

**BEFORE OREGON HOUSE COMMITTEE ON
EMERGENCY MANAGEMENT, GENERAL GOVERNMENT,
AND VETERANS - HB 3450**



24 February 2025

Chair Representative Thuy Tran
Vice-Chair Representative Dacia Graber
Vice-Chair Representative Rick Lewis
Members of the Committee

HB 3450: The Oregon Department of Energy shall develop an energy storage transition plan for the critical energy infrastructure hub

Total Support. This Bill does not declare an emergency for its enactment but must, since the routine 90-day suspense contradicts the urgency for early action.

The extent of the Cascadia megathrust threat is not widely recognized, nor is the math characterizing the jeopardy faced by Oregonians, based on sound research that discovered west coast history only relatively recently. This testimony offers a perspective for hurry-up action well ahead of OEM's first response planning.

BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETERANS - HB 3450



24 February 2025

Recently it was disclosed that the National Risk Index does not acknowledge Oregon's Cascadia megathrust risk. Here is the infrastructure jeopardy just in Congressional District 1:

- Extensive M8 or M9 seismic damage to coastal and inland infrastructure
- Followed by up to 100 ft tsunami inundation at Astoria and all coastal communities to the south, less than 30 min after the quake subsides
- Seagoing fuel tankers destined for Columbia ports will be blocked by Astoria Bridge debris
- The CEI Hub with 500 tanks on unstable Willamette shoreline soils is expected to fail
- This is an inescapable future, not a worst-case scenario

DHS CISA has predicted the coastal conditions and consequences for Washington County highway bridge and overpass damage.

**BEFORE OREGON HOUSE COMMITTEE ON
EMERGENCY MANAGEMENT, GENERAL GOVERNMENT,
AND VETRANS - HB 3450**



24 February 2025

DHS CISA is conducting a Regional Resilience Assessment Program (RRAP) investigating fuels infrastructure, finding a stark future confronting Washington State – and no fuel for Oregon

- [Washington RRAP Programs](#)
- [Washington Fuels RRAP Kickoff, January 2023](#)
- Region 8 Washington Fuels RRAP VTC, June 27 2023, no update since then
[Region 8 will only open from [this page](#): MP4 syntax is
“Region 8-Washington State_Last Mile_Fuels RRAP-20231912”
This 1-hr video is relevatory for Oregon’s future

Please see next page for VTC audio statements and minutes

BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETERANS - HB 3450



Region 8 Fuels RRAP VTC – Eastern Washington, June 27, 2023

24 February 2025

Discloses fact-finding highly pertinent to Oregon's fuel future

Some county fuel wholesalers identified, some w/o emergency contracts.

Idaho Fuels RRAP complete

Idaho National Lab compiling logistic schematics, Fuels dashboard (MS Excel)

Offloading possible at F-POD locations - tanker direct to commercial vehicle

Future workshop: Emergency Fuel Planning, 2 Days (perhaps held by now)

@ 58 min: WA BP shipping diesel to CA; SLC petroleum reserve proposed

@ 1 hr: Fuel pump override needed, to take payment w/o power, w/o internet

@ 1 hr, 4 min: US DOE – EPA discuss 2nd Olympic pipeline (no action)

@ 1 hr, 6 min: **PDX CEI expected to collapse, similar impacts in Puget Sound**

@ 1 hr, 7 min: Fuel Planning Toolkit / template available

@ 1 hr, 8 min: Strawman Key Findings to be reported in Jan 2024

(not published so far)

No mention of Oregon fuel relief in Region 8 discussions

BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETERANS - HB 3450



24 February 2025

Rather than wait for their final findings later in 2025, an update with interim findings is urgently needed now

- Findings are dire for Washington and Oregon
- Salem is discussing high-cost infrastructure action planning to replace the CEI Hub with 2 new fuel depots located in CD2 that cannot be resourced for implementation without federal funding
- It is doubtful any Federal funding to implement HB 3450 would occur without current Washington RRAP findings

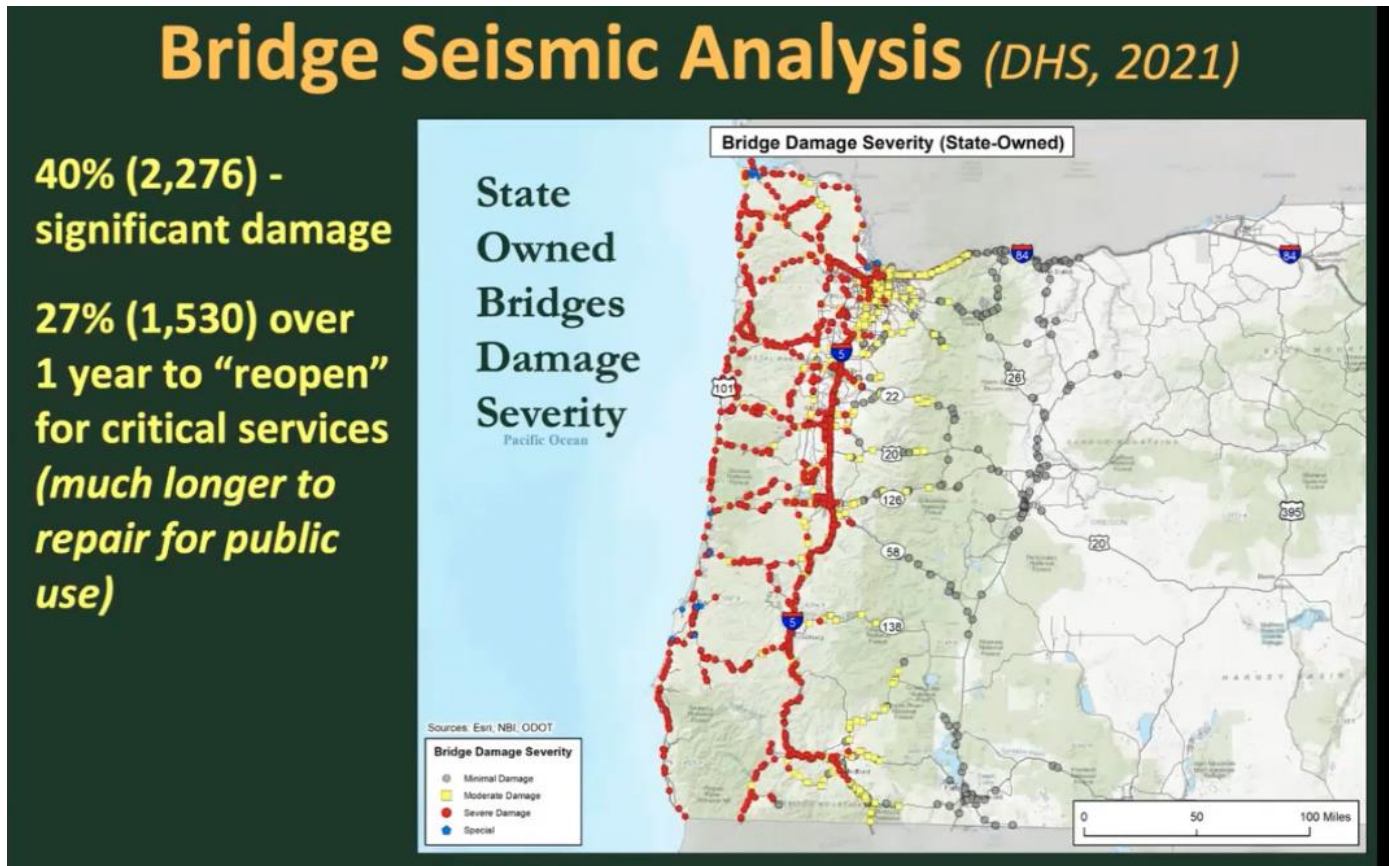
- DHS CISA will release the interim RRAP findings at Committee request, enabling the urgent fuel logistics rebuild to mitigate the tragic disruption to Oregon's fuel-based economy

BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETERANS - HB 3450



Argonne National Lab (CISA), Modeled M 9.0

24 February 2025



<https://publications.anl.gov/anlpubs/2021/09/170001.pdf>

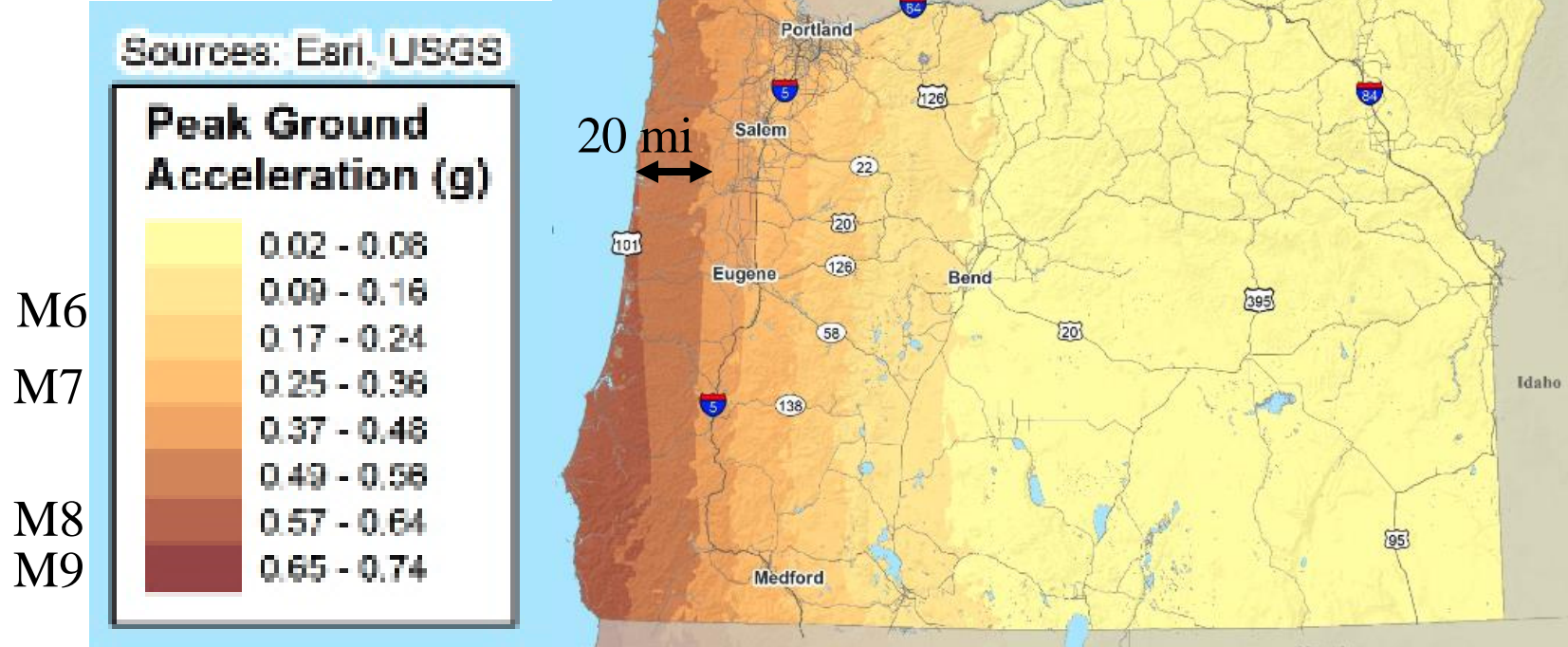
BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETERANS - HB 3450



24 February 2025

Peak Ground Acceleration (horizontal motion) for M9, with
estimate shading for M8 (Wikipedia PGA)

Approximated $\pm 30\%$



<https://publications.anl.gov/anlpubs/2021/09/170001.pdf>

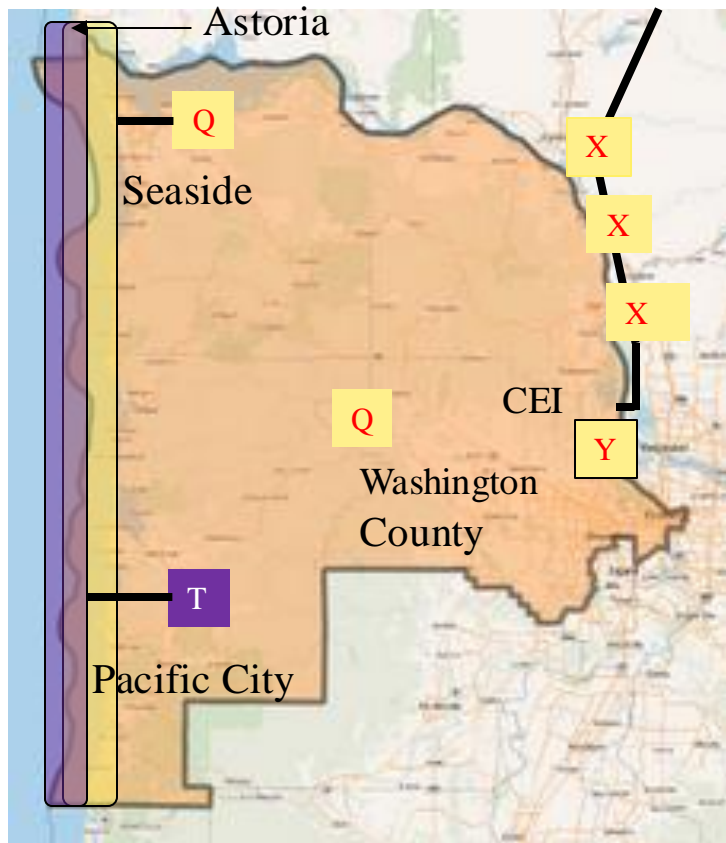
BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETERANS - HB 3450



24 February 2025

What Congressional District 1 is confronted with:

Seismic Day Zero – **and all at the same time**



- X Olympic Pipeline failure
Strands Oregon
- Y CEI Hub collapse
Strands Oregon
- Q Quake collapse
Damages coastal infrastructure
Extensive coastal road/bridge loss
Extensive utility damage
Damages Wash Co infrastructure
Damages bridges, maybe utilities
- T Tsunami
Damages coastal infrastructure
Extensive coastal road/bridge loss
Extensive utility loss

**BEFORE OREGON HOUSE COMMITTEE ON
EMERGENCY MANAGEMENT, GENERAL GOVERNMENT,
AND VETRANS - HB 3450**



24 February 2025

The remainder of this story

Background on Washington's BP Olympic Pipeline

Background on Cascadia seismic history

New fuel infrastructure in CD2 and CD5 to save coastal communities and the rest of Oregon from avoidable tragic aftermath

Barriers we know of

BEFORE OREGON HOUSE COMMITTEE ON
EMERGENCY MANAGEMENT, GENERAL GOVERNMENT,
AND VETERANS - HB 3450



24 February 2025

Oregon Department of Energy Report 5 years ago

Fuel supply for first responder and repair equipment replenishment will fail. We know from the 2017 Oregon Fuel Action Plan that Oregon will need an alternate source for petroleum distribution.

From p5, “... the Olympic Pipeline that transports the majority of gasoline, diesel, and jet fuel to Oregon is projected to suffer as many as **250 breaks** and 82 leaks.”

This pipeline transits 9 Washington counties, each with their own post-Cascadia fuel-supply repair triage priorities, when fuel itself is scarce.

BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETERANS - HB 3450



BP Olympic Pipeline Crosses to Multnomah County, CD1

24 February 2025



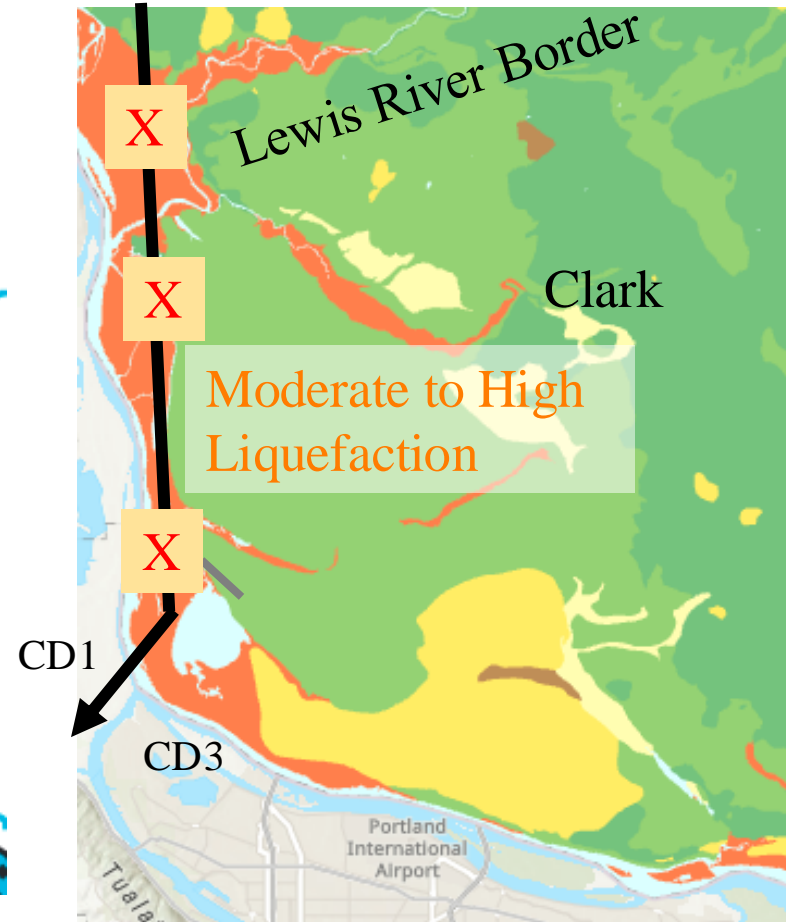
BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETERANS - HB 3450



Clark County, BP Olympic Pipeline

Liquefaction Susceptibility

24 February 2025

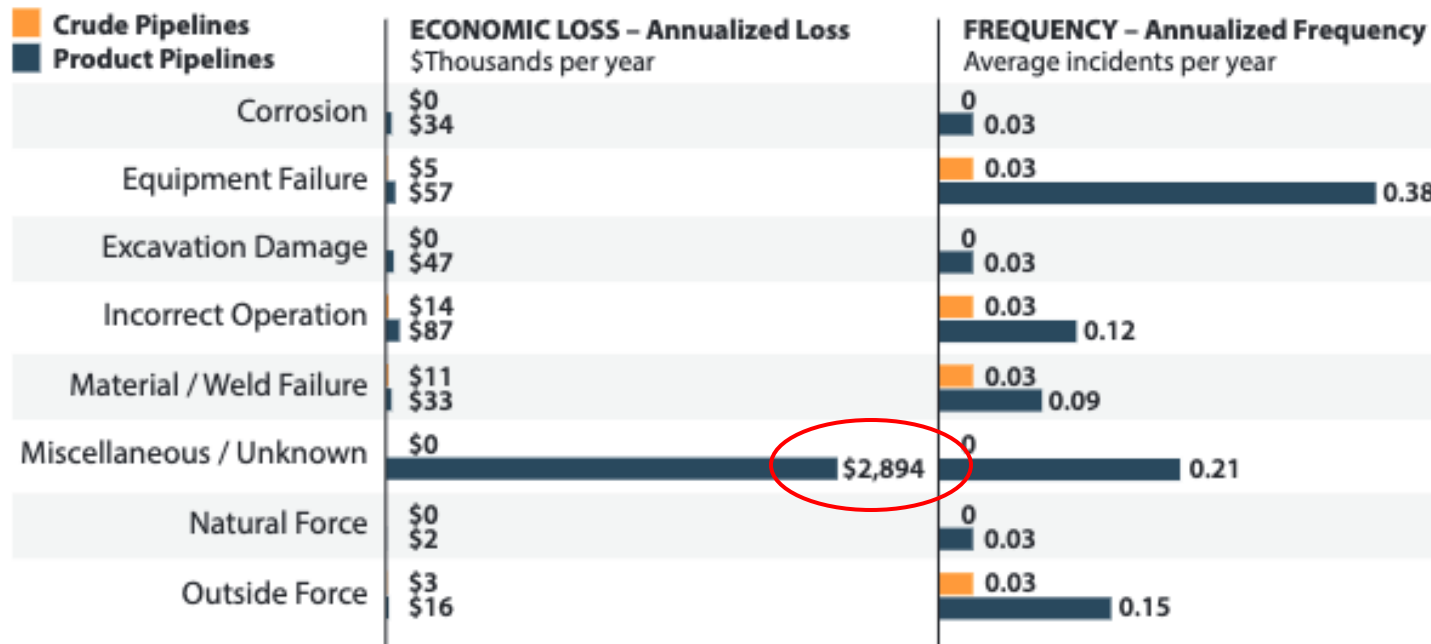


BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETERANS - HB 3450



24 February 2025

The BP Olympic Pipeline currently requires costly maintenance



P7 here: <https://www.energy.gov/sites/default/files/2021-09/State%20of%20Washington%20Energy%20Sector%20Risk%20Profile.pdf>

**BEFORE OREGON HOUSE COMMITTEE ON
EMERGENCY MANAGEMENT, GENERAL GOVERNMENT,
AND VETRANS - HB 3450**



24 February 2025

Background on Cascadia seismic history

BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETRANS - HB 3450



Shortest Seismic Risk Management Primer in the Free World

24 February 2025

Loma Prieta 1989	<u>Magnitude 6.9</u>	63 Deaths	\$10B recovery	Probability 1.0
Cascadia 1700	Magnitude 9.0	-	-	Probability 1.0
Cascadia 2024+	M 8.0 - 9.0	-	-	P = 0.5 in 1946

On energy scale, $M8 = 32 \times M7$
 $M9 = 1024 \times M7$

On Oregon Coast, M8 conditions seem to occur up to 20 mi from beach,
for M8 or M9 event.

BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETRANS - [HB 3450](#)

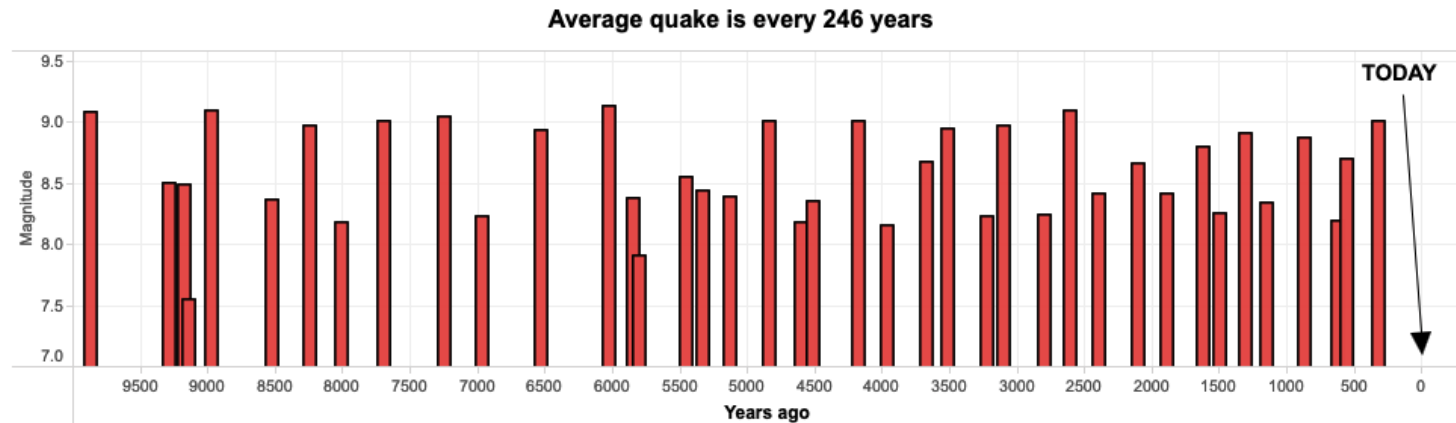


Northwest history of M8 and M9 Events

24 February 2025

10,000 years of Cascadia earthquakes

The chart shows all 40 major earthquakes in the Cascadia Subduction Zone that geologists estimate have occurred since 9845 B.C. Scientists estimated the magnitude and timing of each quake by examining soil samples at more than 50 undersea sites between Washington, Oregon and California.



Last event was 1700. Add average 246 = 1946, when chance was 50%.

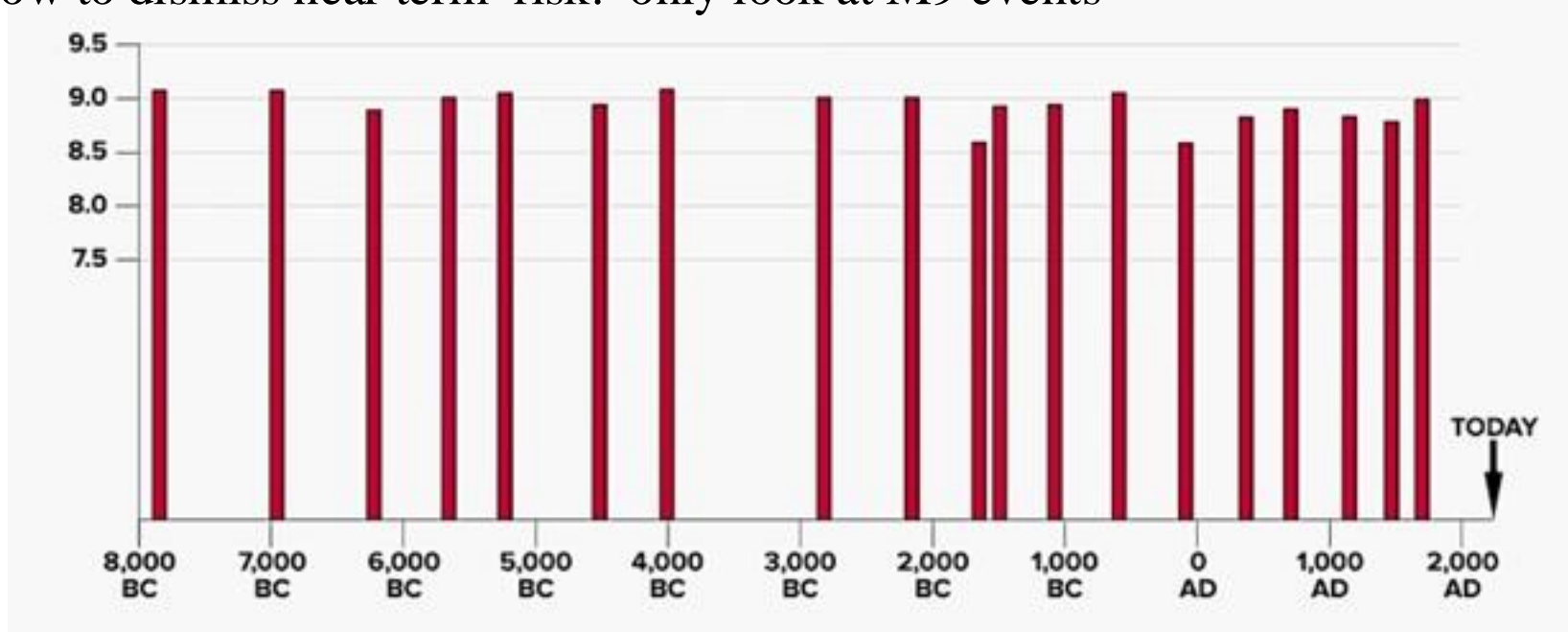
<https://projects.oregonlive.com/maps/earthquakes/timeline>

BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETERANS - HB 3450



How to dismiss near term risk: only look at M9 events

24 February 2025



Screenshot 4 min 30 sec here:

<https://www.youtube.com/watch?v=GP-vyAwiXCM>

Says average interval 400 to 500 years.

**BEFORE OREGON HOUSE COMMITTEE ON
EMERGENCY MANAGEMENT, GENERAL GOVERNMENT,
AND VETRANS - HB 3450**



24 February 2025

New fuel infrastructure in CD2 and CD5 to save coastal communities and the rest of Oregon from avoidable tragic aftermath. M8 megathrust and tsunami are inevitable, not policy options. Could be M9 full rip.

BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT,
GENERAL GOVERNMENT, AND VETERANS - [HB 3450](#)



Oregon can establish rail depots in CD2 to supply the stranded
CD1 and CD4 coastal communities

24 February 2025

Cascadia # 40 in 1700

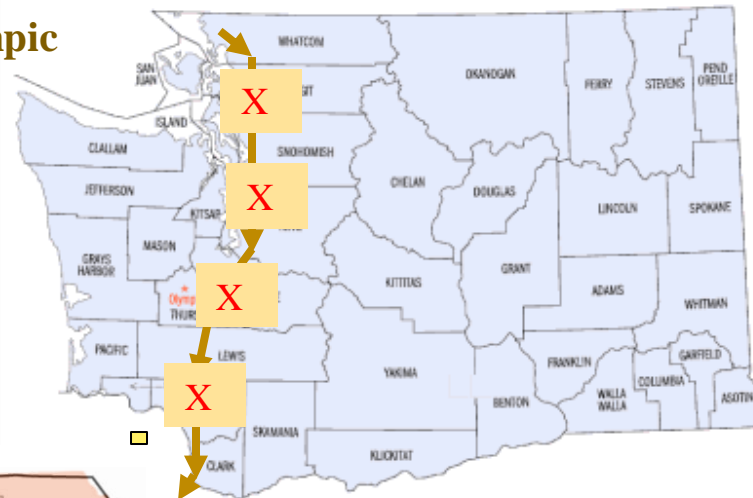
**BP Olympic
Pipeline**

Cascadia # 41 in ?

Average return interval = 246 years

Chance of return in 1946 = 50%

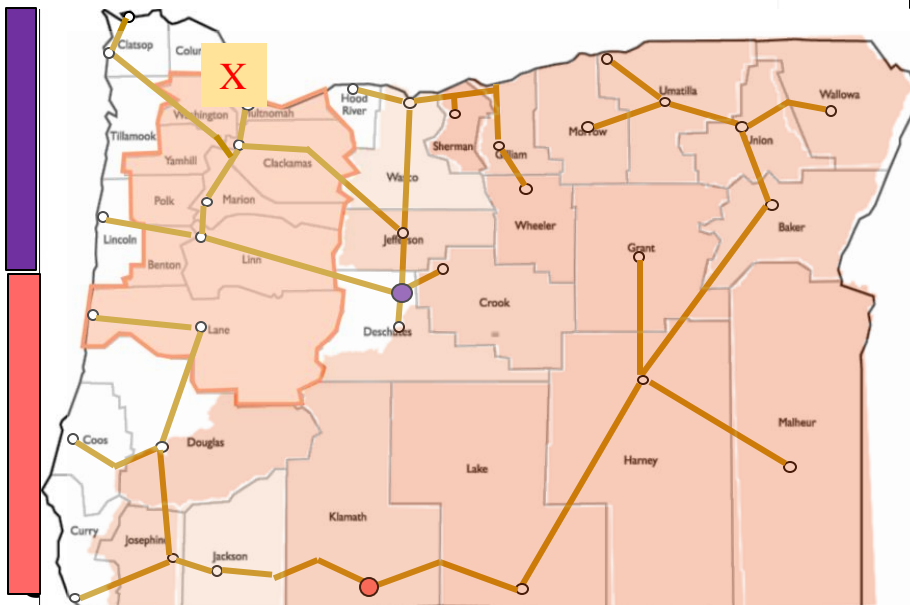
Truck deliveries from CD 2 and CD 5



**New Oregon Fuel
Distribution Depots**

- **Redmond (CD 5)**
- **Klamath Falls (CD 2)**

**Delivered by rail from
Montana, Utah, California**



BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETERANS - HB 3450



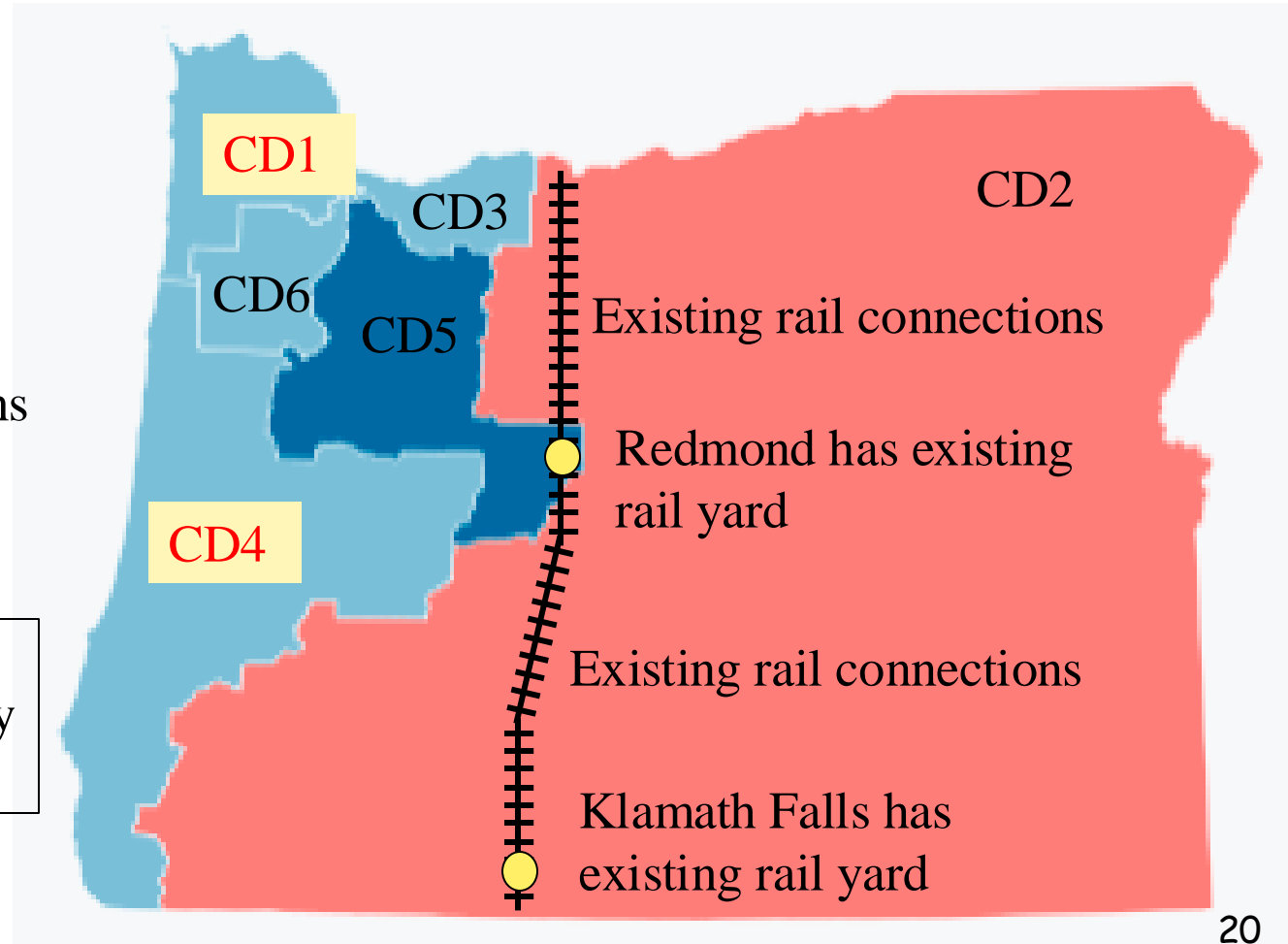
24 February 2025

CD2 and CD5 act to save CD1 and CD4 coastal communities

- Build out fuel depots from existing rail yards ●

- CD2 is key
- Will serve all inland users
- Rail connections to refineries in CA, UT, MT

Avoids default to military emergency on Day 1



BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETERANS - HB 3450



Redmond - CD5

24 February 2025



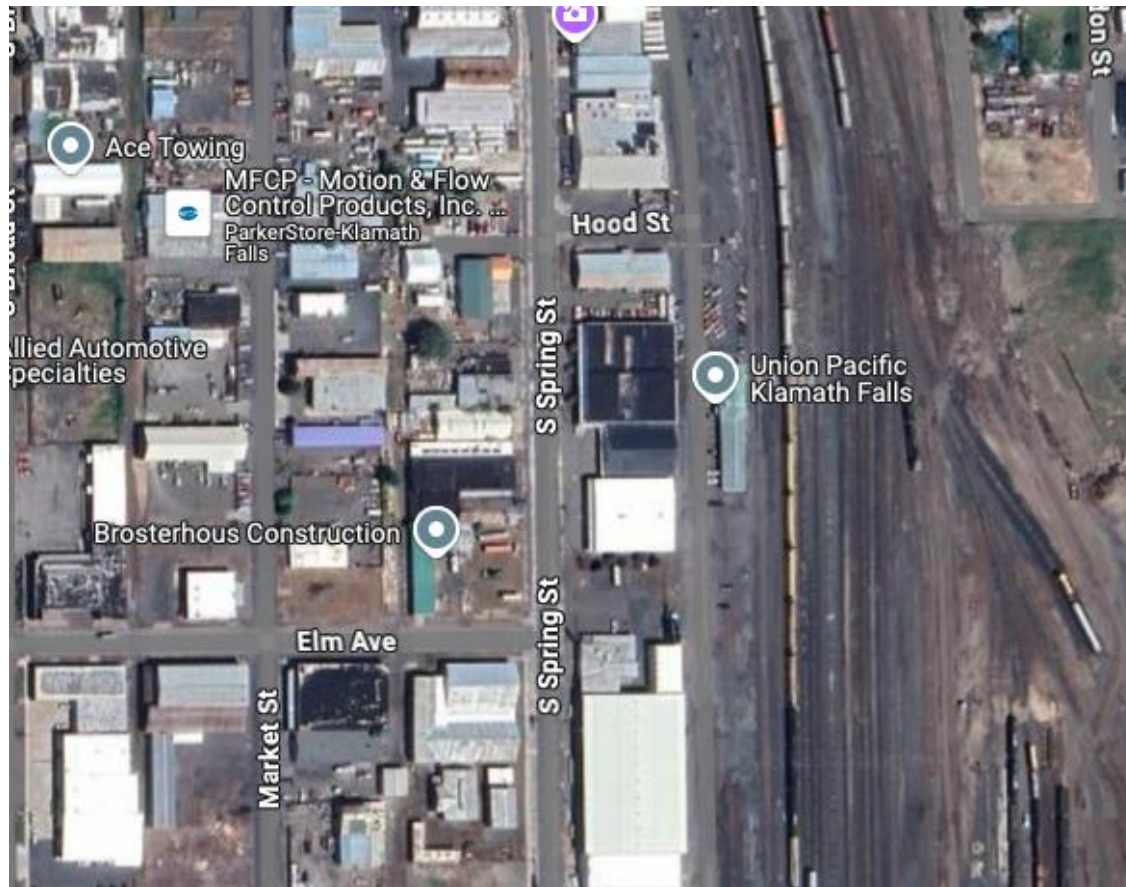
Three tracks

BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETERANS - [HB 3450](#)



24 February 2025

Klamath Falls – CD2



BEFORE OREGON HOUSE COMMITTEE ON
EMERGENCY MANAGEMENT, GENERAL GOVERNMENT,
AND VETERANS - HB 3450



Barriers we know of:

24 February 2025

FEMA does not acknowledge Cascadia seismic threat; if we have a FEMA DHS and CISA have researched and characterized the seismic threat,

- But have not provided recent findings from the Fuels RRAP that we know are dire. **Strawman findings were planned for January 2024**
- Funding for the Oregon infrastructure mitigation depots will not happen without the highly credible Fuels RRAP update

DHS/CISA can be **defunded** under directed Federal funding cuts

CD2 Congressman will consider the cost of the infrastructure mitigation depots for Oregon while factoring the directed Federal spending cuts. Then what.....

The Cascadia megathrust wild card could happen tomorrow, or in the middle of transitioning to the new depots, or after Oregon is ready

**BEFORE OREGON HOUSE COMMITTEE ON
EMERGENCY MANAGEMENT, GENERAL GOVERNMENT,
AND VETERANS - HB 3450**



Suggested next steps needed

24 February 2025

Consensus among Congresswomen to motivate Congressman Cliff Bentz

Contact the Washington Fuels RRAP leadership for an immediate update with interim findings, to validate with Federal authorities the risk Oregon is facing

CISA Region 10 Director, Patrick Massey

CISA HQ Team Lead for Fuels RRAP effort, Jonathan Moaikel

(If you save their jobs they will like it)

Before going ahead with this, please contact us offline

Funding will not happen without a draft plan with a predicted range of cost

Salem is bogged down funding the plan for the plan

- HB 2151 (funding for plan), HB 3450 (plan), HB 2152 (plan)
- Waiting for a routine bill in June 2025 is such a bad idea

**BEFORE OREGON HOUSE COMMITTEE ON
EMERGENCY MANAGEMENT, GENERAL GOVERNMENT,
AND VETERANS - HB 3450**



24 February 2025

**Model for “Day 1 Plan to Shore Up Astoria and for Oregon’s
Sea Coast Recovery”**

1. Build new rail depots in CD2 to distribute fuel to Astoria and all coastal communities by tanker truck.
 - A. Employ tankers that can defuel to commercial cars and trucks directly
 - B. Design safe routes avoiding hazards (US 26 tunnel in Portland)
 - C. Establish a reserve of qualified drivers available for Day 1
2. Deploy electric drive fleets for emergency and repair fleets on coast
 - A. When held on high ground they can operate indefinitely without depot deliveries while repairs on access roads to beach cities are completed
 - B. Survey electric utility grid to coast and fix to survive Day 0
3. Prepare advance contracts for fuel deliveries to engage on Day 1
 - A. Rail to depot
 - B. Offload to tanker and deliver to coastal and inland communities
4. Transition to 50% capability at depots by January 2030 at latest
 1. Start reduction CEI stored commodities by January 2027 at latest
 2. Depots at 100% by 2032 at latest

**BEFORE OREGON HOUSE COMMITTEE ON
EMERGENCY MANAGEMENT, GENERAL GOVERNMENT,
AND VETERANS - HB 3450**



24 February 2025

Possible outcomes without a CD1 plan

Profound disruption to Oregon economy, civic order, with political recrimination
Example “California could have just turned on that valve”

With enough civil disruption, martial law

Military deprived of local fuel access, the same time the responsibility for
multi-state emergency management defaults to military

Very bad stories about why disabled patients did not survive Rita-Katrina in New Orleans
Might extend inward from Coast for considerable distances, if stark fuel
shortages occur for months

Infrastructure rebuild costs after-the-fact are 10x the early mitigation costs

CD1: The 3,000 sq mi of sacrifice zone for disaster capital

BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETERANS - [HB 3450](#)








Alternate Fuel Sources to Oregon

24 February 2025

Priority for Salem Ways and Means

- Infrastructure rebuild costs after the fact are at least 10x the cost of mitigation
- Waiting for post-event investment is a known inflation driver

National Institute of BUILDING SCIENCES™		ADOPT CODE	ABOVE CODE	BUILDING RETROFIT	LIFELINE RETROFIT	FEDERAL GRANTS
Overall Benefit-Cost Ratio		11:1	4:1	4:1	4:1	6:1
Cost (\$ billion)		\$1/year	\$4/year	\$520	\$0.6	\$27
Benefit (\$ billion)		\$13/year	\$16/year	\$2200	\$2.5	\$160
	Riverine Flood	6:1	5:1	6:1	8:1	7:1
	Hurricane Surge	not applicable	7:1	not applicable	not applicable	not applicable
	Wind	10:1	5:1	6:1	7:1	5:1
	Earthquake	12:1	4:1	13:1	3:1	3:1
	Wildland-Urban Interface Fire	not applicable	4:1	2:1	not applicable	3:1

Copyright © 2019 The National Institute of Building Sciences

TABLE 1. Nationwide average benefit-cost ratio by hazard and mitigation measure. BCRs can vary geographically and can be much higher in some places. Find more details in the report.

https://www.nibs.org/files/pdfs/ms_v3_adopts_earthquake.pdf

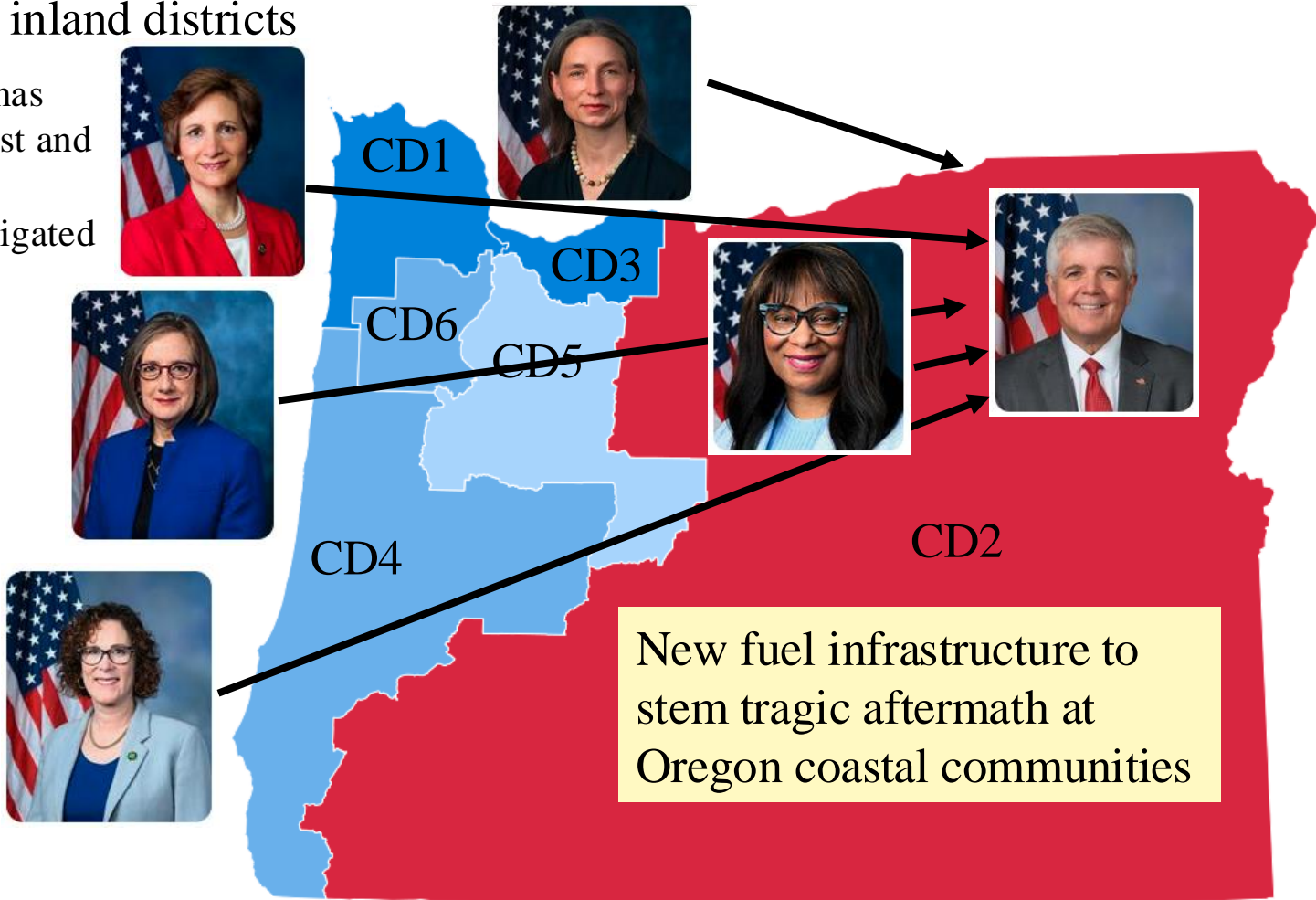
BEFORE OREGON HOUSE COMMITTEE ON EMERGENCY MANAGEMENT, GENERAL GOVERNMENT, AND VETERANS - HB 3450



24 February 2025

CD2 and CD5 act to save CD1 and CD4 coastal communities,
plus inland districts

CD1 has
soonest and
worst
unmitigated
risks



**BEFORE OREGON HOUSE COMMITTEE ON
EMERGENCY MANAGEMENT, GENERAL GOVERNMENT,
AND VETERANS - HB 3450**



24 February 2025

Better Energy LLC is a STEM NGO hosting open-source public information clearinghouse webpages for climate solutions. Our approach is to explain climate risk as the consequence of “big petroleum” deceptively geoengineering the planet for capital gains.

The Cascadia seismic threat has been discovered after the world’s seismic exploration experts, Big Petro employing seismic impulses to identify geologic structures. They clearly knew of Cascadia megathrust risk and have not spent a dime on mitigation. The transition away from our carbon economy will be accelerated sooner or later by our Cascadia event. Sooner is better. Consider Cascadia as a driver for solving the climate geoengineering fiasco. What would be the smart and timely thing to do?

Our research, web clearinghouse, and open-source reporting are not monetized, while being offered as public benefit.



24 February 2025

Finally, we have made every effort to seek a response from the Washington Department of Commerce Fuels RRAP team, the Idaho National Laboratory research lead, and the CISA HQ team lead, none of whom have responded to email requests for a current update, **nor acknowledged receipt of requests**. We're thinking they are not happy with the prospect of backlash for messaging historically bad news at a bad time. There are ways to help with this.

We're guessing this House Committee leadership would get better results than we have had in seeking current RRAP findings, plus important tangible evidence that assures expedited funding for statewide mitigation for Oregon. Note also that Washington also has no mitigation plan.

Petro subsidies from Congress amount to \$20B per year. Just diverting for a year to Oregon and Washington would fix everything, leaving us ready for anything.

Respectfully submitted, Tracy Farwell, Sustainability Desk, Better Energy LLC