

# National Forum for Seismic Safety Commissions

December 4 and 5, 2024

10:00 AM - 12:30 PM *Alaska* | 11:00 AM - 1:30 PM *Pacific*  
12:00 - 2:30 PM *Mountain*  
1:00 - 3:30 PM *Central* | 2:00 - 4:30 PM *Eastern*



# Welcome!

*Before we get started:*

- If you have technical issues with Zoom, please email [schuback@crew.org](mailto:schuback@crew.org) to ask for help.
- Please keep your mics muted.
- We'll create a temporary recording of the forum to assist with note-taking; the recording itself won't be published or shared.

*Funding was provided by FEMA-National Earthquake Hazards Reduction Program*

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# Welcome!



**Brian Blake**  
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[crew.org/national-ssc-forum/](http://crew.org/national-ssc-forum/)

# Agenda, Day 2

*(2 hours, 30 minutes)*

- Welcome & Overview
- Meet three commissions
- Discussion
- Break
- Meet three commissions
- Discussion
- Wrap Up & Adjourn

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# How to Participate

- Commission Presentation (up to 10 minutes each, including Q&A)
- Make a comment, contribute a thought, or ask a question:
  - Use the “chat” feature: Open chat by clicking the “chat” icon at the bottom of your screen.
  - Raise your hand to speak: Click “react” icon at the bottom of your screen, then click “raise hand” and wait to be called.

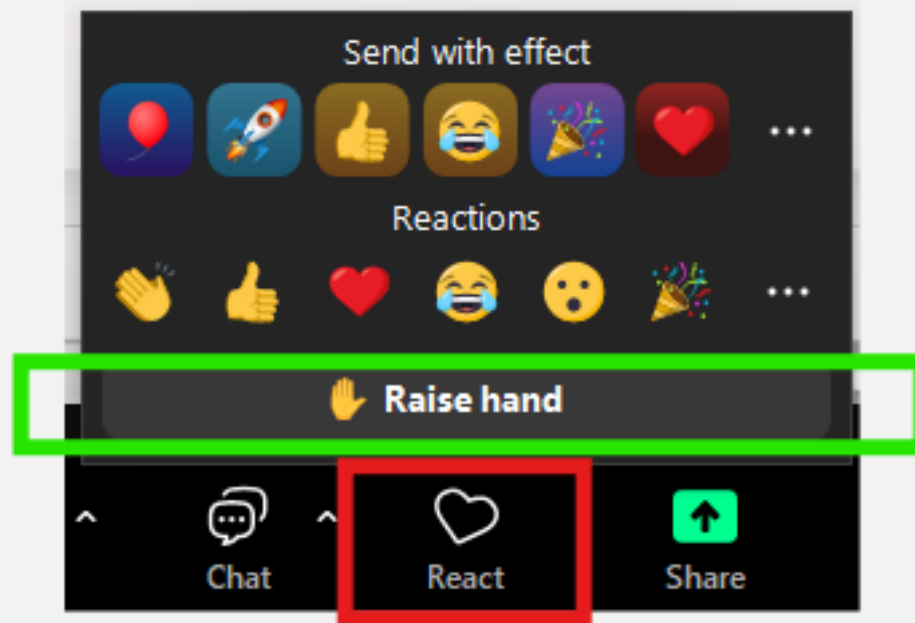
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# How to Participate

Raise your hand to speak: Click “react” icon at the bottom of your screen, then click “raise hand” and wait to be called.



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# Who Is Taking Part

- **Alaska** Seismic Hazards Safety Commission
- **Arkansas** Governor's Earthquake Advisory Council
- **Arizona** Council on Earthquake Safety
- **California** Seismic Safety Commission
- **Colorado** Earthquake Hazard Mitigation Council
- **Missouri** Seismic Safety Commission

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# Who Is Taking Part

- **Montana** Earthquake Working Group
- **Oregon** Seismic Safety Policy Advisory Commission
- **West Tennessee** Seismic Safety Commission
- **Utah** Seismic Safety Commission
- **Washington** Seismic Safety Subcommittee

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# Who Is Taking Part

Supporting partners, including:

- CREW
- CUSEC
- FEMA (National Earthquake Hazards Reduction Program; regional earthquake programs)

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# Up First...

Meet:

- Arkansas Governor's Earthquake Advisory Council
- Arizona Council on Earthquake Safety
- Oregon Seismic Safety Policy Advisory Commission

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# Arkansas Governor's Earthquake Advisory Council

- Authority resides under the Department of Public Safety - Division of Emergency Management
- Authorized under Act 247 of the 1989 Legislative Session HB 1154
  - Act to establish a state earthquake preparedness program
- Approximately 125 members (state, federal, local agencies, schools, private citizens, healthcare, businesses, VOAD)
- Two meetings per year (Spring and Fall) with an average of 75 attending
- Core Values: Collaboration, community, expertise, integrity

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# Arkansas Governor's Earthquake Advisory Council

- Vision – to advise and engage the Governor and constituents of Arkansas of the effects of seismic activities.
- Mission – GEAC will provide education resources, support, guidance for whole community seismic activity planning, preparedness, mitigation/resilience and post-activity response and recovery within Arkansas

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# Arkansas Governor's Earthquake Advisory Council

Initiatives / projects / programs:

- Hosting USGS NSHM Map workshop March 7, 2025- CUSEC region
- Rapid Visual Screening
- Business resilience (QuakeSmart, State Chamber of Commerce)
- Schools (earthquake drills/education)- GEAC collaborated with 2 state agencies to legislation passed in 2021 requiring school earthquake drills - Act 442
- Great ShakeOut

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# Arkansas Governor's Earthquake Advisory Council

Initiatives / projects / programs:

- Strategic Plans
  - Enhance preparedness, understanding, education
  - Support earthquake hazard mitigation
  - Collaborate with stakeholders to improve emergency response
  - Collaborate with stakeholders to improve recovery efforts
  - Evaluate hazards associated with earthquakes

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# Arkansas Governor's Earthquake Advisory Council

Key challenge(s)?

- Public Service Announcements
- Finish Strategic Plans
  - Adding Memorandums of Understanding with collaborating agencies
  - Selecting core GEAC planning group
  - Developing of 5 – Year Plan
- Education/outreach:
  - Businesses
  - Healthcare

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# Arizona Council for Earthquake Safety

- Chairperson (Dr. R. Arrowsmith), Vice-chair (Dr. Jeri Ben-Horin)
- 15 to 20 members
- 3 to 4 meetings per year
- Mission: To provide a platform for professional and community stakeholders to address earthquake science, hazards and risk that can impact the safety and resilience of AZ.

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# ACES

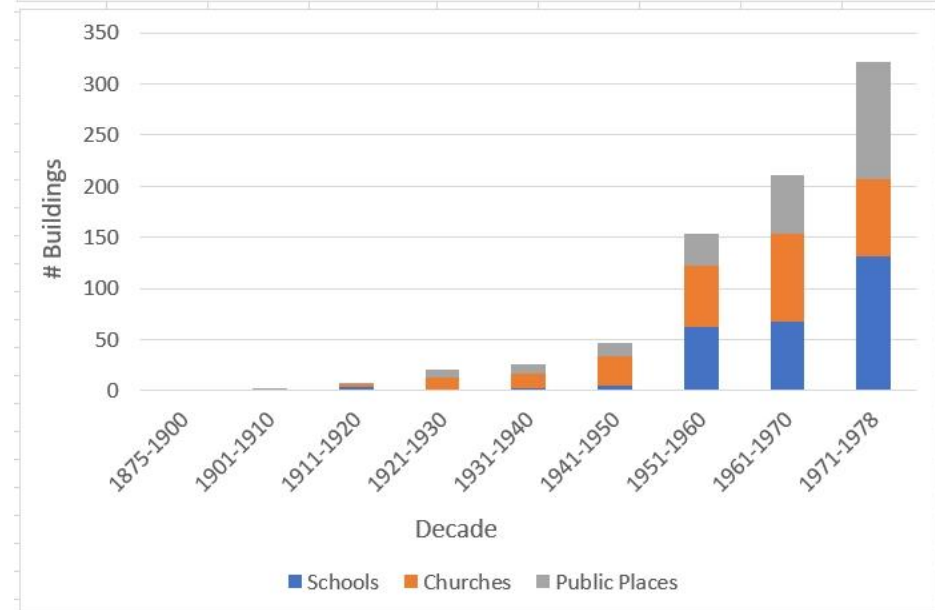
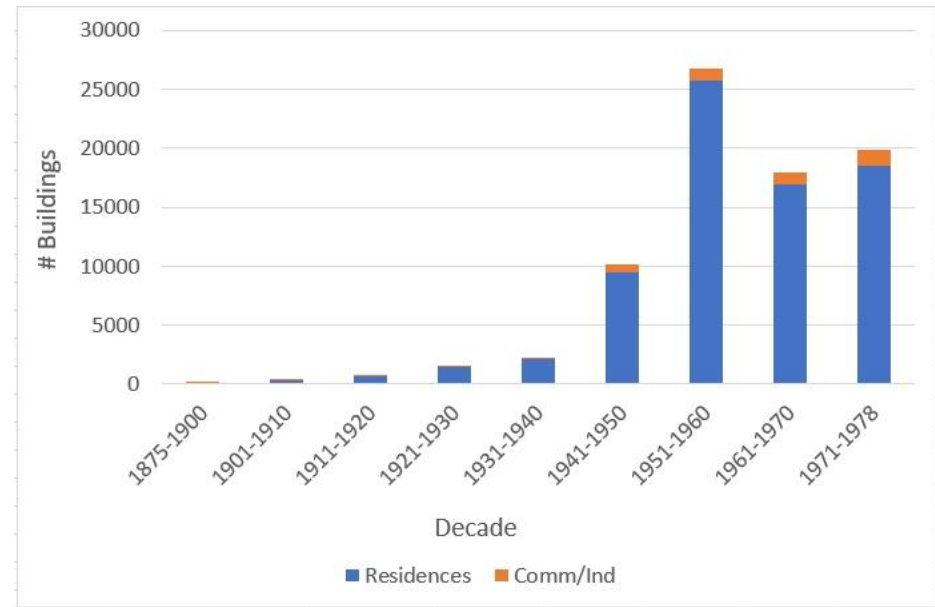
- History
  - ACES resurrected by the Arizona Geological Survey about 10 yrs ago (Mike Conway and myself).
  - Worked with Western States' Seismic Policy Council to guide and improve ACES efforts.
    - Tried to tackle the “building code problem”.
- Membership – ranges from 10 to 20 over the last ten yrs.
- Members – County, City, Tribal Emergency Managers, AZ Dept. of Emergency Management, U of A, NAU, ASU geologists and seismologists, Arizona Geological Survey, FEMA Region 9.
- Budget – no state funding; some aid from FEMA.
- No state mandate or connections to Governor's Office.
- Quarterly meetings – inform members of ongoing seismicity, hazards projects, outreach efforts, aid with EQ scenarios for planning, give primers on AZ earthquakes.
- Greatest achievements, so far –
  - URM Building Projects - Yuma, Flagstaff, Tucson, Prescott, Hualapai Tribe
  - ShakeOut – each October
  - AZ EQ Clearinghouse
  - “Arizona Is Earthquake Country” publication
  - Social Media Posts – FB, Instagram, X
  - Continuing collaboration against the odds



# URMs



- Tucson, Flagstaff, Prescott and Yuma, Hualapai Reservation, Peach Springs, AZ.
  - All cities had incomplete records.
  - All cities had erroneous to no building type assignments.
  - All had vulnerable schools.



# ShakeOut summary 2024

- 40,121 enrolled
- Successes:
  - New contact at AZ Dept of Education (Doug Nick, Direction of Communications)
  - Hosted two outreach events at Flagstaff Festival of Science
  - Similar K-12, Healthcare, Tribal enrollment
  - Higher college/university enrollment
- Challenges:
  - First year w/o Mike 😞
  - Lack of participation by universities
    - WUE!!
- Future Plans:
  - Short demo videos for social media
  - Custom powerpoints for AZ teachers
  - Help from geo professors to get university emergency managers on board?



# Arizona Virtual Earthquake Clearinghouse



The Arizona Geological Survey, in partnership with the Arizona Department of Emergency and Military Affairs, the Earthquake Engineering Research Institute, and the AZGeo Data Hub, have created a new Arizona Virtual Earthquake Clearinghouse (AVEC). A clearinghouse is an organization that coordinates data collection and sharing efforts among investigators working in response to a natural hazard or other emergency. The Arizona Virtual Earthquake Clearinghouse (AVEC) is a digital repository that collates and publishes data gathered by geoscientists, emergency responders, civil engineers, policymakers, and other stakeholders working in response to Arizona earthquakes.

Use the search below to explore and discover Arizona Virtual Earthquake Clearinghouse data and contributions



# “Arizona Is Earthquake Country”



- Convince the reader that AZ has earthquakes
- 7 Steps to earthquake safety
- Active faults in AZ
- Types of Earthquake Hazards
- Monitoring EQs in AZ
- Resources

# Oregon Seismic Safety Policy Advisory Commission (OSSPAC)

- Formed in 1991 – Loma Prieta
- Meets bi-monthly
- Mission and priorities
  - Influence decisions & policies regarding pre-disaster mitigation of EQ/tsunami
  - Increase public understanding of EQ hazard, risk, exposure & vulnerability through education
  - Respond to new studies/issues



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**nehrp**

# Commission Membership

18 Members

## State of Oregon

- Transportation
- Land Conservation & Development
- Geology & Mineral Industries
- Consumer & Business Services
- *Environmental Quality (ad hoc)*
- House Representative
- Senate Representative

\* State Resilience Officer

## Industries & Public Interest

- Local Government
- Utilities
- First Responder
- Schools
- Utilities
- Multi-Housing
- Building Owner
- Banking/Insurance
- Structural Engineer
- Public Members (3)

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# Key Challenges

- Earthquake Culture
- Earthquake Education
- Building Codes Resistance
- Competing Priorities/Funding
- Legislative Coordination
- **Critical Energy Infrastructure Hub**
- **Tsunami Risk**



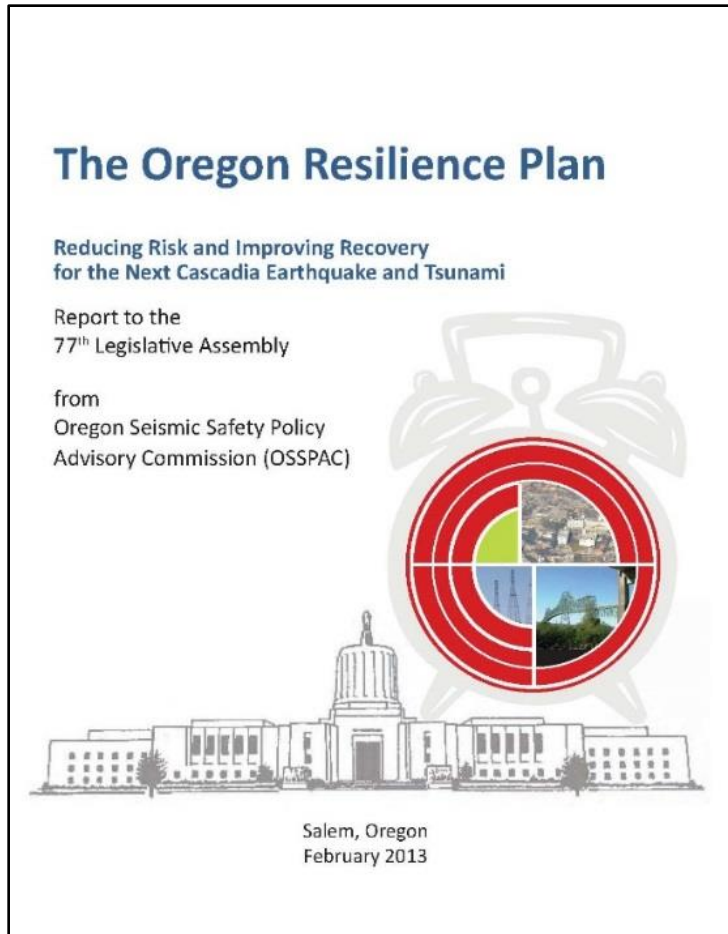
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# Projects

## *Policy, Programs & Initiatives*



## OREGON RESILIENCE PLAN

- 50 Year Plan for State
- Assessment of Current State
  - Coastal Communities
  - Business
  - Critical Buildings
  - Transportation
  - Energy
  - Communications
  - Water/Wastewater
- Months to Years of Recovery
- 1/5 of Oregon GDP Lost
- 10,000's Displaced

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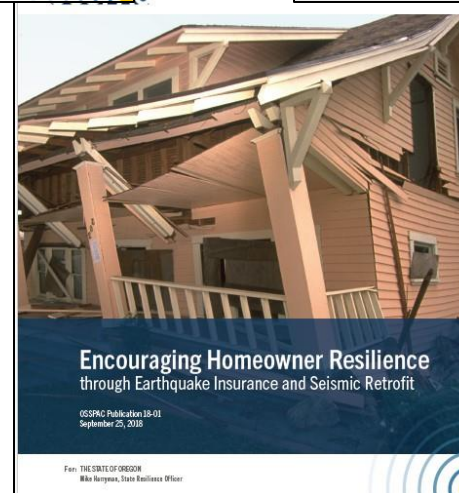
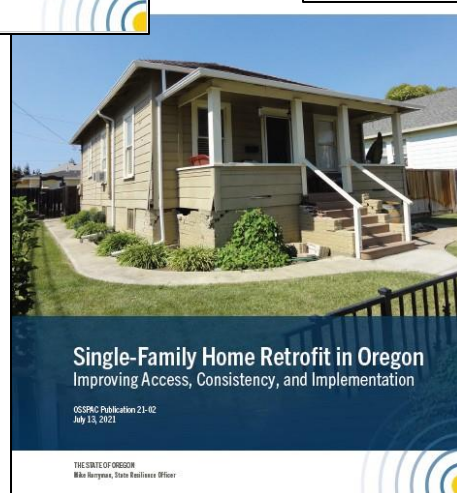
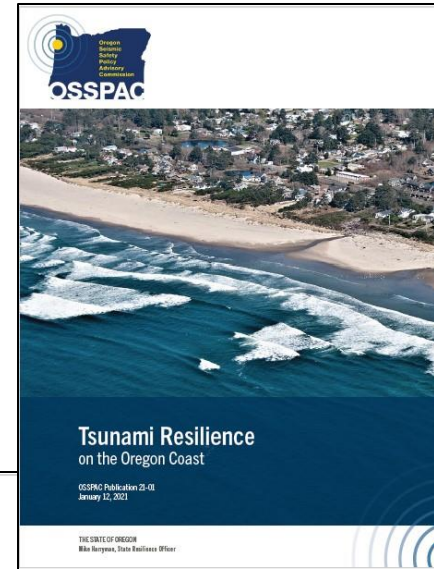
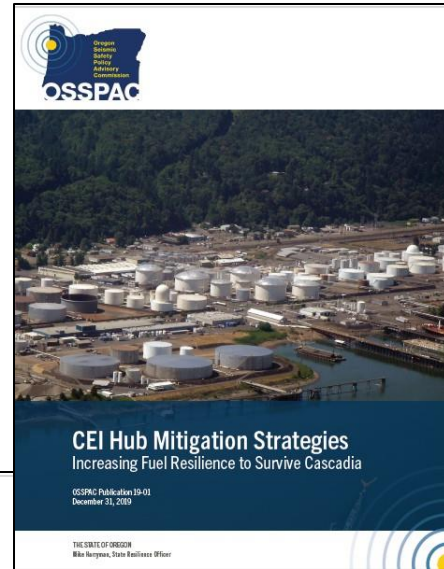
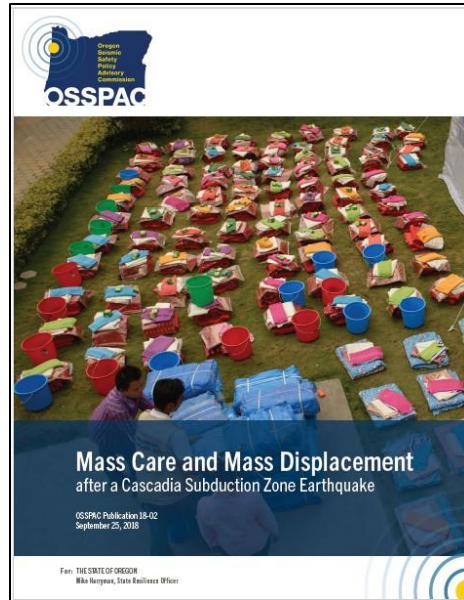


Critical Service	Zone	Estimated Time to Restore Service
Electricity	Valley	1 to 3 months
Electricity	Coast	3 to 6 months
Police and fire stations	Valley	2 to 4 months
Drinking water and sewer	Valley	1 month to 1 year
Drinking water and sewer	Coast	1 to 3 years
Top-priority highways (partial restoration)	Valley	6 to 12 months
Healthcare facilities	Valley	18 months
Healthcare facilities	Coast	3 years

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# Reports & Recommendations



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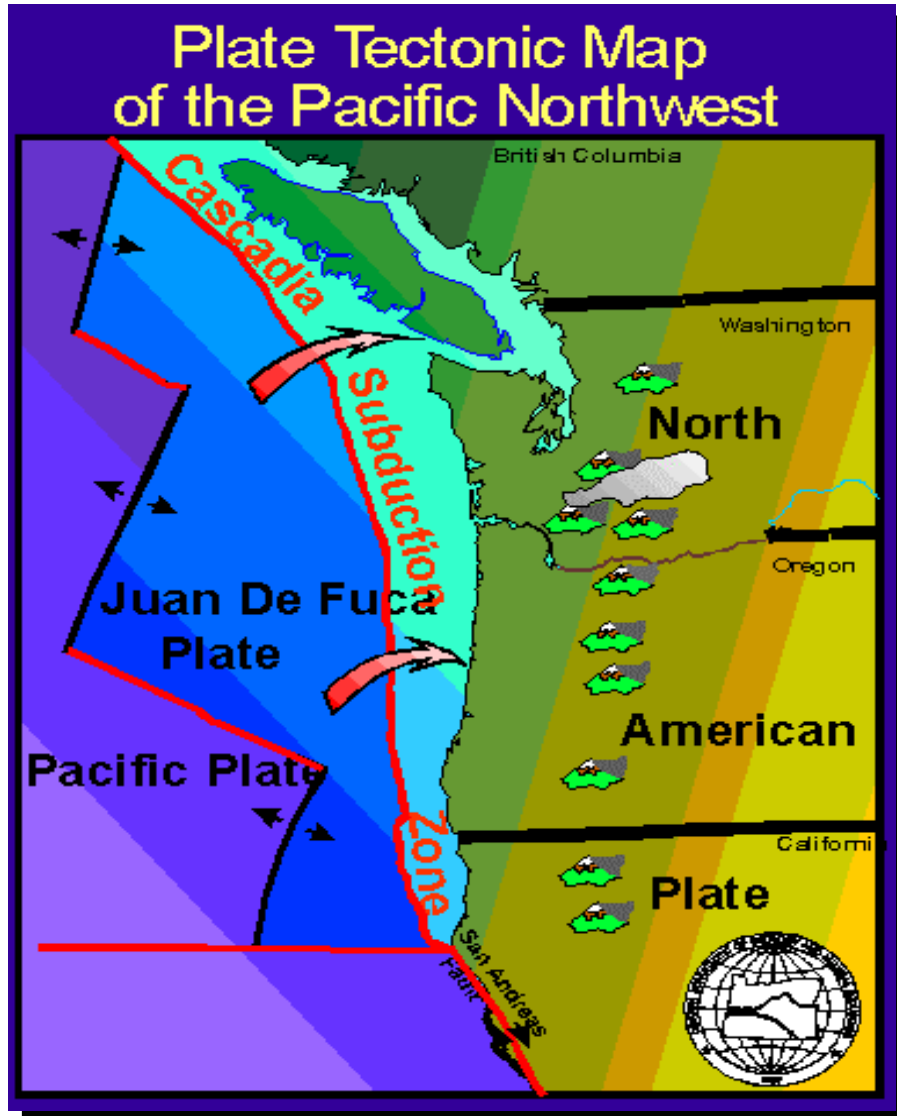
# Seismic Resilience Efforts in Oregon

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# Pacific Northwest



- 1994 – Oregon Building Code w/Seismic Design Provisions
- Inherited community infrastructure at-risk

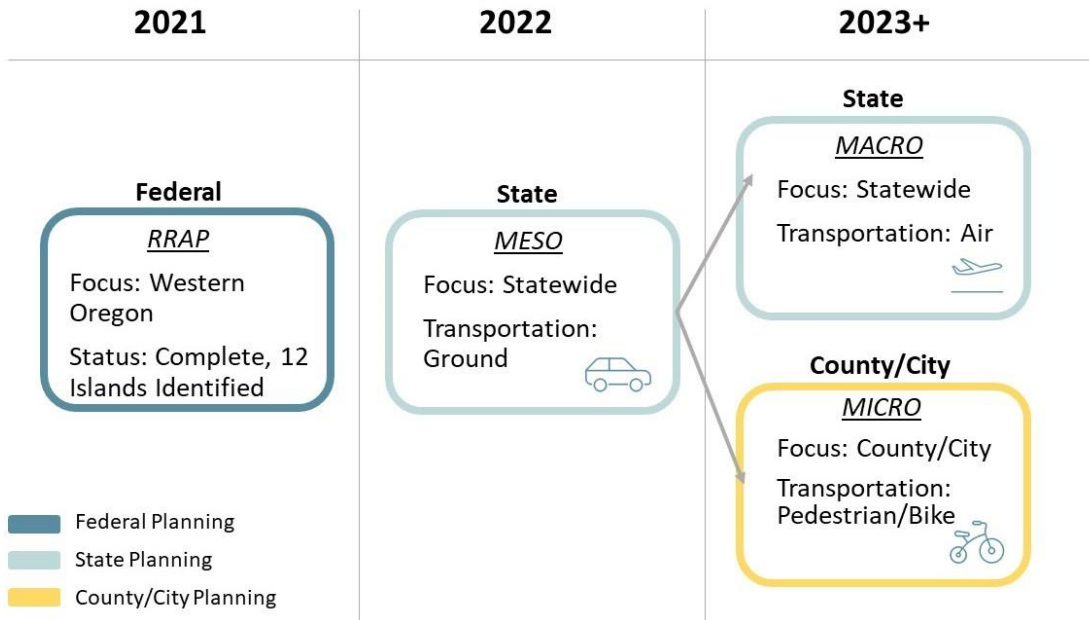
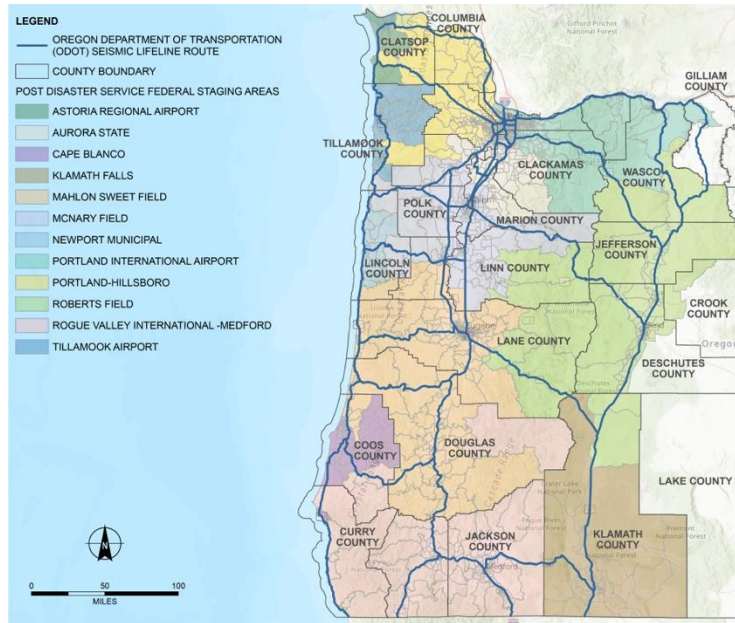
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# Steps Forward Since ORP

## State Islanding for Emergency Response Planning



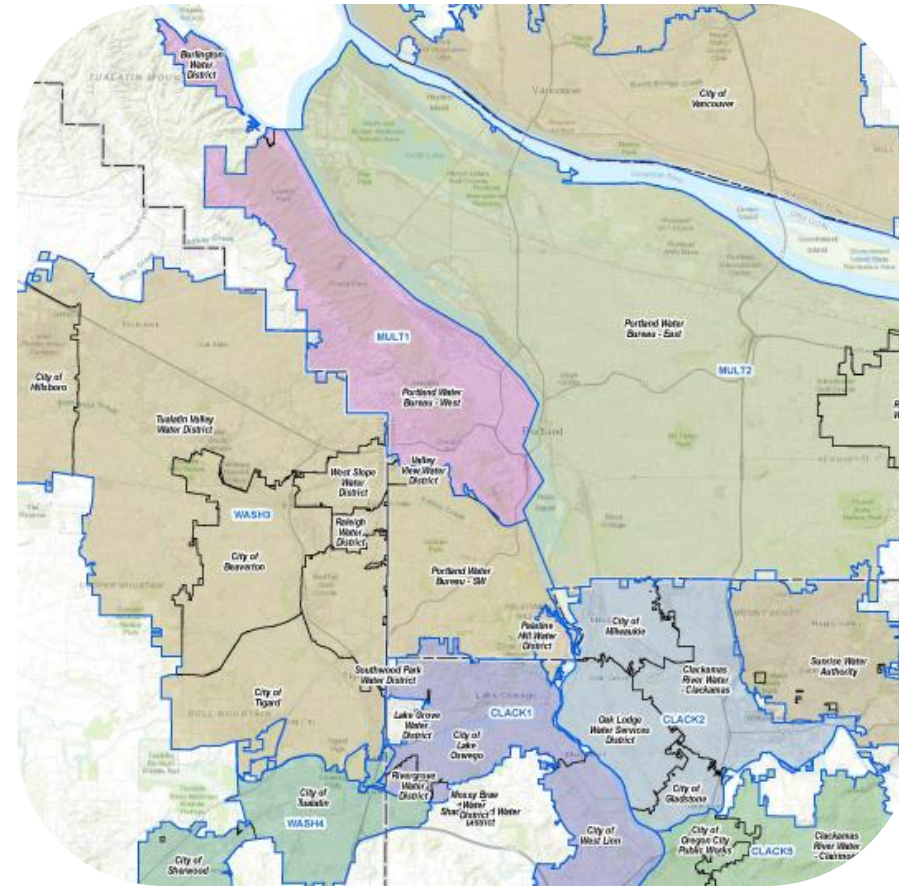
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# Steps Forward Since ORP

## Recent use of Islanding for Emergency Response Planning

- RDPO/RWPC Emergency Drinking Water Project
- RRAP Oregon Transportation Systems Assessment Islands

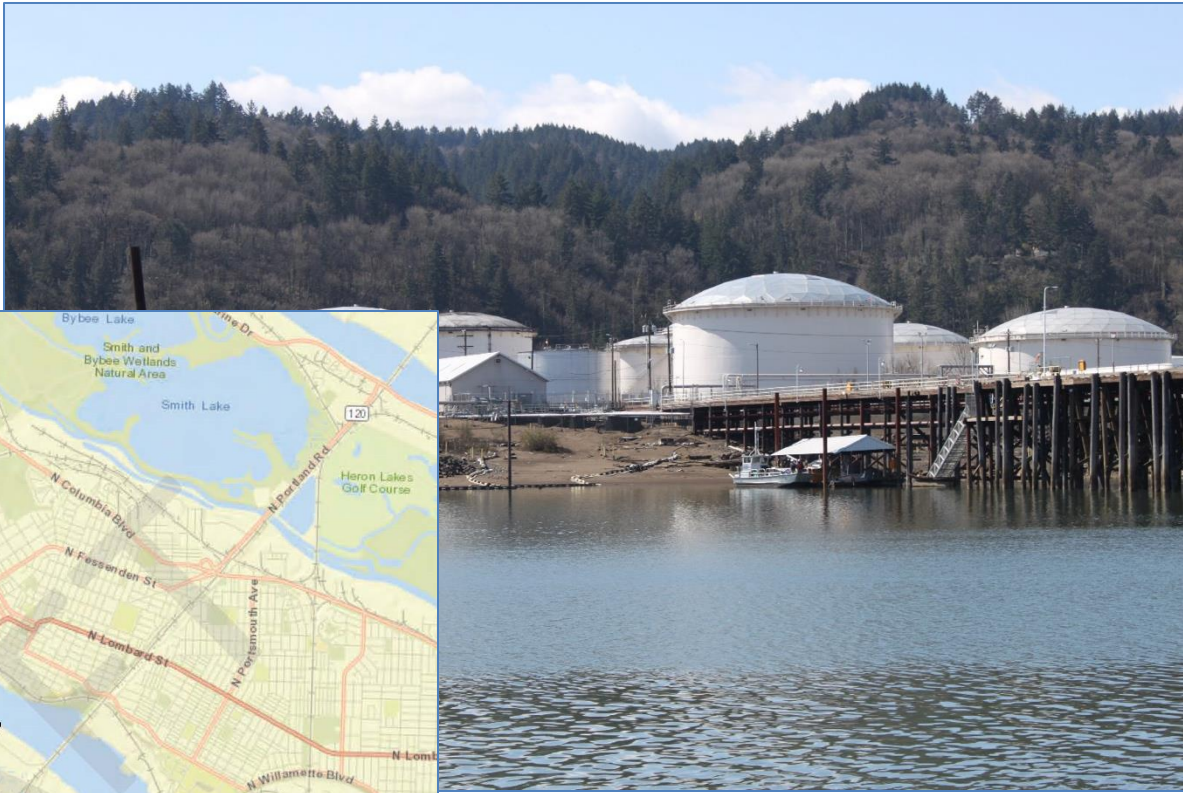


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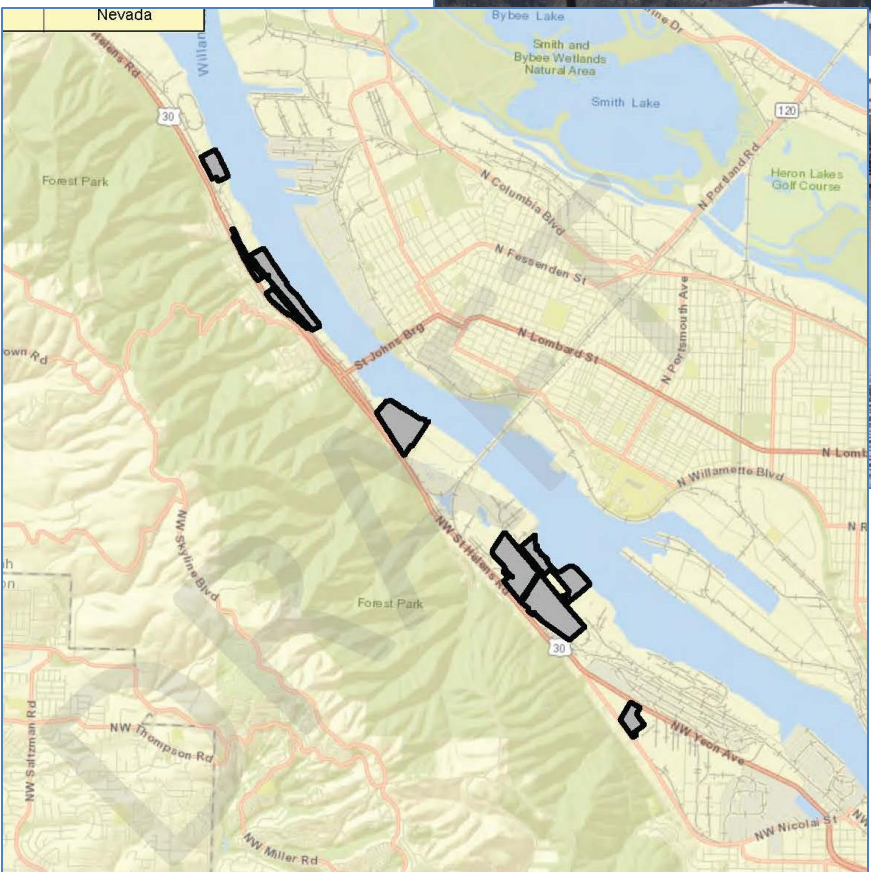


# Steps Forward Since ORP

Statewide and  
Local Fuel  
Planning



Mandatory  
Seismic  
Upgrades



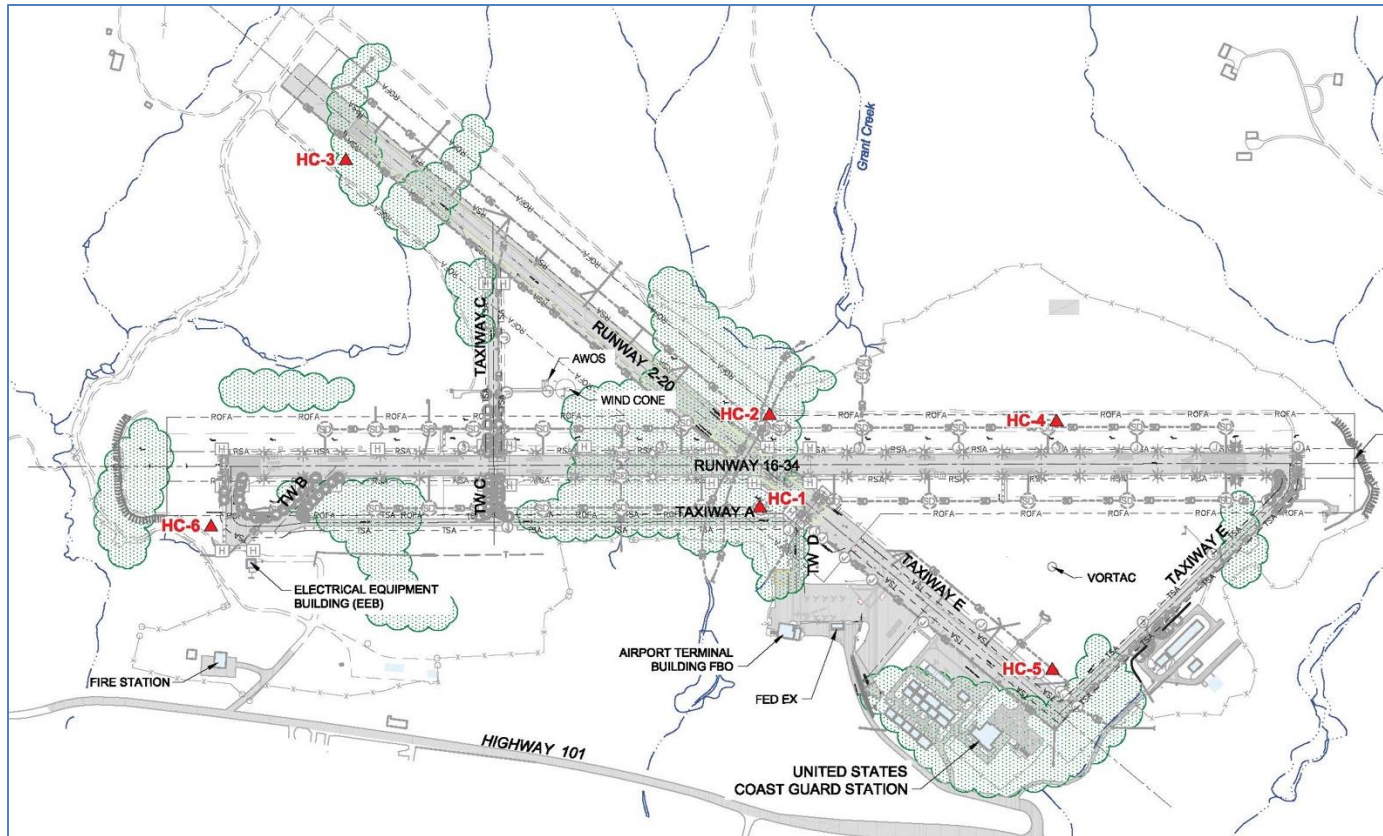
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**DOGMI**  
OREGON DEPARTMENT OF  
GEOLOGY AND MINERAL  
INDUSTRIES

**nehrp**

# Steps Forward Since ORP



Oregon  
Department of  
Aviation  
Assessments

DHS/FEMA/State  
RRAP  
Transportation  
Studies

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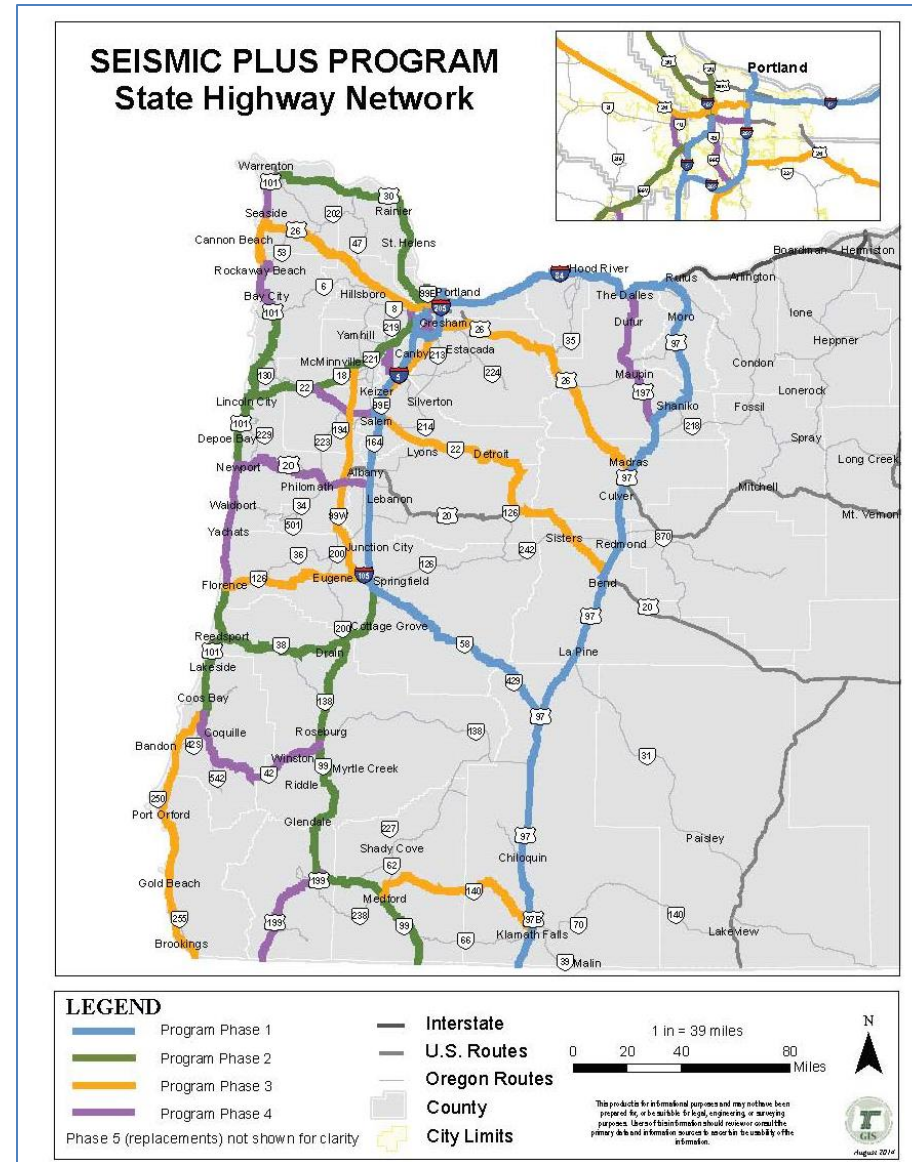
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# Steps Forward Since ORP

## ODOT - Plan and Prioritize

- Tier 1: Backbone system  
Restored within Hours to 3 Days
- Tier 2: Secondary system  
Restored with Days to Weeks
- Tier 3: Tertiary systems  
Restored with Weeks to Months



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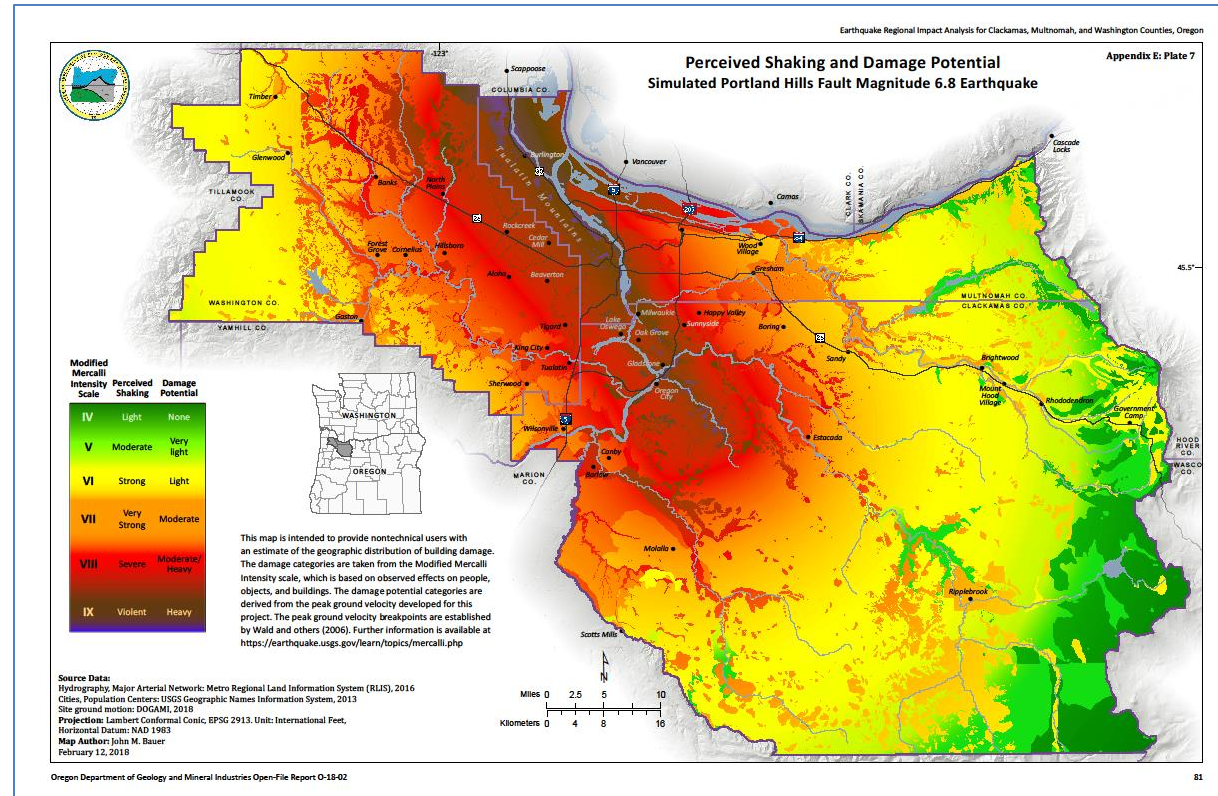
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# Steps Forward Since ORP

DOGAMI Mapping  
and Damage  
Assessments

Islands  
Identification



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**Prepare • Respond • Recover Workshop & Conference**  
October 7-10, 2019 | Valley River Inn • Eugene, Oregon

# Steps Forward Since ORP

## Resilient Buildings

- Schools
- State Building
- Police/Fire



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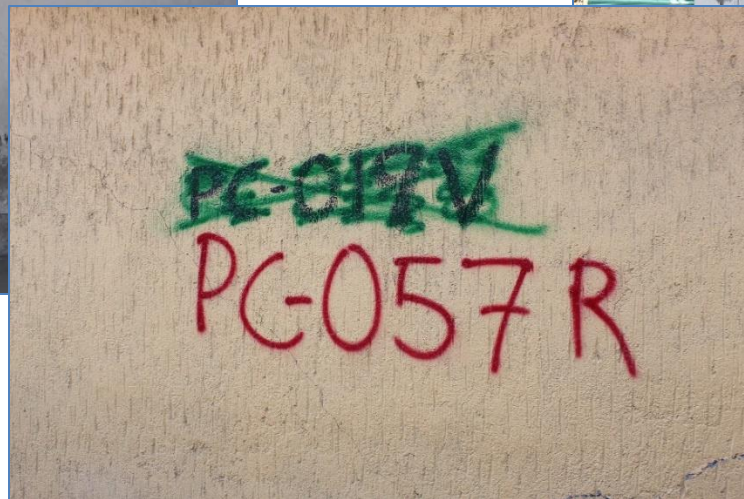
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# Steps Forward Since ORP

ORSAP

Post-disaster Assessment



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# Break

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# Up First...

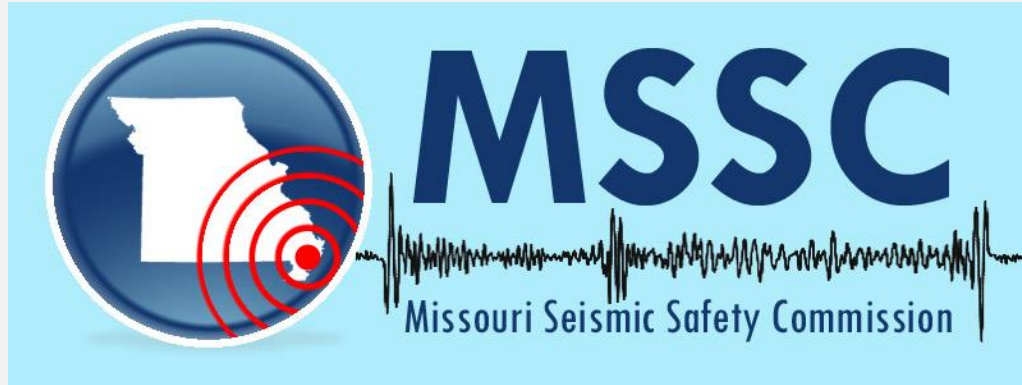
Meet:

- Missouri Seismic Safety Commission
- West Tennessee Seismic Safety Commission
- Colorado Earthquake Hazard Mitigation Council

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# Missouri Seismic Safety Commission

- Created in 1993 by state law
- 17 members
- 4 meetings per year

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# Commission Duties Include:

Prepare	Prepare the state to respond to earthquakes
Advise	Advise governor and state officials on earthquake readiness
Recommend	Recommend program changes to state agencies
Issue	Issue annual report to Governor
Sponsor	Sponsor training, activities to promote earthquake readiness

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# Funding



No funding dedicated to commission



SEMA covers travel expenses, facilitates meetings and other activities



Work w/SEMA to use portion of NEHRP funds

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# RVS Program



Free seismic evaluations for critical infrastructure



Focused on schools



More than 200 buildings since 2013



Folded into CUSEC program



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# Earthquake Insight Field Trip



Tour of New Madrid Seismic Zone, focusing on geology and structures



Conducted almost every year since 2005



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# Earthquake Summit



Regional professional development conference



Annually since 2019



400 attendees last year



Valuable for networking and awareness



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# Challenges



Apathy about earthquake risk



Commission Vacancies

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# West Tennessee Seismic Safety Commission



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# Colorado Earthquake Hazard Mitigation Council

*A consortium of academia, government and private industry*

- Organization: Now Ad Hoc (Long history stemming from 1963; Colorado Society for Earthquake Research; Colorado Society for Natural Hazards Research; and formally organized as the Earthquake Subcommittee of the Colorado Natural Hazards Mitigation Council)
- 17 members
- 6 Meetings per year
- Mission:
  1. Increase public awareness of Colorado earthquake hazards
  2. Provide oversight review of seismic issues, standards, and practices
  3. Improve the characterization of Colorado's earthquake hazard in order to mitigate the associated risk and vulnerability of Colorado's population and infrastructure to earthquakes.

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# Colorado Earthquake Hazard Mitigation Council

*A consortium of academia, government and private industry*

Initiatives / projects / programs:

- The 2020 Building Resilient Infrastructure and Communities (BRIC) program and the Mitigation Project Proposal entitled “Colorado Earthquake Resilience Investigation – Code Review & Rapid Visual Screening Pilot Study.” There are two elements to the project. Element 1 is a statewide examination of building codes applied to all K-12 public schools. Element 2 encompasses a pilot study of up to six critical infrastructure buildings using FEMA P-154.
- Policy Recommendation to the Colorado Division of Fire Prevention and Control on the Seismic Design of Public Schools
- Letters of support for NEHRP, ShakeOut and local seismic investigations

Key challenge(s)?

- Awareness of the Colorado earthquake hazard, particularly the appreciation of the historic 1882 6.6M event as representative of potential future risk.

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# Discussion

*Facilitator: Martha Kopper, Arkansas*

## ***How do we build support for commissions and their work?***

For example:

- What benefits or “selling points” should we promote to persuade decision makers and the public that a seismic safety commission is needed in our state/territory?
- Who do we need to convince?
- How can seismic safety commissions in different states help and support one another?

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*Funding for this forum was provided by grants from  
FEMA-National Earthquake Hazards Reduction Program*

*Please share your feedback with us:*

[www.surveymonkey.com/r/2024-national-ssc-forum-survey](https://www.surveymonkey.com/r/2024-national-ssc-forum-survey)

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***Thank You!***