OREGON SCHOOLS: ACCELERATING SEISMIC SCHOOL SAFETY

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Outline

Oregon Seismic School Safety Highlights
2007 DOGAMI survey results
2009 State Mitigation Grant Program

Current Oregon Efforts (accelerate mitigation)
Parent Advocates, incl. Ted Wolf and OPTA
Oregon Priority Schools Initiative (OPSI)
State Gov’t -Senator Peter Courtney SB 1566
-OSSPAC resilience planning
-Governor’s in-progress 10 yr plan
Schools in tsunami zones
Oregon’s Seismic School Safety Highlights

- 2001 Requires seismic “life safety” by 2032
- 2002 Public vote amended Constitution
  Allows $1 B state bonds to fix schools
- 2005 Universities: institutional mitigation
- 2007 Statewide Seismic Ratings (Dogami Report)
- 2009 Oregon seismic rehabilitation grants
- 2012 New Law institutionalizes seismic info

In 2005, Oregon Public Universities
Institutionalized seismic safety
FEMA seismic grants were key to implementing change
In 2007, DOGAMI RVS Results

http://www.oregongeology.org/sub/projects/rvs/reports/Clat_sch04.pdf

2007 Statewide Seismic Ratings

(http://www.oregongeology.org/sub/projects/rvs/default.htm; 2007)

1,101 schools
2,185 buildings
273 Very High
745 High
501 Moderate
666 Low
Lots Dangerous
Schools eg, 94 URMs
In 2009, Oregon Seismic Rehab. Program

Oregon Emergency Management administers

- 2010  12 schools awarded
- 2011  3 schools awarded
- 2012  8 schools to be awarded

FUNDING GAP EXISTS...

2010 OSSPAC proposal to Legislature: a funding schedule for schools & emergency facilities

- Recommended $200 million in 2011-13
  - Mitigate 110 schools
  - ~3,300 jobs (2000 direct + 1300 indirect)
  - Continue 55 schools per yr, for 20 yr duration

- Legislature approved $30 million to date
  - Good start for new grant program
  - Ready to accelerate mitigation
Oregon Efforts to Accelerate Mitigation

- **Parent Advocate, Ted Wolf**
  Oregon PTA resolution
  Parent’s e-petition
  Superintendents, jobs and safety outlook

- **Oregon Priority Schools Initiative OPSI**
  Jason Thompson, chair
  SEAO and ASCE volunteers
  Oregon Dept of Education

- **State Government**
  - Sen. President Peter Courtney’s
    2012 SB 1566 increase transparency
  - OSSPAC resilience planning (due Feb 2013)
    - Kent Yu, chair
  - Governor’s in-progress 10 yr plan
    - Sustainable funding (TBD)

Tohoku & Cascadia “Mirror Images”

- March 11, 2011 Japan Tsunami
- Hypothetical Cascadia Tsunami

(Source NOAA)
Schools in Tsunami Zone

Wood—Steel—Reinforced Concrete

Flood Depth versus Velocity

Building Performance in Tsunamis
Reinforced Concrete Building

(Source: K. Miyamoto)

Steel Building

4/25/2012
Wood Buildings

(Source: K. Miyamoto)

Japan Tsunami Study Results (MLIT 2011)

1.5 – 2.0 m: 34% buildings destroyed

2.0-2.5 m: 72% destroyed

65% of destroyed buildings were completely washed away
Flood Depth versus Velocity for people

**Male Adult knocked down:**
- Waist deep (3 ft) at 3 mph
- Knee deep (2 ft) at 4 mph
- Ankle deep (1 ft) at 7 mph

Source: Harry Yeh, 2010, NHR

Waldport HS relocating above tsunami zone to high ground

The City of Waldport, Oregon

Broke Ground April 2012

Cost: $0.21 /$1000 for 15 years
Cannon Beach Elementary in Tsunami zone

Inside Zone – Serious Risk of Dying. Viable Evacuation Route

Outside (Above) Tsunami Zone – Safest Option

Cannon Beach Elementary School
...to be destroyed in a Cascadia tsunami
Wood buildings located in tsunami zone
Evacuation route 1 mile to high ground
Bad news, anyone hit by tsunami ...