

A topographic map of Oregon, showing the state's outline and surrounding terrain. The map is centered on the state, with the Pacific Ocean to the west and the Rocky Mountains to the east. The text is overlaid on the map.

The Oregon Resilience Plan Brief Overview

Presentation for

House Committee on Veterans' Services and Emergency Preparedness

and

Senate Veterans and Emergency Preparedness

Kent Yu, PhD, Chair

Oregon Seismic Safety Policy Advisory Commission

June 6, 2013

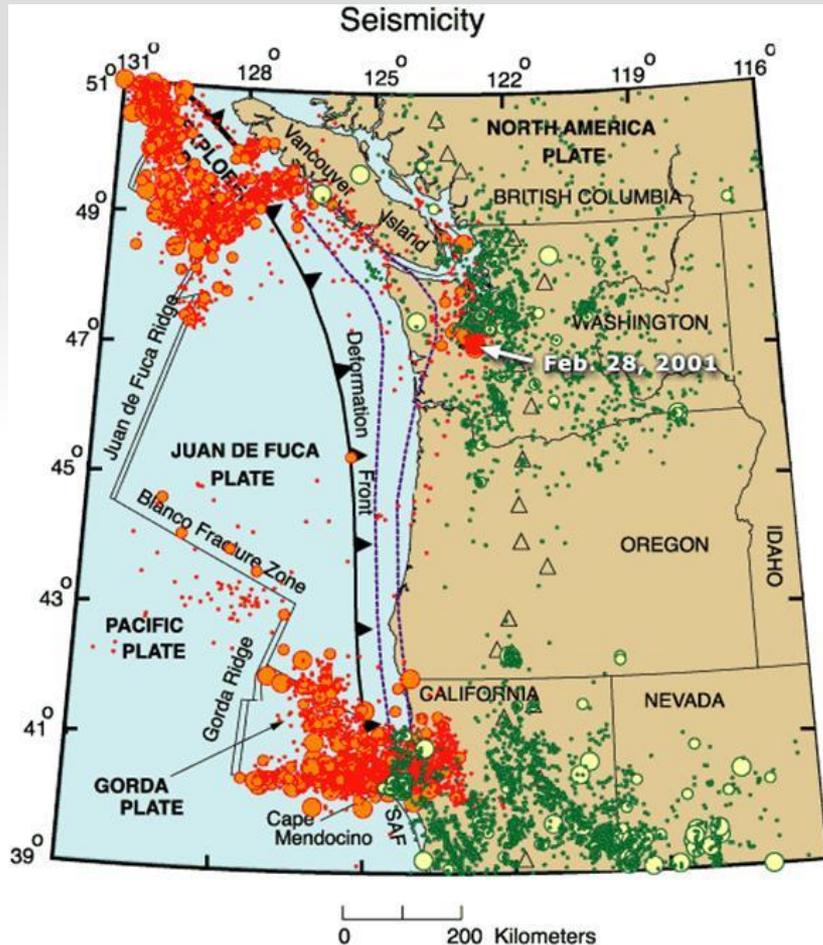
Salem, Oregon

To Keep Commerce Flowing, We Need Infrastructure

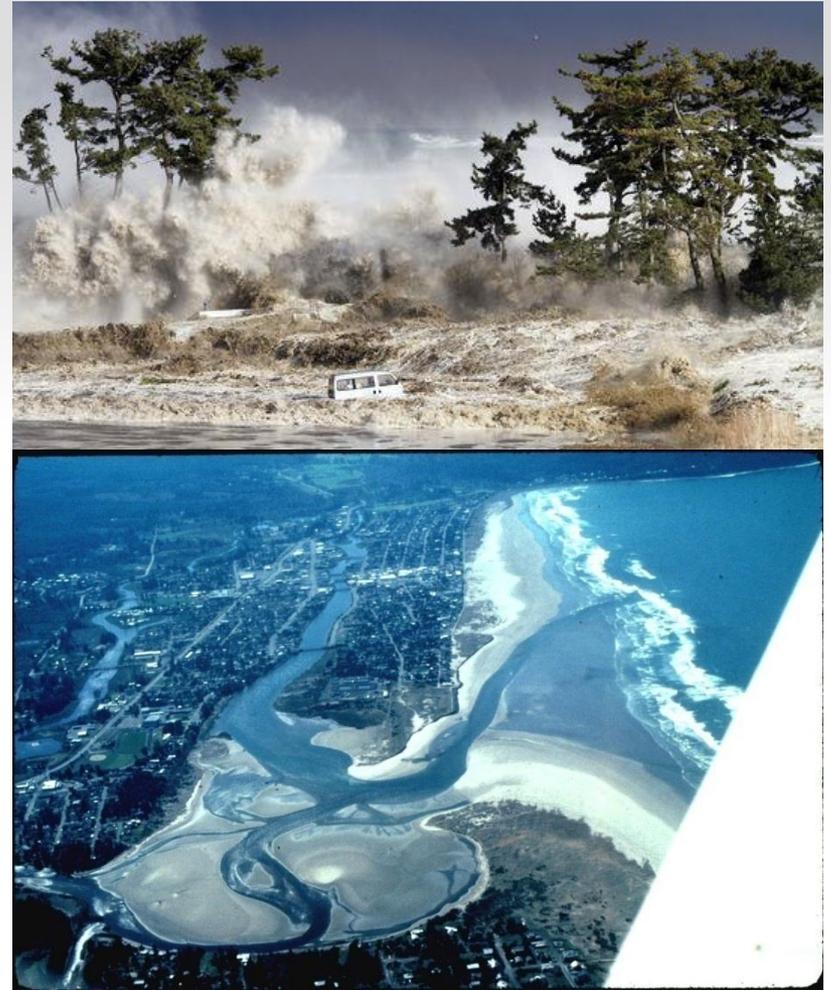


Cascadia Subduction Earthquake

- Strong Ground Shaking (M9 w/ 2 - 4 min shaking)
- Tsunami within 15 to 25 minutes



modified from Weaver and Shedlock, 1996



The Oregon Resilience Plan

The Oregon Resilience Plan

Reducing Risk and Improving Recovery
for the Next Cascadia Earthquake and Tsunami

Report to the
77th Legislative Assembly

from
Oregon Seismic Safety Policy
Advisory Commission (OSSPAC)



Salem, Oregon
February 2013

50-year Comprehensive Plan

- Cascadia Earthquake Scenario
- Business/Workforce Continuity
- Coastal Communities
- Critical & Essential Buildings
- Transportation
- Energy
- Information and Communication
- Water & Wastewater

169 Expert Volunteers

\$ Millions in donation of professional services over a year

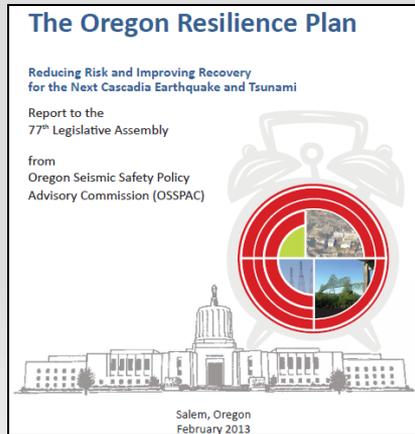


c)

- March 14th Hearing for HVET and SVEP
- May 13th Hearing for House Committee on Transportation & Economic Development



The Oregon Resilience Plan



June 6

- Executive Summary
- Energy (Chapter 6)
- Transportation (Chapter 5)

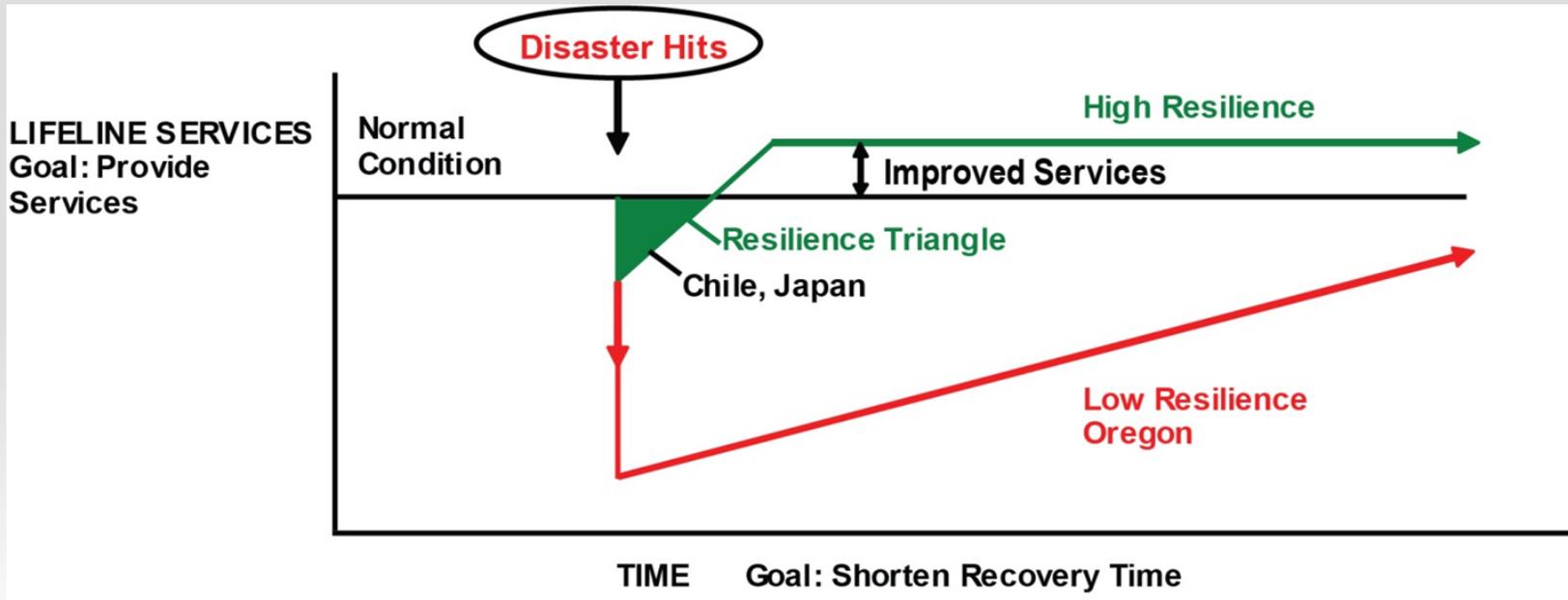
June 13

- Business/Workforce Continuity (Chapter 2)
- Coastal Communities (Chapter 3)
- Critical & Essential Buildings (Chapter 4)

June 20

- Information and Communication (Chapter 7)
- Water & Wastewater (Chapter 8)
- Cascadia Earthquake Scenario (Chapter 1)

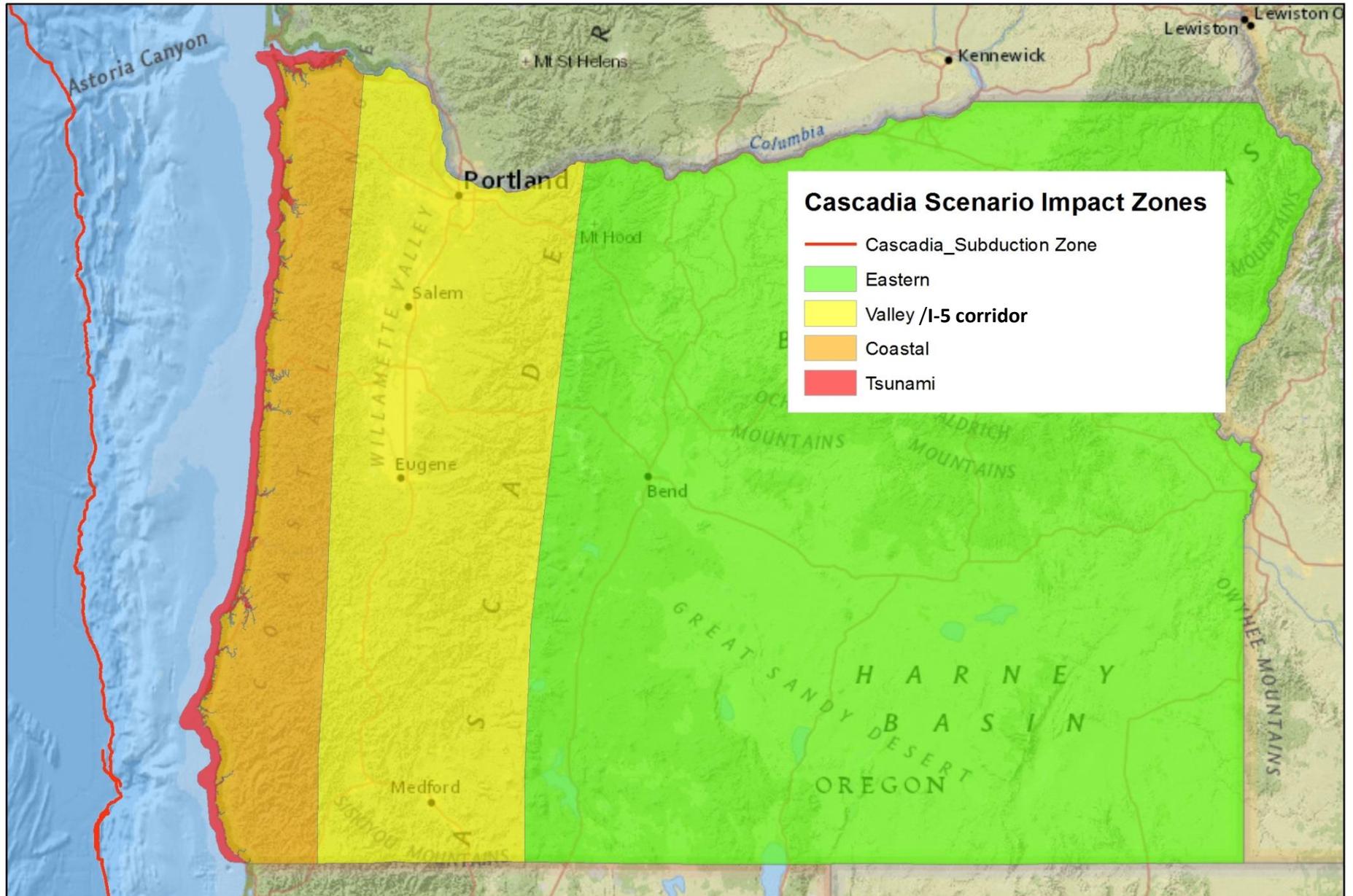
Definition of Resilience



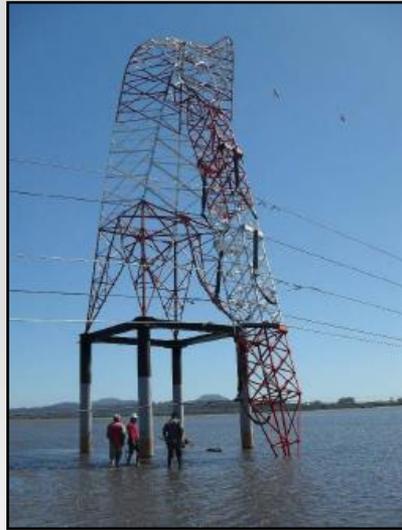
(Yumei Wang)

- **Resilience:** Save lives, Reduce Losses, Speed Recovery, & Rebuild Better
- Direct Economic Loss vs Indirect Economic Loss
- Sustainability without **Resilience** is NOT sustainable!
- Resilience enhances sustainability

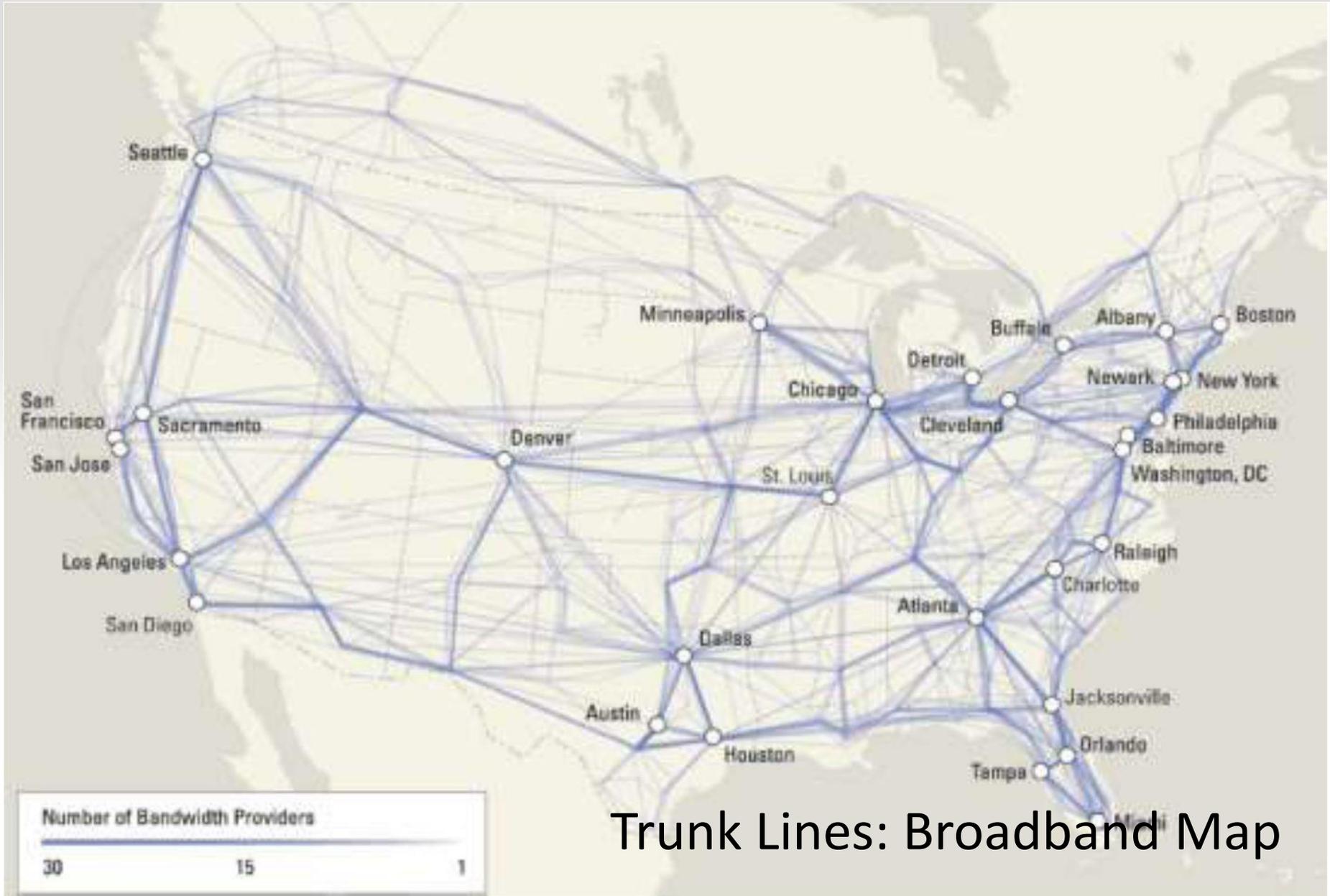
Four Zones



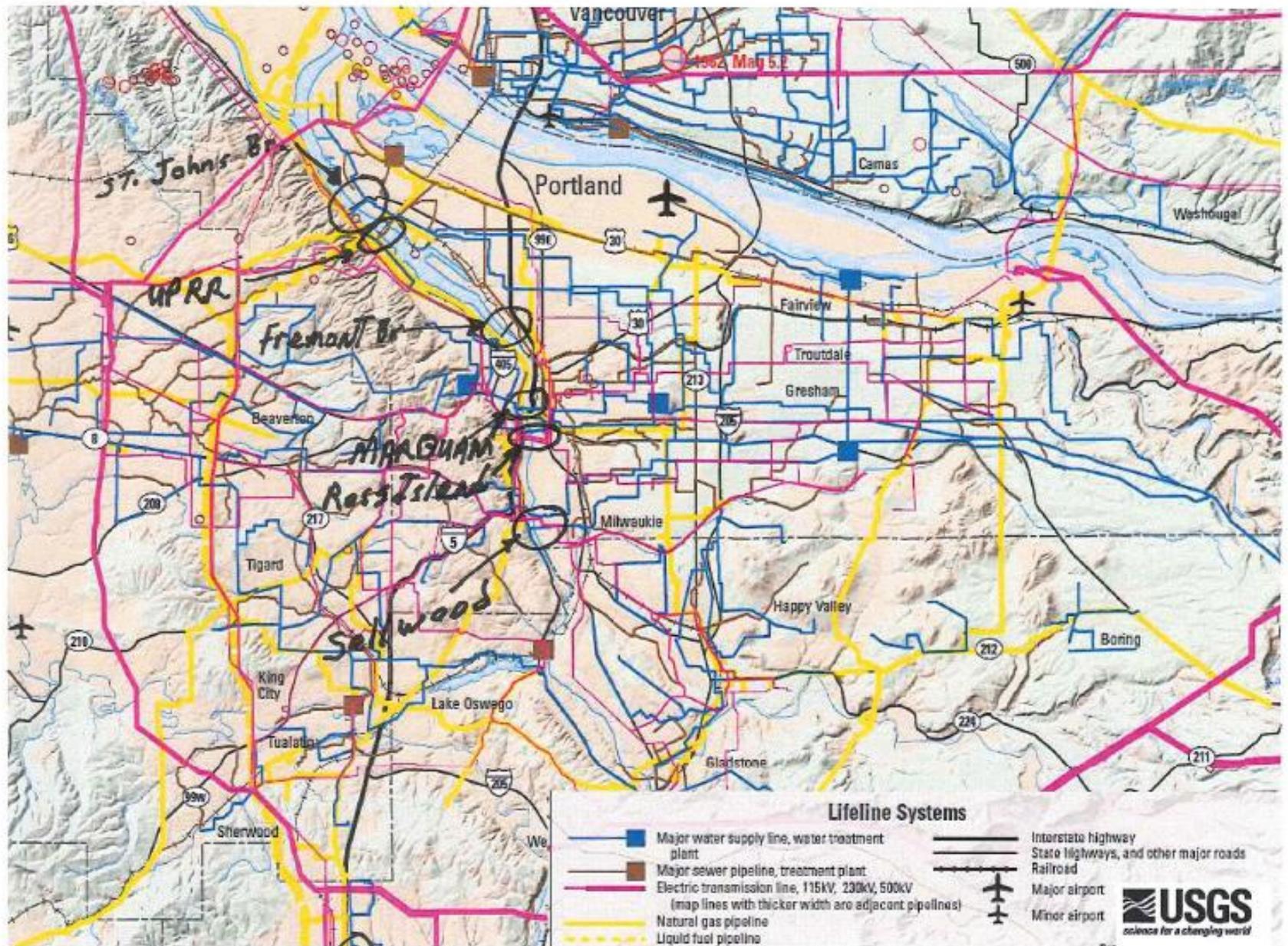
Lifeline Interdependencies



Lifeline Co-location



Lifeline Co-location



Lifeline Systems

	Major water supply line, water treatment plant		Interstate highway
	Major sewer pipeline, treatment plant		State highways, and other major roads
	Electric transmission line, 115kV, 230kV, 500kV (map lines with thicker width are adjacent pipelines)		Railroad
	Natural gas pipeline		Major airport
	Liquid fuel pipeline		Minor airport

USGS
science for a changing world

BOONE Br.

Key Findings

- Oregon is far from resilient to the impact of a great Cascadia earthquake today
 - Casualties (a few thousand to more than 10,000)
 - Economic Loss (at least 20% state GDP)
 - More than one million truck loads of debris
- Liquid Fuel vulnerability



Current Resilience Gap Examples

- Business can only tolerate two to four weeks of disruption of essential services

Critical Service	Zone	Estimated Time to Restore Service
Electricity	Valley	1 to 3 months
Electricity	Coast	3 to 6 months
Police and fire stations	Valley	2 to 4 months
Drinking water and sewer	Valley	1 month to 1 year
Drinking water and sewer	Coast	1 to 3 years
Top-priority highways (partial restoration)	Valley	6 to 12 months
Healthcare facilities	Valley	18 months
Healthcare facilities	Coast	3 years

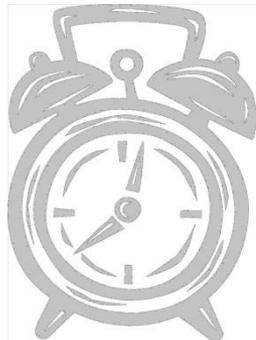
Can we achieve resilience for M9?

- YES
- Chile (2010 M8.8 Maule Earthquake)
 - 90% communication services within two weeks
 - 95% power supply within two weeks
 - Re-start commercial flights in ten days
- Japan (2011 M9.0 Tohoku Earthquake)
 - 90% power supply in ten days
 - 90% telephone lines in two weeks



Overarching Recommendations

- Establish a State Resilience Office to provide leadership, resources, advocacy, and expertise in implementing statewide resilience plans
- Undertake comprehensive seismic assessments of the key structures and systems that underpin Oregon's economy;



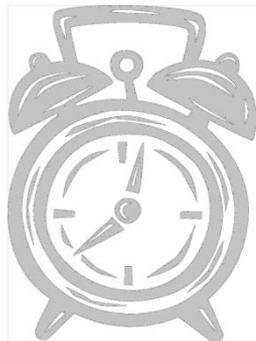
Overarching Recommendations

- Launch a sustained program of capital improvement in Oregon's public structures;
- Craft a package of incentives to engage Oregon's private sector to advance seismic resilience;
- Update Oregon's public policies



Looking Ahead

- Propose to work with Oregon's Legislative Assembly to keep the 50-year goal in view
- Community-level Planning
- Joint regional planning with Washington State
- Human Resilience
- Civic infrastructure



How to Implement it?

