

OTREC Draft Position Description

Modeling and Transportation Analysis Training and Outreach

(20%) Establish transportation modeling training program. Work with local partners such as the Oregon Department of Transportation, Metro, Oregon Modeling Steering Committee, etc. to determine professional development needs. Develop an annual training program that will consist of classroom-based and on-line courses in addition to identifying national training opportunities that could be hosted in Oregon.

(65%) Coordinate planning and implementation of transportation modeling, forecasting, and analysis courses, workshop, symposiums, and conferences. Coordinate meetings with instructors, partners and potential students who may be involved. Coordinate and assist with the program development (schedule, content, instructors, etc.). Develop workshop calendar (target dates for content, marketing, deadlines, etc.). Develop informational brochure/flyer for circulation and Web. Coordinate and track continuing education unit and/or professional development hours certification.

(10%) Program Administration. Work with the OMC Director to develop and shape other transportation modeling initiatives. This will include participating in the Oregon Modeling Steering Committee and similar meetings of transportation modeling professionals to keep up to date on training needs and innovative practices, and coordinating annual or semi-annual meetings of transportation modeling stakeholders.

(5%) Other duties as assigned. Working on other duties as assigned and related to furthering transportation modeling professional development.

Presented at April 23, 2014 OMSC meeting, Hau Hagedorn, PSU

OMC Continuing Education / Professional Development Survey

Last Modified: 04/17/2014

1. Over the next few years, please rate your level of interest in obtaining training for yourself or your staff in each of the following topic areas:

#	Question	Very Intereste d	Intereste d	Somewh at Intereste d	Not Intereste d	Total Respons es	Mean
2	Transportation demand modeling and forecasting	32	18	11	3	64	1.77
8	Bicycle and Pedestrian Modeling	30	23	7	4	64	1.77
15	Alternative performance measures	29	21	10	4	64	1.83
12	Communicating model output to the public	27	18	15	4	64	1.94
11	Visualization	24	22	14	4	64	1.97
1	Traffic simulation modeling	22	21	14	7	64	2.09
9	Activity based modeling approaches	25	13	19	7	64	2.13
3	Land use and economic forecasting	18	25	16	5	64	2.13
7	Forecasting Transit Demand	22	16	20	6	64	2.16
4	Travel demand data - surveys and emerging methods	17	24	18	5	64	2.17
6	Scenario planning	20	19	16	9	64	2.22
19	Dynamic Network Assignment	15	23	16	10	64	2.33
16	Model validation	13	24	18	9	64	2.36
5	Database management and programming	13	19	24	8	64	2.42
13	Emissions and air quality models (e.g. MOVES, etc.)	12	21	21	10	64	2.45
17	Transferability of models	14	17	21	12	64	2.48
10	Computer programming languages (e.g. R, Python, etc.)	17	11	16	20	64	2.61
14	Agent based modeling	9	16	26	13	64	2.67

2. Are there any other topics that you feel are Very Interested in but not listed above?

Text Response

Education on the capabilities and incapacibilities of the current models in explaining various common planning scenarios
 Freight modeling / planning
 Health and transportation
 No
 Post processing of traffic assignments.
 Safety and operational effects, and effects on travel demand, of different cycling infrastructure.
 Travel demand management. ITS.
 Project evaluation, investment grade toll revenue forecasting
 Training on translating the Highway Performance Modeling System (HPMS) data on vehicle miles traveled (VMT) into the required MOVES model inputs needed in a MOVES RunSpec. Oregon collected VMT data for HPMS reporting however it is not well known or understood how this collected data can be appropriately used for necessary MOVES model inputs.
 Calibrating models traditionally set up to address highway design for modern urban conditions
 Traffic Data Sources: Speed: INRIX, TomTom, Nokia Origin-Destination: Airsage, Bluetooth, Etc.

3. What format do you prefer delivery of instruction?

#	Answer	Response	%
1	Webinar	42	66%
2	In-person	34	53%
3	Other, please indicate below:	9	14%

Other, please indicate below:

On-line
 I like in person, but only for longer trainings that justify the travel time.
 Perhaps recorded In-person training that could be recorded and posted for training should I not be able to take advantage of the offered training at the time it was offered.
 Archived webinar with notes and/or code from meeting available online.
 Webinars, either live, or recorded and on-demand depends on type of material
 Conference
 either
 Within Oregon (in-person); outside of Oregon (webinar)

For in-person training, what is the ideal duration for instruction?

#	Answer	Response	%
1	1/2 day	14	24%
2	1 day	25	42%
3	2 days	9	15%
4	More than 2 days	5	8%
5	Other, please explain:	6	10%
	Total	59	100%

Other, please explain:

depends on the topic and the depth of instruction

1/2, 1 and 2 day okay

It depends on the complexity of the subject.

As needed, but 1 day or less is best.

I live in Illinois so if it must be in person and I need to travel I'd like as much time as necessary.

1 or 2 days

Are you able to travel out-of-state for training?

#	Answer	Response	%
1	Yes	26	41%
2	No. Please explain:	37	59%
	Total	63	100%

No. Please explain:

State budget administrative restrictions

no budget for transp and lodging

No means maybe.

There's no express prohibition on out-of-state travel, but funding has been so limited that I haven't traveled out of state for work in the last three years.

Possibly, but more likely if within Oregon.

Not typically, but can it the training is specific to job duties

Cost

Cost prohibitive

Institution's policy based on economics

Would prefer not to travel out of state.

Don't have the budget for out of state travel

yes, limited to cost and time

Agency travel restrictions, but I'm in Oregon.

Potentially I would be, depending upon workload and schedule and cost to company.

Travel budgets are extremely limited.

Funding not available for out-of-state training

I cannot justify it for me for this topic. Webinar is preferred over out-of-state travel.

family

Funding is limited though.

Maybe to Washington state...otherwise, the travel costs are prohibitive

Student, difficult to get funding in addition to usual conferences. Useful if training is tacked onto (or available within) other conferences.

While out-of-state travel is technically allowed, my firm rarely supports traveling very far for training.

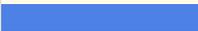
Depends on available budget

The state is very restrictive on when we can travel out of state

State pf Oregon employees are generally prohibited from traveling out of state for training.

I work for government agency with out-of-state travel restrictions.

4. Does your position require meeting professional development or continuing education credits? If yes, what type of credits are required?

#	Answer		Response	%
1	Yes, please note type of credit below:		27	42%
2	No		37	58%
	Total		64	100%

Yes, please note type of credit below:

AICP
AICP certification maintenance credits
AICP credits
AICP CM, PTP
Professional Engineer PDH
AICP continuing ed credits
CM for AICP certification
AICP
Professional Engineer
professional development hours
AICP Certification Maintenance
AICP CM Credits
CEU, PDH
Professional development hours
AICP
AICP
PDHs for Professional Engineering license renewal
AICP
PDH
CE
PE

5. On average, what is the organization's annual professional development budget per employee?

#	Answer		Response	%
1	Less than \$500		15	23%
2	\$500 to \$1000		32	50%
3	Over \$1000		17	27%
	Total		64	100%

6. What is your affiliation/organization?

#	Answer	Response	%
1	City	8	13%
2	County	4	6%
3	State	16	25%
4	Private sector	10	16%
5	University	5	8%
6	Other, please indicate below:	19	30%
7	Federal government	2	3%
	Total	64	100%

Other, please indicate below:

Regional Government
MPO
Council of Governments
MPO
MPO
regional government
MPO
MPO
MPO
Private non-profit
Transit Agency
Metro - regional government
Non-profit
MPO
Regional transit agency
MPO
transit agency
Metropolitan Planning Organization
Transit agency

7. If you have any other comments, please share them below:

Text Response

Some items I marked as 'not interested' because I don't know what they are and they sounded too technical - I am a planner, not a modeler.

Training sessions need to be efficient. I do not advocate for a lot of time spent doing exercises during the training time. That can be done later. The goal of the training is to impart working knowledge and provide reference material to address later questions.

for question #8. I am not a "modeler" per se, but I do utilize travel demand models, including post-processing of output data.

These are areas in which we would either like to see new hires trained, or have opportunities for training new, existing staff

Training on how to best find, collect, sort and prepared EPA MOVES model inputs to best reflect Oregon specific inputs would be very valuable training.

I'm not a modeler or a manager but someone who wants to better understand modeling.

I have no idea re: question #5.

We typically hire staff with a background in travel forecasting, so many of these topics don't apply to our group. Also I am a modeler that manages projects and people. I would have checked all 3 responses to question 8 if possible.

8. Which describes your current position?

#	Answer		Response	%
1	I'm a modeler		31	53%
2	I manage people		8	14%
3	I manage money and people		20	34%
	Total		59	100%

9. In what state do you currently work?

#	Answer	Response	%
1	Alabama	0	0%
2	Arizona	0	0%
3	Arkansas	0	0%
4	California	3	5%
5	Colorado	0	0%
6	Connecticut	0	0%
7	Delaware	0	0%
8	District of Columbia	0	0%
9	Florida	0	0%
10	Georgia	0	0%
11	Idaho	0	0%
12	Illinois	1	2%
13	Indiana	0	0%
14	Iowa	0	0%
15	Kansas	0	0%
16	Kentucky	0	0%
17	Louisiana	0	0%
18	Maine	0	0%
19	Maryland	0	0%
20	Massachusetts	0	0%
21	Michigan	0	0%
22	Minnesota	0	0%
23	Mississippi	0	0%
24	Missouri	0	0%
25	Montana	0	0%
26	Nebraska	0	0%
27	Nevada	0	0%
28	New Hampshire	0	0%
29	New Jersey	0	0%
30	New Mexico	1	2%
31	New York	1	2%
32	North Carolina	0	0%
33	North Dakota	0	0%
34	Ohio	1	2%
35	Oklahoma	0	0%
36	Oregon	46	73%
37	Pennsylvania	0	0%
38	Rhode Island	0	0%
39	South Carolina	0	0%
40	South Dakota	0	0%
41	Tennessee	0	0%
42	Texas	1	2%
43	Utah	0	0%
44	Vermont	1	2%
45	Virginia	3	5%
46	Washington	4	6%
47	West Virginia	0	0%
48	Wisconsin	0	0%
49	Wyoming	0	0%
50	Puerto Rico	0	0%
51	Alaska	0	0%
52	Hawaii	0	0%

53	I do not reside in the United States		1	2%
	Total		63	100%

10. In what city do you currently work?

Text Response

Portland

Corvallis

Central Point

Salem

Cincinnati

Portland

Central Point

Portland

Albany

Portland

Vancouver, WA

City of Corona

Portland

Florence

Portland

Fairfax

Vancouver

Portland

Portland

Portland

Portland

Dallas

Salem

Portland

Burlington

Bend, OR

Oakland

Eugene

Portland

Hillsboro

Portland

Portland

San Bernardino

Portland

PDX

Eugene, OR

Binghamton

Albuquerque

Hillsboro

Olympia

pdx

Eugene

Chicago

Portland

Oregon City

Portland

Vancouver

Portland

Portland (consulting nationally)

Portland

Washington

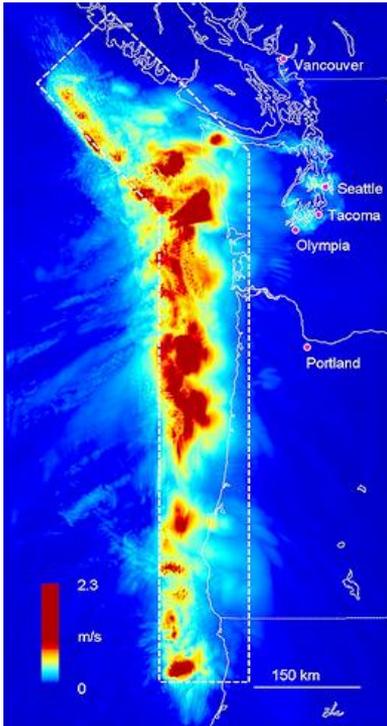
Portland

Salem

Salem
Portland
Reston
Portland



Estimating the Economic Value of Seismic Mitigation



Oregon Modeling Steering Committee
April 23, 2014

Presented by Becky Knudson
Transportation Planning Analysis Unit



Oregon Department of Transportation: *A Century of Service*



Photo: The Oregonian/1964

Following quote from Jan 18, 2010 Oregon Live Article on "Is Oregon Ready for the Big Quake? Experts Don't Think So"

A Ford rests against a home in Seaside in March of 1964 after a tsunami struck the Oregon coast. The tidal wave was the result of the Good Friday Earthquake in Alaska. Five people were killed by the wall of water. Scientists predict a much larger quake could someday strike again off the Oregon coast, causing even more damage, and authorities fear residents here aren't prepared.



March 27, 1964 “Tidal Wave in Cannon Beach

Flooding of Main Street in 1964 tsunami.

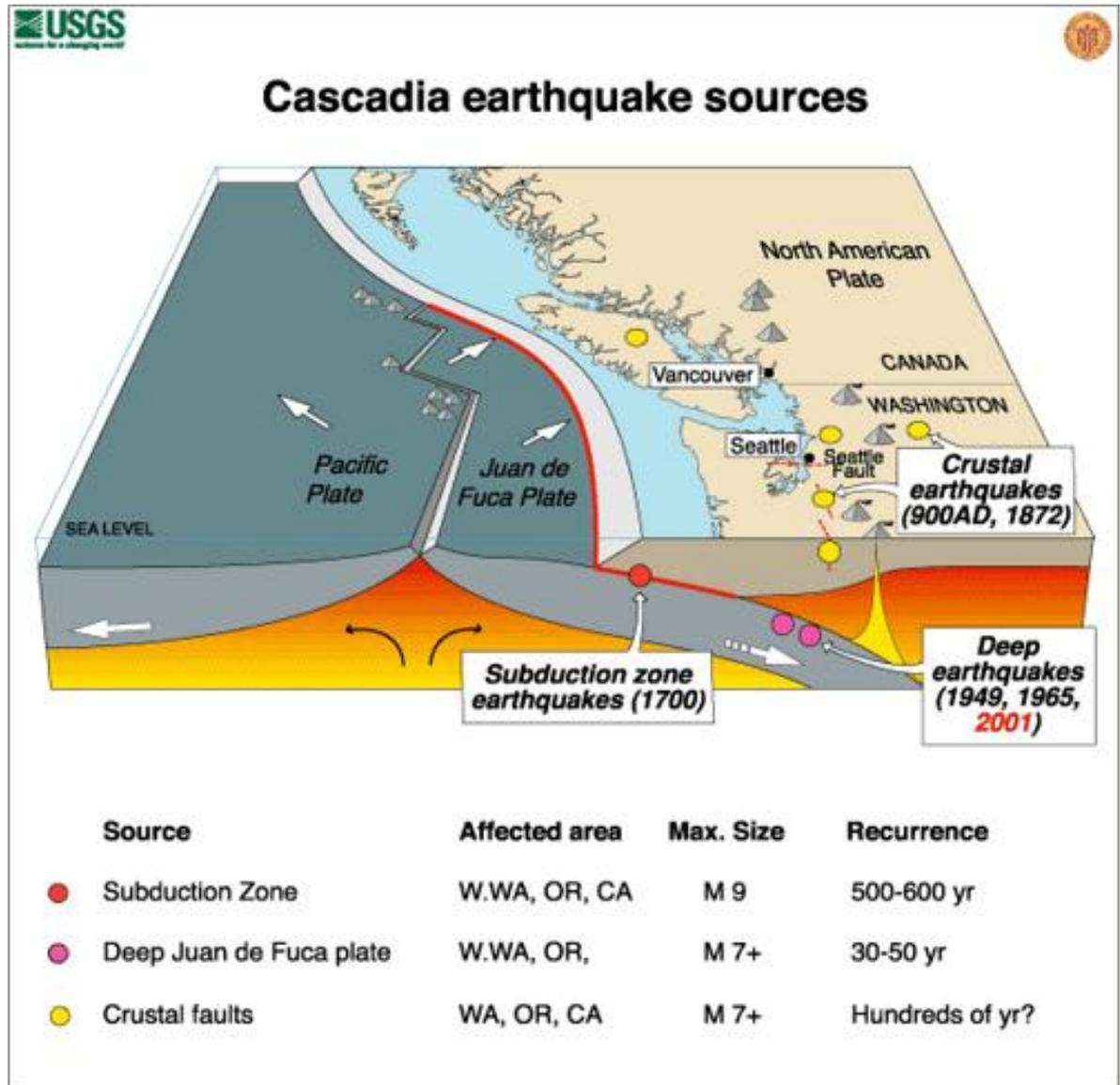


Tsunami damage from the air.



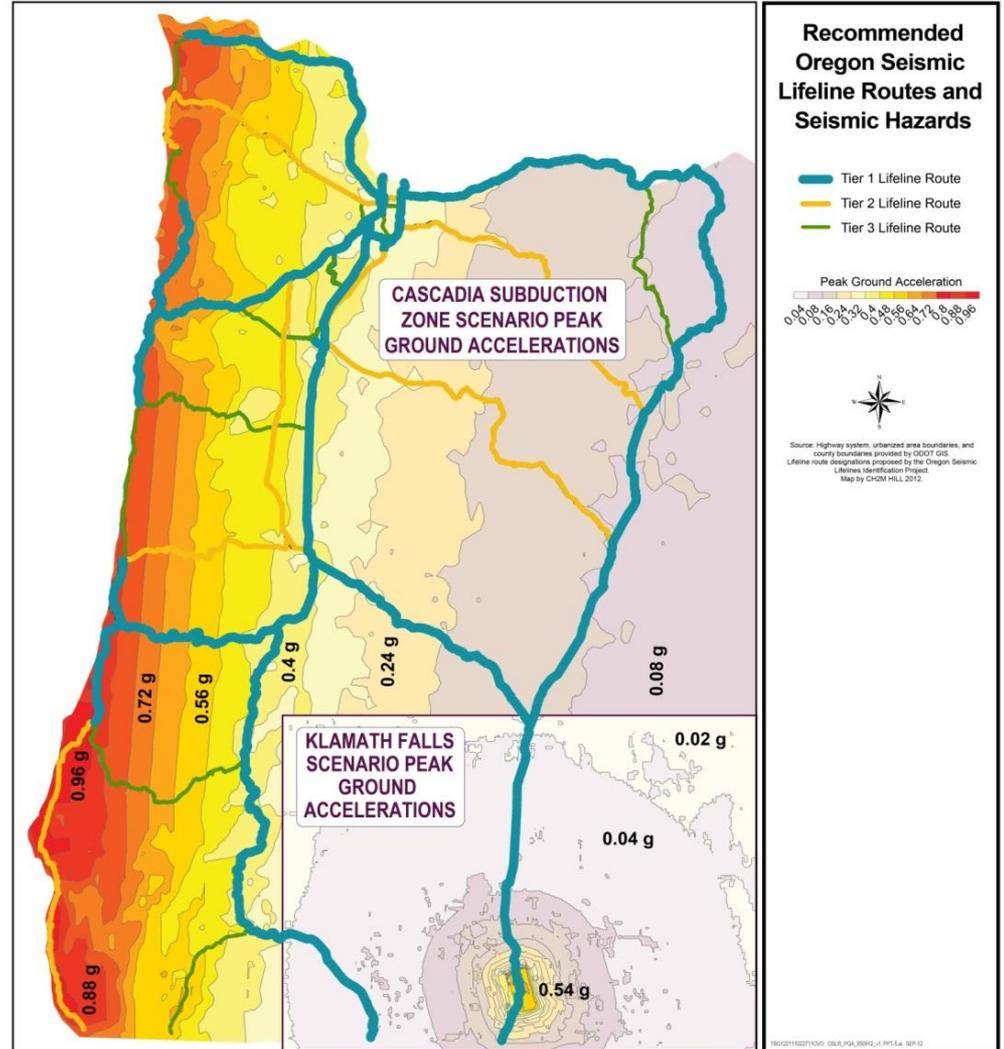
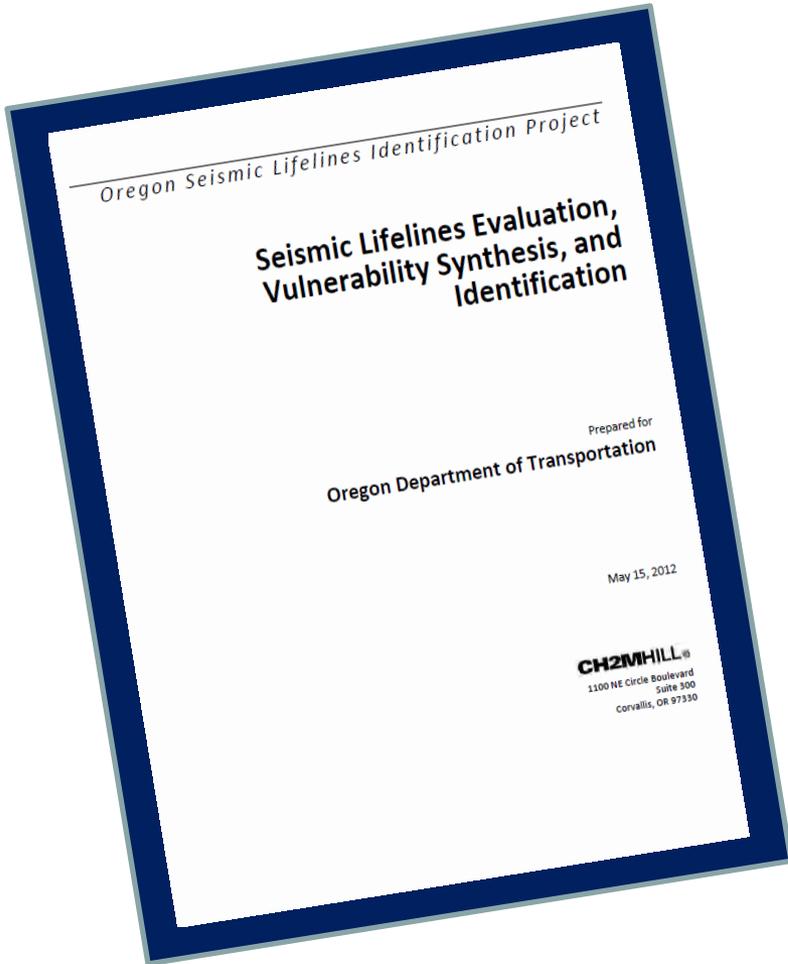
A scene from the Alaska earthquake of March 27, 1964. Fourth Avenue in Anchorage collapsed when the ground subsided eleven feet (3.3 m) vertically and lurched fourteen feet (4.3 m) horizontally at the same time. (U.S. Geological Survey)

Great subduction zone earthquakes are the largest in the world, the only source of 8.5 or greater magnitude earthquakes.





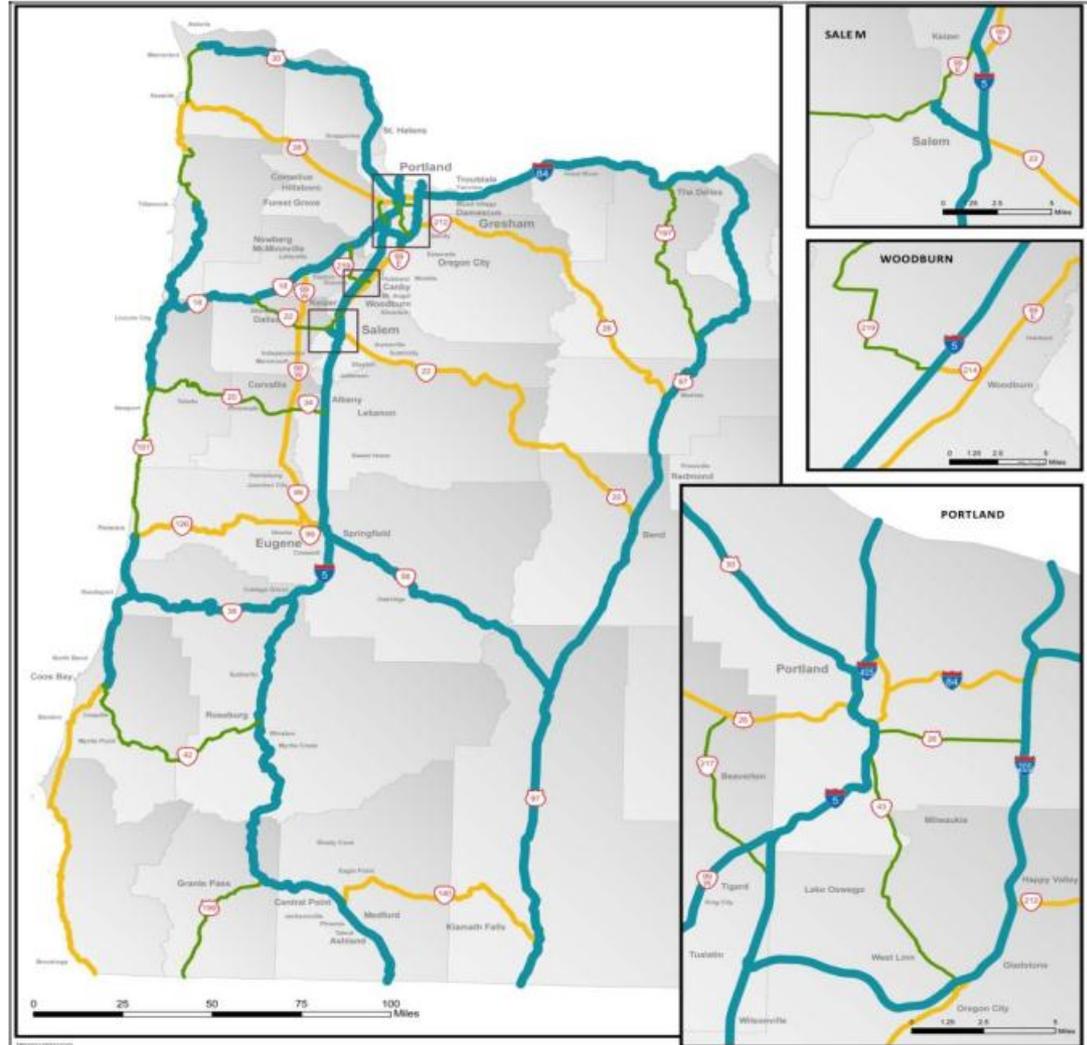
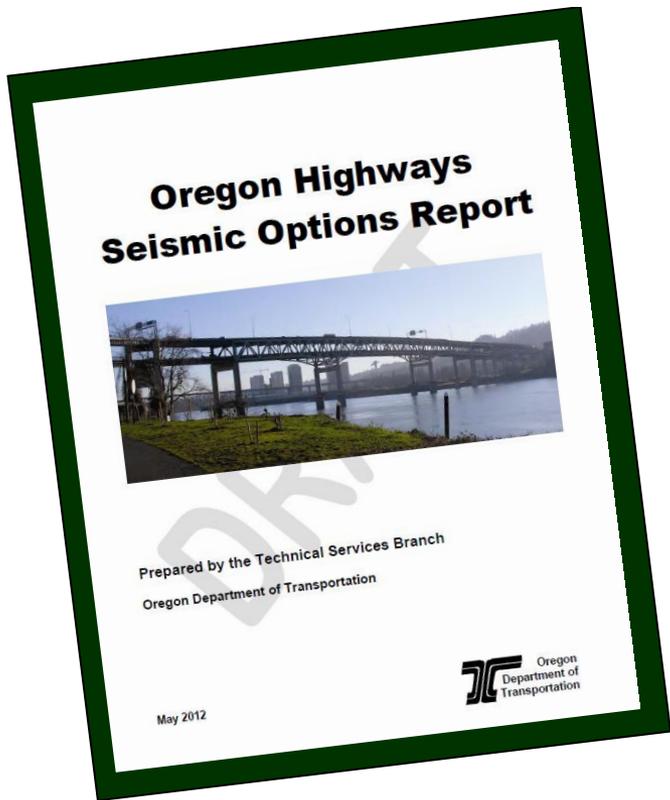
Oregon Lifelines Study



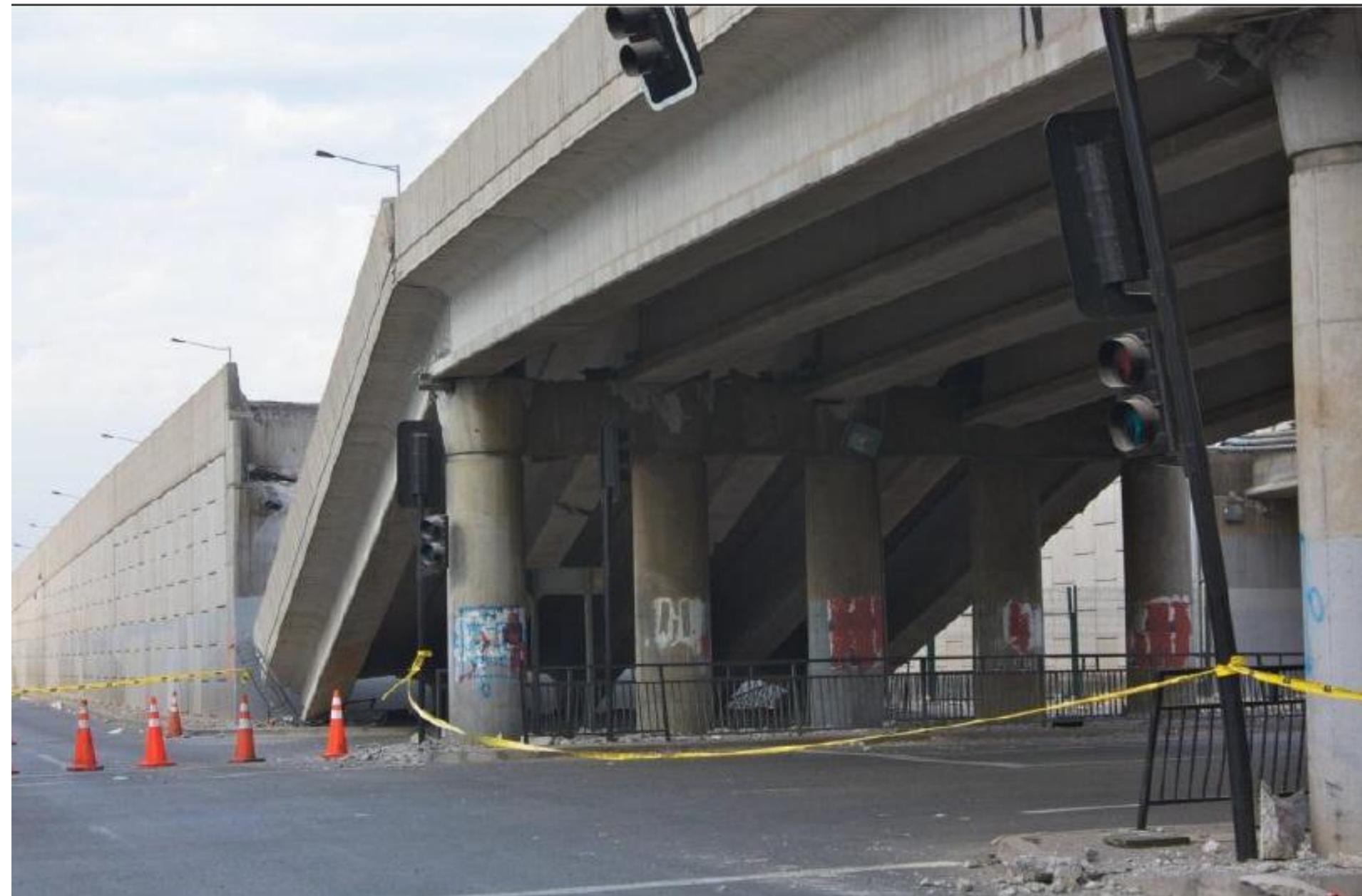


Oregon Highway Seismic Options

1st Tier
2nd Tier
3rd Tier



Bridge Span Collapse



Bridge Bent Failure



Landslide





START

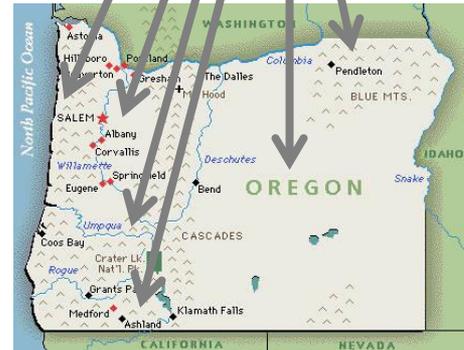
TOOL: Oregon Statewide Integrated Model



Economy



Population



Person travel
Auto/carpool
Transit
Passenger rail
Commercial travel
Truck
Rail
Water





State Geography

About 87 % of State Population is Located West of the Oregon Cascades Mountain Range

About 86% of Statewide Economic Production is Located West of the Oregon Cascades Mountain Range

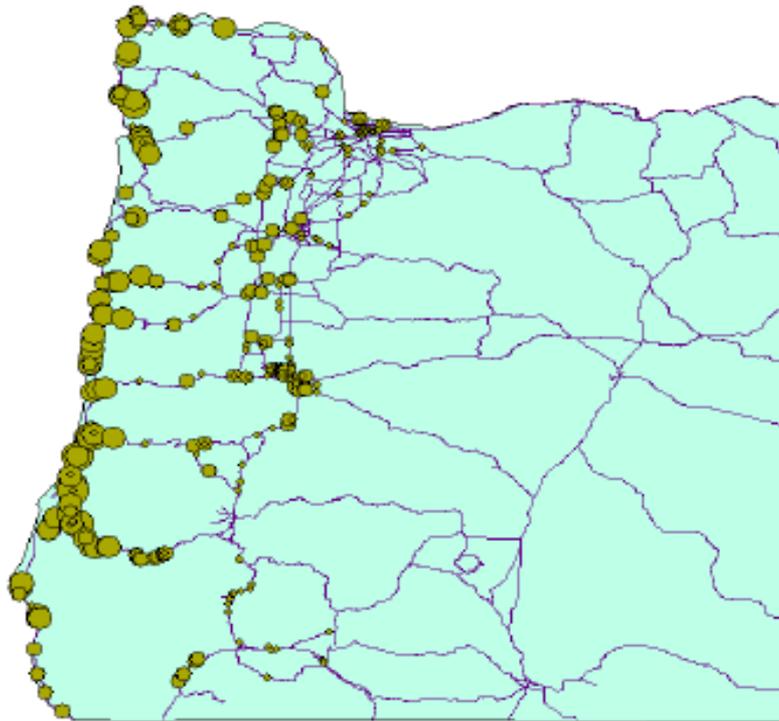


Cascadia Subduction Zone Earthquake (Magnitude 9.0)

6 complete collapses
 64 extensive
 106 major
 164 slight

Estimates Loss:

- \$1,080 million for bridge repair and replacement
- Significant Economic losses (travel time related losses)



Legend

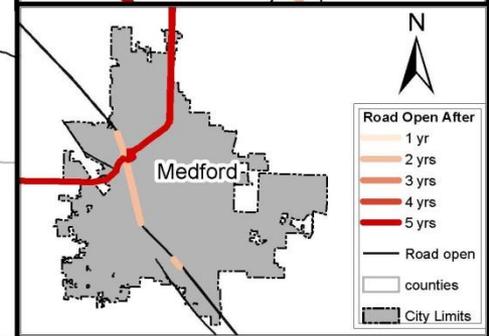
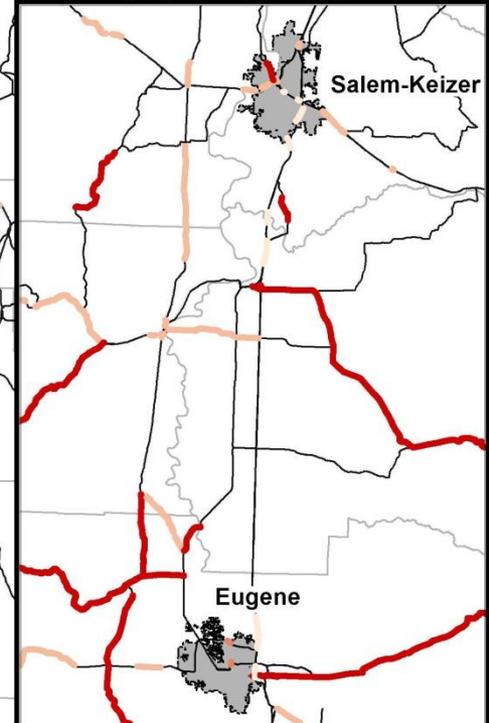
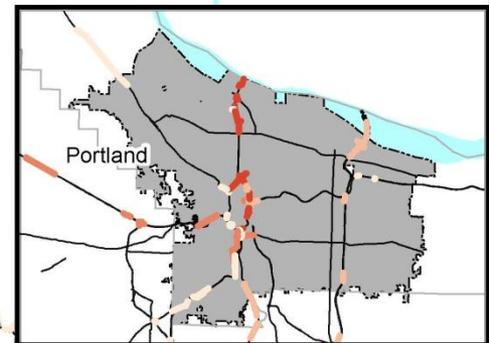
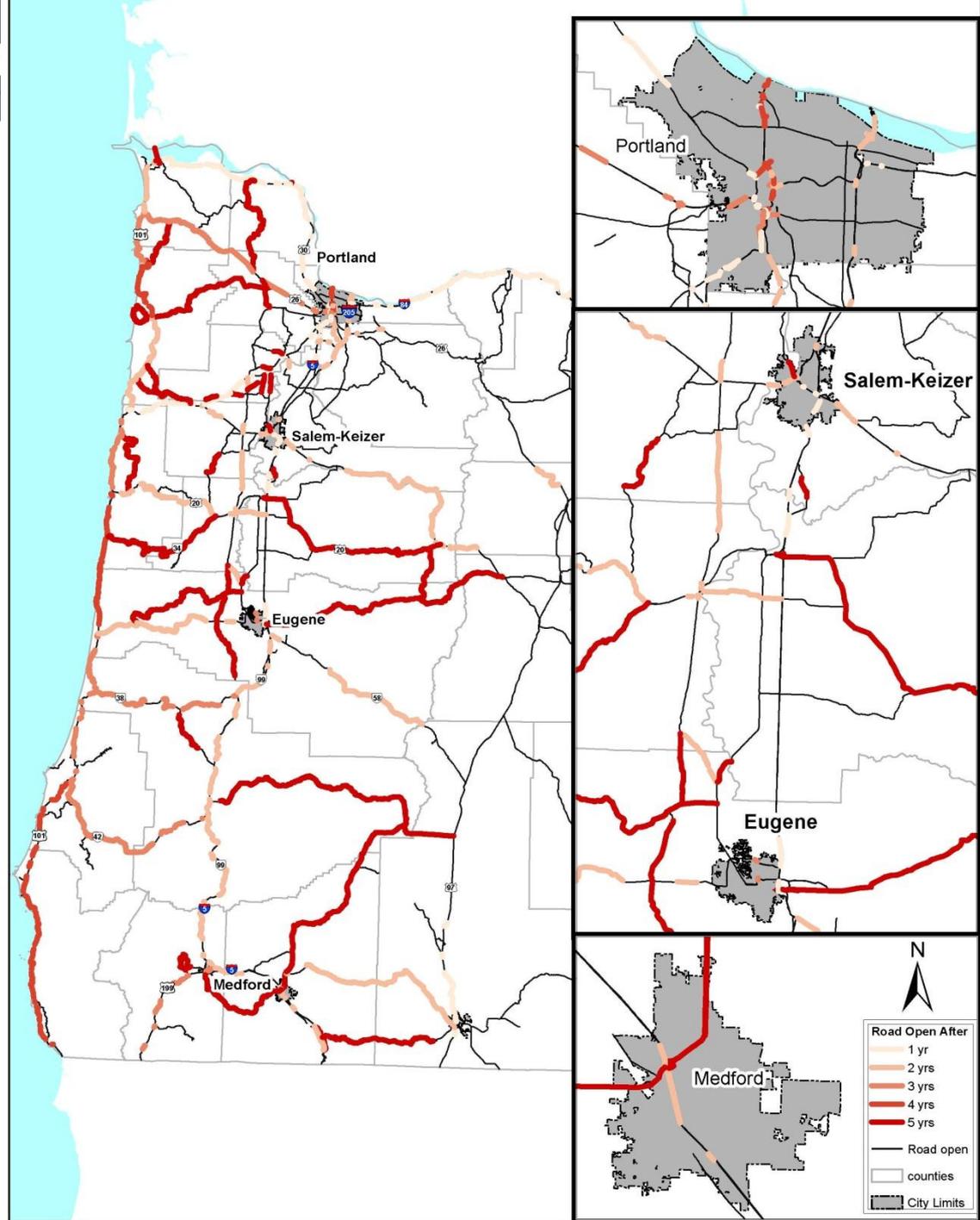
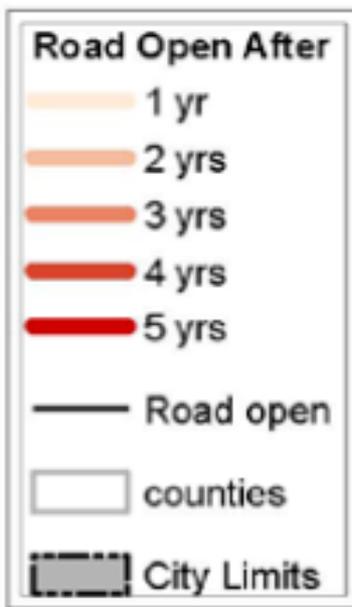
- Slight
- Moderate
- Extensive
- Collapse
- NHPN

Route	Damage States			
	Slight	Moderate	Extensive	Complete
I-5 (MWC)	4	1	0	0
I-5 (MLL)	16	3	1	0
I-5 (DJJ)	27	0	0	0
I-84	13	1	0	0
US-101	7	14	36	5
US-26	7	5	0	0
I-205	8	2	0	0
I-405	7	0	0	0
US-30	4	2	2	0
US-20	5	3	5	0
OR-38	3	2	1	0
OR-42	4	13	13	1
Others	59	60	6	0
Total	164	106	64	6



Model Network

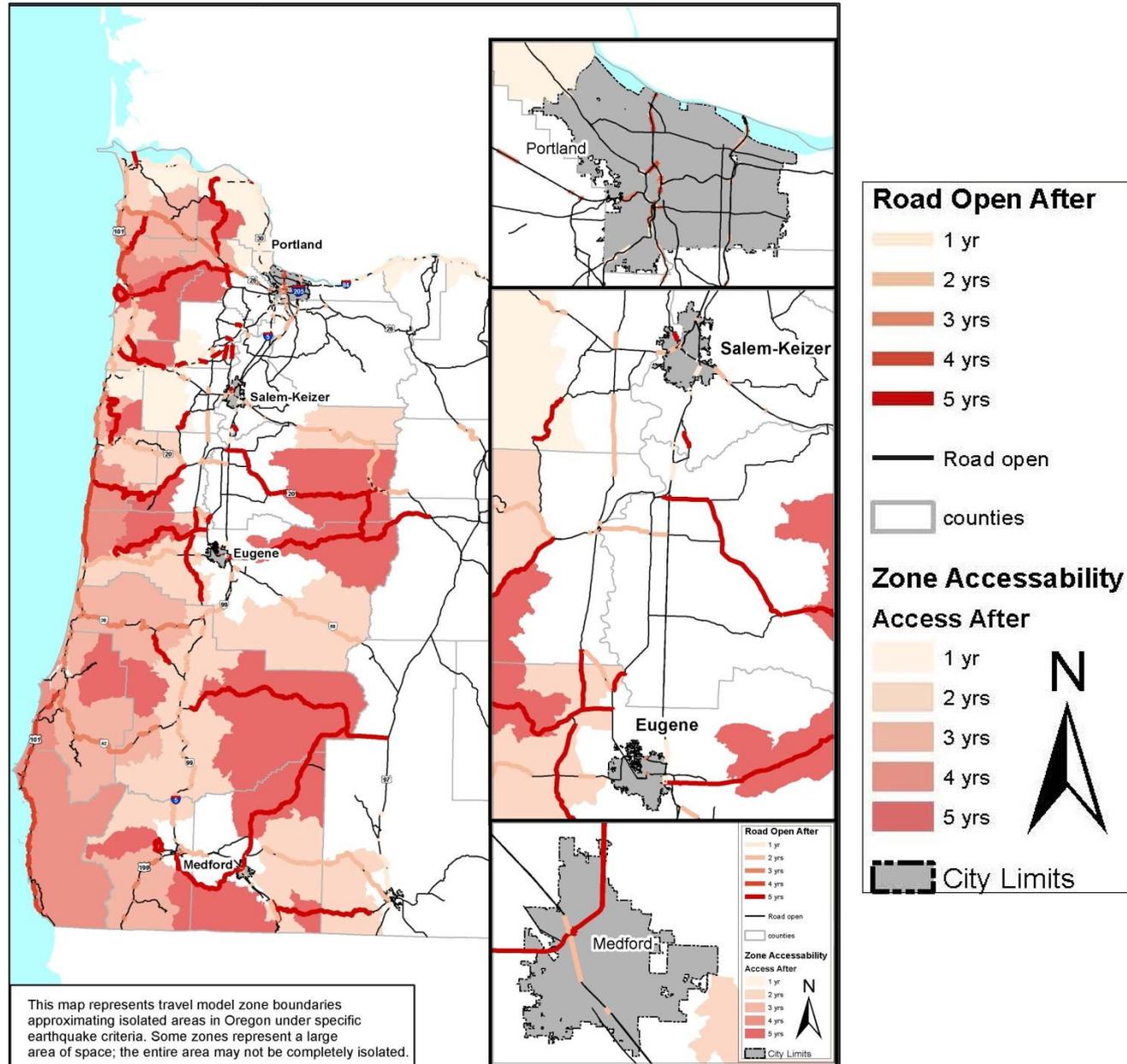
Failures and Repair Schedule After Major Seismic Event



Major Seismic Event No Mitigation: Isolated Areas

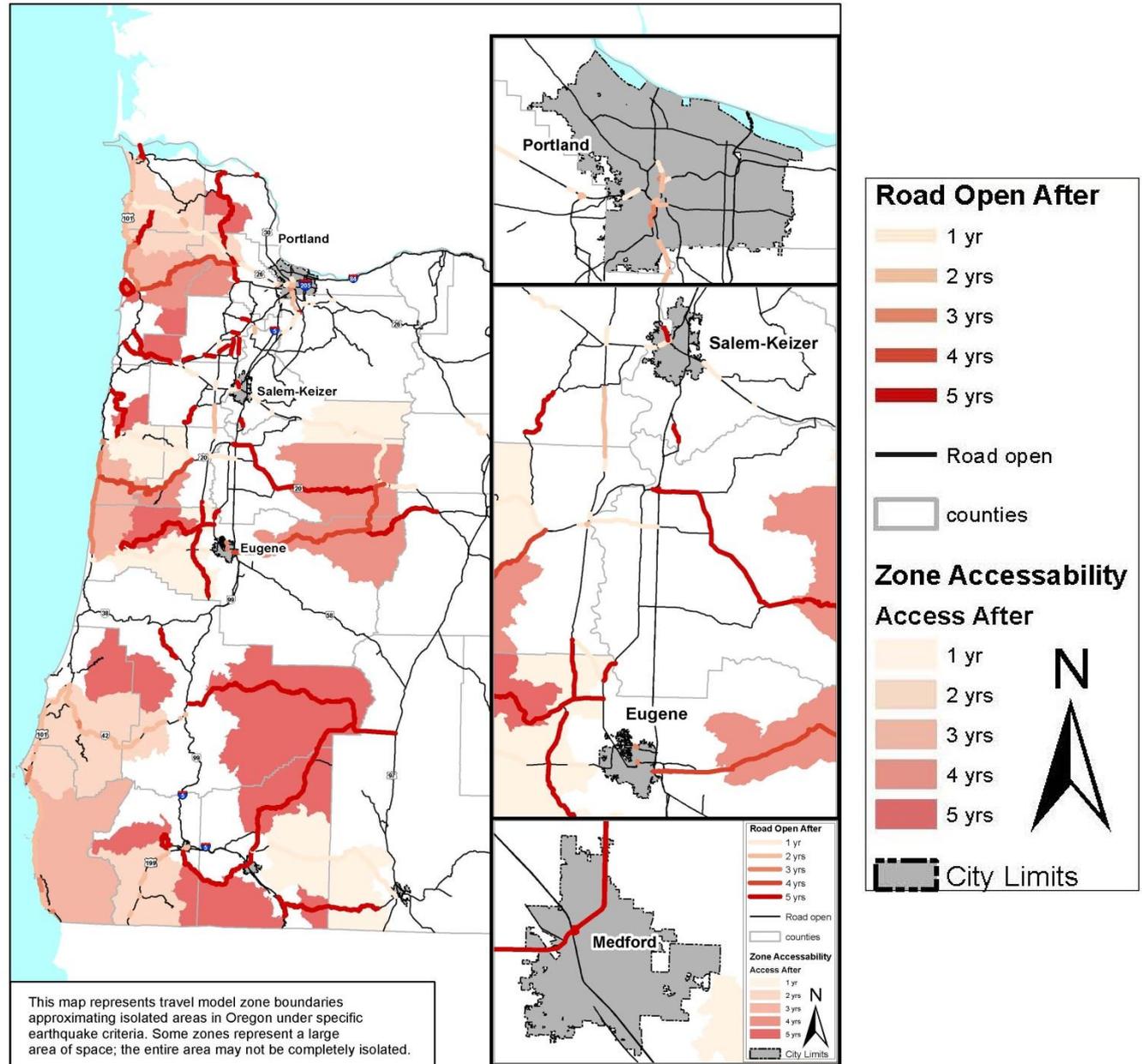
Major
Disruption
Results: State
Production is
lost, future
growth affected.

Estimated
economic loss:
\$350B (2011
dollars)



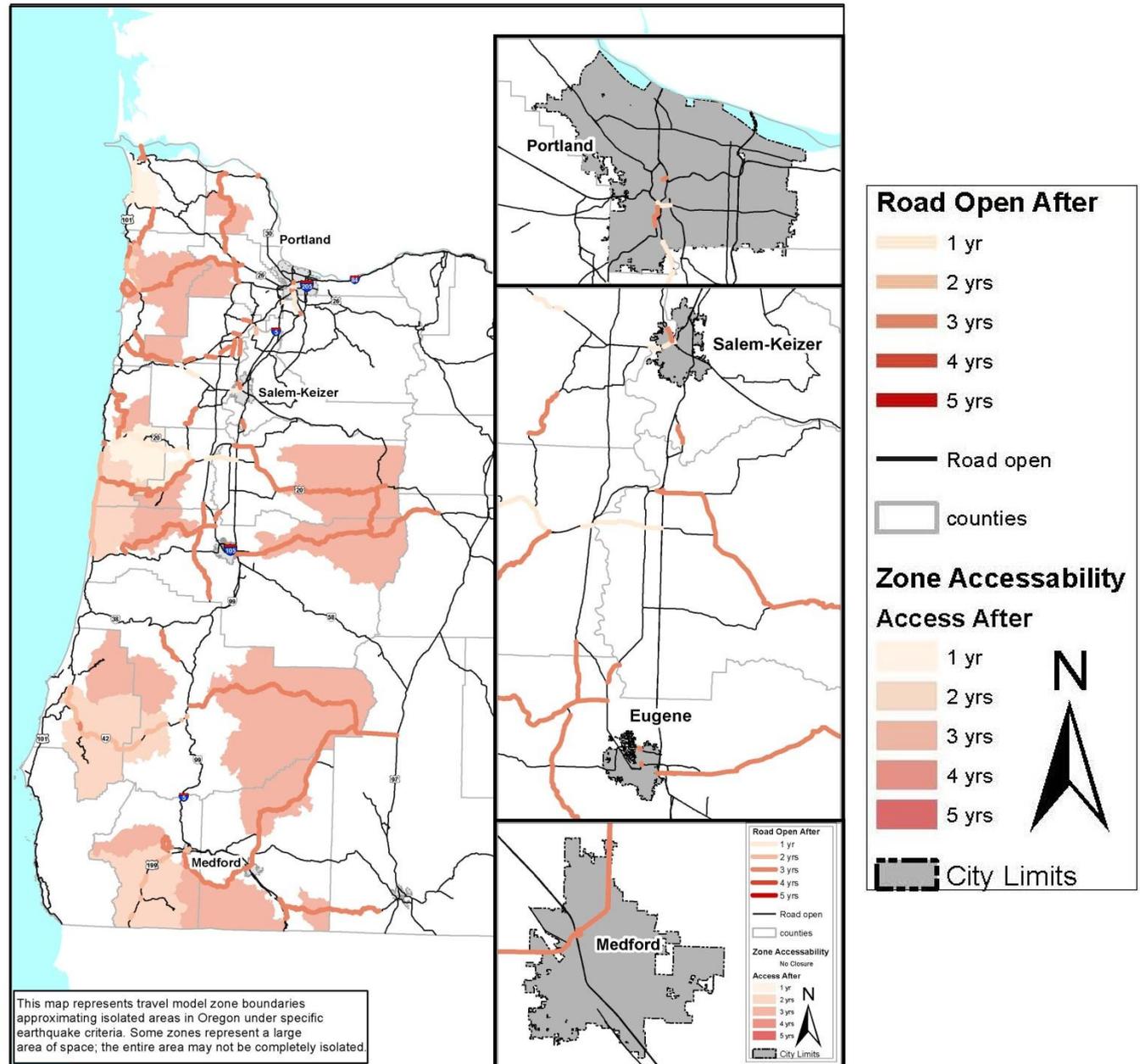
Isolated Zones: Stage 1 Scenario

Mitigation
reduces
economic
loss by **\$35B**
(2011 dollars)



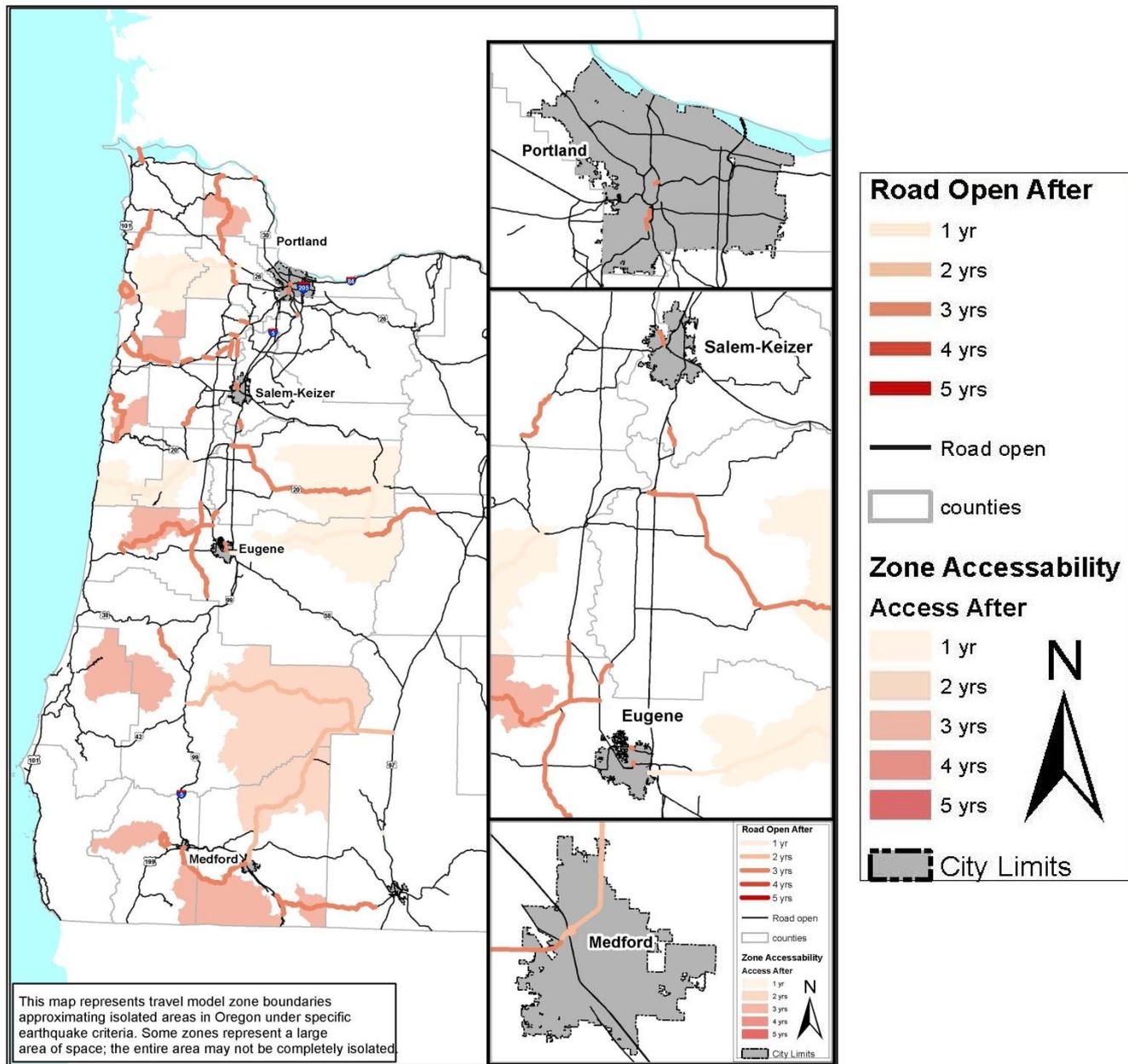
Isolated Zones: Stage 1 & 2 Scenario

Mitigation
reduces
economic
loss by **\$55B**
(2011 dollars)



Isolated Zones: Full Seismic Program

Mitigation reduces economic loss by **\$84B** (2011 dollars)





Is it Worth it?

	Worst Case Scenario	Stage 1 Program	Stage 1&2 Program	Full Program
Economic Losses Avoided	\$ 0	\$34.0 B	\$55.0 B	\$84.0 B
Program Cost	\$ 0	\$ 0.9 B	\$ 1.5 B	\$ 1.8 B
Benefit/Cost	0	37	36	46
Weighted B/C 12% chance of event		4	4	5



Summary

- Statewide Integrated Model
 - Evaluate return on investment of different options
 - Demonstrate impacts of damaged transportation system on regions of state
 - Plan for events associated with uncertainty



I-84 Sandy River Bridge



I-84 Sandy River Bridge



I-5 Willamette River Bridge (Eugene)



***For More Information
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