OSSPAC MINUTES
July 14, 2020

The meeting was called to order at 9:00 PDT virtually.

OSSPAC Members Present:

Jeffrey Soulages, Chair	Public member
Tiffany Brown, Vice Chair	Stakeholder: local government
Matt Crall	State agency: DLCD
Rep. David Gomberg	Legislative member
Joe Karney	Stakeholder: utilities
Christina LeClair	State agency: ODOT
Ed MacMullan	Stakeholder: banking
Bonnie Magura	Stakeholder: schools
Trent Nagele	Stakeholder: structural engineer
Althea Rizzo	State agency: OEM
Sen. Arnie Roblan	Legislative member
Susan Romanski	Public member
Aeron Teverbaugh	State agency: DCBS
Adam Pushkas	Stakeholder: building owners
Yumei Wang	State agency: DOGAMI
Katie Young	Public member

OSSPAC Members Absent:

Dacia Grayber	Stakeholder: first responder
Walter McMonies	Stakeholder: multi-family housing

Invited Speakers:

Jonathan Allan	DOGAMI
Hong Kie Thio	AECOM
Arthur Frankel	USGS and University of Washington
Gordon McGraw	Tillamook County EM
Kenneth Murphy	Lincoln City EM
Tom Horning	Seaside City Council

Others in Attendance:

Chris Goldfinger	Oregon State University
Jeni Hall	Public
Mike Harryman	State Resilience Officer
Tyler Janzen	Chief of Staff, Rep. David Gomberg
Paul Jewell	Public, Beaverton School District
Meg Reed	State agency: DLCD
Steve Robinson	Public

Jay Wilson Public

1. Administrative Matters

1a. Welcome & Introductions

Chair Jeff Soulages opened the meeting and led introductions.

1b. Review and Approval of Minutes from previous meeting

Jeff Soulages asked for any corrections or additions. Bonnie Magura proposed to change Item 3, in the third line where it states, “mapping inundation list” to “mapping inundation line”. There was no objection. The minutes were proposed as amended, seconded, and accepted.

1c. Events Notification

Cascadia Region Earthquake Workgroup is holding a series of webinars on lifeline mitigation on Tuesdays and Thursdays at 2:00 pm – 4:00pm and running for three weeks. Contact Althea if interested and she will resend the link.

American Society of Civil Engineers is having a Lifelines Conference February 7-10, 2021 in Los Angeles California, https://samueli.ucla.edu/lifelines2021/. There will be three sessions focused on Cascadia Earthquake. This conference is taking place during the 50th anniversary of the February 9, 1971 San Fernando California Earthquake.

1d. New Business

Jeff Soulages thanked Yumei Wang for all her hard work and wishes her well in her retirement.

2. Reports

2a. OEM

OEM is working on the tsunami cache project with DLCD. Also working on tsunami debris guidance with several partners. A NERHP grant has been applied for with OSSPAC volunteer time being used as the 25% match. Althea Rizzo will send out guidance to members on how to capture OSSPAC time for this purpose. Althea is mostly working on the COVID-19 continuing response.

2b. DOGAMI

Yumei Wang is retiring from DOGAMI and wishes the best for OSSPAC and its members. Bob Houston will be the interim DOGAMI representative for OSSPAC.

DOGAMI is working with DLCD, who is the lead agency on the 2020 update of the State Natural Hazard Mitigation Plan. DOGAMI provided expertise on: earthquake, tsunami, volcano, flood, landslide, and coastal erosion hazards;

evaluating vulnerability and risk; developing and prioritizing mitigation actions. The draft Plan is open for public comment (DLCD webpage). Plan will include new information on:

- OHA's seismic safety drinking water requirements on water systems (enacted 2018)
- PUC's seismic regulations on consumer owned utilities (since 2013)
- DOGAMI's Seismic Instrumentation Program, which contributes to build out of ShakeAlert, the state's earthquake early warning system under development

New DOGAMI publications include

- Coastal Hospital Resilience Project https://www.oregongeology.org/pubs/ofr/p-O-20-02.htm
- Analysis of earthquake and tsunami impacts for people and structures inside the tsunami zone for five Oregon coastal communities: Gearhart, Rockaway Beach, Lincoln City, Newport, and Port Orford, Open-File Report O-20-03, https://www.oregongeology.org/pubs/ofr/p-O-20-03.htm
- Temporal and spatial changes in coastal morphology, Tillamook County, Oregon, Open-File Report O-20-04, https://www.oregongeology.org/pubs/ofr/p-O-20-04.htm
- Tsunami evacuation analysis of Port Orford, Curry County, Oregon, Open-File Report O-20-05, https://www.oregongeology.org/pubs/ofr/p-O-20-05.htm

New Projects funded by FEMA and start up in Sept 2020:

- Earthquake Impact Analysis for the Greater Eugene-Springfield Area, Oregon.
- Natural Hazard Risk Assessments for Washington County.

2c. DLCD

Nine coastal jurisdictions have now adopted tsunami hazard overlay zones and related provisions with two jurisdictions are pending. DLCD is getting started on the development of tsunami community disaster cache guidance and a toolkit and have hired a contractor for assistance. They hope to have this project completed in March 2021.

2d. ODOT

Received initial approval for ~$11 million for flood mitigation for the February 2020 flood event. ODOT received $7 million directly and $4 million was allocated for effected counties.

2e. DCBS

No report.

2f. SRO

No report.

3. USGS National Hazard Maps: Cascadia Source Characterizations: Art Frankel, USGS and U. of Washington

See attached presentation as Appendix A.

Art Frankel went through how partial and full rupture earthquakes have been identified on the Cascadia Subduction Zone. There were a series of three workshops in 2010, 2011 and 2012 to review the data. The southern portion of the zone is more complicated than the north portion. The general goal was to use onshore and offshore data in the south to determine the rate of large earthquakes, but the onshore data does not correlate well to the offshore turbidite data. The data shows an average reoccurrence of >8 magnitude earthquakes is 340 years for the south portion. The current tsunami mapping uses these recurrence intervals in the models. USGS is working on the 2023 Seismic Hazard Model by improving the base models with new information.

There were no questions from the Commission.

4. ASCE 7-16 Tsunami Inundation Maps: Hong Kie Thio, AECOM

See attached presentation as Appendix B.

Hong Kie Thio went through how the tsunami inundation maps included in ASCE 7 were developed. It starts with the USGS (United States Geological Survey) ground motion model with adaptations for NOAA (National Oceanic and Atmospheric Administration). Several gaps and uncertainties were identified and discussed in the information that goes into the different models. Most important is the epistemic uncertainty as there are no direct observations for earthquakes and tsunamis in Cascadia. Maps generally have coarse 60 meter resolution (like Oregon), but California has benefited from more detailed maps with 10 meter resolution. Subsidence maps will be more fine-grained in the ASCE 7-22 update, but this is the only significant change. There is currently no budget for other major updates in 2022. USGS and NOAA are hoping to start on the ASEC 7-28 update now and this will be a major update.

Tiffany Brown asked if deterministic data can be run through a probabilistic model. Yes; this is possible as the University of Hawaii is doing this now. However, the modelling must conform to the procedure in ASCE 7-16 including bottom friction. Discussion followed regarding the different model types. Chris Goldfinger pointed out that the difference between deterministic and probabilistic models is not large, the differences are in the details.

5. Tsunami Inundation Map Roadmap: Jonathan Allen, DOGAMI

The original goal of the DOGAMI mapping effort was to develop evacuation maps for the Oregon coast. In 2009, DOGAMI began a multi-year program including hundreds of simulations from the north to the south coast of Oregon. The core

was 15 simulations that bracketed what was known. A lot of conservativism was put in the maps which came out in 2013. The maps showed tsunami inundation lines in five variations from S, M, L, XL and XXL. These maps have been used widely but there has been a lot of excellent new research that has been done more recently. This information will be used by DOGAMI to create new models and maps. There will be two workshops held in 2021; one to address aleatory uncertainty funded by the National Tsunami program and the other to determine consensus on the Cascadia source characterization including a new logic tree.

Jeff Soulages asked if DOGAMI's goal is to produce 10 meter resolution maps. Jonathan Allan answered yes, the current maps are high resolution and the new ones will be as well.

Bonnie Magura asked when the maps will be ready to be integrated with the ones in ASCE 7. Jonathan Allan answered that DOGAMI could produce for ASCE 7-22 but realistically it should be available for ASCE 7-28. Bonnie Magura asked about the status of the current tsunami lines in the DOGAMI maps that have not been fully adopted and how can they be used. Jonathan Allan answered that the maps are used is a variety of ways already including evacuation routes. Nine jurisdictions on the Oregon coast have already adopted the maps to guide planning and there are more in various planning phases.

6. Coastal stakeholder: Gordon McCraw, Tillamook County Emergency Manager

Last October the community development staff participated in a tsunami risk reduction project and established a tsunami overlay zone for Tillamook County. For the overlay zone they used the XXL line from the DOGAMI maps. The project focused on land use planning efforts to minimize the potential impact from a tsunami. The project identified at-risk areas and assessed the need for additional land use limitations, long-term relocation strategies and locations, and created a tsunami evacuation facility improvement plan which is ongoing. They also created a review process for critical and essential facilities plans which are reviewed by several entities. Gordon views the recent HB4119 as a minimum standard and acknowledges that Tillamook can adopt higher standards.

Jeff Soulages asked if there were timeframes for relocating critical infrastructure. Gordon McCraw answered that he was not sure, but it is probably a long term plan. For example if a fire station needs to be replaced, it will be moved out of inundation zone.

7. Coastal stakeholder: Tom Horning, Seaside City Council

Tom appreciates the approach described by Jonathan Allen to close the difference between the deterministic and probabilistic models. Seaside appears to be particularly vulnerable in most models with 90% of the city inundated. The

city has been working to move critical facilities, like school district buildings, up the hill. Gearhart has wanted to upgrade its fire station but there are very few good places for it to move. This is an ongoing effort. Keeping decisions in local hands is the best approach but some state guidance would help get things moving. Raising money is always problematic for preparedness no matter the source, from room taxes or another way. The Seaside community has both horizontal and vertical evacuation challenges. The bridges may not survive the earthquake and there are limited ways to get to higher ground on foot. Tom recommends waiting until Jonathan Allen's work is done. If some legislation needs to go through it is preferred to go with the DOGAMI model rather than the probabilistic models of ASCE 7-16.

Jeff Soulages pointed out that a site specific study is always an option under the ASCE 7-16 building code. The only limit is that nothing can go below 80% of the code minimum. The DOGAMI information can be used to develop a site specific study and a site specific study should always be done if possible.

Althea Rizzo asked about horizontal and vertical evacuation and what that looks like. Tom Horning answered that the plan was a multistory (greater than 50 feet) building that is built to survive both the earthquake and tsunami. Most likely a parking garage. This building's location is questionable so foot bridges as short cuts are important to have good access to evacuate.

Jeff Soulages asked if the community has been asked about vertical evacuation and about how many people will be served. Tom Horning answered that Seaside has been planning for 1000 people and it appears they need to serve 2000 people. This is one of the reasons the project may now be in limbo.

Chris Goldfinger asked about funding for bridges outside of local sources. Tom Horning answered that it would be about $25 million for four bridges and $5M for pedestrian bridges. However, no funds are available. The room tax proposal is a very important funding source but there will be push back as that was recently raised.

8. Coastal stakeholder: Ken Murphy, Lincoln City Emergency Manager

Lincoln City has done good planning and has benefited from good luck. All critical facilities are out of the inundation zone and many other facilities have been or are being seismically upgraded. The geography of the city is favorable if a tsunami hits. Ken's opinion is that HB4119 was "soft and fluffy" and it did not look like it would have done much. Communities already know what the situation is and what they need to do. Ken feels that good input from stakeholders is needed before any similar bill is introduced onto the floor of the legislature. No map is 100% accurate and that needs to be remembered going forward. Lincoln City has taken the worst scenario and planned backwards from that using current information and plans. The most recognizable maps (DOGAMI for example) are

not always the best maps and should not be used exclusively just because they are recognized. The problem of unfunded mandates with any legislation to the local communities need to be recognized, especially with the current COVID-19 environment. Ken is concerned about how long the new DOGAMI mapping initiative is going to take and does not want any new proposed legislation to be in "limbo" due to having to wait.

Trent Nagele wanted to clarify that prior to the current version of ASCE 7, there were no specific building code provisions regarding tsunamis. Oregon had a provision that critical infrastructure was not allowed to be built in the tsunami inundation zone but that moratorium was lifted with the passing of HB3309. The intention of HB4119 was to put tsunami requirements into Oregon building codes. Additional discussion followed regarding the building codes, the political processes, and how OSSPAC should be involved.

9. Commission Discussion: Protecting critical infrastructure at the coast and the proposed draft edits to HB4119

Jeff Soulages introduced the topic that we are looking for feedback from the Commission on the draft edits that were sent out. A vote can be held at the next meeting but for right now, all that is required is member suggested edits to concepts or language. The final edited bill must go through the legislative council process, which is lengthy. As many people were not happy with HB3309 and the gaps that it created, the time to do something is now before everyone forgets about this issue.

There was discussion about the language of the draft and what the end goal is. This included what is acceptable language for statues and who is best able to help with this.

Tyler Janzen gave an overview of how the legislative process works. Bills that are submitted are reviewed in the order they were sent in so the quicker the bill language is finalized the better. The proposed language needs to be voted on at the next OSSPAC meeting which is September 8. This fits within the deadline for bills to be submitted of September 25. Tyler added that sooner is always better.

Bonnie Magura asked who will provide input and how will this process go before the vote be taken. Jeff Soulages responded that that is up to the Commissioners. Jeff has already had many meetings with various identified stakeholders about this language and described a few of these conversations.

Tiffany Brown proposed to use the process that has been done previously for work groups. She volunteered to be part of the work group. Yumei Wang agreed with the working group idea and echoed concerns from previous discussions. Jeff Soulages likes the idea of a short report of what OSSPAC sees as the future for tsunami areas but the time to publish such a report is short.

Mike Harriman reminds everyone that OSSPAC will not be introducing a bill. He echoed several points Tyler pointed out about the future legislation. He suggests to provide language and then sit back and let the process work.

Jeff Soulages briefly touched on the fiscal aspect of the legislation, especially during challenging budget cycles like now. The previous HB4119 did not have a fiscal component and if what is proposed is substantially similar to that bill, it should not have any issues with Ways and Means.

Jeff Soulages asked for volunteers for the work group: Althea Rizzo, Aeron Teverbaugh, Tiffany Brown and Meg Reed agreed. Anyone else who is interested should email Jeff.

10. Public Comment

Chris Goldfinger wanted to clarify the difference between the dead HB4119 and what the rest of the world does in tsunami planning. Japan uses a land use approach at the prefecture (county) and town level. Land use planning is what is used around the world and that is what the fundamental issue is. This is taking a common land use approach and replacing it with an engineering standard.

The meeting was adjourned at 12:03 PM PDT.