DAHO Department of Water Resources

Idaho Water Resource Board Surface Water Storage Projects

Helen Harrington December 6, 2012











Why investigate new water storage?

"...residents of Idaho have been experiencing shortages in water availability and deliveries in recent years;...continued, unprecedented drought, population growth and urban development, conjunctive administration, Endangered Species Act requirements and other additional demands are being placed on the already scarce water resources of the state" (House Joint Memorial No. 8, 2008 Legislature)

















Why the Idaho Water Resource Board?

Idaho Constitution Article XV Section 7, in part:

- *"There shall be constituted a Water Resource Agency ... to formulate and implement a state water plan for optimum development of water resources in the public interest."*
- " ... shall have the power to construct and operate water projects ... "

















Legislation and Activities

- 2008 Idaho Legislature directed the Idaho Water Resource Board to investigate additional water storage projects across the state.
 - House Joint Memorial No. 8 (HJM 8)
 - Senate Bill 1511 (S1511)
 - ➢ House Bill 644 (H644)
- Water Storage Studies directed by HJM8
 - Minidoka Raise/Enlargement Study
 - Henrys Fork Basin Study
 - Lower Boise River Feasibility Study
 - Weiser-Galloway Project Studies
 - > Others

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Minidoka Dam/Lake Walcott Enlargement Study

- Undertaken through cooperative agreement with U.S. Bureau of Reclamation
- Study was accelerated due to planned rehabilitation of Minidoka Dam (could rehabilitation and raise be done at same time?)
- Study determined that raising the dam 5 feet is technically achievable and would result in an additional 67,115 acre-feet of storage
- Cost would be \$205 million (2010 dollars) or \$3,054/acre-foot
- The IWRB is not planning further work on this project at this time, however IWRB may consider future actions if economic or other conditions change











Henrys Fork Basin Study

- IWRB is partnering with U.S. Bureau of Reclamation which provided funds and expertise through its Basin Study Program
- The Basin Study Program requires evaluation of more than storage options includes opportunities to develop water supplies and improve water management while sustaining environmental quality.
- Alternatives moved to "reconnaissance level" evaluation:
 - Existing and New Surface Storage
 - Managed Ground Water Recharge
 - Agricultural Conservation and Management
 - Municipal and Industrial Conservation
 - Market based alternatives













Henrys Fork Basin Study

- Preliminary concepts for Surface Water Storage options being evaluated at reconnaissance level:
 - Island Park Enlargement 1-8 ft raise (8,000 74,000 AF additional)
 - Ashton Dam Enlargement 73 ft raise (20,400 AF additional)
 - Moose Creek (60,000 AF)
 - Lane Lake off-stream (68,000 AF +)
 - Spring Creek/Canyon Creek (10,800 20,000 AF)
 - Moody Creek (15,000 37,000 AF)
 - Upper Badger Creek (16,300 47,000 AF)
 - Teton Dam -Compare with updated costs for rebuilding Teton (50,000 - 288,000 AF)
- Study expected to be complete in June-July 2013











Weiser-Galloway Project

- As previously studied: 900,000 acre-foot reservoir on Weiser River, 300 ft high rock-fill embankment dam, reservoir surface area approx. 6918 acres, 4.6 MW hydropower plant.
- Project was studied extensively by Corps of Engineers in 1980's as a flow augmentation project with few other benefits to Idaho or the Weiser Basin.
- Potential benefits:
 - In-Basin: water supply and irrigation, flood control, recreation, economic development
 - State-wide: replace flow augmentation coming from Upper Snake and Boise Rivers; power generation at dam and increased generation through Hells Canyon
 - Downstream: improve reliability of flow augmentation; increased downstream power generation through Lower Snake and Columbia dams











Weiser-Galloway Project

- IWRB and Corps of Engineers completed review of past work and documented two remaining questions that must be addressed prior to moving ahead with further work:
 - Core drilling at dam site to supplement drilling done in 1980's to rule out questions about dam abutment material and potential faults at the dam site.
 - Hydrologic and operational analysis, together with other interested parties including IPCo, BOR, BPA, and others, to verify and quantify the project benefits
- IWRB approved spending up to \$2 million to evaluate these critical items
- IWRB is coordinating with the Corps of Engineers and other interested parties to complete these analyses.















Lower Boise River Feasibility Study

IWRB initiated the study in the Boise River Drainage to:

- 1. Carry out legislative direction to investigate additional water storage for multiple purposes (flood control, water supply, other)
- Evaluate storage to meet future water needs in the Treasure Valley (80,000 – 170,000 acre-feet)



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Lower Boise River Feasibility Study

Proposed Treasure Valley Comprehensive Aquifer Management Plan (TV CAMP)

- Identifies key challenges and actions/tools for managing water supply in the future
- Documented need for increased water supply in the future (80,000 to 170,000 acre-feet over next 50 years)
- Wet years getting wetter and dry years getting drier water storage capacity not large enough to hold increased wet-year flows to meet needs in dry years
- Investigation of new surface water storage is one of several actions identified in the plan
- > Information generated for the TV CAMP can be used in the feasibility study
- On November 28, the proposed plan was remanded to a committee for further discussion. The committee is meeting on Dec. 13 to decide on the next steps.











Lower Boise River Feasibility Study

- IWRB partnering with U.S. Army Corps of Engineers
 - Corps technical expertise
 - Presence in the basin (Lucky Peak)
 - IWRB awarded \$500,000 credit toward study for previous planning efforts
- Agreement between Corps and IWRB executed in May 2009 initiated part of the feasibility study:
 - Water storage site screening analysis
 - Existing condition inventory
 - Flood damage and economic analysis
 - Plan next phase of feasibility study
- Water storage options are being evaluated for their potential as multi-purpose projects reduce flooding, provide additional water supplies, recreation, etc.
- "Water Storage Screening Analysis" identified Arrowrock Enlargement (317,000 acre-feet of new storage) as preferred alternative

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Lower Boise River Feasibility Study

Next Steps

- Amend the 2009 Feasibility Study Agreement (required) to include:
 - Develop, compare and evaluate alternatives (including Arrowrock Dam raise)
 - Environmental compliance (NEPA, ESA, etc.)
 - Public review and meetings
 - Prepare feasibility report and decision document (required for congressional authorization and construction).
- IWRB authorized staff to develop an adjusted scope and costs for a full feasibility study for review by the IWRB
 - Assumed total study costs = \$3 million
 - Assumed non-federal share = \$1.5 million
 - IWRB/State has already committed \$870,000
- IWRB encouraged IDWR staff to coordinate with local leadership and the public.













Questions