

Dam Safety Update



Racquel Rancier,
Policy Manager

Tony Janicek,
Civil Engineer



Overview

- Dam Safety Program
- HB 2085 Implementation
- Status of High Hazard Dams
- FEMA High Hazard Potential Dam Grant
- 2020 Legislation
- Questions



Why does Oregon have a Dam Safety program?

- Water storage is essential to meeting water needs
- Consequence of dam failure can be high
 - Risk to lives, property, and infrastructure
- Maintenance and safe operation
 - Necessary to keep benefits and prevent failures



Factors in Dam Failure

- Lack of Maintenance
- Deterioration
- Design or Construction flaw
- Spillway failure / Overtopping
- Misoperation
- Landslides
- Floods
- Earthquakes



Dam Safety Program

- Life, property, and infrastructure
- 10 feet high and 3+ million gallons
- Review designs for new dams and significant modifications
- Inspect dams and require repairs for safety
- Nonfederal dams

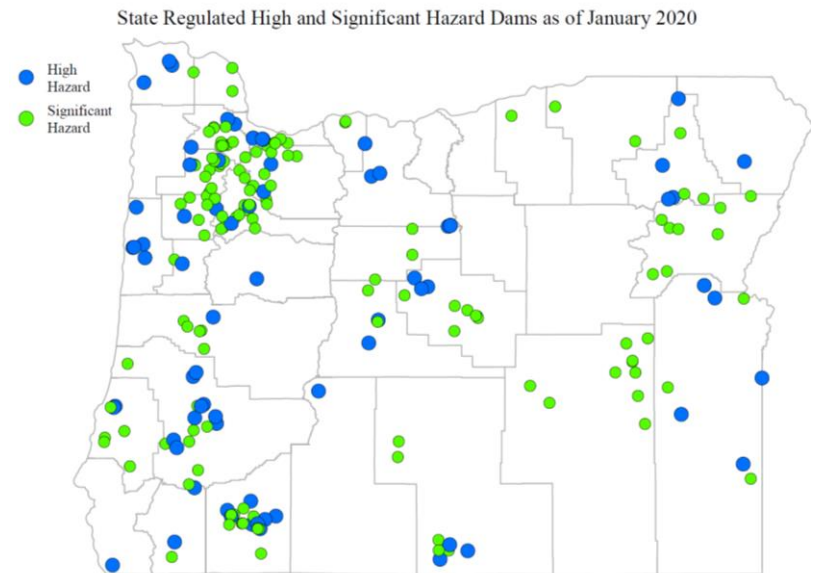


State Regulated Dams

~950 State Regulated Dams

- 76 – High Hazard Dams
- 151 – Significant Hazard Dams
- 728 – Low Hazard Dams

**Hazard rating does not indicate condition*



HB 2085 (2019)

Modernize Oregon's Dam Safety Statutes

- Provide tools to address maintenance and safety issues, improving the safety of dams to protect people, property, and infrastructure
- Cooperative plan and timeframe (particularly for seismic and floods), informal resolution, formal corrective action, injunction, civil penalty, and maintenance action
- General authorities, dam failure actions, jurisdiction, modification, owner responsibilities, safe removal, etc.
- Operative date July 1, 2020

Rulemaking

Implementation of House Bill 2085 (2019)



RAC Meetings:
October – January

*Notice and Public
Comment:*
March 2020

Adoption:
June 2020

Long-Term Goals

- Identify safety issues of dams
 - More detailed inspections and evaluations
- Address safety issues of dams
 - Prioritizing dams for addressing safety risks
 - Population at risk
 - Severity of issue
 - Interim measures that can reduce the risk
 - Funding

Condition of High Hazard Dams

Poor Condition - 13

- BARNES BUTTE
- BEAR CREEK
- DUGGAN
- JUBILEE LAKE
- LONESOME LAKE
- MORGAN LAKE
- OSBORNE CREEK
- PONY CREEK - LOWER
- POLE CREEK
- WAGEMAN
- WALCH DAM
- WALLOWA LAKE
- WINCHESTER

Unsatisfactory - 7

- CROWLEY
- BIG CREEK #1 (LOWER)
- BIG CREEK #2 (UPPER)
- FERRY CREEK
- MCMULLEN CREEK
- WOODRAT KNOB
- WILLOW CREEK 3 (MALHEUR)

Information Can Drive Strategic Investments

- Condition ratings mostly based on visual inspection; partial risk assessments done as resources available
- More in-depth inspections: Utilize information to make strategic and informed decisions and best utilize limited resources
 - High and significant hazard dams need risk assessments
 - Floods, earthquakes, internal erosion, landslides, structural deterioration, and debris blockages
 - Prioritize dams for more detailed analysis and to address issues

2019 FEMA Grant

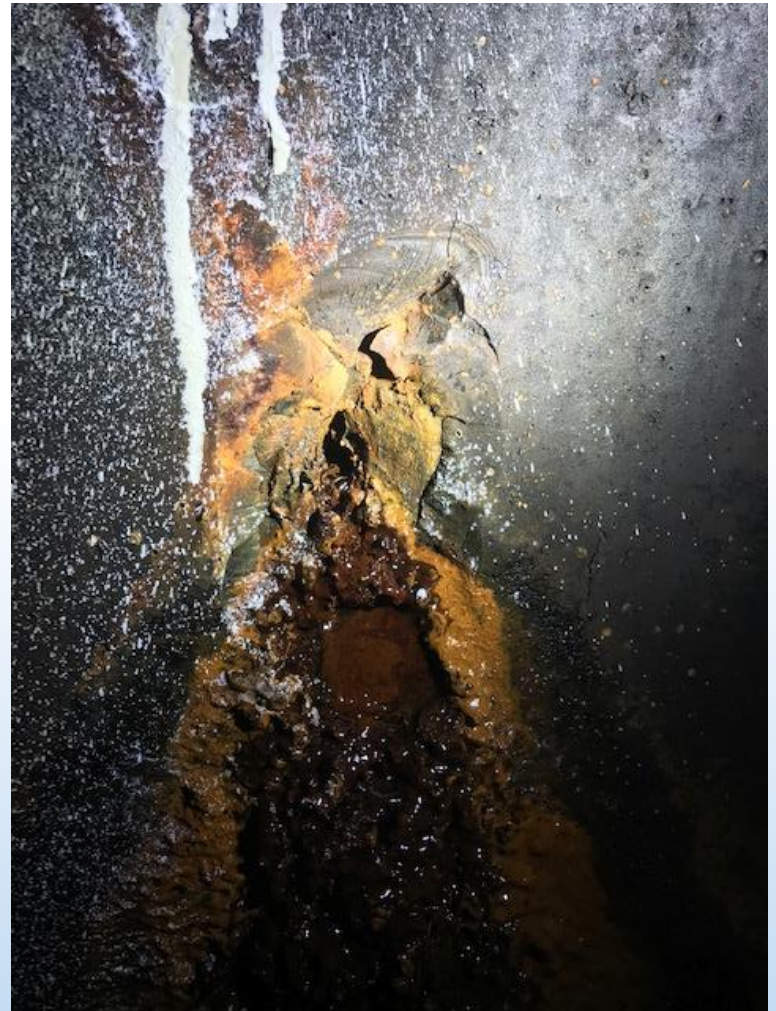
FEMA High-Hazard Potential Dam Grant - \$260k

- Position dams to qualify for future funding
- Statewide Hazard Mitigation Plan Update
- Risk assessment protocol for Oregon specific risks
- Risk assessments for 16 high hazard rated dams - flood, earthquake, internal erosion, landslide, deterioration
- Population at risk and likely economic losses
- Two Floodplain Management Plans

SB 1537 - Resiliency

Requesting \$2,000,000

- Safety assessments to determine dam specific seismic, flood overtopping, and other safety risks
- Development of methods to determine extreme flood event size



SB 1537 - Resiliency

- Dam Safety Task Force:
 - Approach to prioritize dams to address safety issues
 - Funding mechanisms for addressing dam safety issues
- Analyses of dams



Questions?



Racquel Rancier, Policy Manager
Racquel.R.Rancier@oregon.gov

HB 2085 (2019)


- Links to More Detailed Information on House Bill 2085
 - Summary:
<https://olis.leg.state.or.us/liz/2019R1/Downloads/CommitteeMeetingDocument/199817>
 - Comparison:
<https://olis.leg.state.or.us/liz/2019R1/Downloads/CommitteeMeetingDocument/200013>

2018 Budget Note

- 2018 Report addressing:
 - Existing Dam Safety Program activities
 - Cost to rehabilitate high-hazard dams in poor or unsatisfactory condition
 - Funding resources
 - Policy and budget recommendations
- Link to Presentation:



<https://olis.leg.state.or.us/liz/201711/Downloads/CommitteeMeetingDocument/153147>
- Link to Budget Note Report:

<https://olis.leg.state.or.us/liz/201711/Downloads/CommitteeMeetingDocument/153148>



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 |