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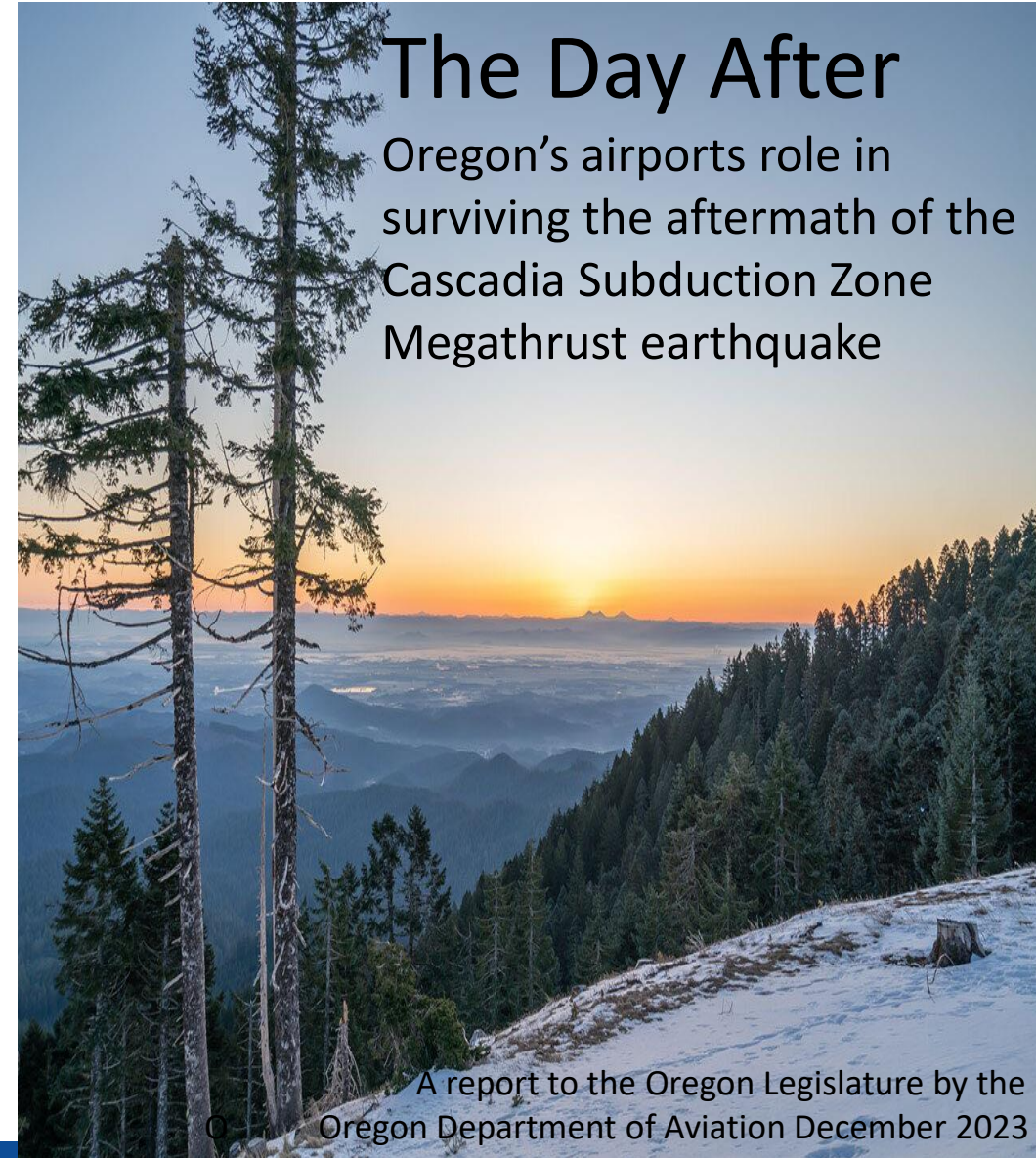
PRESENTATION AGENDA

February 1, 2024

- The Day After – Oregon’s airports role in surviving the aftermath of the Cascadia Subduction Zone megathrust earthquake
- HB 3058
- A brief history of the CSZ threat
- The longest 5 minutes of our lives
- Recovery time
- Statewide Airport Resiliency Assistance (SARA) grant program

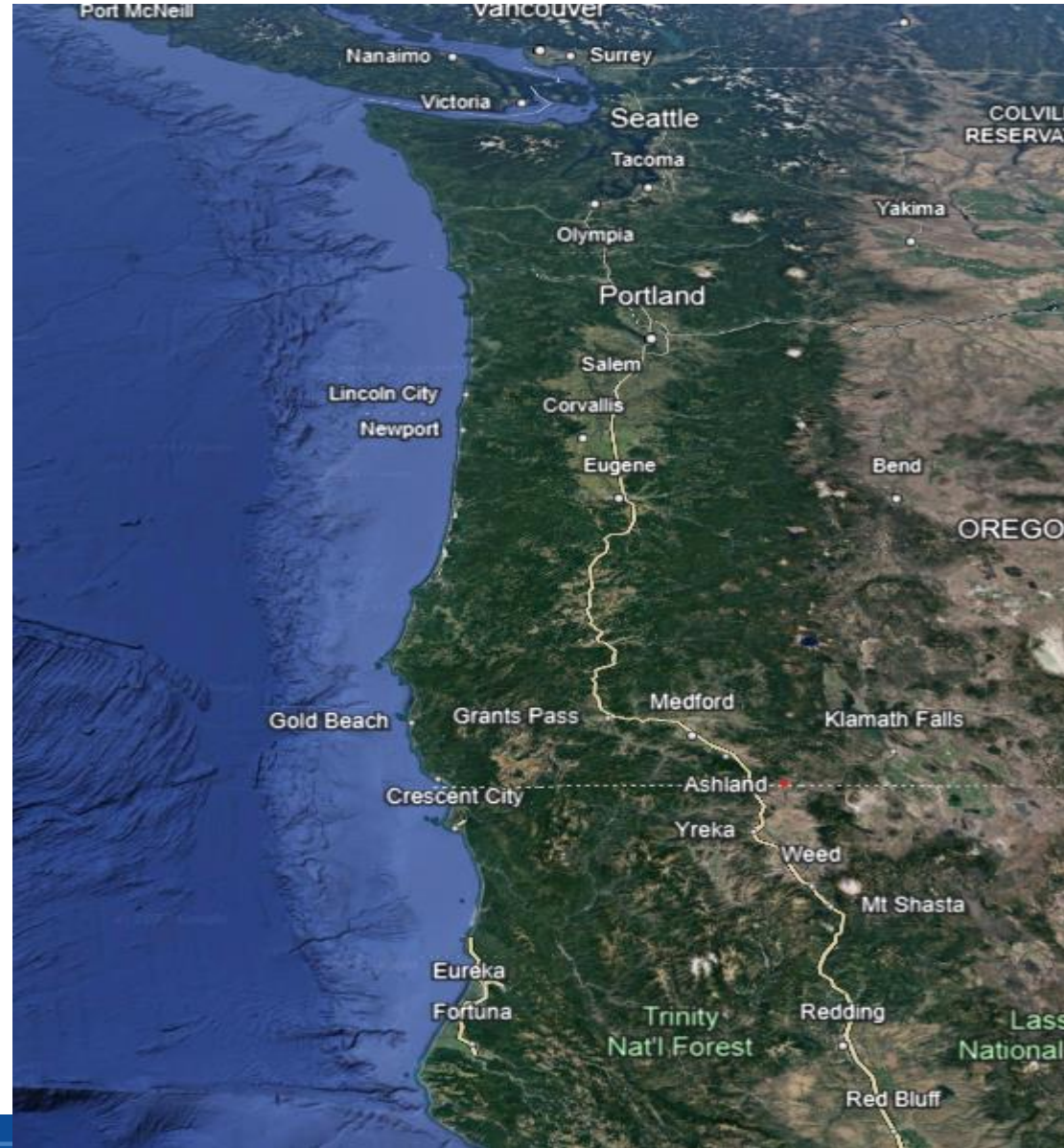
HB 3058

- Sponsored by Rep. Evans
- Passed in May 2023
- Required ODAV to study airport resiliency and report to the legislature by 12/31/23
- No funding or staffing assistance
- Authored in-house, with 15 organizations providing reviews
- Report submitted 12/29/23
- Presented the report to three Committees (Joint Transportation and both Senate and House committees on Emergency Management on January 11 & 12)



A brief history of the CSZ threat

- Earthquakes are measured by the amount of energy they release (on a scale of M1-M9+)
- Megathrust earthquakes (M8+) only occur on subduction Zones
- Off the coast of CA, OR, WA and Canada's British Columbia is the 620 mile long Cascadia Subduction Zone
- The Juan de Fuca plate is subducting under the North American Plate and is locked
- The CSZ has a partial or full rupture on average of 250 years
- The last rupture occurred January 26, 1700, 324 years ago.
- We are "9.5 months pregnant"*
- 10 million people live in the moderate to severe impact zone west of the Cascades, including **3.7 million in western Oregon**



*Allyson Pyrch, Haley & Aldrich

The longest 5 minutes of our lives

- When the CSZ Megathrust earthquake occurs, we will shake for 5-7 minutes
(Most earthquakes last for about 30 seconds or less)
- During the shake, the impact zones will experience liquefaction, subsidence, uplift, lateral spread, and deformation
- Shortly after the quake, the coast will experience a tsunami
- Above ground objects will fall (trees, powerlines, cell towers, URM's)
- Below ground objects will break (pipelines, water/sewer distribution, underground tanks)



Besides the shaking, what else happens?



Estimated recovery time

- Current estimates*

- Major Hwys
- Electricity
- Water/sewer
- Police/fire
- Health care

	Valley	Coast
• Major Hwys	6-12 mn	
• Electricity	1-3 mn	3-6 mn
• Water/sewer	1-12 mn	1-3 yrs
• Police/fire	2-4 mn	
• Health care	18 mns	3 yrs



* OR Resilience Plan, 2013

Airport operational recovery time

To reopen, an airport must have at least runway, parallel taxiway and one parking apron must have

- Cracks less than 3" deep or wide
- Pavement lips no greater than 3"
- Pavement markings that are clear, accurate and visible under VFR conditions
- adjacent safety areas clear of obstructions
- if liquefaction suspected, or if pavement has been submerged, proof rolling to verify pavement strength and stability



Surigao, Philippines runway damage

Estimated recovery time

	WEST of Cascades	EAST of Cascades
• Immediate (1-3 days)*	none	33
• Within one month	13	
• Within three months	8	
• Within 6-12 months	19	
• More than one year	22	

* based on current conditions. Once the PDX south runway hardening project is complete, one runway west of the Cascades is expected to be immediately operational.

Statewide Airport Resiliency Assistance (SARA) grant program proposed

- Grant program to purchase resiliency equipment for Oregon's publicly owned, public use airports
- Two-year pilot program, funded at \$10M/year for total of \$20M
- Modeled after OEM's SPIRE grant program
- Administered by ODAV or OEM
- Unlikely to be pursued in the 2024 legislative session, potentially in the 2025 session



Photo courtesy OR Pilots Association

Examples of eligible equipment



Priorities

- **Fuel Storage**

Oregon's airports have 4.1M gallons of aviation fuel storage, but 91% is located in western OR (and 50% is at one airport). Additional fuel storage capacity needs to be added across Oregon.

- **Communications**

With electricity out for months, airports will need an alternate means of communicating with arriving and departing aircraft.

- **Pavement**

Fixed wing aircraft make up 95% of the US aviation fleet and require a runway. No US airport currently has a hardened runway (but PDX is in the design phase to harden the south runway). Western OR needs at least 4 hardened runways.

Runways with suspected liquefaction or that have been submerged will need proof rolling to verify pavement strength and stability prior to reopening, but few OR airports have this ability.

- **Water and sanitation**

The drinkable water distribution system is expected to sustain major damage. Humans can survive for about three days without water. Airports will need to have an alternate water source for personnel repairing or operating the airport, as well as sanitation.

- **Lighting**

With electricity in western OR out of service for weeks or months, airports in this region will be limited to daytime VFR operations only. Airports in eastern OR will become staging areas for relief supplies, and additional portable lighting units can extend the hours available for loading or unloading of aircraft.

The Day After – Oregon’s airports role in surviving the aftermath of the Cascadia Subduction Zone Earthquake

- Next steps – begin building legislative support for the 2025 session thru local support
- Oregon has invested millions in ensuring our buildings will survive the earthquake. Now we need to ensure our people can survive the aftermath.



And thank you to the following, who gave their time and expertise for this report:

State Agencies

ODAV – Kenji Sugahara & Tony Beach
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ODOT – Leah Horner
Governors Office – Jonna Papaefthimiou

Academia

OSU – Dr. Chris Goldfinger
PSU – Prof. Yumei Wang

Emergency Preparedness

Port of Portland – Carmen Merlo
OR Seismic Safety Policy Advisory Commission – Tiffany Brown

Airports

Eugene – Andrew Martz
Portland – Steve Nagy
Bend – Tracy Williams
Newport – Lance Vanderbeck

Specialty

Haley & Aldrich Engineers- Allyson Pyrch
AOC – Mallory Roberts
Legislature - Representative Paul Evans

Director's Update

Website Redesign

Why?

- Dead links
- Confusing
- Need to be ready for better tools

Where are we?

- Conversations with ODOT to figure out best approach.
- Model: industry.traveloregon.com



Airport of the Future

Oakridge Update

- Multiple opportunities
 - Anticipate Connect Oregon application in February.
 - EDA grant to be submitted soon.
- Letters of Support from:
 - Rep. Salinas, Gov. Kotek, Rep. Conrad, Rep. Cate, USDA Forest Service, Eugene Airport, Port of Portland, Fire Safe Council, City of Oakridge, Oakridge School District, ODEM, ODF, OSFM, OSP, Overwatch Aero
 - More pending.



THANK YOU!
QUESTIONS?