

# SB 1537 – Resiliency Dam Safety



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# Dam Safety Program

- 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
- ORS 540.340 to 540.400 / HB 2085 (2019)



# 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
- Landslide
- Floods
- Earthquakes

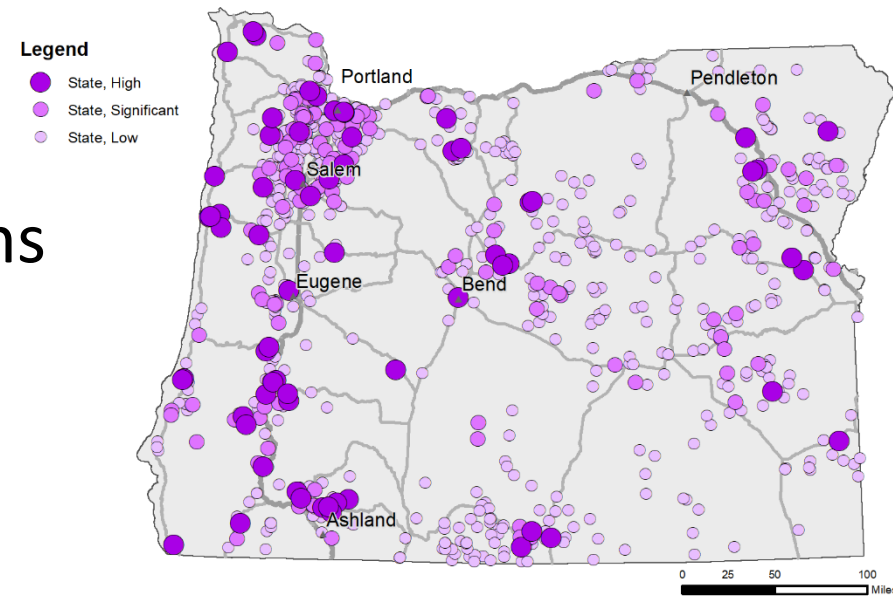


# State Regulated Dams

~950 State Regulated Dams

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

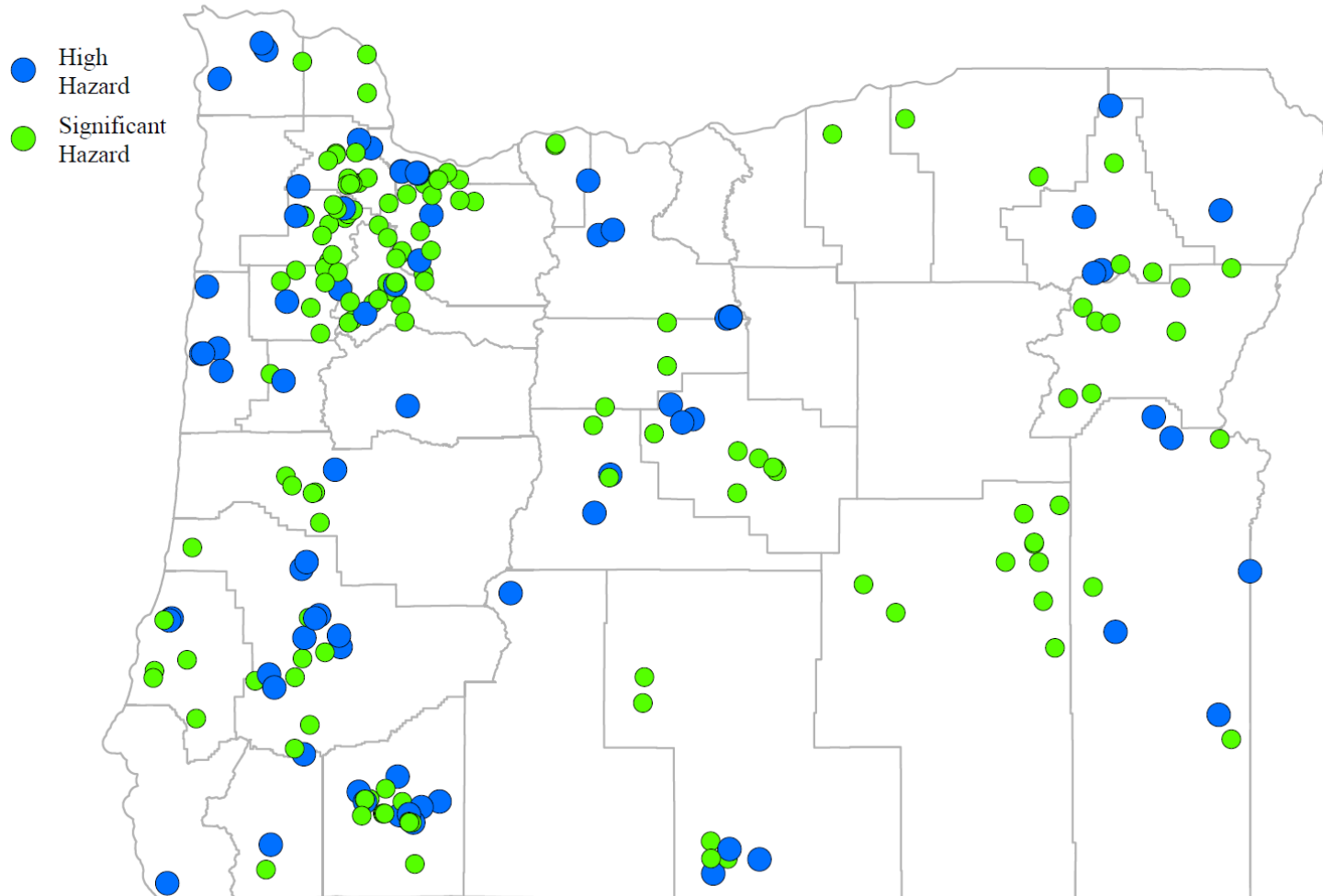
*\*Hazard rating does not indicate condition*





# High and Significant Hazard Dams

State Regulated High and Significant Hazard Dams as of January 2020



# 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)

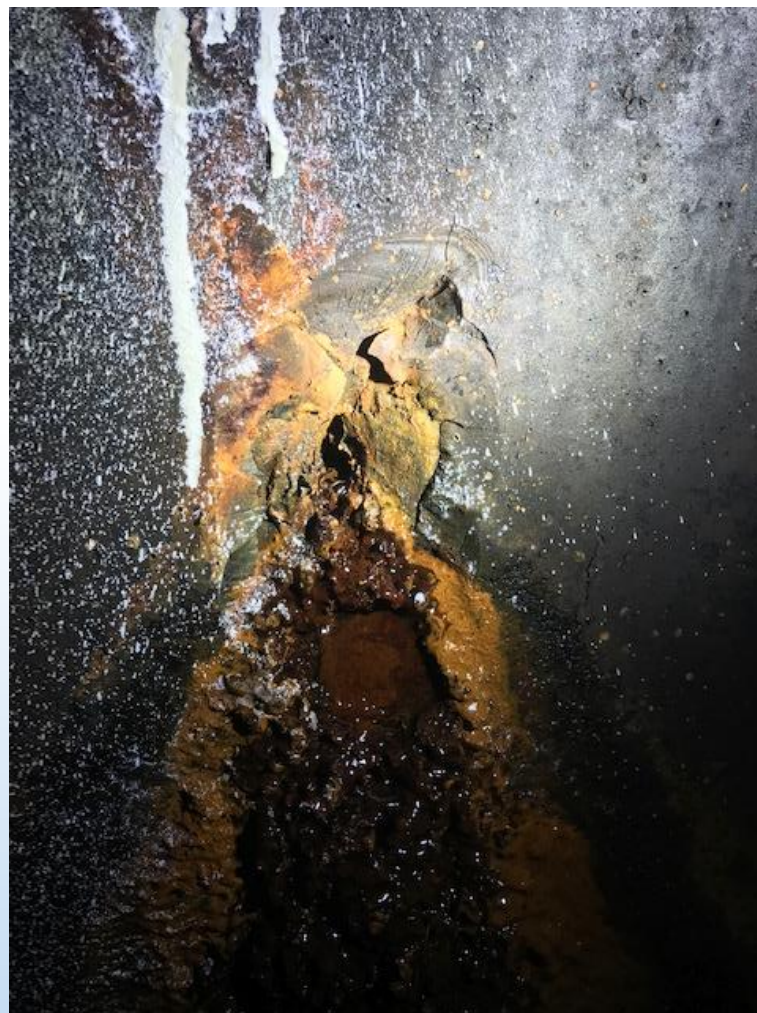
# Information Can Drive Strategic Investments

- Condition ratings are mostly determined based on visual inspection
- More in-depth inspections/evaluations: partial risk assessments and analyses done as resources are available
  - There is a lot we do not know about our dams
- Limited resources
  - Strategic and informed decisions to prioritize repairs and funding



# 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



- Dam Safety Task Force:
  - Prioritize dams for repair and addressing other safety issues
  - Funding mechanism for addressing dam safety issues
- Analysis of dams



# Questions?



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# 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

## 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
- 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