

# **BEFORE OREGON HOUSE COMMITTEE ON CLIMATE, ENERGY AND ENVIRONMENT – HB 3681**



11 March 2025

**Chair Representative John Lively**  
**Vice-Chair Representative Mark Gamba**  
**Vice-Chair Representative Bobby Levy**  
**Members of the Committee**

## **Urgent Cascadia Preparation Relies On Infrastructure Permit Reform**

### **Total Support for HB 3681**

Surviving Cascadia is taking more than guesswork. Oregon energy infrastructure is at risk. No one believes the Portland CEI Hub will survive the Cascadia megquake, so the only remaining durable energy infrastructure is the electricity grid. The transition from reliance on commodity fuels to non-fuel energy generation and distribution is as inevitable as the next Cascadia M8 – M9 event

HB 3681 is essential to implement an intelligent Oregon Energy Security Strategy, soon

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Oregon's Energy Security Plan is statewide. This means that all Counties are treated equally. The reality is that there is only one county with the largest population at risk for stranding as an energy island the first minute after the Cascadia megaquake comes to a halt.

Since no one is arguing that the CEI Hub might still be intact, no one can argue that Washington County might have ANY fuel resupply to its current fuel logistics infrastructure on Day 1.

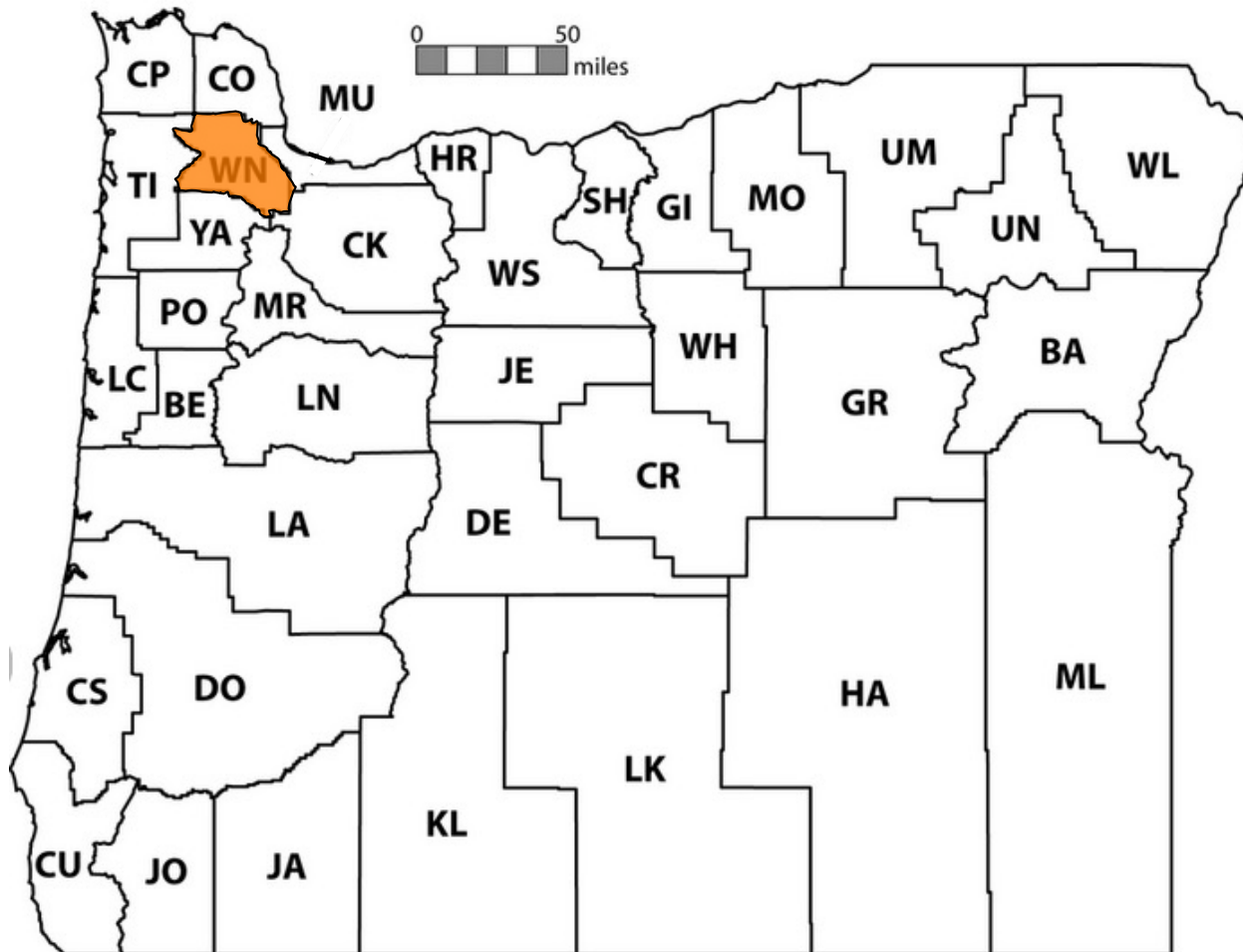
- No fuel resupply after Cascadia.
- Without strategic infrastructure investment, there is no possibility of conventional fuel first responder mobilization in Washington County, which is
- The only emergency resource for two beach resort counties destroyed with seismic collapses followed by 50- to 100-ft tsunami.

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Which of the most populated Oregon Counties is islanded by  
long-term interrupted fuel ?



No tanker truck  
resupply from failed  
CEI Hub

No surviving rail  
bridges to Washington  
County

Encompasses Oregon  
SD 14, SD 15, SD 16  
SD 17, SD 18

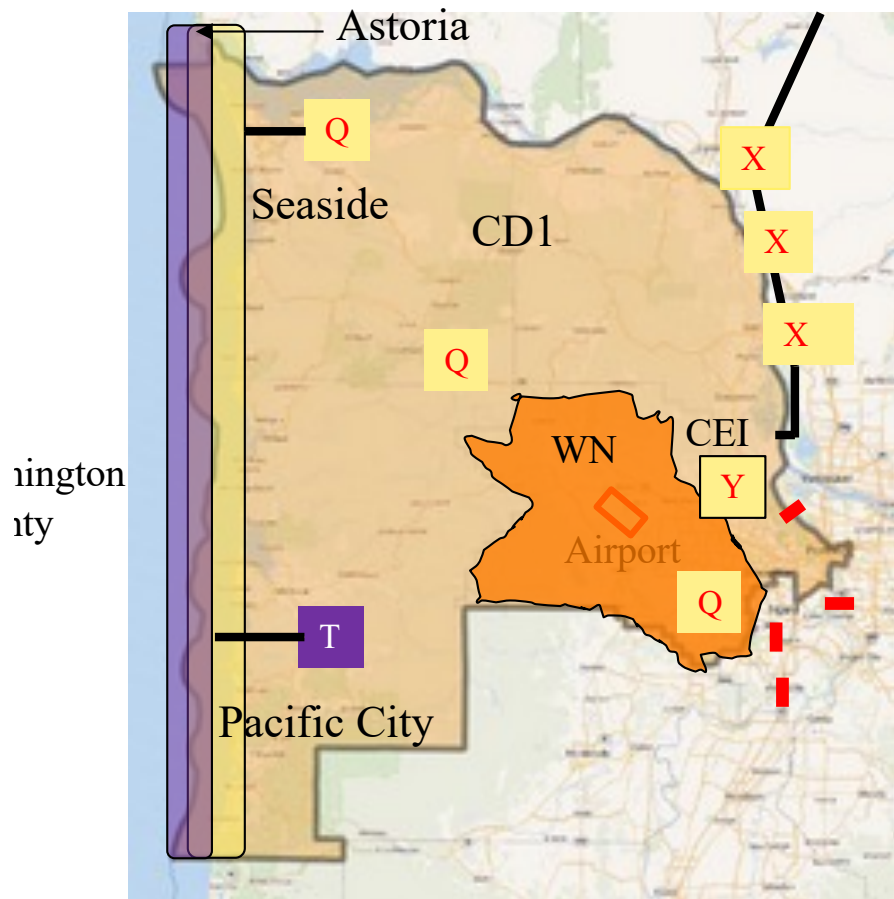
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No one is arguing that Washington County is not THE most threatened in Oregon for fuel insecurity. Population 598,000

First Congressional District on Seismic Day Zero – **and all at the same time**



- Failed rail bridges preclude fuel delivery
- X Olympic Pipeline failure  
Strands Oregon
- Y CEI Hub collapse  
Ends tanker truck logistics to CD1
- Q Quake collapse  
Closes Columbia at Astoria Bridge  
Damages coastal infrastructure  
Extensive coastal road/bridge loss  
Extensive utility damage  
Damages Wash Co infrastructure  
Damages bridges, maybe utilities
- T Tsunami  
Re-damages coastal infrastructure  
More coastal road/bridge loss  
More utility loss

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**Is it smart for AI investors to compete with emergency critical infrastructure for State energy access?**

There is every governmental motivation to protect the public interest ahead of the inevitable Cascadia catastrophe. Having no fuel resupply to even de-populate stranded disaster areas from Washington and Coastal Counties is an exceptional disaster in itself.

In an era when Artificial General Intelligence (AGI) is on the threshold of matching **Legacy Authentic Intelligence (LAI)**, why wait for AGI to save Oregonians from the inevitable?

What we already know. Since the Cascadia wild-card crisis involves the delivery of commodity fuels, the early transition to non-fuel energy delivered from the electricity grid is beyond debate. For Washington County, the primary energy delivery system is the electricity grid infrastructure, while commodity fuel infrastructure is for the interim contingency to manage an early arrival of Cascadia-caused infrastructure collapses.

AI software can be asked for its answer, but we already have one: **Washington County emergency transition to electrified transportation for first responders and the public.**



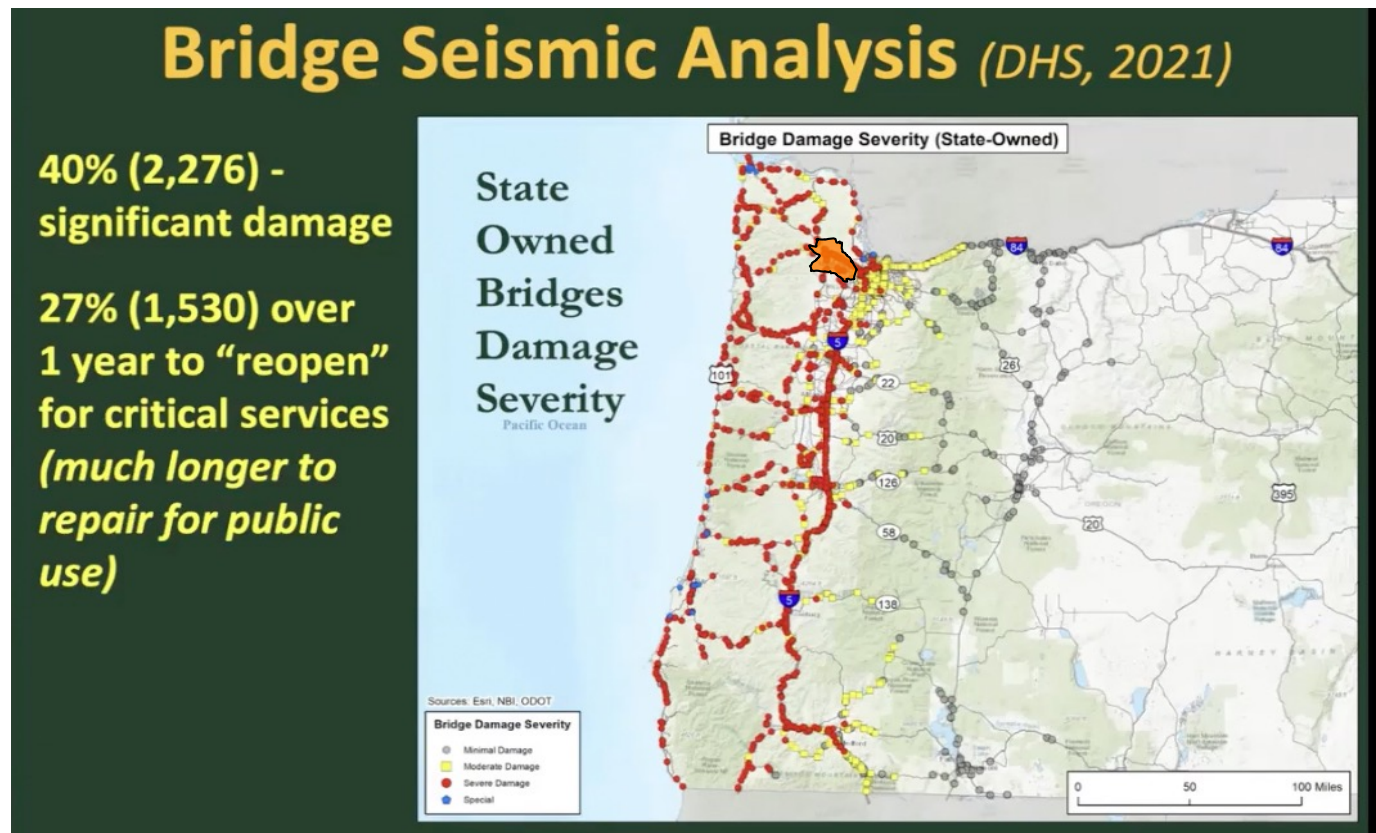
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DHS CISA has predicted the coastal conditions and consequences for Washington County highway bridge and overpass damage.

Argonne National Lab (CISA), Modeled 9.0



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

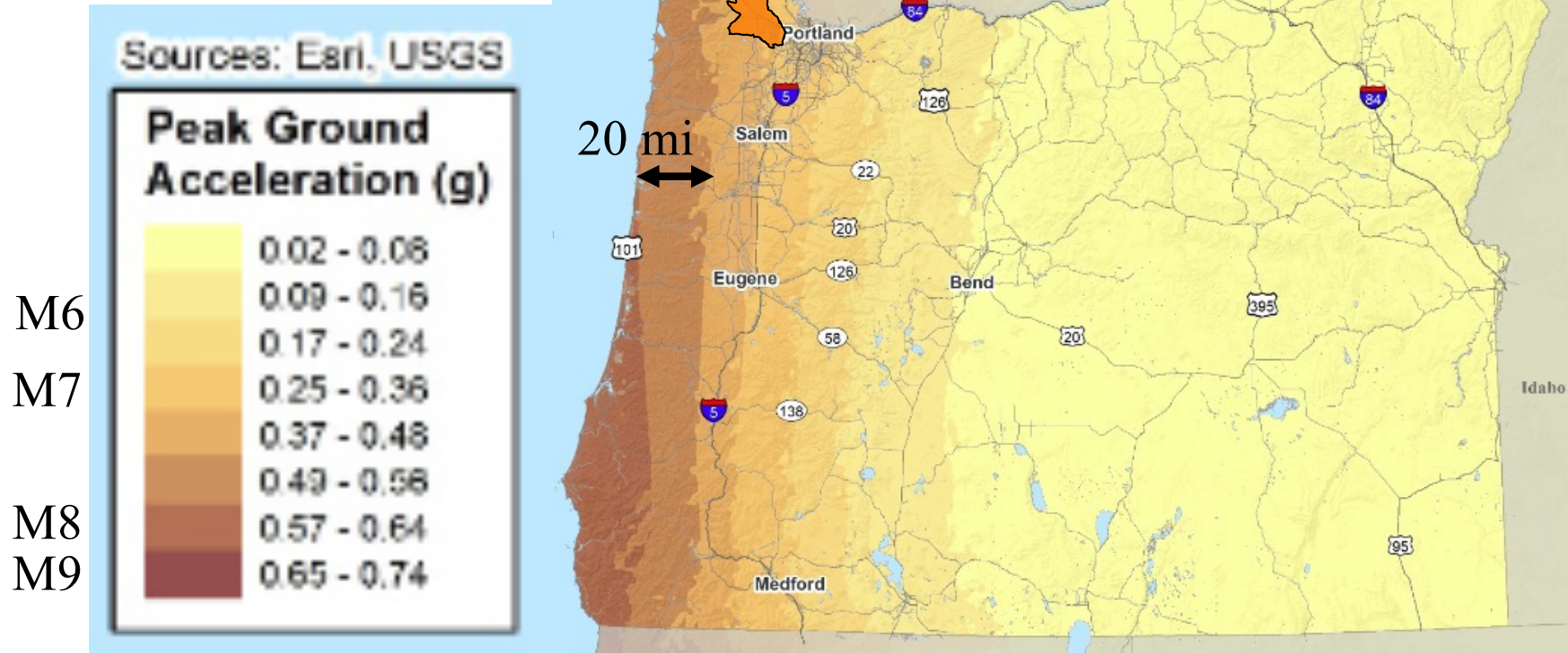
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Peak Ground Acceleration (horizontal motion) for M9, with  
estimate shading for M8 ([Wikipedia PGA](#))

Approximated  $\pm 30\%$



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

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## Shortest Seismic Risk Management Primer in the Free World

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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 inland up to 20 mi from beaches, for either M8 or M9 events.



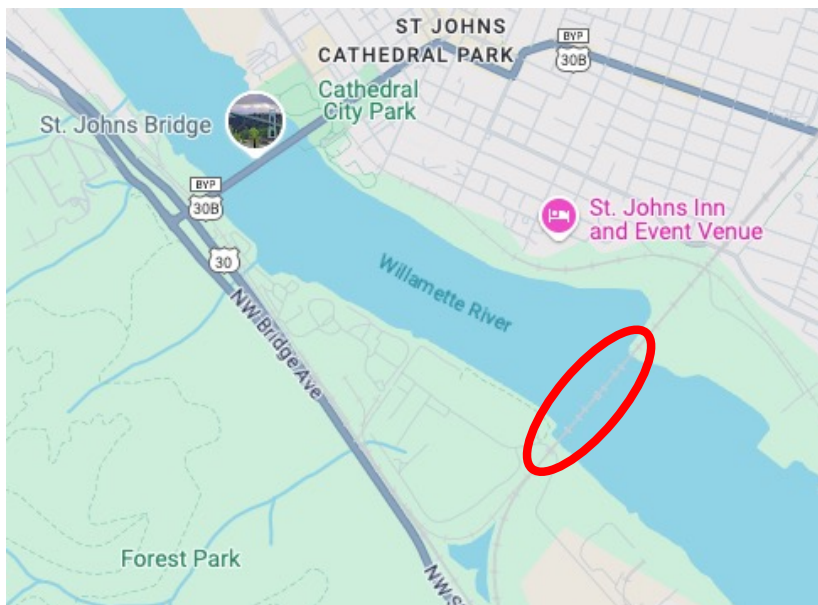
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BNSF Railway Bridge 5.1



Silver spans - 1908

Weathered rust – 1989

Cascadia threat discovered 2010

What are the retrofits?

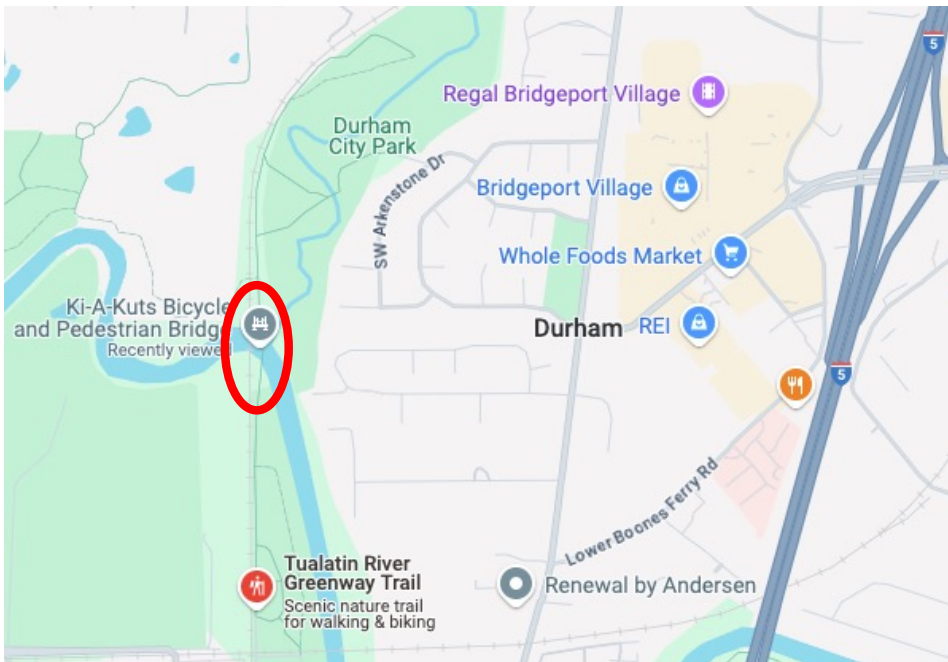
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Tualatin Railroad Bridge – Milepost 35.3



Prior to 1968  
Garden Home to Wilsonville Bridge  
- Tualatin River  
Cascadia threat discovered 2010  
What are the retrofits?

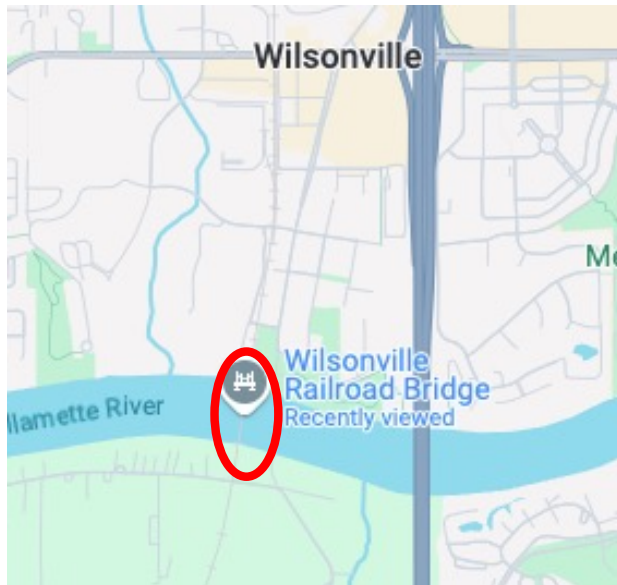
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Willamette Rail Bridge - Wilsonville



1975

Portland and Western Railroad  
Cascadia threat discovered 2010  
What are the retrofits?



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Oak Grove – Lake Oswego  
Railroad Bridge



1910  
Portland and Western Railroad  
Cascadia threat discovered 2010  
What are the retrofits?

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There are two general math choices for evaluating the likelihood of a Cascadia M8 arriving soon (there's no escaping it).

1. Expect 37% in the next 50 years, from 2012. Not updated in 2024. Thus, the risk is not less than 37% today, as tectonic stress accumulates. This is taken from the [USGS Paleoseismicity](#) report in 2012 (it also has 16 other 50-year percent choices, with no preferred math conclusions offered – find an essay on this [here](#))
1. Expect 50% in 1946, because this is from the average repeat interval of 246 years known from the raw data tables the USGS Paleoseismicity report, added to the last M9 event in 1700. The risk is significantly higher today with no tectonic stress relief theorized since 1700.



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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, likely set by their Military Department, when fuel itself is scarce.

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## **Authenticity for Survival**

Cascadia megaquake arrival is a wild card. So is access to emergency funding for emergency infrastructure for emergency responders. Will AGI explain to us what we already know? State budgets must be balanced annually. Cascadia infrastructure investment is widely recognized as exceeding State resources.

It remains for our elected LAI to fund Oregon's emergency infrastructure build-out. There is apparently no funding as an element of any Emergency Energy Transition Strategy to save Washington County from wild card fuel collapse.

Another question for AGI: Will random energy bills in the State Legislature ever add up to a Washington County Emergency Energy Transition Strategy ?

It actually takes all of Oregon to do this.

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To deal with an early Cascadia wild card, Oregon can establish contingency rail depots in CD2 and CD 5 to supply the stranded CD1 and CD4 coastal communities

**Cascadia # 40 in 1700**

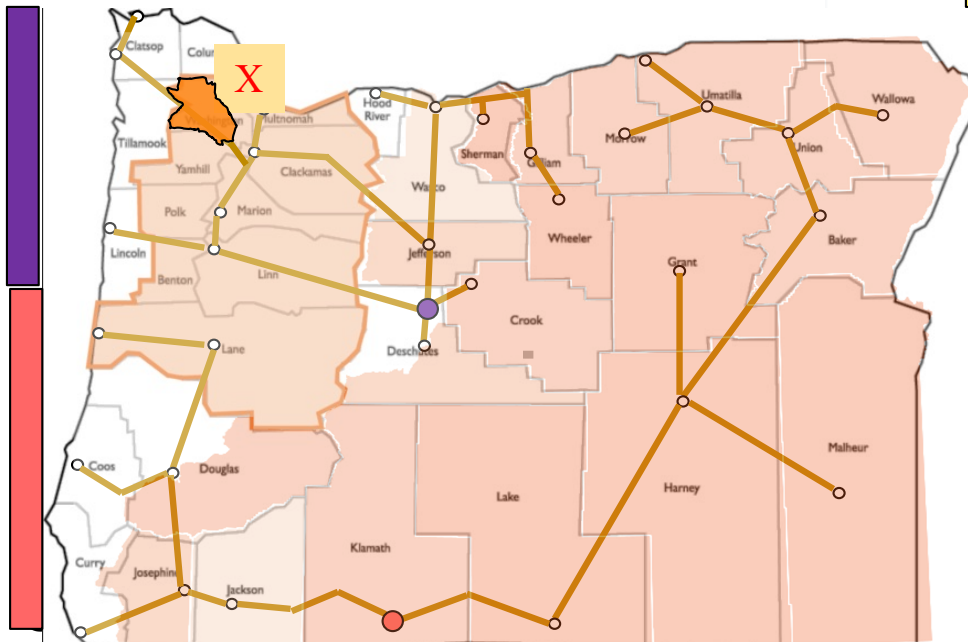
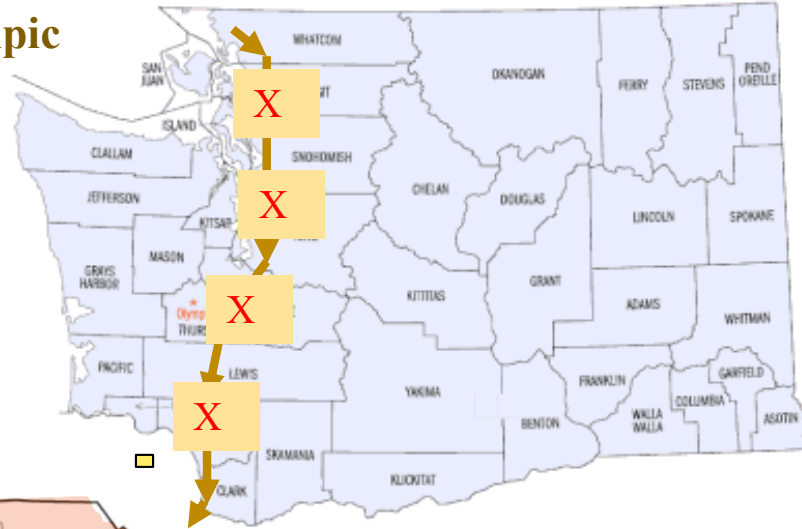
**BP Olympic Pipeline**

**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**

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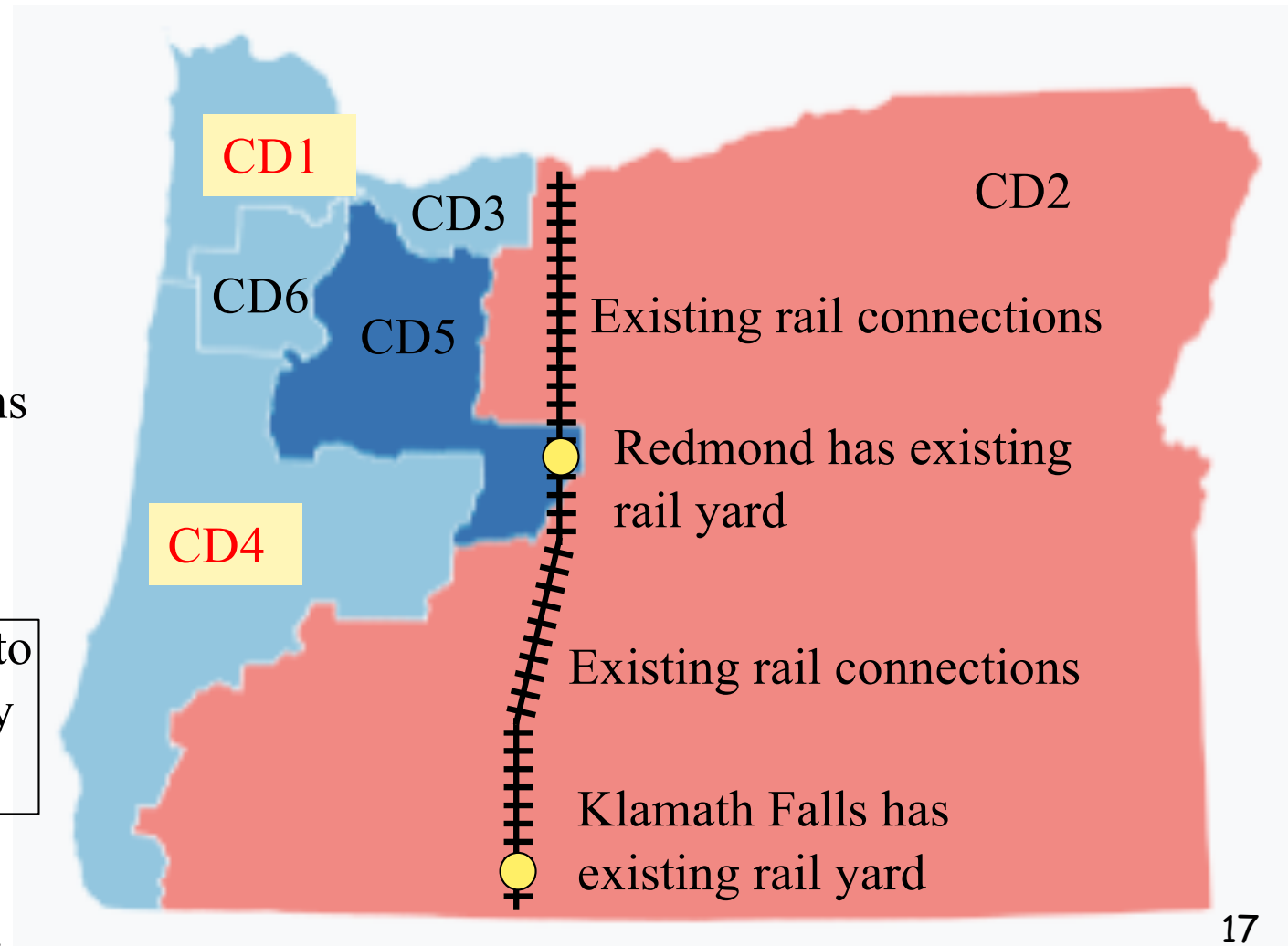
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CD2 and CD5 act to save CD1 and CD4 coastal communities

- Build out fuel depots from existing rail yards ●

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

Can avoid default to military emergency on Day 1



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Redmond - CD5

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Three tracks

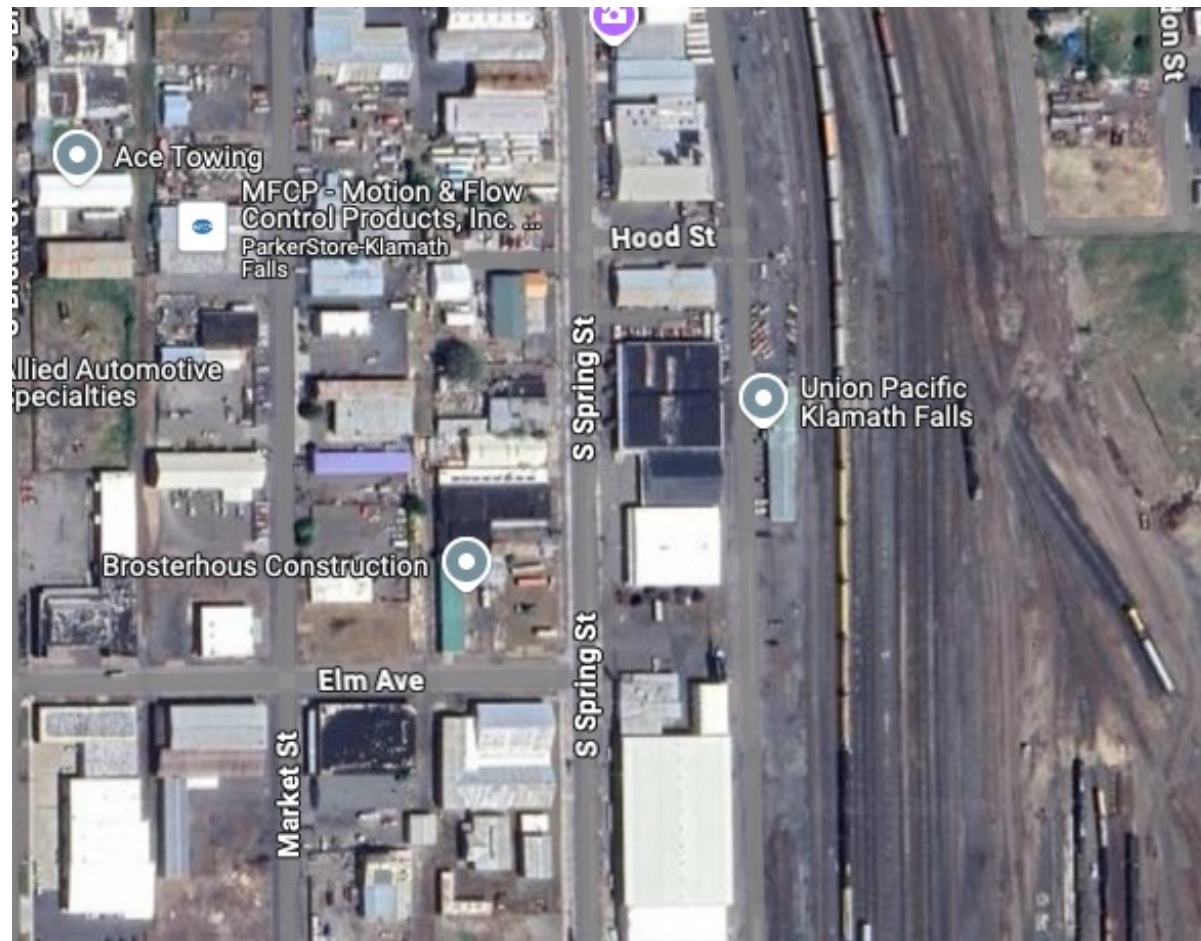


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## Klamath Falls – CD2



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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 Washington State Fuels Regional Redundancy Assessment Program (RRAP) that we know are dire. **Strawman findings planned for January 2024 seem to be impounded.**
- Funding for the Oregon infrastructure mitigation depots will not happen without the highly credible WA Fuels RRAP update

DHS/CISA can be **defunded** under directed Federal funding cuts. Our 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 the Oregon energy grids are ready

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Model for “Washington County Emergency Energy Transition Strategy ”

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1. Obtain a waiver from US DOE for early funding without a State Energy Strategy
1. Build contingency rail depots in CD 5 and CD2 to distribute fuel to Washington County (and everywhere else) by tanker truck.
  - A. Employ tankers that can defuel to commercial cars and trucks directly
  - B. Design safe tanker routes avoiding hazards (US 26 tunnel in Portland)
  - C. Establish a reserve of qualified drivers available for Day 1
2. Build-out durable electric energy generation well ahead of expected base load growth
3. Deploy electric drive fleets for Day 1 emergency and repair vehicles ASAP
  - A. Survey electric utility grid to Washington County and fix to survive Day 0
4. Build a fuels depot at Hillsboro Airport and secure resupply logistics by rail
5. Prepare advance contracts for fuel deliveries to engage on Day 1
  - A. Rail to depot
  - B. Offload to tanker and deliver to Washington County
6. Transition to 50% capability at new fuel depots by January 2030 at latest
  1. Start reduction of CEI stored commodities by January 2027 at latest
  2. Depots at 100% by 2032 at latest

Note: Our correspondence with [Washington County Commissioners](#)

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Possible outcomes without a CD1/Washington County 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

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## Alternate Fuel Sources to Oregon

### 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

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**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](https://www.nibs.org/files/pdfs/ms_v3_adopts_earthquake.pdf)



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## Concept for an Oregon Emergency Energy Security Transition Plan

Plan Authorship	Oregon Department of Energy <b>Chapter 1 Washington County Emergency Energy Transition Strategy</b>	Maxwell Woods
Mil Department	Adjutant General, Oregon National Guard	BG Alan Gronewold
Technical Officers	Oregon Department of Environmental Quality	Mike Korten Kathryn Harrington
Science Consultant	Oregon Department of Geology	Alex Lopez
Plan Legal	Oregon Public Utilities Commission	JP Batmale
Project Schedules	Oregon Oregon Department of Transportation	
Governor Liaison	House Committee on Emergency Management	Rep Dacia Grayber

NOTE: Anyone not edgy about getting this right does not understand the problem.

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## Chapter 1 Washington County Emergency Energy Transition Strategy

- 1.1 Securing access to existing Federal infrastructure funding for simultaneous start of Washington County Cascadia Emergency planning and essential infrastructure projects
- 1.2 Securing electricity reliability (like PGE Harborton Reliability Project)
- 1.3 Securing reliable fuel access by rail (Depot to Washington County)
- 1.4 Securing reliable fuel access by tanker truck logistics
- 1.5 Securing air sorties to coast for emergency relief and infrastructure repair
  - 1.5.1 Prioritize coastal charging stations for first responders
- 1.6 Securing inland charging infrastructure for county drivers and Max rail
- 1.7 Securing access to reliable water infrastructure

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**The Better Energy LLC Oregon Solution to the Cascadia Wild Card Threat**

Secure emergency infrastructure funding from the 2021 DeFazio IIJA and the 2022 Wyden IRA

Simultaneously build out a secure primary energy network via seismically stable electricity grid, together with

contingency fuel depots and seismically retrofitted infrastructure as backup while primary energy projects are underway

NOTE: Anyone not edgy about getting this right does not understand the problem.

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Better Energy LLC is a STEM NGO that researches better energy options, originally concerned with renewable energy technology but discovered the Cascadia threat more imminent as risk to economy and society than uninterrupted climate pollution.

You get the same perspectives as from Marsh McLennan, but without the 90,000 staff and we don't invoice for our work conducted in the public interest. Our answers can be validated by ample reference links to open-source data without the pesky delays imposed by the funding scrambles that just compound the risk.

Marsh McLennan reports to the US House Committee on Homeland Security with this [testimony](#) about working with FEMA, giving ample attention to Alabama, Florida, South Carolina, Louisiana. No mention of Oregon.

Respectfully, Tracy Farwell, HD-46, Sustainability Desk, [Better Energy LLC](#)