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Managing Water in the West

Bighorn Lake Sedimentation

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U.S. Department of the Interior
Bureau of Reclamation

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Brief History of Planning Effort

Current Reclamation Efforts

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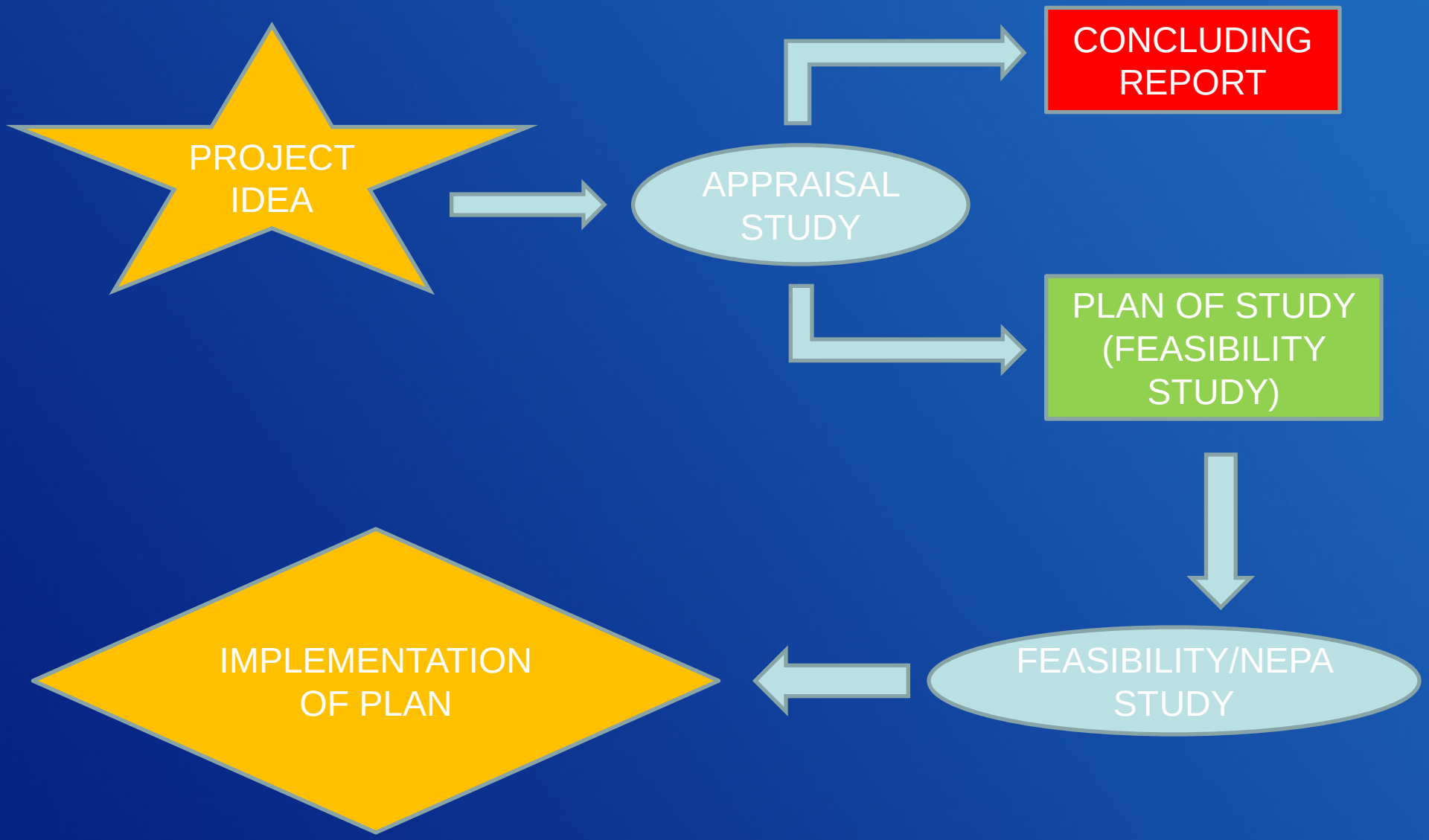
Bighorn Lake Sedimentation Study



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Alternatives Considered

Bighorn Lake Sediment Management Study

USACE 2010

Reconnaissance Level

Developed Alternatives and Estimated Costs

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Alternatives Considered

1. **Force channel to the west side of HSB using a dike**
   Cost estimate - $24 Million and up + maintenance

2. **Force all flow to the east side of HSB using a dike**
   Cost estimate - $24 Million and up + maintenance

3. **Sediment removal with Flow barrier dikes**
   Cost estimate - $34 Million and up + maintenance

4. **Sediment removal without flow barrier dikes**
   Cost estimate - $145 Million and up + maintenance

5. **Sustainable Reservoir Sediment Management**
   Cost estimate – Unknown at this time

Reclamation Planning Process

Formulation and evaluation of alternatives follow Reclamation policy and procedures for implementing NEPA and other applicable Federal rules and regulations.

Federal objective for planning is to contribute to national economic development consistent with protecting the Nation's environment.

Alternatives Considered

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Magnitude of Problem

Large incoming sediment load

Est 2,500 acre-ft/year of sedimentation (Ferrari 2010)

- 70% from the Bighorn River

- 30% from the Shoshone River and other tributaries

Sustainable Reservoir Sediment Management Plans

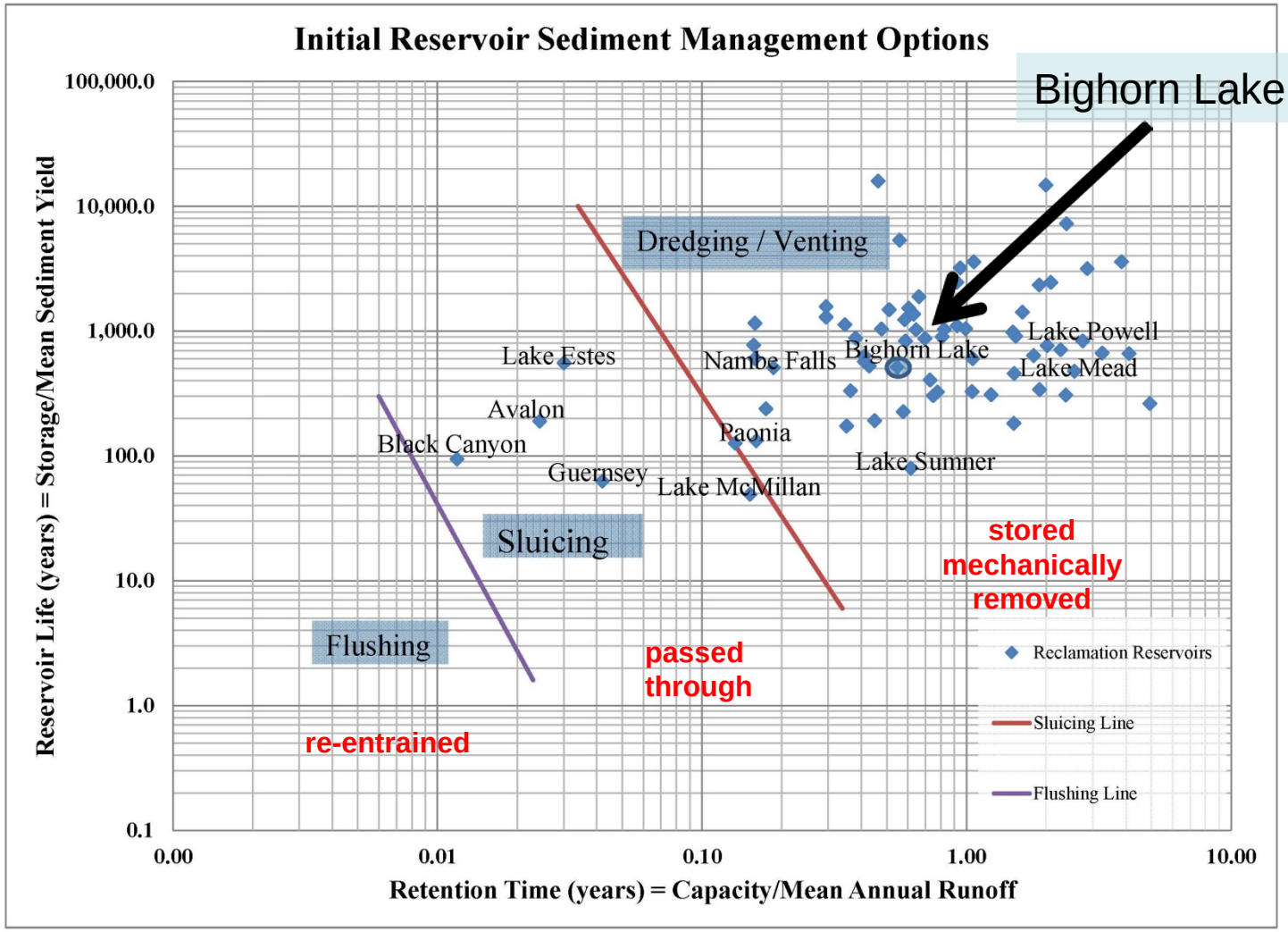
- Currently developed on a reactive basis
- Reservoirs already experiencing impacts

Full Sediment Balance is ultimate goal in formulating a sediment management plan for a reservoir

Sustainable Reservoir Sediment Management Plans

Investigate alternatives to deal with reservoir sedimentation and the options to reach a sediment balance

- Passing inflowing sediments through the reservoir
- Sediment dredging



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Bureau of Reclamation

Research and Development Office

Science and Technology Program

Dealing With the Inevitable: Sediment in Reservoirs

Developing effective guidelines for managing sediment in Reclamation's reservoirs

2013 & 2014

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Dealing With the Inevitable: Sediment in Reservoirs

Developing effective guidelines for managing sediment in Reclamation's reservoirs

Coordinate and perform pilot studies at Reclamation facilities to test the competency of the preliminary reservoir sustainability guidelines

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Bureau of Reclamation

Research and Development Office

Science and Technology Program

Pilot Studies of Reservoir Sustainability Options – Large Reservoirs

Fiscal Year 2016	➔	Review data, plan options, collect data
Fiscal Year 2017	➔	2D sediment modeling of passage to increase sediment transport capacity; work with stakeholder to plan potential long-term options
Fiscal Year 2018	➔	Develop Report and Guideline of options

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Bureau of Reclamation

Research and Development Office

Science and Technology Program

Pilot Studies of Reservoir Sustainability Options – Large Reservoirs

Fiscal Year 2016 ➔ $70,000

Fiscal Year 2017 ➔ $105,000

Fiscal Year 2018 ➔ $35,000

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Next Steps & Questions?

- **Reclamation -- continue to look for ways to fund research and evaluate alternatives**

- **Sedimentation Committee – public education and continue effort to identify funding sources**

Future
(if nothing is done)

short and long-term loss of project benefits and potential expensive retirement options

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