



OREGON SEISMIC SAFETY POLICY ADVISORY COMMISSION (OSSPAC)

Tuesday, March 12, 2024
9:00 – 11:00 p.m.

MEETING AGENDA

IN-PERSON

State of Oregon Treasury, 867 Hawthorne Ave SE, Salem, OR 97301

VIRTUAL

<https://us02web.zoom.us/j/86154135251?pwd=NFRyc0ljQWd4dXlhQlI4a2VrME9JZz09>

Meeting ID: 861 5413 5251 | Passcode: 691864

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- 9:00 1. Administrative Matters
- a. Welcome
 - b. Roll Call & Introductions
 - c. Review and Approval minutes
 - d. Events Notification
 - e. New Business
 - f. May OSSPAC Meeting
- 9:10 2. Reports
- a. State Agencies
 - i. ODOT
 - ii. DLCDC
 - iii. ODEM
 - iv. DOGAMI
 - v. DCBS
 - vi. DEQ
 - vii. Legislative Assembly
 - viii. State Resilience Officer
- 9:25 3. Public Comment
- 9:30 4. Oregon Resilience Plan Project Update & Discussion
- 10:00 5. Cascadia Lifelines Program (CLIP) - Overview
Mike Olsen, Ph.D. | OSU School of Civil and Construction Engineering
- 10:30 6. Cascadia Lifelines Program (CLIP) – Community Resilience Project
Shane Brown, Ph.D. | OSU School of Civil and Construction Engineering
- Adjourn



OREGON SEISMIC SAFETY POLICY ADVISORY COMMISSION (OSSPAC)

Minutes

November 14, 2023

OSSPAC Members Present:

Tiffany Brown, Chair	Local Government Stakeholder
Elizabeth Safran, Vice Chair	Public Member
Althea Rizzo	Department of Emergency Management
Christina LeClerc	Department of Transportation
Rep. David Gomberg	Legislative Assembly Representative - House
Sen. Dick Anderson	Legislative Assembly Representative - Senate
Matt Crall	Department of Land Conservation and Development
Natasha Fox	Schools Stakeholder
Allison Pynch	Public Member

OSSPAC Members Absent:

Jonathan Allan	Department of Geology & Mineral Industries
Todd Smith	Department of Consumer & Business Services
Lesley Ogden	First Responder Stakeholder
Carolina Abdalah	Multifamily Housing Stakeholder

Others in Attendance:

Jordan Peterson, Admin Support	ODEM
Luke Hanst	Portland State University
Alice Busch	Multnomah County
Amanda Fox	ODEM
Betty Stansbury	Department of Aviation
James Bela	Citizen
Mike Korten Hof	DEQ
Jonna Papaefthimiou	State Resilience Officer
Lalo Guerrero	Department of Geology & Mineral Industries



1. **Administrative Matters:**

Roll Call & Introductions: At 9:08 a.m., Brown opened the meeting, made introductions, and roll call was taken. Brown gave shoutout to Peterson for all his help in coordinating administrative matters for OSSPAC.

Review & Approval of September minutes: Fox made and Safran seconded a motion to approve the September minutes, and the motion passed unanimously.

Events Notification: Great Shakeout exercise occurred on October 19 to great success with over 600,000 Oregon residents participating. Additionally, September was Preparedness month and October is focused on earthquake preparedness. Brown brought up that she has noticed great interest in preparedness/resiliency speakers at professional conferences lately which reflects on the importance and recognition of the work we do.

New Business: None

Next Meeting: The January 9, 2024 meeting will be held in the new Oregon State Treasury Building on Hawthorne Avenue in Salem, as well as meetings being available remotely over zoom. In addition to our regular meeting, there is also a retreat planned for that day to provide members an opportunity to get to know one another and talk about projects/initiatives. Other plans and ideas can be built out during that time as well. Gomberg suggested the idea of touring the State Capitol building to see the seismic renovations that have been made.

2. **Reports:**

Legislative Assembly: Representative Gomberg conducting a legislative tour of water and sewer projects on the coast. The increased housing needs along the coast bring with it an increased need for water infrastructure and it is important to build new infrastructure keeping in mind the seismic threats that is will face.

Reminded the group that the state congress has short sessions in even-numbered years and long sessions in odd-numbered years. The upcoming short session in 2024 they will be making tweaks to the biannual budget and are limited to two bills each. Rep. Gomberg anticipates that key topics that will be brought up this session include housing, resilience, addiction, measure 110, and addressing legislative walkouts.

Senator Anderson commended Rep. Gomberg's overview of the legislative schedule.

ODOT: LeClerc reminded the group about upcoming winter weather and to be personally prepared with winter kits in our cars. ODOT's budget shortfalls are impacting the number of resources allocated to plowing this season so road conditions may be



worse than in previous years. With help from the State Resilience Officer, got support from the governor's office to help cover expenses from flood damage that occurred in June along Highway 20 around the Burns Paiute tribe area.

DLCD: Crall discussed how DLCD continues work on natural hazard risk assessment upgrade, which will be the basis for the update to the state natural hazard mitigation plan (will complete by 2025). They are also awaiting the formal BRIC grant fund allocation to begin the upgrade. He proposed that members of OSSPAC could help support this initiative, by sharing information about the seismic risks across Oregon, working to estimate the resultant deaths and damages from the various hazards. Rizzo brought up that she is working on exercise scenario for IronOR 24 exercise next Fall where she will be compiling some of this information.

Papaefthimiou asked the group what the largest hazards to life safety are following an earthquake. She suggested in the risk assessment to break it down by the individual risks post-earthquake that pose the greatest threat. She brought up a few on her radar including the risks of collapse that many state prisons face and the inhalation risk of toxic chemical spills. She wondered if Natural Hazard Risk Assessment or Oregon Resilience Plan could include a cost-benefit analysis to definitively set the priorities in mitigating the largest risks to life.

Guerrero shared that DOGAMI has been publishing a series of county-level multi-hazard and earthquake reports funded by FEMA that analyze the geographic and geologic data that outline the hazards and risks associated with them that would incorporate well into this discussion.

Rizzo noted that there is interest in a statewide assessment of loss estimation, and seismic risks from Cascadia and other crustal faults, suggesting the idea of establishing a workgroup between ODEM, DOGAMI, DLCD, and other partners to help develop a comprehensive and definitive statewide seismic assessment.

ODEM: Fox announced her move to ODEM as the Inclusion, Diversity, Equity, and Accessibility Coordinator. In this position she will work on providing equitable access to preparedness, mitigation, recovery, and response initiatives around the state as well as internally at ODEM.

Rizzo announced that the Be2Weeks Ready program has been developed and will be launching next spring. Discussed the development of IronOR 24, a full-scale exercise simulating the response to a Cascadia subduction zone event that will occur next October. There will be participation from many state agencies as well as local, tribal, and private sector partners that will test the state's evacuation, mass care, communication, and operational capabilities. Rizzo is working on the exercise scenario as well developing a "ground truth" document to get the most realistic look at infrastructure damage following the event. Additionally, she is developing the tsunami debris guidance document for assisting recovery efforts related to tsunami debris.



DOGAMI: Guerrero updated the progress on the Cascadia Source Models, which is a combination of USGS hazard sources that will be used to generate new probabilistic hazard analysis models. These models are critical in creating high-resolution inundation modeling along the coast. DOGAMI will be starting next spring with modeling Clatsop, Tillamook, and Lincoln counties and working down the entire coast through 2025.

The Cascadia Region Earthquake Science Center (CRESCENT) kickoff meeting was held with a handful of DOGAMI employees in attendance, and it will provide many great opportunities for collaboration.

Guerrero is currently working on a geologic map near Milton-Freewater mapping the Wallula fault zone which is the source of the 1936 state line earthquake. Coworkers are working on multi-hazard reports for Clackamas and Polk County as well as a Cascadia loss estimation report for Eugene and Springfield. These reports will inform both English and Spanish outreach materials and a Spanish public presentation that will be given by Guerrero.

DCBS: No report.

DEQ: Korten Hof, manager of the fuel tank seismic stability program, presented the proposed rule changes for Senate Bill 1567 were passed on Sept. 14 and for which DEQ is proceeding with implementation. The rules require the largest fuel storage facilities to be seismically resilient per current codes such as ASCE 7. Per the bill, facilities must submit their assessments and mitigation plans within the next two years, and DEQ will review them, with a following ten-year construction implementation window. There was a robust environmental justice and equity analysis conducted with partners, such as PSU, to evaluate the community impacts and ongoing needs for DEQ related to this risk. First facility work is already beginning at the Port of Portland & Portland Airport have plans to start construction on new fuel storage tanks this spring. Will be working with them closely to ensure they are following all rules and stay on track. DEQ has been involved in and appreciates Multnomah County's work on the hazardous substance report that will be presented during this meeting.

State Resilience Officer: Papaefthimiou attended the CRESCENT kickoff meeting and appreciated her experience interacting with so many partners. She was invited to serve on the board and look forward to her continued participation with them.

Got a tour of the remodeled terminal of Portland Airport. The project took inspiration from the Sendai airport in Natori, Japan. The project will utilize deep soil mixing to mitigate liquefaction for one of the runways to ensure a runway will survive Cascadia. Because it will take the runway out of service for over a year, they are first focusing on making fixes to their other runways to ensure they are all functional for the duration of the project. The project will take 18 months for the repairs to the current runway and then an additional 24 months for the seismic runway. The airlines paid for the remodeled terminal and



\$3.75 million was secured from the 2022 federal omnibus spending bill for the runway upgrade.

No update on seismic-related bills in the February session.

3. **Public Comment:** None.

4. **Hazard Analysis - Earthquake-induced HAZMAT Releases in the North Portland Industrial Areas:** Presented by Luke Hanst (Portland State University) & Alice Busch (Multnomah County Emergency Manager)

Hanst is from the Institute for Sustainable Solutions at PSU which focuses on creating a more resilient and sustainable region. The project was funded by a grant that was intended to create an evacuation plan for the city of Linton. By the time they had received the grant funding, the city had developed its own plan. Instead, they changed their scope to instead investigate the toxic chemical risks and look at where a disaster resource shelter could be placed in Linton/CEI Hub that would be outside of the HAZMAT release area post-Cascadia earthquake. A few goals of the project include the following:

1. Improve collaboration between hazmat experts, first responders, PIOs, and others.
2. Increase our understanding and awareness of the risks of an earthquake-induced HAZMAT release
3. Identify protective action and communication recommendations
4. Recommend next steps for increasing community resilience to this hazard

North Portland has a very high risk of liquefaction that will limit resources into the area, evacuations out of the area, and cause severe disruption of utilities such as power, water, and natural gas. There are many hazardous material facilities (acids, explosives, toxic inhalation hazards (TIH), etc.) that are within high-risk soil liquefaction areas along the Columbia corridor. The study focused on facilities with large quantities of TIHs that are in high-liquefaction risk zones near residential areas. Selected four facilities with the highest life-safety threat based on LEPC modeling.

Many of these facilities are sensitive to controlled or classified information such as exact facility locations, names of chemicals, etc. which can be tricky to navigate. To comply with this classified information, the study uses facility and material pseudonyms and does not provide exact quantities or location of the facilities.

TIHs pose the greatest threat to life safety due to their dispersion over a wide area. Acute symptoms of TIH exposure include severe irritation and burns to the eyes, skin, and respiratory system. Acute Exposure Guideline Levels (AEGL) indicate the effects of different exposure levels with AEGL 1 causing acute symptoms, AEGL 2 causing irreversible/chronic symptoms, and AEGL 3 causing life-threatening effects or death. Plume modeling is complex as each model can be so different depending on a wind



pattern, it is good to imagine it as a petal on a flower of possible outcomes based on conditions. The study chose two scenarios to model, a “summer” and “winter” weather scenario with wind coming from the northwest and southeast respectively. In the summertime release scenario from these four facilities alone, the model estimates 2,763 possible deaths and over 350,000 irritation exposures. This modeling only includes AEGL 2 & 3 exposure plume models for the area because the AEGL 1 plume is modeled to span from the North Portland peninsula all the way across the Portland metro area to Tualatin and West Linn.

Busch brought up the difficulty in displaying the areas affected because each plume models stands to represent a single possibility of many and how any way of putting out information for general consumption will be misleading because if the model will either show a single plume and give people a false sense of safety, or be a full circle containing all possible exposures and will be overstating the risk because not everyone in the circle will actually be exposed if a release occurs.

Protective actions individuals can take include evacuating, shelter in place, and utilizing personal protective equipment (PPE). However, these actions have major barriers including different chemicals requiring vastly different PPE and PPE expiring and losing effectiveness. Additionally, there are many issues and barriers to having any easy solution to proper evacuation notification, especially if multiple different chemicals are released simultaneously. There is currently no methodology to sample multiple chemical and model plumes for complex exposures. The current evacuation/shelter in place notification methodology follows a “donut model” where those in an AEGL 1 zone exposure will be notified to shelter in place, but those farther away in AEGL 2 and 3 zones would be told to evacuate before the plume reaches them. This will be impossible to calculate in this scenario.

Hanst brought up that these exposures are particularly scary within the context that this exposure will follow a Cascadia earthquake, because decontamination requires copious amounts of water which will be unavailable if water infrastructure is damaged. Additionally, serious exposures will require hospitalization and access to mechanical ventilation which may be impossible due to transportation infrastructure damage.

ISS has policy and legislative recommendations pertaining to OSSPAC and SB 1567 including inter and intra-government coordination, full hazard analysis and planning, support for hospitals in preparing for mass casualty incidents, develop decontamination and medical response plans and capabilities, and development of public education and outreach to inform residents of the hazards and protective action recommendations.

5. ODAV Legislative Report on Airport Resilience (HB 3058): Presented by Betty Stansbury (Dept. of Aviation)



Oregon Department of Aviation is a small 15-person agency that help support airports, advise local government, register aircraft, inspect airports, and administer a small grant program.

Airport Resiliency Report (HB 3058) sponsored by Paul Evans passed in May 2023. Tasked ODAV with developing a report on airport resiliency, focusing on the role airports will play after a major natural disaster. Requires ODAV to consult with other state agencies and were given six months to complete the report with no additional funding.

Draft of report is out for review by 15 organizations including, but not limited to, the State Aviation Board, state agencies, and airports. Proposes a grant program to purchase resiliency equipment for public-use airports to stage airports for use when the Cascadia earthquake happens.

Oregon has invested millions of dollars in ensuring our buildings will survive the earthquake and need to ensure our people will survive the aftermath. Oregon has 97 public-use airports across the state, the 2013 Oregon Resiliency Plan lists 28 airports with the potential to maintain or quickly restore operational functions after a major earthquake.

Following the earthquake, ODAV expects that all 25 central and eastern Oregon airports will be operational. Additionally, within one month 11 in the valley including Portland, Salem, and Eugene will be operational and another eight will be with three months.

Key needs for airports following an earthquake include increased on-site fuel storage, hardened runways, communications such as short-range radio stations, alternative water distribution system and basic sanitation facilities, electricity to power equipment while electric grid is down.

Potential funding source federal funding through the Airport Improvement Project (AIP) grant but resiliency projects are not AIP-eligible. ODAV proposes creating a Statewide Airport Resiliency Assistance Grant Program which would fund generators, sweepers, communications, drones, fuel storage, communications, water storage, portable lighting, aircraft control devices that could be modeled after the ODEM SPIRE grant. This would be administered by either ODAV or ODEM depending on staffing availability.

The group discussed the possibility of some kind of screening process to prioritize airport's access to SARA grant funds. Pyrch brought up ODHS's Cascadia Islanding Mapping Program which looks at areas that will likely be isolated from one another in the event of a Cascadia earthquake. She suggested that if this screening does occur, to include the island mapping models in this process. Rizzo brought up that some of these improvements could be made under the BRIC grants and that depending on how it is set up, SARA funds could be used as state match contributions to BRIC allocations.



Kortenhof brought up that fuel tank resilience upgrades should be included within this program as well.

Adjourned: Brown adjourned the meeting at 11:13 a.m.

Next Meeting: January 9, 2024 | 3 - 4 p.m.

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OREGON SEISMIC SAFETY POLICY ADVISORY COMMISSION (OSSPAC)

Minutes

January 9, 2024

OSSPAC Members Present:

Tiffany Brown, Chair	Local Government Stakeholder
Allison Pynch, Vice Chair	Public Member
Althea Rizzo	Department of Emergency Management
Jonathan Allan	Department of Geology & Mineral Industries
Todd Smith	Department of Consumer & Business Services
Matt Crall	Department of Land Conservation and Development
Christina LeClerc	Department of Transportation
Rep. David Gomberg	Legislative Assembly Representative - House
Lesley Ogden	First Responder Stakeholder
Nishant Parulekar	Utilities Stakeholder
Carolina Abdalah	Multifamily Housing Stakeholder
Elizabeth Safran	Public Member
Anne Castleton	Public Member

OSSPAC Members Absent:

Sen. Dick Anderson	Legislative Assembly Representative - Senate
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Others in Attendance:

Jordan Peterson, Admin Support	Department of Emergency Management
Natasha Fox	Department of Emergency Management
Jonna Papaefthimiou	State Resilience Officer
Rhiannon Bezore	Department of Land Conservation and Development
Mike Kortenhof	Department of Environmental Quality
Svetlana Lazarev	Department of Environmental Quality



1. Administrative Matters:

Roll Call & Introductions: At 3:00 p.m., Brown opened the meeting and roll call was taken.

Review & Approval of November minutes: Postponed approval for March meeting.

Events Notification: January 26th is the anniversary of the 1700 Cascadia Earthquake

New Business: None

Next Meeting: Tuesday, March 12, 2024, 0900-1200. There will be a new Zoom link moving forward that will be attached in next meeting's agenda and updated on the OSSPAC website.

2. Reports:

ODOT: LeClerc updated the group about emergency funding provided by Governor Kotek for ODOT to plow roads this winter. She discussed how although they got a large disbursement of funds, there are logistic hurdles regarding hiring more staff in time for upcoming winter weather events. However, it will help fund overtime for current ODOT employees as well as pay for maintenance work in the Spring. ODOT also received approval for funding from the federal highway administration for a flooding incident near the Burns Paiute tribe. Preparing another application for the Tillamook County flooding incident.

DLCD: Crall updated the group that DLCD is deep into the All-Hazards Statewide Risk Assessment but have not started the Statewide Natural Hazard Mitigation Plan because they are still awaiting disbursement of federal grant funds, desperately awaiting funding because the new plan must be completed before the current plan expires in September 2025.

DOGAMI: Currently working with the city of Seaside to evaluate potential vertical evacuation structure sites, assessing data on where the highest need is both regarding residential populations and non-residential visitor concentrations. Planning commission meeting at the end of January to share findings. This assessment will guide the City of Seaside to decide where to build these structures, the convention center is a current potential site.

DOGAMI completed risk assessment for Curry County, in the process of updating the North Coast counties risk assessment to reflect newer 2020 census data and updated statewide Cascadia hazard modeling data, will be released later this year. Data will also be released for the Eugene-Springfield area.



OEM: Rizzo reported that the B2WR program is progressing through its final stages before launching in February. OEM held an internal all staff meeting reviewing the Director and Deputy Director's 90-day assessment, identifying key gaps in the department and establishing goals for 2024. Preparations are being made for the annual emergency preparedness conference hosted by OEM – Oregon Prepared, held in Sunriver April 23-25.

DCBS: No update.

DEQ: Korten Hof updated the commission that the Portland Airport, through the airline consortium "PDX Fuels" is ahead of schedule on their proposal for construction of a new fuel tank system. On December 21, DEQ received their facility assessment, mitigation plan, and project proposal and will begin reviewing it by the end of February with final approval by this Spring.

Legislative Assembly: Representative Gomberg informed the group about the upcoming Legislative Days later this week, where they will hold committee and task force meetings. 2024 Legislative session will run February 5 through March 10, currently there are currently no bills relevant to OSSPAC. Reminded the group about the Governor's effort for 36,000 new housing units per year, and there are a number of proposals to get to that goal. There may possibly be concerns from OSSPAC in terms of housing resilience, especially with respect to any efforts to build housing in tsunami inundation zones.

State Resilience Officer: Papaefthimiou will be before the Senate Veterans and Emergency Preparedness Committee in the upcoming Legislative Days on Thursday morning to talk about resilience efforts coming from the Governor's office and will include the efforts of OSSPAC and reviewing the ORP. Thursday afternoon, she will be presenting to the House Veterans and Emergency Preparedness Committee alongside Luke Hanst from Portland State University and Chris Voss from Multnomah County to talk about the toxic inhalation hazards found in their study presented before OSSPAC in November. Besides earthquake risk, she is also currently involved in efforts regarding houselessness, fentanyl, and winter weather.

3. Overview of Retreat:

Directly preceding this meeting was a member's retreat focused on team building and brainstorming of future efforts for the commission. It began with introduction and an overview of OSSPAC, then transitioned into a member introductory activity where the group discussed strengths and what each brings to the commission.

Pyrch conducted a needs assessment brainstorming session to generate high level topics (such as functional recovery, equity, and public education) and to identify specific



statewide needs or priorities. The session ended before the group was able to prioritize but committed to completing at a later meeting. Brown reported on a 10-year review of the Oregon Resilience Plan, with an overview of the timeline and structure of the review. Finished the retreat with a synthesis and next steps conversation.

4. Public Comment: None.

5. Election of Officers

An election of officers for 2024 had been planned to occur during the November meeting but did not happen because there was not a quorum.

Pyrch nominated Brown for Chair, with no other nominations or opposition, Brown was elected Chair by consensus.

Safran nominate Pyrch for Vice Chair, with no other nominations or opposition, Pyrch was elected Vice Chair by consensus.

6. Additional Discussion:

Safran asked about Gov. Kotek's housing effort brought up by Rep. Gomberg, specifically asking what opportunities exist for OSSPAC to insert concerns about resilience into the conversation. Gomberg explained that the housing efforts span from manufactured homes, apartments, transitional housing, and increased shelter capacity, facilitated by the housing division and private sector. He suggested that the SRO gather information from relevant departments about resilience needs for future housing development. Papaefthimiou will be meeting with the directors of the natural resource agencies about resilience and will include housing in that discussion. She addressed that there is a struggle in addressing these needs. By doing so, it will inevitably slow down housing efforts and make them more expensive, something that is not conducive to the immediacy needed in resolving this problem.

Papaefthimiou raised the point that this also relates to the discussion about urban growth boundaries (UGBs) and land use zoning restrictions. Although the solution is obviously not to build in wetlands and vulnerable areas, there must be a path forward in recouping the housing opportunity that is lost in those areas. Rep. Gomberg added that in addition to land use within current UGBs, they will be considering expanding UGBs to provide more opportunities for housing. Along those lines, the conversation about new urban growth implies new utilities, especially water and sewers, and perhaps this could be where our resilience efforts could be focused.

Papaefthimiou added that although Portland has very resilient utility infrastructure, many cities around the state struggle to maintain their existing infrastructure, let alone with population increases or to withstand an earthquake. Perhaps we shift the conversation



of resilient infrastructure not to prepare for future events, but to address areas where it is currently an issue. For example, a community in Clatsop County that has not had potable water for over a year and does not have the funds to fix their infrastructure.

On the topic of resilient infrastructure, Rep. Gomberg brought into the conversation the risks Oregon currently faces regarding seismically vulnerable dams. Particularly earthen dams (dams made from natural materials) that are vulnerable to even minor earthquakes, for example the earthen dams on the Big Creek Reservoir in Newport are calculated to fail in a 0.3 magnitude earthquake, threatening loss of life, the city's water source, homes, and highway 101.

Castleton asked about the aggressive timeline for the Workplan and how feasible it is given that every member of the commission has a day job and does not necessarily have much time to devote towards the ORP review. Particularly asking what the reasoning behind the timeline is, to which Brown explained that the timeline is to have it completed in time for the 2025 legislative session and to inform the body of work carried out by the commission. Pyrch added that most of the plan will remain untouched and that the primary purpose of the review is to add a chapter and put a new date on the document.

Adjourned: Brown adjourned the meeting at 3:30 p.m.

Next Meeting: March 12, 2024 | 9:00 a.m. – 12:00 p.m.