

**Neskowin
Tillamook County**





Motel in Neskowin adjacent to Hawk Cr.



Waves coming up Hawk Cr.

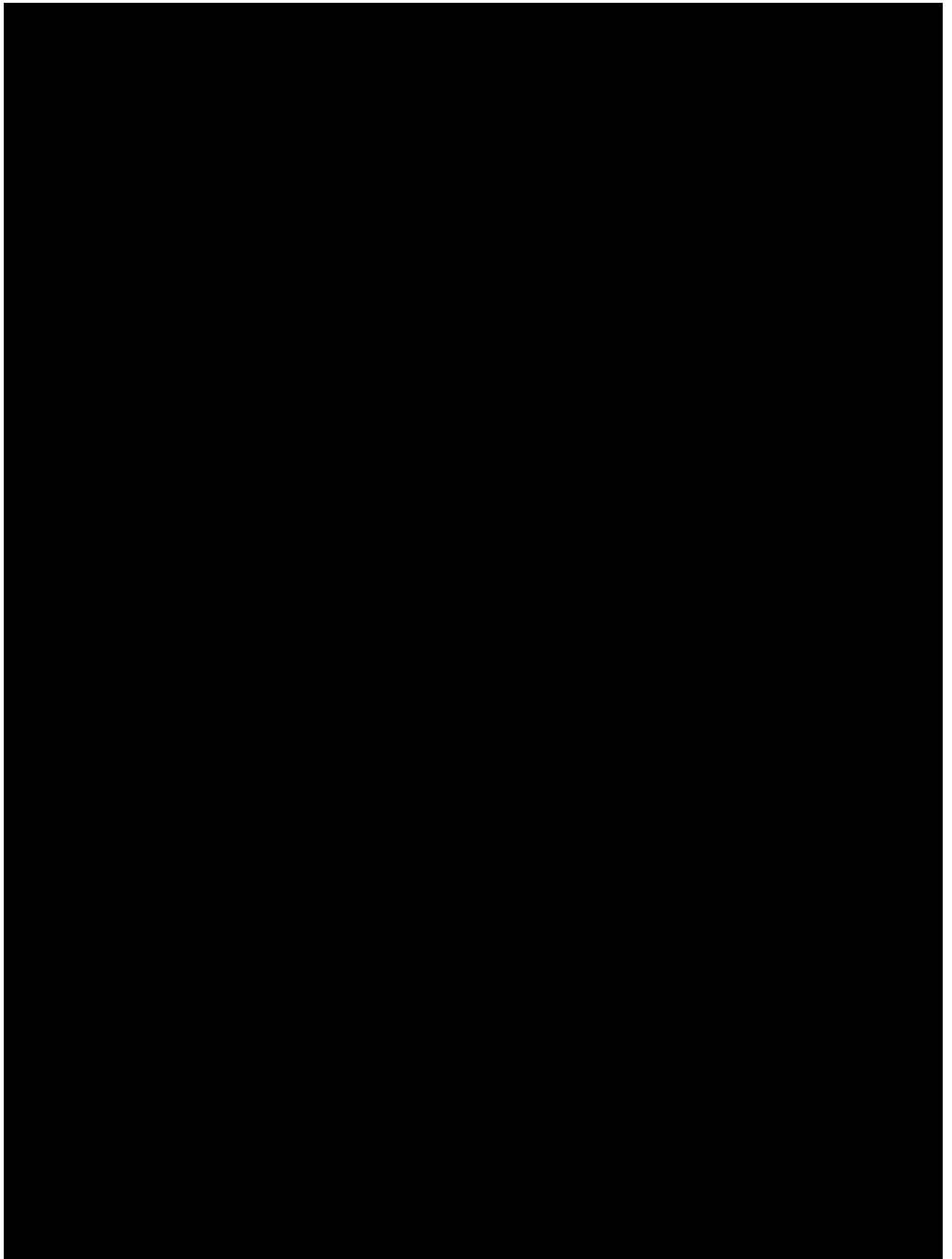
WARNING
PROCEED AT OWN RISK
NO DROP-OFF
AT LOW TIDES
DANGER OF BREAKER WAVES

Today's population is about 200 full time and lots of people in the summer months

Hawk Creek Bridge December 2015

During one of their
Storms with a high tide.

This the only bridge
leading into the
Community. Water
and sewer lines hang
on the bridge.





Motel

Hawk Cr. Cafe

Ocean →

Hawk Cr.



The Capes Coastal erosion , in Tillamook County near Netarts, was first noticed in 1997 by local home owners

Lawns dropped vertically some 18 inches in January 1998. Five more feet of drop were added a few weeks later.

2002 Entry: The main area of movement is presently 900 feet long and 500 feet wide, endangering 10 houses, with 10 more at risk.

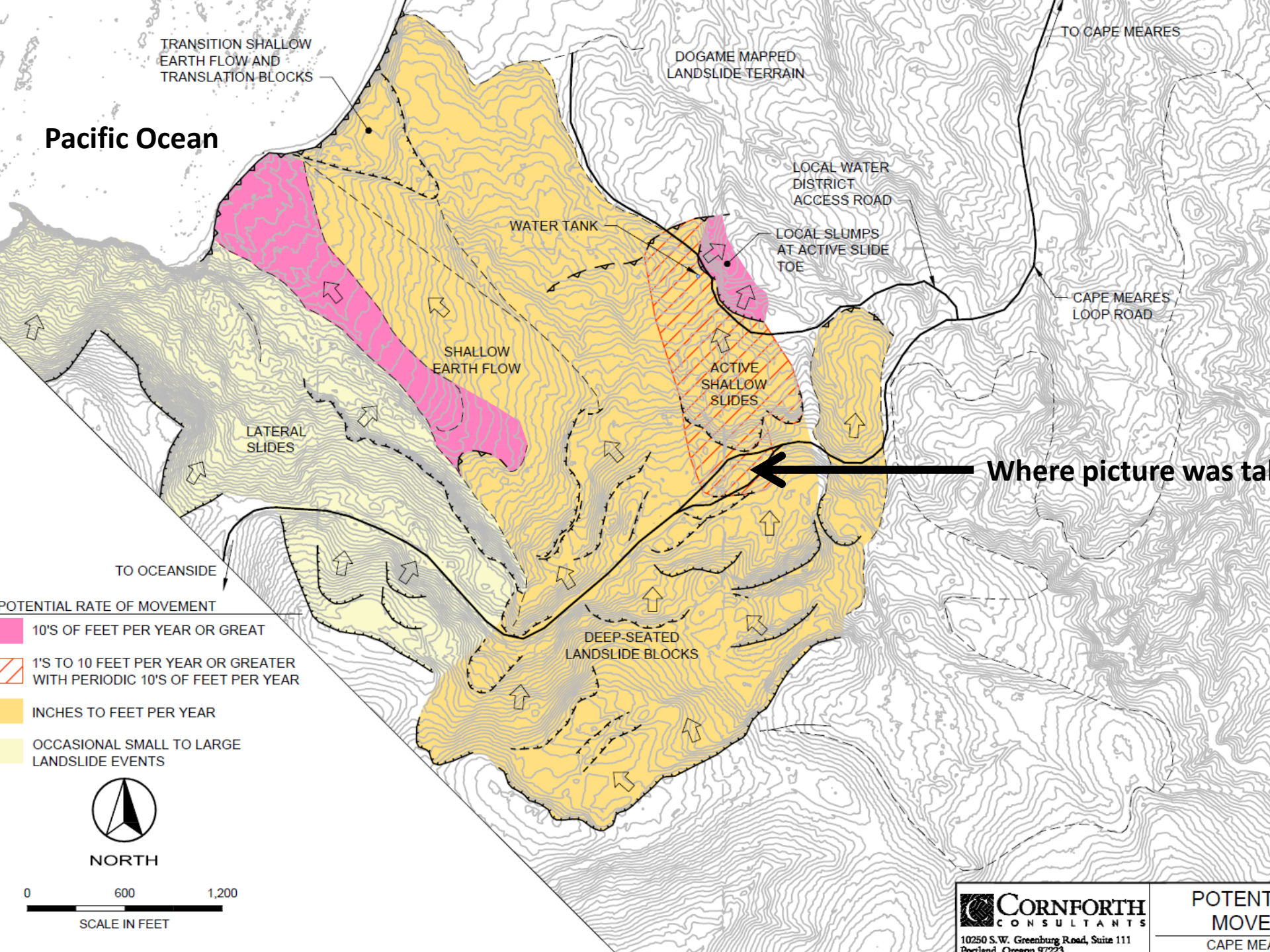
2002 DOGAMI Report

The Capes private housing community experienced landslide and coastal erosion damage associated with the 1997-8 El Nino event. Residents were evacuated and short-term mitigation was implemented. Long-term mitigation options, which need to accommodate coastal building regulations, are still being evaluated.

Cape Meares County Road

This road provide access to Cape Meares, Cape Meares Light House and Oceanside. Also an emergency Evacuation route out of Oceanside and Cape Meares.





TRANSITION SHALLOW
EARTH FLOW AND
TRANSLATION BLOCKS

DOGAME MAPPED
LANDSLIDE TERRAIN

TO CAPE MEARES

Pacific Ocean

LOCAL WATER
DISTRICT
ACCESS ROAD

WATER TANK

LOCAL SLUMPS
AT ACTIVE SLIDE
TOE

CAPE MEARES
LOOP ROAD

SHALLOW
EARTH FLOW

ACTIVE
SHALLOW
SLIDES

LATERAL
SLIDES

Where picture was taken

TO OCEANSIDE

POTENTIAL RATE OF MOVEMENT

10'S OF FEET PER YEAR OR GREAT

1'S TO 10 FEET PER YEAR OR GREATER
WITH PERIODIC 10'S OF FEET PER YEAR

INCHES TO FEET PER YEAR

OCCASIONAL SMALL TO LARGE
LANDSLIDE EVENTS

DEEP-SEATED
LANDSLIDE BLOCKS



NORTH

0 600 1,200

SCALE IN FEET

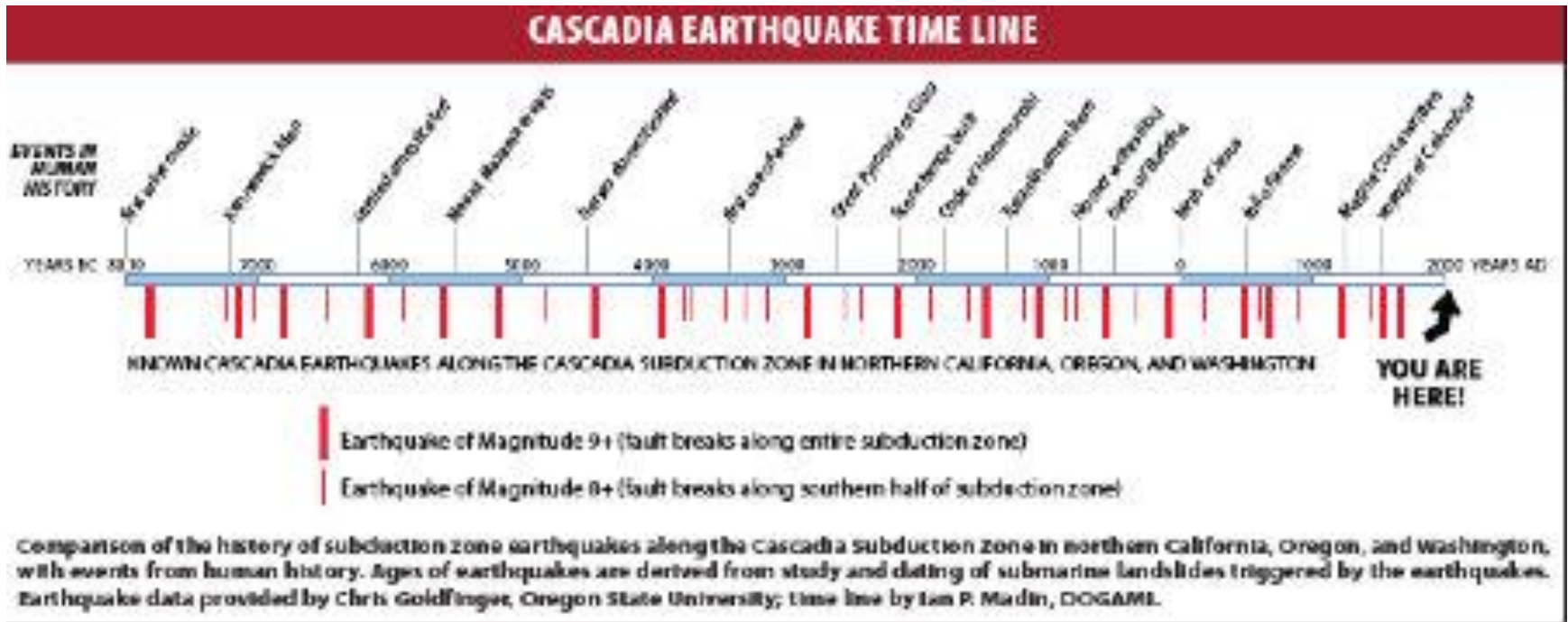
CORNFORTH
CONSULTANTS

10250 S.W. Greenburg Road, Suite 111
Portland, Oregon 97223

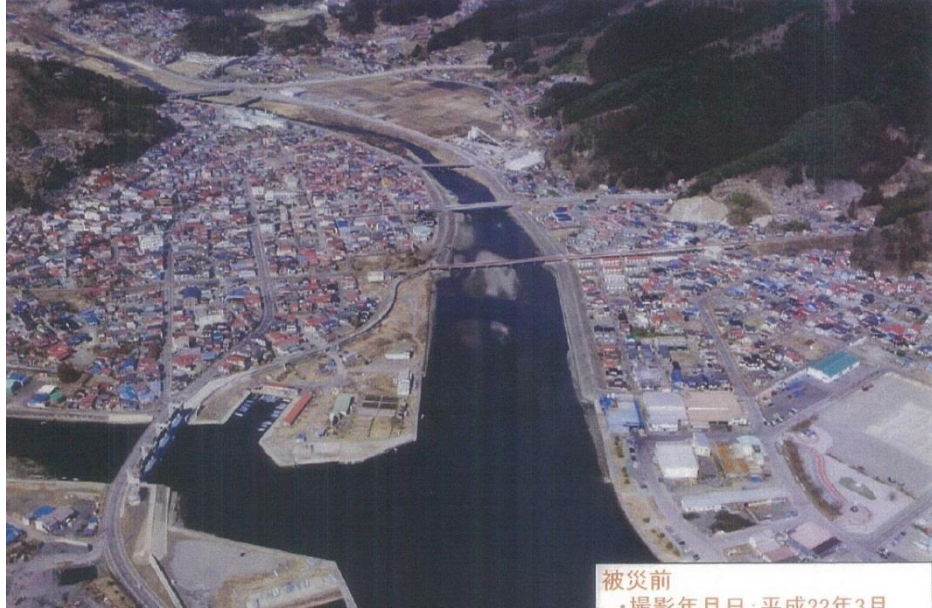
POTENT
MOVE
CAPE ME

The Biggest Coastal Hazard - Cascadia

Source: Chris Goldfinger - Oregon State



Passed 75% of the Recurrence Intervals
30% chance of a Magnitude 9.0 in the Next 50 Years



← Japan city before Tsunami

Japan city after Tsunami



This could be Seaside, Cannon Beach, Rockaway Beach, Pacific City, etc.





Sewer manhole pops out of ground

Waste Water Systems Fail



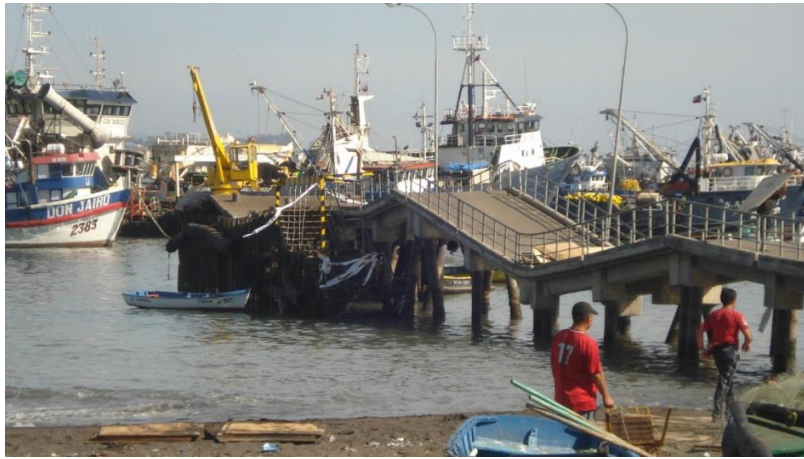
Electrical Systems Fail



Liquid Fuel Systems Fail



Road Systems Fail



Ports Damaged



**1964 Cannon Beach Bridge hit by tsunami
from Alaska**

Bridge Pieces



| | OR Total | WA Total | OR and WA Total |
|---|------------|------------|-----------------|
| Land area (square miles) | 98,386 | 71,303 | 169,689 |
| Miles of coastline | 296 | 157 | 453 |
| Population | 3,421,399 | 5,894,121 | 9,315,520 |
| Population exposed to tsunami | 22,200 | 50,190 | 72,390 |
| Residential buildings damaged (slight to complete damage) | 453,206 | 507,701 | 960,907 |
| Short-term human sheltering requirements | 523,027 | 410,127 | 933,154 |
| Short-term pet sheltering requirements | 315,071 | 254,357 | 569,428 |
| Mass feeding and hydration requirements (people) | 1,146,608 | 1,274,327 | 2,420,935 |
| Mass feeding and hydration requirements (pets) | 699,433 | 777,340 | 1,476,773 |
| Deaths | 4,226 | 8,440 | 12,666 |
| Injuries | 15,261 | 12,114 | 27,375 |
| Hospital patient evacuation requirements | 8,948 | 15,501 | 24,449 |
| Nursing home patient evacuation requirements | 30,144 | 65,249 | 95,393 |
| Building debris (Cubic Yards) | 18,747,845 | 13,174,243 | 31,922,088 |

Ok, you made your point. We know it's going to be bad.

We know, coastal erosion is currently happening and appears to be increasing. We know the earthquake and tsunami will be a disaster of all disasters.

We know there will be a disaster after the disaster.

We know we are going to be on our own for awhile.

So what are doing about all this??

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

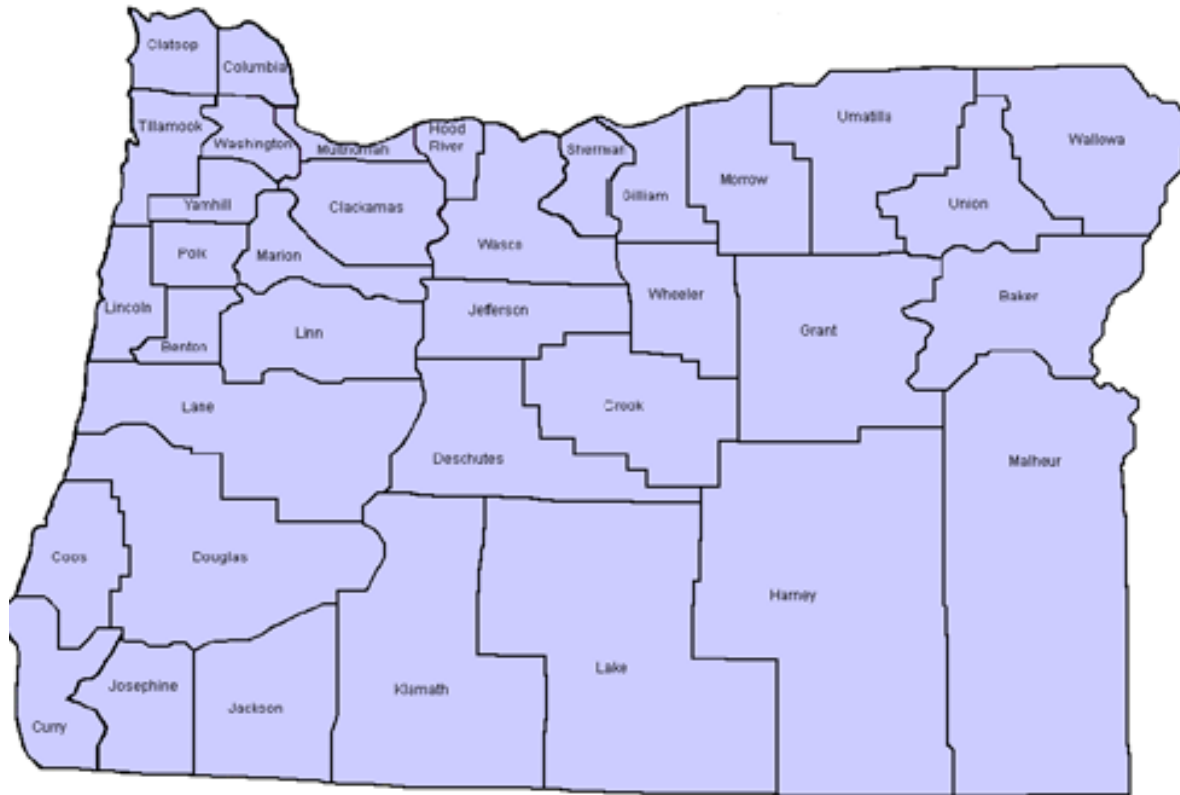
We all need to work together
to implement the provisions
In the Oregon Resilience
Plan that we can afford to
implement

So what else are you doing?

Develop Sister County Relationships

- 2014 – Develop 5 Sister County relationships
- 2015 – County's/City's work with their Boards/Councils to communicate this initiative
- 2015 – Sister Counties meet annually and their respective Board of County Commissioners
- 2015 – Develop Sustainment of Understanding of each County's leadership needs and resources
 - Develop and commit to yearly resource estimate to sustain Sister relationships
 - Find and obtain resources to sustain relationships
 - Annually and officially submit PWD's helicopter priority names and contact information to OEM and FEMA.
 - Sign Mutual Aid Agreements
 - Confirm all PWD staff meet ICS training requirements

Counties and Cities currently interested in participating



- Benton
- Lincoln
- Clackamas
- Marion
- Clatsop
- Tillamook
- Coos
- Umatilla
- Douglas
- Union
- Deschutes
- Wasco
- Jackson
- Lane
- City of Astoria
- Linn
- City of Redmond



DLCD has prepared guidance to assist local governments (and associated communities) in becoming more resilient to a catastrophic tsunami.

**Preparing for a Cascadia Subduction
Zone Tsunami:
A Land Use Guide
for Oregon
Coastal
Communities**

**Prepared by The Department of Land
Conservation and Development
April 2015**

DLCD has been a good partner in this work and would provide valuable technical assistance and support but as usual financial resources would also be needed. Providing DLCDC with grant resources to pass on to local governments will likely be critical for any of this resilience work to be accomplished.

The land use guidance focuses on three areas:

1. Life safety and adequate tsunami evacuation facilities:
2. Zoning/limiting uses: Encourages some community facilities and uses to be located out of harm's way (emergency service uses, hospitals, schools, potentially high density uses, and other key facilities).
3. Incentives: Provides options to provide land use incentives to develop in a more resilient way.

Emergency Volunteer Corps of Nehalem Bay

“The Emergency Volunteer Corps of Nehalem Bay is a deeply committed core of like-minded volunteers that have forged a remarkable private-public coalition in three small coastal towns which is one of the most visionary, innovative, and organized local emergency preparedness groups in the United States.”

- James Roddey, Earth Sciences Information Officer,
Oregon Dept. of Geology and Mineral Industries

Emergency Volunteer Corps of Nehalem Bay

Started from nothing and now:

- 112 trained **Community Emergency Response Team** members
(CERT -skilled support for first responders)
- 160 teen CERTs trained at Neahkahnne High School
- 133 **Map Your Neighborhood** Captains and Co-Captains
(community based neighbor to neighbor program)
- 42 **American Red Cross** volunteers
(critical for our shelter operations)
- 54 **ham radio operators** (our emergency communication)
- 33 Registered **Medical Reserve Corps** members
(trained medical personnel)

Emergency Volunteer Corps of Nehalem Bay

Funded by:

The Cities of Manzanita, Nehalem and Wheeler
Nehalem Bay Fire & Rescue

Partners with:

Nehalem Bay Fire & Rescue
American Red Cross
Neahkahnie School District
Adventist Health and Rinehart Clinic
Tillamook County Emergency Management
Nehalem Bay State Park

Passing HB 4098 will help local governments to continue to implement the State's Resilience Plan.

It will allow local governments an opportunity to acquire much needed Emergency Preparedness Equipment that we could not otherwise afford and supplements what some local jurisdictions already have in place.

Please support HB 4098



The End

Or Maybe In Oregon's Case

Just the Beginning