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Managing Water in the West

Anderson Ranch Dam Feasibility Study Proposal

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Agenda

- Purpose
- Why study this?
- Boise Project
- Background
- Storage at a Glance
 - Lucky Peak
 - Arrowrock Dam
 - Anderson Ranch Dam
- Studies – how did we get here?
- Approximate study timeline and funding needs
- Questions!

Purpose

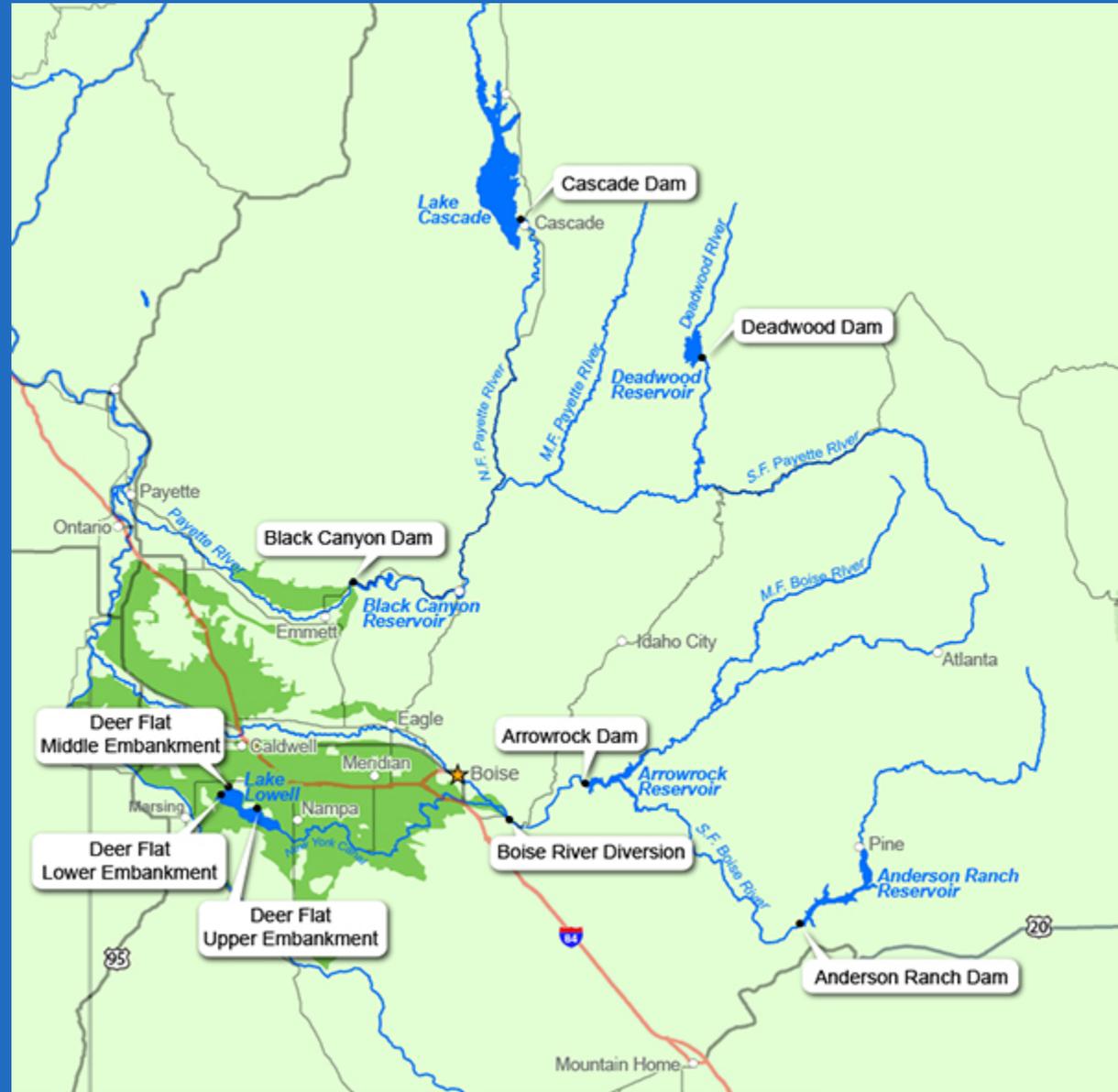
- **Provide sufficient information to enable non-Federal entities to determine whether to support with either cash or in-kind services a feasibility study to increase the storage in Anderson Ranch Dam**
- **Authority to design, and construct a dam raise, if it's the preferred alternative, would require a Congressional action following the feasibility process**

Why study this?

- **IDWR (2001) completed DCM&I Study showing up to 96,000 acre-feet of water needed over next 25 years**
- **Study results were extrapolated through 2050 resulting in estimates of more than 150,000 acre-feet of additional water**
- **As population expands to areas that are currently not irrigated, more water will be needed**
- **Climate variability is resulting in decreased summer flows and snowpack while winter flows are occurring earlier in the year and have higher peaks**

Boise Project

- Facilities authorized under the Reclamation Acts of 1902, 1910, and 1939
- The Boise Project is divided into the Arrowrock Division and the Payette Division

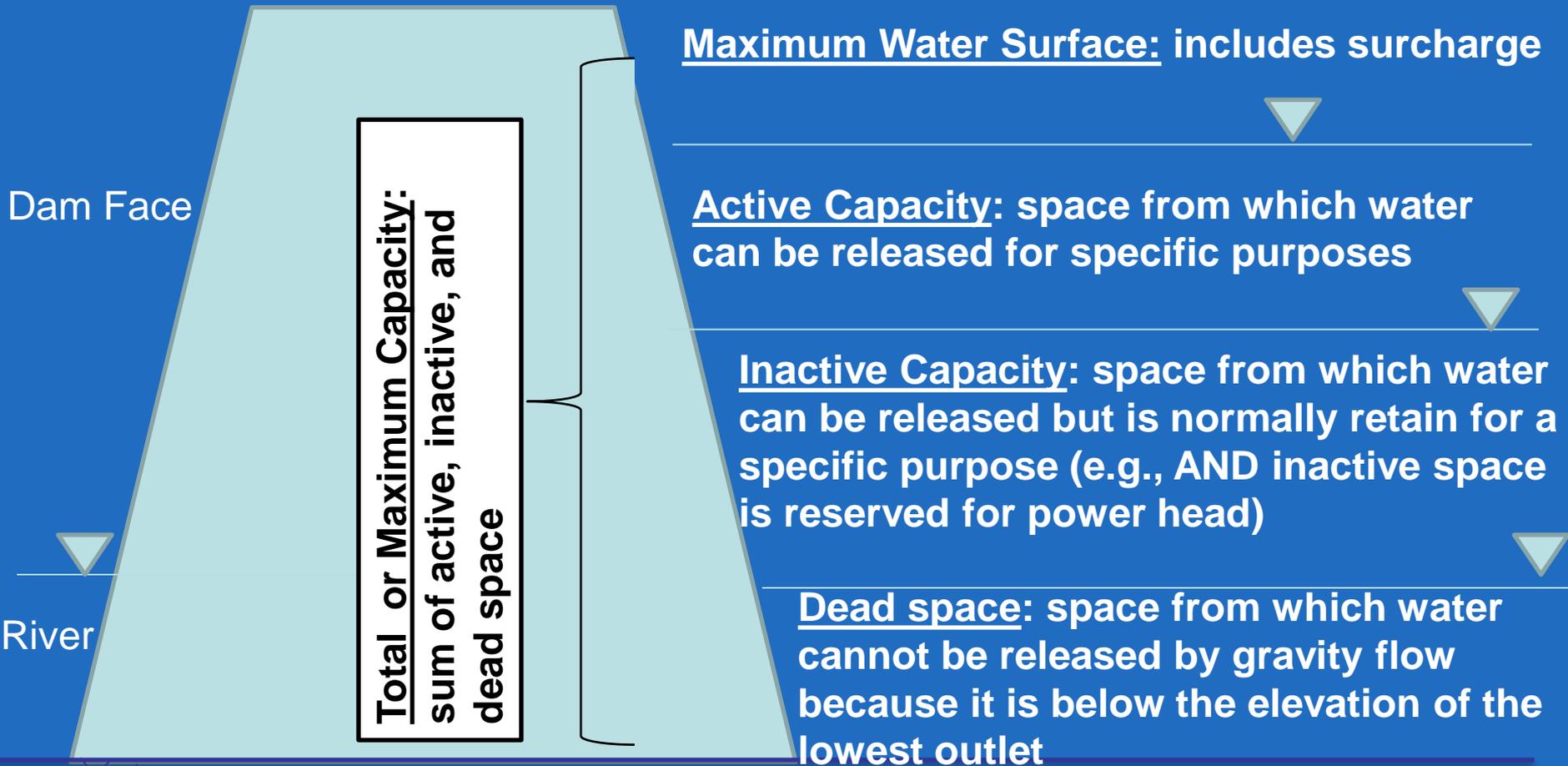


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Boise Project

- Five storage dams with total capacity of 1,793,600 acre-feet (not including Lucky Peak)
- Three powerplants (Anderson Ranch Dam, Black Canyon Diversion Dam, and Boise River Diversion Dam) with a combined capacity of 50,200 kilowatts
- Seven pumping plants
- 720 miles of canals; 650 miles of drains
- Furnishes irrigation water supply to about 400,000 acres in SW Idaho and eastern Oregon

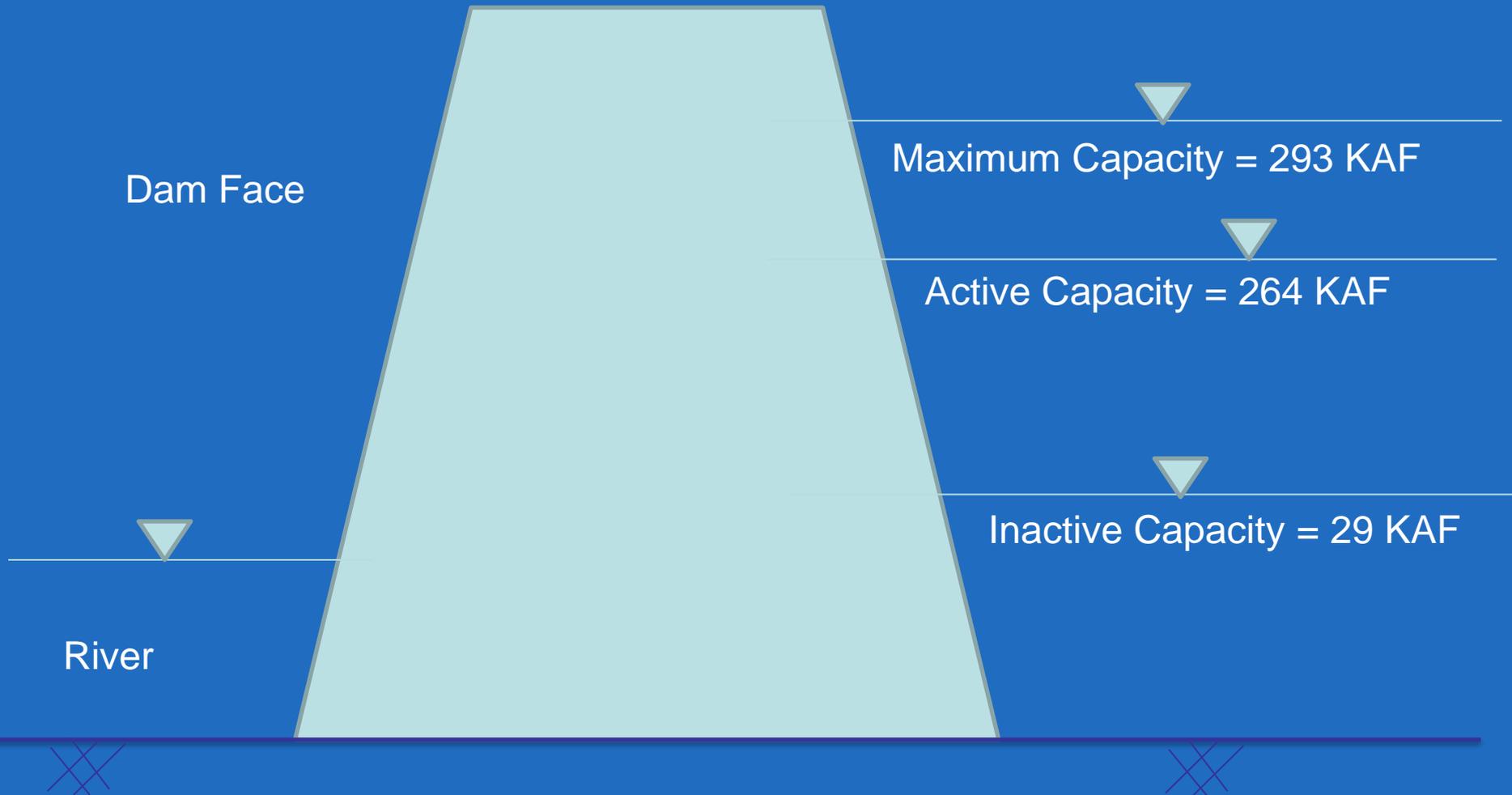
Storage at a Glance



Lucky Peak Dam

- Completed in 1954 by the USACE
- Constructed with earthen and gravel fill
- Authorized for flood control and irrigation
- Powerhouse added in 1988 owned by the Boise Project Board of Control

Lucky Peak Storage at a Glance



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Arrowrock Dam

- **Built by Reclamation in 1915**
- **Concrete arch dam 350 feet high**
- **Authorized for irrigation; flood control added in 1954**
- **Raised 5 feet in 1930s adding 9,000 acre-feet more storage**
- **Boise Project Board of Control added 15MW powerplant in March 2010**
- **One of several alternatives being considered in the Boise River General Investigation**
 - Raising Arrowrock up to 74 feet adding 300,000 acre-feet more storage for flood control and water supply

Arrowrock Storage at a Glance

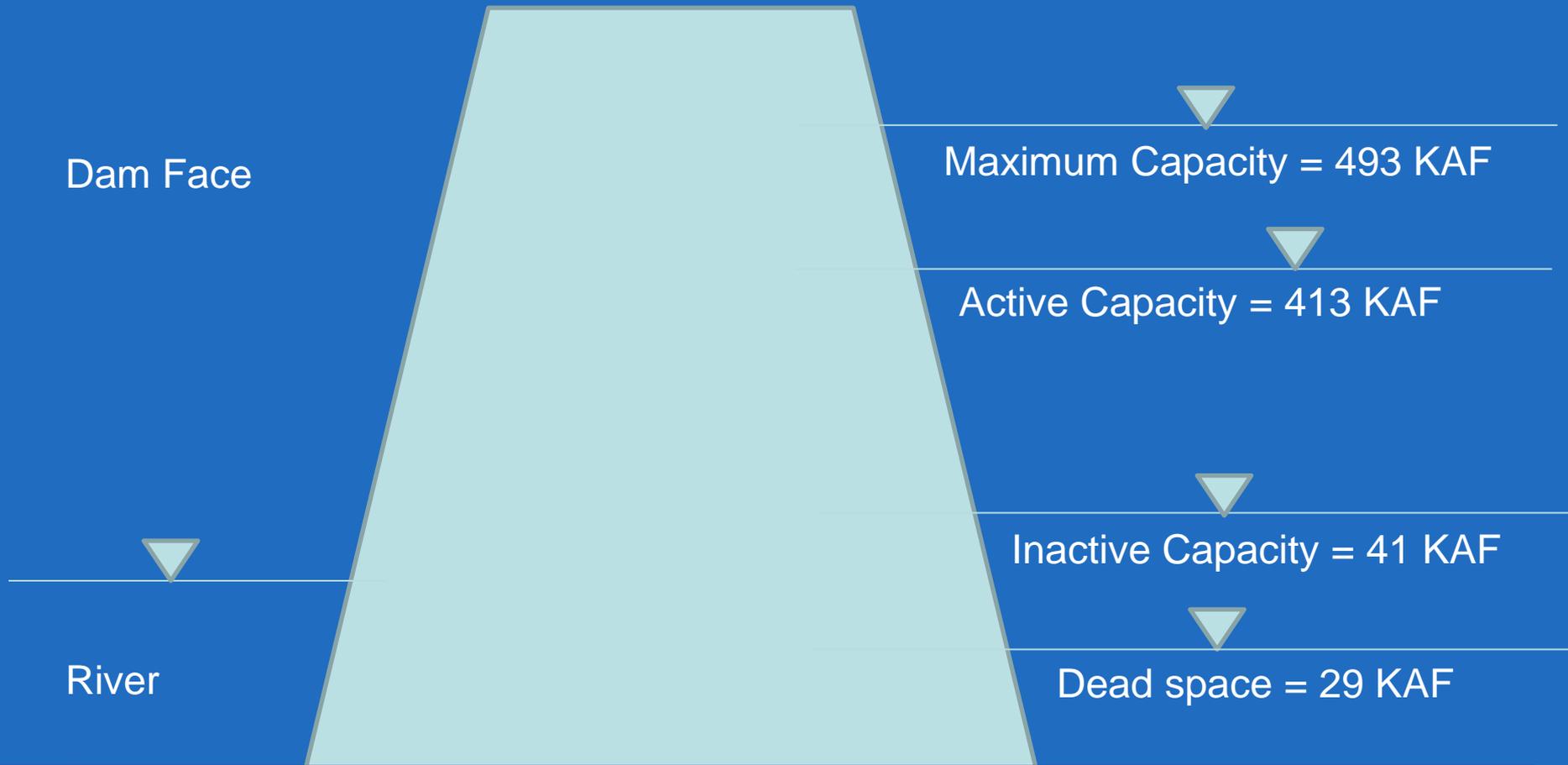


Anderson Ranch Dam

- **Completed in 1950**
- **Earthen dam 456 feet high on the SF Boise River**
- **Authorized for flood control, irrigation, and power**
- **Powerplant has 40,000 KW capacity**
- **Minimum instream flow target of 300 cfs from 9/15 to 3/31; 600 cfs from 4/1 to whenever higher releases dictated by irrigation demand or flood control**

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Anderson Storage at a Glance



Studies

- In 2006 Reclamation completed the Boise/Payette Water Supply Assessment
 - 50 year planning horizon
 - “Areas of interest” were identified in the Boise River system to provide
 - Increase water supply storage
 - Reduce flood risk
 - Provide ancillary environmental benefits
- Anderson Ranch Dam raise was among those identified as a possible alternative
- Corps evaluated effectiveness of those areas using four criterion

Studies

- In 2010 USACE completed the Water Storage Screening Analysis
 - Four criteria used to score sites
 - Basin average annual inflow volume
 - Relative residual volume (*additional inflow above storage*)
 - Reduction of system runoff volume (*flood benefit*)
 - Annual refill volume *90% of the time*
 - Anderson Ranch Dam was not considered further because it did not provide needed flood reduction

Feasibility Authority

- **Reclamation authority is from the Omnibus Public Land Management Act of 2009, PL111-11 SEC. 9001.**
 - (a) In General—The Secretary of the Interior, acting through the Bureau of Reclamation, may conduct feasibility studies on projects that address water shortages within the Snake, Boise, and Payette River systems in the State of Idaho, and are considered appropriate for further study by the Bureau of Reclamation Boise Payette water storage assessment report issued during 2006.
 - (b) Reclamation policy standards and guidelines for studies.
 - (c) there is authorized to be appropriated to the Secretary of the Interior to carry out this section \$3,000,000.
 - (d) authority provided by this section terminates on the date that is 10 years after the date of enactment of this Act.

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Feasibility Study

- **Using 2009 feasibility study authority, determine feasibility of raising Anderson Ranch Dam**
- **Increase water surface elevation by 6 feet; adding 29,000 acre-feet with an annual refill probability of 80%**
- **Potential uses of water would be for Domestic, Commercial, Municipal and Industrial (DCM&I) water**
- **Evaluate conservation opportunities as well**

Phase	Schedule Start	Duration (all approximate)	Estimated Cost	Cost by Fiscal Year
Plan of Study, Cost-sharing agreements, develop study team	Jul – Sep 2015	3-6 months (end March 2016)	\$250,000 to \$500,000	
Selection of Plans for Feasibility Study	Sep 2015	12 months (end Sep 2016)	\$500,000	\$750,000 to \$1M (2016)
Feasibility Scoping Phase/ Initiate NEPA Process	Sep 2016	12 months (end Sep 2017)	\$600,000 to \$1M	\$600,000 to \$1M (2017)
Alternative Formulation and Evaluation Phase	Sep 2017	12 months (end Sep 2018)	\$600,000 to \$1M	\$600,000 to \$1M (2018)
Recommended Plan to DEC and Policy reviews / Feasibility Report	Sep 2018	12 months (end Jun 2019)	\$500,000	\$500,000 (2019)
Washington, DC Reviews	Jun 2019	6 months (end Dec 2019)	\$250,000	
Record of Decision issued and submitted to Congress	Dec 2019	6 months	\$250,000	\$500,000 (2020)
Congressional authority to design and construct	Jan 2020			

Next Steps

- **Non-Federal partners interested in sharing costs (in-kind or cash) need to provide letter to Reclamation within 60 days (June 29, 2015)**
- **Reclamation will coordinate with Federal, state, and local agencies to determine their resource needs**
- **Reclamation will coordinate with outside interest groups**
- **If cost-share is sufficient, Reclamation will develop funding Memorandum(s) of Agreement with interested parties, obtain monies**
- **Initiate feasibility study (late summer or early fall 2015)**
 - **Refine schedule and budget, initiate plan of study**
 - **Establish internal and external project team**

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Questions

Website: <http://www.usbr.gov/pn/studies/andersonranch/index.html>

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