

# Fuel Tanks Seismic Stability

## Rulemaking Advisory Committee Meeting #1

Oct. 26, 2022

9 a.m. to 12 p.m.

# Welcome, overview of today's meeting

Time	Topic
9 a.m.	Welcome, Overview, Introductions
9:15	Committee Charter and ground rules
9:30	Program Overview, SB1567 requirements, rulemaking timeline
9:50	Rule Concepts Topics: <ul style="list-style-type: none"><li>• Vulnerability Assessments</li><li>• Risk Mitigation Program</li><li>• Criteria to Minimize Risk</li></ul>
10:30	Break
10:45	Committee Discussion Time
11:15	Environmental Justice Considerations (PSU)
11:30	Similar Regulations in Other Jurisdictions (PSU)
11:45	Engineering Considerations (HaleyAldrich)
12 p.m.	Next steps and adjourn meeting

# Webinar tips

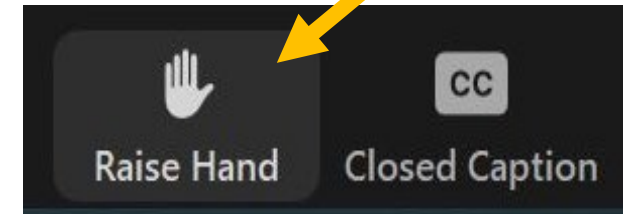
**Thank you for joining us today!**

Join audio by either phone or computer, not both.

For panelists discussion and comments, use the raise hand button to get in the queue; if joined by phone press \*9

This meeting is being recorded.

For Zoom technical issues, send a message through the chat to Svetlana Lazarev or email [svetlana.lazarev@deq.oregon.gov](mailto:svetlana.lazarev@deq.oregon.gov)



# Meeting ground rules

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- Listen and treat everyone with respect
- Allow one person to speak at a time – raise hand
- Be prepared and set time aside for the meetings
- Provide a balance of speaking time
- Bring concerns and ideas up for discussion early in the process
- Comment constructively and avoid personal attacks
- Move around and take care of yourself as needed

# Communications

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- Substantive discussion by the committee will occur during public meetings, not offline.
- DEQ will post meeting materials and input received from RAC members on the [Seismic Stability Rulemaking web page](#)
- RAC members may send input after a meeting to: [seismicstability.2023@deq.oregon.gov](mailto:seismicstability.2023@deq.oregon.gov)

# DEQ key team members

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**Mike Kortenhof**, Fuel Tank Inspection Manager

**Svetlana Lazarev**, Project Manager

**Lauren Wirtis**, Public Affairs Specialist, Facilitator

**Abby Boudouris**, Senior Legislative Analyst

# DEQ technical support team

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**Yumei Wang**, Senior Advisor on Infrastructure Resilience and Risk at PSU; former DOGAMI Resilience Engineer

**Portland State University** (Beth Gilden, Luke Hanst)

**Haley and Aldrich, Inc.** (Allison Pyrch lead)

# RAC members

Name	Organization
Peter Dusicka, PhD	PSU
Paul Edison-Lahm	Environmental Justice Interests
Randy Groves	Eugene/Springfield Fire Chief (retired)
Nancy Hiser	Linnton Neighborhood Association
Andrew Holbrook	Kinder Morgan
Lindsey Hutchison	Willamette Riverkeeper
Holli Johnson	Western States Petroleum Assn.
Amit Kumar, PE	Development Services/COP
Doug Lenz	Columbia Pacific Bio-refinery
Warren Seely	Seely Mint Farm
Chris Voss	Multnomah County
Jacque Wurster	NW Eugene Ready



# What to expect



# About rules and rulemaking process

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Rules are agency regulations, carry the power of the law.



DEQ uses the rulemaking process to clarify and implement state law.



Rules are proposed by DEQ and are adopted by the Environmental Quality Commission.

# Role of the rulemaking advisory committee

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This is an advisory committee

- Your ideas inform the proposed rules
- Meetings will be focused on proposed rule concepts
- SB 1567 directs DEQ's choice of issues to address in this rulemaking

RAC has particular responsibility to review and advise on:

- Racial equity impacts of rules
- Fiscal impacts of rules

# Public involvement

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Opportunities to stay engaged:

- Email updates ([GovDelivery](#))
- Online documents
- Public input (December meeting)
- Public comment



# Centering racial equity and environmental justice

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DEQ is committed to serving all communities in Oregon by centering its work, including rulemaking, in racial equity and environmental justice.

# Committee charter

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## Highlights:

- Objectives and scope
- Roles and expectations
- Alternates process

## DEQ Fuel Tanks Seismic Stability Program Rulemaking

Advisory Committee Charter

September 8, 2022

Contact Name: Mike Kortenhof, Fuel Tank Inspection Section Manager



# Process questions and answers

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# Senate Bill 1567 (effective June 3, 2022)

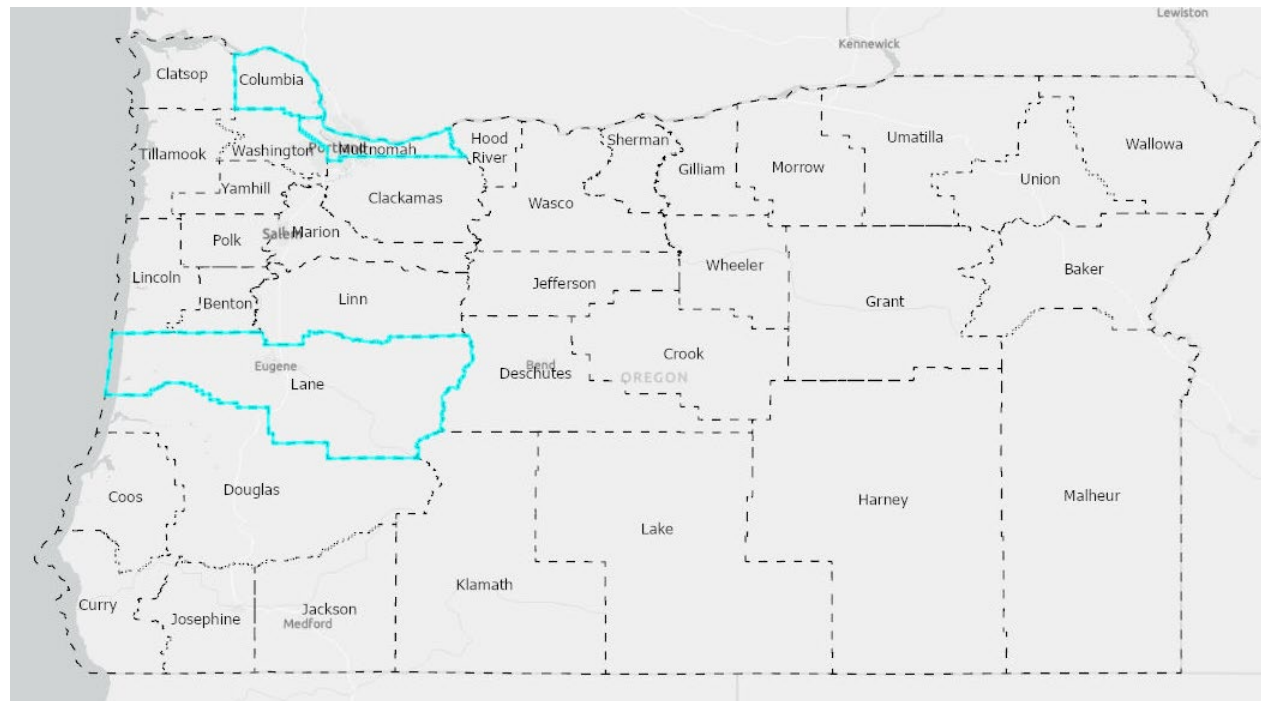
- Requires large capacity fuel handling facilities to assess integrity in the event of Cascadia earthquake by June 1, 2024
- Requires DEQ to develop a risk mitigation implementation program, including rules for content and approval
- Requires DEQ recommendations to Legislature by Nov. 1, 2024
- Department of Energy develops Energy Security Plan





# Facilities affected

- Facilities with the capacity over 2 million gallons
- Located in Multnomah, Lane and Columbia Counties



# Program timeline

## SB 1567 effective

- June 3, 2022

## Spring 2023:

- Public Notice

## June 2024:

- Assessments and mitigation plans submitted

## Oct. 2022 - Feb. 2023

- RAC meetings

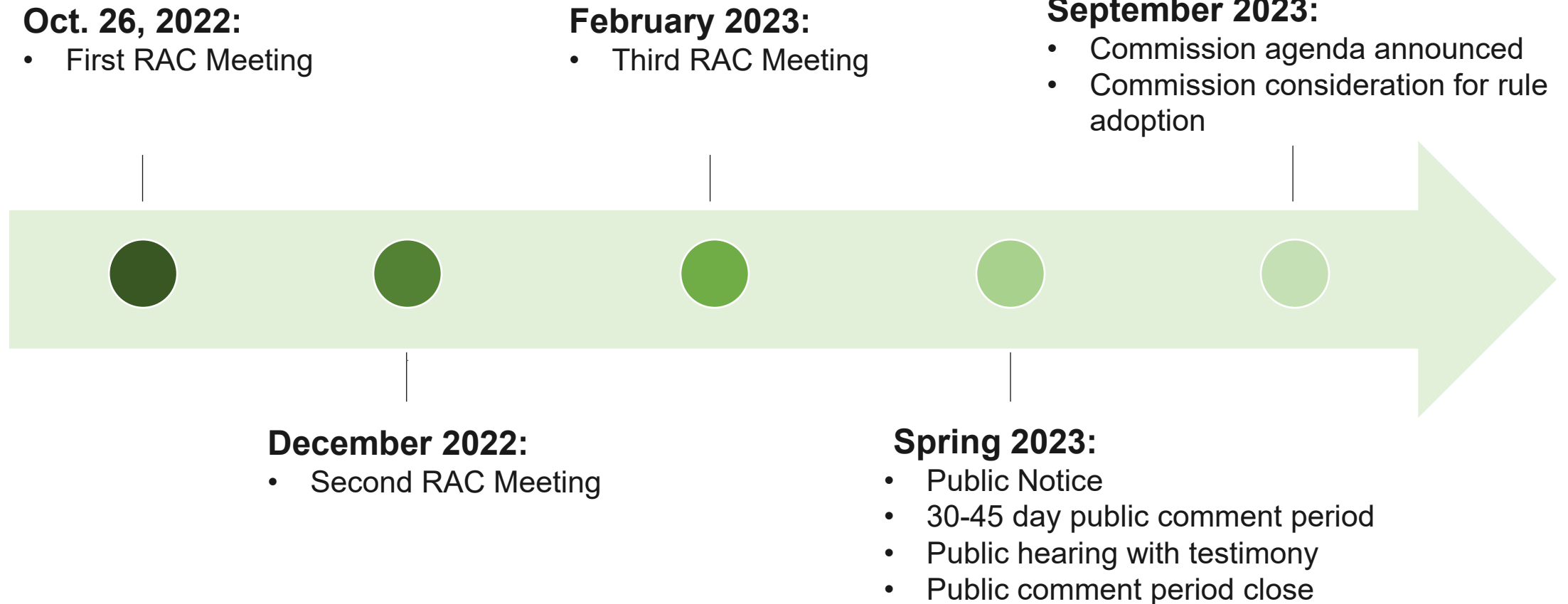
## Sept. 2023:

- Commission consideration for rule adoption

## Nov. 2024 and on:

- Legislative report
- Mitigation implementation
- Community involvement

# Rulemaking timeline



# Rulemaking concepts topics overview

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# Vulnerability Assessments – SB1567 Sec 2

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- Required components
  - a) Seismic risk assessment of buildings and structures
  - b) Vulnerability of site to liquefaction and lateral spreading
  - c) Designs reduce significant damage in magnitude 9 event
  - d) Potential of structures to maintain operation, or safely shut down
- Rules **may** be adopted

# Risk Mitigation Program SB1567 Sec 3

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- Provisions for training, response exercises, external peer reviews, inspections and tests to verify ability to sustain safe operations and respond to releases
- Requirements to minimize harmful impacts
- Requirements for inspection
- Standards for new tanks
- Standards for mitigation of existing tanks, piping and structures

# Risk Mitigation Program - continued

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- Provisions for generators or emergency hookups
- Provisions for reviews by other state agencies
- Provisions for submittal of plan updates
- Provisions for establishing review fee
- Provisions for grants
- Rules **shall** be adopted for mitigation plan content and for approval

# Developing assessment and mitigation criteria

Geotechnical engineering assessment  
including liquefaction

Structural integrity assessment and analysis

Seismic building codes and industry  
standards

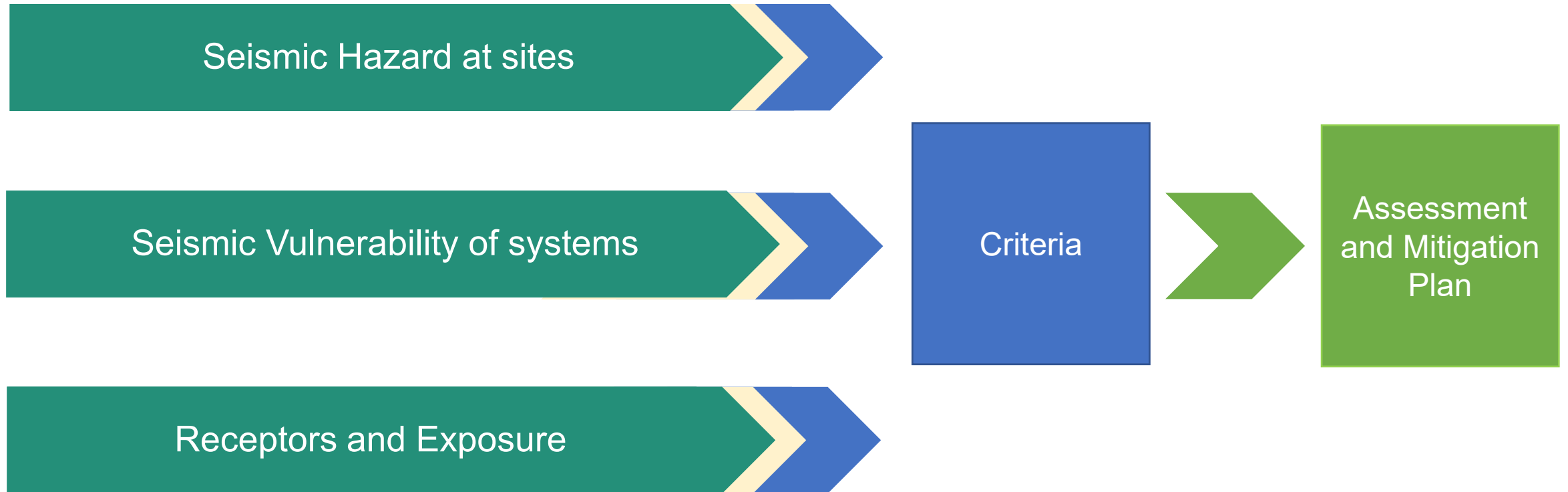
Methodology used in other states and  
countries

Additional provisions needed to  
achieve magnitude 9 event resilience

Assessment and  
Mitigation Criteria



# Assessing risk at facilities



# How will risk be minimized?

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- Mitigation plan process to be determined through this rulemaking – criteria and schedules
- Consultation with Department of Geology and Mineral Industries
- Plans implemented by the facilities
- Upgrade or replace equipment when the seismic hazards is greater than structural capacity

# Break

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# Discussion

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# PSU Technical Support Team

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**Who We Are:** Focused on a more resilient and sustainable region, Institute for Sustainable Solutions matches the passion and expertise of PSU faculty and students with the experience and needs of community.

**Long-term transformational change** Requires strategies that will work within context, given the "wicked" or complex problems that will lead us toward a more sustainable world. We focus on process, especially on collaboration, as the foundation of our work.



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# PSU Technical Support Team

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## Process

- Strategy and coaching for the rulemaking process
- Capturing visionary pieces that go beyond SB1567
- Holding space and articulating important next steps

## Supportive Projects

Planning and policy research

Environmental justice

Convening external interested groups

# Environmental Justice Considerations (PSU)

## Environmental Justice Review:

Jola Ajibade, PhD, Assistant Professor of Geography at PSU

Arun Pallathdka, PhD Student in Geography at PSU

## Goals:

- Vulnerability analysis of impacted communities.
- Understand the impacts of fuel terminals and their safety on nearby populations



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# Similar regulations in other jurisdictions (PSU)

## Planning and Policy Research:

Luke Hanst, MS, Partnerships Coordinator at Inst. for Sustainable Solutions

### Goals:

- Identify model policies for reducing risk of fuel releases from earthquakes.
- Provide state of practice recommendations for mitigation planning for earthquake-induced fuel releases.
- Outline existing framework of response and mitigation plans for large fuel terminals.



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# Haley & Aldrich

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**HALEY**  
**ALDRICH**



**Daniel Trisler, PE, GE**  
**Technical Review**



**Della Graham, LG**  
**Project Management**



**Allison Pynch, PE, GE**  
**Project Engineer**

# Engineering considerations

## Earthquake hazard

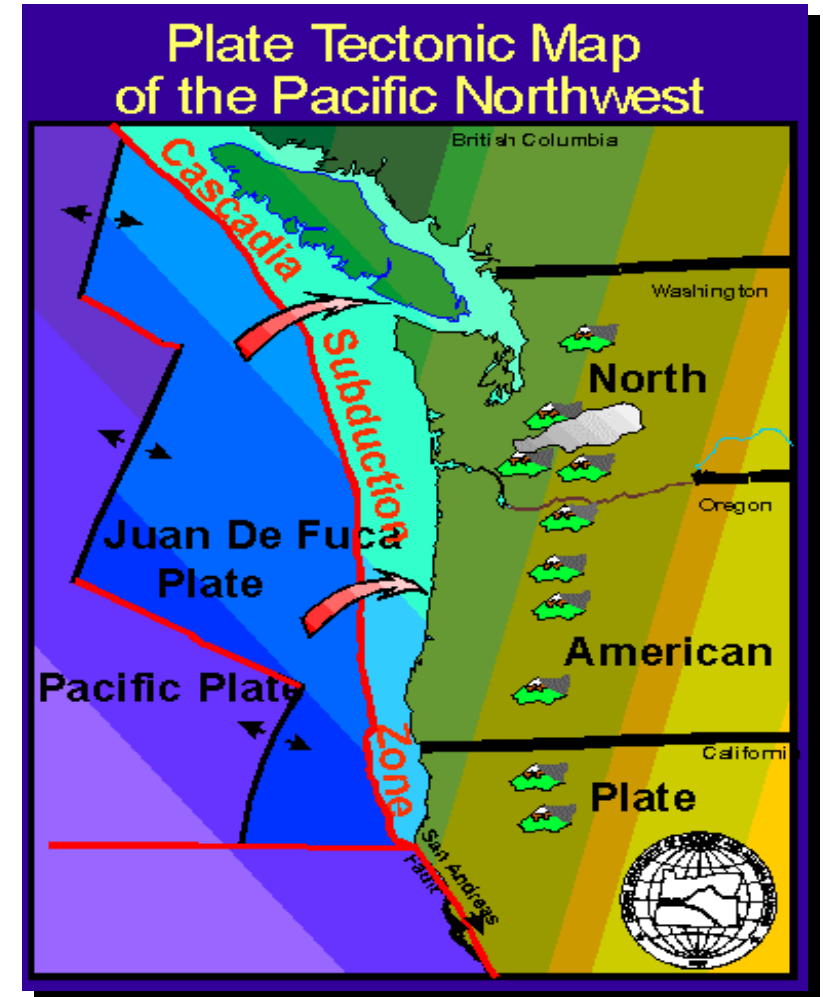
- Magnitude, distance, and shaking strength

## Regulation earthquake

- Earthquake frequency

## Performance Criteria for Tanks and Infrastructure

- No collapse/Life Safety/Operational



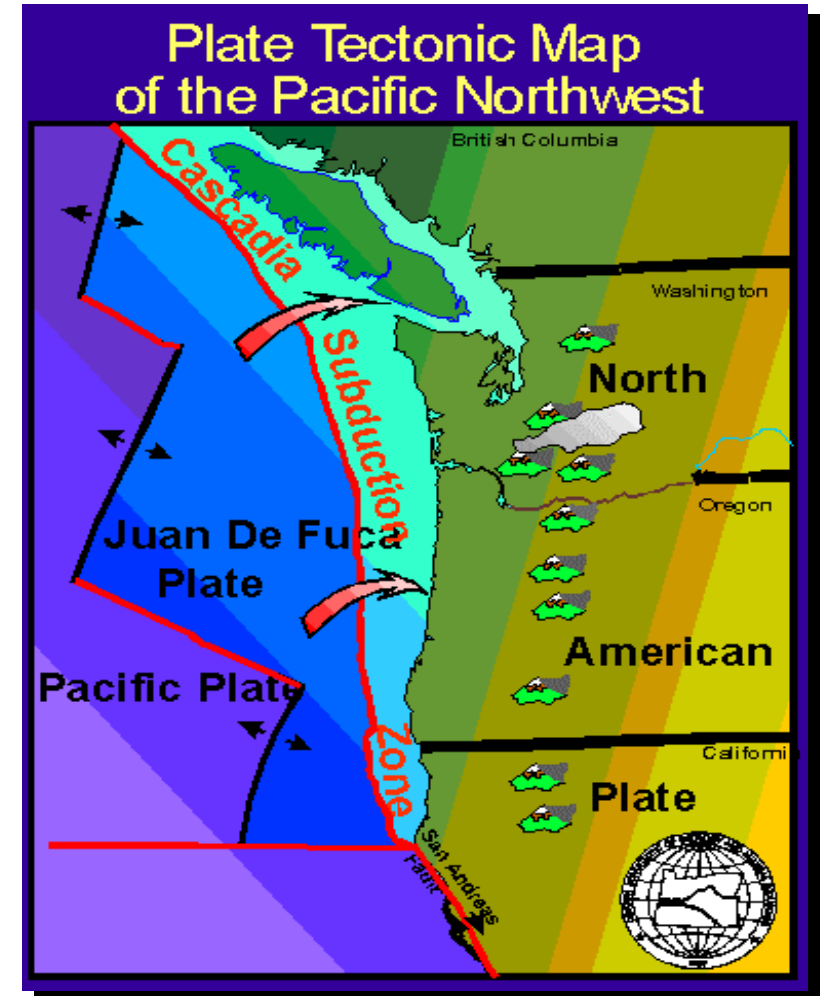
# Engineering considerations

## Results of Failure

- Tanks
- Containment
- Tank connections/fuel lines

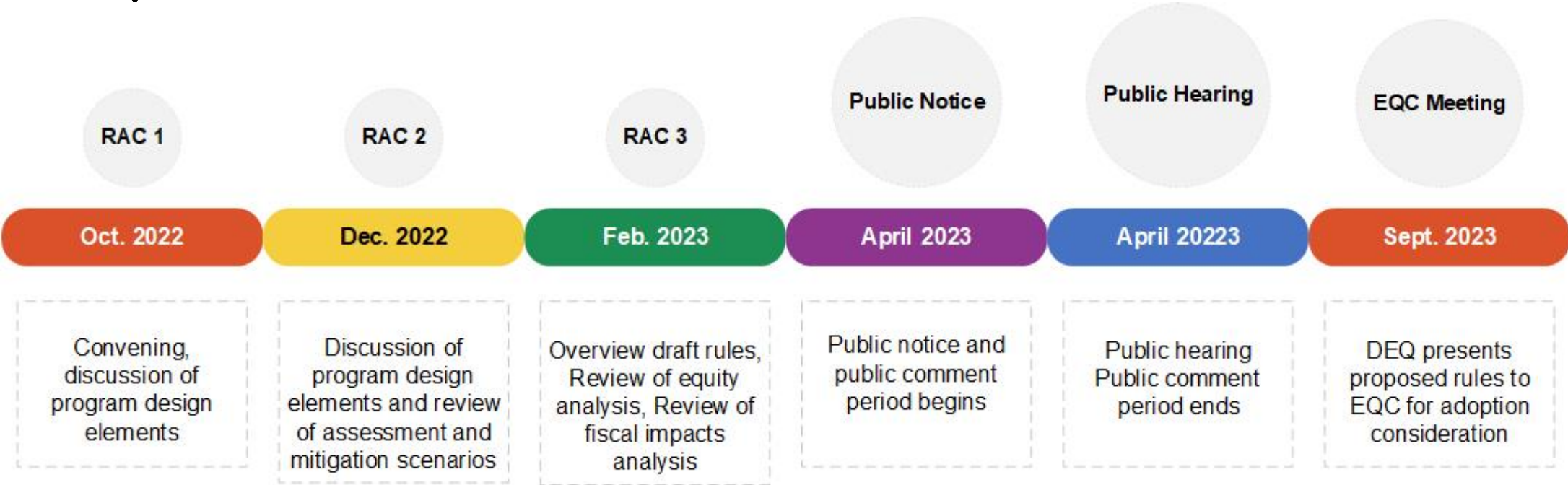
## Acceptable Risk

- Performance requirements for existing facilities vs new
- Containment requirements for tank failure



# Next steps

We are here





# More information

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Rulemaking webpage:  
[ordeq.org/tanks-seismic-rules](https://ordeq.org/tanks-seismic-rules)

Send input by Nov. 2, 2022 to:  
[seismicstability.2023@deq.oregon.gov](mailto:seismicstability.2023@deq.oregon.gov)

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*Thank  
You*