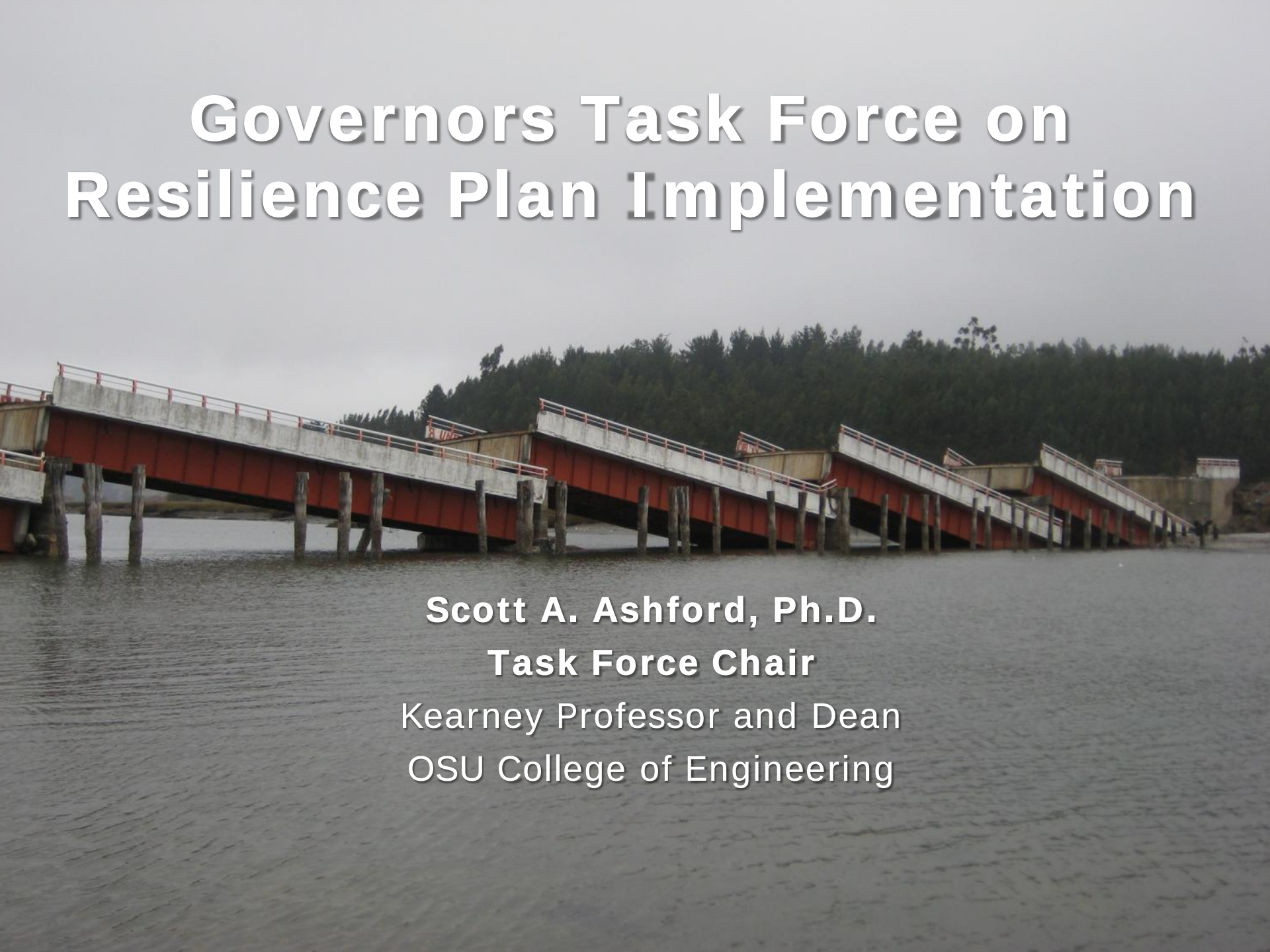
Governors Task Force on Resilience Plan Implementation

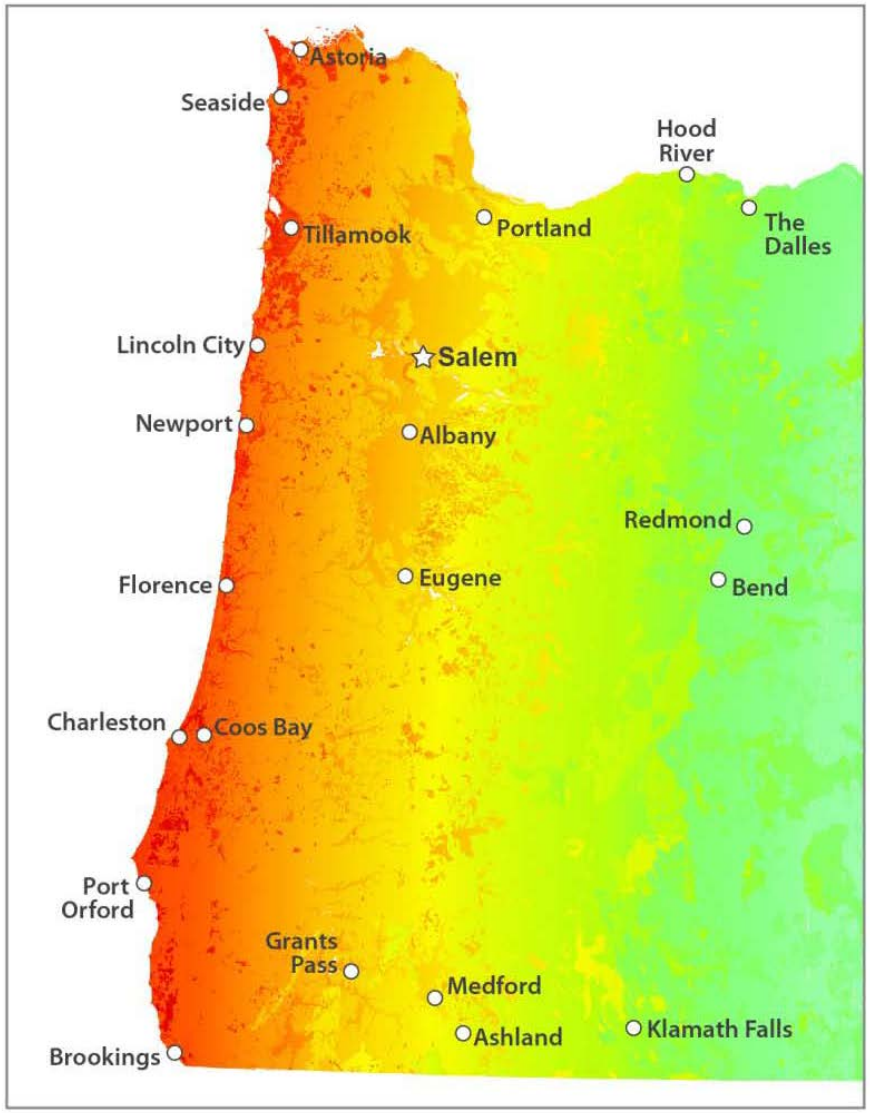


Scott A. Ashford, Ph.D.
Task Force Chair
Kearney Professor and Dean
OSU College of Engineering

Task Force Members

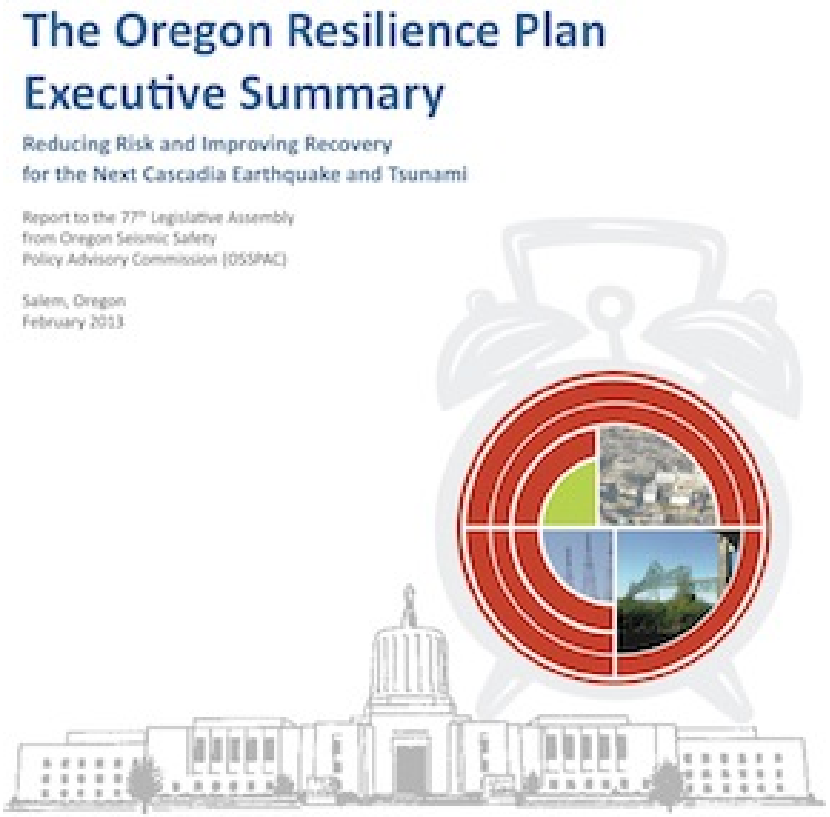
• Scott A. Ashford, Chair	Oregon State University
• Jeff N. Rubin, Vice-Chair	Tualatin Valley Fire and Rescue
• Rep. Debbie Boone	HD 32, Oregon State Legislature
• Mark Ellsworth	Regional Solutions Coordinator for Governor Kitzhaber
• Mayor George Endicott	City of Redmond
• Dave Ferre	Oregon Military Department
• Mike Harryman	Oregon Health Authority
• Commissioner Mark Labhart	Tillamook County Commission
• Heidi Moawad	Public Safety Policy Advisor to Governor Kitzhaber
• Lucinda Moore	Oregon Department of Transportation
• Paula Negele	American Red Cross
• Senator Alan Olsen	SD 20, Oregon State Legislature
• Senator Arnie Roblan	SD 5, Oregon State Legislature
• Jeff Soulages	Intel Corporation
• Dave Stuckey	Office of Emergency Management
• Rep. Jim Weidner	HD 24, Oregon State Legislature
• Jay Wilson	OSSPAC Chair/Clackamas Co. Hazard Mitigation

Why we are here: The Cascadia Subduction Zone



Estimation of time to restore services: VALLEY

- Electricity
  - 1 to 3 months
- Police and Fire Stations
  - 2 to 4 months
- Top Priority Highways (partial)
  - 6 to 12 months
- Healthcare Facilities
  - 18 months
- Water and wastewater
  - 1 month to 1 year



Santiago *(AP PHOTO/Carlos Espinoza)*

SHOW CAPTIONS SHOW THUMBNAILS LEAVE COMMENT

PHOTOGRAPH BY: PHILIPPE LOPEZ / AFP / GETTY IMAGES

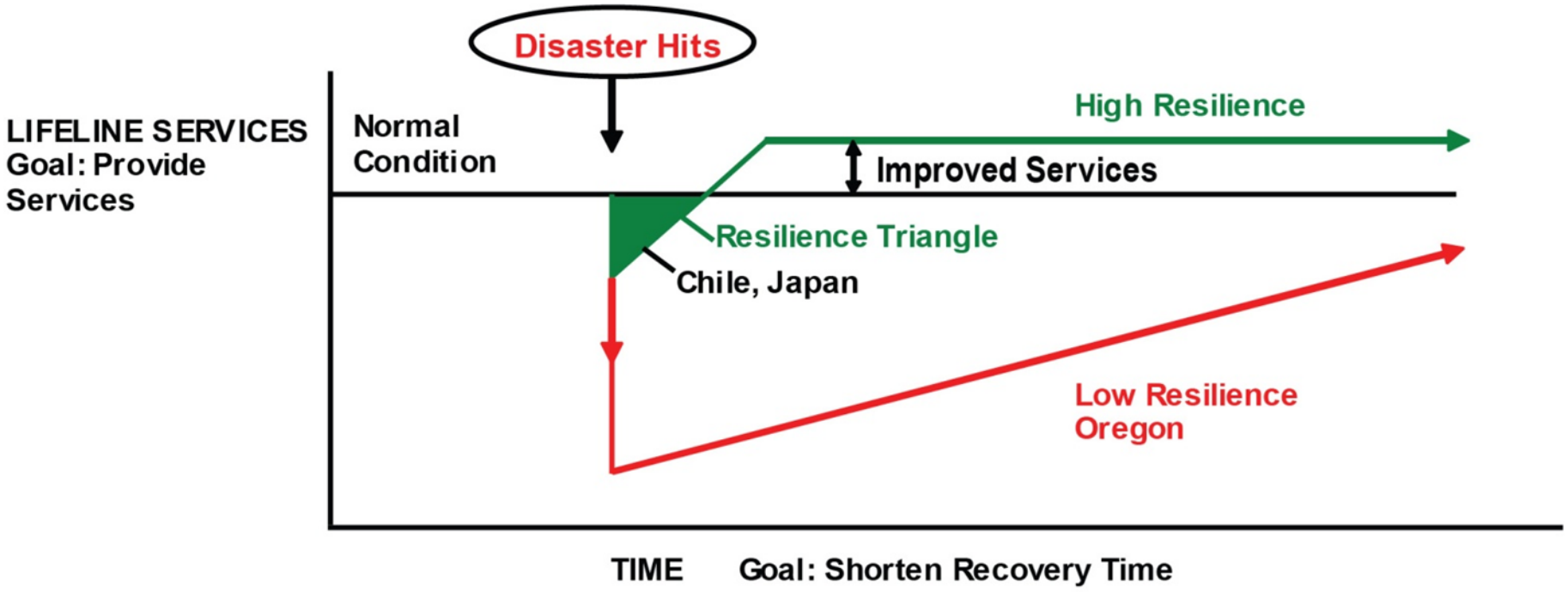

CHIGUAYANTE
HUALPEN
A 200 MTS


LA Times Photo


JR BUS TOHOKU
JR


844

Our Definition of Resilience



(Yumei Wang)

- **Resilience:** Save lives, Reduce Losses, Speed Recovery, Rebuild Better
- Sustainability requires r**esilience!**

Report submitted to Legislature October 1, 2014

- Narrowed down over 140 recommendations from the ORP to the most important specific recommendations to take action on this upcoming biennium

- Specific Recommendations in 8 areas
  A. Oversight
  B. Transportation
  C. Land Use
  D. Energy
  E. Research
  F. Critical Facilities
  G. Training and Education
  H. Water and Wastewater

A. Oversight Recommendation

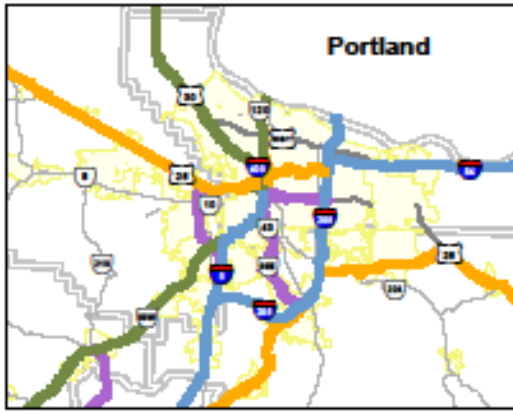
- Resilience Policy Advisor needs to be appointed by and report directly to the Governor
  - Overall, this is one of our primary recommendation
  - Time for volunteer efforts is over
  - This cannot serve within an agency

B. Transportation Recommendations

- Additional revenue be identified to complete the most critical backbone routes identified in ODOT's Seismic Options Report
  - Start construction within the decade
  - Complete the program by 2060
  - Funding source should be ongoing and pay as you go
  - Research would be incorporated into the program to ensure the most current technology and efficient methods are applied.

- Conduct a thorough inventory and assessment of transit, airport, water port, and rail assets.
  - In preparation for future investments

SEISMIC PLUS PROGRAM
State Highway Network



LEGEND

- Program Phase 1
- Program Phase 2
- Program Phase 3
- Program Phase 4

Phase 5 (replacements) not shown for clarit

- Interstate
- U.S. Routes
- Oregon Routes
- County
- City Limits

1 in = 39 miles

0 20 40 80 Miles

N

C. Land Use Recommendations

- DOGAMI Governing Board adopt “L” line from most recent tsunami hazard maps

- Local governments adopt latest version of tsunami hazard maps
  - In advance of State action
  - Include in comprehensive plan policies and development codes
  - Local governments welcome/encouraged to adopt stricter guidelines

- New funding of $5 million be made available by State through existing programs for resilience planning by coastal communities most at risk of severe impacts from a tsunami.

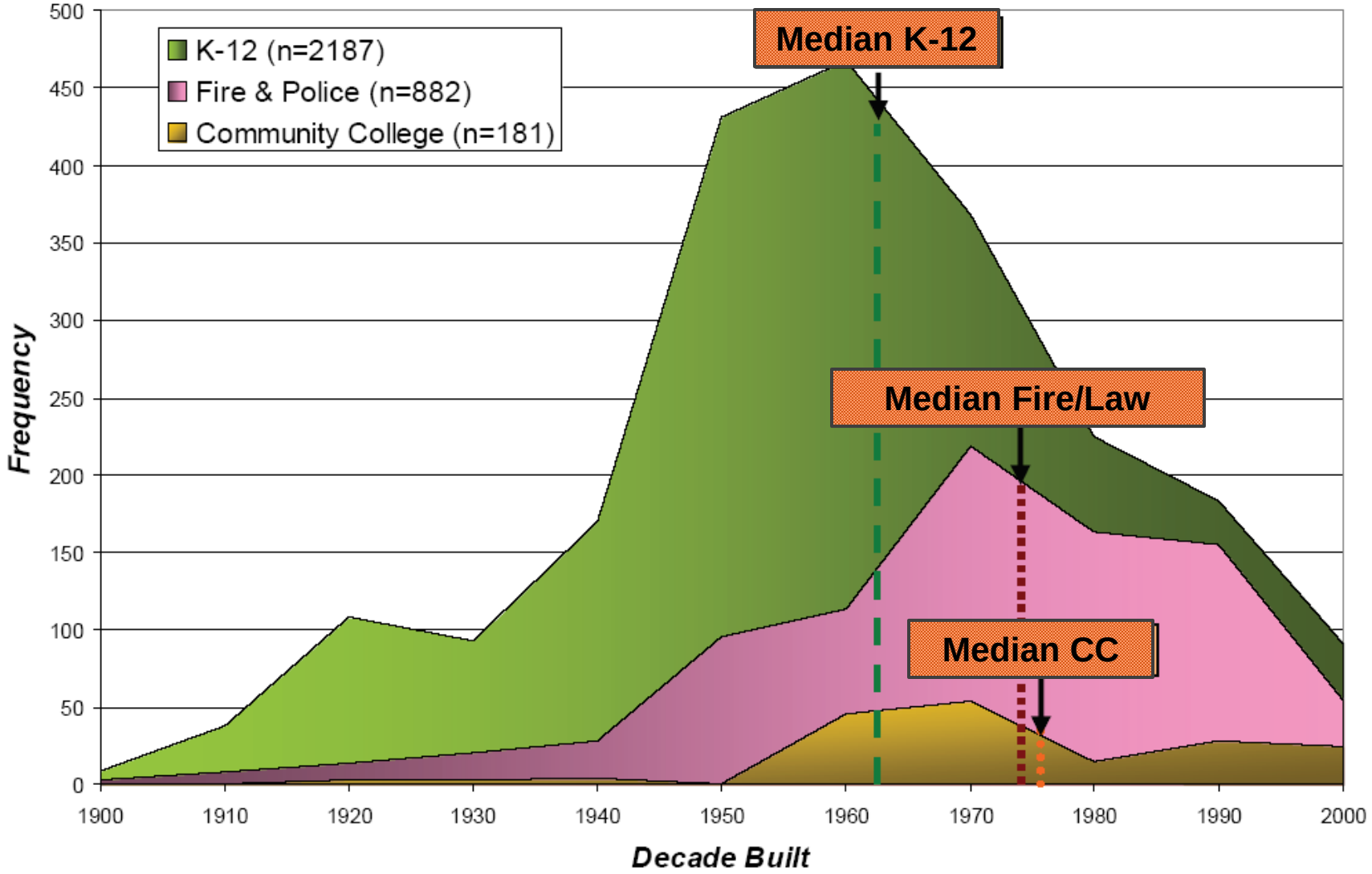
- Revise Urban Reserve Rules (OAR 660-021) to make them more useful for recovery planning prior to a tsunami.
  - Allow pre-disaster Urban Growth Boundary revision for safer development
  - Facilitate recovery by expediting post-disaster UGB modification

D. Energy Recommendations

- OPUC require energy providers it regulates conduct seismic assessments of its regulated facilities.
  - Allow cost recovery for prudent investments related to assessments and mitigation of vulnerabilities identified during those assessments.
  - Utilities are concerned about potential liability, we had DOJ consider this, but opinion was inconclusive

- Establish a public-private partnership to mitigate and evaluate diversification of locations for storing liquid fuels, and identification of new liquid fuel energy corridors.
  - Loss of liquid fuel in NW Portland Energy Hub may be our greatest threat
  - We have very limited supply of liquid fuel in the State and no alternative source.

E. Critical Facility Recommendations



E. Critical Facility Recommendations

- DOGAMI be funded with up to $20 million to update and enhance the statewide inventory and provide preliminary evaluation of critical facilities.
  - The amount of funding is scalable, depending on the specific scope DOGAMI is charged with
- The OBDD/IFA Seismic Rehabilitation Grant Program (SRGP) be funded with a minimum **initial** amount of $200 million in the next biennium.
  - **Funding continue to the program in each subsequent biennium** with a similar or higher level of funding

E. Critical Facility Recommendations (cont'd)

- As demolition costs for unsafe buildings can be prohibitive to local jurisdictions, "seismic rehabilitation" is defined to include demolishing unsafe structures*.
  - *Based on construction and/or location
- Rules governing SRGP eligibility be modified to allow grant dollars to be used toward replacement* facilities for projects that must be moved out of a tsunami inundation zone.
  - *As opposed to solely rehabilitation
- Both recommendations may require (distinct) companion program to SRGP

F. Research Recommendations

- State establish a research initiative that would provide $1M annually for research aimed at improving Oregon's earthquake resilience
  - Provide 1:1 matching funds to the state's public universities for state-, federal- or industry-funded earthquake research
  - Administered by and in collaboration with DOGAMI
  - Partnership with Oregon's universities, industry, and agencies
  - PGE, NWN, PDX, EWEB, ODOT, PWB, BPA, and TVWD have stepped up
  - Research required to ensure value- and cost-informed decisions
- A formal center of excellence for resiliency research and initiatives not be established.
  - At this time, we need participation of all our universities

G. Training and Education Recommendations

- Fund OEM at $500,000 to lead process for 2015-17 biennium of developing and disseminating educational materials for agencies, businesses, and public
  - Revising and standardizing information provided to public and businesses to recommend emergency preparedness goal of **at least two weeks**
  - Training & education in disaster preparedness, response, recovery, and mitigation
  - Supporting education, training, related professional development for emergency managers
  - Establishing electronic clearinghouse of educational and technical information for emergency responders and planners, technical specialists, workplaces, and general public.

G. Training and Education Recommendations (cont'd)

- Funding Department of Education at $500,000 for 2015-17 biennium to lead process of adopting standardized educational content and associated resources for K-12.
  - Applicable to entire State as well as for specific hazard areas (e.g., coastal communities)
  - Establish electronic clearinghouse for curriculum, supporting resources
- Business Oregon, in partnership with OEM, strongly encourages continuity assessment and planning for all businesses.

H. Water and Wastewater Recommendations

- Water providers complete a seismic risk assessment and mitigation plan as part of the existing requirement for periodic updates to water system master plans
- Wastewater agencies complete a seismic risk assessment and mitigation plan as part of periodic updates to facility plans
- Firefighting agencies, water providers, and emergency management agencies to establish joint standards for use in planning firefighting response to a large seismic event.
  - Agree on priorities, develop common assumptions and expectations

Pursuing Resilience: Thinking Global – Acting Local

Jay Wilson

Task Force Member

Chair – OSSPAC

Disaster Resilience Fellow

National Institute of Standards and Technology

OSSPAC's Role

MISSION – ORS 401.918

(3) To improve public understanding of earthquake hazards, reduce such hazards and mitigate the possible effects of potentially damaging earthquakes, the commission shall review and advise the Governor and the Legislative Assembly concerning all plans and proposals addressing seismic hazards in the areas of:

(a) Any legislative proposals

(b) Plans and proposals of statewide impact

(c) Lists of recommendations for actions and potential rule changes specifically by state agency

OSSPAC's Role

- Author of Oregon Resilience Plan (ORP)
- Support Resilience Policy Advisor
- Continued support and engagement with Governor's Office and Legislature for these 25 biennium of ORP timeline
- Promote resilience across Oregon and down to community level
- Connect with National Disaster Resilience Framework

National Disaster Resilience Framework*

National Institute of Standards & Technology

- Critical part of the President's Climate Action Plan
- All hazards approach – including geohazards
- Directly references the Oregon Resilience Plan and the City of San Francisco "Disaster Resilient City" Plan

* http://www.nist.gov/el/building_materials/resilience/

Our "Expected" Disaster

Table 3-2: Sample Hazard definition for earthquakes developed by SPUR for San Francisco

Routine	***Earthquakes that are likely to occur routinely.*** Routine earthquakes are defined as having a 70% probability of occurring in 50 years. In general, earthquakes of this size will have magnitudes equal to 5.0 – 5.5, should not cause any noticeable damage, and should only serve as a reminder of the inevitable. San Francisco's Department of Building Inspection (DBI) uses this earthquake level in their Administrative Bulletin AB 083 for purposes of defining the "service level" performance of tall buildings.
Expected	***An earthquake that can reasonably be expected to occur once during the useful life of a structure or system.*** It is defined as having a 10% probability of occurrence in 50 years. San Francisco's Community Action Plan for Seismic Safety (CAPSS) assumed that a magnitude 7.2 earthquake located on the peninsula segment of the San Andreas Fault would produce this level of shaking in most of the city.
Extreme (Maximum Considered Earthquake)	***The extreme earthquake that can reasonably be expected to occur on a nearby fault.*** It is defined as having a 2% probability of occurrence in 50 years. The CAPSS defined magnitude 7.9 earthquake located on the peninsula segment of the San Andreas Fault would produce this level of shaking in most of the city.

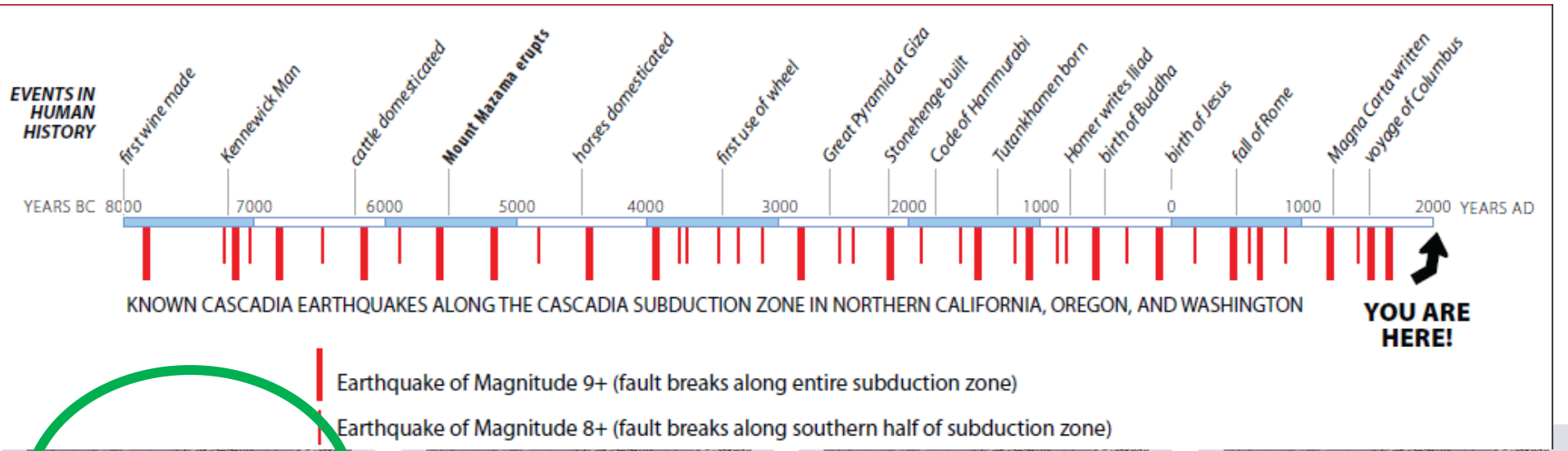
The American Society of Civil Engineers (ASCE) Standard 7-10 *Minimum Design Loads for Buildings*

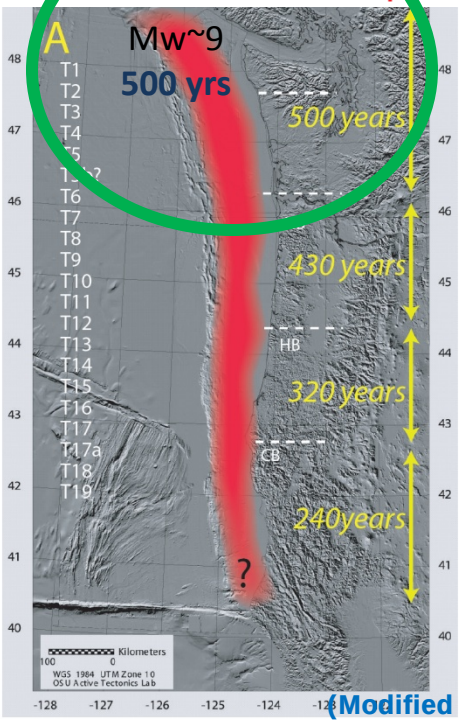
Table 3-3: Design Loads for Buildings and Facilities (ASCE 7-10)

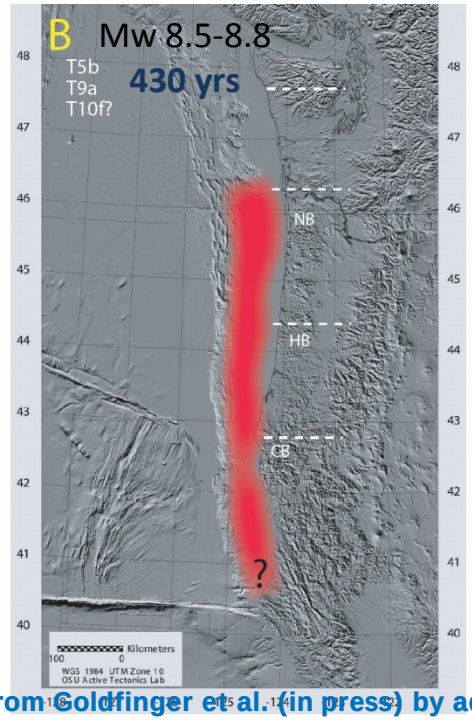
Hazard	Routine	Expected	Extreme
Ground Snow	50 year	300 to 500 year[1]	TBD
Rain	2	2	2
Wind – Extratropical	50 year	700 year	3,000 year[3]
Wind – Hurricane	50 to 100 year	700 year	3,000 year[3]
Wind – Tornado	3	3	3
Earthquake[4]	50 year	500 year	2,500 year
Tsunami	50 year	500 year	2,500 year
Flood	100 year	100 to 500 year	TBD
Fire – Wildfire	4	4	4
Fire –Urban/Manmade	4	4	4
Blast / Terrorism	5	5	5

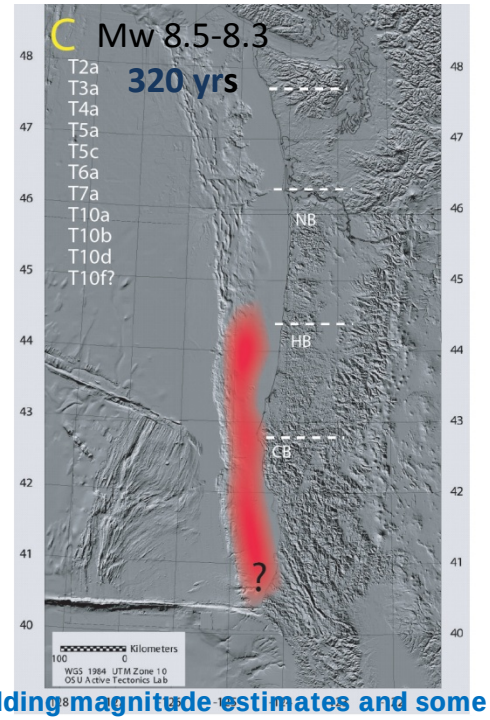
Hazard	Routine	Expected	Extreme
Earthquake[4]	50 year	500 year	2,500 year

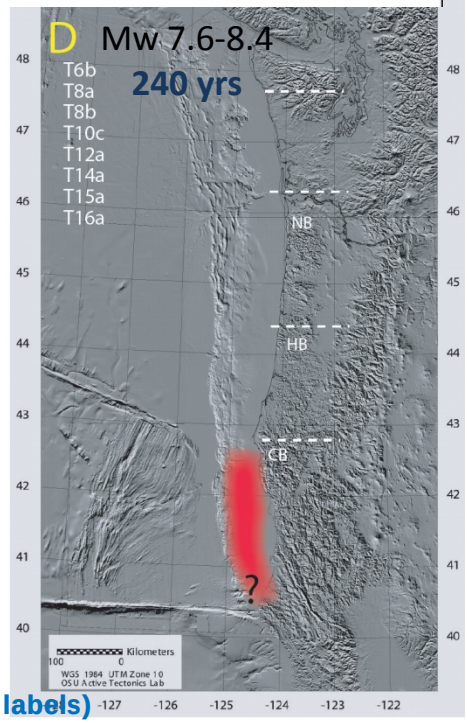
Cascadia Subduction Zone Earthquakes











(Modified from Goldfinger et al. (in press) by adding magnitude estimates and some labels)

Pursuing Resilience
Using Existing ORS and OAR

- Rules as Tools
- Must be Current and Adaptable
- Based on Up-to-Date Science
- Guidance and Assistance to Local Government and Communities
- Or . . . Risk falling through the cracks
- Example – New hospital in Gold Beach

Ishinomaki Red Cross Hospital

Remained operational during and after 3/11/11 M9 EQ

Base isolation Technology

Fire Station – Tome City, Miyagi

登米市消防防災センター

消防情報テレホンサービス
0180-992-099

新着情報

- 年末年始消防特別警戒について UP
- 甲種防火管理者新規講習会について
- 危険物取扱者試験
- 2014消防年報とめ
- 登米市消防団が第
- で準優勝
- 東出張所が東和町
- ホテル・旅館等に
- 救急車の利用に
- 火災広報について
- 消防団協力事業所
- 消防団員募集

Remained operational during and after 3/11/11 M9 EQ

Thank You

The mission of the Seismic Safety Policy Advisory Commission shall be to reduce exposure to earthquake hazards in Oregon.

§ 401.918
Mission of commission