

Lifeline Infrastructure and Public Safety



25 August 2025

Challenge Question for the Emergency Board:

Can the Salem LPRO answer the question,
“How could Katrina damage be any less than
the 43rd return of the Cascadia Catastrophe?

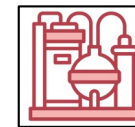
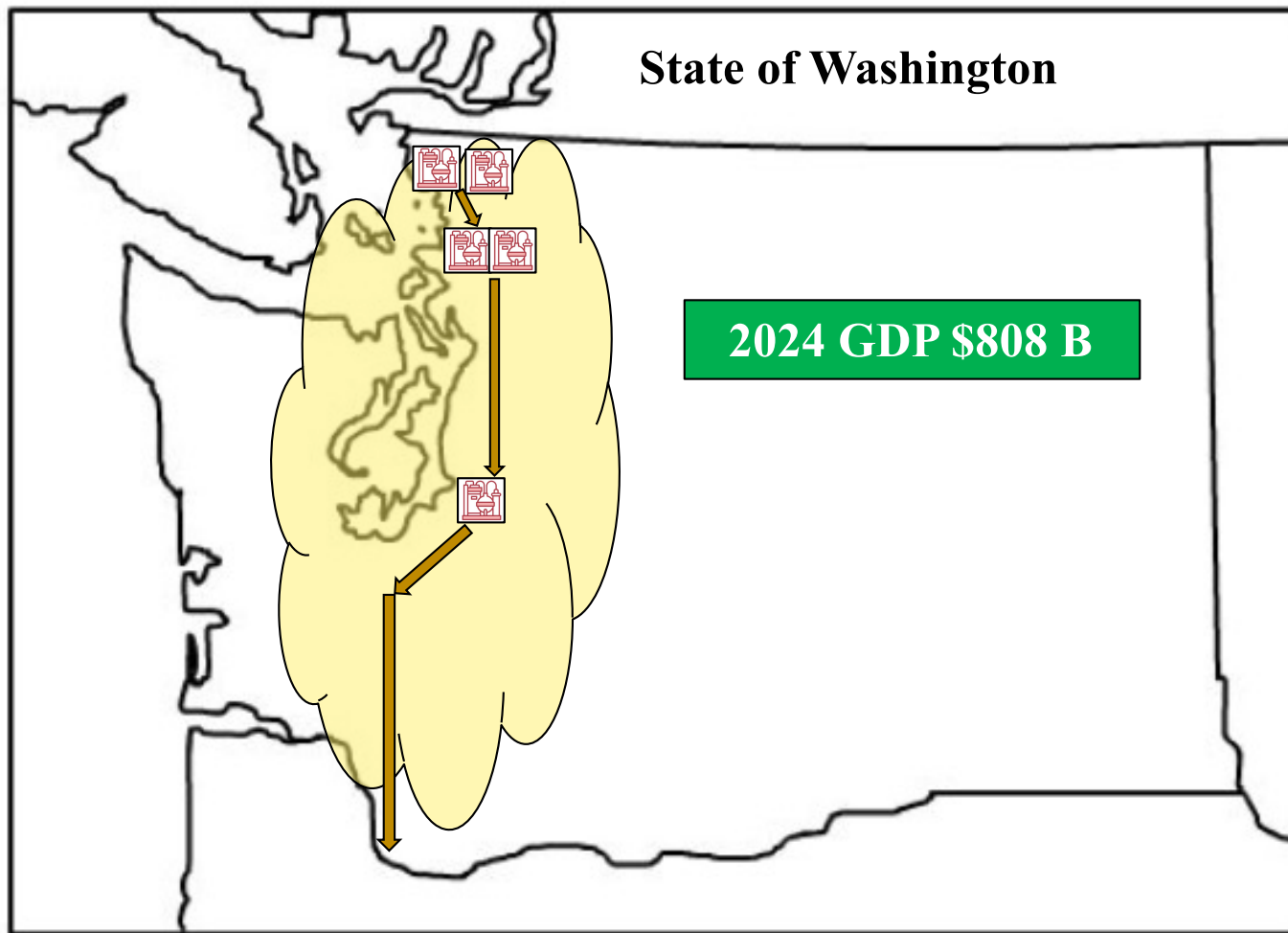
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Preliminary



25 August 2025

Before 43rd Cascadia M8 seismic return



Revealed
seismically
under-designed
refinery

History of 42 Cascadia
Seismic events
discovered 2010,
USGS published 2012



Combustion
CO₂



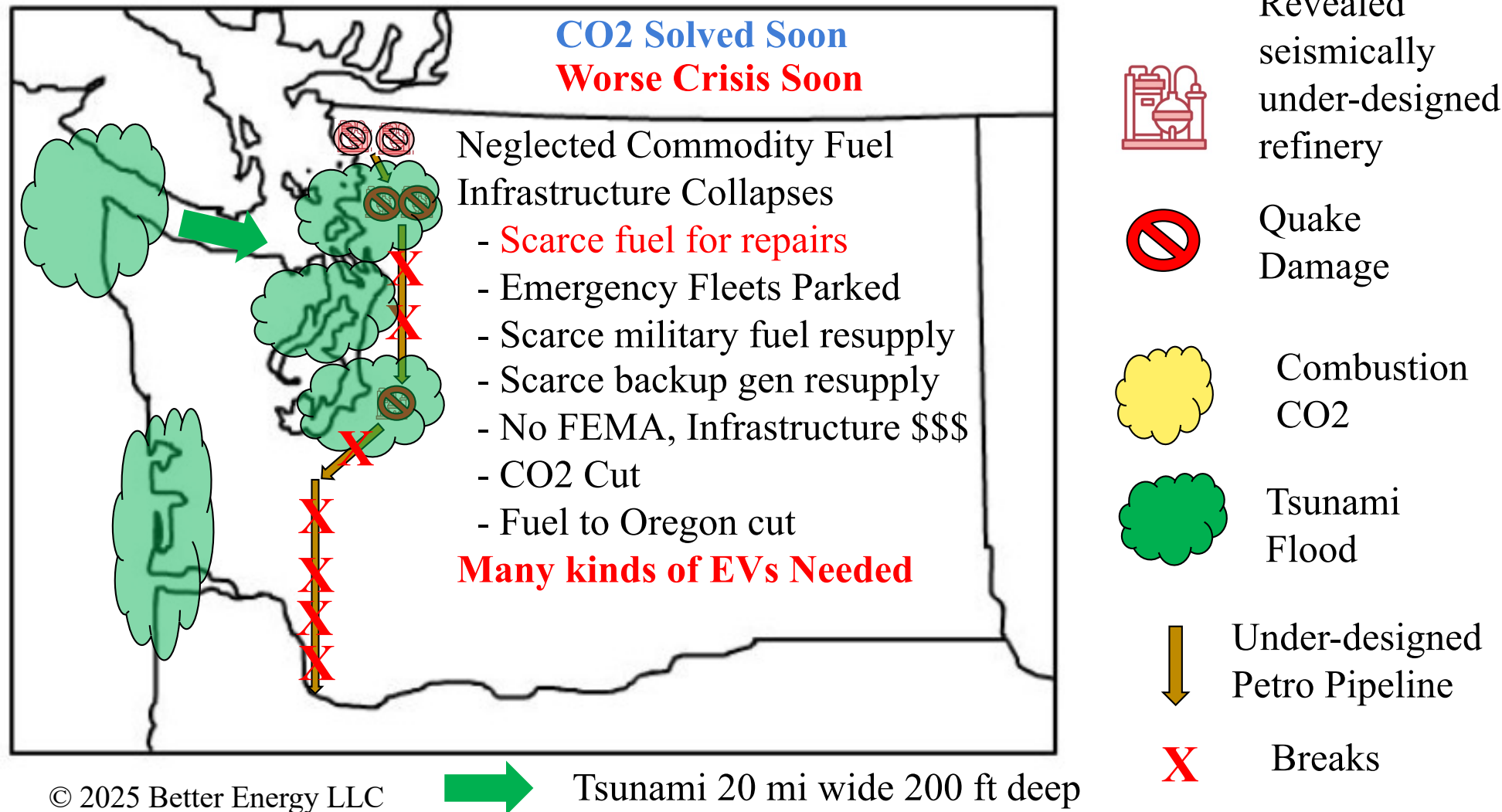
Under-designed
Petro Pipeline

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Day 1 after 43rd historic M8 Cascadia seismic return

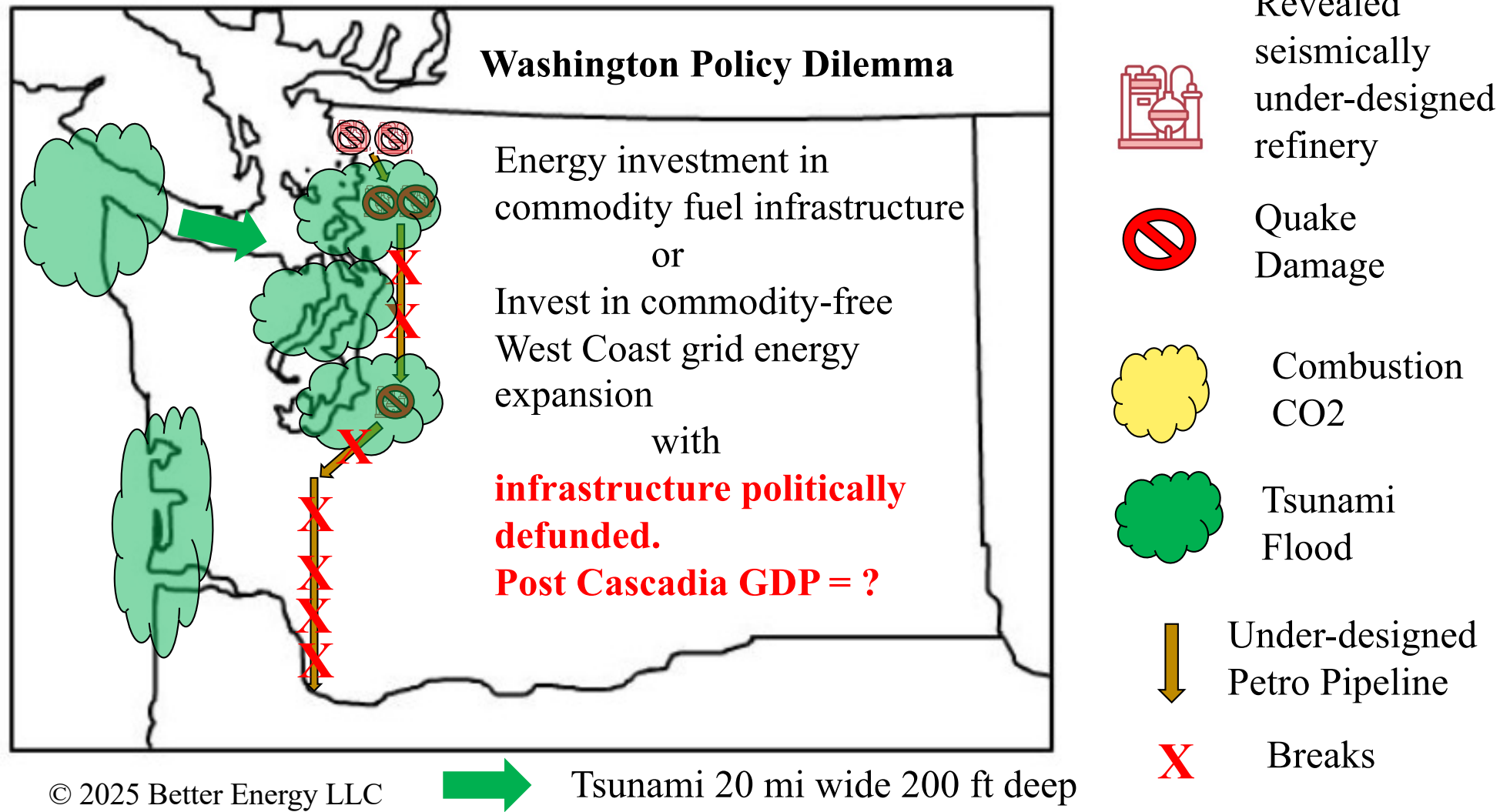


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Day 1 after 43rd historic M8 Cascadia seismic return

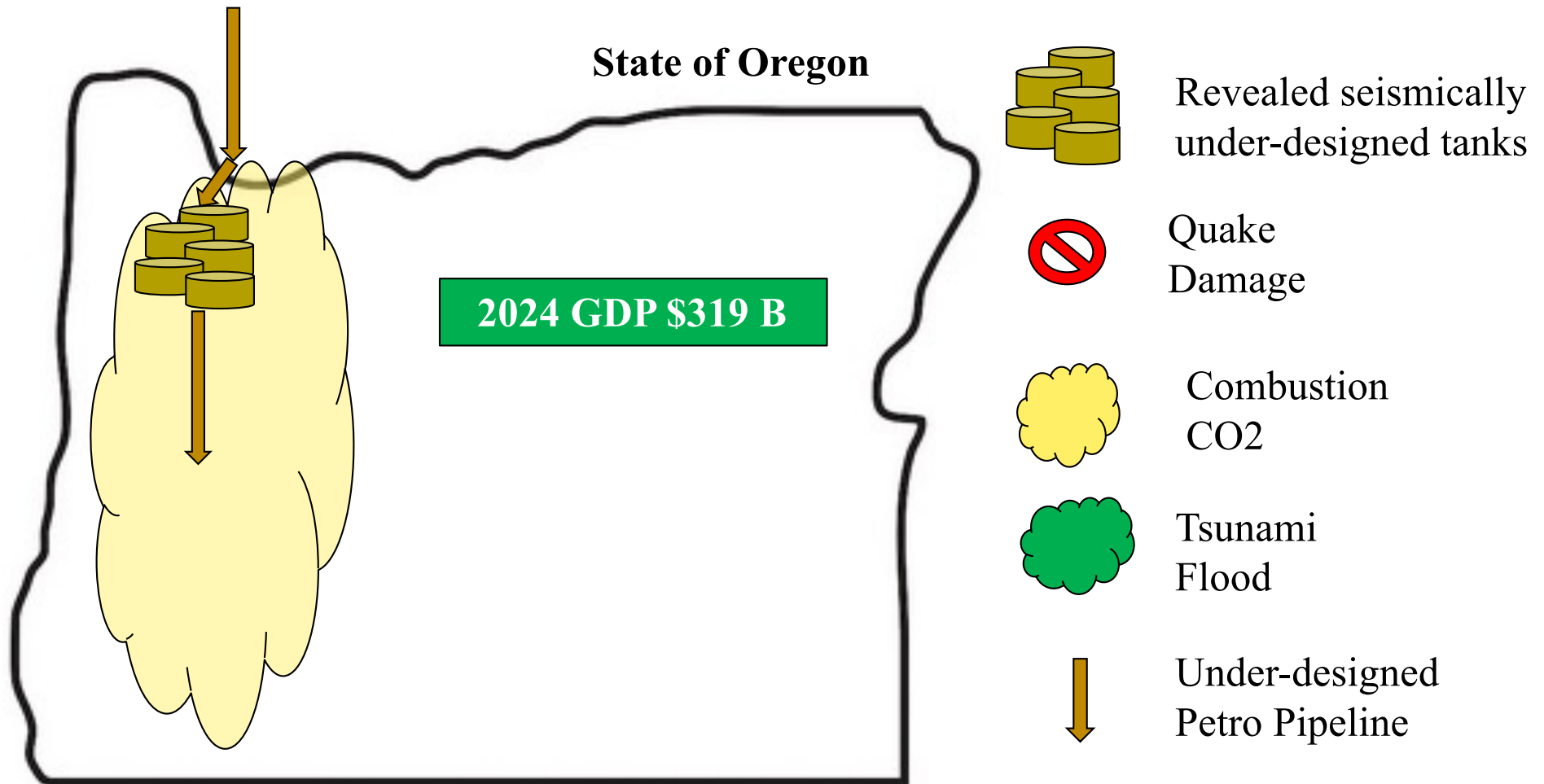


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Before 43rd Cascadia M8 seismic return



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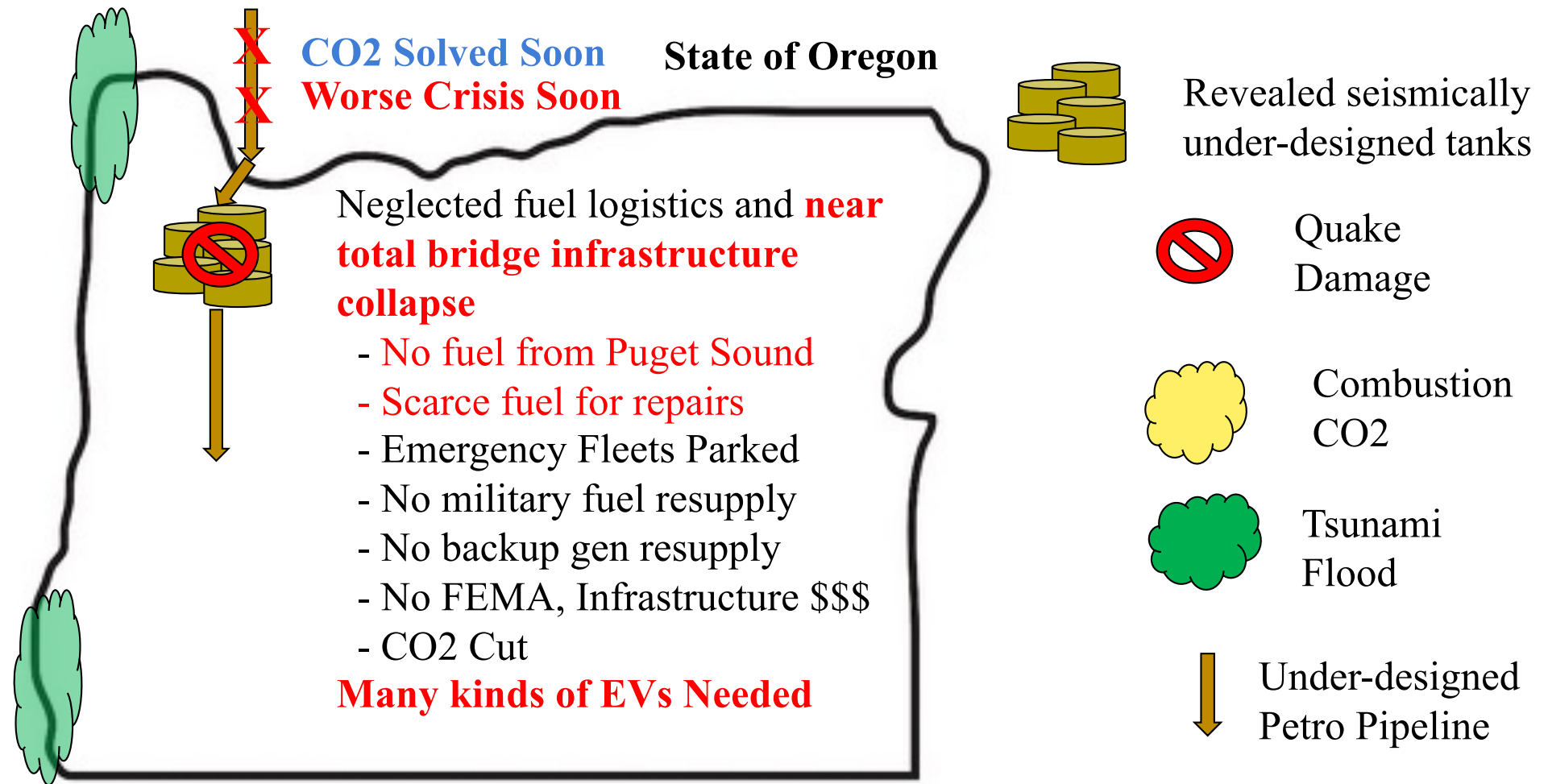


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After 43rd historic M8 Cascadia seismic return

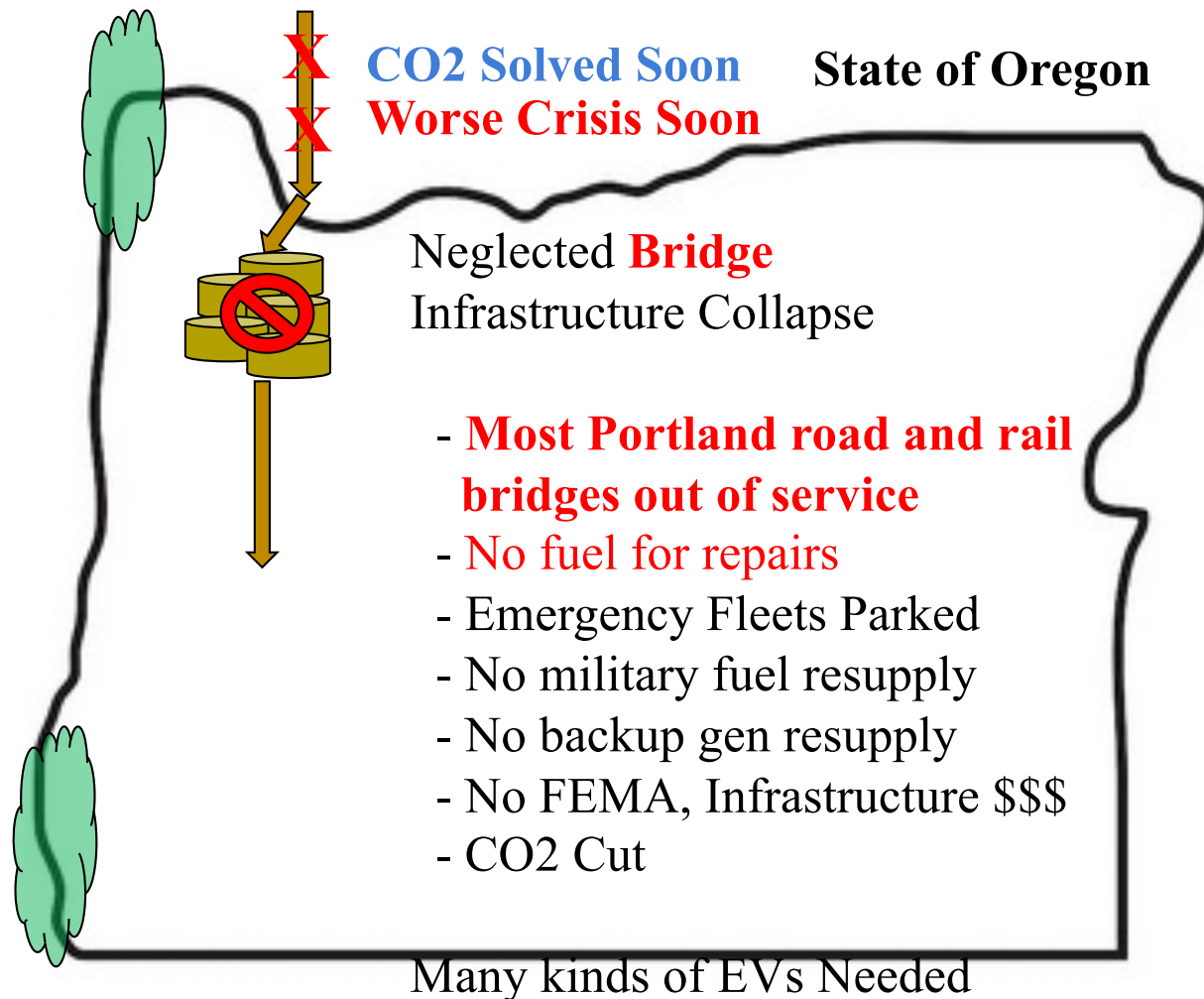


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After 43rd historic M8 Cascadia seismic return



Revealed seismically
under-designed tanks



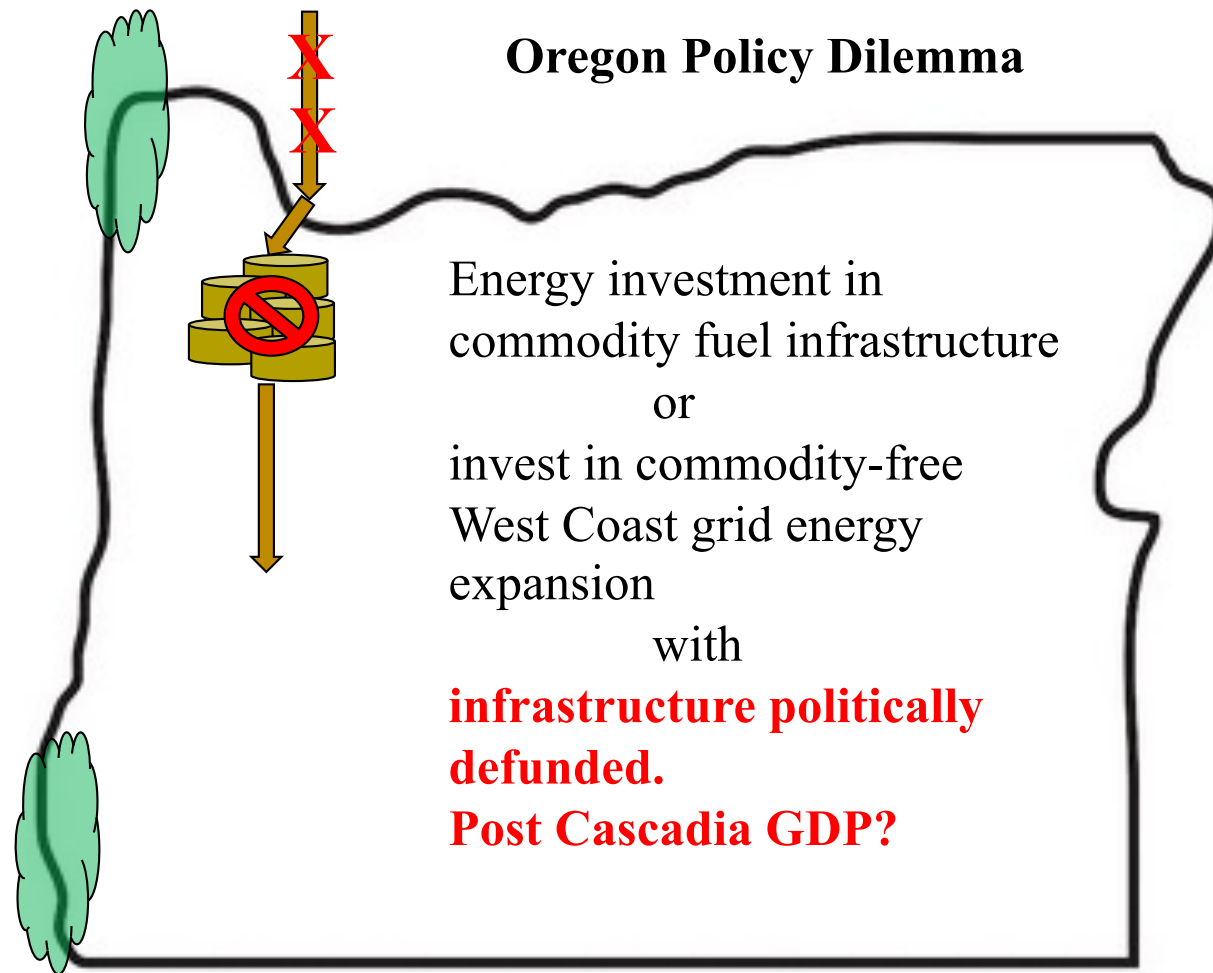
Quake
Damage

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After 43rd historic M8 Cascadia seismic return



Revealed seismically under-designed tanks



Quake Damage

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After 43rd historic M8 Cascadia seismic return



Quake
Damage

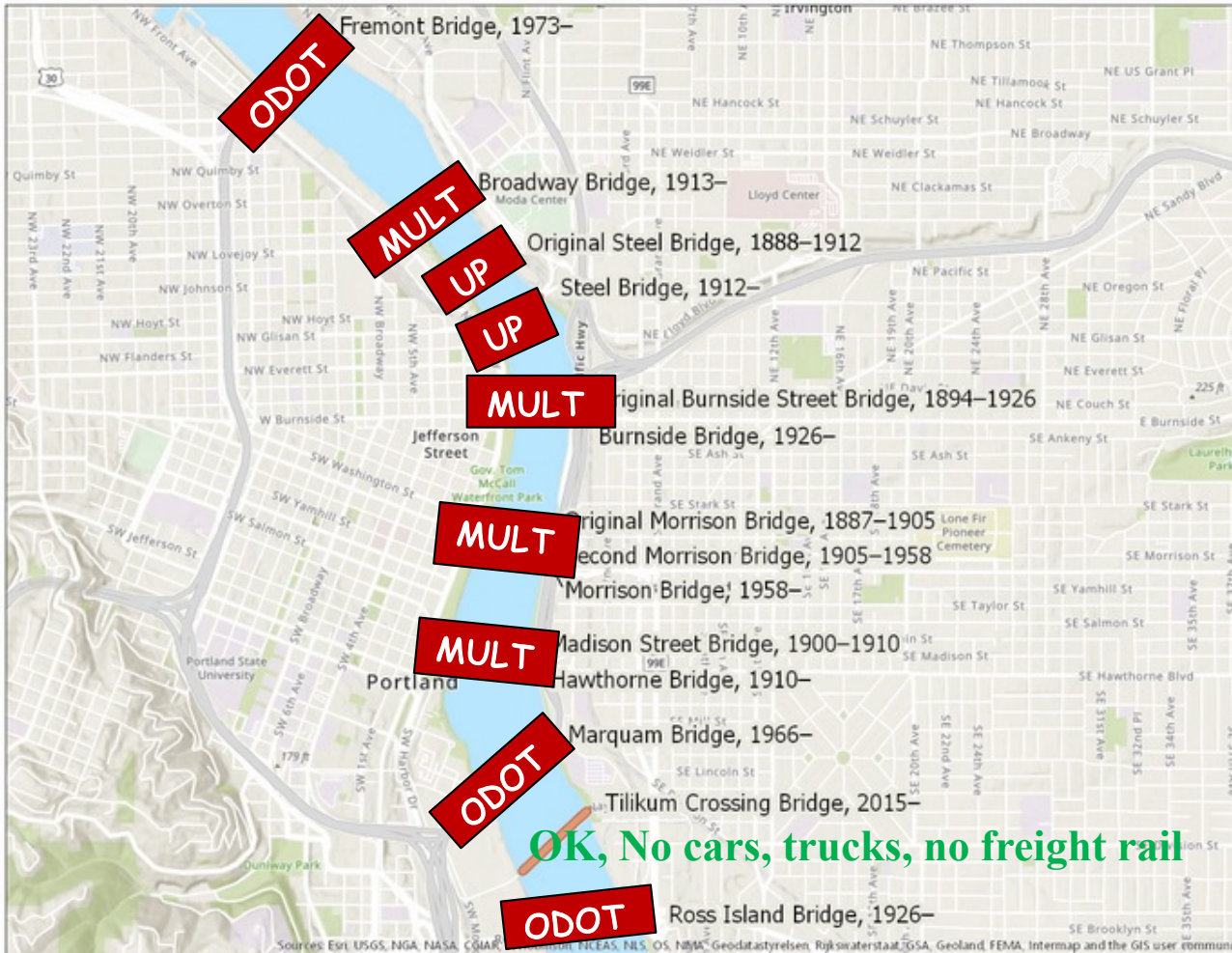
Sellwood OK, no rail

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After 43rd historic M8 Cascadia seismic return



Revealed seismically under-designed bridges

UP

Union Pacific

BNSF

BNSF

PNWR

Portland and Western Rail

ODOT

Oregon DOT

MULT

Multnomah County

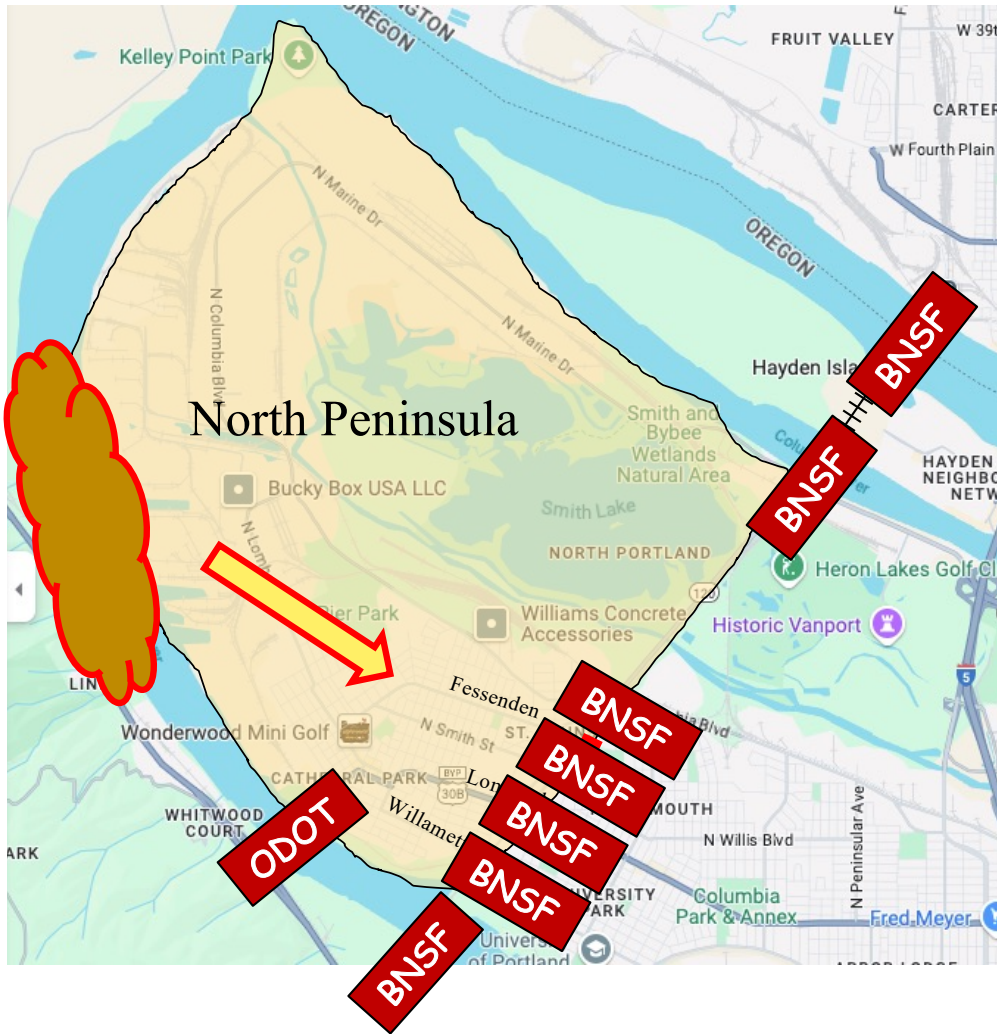
Sellwood OK, no rail

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After 43rd historic Cascadia seismic return North Portland Peninsula



Portland CEI Hub
seismically under-designed
tanks collapse and burn

Revealed seismically
under-designed bridges

CRC

I-5 Bridge

ODOT

Oregon DOT
(St. Johns)

BNSF

BNSF Rail -
Failures isolate
Oregon and
strand North
Portland

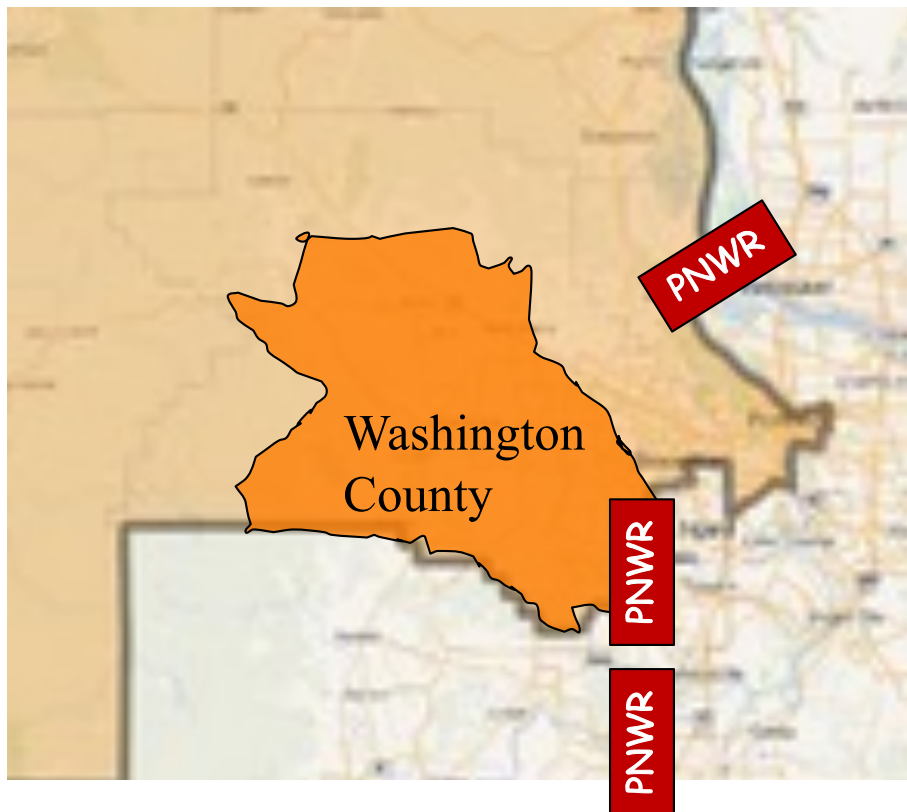
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After 43rd historic Cascadia seismic return

Washington County



Revealed seismically
under-designed bridges

UP

Onion
Pacific

BNSF

BNSF

PNWR

Portland and
Western Rail:
Lake Oswego
Tualatin
Willamette

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After 43rd historic Cascadia seismic return

Public safety recap

About Cascadia math

Region of uncertainty 50/50 Region of Certainty

One of many risk math derivations

<https://storymaps.arcgis.com/stories/229d0d268239467098a156c41f6dd0da>

Disaster capital is a thing