

Item 37: High Hazard Dams - Dam Safety Budget Note Report



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Budget Note Overview

- Existing Dam Safety Program activities
- Cost to rehabilitate high-hazard dams in poor or unsatisfactory condition
- Funding resources
- Policy and budget recommendations





Dam Safety Program

- **1929 - life and property**
- **10 feet high and 3+ million gallons**
- **Inspect dams and require repairs for safety**
- **Review designs for new dams and significant modifications**
- **Emergency Action Plans for high-hazard dams**



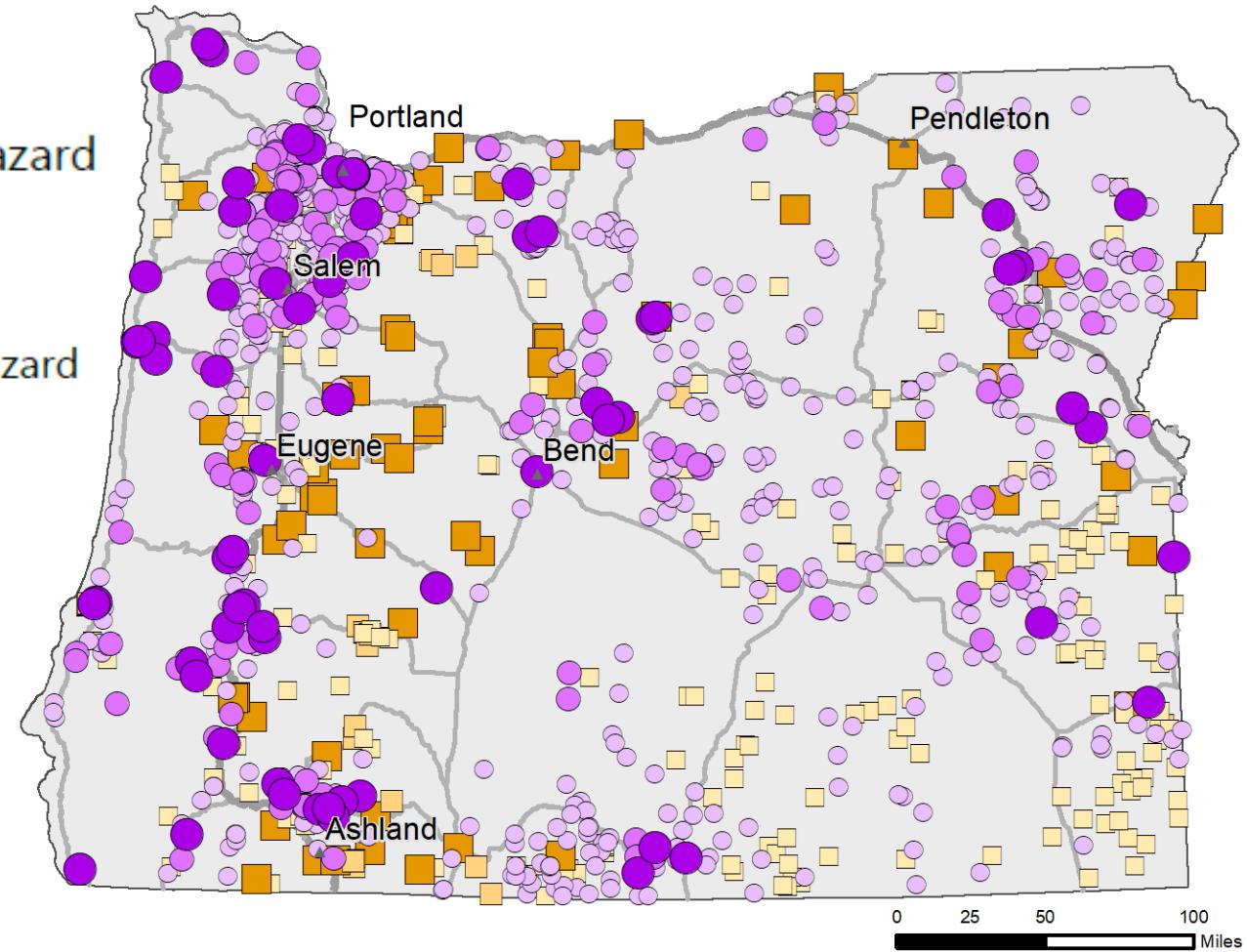


Dams in Oregon

- State, High Hazard
- State, Significant Hazard
- State, Low Hazard

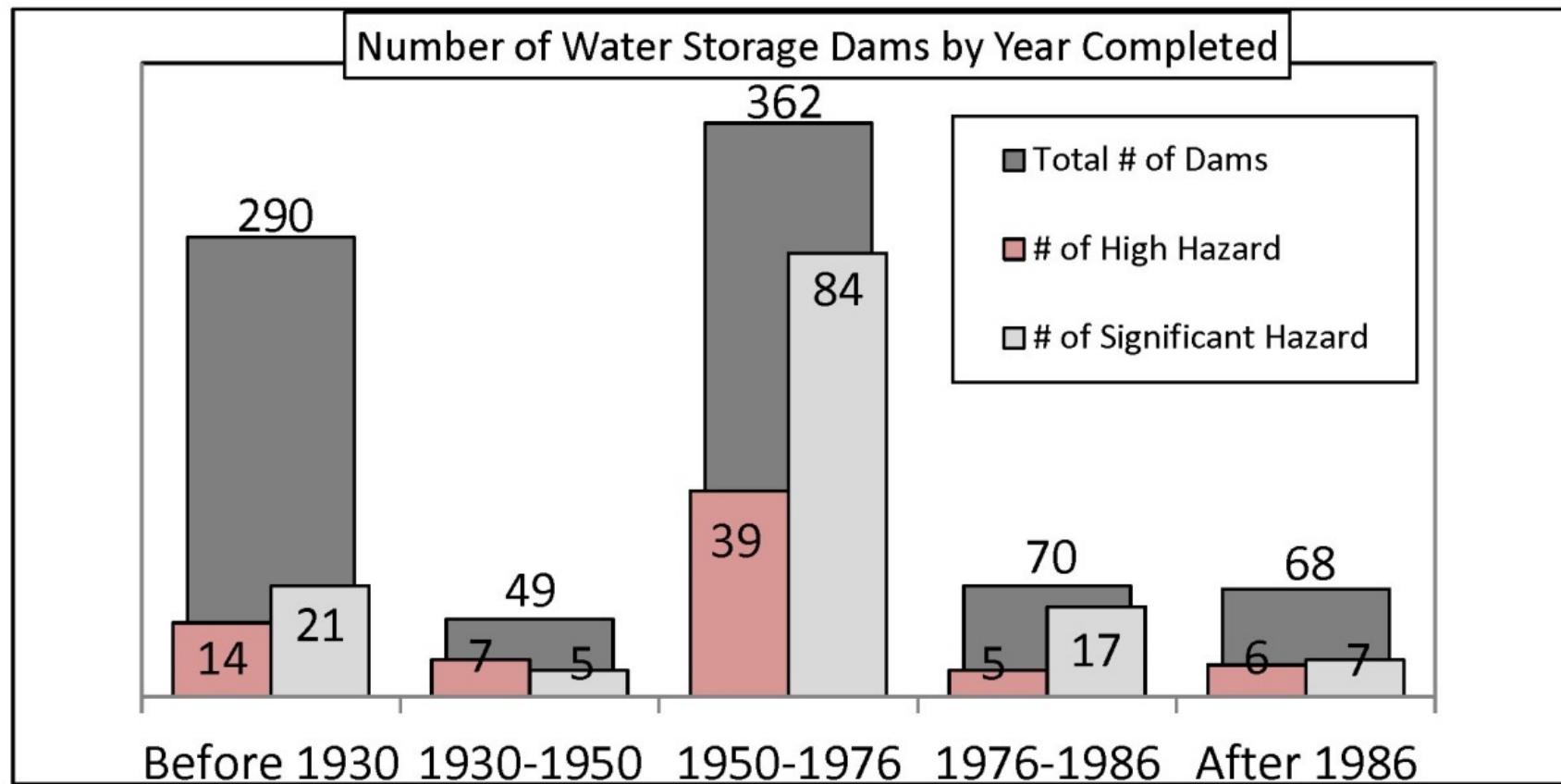
- Federal, High Hazard
- Federal, Significant Hazard
- Federal, Low Hazard

- Satisfactory
- Fair
- Poor
- Unsatisfactory
- (Unsafe)





Oregon's Dams Are Older





Condition of High-Hazard Dams and Costs: Caveats

- Specific costs are difficult to ascertain without a full-scale engineering analysis for each individual dam
- Insufficient resources to conduct more in-depth assessments of dams; inspections are only visual in nature
- All costs are estimates





Condition of High-Hazard Dams and Costs

Cost Estimates for Publicly Owned Dams

Dam	Location (County)	Condition	Probable Safety Action	Estimated Cost
Big Creek #1	Lincoln	Unsatisfactory	New Dam	\$19-\$71M
Big Creek #2	Lincoln	Unsatisfactory	New Dam	
Ferry Creek	Curry	Unsatisfactory	New Dam	\$8-\$15M
McMullen Creek	Josephine	Unsatisfactory	Rehabilitate	\$3-\$5M
Bear Creek	Clatsop	Poor	Rehabilitate	\$0.5M
Morgan Lake	Union	Poor	Rehabilitate	\$1M
Wallowa Lake	Wallowa	Poor	New Dam	\$10-\$16M



Condition of High-Hazard Dams and Costs

Cost Estimates for Privately Owned Dams

Dam	Location (County)	Condition	Probable Safety Action	Estimated Cost
Barnes Butte	Crook	Poor	Rehabilitate	Medium
Duggan	Jackson	Poor	Repair	Low
Johnson Creek	Crook	Poor	Repair	Low
Lake Creek	Jackson	Unsatisfactory	Rehabilitate	Medium
Lonesome Lake	Malheur	Poor	Repair	High
Osborne Creek	Jackson	Unsatisfactory	Rehabilitate	Medium
Pole Creek	Malheur	Poor	Rehabilitate	Medium
Wageman	Douglas	Poor	Rehabilitate	Medium
Woodrat Knob	Jackson	Unsatisfactory	Rehabilitate	Medium
Yankee (Gardener)	Jackson	Poor	Rehabilitate	Medium
Crowley Reservoir	Malheur	Unsatisfactory	Replace	High
Willow Creek 3	Malheur	Unsatisfactory	Rehabilitate	High



Funding Resources

- Limited options: particularly for non-federally regulated dams, and especially non-publically owned
 - FEMA National Dam Rehabilitation Program
 - USDA Watershed Rehabilitation Program
 - Oregon Special Public Works Fund
- Other funding programs may be able to fund dam rehabilitation in some instances, but not targeted for that purpose

➤ Conclusion: Funding is a challenge; costs can be significant



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Policy & Budget Recommendations

- Governor's Recommended Budget
- 2017 Integrated Water Resources Strategy Recommended Actions
- Department's Legislative Concept





2017 IWRs

- 1. Modernize state laws to improve the safety and resiliency of Oregon dams**
- 2. Resources to determine safety deficiencies; evaluate and retrofit**
- 3. Authorize emergency actions and encourage cooperative actions to improve the safety of dams**





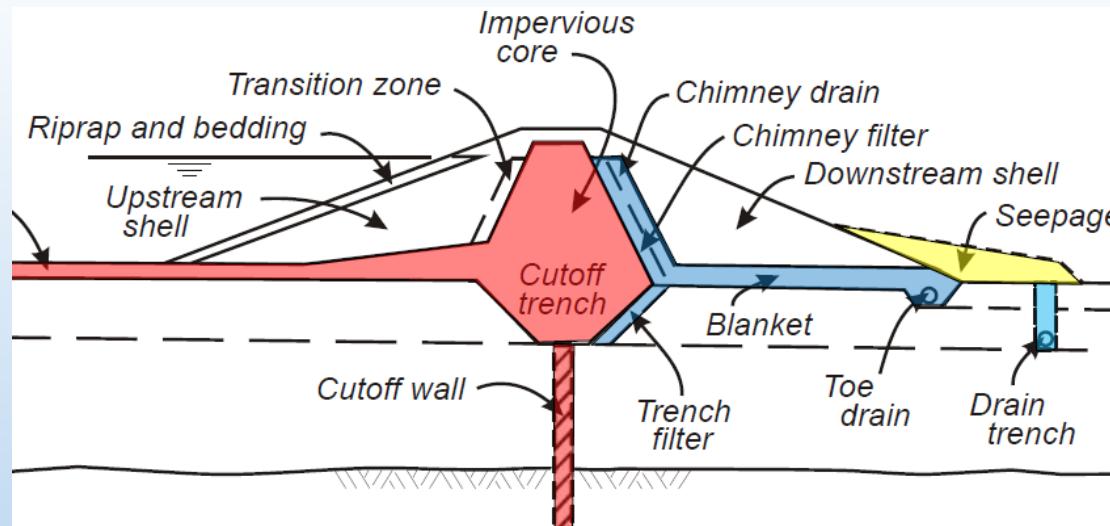
2017 IWRS

- 4. Properly decommission dams at the end of their useful life**
- 5. Coordinate emergency responses**
- 6. Define the responsibilities of a dam owner**
- 7. Require monitoring on deficient high-hazard dams**





- 8. Dam owners should prepare an EAP for high hazard dams**
- 9. Authorize a fee for review of plans and specifications**
- 10. Dedicate grant and loan resources for rehabilitation of deficient dams**





Potential Legislative Concept

- See attachment
- Jurisdiction – Non-federally regulated dams: water or wastewater
- Approval of modifications and receipt of final engineering documentation
- Fee for reviews of plans for dams
- Guidance for owners on their responsibilities
- Clarify the Department's general authorities and actions may take during a dam failure



Potential Legislative Concept

- **Approval of removals to protect people and property**
- **Improve process for maintenance and safety issues, including flood and seismic; Provide tools to work with owners and get compliance**
- **Civil penalty authority for certain violations of dam safety statutes**
- **In order to improve readability and functionality of the statutes, repeals the current laws; as a result many existing authorities appear as new language**

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