



40% Of Idaho's population is located in the watershed

\$10 BILLION Infrastructure at risk in 0.2% chance floodplain

\$242 MILLION In estimated damages with a 1.0% chance flood

\$2.6 BILLION In estimated damages with a 0.2% chance flood

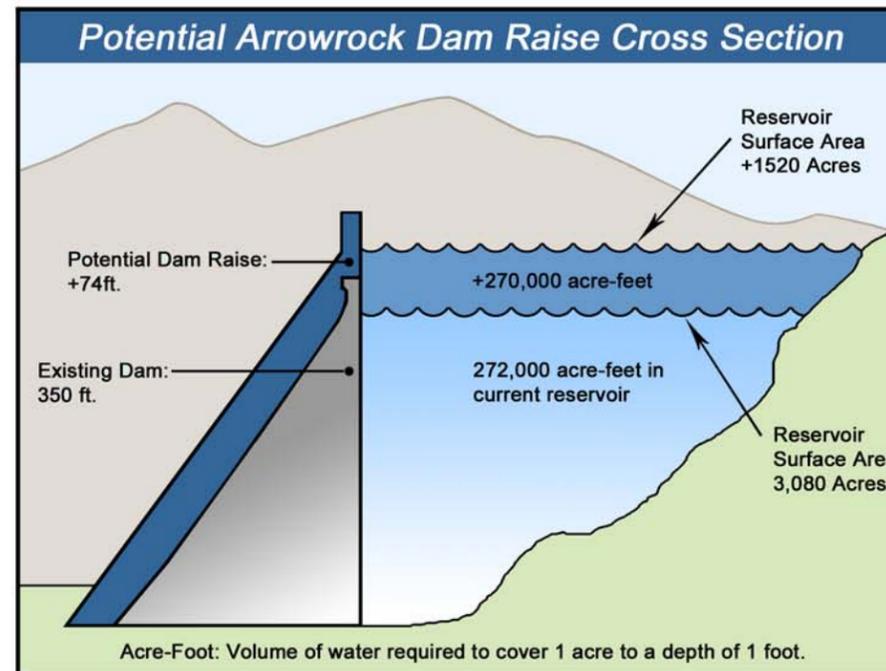
80,000 - 170,000 ACRE FEET Estimated additional future water supply need

STUDY BACKGROUND

The Idaho Water Resource Board and the U.S. Army Corps of Engineers are partnering on a feasibility study that will evaluate options to reduce the significant flood risk to Boise, Idaho and other communities along the Boise River. This study will also evaluate alternatives to meet the current and future water supply needs of the entire lower Boise River watershed, while identifying opportunities to improve the ecosystem, improve fish and wildlife habitat, and minimize or eliminate adverse socioeconomic effects. The Idaho Water Resources Board is the non-Federal sponsor for the \$3 million study. In addition, the study team is working closely with the US Bureau of Reclamation, US Forest Service, and other agencies.

POTENTIAL MEASURES

- Arrowrock Dam Raise
- Managed Aquifer Recharge
- Upgrade Irrigation Headgates
- Replace Push-Up Dams
- Upgrade Bridges
- Controlled Flooding of Gravel Pits and Ponds
- Temporary Conveyance of Water in Floodplain
- Flow Split structure @ Eagle Island
- Non-Structural Measures
- Enhanced Conservation Measures



74ft. Dam Raise Would Provide an Additional:

~100,000 acre-feet



For Water Supply (34%)

&

~170,000 acre-feet



Exclusively For Flood Risk Management (66%)

Acre-Foot: Volume of water required to cover 1 acre to a depth of 1 foot.



Boise River Feasibility Study

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

The U.S. Army Corps of Engineers (Corps) and Idaho Water Resource Board (IWRB) are partnering on a feasibility study on the Boise River. The feasibility study will evaluate alternatives to reduce flood risk, and meet current and future water supply needs in the lower Boise River watershed, from Lucky Peak Dam downstream to the confluence with the Snake River. The study will also seek to provide ancillary ecosystem-restoration benefits, while minimizing socioeconomic effects and impacts to sensitive species.

STUDY AUTHORITY – Study authorization is provided by Section 414 of the Water Resources Development Act (WRDA) of 1999, as amended by Section 4038 of WRDA 2007.

STUDY BACKGROUND – In May 2009, the Corps and IWRB entered into an agreement to begin the feasibility study. Initial efforts conducted from 2009 to 2012 produced numerous reports that are available on the Corps webpage including *Public Information Meetings and Public Comment Summary* (September 2010), *Water Storage Screening Analysis* (2010), and *Preliminary Analysis of the Arrowrock Site* (2011)

In Spring 2014, a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) for the project was published and a series of public meetings was held to present information on the study and solicit feedback as part of scoping. Work on the development of the combined Feasibility Study and EIS began in earnest in October 2014. Currently the study team is conducting modeling to determine the benefits of various measures and alternatives and studying the potential environmental effects of implementing various alternatives.

STUDY MEASURES

AND ALTERNATIVES – The following measures were identified and combined to develop a set of alternatives that address identified flood-risk and water-supply problems. The adjacent table summarizes the study alternatives. An “X” in the row beside a measure indicates that this measure is included within the alternative.

Following is a general description of the measures comprising each preliminary alternative:

| MEASURES | ALTERNATIVES | | | | |
|---|--------------|---|---|---|-----------|
| | A | B | C | D | No Action |
| Arrowrock Dam Raise | X | | X | X | |
| Managed Aquifer Recharge | | X | | | |
| Upgrade Irrigation Headgates | X | X | X | | |
| Replace Push-Up Dams | X | X | | | |
| Upgrade Bridges | X | | | | |
| Controlled Flooding of Mining Pits | X | | | | |
| Temporary Conveyance of Water In Floodplain | X | X | X | | |
| Flow Split Structure | X | | | | |
| Enhanced Water Conservation | | X | | | |
| Non-Structural Measures | X | X | | | |

Arrowrock Dam Raise - A range of potential dam raise heights is possible, with a currently estimated maximum raise of 74 feet. The maximum raise would provide an estimated 270,000 acre-feet of storage for flood-risk management and water supply.

Managed Aquifer Recharge - This measure involves a deliberate strategy of recharging existing groundwater aquifers along the New York Canal with the potential for some additional flood-risk management benefits.

Upgrade Existing Irrigation Headgate Structures - Headgates control the diversion of water into irrigation canals and could be improved to reduce the risk of localized flooding.

Replace Push Up Dams with Inflatable Weirs - Push up dams assist the diversion of water into irrigation canals. Replacing specific dams with inflatable weirs that can be lowered during high water events is expected to have localized flood-risk-management benefits.

Replace or Upgrade Undersized Bridges - Some bridges in the project area have potential to cause localized flooding during high flow events and could be raised or replaced to reduce the risk of localized flooding.

Controlled Flooding of Gravel Mining Pits - This measure involves designing a controlled method of flooding actively mined pits with high potential for pit capture.

Temporary Conveyance of Water in Floodplain - In some areas, there are opportunities to re-grade parks or develop perched side-channels to reduce localized flooding. These measures also have the potential to provide some ancillary environmental benefits.

Flow-Split Structure at Eagle Island - Under some high water scenarios, a controlled split of flows into the north and south river channels around Eagle Island could be beneficial.

Enhanced Water Conservation - While each alternative will consider conservation measures that are reasonably likely to occur in the future, enhanced conservation will also be considered. This measure will look at all potential conservation measures that could be implemented regardless of whether or not they are likely to be implemented.

Non-Structural Measures - There may be cost-effective opportunities to provide “non-structural” flood protection (e.g., flood-proofing buildings, ring levees around critical infrastructure or raising structures in place) in certain areas to reduce the frequency of flooding.

Measures Common to All Alternatives - Certain measures will be included in all alternatives, such as reasonably foreseeable water conservation measures, floodplain management plans to help limit future floodplain development and altered system operations.

FEASIBILITY STUDY/EIS PROCESS – The costs, benefits and environmental effects of the study alternatives will be considered and compared against the “No Action” alternative to determine the potential changes from implementing the alternatives. These factors, along with consideration of the environmental and socioeconomic impacts of various alternatives, will be used to select a preferred alternative that best meets study objectives.

The draft integrated feasibility report/EIS evaluating an array of alternatives will be circulated for public review and comment. After all comments have been addressed, a decision will be made regarding which alternative will be identified as the preferred alternative, or recommended plan and will move forward into a more advanced design phase. Once the design is complete for the recommended plan, a final integrated feasibility report/EIS will be circulated for public review. When comments from this final review have been received and addressed, a Record of Decision will be signed, indicating the selection of an alternative and completion of the feasibility study.

ENVIRONMENTAL CONSIDERATIONS –Through previous coordination, collection of background information, and scoping, the Corps has identified several critical environmental issues to be addressed in the feasibility report/EIS:

- Effects on Bull Trout, a fish species listed under the Endangered Species Act
- Effects on Yellow Billed Cuckoo, a bird species listed under the Endangered Species Act
- Effects on other sensitive species, including Bald Eagle
- Effects on sensitive habitats, including wetlands and big game winter range
- Effects on fish habitat in the South Fork Boise River
- Effects on recreation, including fishing and rafting on the South Fork Boise River
- Effects on hydropower generation facilities at Arrowrock Dam
- Effects on flows in the Boise and Snake Rivers
- Effects on cultural and historic resources

SCHEDULE – The anticipated schedule for completion of the feasibility study and EIS is contingent upon available federal funding.

Spring 2016 - Circulate draft feasibility report/EIS for Public Comment

Spring 2017 - Circulate final feasibility report/EIS for Public Comment, Sign Record of Decision

Additional information about the study, including reports and analyses, can be obtained by visiting the Corps study website, www.nww.usace.army.mil/Missions/Projects/LowerBoiseRiverFeasibilityStudy.aspx, or emailing BoiseGI@usace.army.mil

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