



# Request for Adoption of Rules OAR Chapter 690, Division 20, Dam Safety

**Water Resources Commission Meeting  
March 13, 2015**

**Keith Mills, P.E., State Engineer  
Brenda Bateman, Administrator, Technical Services Division**

# Outline

- **Rationale for Dam Safety Rule Modifications**
- **Rules Advisory Committee**
- **Public Comment**
- **Walk through of Rule Changes**
- **Questions or comments at any time**



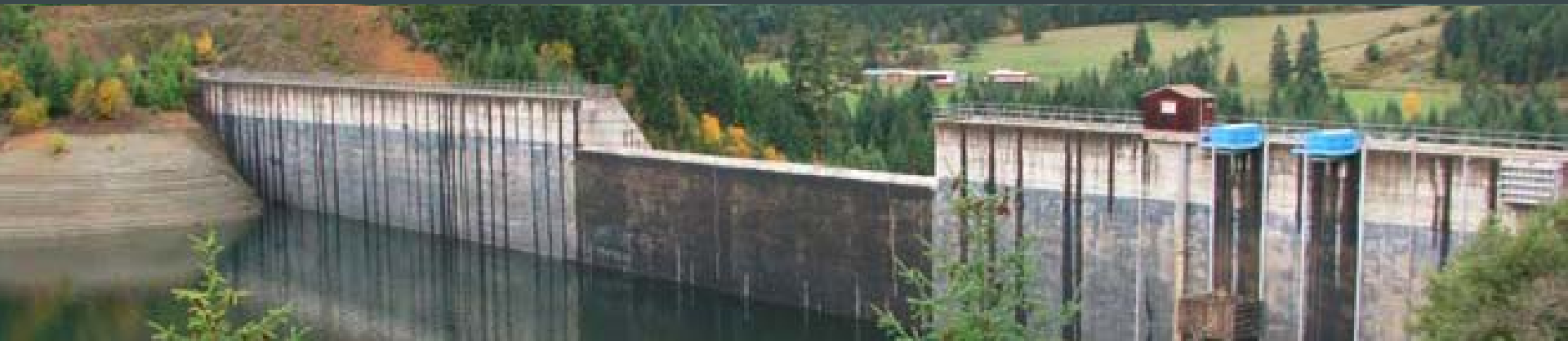
# Rationale for Dam Safety Rule Modifications

- Put engineering guidance into rule form
- State of the practice for dam design
- Scaled by hazard rating (risk to people & property)
- Clarification of inspections, maintenance, repair, and emergency dam safety practices
- Organized by general order of activity



# Basis of Rule Changes

- **Continue good dam safety record in Oregon**
- **Dam safety practices from nearby states**
- **National standards for dam safety**
- **New understanding of flood & seismic risk**
- **Presentation at Nov. 2014 Commission Meeting**
- **Detailed legal review**

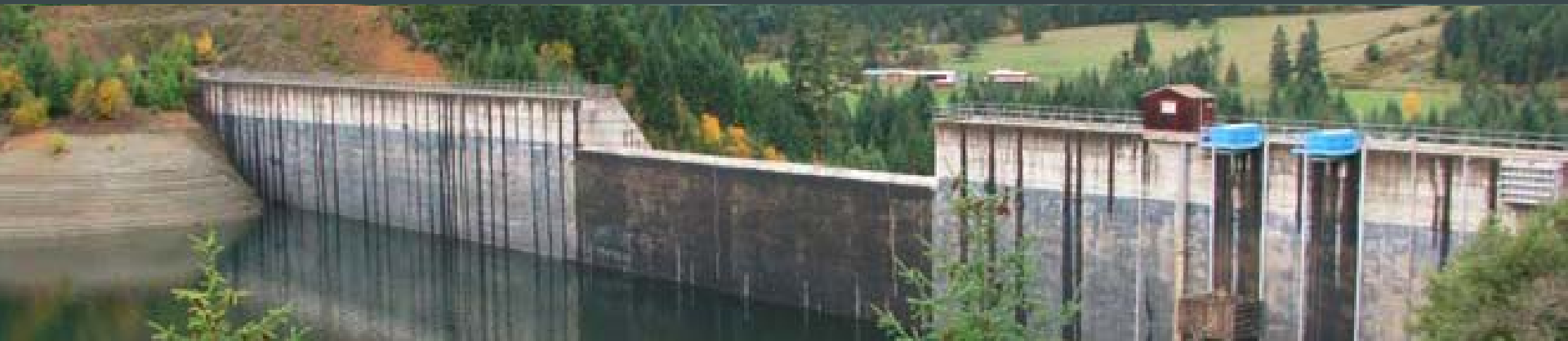


# Rules Advisory Committee

- **Engineers that have designed dams**
  - Eric Urstadt, P.E., Stuntzner Engineering
  - Gerry Heslin, P.E., Cornforth Consultants
  - Chris Bahner, P.E., West Consultants
- **Oregon State Board of Examiners for Engineering and Land Surveying (OSBEELS)**
  - Jim Doane, P.E., Board Member
- **Dam owners, public and private**
  - Robert Klein, McMinnville Water and Light
  - Genice Rabe, Croft Dam West Salem

# Public Comment

- **WaterWatch of Oregon**
- **3 other comments of support from engineers**
- **Addressed comments carefully; changed wording**
- **Will cover comments by Section**



# Five Primary Categories of Concern

1. Use of fees
2. Diminished hazard rating criteria
3. Use of the term “statutory dam”
4. Conduit size / stated objective of releases
5. Guidelines for small dams





# Walk through of Rule Changes

Refer to Attachment 1 in Agenda Item



# Purpose and Applicability 690-020-0000

- **Consistent with Statute**
- **Legal Authority**
  - **Life and property**
  - **Plans and specifications for new dams only**
  - **Inspections**
  - **Only guidance applicable to dams under 10' high or storing less than 9.2 acre feet (AF) of**



# Definitions 690-020-0022

- Dropped proposed term “Statutory dam.”  
Dropped terms “small” and “large” dams
- Rules modified; these terms not needed
- Moved “significant dam work” to rule for State Engineer Approval- dropped from definition
- Dropped proposed exemption for owners’ property in rules for low and significant hazard ratings



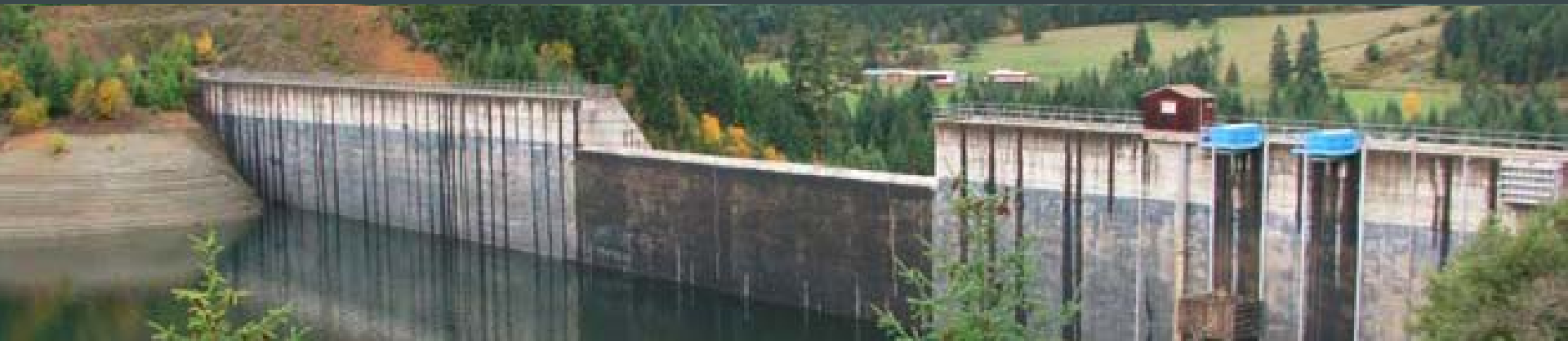
# Dam Safety Process Requirements for Construction of Dams 690-020-0023

- Specify process for owners and engineers
- Compiled in response to frequent questions



# General Requirements 690-020-0025

- Legal authorities clarified
- Most authorities could not be applied to dams under 10' high or storing less than 9.2 af of water
- Now reference hydroelectric provisions in the dam safety statutes



# Recommendations for Dams Under 10' High or Storing Less than 9.2 af 690-020-0029

- Had proposed to delete; advisory only
- Commenters saw value; requested re-instatement
- Added back
- References other rules as “example” standards
- References requirements for water rights



# Minimum Engineering Design Requirements

## 690-020-0035

- Principal reason for these rule changes
- Needed better organization
- Had no specifics on hydrologic or seismic design
- Now includes 0035 to 0060
- Very few comments received

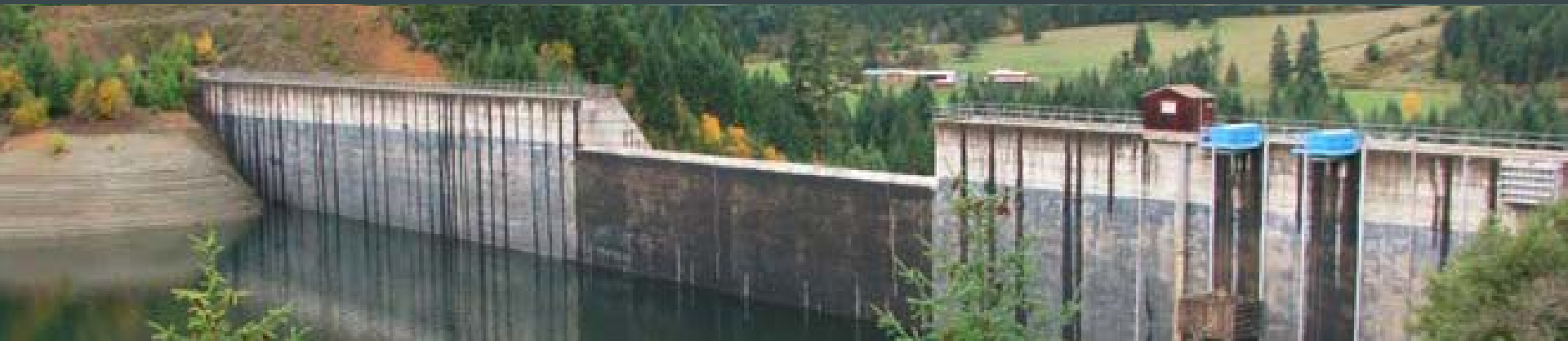


# Minimum Engineering Design Requirements, continued

- Site Suitability/Geotechnical Eval. 690-020-0036
- Hydrology and Inflow Design Flood 690-020-0037
- Embankment Dam Structures 690-020-0038
- Concrete Dam Structures 690-020-0041
- Spillways 690-020-0042
- Penetrating Conduit(s) 690-020-0043 comments
- Monitoring- Instrument. 690-020-0044 comments
- Geosynthetics 690-020-0047

# Walk-Through, continued

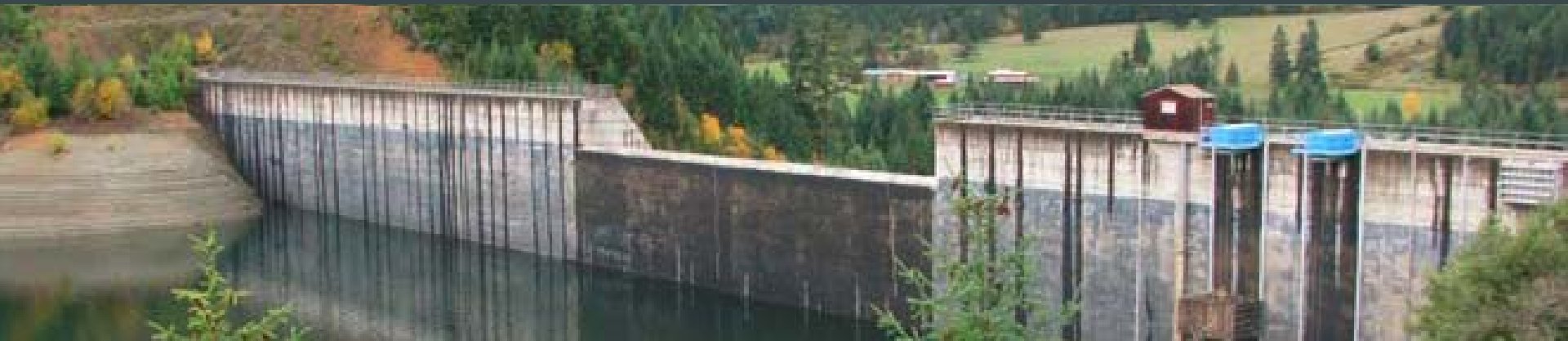
- **Modification of Requirements 690-020-0048**
- **Design Drawings 690-020-0055**
- **Construction Specifications 690-020-0060**
- **Dam Construction 690-020-0065**
- **Submittals and Notifications 690-020-0070**





# Written Approval by State Engineer 690-020-0080

- Moved and enhanced what had been a definition of “significant dam work”
- Approval of design plans and specification valid for five years - NEW



# Hazard Rating of Dams 690-020-0100

- Using the same 3 hazard ratings categories
- Received specific comments - changes made
- Example 1: proposed definition of road use “*500 vehicles per day*” was dropped
- Example 2: discussion of recreational uses was moved, clarified
- Sets forth procedures to revise hazard ratings.



# Dam Breach Inundation Analysis

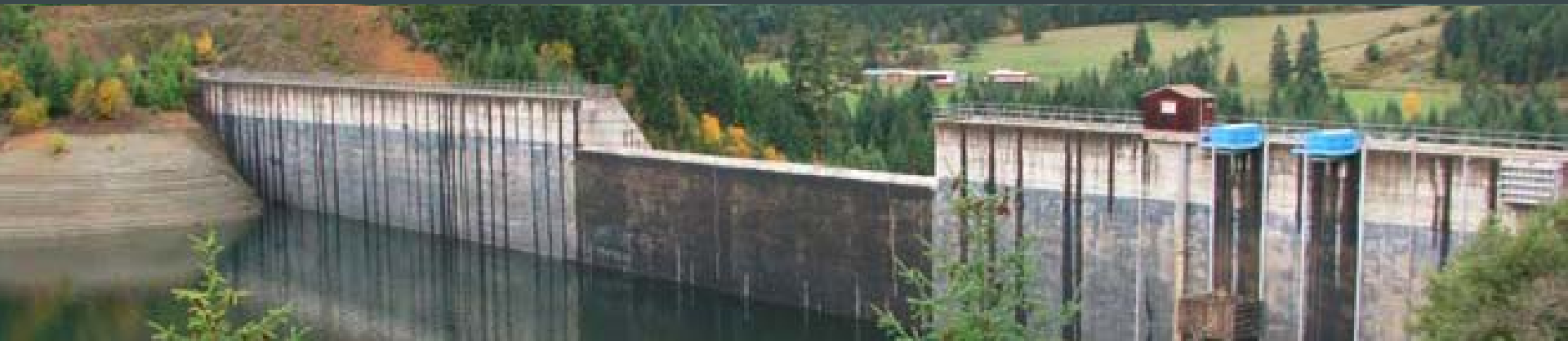
## 690-020-0120

- A requirement for new dams since 2010
- No analysis required if a remote area without recreation
- Received several comments; made most changes



# Routine Inspection of Dams 690-020-0150

- **New language**
- **Received comment: “rule should be stronger than the Department ‘may’ inspect dams”**
- **Result: Department “shall” maintain a program of inspecting dams and “may” inspect at frequencies specified**



# Fees for Dams 690-020-0200

- One comment - concern over use of fees
- Used on existing dams for actions where there is no statutory authority to require actions
- Example: develop emergency action plan (EAP) and hazard rating reviews for existing dams
- Fees are not to be used for inundation analysis or EAPs for new dams, since these are required
- May be used to verify the inundation analysis submitted by the owner

# Walk-Through, Continued

- **Maintenance of Dams 690-020-0250**
- **Modification of Dams Requiring Notification and/or Approval 690-020-0300**
- **Operations and Maintenance Plans 690-020-0350**
- **Emergency Action Plans (EAP) and Emergencies 690-020-0400**

*Comment: no emergency manager on RAC*

**Response: following FEMA guidelines, coordinating with each emergency manager**

- **Enforcement 690-020-0500**
  - **Renumbered, added OSBEELS**
  - **Put inspection into new 0150**

# Alternatives

- 1. Adopt the final proposed Chapter 690, Division 20, dam safety rules in Attachment**
- 2. Adopt the final proposed dam safety rules as modified by the Commission.**
- 3. Not adopt the final proposed dam safety rules and ask the Department to return with more information.**

# Recommendation

- 1. Adopt the final proposed Chapter 690, Division 20, dam safety rules in Attachment**
2. Adopt the final proposed dam safety rules as modified by the Commission.
3. Not adopt the final proposed dam safety rules and ask the Department to return with more information.



**Thank You!**

