

**BEFORE OREGON HOUSE COMMITTEE ON CLIMATE,  
ENERGY AND ENVIRONMENT – HB [3597](#), HB [3598](#), and  
An Answer**



8 April 2025

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

**Representative Tom Andersen has the right question for DEQ about Electric Transport.**

**We Support the Bills. We know the DEQ Answer. It's more about Energy and the Department of Energy**

Balancing the Oregon State Budget on rickety, obsolete, neglected commodity fuel infrastructure is high risk, like waiting for the next forest wildfire, lowland flooding or wind-driven urban conflagration. State budgets must be balanced, regardless of unaffordable disasters. That is where FEMA comes in, if it comes in.

Electric fleets and supporting infrastructure are less susceptible to the inescapable, inevitable return of the Cascadia megaquake, widely disastrous at the M8 level

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Oregon economic solvency depends 90% on uninterrupted supply of Washington refinery fuel deliveries. Recently it was disclosed that the FEMA [National Risk Index](#) does not acknowledge the Washington/Oregon Cascadia megathrust risk. Electric fleets and supporting infrastructure are less susceptible to the inescapable, inevitable return of the Cascadia megaquake, widely disastrous at the M8 level. With the electric transmission grid there are no commodity logistics to neglect or disaster risks to externalize to the public

Non-emitting energy is less costly than energy derived from commodity fuels and has little threat to the declining environment. The transition of transport fleets including first responder service fleets can't happen fast enough to handle the understated Cascadia threat.

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8 April 2025

## What about Washington State commodity fuels infrastructure?

This is more than a worry. The Washington Fuels Regional Resiliency Assessment Report (RRAP) initially disclosed serious vulnerabilities then entered a cone of silence.

DHS CISA is conducting the fuels 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 Webpage](#): MP4 syntax is .....  
“Region 8-Washington State\_Last Mile\_Fuels RRAP-20231912”  
This 1-hr video is revelatory for Oregon’s future

Please see next page for VTC audio statements and minutes

**BEFORE OREGON HOUSE COMMITTEE ON CLIMATE,  
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8 April 2025

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

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 (MSExcel)

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 2<sup>nd</sup> 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 CLIMATE, ENERGY AND ENVIRONMENT – HB [3597](#), HB [3598](#), and An Answer

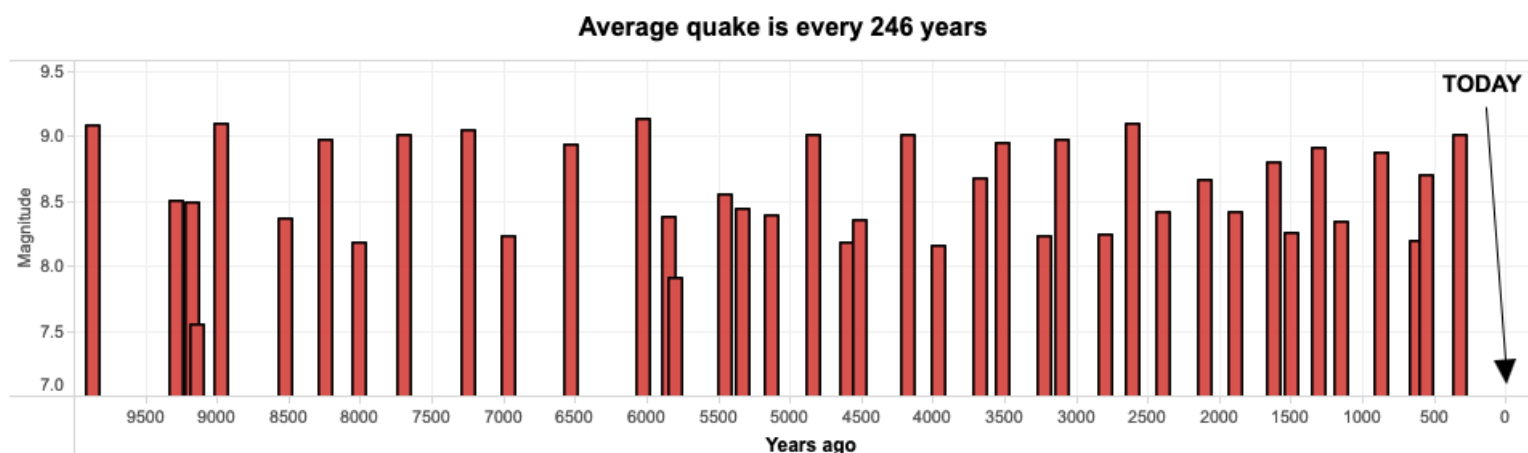


8 April 2025

The incomplete Washington Fuels RRAP raises questions about what we know from Cascadia history of M8 and M9 Events.

## 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%.

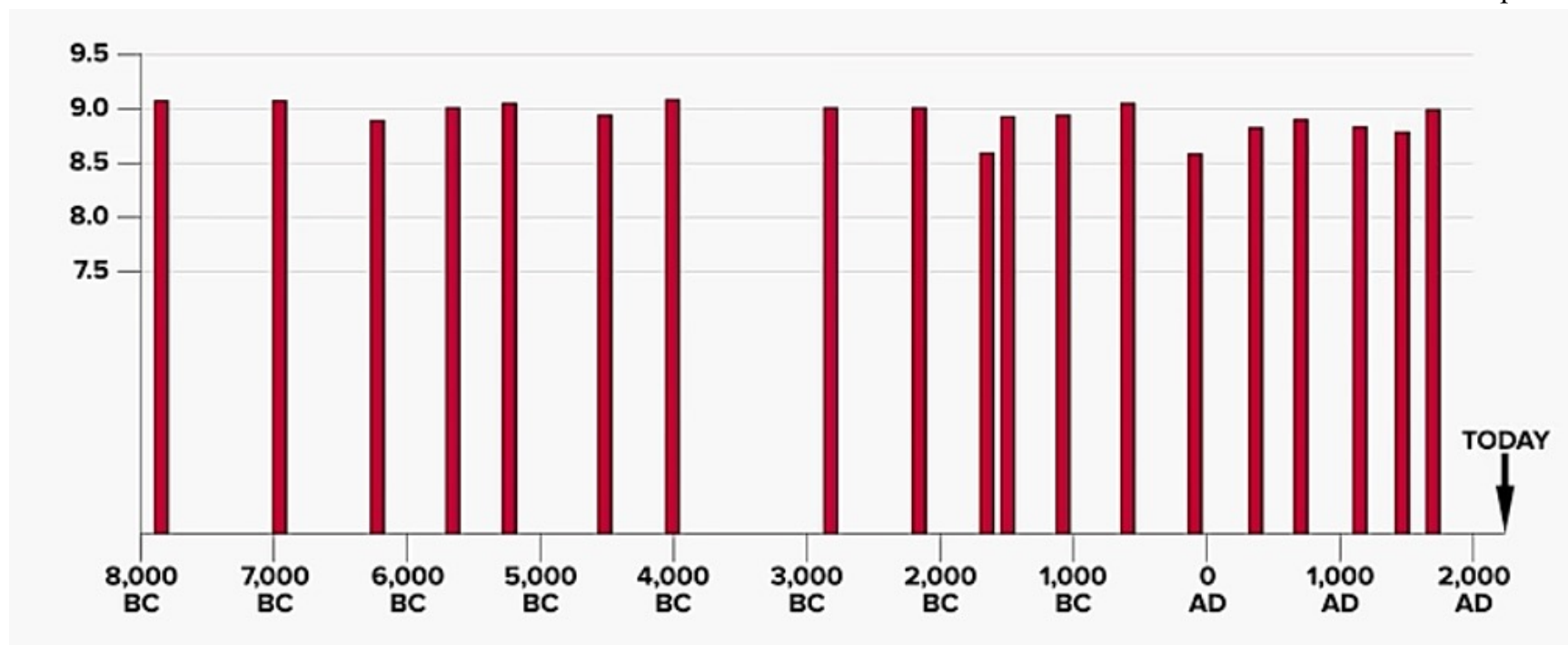
<https://projects.oregonlive.com/maps/earthquakes/timeline>

# BEFORE OREGON HOUSE COMMITTEE ON CLIMATE, ENERGY AND ENVIRONMENT – HB 3597, HB 3598, and An Answer



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

8 April 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 CLIMATE, ENERGY AND ENVIRONMENT – HB 3597, HB 3598, and An Answer



8 April 2025

Increasing demands for FEMA relief and rebuild are driving high economic inflation. Evidence shows that earthquake mitigation ahead of time obviates at least 10x the cost of recovery after. Benefit cost ratios (BCRs) are known for typical hazards.

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



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8 April 2025

**Representative Tom Andersen has the right question for DEQ  
about Electric Transport. The Energy answer is urgently needed,  
costly, and not happening**

- 1. Relieve the State Treasury from perilous dependence on Washington State commodity fuels. Our CEI Hub Tanks are just as unreliable, but more dangerous.**
  - A. Build out electric fleets for first responders and critical delivery fleets (food, staples, even fuels).**
  - B. Build out more durable distributed electricity grid.**
- 2. Since the Cascadia wild-card can land in the middle of Step 1, contingency fuel depots must be invested in for the interim.**
  - A. It takes fuel to rebuild any and all infrastructure after a disaster**
  - B. If Cascadia happens before alternative depots, first responders, National Guard, contractor fleets, emergency generators, grid repair fleets are fuel stranded for months.**
  - C. Military readiness seriously compromised**
- 3. Solicit infrastructure funding from self-threatened industry – negligent rail operators, commodity fuel operators. FEMA is failing indefinitely.**



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**Representative Tom Andersen has the right question for DEQ  
about Electric Transport. The Energy answer is urgently needed,  
costly, and not happening**

**Please See ATTACHMENT 1**

**Our Report to Oregon Department of Energy, probably 2 years ahead of a DEQ report  
since they are reeling from the Congressional FEMA funding failure like everyone else.**

**BEFORE OREGON HOUSE COMMITTEE ON CLIMATE,  
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8 April 2025

These prescient Bills are urgently needed, along with a stack of others than can add up to a State Energy Security Project Plan.

Thank you for early attention to hazard mitigation in advance of the inevitable.

Respectfully,

Tracy Farwell, Sustainability Desk; SD23, HD 46  
[Better Energy LLC](#)

**BEFORE OREGON HOUSE COMMITTEE ON CLIMATE,  
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8 April 2025

**ATTACHMENT 1 A Report to Our Oregon Department of Energy**

We advocate for acknowledgment of the inevitable Cascadia wild card in formulating Our Oregon Energy Strategy, scheduled for a Listening Session, 24 April 2025

# Oregon Department of ENERGY

## Oregon Energy Strategy Public Forum Forum 24 April 2025



8 April 2025

Jessica Reichers, Edith Bayer  
Maxwell Woods, Traci Naile

**The Cascadia Catastrophe destroys commodity energy infrastructure and is an inevitable wild card that demands action– not a dismissible option**

- Not acknowledged in current [Washington State Energy Strategy - 2021](#)
- Does appear in [Oregon Fuel Action Plan](#) - 5 years ago
  - Cites up to 250 breaks in Washington Olympic Pipeline feeding Oregon
- Does appear in [Oregon Energy Security Plan](#) – 2024
  - Cites a 2012 [Earthquake Risk Study](#) reporting average M8 return interval of 250 years, a risk of 50/50 in 1950

# **Oregon Department of ENERGY**

## **Oregon Energy Strategy Public Forum 24 April 2025**



8 April 2025

### **Because of the Washington State Fuels RRAP Impoundment, Oregon Needs a Strategic Energy Emergency Contingency Plan This Month**

The last Regional Resiliency Assessment Program public release of findings from Washington State was June 27, 2023 (see Last Mile Region 8). Old news was not good for Oregon. They are holding back 18 months of dire findings

Since the Cascadia catastrophe is inevitable, a strategy that includes contingency energy planning is not optional

No such ODOE planning has been acknowledged in public fora to date

Means that a revised strategy is overdue

# Oregon Department of ENERGY

## Oregon Energy Strategy Public Forum 24 April 2025



8 April 2025

### Summary of our findings

- After Cascadia, no fuel truck deliveries from the collapsed CEI Hub to 90% of Oregon
- Even if road bridges still span the Willamette, no fuel deliveries to all of Washington County
- No rail car deliveries to Washington County due to their rail bridge collapses
- A Hillsboro fuel depot is needed for emergency first responder fuel for 160 miles of coastline disaster, plus fuel-stranded First Congressional District, population 600,000
- Washington State will consume all Midwest refinery deliveries to Pasco
- Available excess capacity from Midwest refineries is 5%, can't fill Oregon demand
- Illegal Federal impoundment of appropriated and mandated infrastructure funding is a ridiculously inconceivable worst- case scenario, happening right now  
<https://www.oregon.gov/odot/about/pages/federal-funding-eo-pause.aspx>
- OregonLive report on next Cascadia event says 50% probability in 1700+246=1946  
<https://projects.oregonlive.com/maps/earthquakes/timeline>
- Our math says 80% probability today <https://better-energy-llc.com/wp-content/uploads/2023/03/10k-vs-6k.pdf>
- Fuel-dependent energy security in Oregon is zero or less – what is the strategy?

# Oregon Department of ENERGY

## Oregon Energy Strategy Public Forum 24 April 2025



8 April 2025

We provide our documented analyses to Salem Legislators as testimony supporting their bills

- Format is self-paced VTC slides, fully referenced data, not opinion
- No constituent zoom calls
- No response to date from any testimony filed on OLIS

Washington State Fuels RRAP, Cascadia math, new rural depots

<https://olis.oregonlegislature.gov/liz/2025R1/Downloads/PublicTestimonyDocument/134265>

Strawman infrastructure planning, rail access to fuel depot in Hillsboro

<https://olis.oregonlegislature.gov/liz/2025R1/Downloads/PublicTestimonyDocument/139175>

Hillsboro depot, Midwest refinery excess capacities

<https://olis.oregonlegislature.gov/liz/2025R1/Downloads/PublicTestimonyDocument/144586>

CD3, CD1 Jeopardy – Please see Appendix A



# Oregon Department of ENERGY

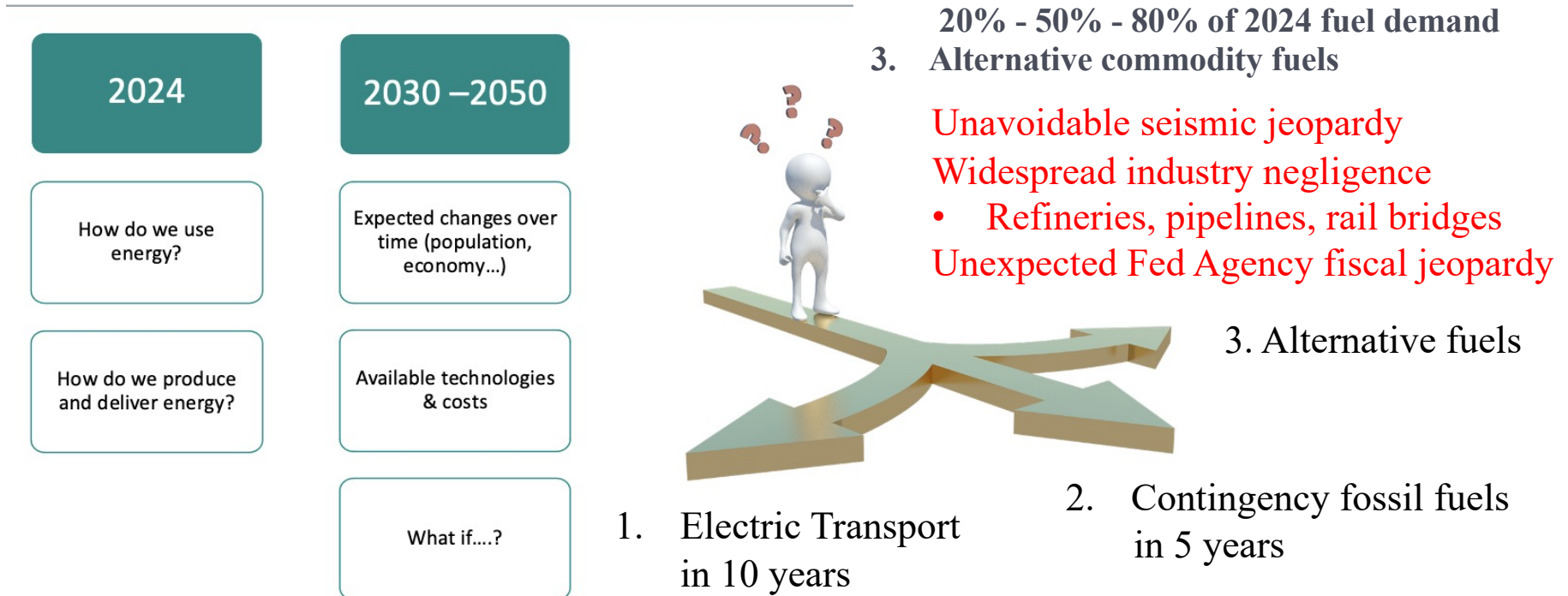
## Oregon Energy Strategy Public Forum 24 April 2025



8 April 2025

When can we expect strategic contingency planning to assure secure fuel energy to handle the inevitable?

### STEP 1: MODELING



How can Oregon's economy possibly survive ?

- State's Bond rating goes to zero in a day
- Defaults existing bond holders
- Military stranded for fuel

# Oregon Department of ENERGY

## Oregon Energy Strategy Public Forum 24 April 2025



8 April 2025

Why do we need a competent Oregon Energy Strategy?

Current Federal DOT Agency incompetence leaves the Oregon National Guard with default responsibility to answer a widespread fuel infrastructure collapse and no fuel to fix it.

Inevitable and overdue natural catastrophe  
USDOT blocking Congressionally mandated infrastructure funds  
Defunded DHS/CISA  
No State resources  
No military readiness  
No plan for success  
No Governor Energy Emergency EO

Feel free to ignore our findings just like Salem Legislators. Ho hum.

**Oregon Department of ENERGY**  
**Oregon Energy Strategy Public Forum 24 April 2025**



8 April 2025

Appendix A - HB 2749 As it dies in Ways and Means Subcommittee

Natural Threat Jeopardy to Oregon First and Third Congressional Districts

**BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION  
AND ECONOMIC DEVELOPMENT – HB 2749**



8 April 2025

**Co-Chair Senator Chris Gorsek**

**Co-Chair Representative Susan McLain**

**Co-Vice Chair Senator Bruce Starr**

**Co-Vice Chair Representative Shelley Boshart Davis**

**Members of the Committee**

**Not filed,  
Pending a work session**

**Total support** for HB 2749, noting that Ways and Means has no possibility of funding secure transportation infrastructure in Oregon, for infrastructure never built to current seismic compliances

**Our concern:**

Section 2. “The City of Portland is encouraged to seek and apply for federal funding to aid in the design and construction of a bridge across Columbia Boulevard.” Infrastructure funds are impounded under Federal EO 14154.

**Today we find that funds appropriated by the 2021 Bipartisan Infrastructure Law (\$739B) are impounded together with the 2022 Inflation Reduction Act funds (\$1.2T), illegally contradicting Congressional mandates.**

## BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION AND ECONOMIC DEVELOPMENT – HB 2749



8 April 2025

What DC attorneys say about IRA and IIJA funds

- Funds were blocked, then released for some appropriations
- No funds are being disbursed, State AGs have sued

<https://www.arnoldporter.com/en/perspectives/advisories/2025/02/funding-pauses-and-uncertainty-under-ira-and-iija>

What ODOT says about IRA and IIJA impoundments:

“Bridge funding provided under the IIJA is one of the types of funds for which all new obligations are on hold.”

<https://www.oregon.gov/odot/about/pages/federal-funding-eo-pause.aspx>

- This means that any critical fuels or rail infrastructure bills will not be funded, indefinitely
- These bills are on a death march to W&M

So, we need a bill to outlaw any Cascadia tectonic disasters until Congress can solve the Exec Branch holdups. \$\$\$\$ Holdups.

**BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION  
AND ECONOMIC DEVELOPMENT – HB 2749**



8 April 2025

Oregon Critical Infrastructure  
Serving Multnomah North Peninsula Communities

## BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION AND ECONOMIC DEVELOPMENT – HB 2749



8 April 2025

What is the impact of these findings on Oregon business development and state economy?

The predicted and inevitable tectonic megaquake will result in guaranteed infrastructure collapse for 90% of Oregon transport fuels. Bad for business.

Build a boat after the storm? Infrastructure needed in the aftermath of an inevitable Cascadia megaquake is not being prepared to survive:

- Washington State fuels pipeline to the Portland CEI Hub will fail 100%
- The CEI Hub will fail 100% from any M8 or M9 event
- Petroleum smoke and chemical fumes will threaten North Peninsula industry and residents
- Simultaneous collapse of seismically non-compliant 100-year-old rail overpasses will strand all eastward escape routes
- No viable routes to north, west or south

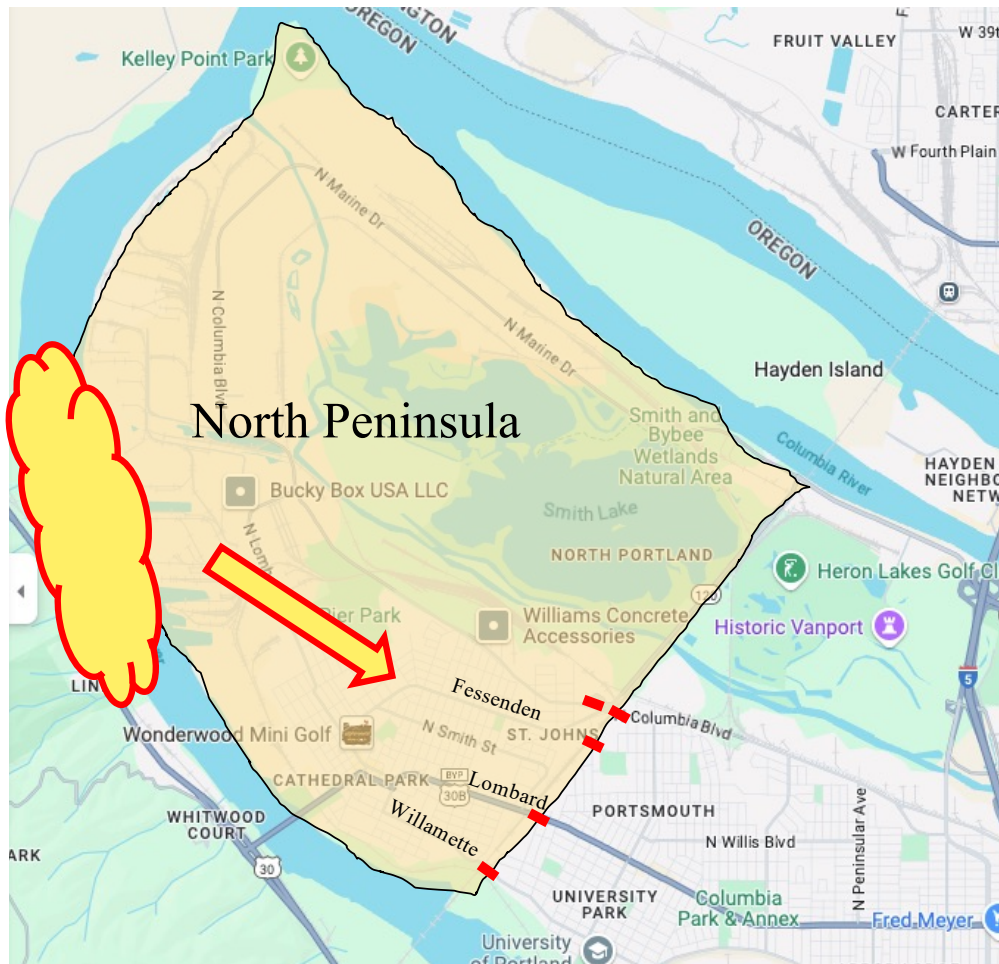


## BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION AND ECONOMIC DEVELOPMENT – HB 2749



8 April 2025

No one is arguing that the North Peninsula is not THE most threatened Community for stranding from infrastructure collapse – no eastward escape routes. Population 30,000



Threats not being disputed:

- CEI Hub seismic collapse, with fire, toxic smoke and chemical plume releases
- Simultaneous bridge failures ■ at Portsmouth rail cut: 4 BNSF rail overpasses with no seismic compliances, all > 100 yrs with no retrofits
- No enforceable USDOT infrastructure mandates, no stockholder due diligence.
- Successful externalized risk by Berkshire Hathaway
- 2021 BIL impounded
- 2022 IRA impounded

# BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION AND ECONOMIC DEVELOPMENT – HB 2749



8 April 2025

North Columbia Blvd  
Road Bridge Overpass

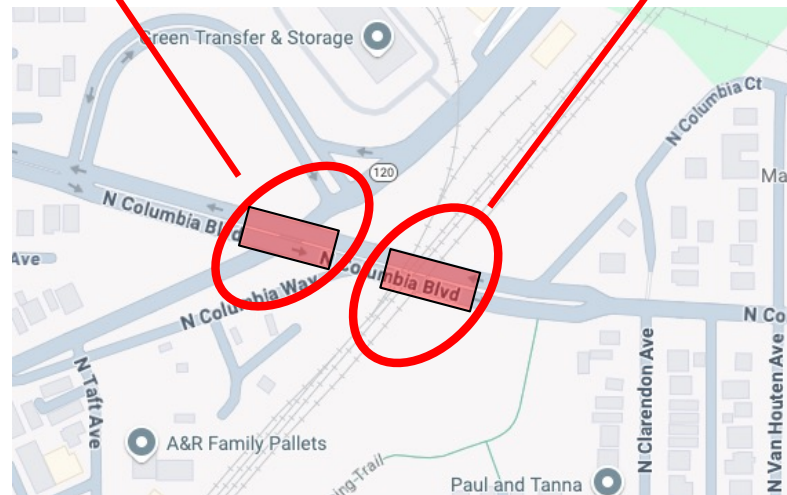


PBOT, 1968  
Age 56 years

North Columbia Blvd Bridge  
BNSF Rail Overpass



BNSF, 1909  
Age 115 years



Two bridges  
Total PBOT replacement cost:  
\$57.5M (2027 dollars)  
Emergency plan  
**No funding**

# BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION AND ECONOMIC DEVELOPMENT – HB 2749



8 April 2025

Fessenden Street Bridge



BNSF 1909  
Age 115 years  
Replacement cost  
\$37M (2027 dollars, **no plan**)

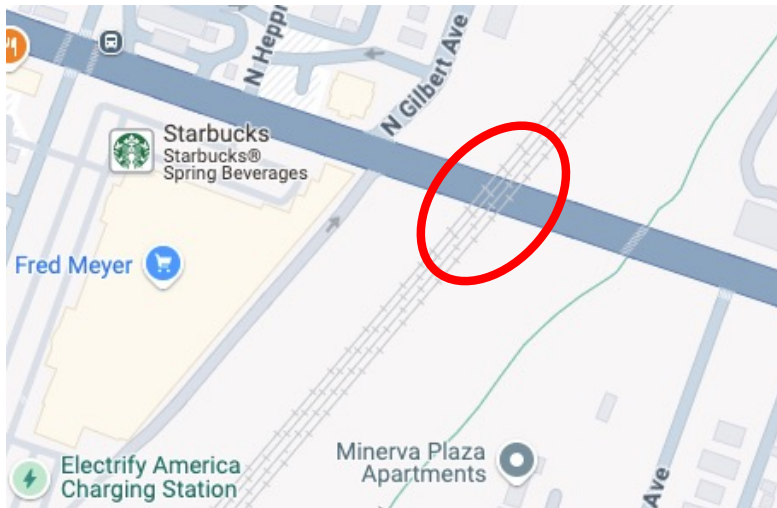


# BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION AND ECONOMIC DEVELOPMENT – HB 2749



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North Lombard Street Bridge



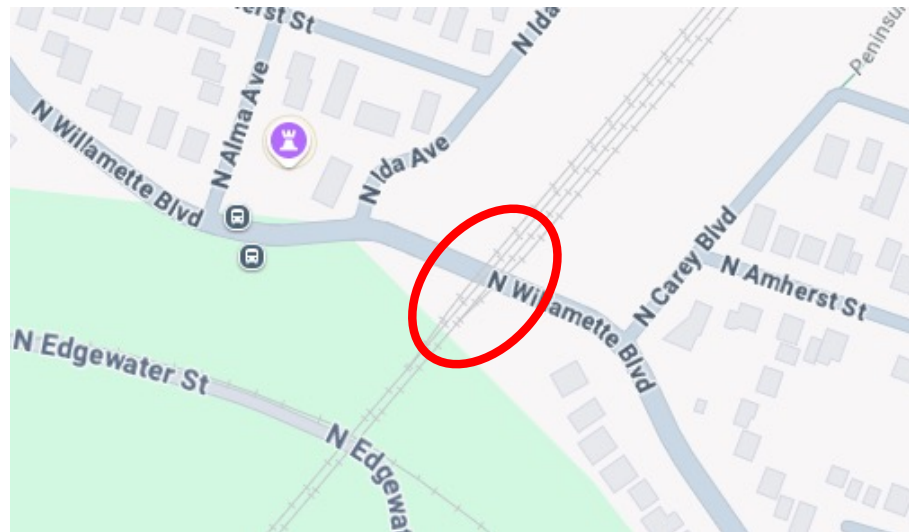
BNSF 1908  
Age 116 years  
Replacement cost  
\$37M (2027 dollars, **no plan**)

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North Willamette Blvd Bridge



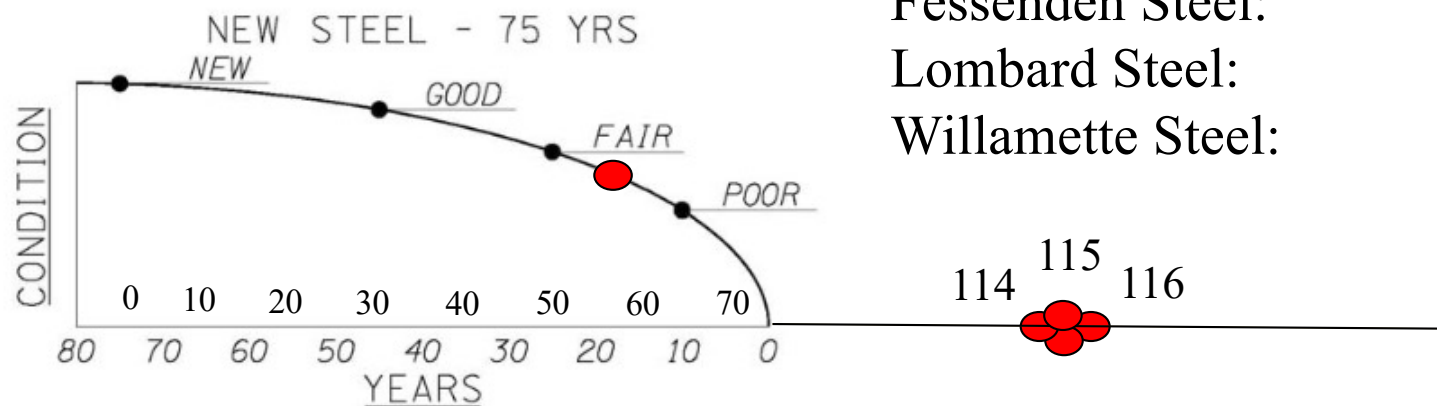
BNSF 1907  
Age 117 years  
Replacement cost  
\$37M (2027 dollars, **no plan**)

**BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION  
AND ECONOMIC DEVELOPMENT – HB 2749**



8 April 2025

**OREGON RAIL BRIDGE ASSESSMENTS**  
**FINAL REPORT OF STUDY FINDINGS**



Columbia BNSF Rail Overpass: 115  
Columbia PBOT Road Overpass: 56  
Fessenden Steel: 115  
Lombard Steel: 116  
Willamette Steel: 114

# BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION AND ECONOMIC DEVELOPMENT – HB 2749



8 April 2025

Oregon Legislature Joint Committee on Transport, 4 June 2024

Donna Cohen, St. Johns

<https://olis.oregonlegislature.gov/liz/2023I1/Downloads/CommitteeMeetingDocument/284340>

SJNA, PBOT Zef Wagner

<https://olis.oregonlegislature.gov/liz/2023I1/Downloads/CommitteeMeetingDocument/284447>

RJ Demello

<https://olis.oregonlegislature.gov/liz/2023I1/Downloads/CommitteeMeetingDocument/284554>

Oregon Critical Infrastructure Serving North Portland  
Industries and Communities

[https://historicbridges.org/b\\_a\\_list.php?ct=&c=&ptype=county&pnam=Multnomah+County,+Oregon](https://historicbridges.org/b_a_list.php?ct=&c=&ptype=county&pnam=Multnomah+County,+Oregon)



**BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION  
AND ECONOMIC DEVELOPMENT – HB 2749**



8 April 2025

Oregon Critical Infrastructure  
Serving Washington County and Coast Communities

## **BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION AND ECONOMIC DEVELOPMENT – HB 2749**



8 April 2025

What is the impact of these findings on Oregon business  
Development and state economy?

The predicted and inevitable tectonic megaquake will result in guaranteed  
infrastructure collapse for 90% of Oregon transport fuels. Bad for business.

Build a boat after the storm? Infrastructure needed in the aftermath of an  
inevitable Cascadia megaquake is not being prepared to survive:

- Washington State fuels pipeline to the Portland CEI Hub will fail 100%
- The CEI Hub will fail 100% from any M8 or M9 event
- No fuel resupply for Washington County with empty Hub tanker trucks
- Rail bridges for Washington County fuel resupply will fail 100%
  - Of 5 river crossings, 3 are >100 years old, none are seismic compliant
- Washington County cannot provide relief to 160 miles of coastline after seismic destruction followed by 40-100 ft tsunami devastation

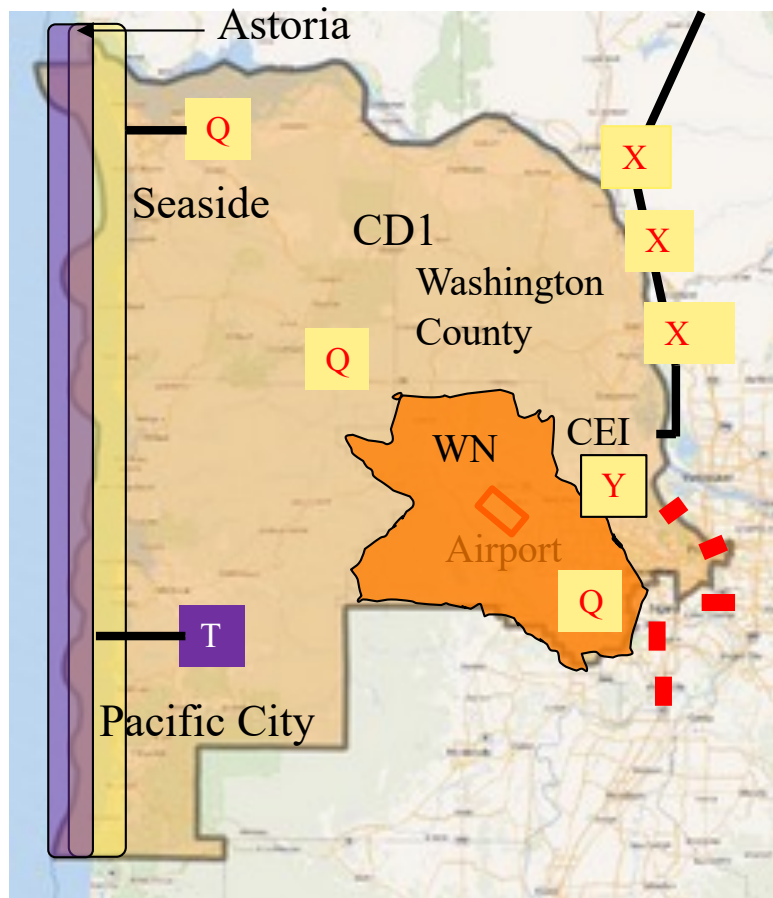
## BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION AND ECONOMIC DEVELOPMENT – HB 2749



8 April 2025

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

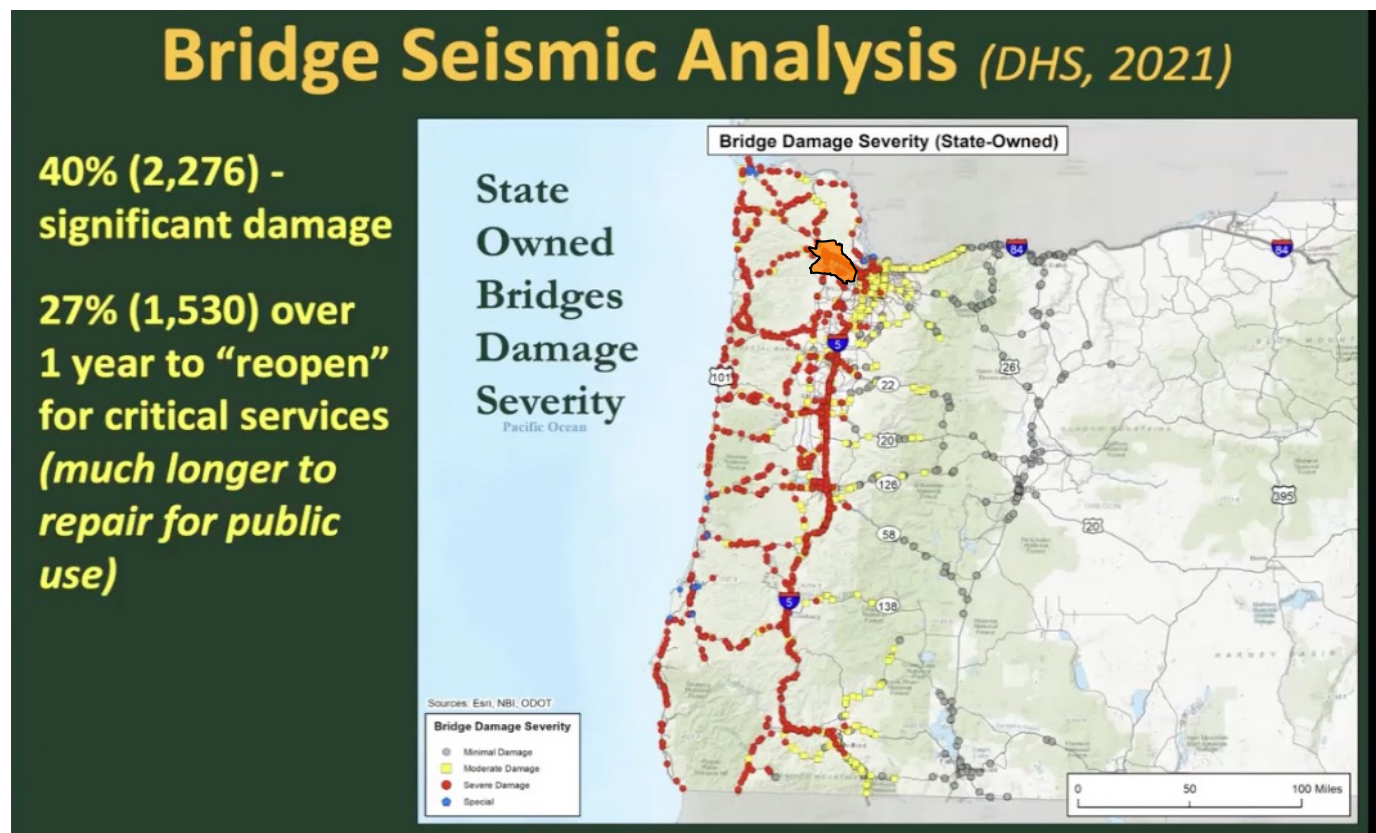
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8 April 2025

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>



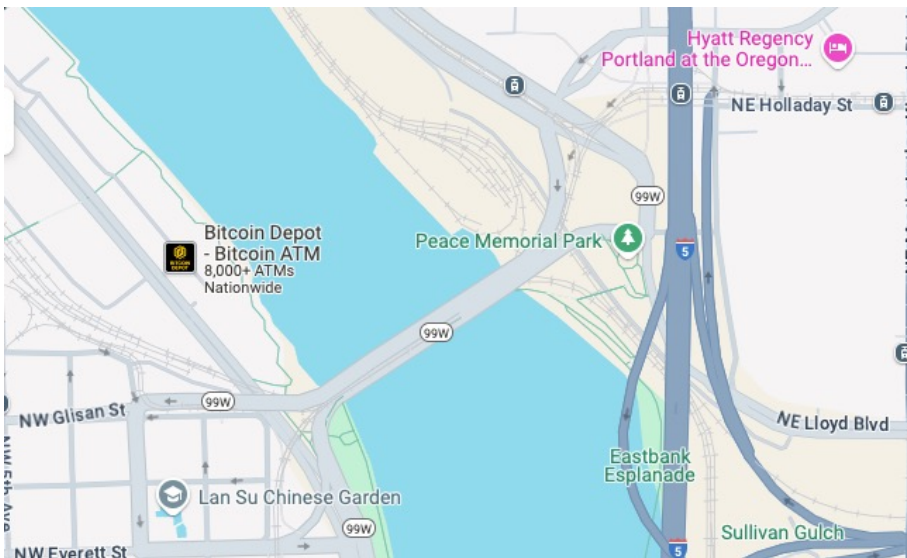
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8 April 2025



Portland Steel Bridge  
Freight rail lower deck



1912  
Union Pacific  
Cascadia threat discovered 2010  
New approaches 1950  
Age in 2024: 112 yrs  
What are the retrofits?  
**No plan**

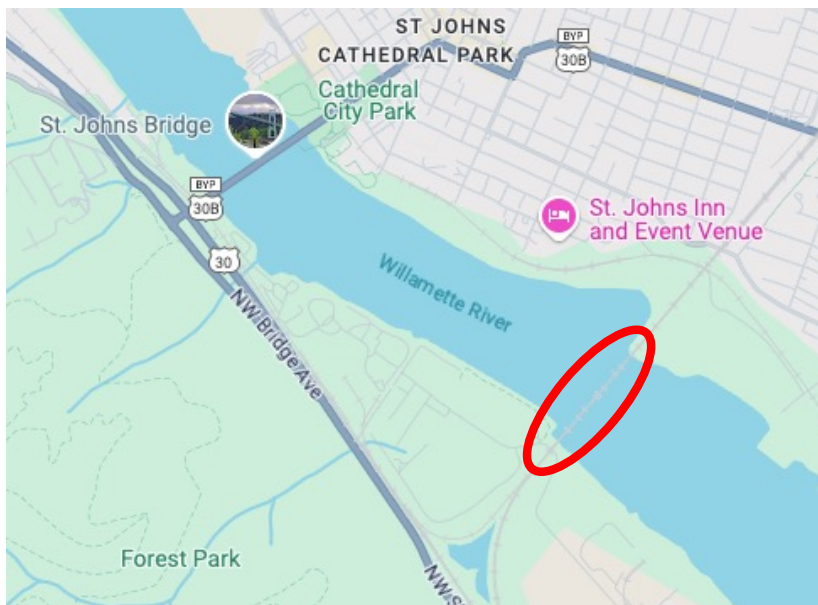
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8 April 2025



BNSF Railway Bridge 5.1  
St. Johns



Silver spans - 1908

Weathered rust – 1989

Cascadia threat discovered 2010

For approaches, age in 2024: 116 yrs

What are the retrofits?

No plan

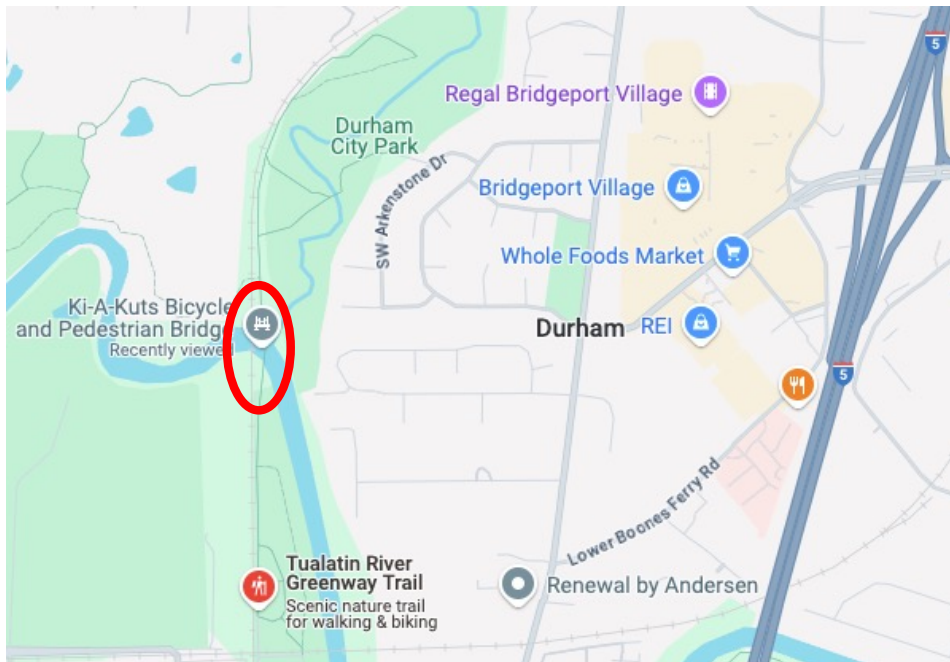
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8 April 2025



Tualatin Railroad Bridge – Milepost 35.3



Prior to 1968  
Portland and Western Railroad (PNWR)  
Garden Home to Wilsonville Bridge  
- Tualatin River  
Cascadia threat discovered 2010  
Age in 2024: at least 56 yrs  
What are the retrofits?  
**No plan**



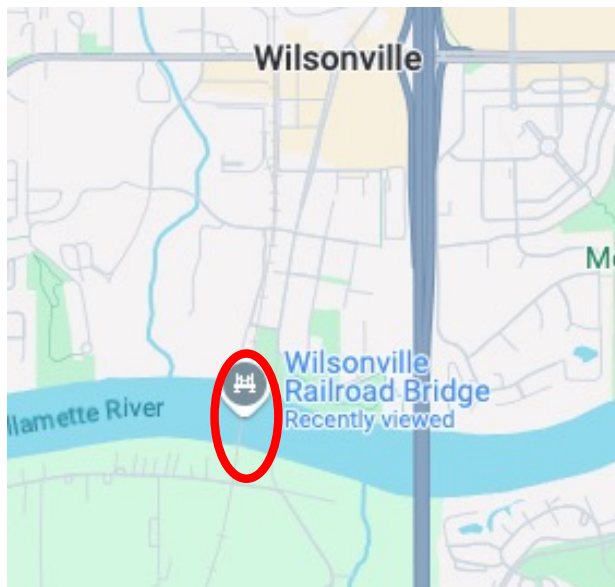
**BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION  
AND ECONOMIC DEVELOPMENT – HB 2749**



8 April 2025



Willamette Rail Bridge - Wilsonville



1975

Portland and Western Railroad (PNWR)

Cascadia threat discovered 2010

Age in 2024: 49 years

What are the retrofits?

**No plan**

# BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION AND ECONOMIC DEVELOPMENT – HB 2749



8 April 2025



Oak Grove – Lake Oswego  
Railroad Bridge



1910

Portland and Western Railroad (PNWR)

Cascadia threat discovered 2010

Age in 2024: 114 yrs

What are the retrofits?

**No plan**

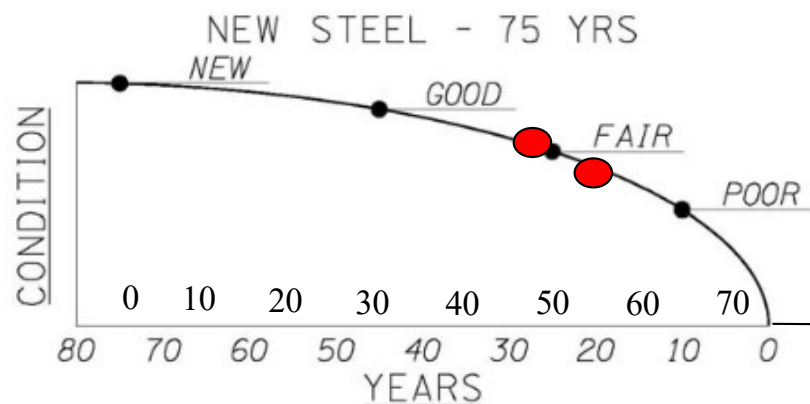
PNWR acquired by Genesee and  
Wyoming (GW) in 1995

# BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION AND ECONOMIC DEVELOPMENT – HB 2749



8 April 2025

## OREGON RAIL BRIDGE ASSESSMENTS FINAL REPORT OF STUDY FINDINGS



BNSF St. John's approaches: 116  
UP Steel: 112  
Tualatin MP 35.3: 56 +?  
Wilsonville: 49  
Lake Oswego: 114

112 114 116

Note: None of these bridges seem to  
be designed for seismic compliance



Lake Oswego approaches: 114

# BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION AND ECONOMIC DEVELOPMENT – HB 2749








8 April 2025

## 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)

# BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION AND ECONOMIC DEVELOPMENT – HB 2749



8 April 2025

Post-Cascadia megaquake chaos multiplier x10

## NP Egress Bridges

PBOT Columbia Overpasses:	\$58M	\$580M
BNSF Fessenden Steel:	\$37M	\$370M
BNSF Lombard Steel:	\$37M	\$370M
BNSF Willamette Steel:	\$37M	\$370M

## CD1 Fuel Security Bridges

Portland “Steel Bridge” est*	\$900M	\$9,000M
BNSF Bridge 5.1 est*	\$900M	\$9,000M
PNWR Tualatin	\$40M	\$400M
PNWR Willamette	\$40M	\$400M
PNWR Oak Grove-Oswego	<u>\$40M</u>	<u>\$400M</u>
	\$2,089M	\$20,890M
	\$2.1B	\$21B

Annual Federal petro subsidies \$20.0B

\* Burnside Mechanical Bridge replacement estimate is \$900M, 5 years



## BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION AND ECONOMIC DEVELOPMENT – HB 2749



8 April 2025

The likelihood of the Cascadia megaquake factors into Oregon bond ratings: more risk means more debt service cost. Oregon and Washington policymakers have adopted the 50-year risk math employed in civil engineering as design-to standards for bridges, buildings, other infrastructure projects that are designed for 50-year lifetimes.

As a way to assure public safety ? - Not a great idea. To protect the public, we get a better idea of risk by looking at the 10,000-year Cascadia history and seeing what it means, starting with the last such event in 1700. The average event repeat interval is 246 years. This means the risk was 50/50 in 1946 – and higher today.

It is easy enough to check off all the historical repeat intervals that have already been exceeded by the quiet time since 1700. The total number of those exceeded in 2018 is 83%. This is not statistical math. It is middle school math.

If you run a time-sensitive lognormal model, you get similar numbers. Not good for bonds. Employing this math (80% chance of default) would not be very popular. It is not however refutable.

# BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION AND ECONOMIC DEVELOPMENT – [HB 2749](#)



8 April 2025

Every day, the unacknowledged extremely high risk of sudden critical infrastructure collapse increases.

- No need to prove this
- There is an urgent compelling demand to disprove it, if you can

Insurance actuaries studied climate change, no action.

- After predictable wildfires they suddenly suspended new coverage, cancelled existing contracts.

Insurers and reinsurers will expertly tell you what's happening after it happens. Time to wise up.

Every day is a bet Oregon cannot afford.



**BEFORE THE JOINT SUBCOMMITTEE ON TRANSPORTATION  
AND ECONOMIC DEVELOPMENT – HB 2749**



8 April 2025

Our testimony to the House Emergency Management Committee supporting many of their infrastructure bills has not been acknowledged or acted on. Example:

<https://olis.oregonlegislature.gov/liz/2025R1/Downloads/PublicTestimonyDocument/134265>

We believe HB 2749 is an example of another emergency bill that is on a death march to W&M (no possibility of federal funding). Expanding it to save Washington County and the coast is absolutely critical, and it would have no chance with W&M.

Q: Who in the Executive Branch as 6 bankruptcies and believes all FEMA disaster claims can be carried by the States who by law must report balanced budgets?

Q: Is bankruptcy the new pandemic?

What is the Ways and Means survival plan considering the physical and financial stranding of Washington County and the coast before and after Cascadia M8 ?

Respectfully, Tracy Farwell, HD-46, Sustainability Desk, Better Energy LLC