawn, but the point of diversion would change from the Yakima River to the Columbia River.

What would be the effect on the fishery?
The potential project is intended to have positive benefits to the Yakima River fishery through restoration of more normative flows, while avoiding adverse impacts to the Columbia River by diverting only when water supply conditions permit.

How does this potential project tie into the effort by Federal agencies to restore anadromous fish throughout the Columbia River Basin?
Water operations described in the Black Rock Assessment conform to flow requirements established in the 2004 Biological Opinion on operation of the Federal Columbia River Power System. The Black Rock alternative would improve habitat conditions on the Yakima River for anadromous fish.

What are the benefits to recreation?
Recreation benefits have not been analyzed yet. A large reservoir between Yakima and the Tri-Cities would attract recreational users. However, operation of the reservoir for its primary purpose would result in drawdown of the reservoir in the summer. This drawdown may create mud flats which could potentially limit recreational use at times.

What happens next?
Reclamation is continuing with the Pre-Plan Formulation (Phase 2 of the September 2003 Plan of Study) activities relating to the Yakima Basin Storage alternatives. These activities will determine the availability of water from the Yakima River for these alternatives, impacts to the normative instream flow concept if additional water is stored from the Yakima River Basin, and identify preliminary benefits. A range of technically viable alternatives, including the Black Rock alternative, will be compared in the next phase of the Storage Study (the plan formulation phase), and one or more alternatives will be selected for further analysis in the final (feasibility) phase of the study.

How will Reclamation decide which alternatives to carry into the plan formulation stage?
Reclamation intends to carry the Black Rock alternative and the other Yakima Basin storage alternatives into the next phase of the Storage Study, the plan formulation phase.

How will Reclamation decide which alternatives to carry forward into the feasibility phase?
The feasibility phase, the last stage of the Storage Study, is the detailed evaluation of selected alternatives to meet the Storage Study objectives in terms of engineering, economic, and environmental considerations, cultural and social acceptability, and financial feasibility. Preparation of the Feasibility Report/Environmental Impact Statement is part of this final phase. Alternatives which meet the three water supply objectives of the study and are deemed reasonable will be carried forward into the feasibility phase.

Where can I find the *Appraisal Assessment*?
More information about the Yakima River Basin Water Storage Feasibility Study, including the *Summary Report, Appraisal Assessment of the Black Rock Alternative* (a summary of preliminary findings of the *Appraisal Assessment*) is available at www.usbr.gov/pn/programs/storage_study. Printed copies are also available upon request from Mr. Kim McCartney, Study Manager, Bureau of Reclamation, 1917 Marsh Road, Yakima, WA 98901; (509) 575-5848, ext. 370. The technical reports from which the information in the *Summary Report* is drawn are posted on the same web site.

How can I find out more?
Reclamation will continue to hold public meetings to explain reports, study process, and the study schedule. Please check our web site and sign up on the Washington Department of Ecology's list-serve to be notified of future events. Questions and comments about the Storage Study and its process will be posted on the web site.