

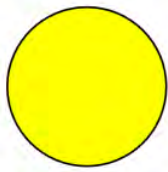
EARTHQUAKE RISKS & PREPAREDNESS



don't be scared,
be prepared!

Source: vimeo.com

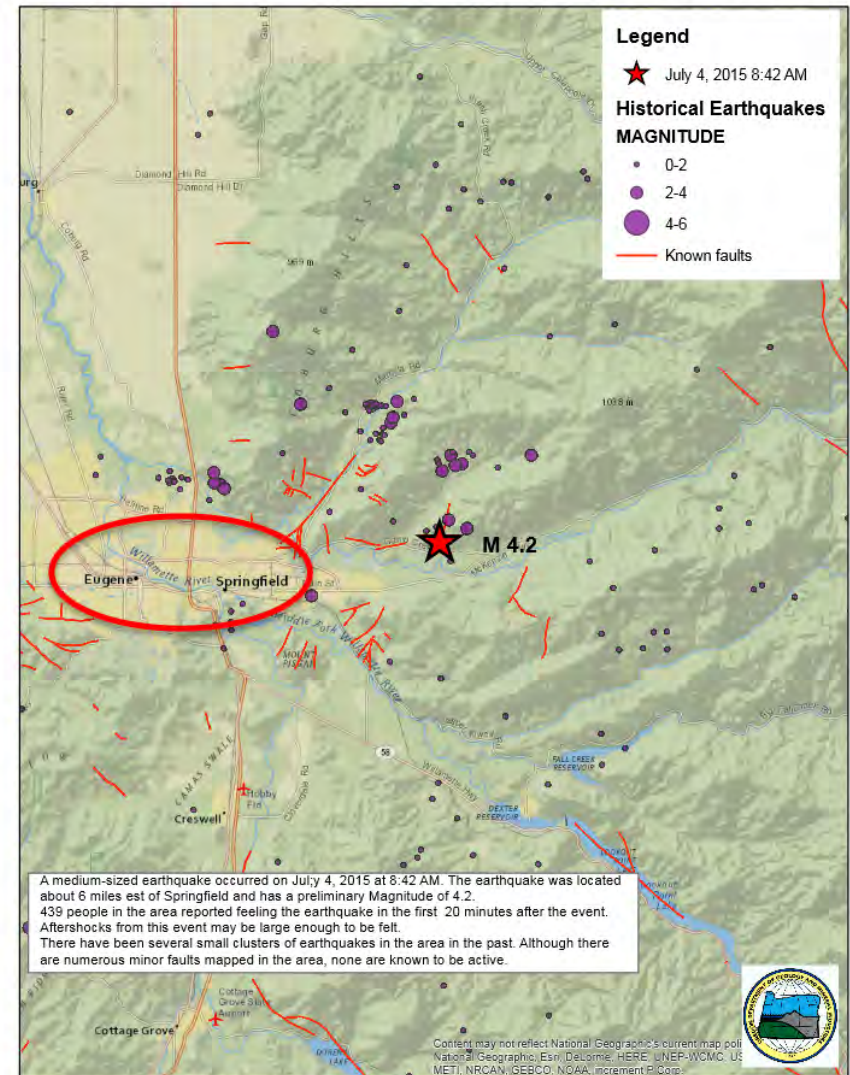
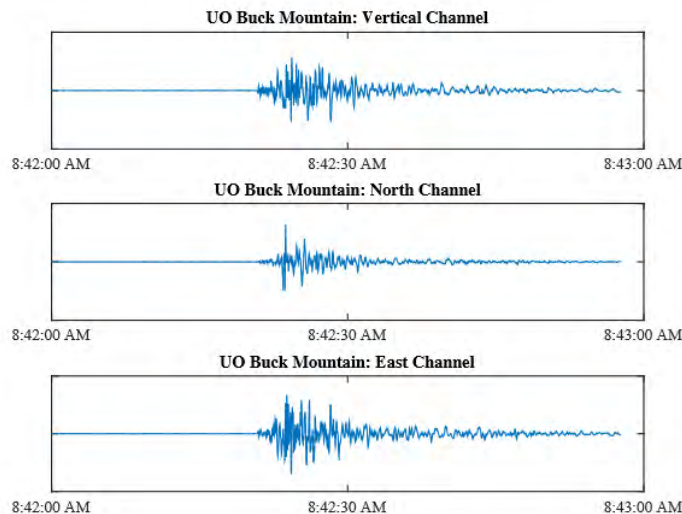
EARTHQUAKE HAZARDS



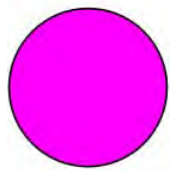
Crustal earthquakes

July 4, 2015 Walterville earthquake (**M4.2**)

- Depth generally <20 km
 - Occur throughout PNW
 - **Duration of shaking** can be seconds to tens of seconds
 - If large enough, local damage
 - Scott's Mills (**M5.2**) and Klamath Falls (**M6.0**) earthquakes (1993)

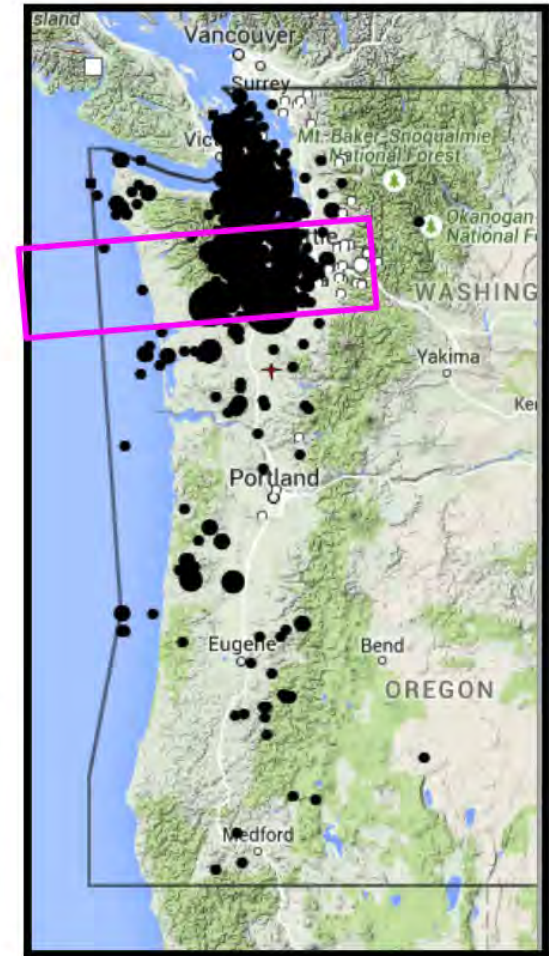


Source: UO Geological Sciences

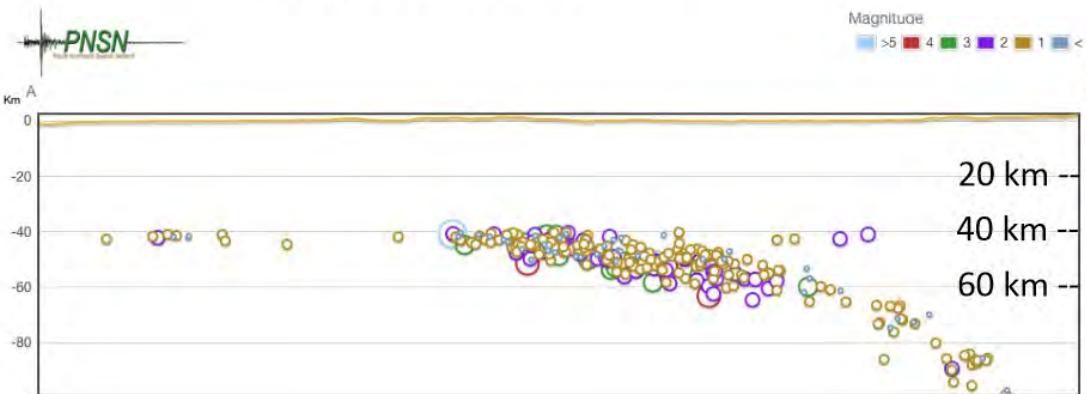


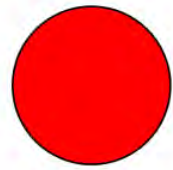
Deep earthquakes

- Depth > 40 km
 - Mainly under Puget Sound
 - **M7 events** in 1949 & 1965, plus 2001 Nisqually event
 - **Duration of shaking** can be tens of seconds
 - Can be large, local damage can be severe



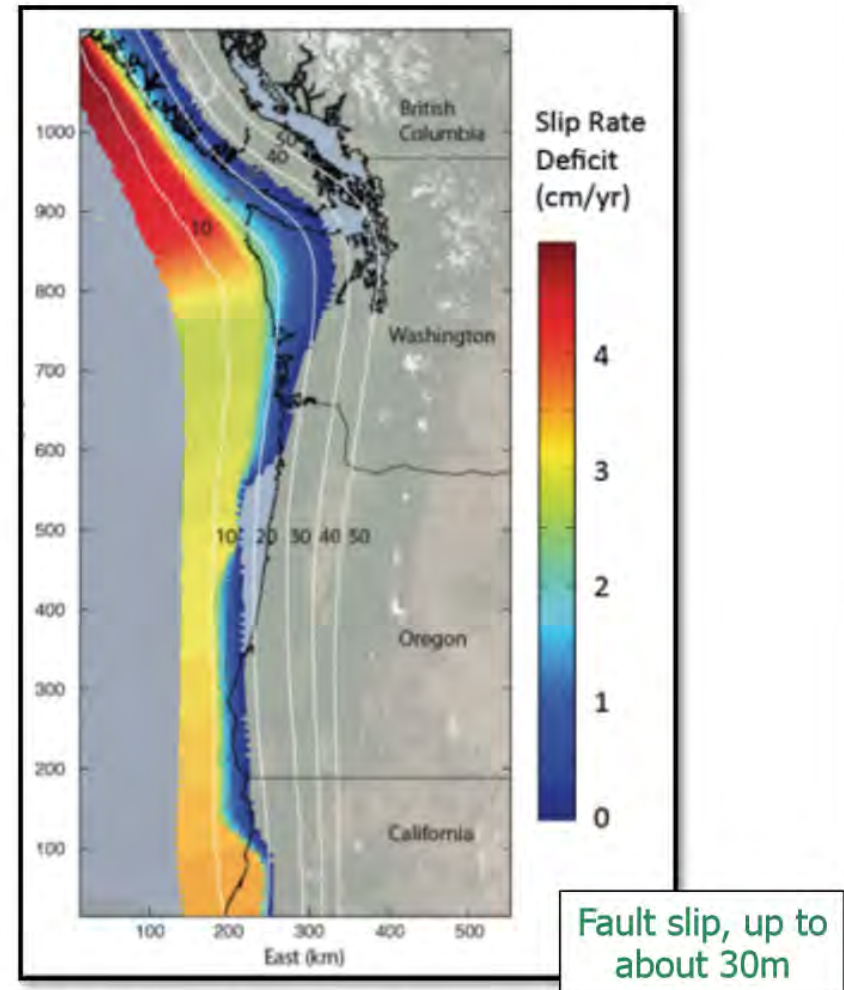
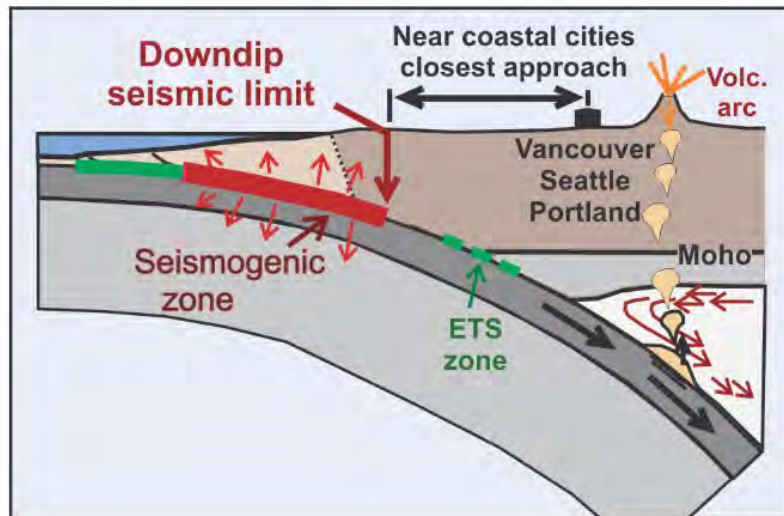
Since 2000





Subduction zone earthquakes

- Locked portion of fault:
 - **M9** event in 1700
 - Lies primarily offshore
 - Extends from N. California to Vancouver Island
 - **Duration of shaking** can be up 4 to 5 minutes



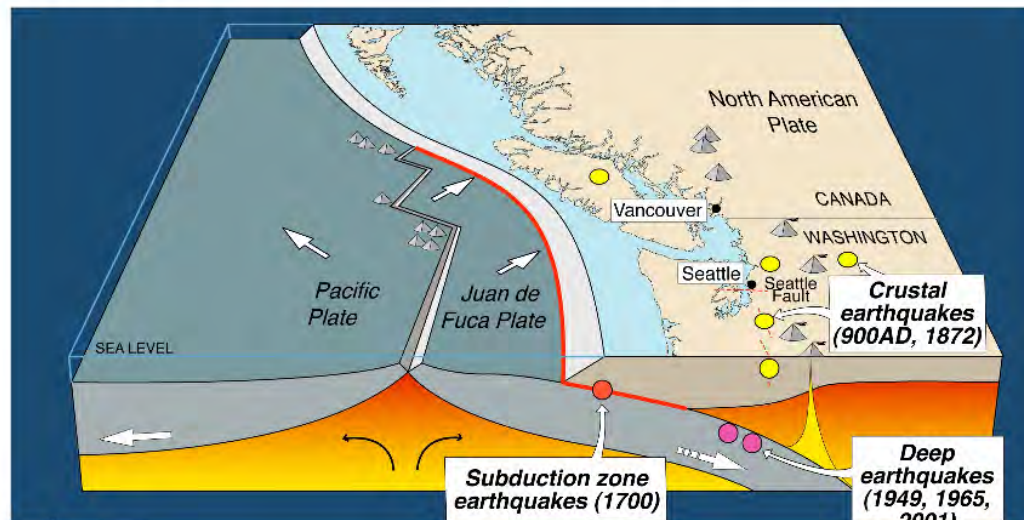
M9 fault rupture (UO model)

Source: UO Geological Sciences

50-year probabilities



- Cascadia M9: 10-20%
Southern Cascadia M8-9: 25-40%
- Deep $M \geq 6.5$: 84%
–(similar to 1949, 1965, 2001)
- Shallow Puget Sound and I-5 corridor $M \geq 6.5$
–Shallow in entire area: 15%



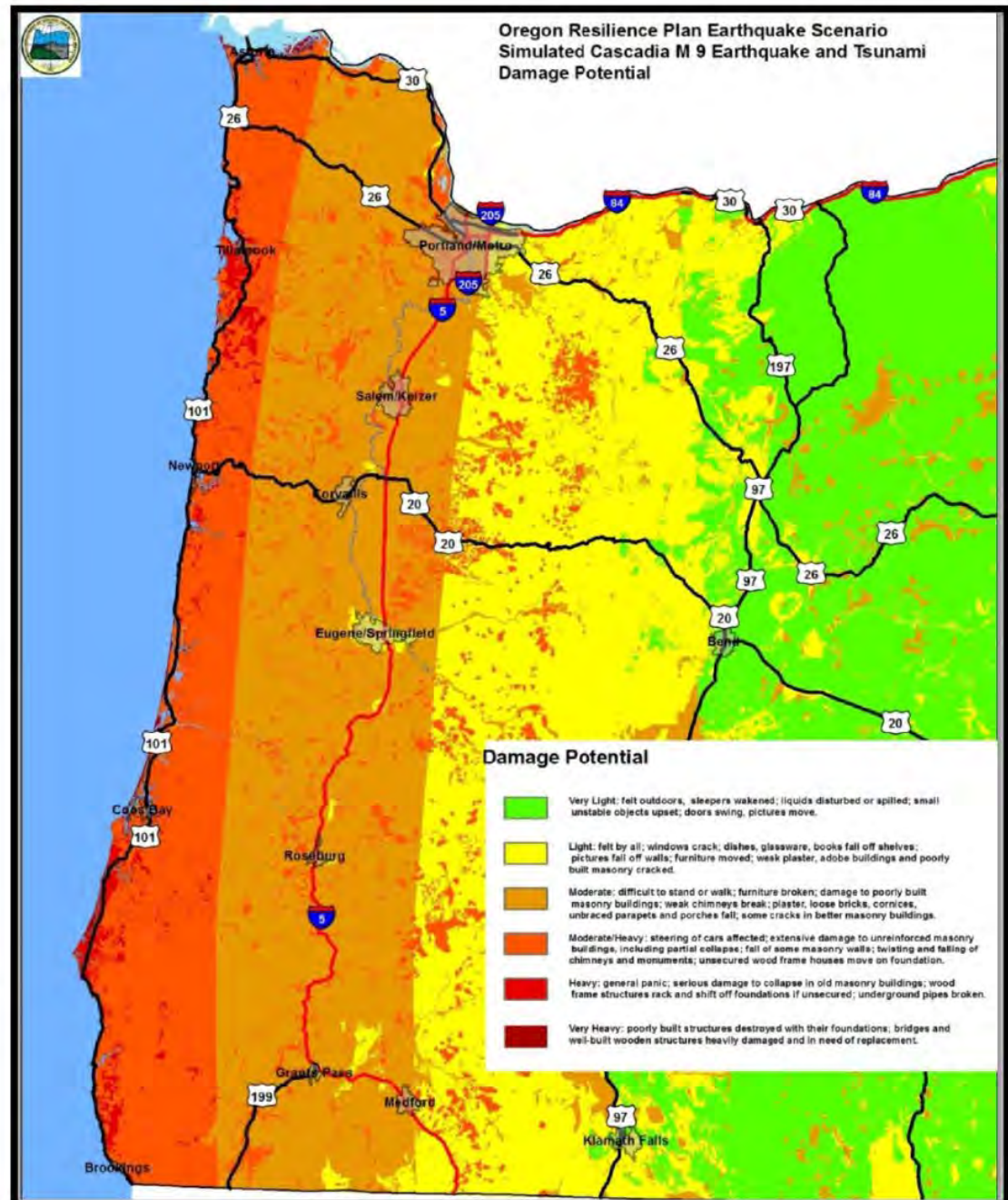
Damage Potential

Site response is important

Light: felt by all; windows crack; dishes, glassware, books fall off shelves; pictures fall off walls; furniture moved; weak plaster, adobe building and poorly built masonry cracked.

Moderate: difficult to stand or walk; furniture broken; damage to poorly built masonry buildings; weak chimneys break; plaster, loose bricks, cornices, unbraced parapets and porches fall; some cracks in better masonry buildings:

Moderate/Heavy: steering of cars affected; extensive damage to unreinforced masonry buildings, including partial collapse; fall of some masonry walls; twisting and falling of chimneys and monuments; unsecured wood frame house move on foundation.



RESILIENCE PLAN

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

- ☐ Save Lives
- ☐ Protect our Economy
- ☐ Preserve our Communities

☐ 169 volunteers

☐ \$0 Funding

☐ One-year Schedule

Source: Oregon Partnership for Disaster Resilience

CURRENT RESILIENCE GAP

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

Source: Oregon Partnership for Disaster Resilience

UO PLANS AND RESOURCES

UO RESOURCES

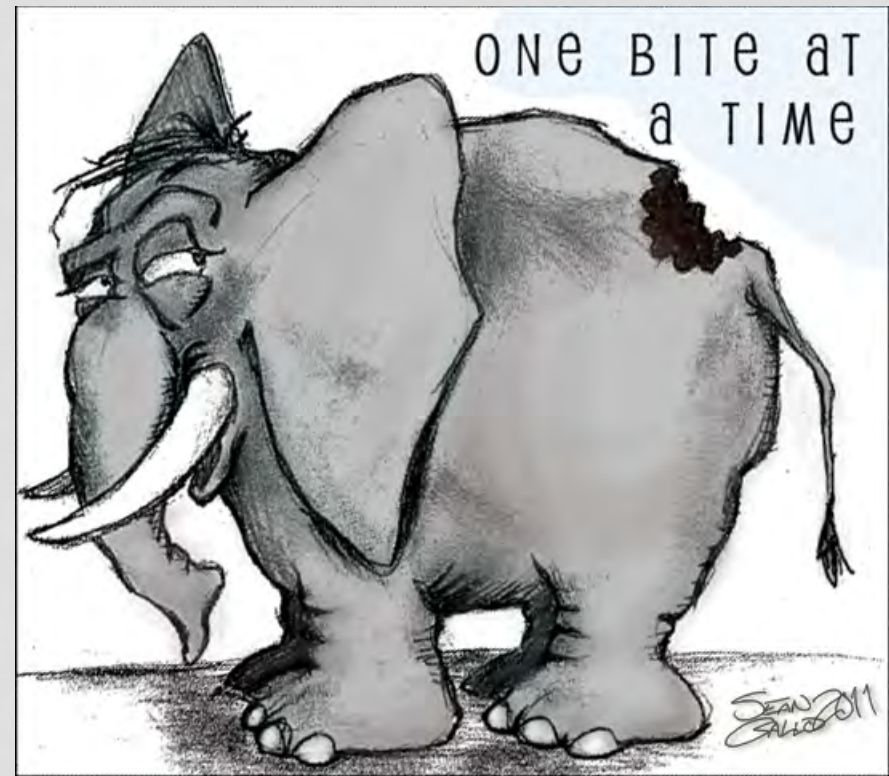
- Emergency Operations Plan
- Incident Management Team
- Structural Retrofits
- Non-Structural Retrofits
- Drop, Cover, Hold Drills

Floor and Ceiling Supports



NEXT STEPS ON CAMPUS

- Catastrophic earthquake planning
 - Accountability protocols
 - Academic, research, and business continuity
 - Higher education mutual aid
 - Campus recovery



Source: assimilationsystems.com

IMMEDIATE RESPONSE STEPS

DROP, COVER, HOLD ON

Get Your Ducks in a Row:
Be prepared for earthquakes.



Photo: Dean Walton, UO Libraries

EQ: WHAT TO DO

- Drop, Cover, Hold until ground stops shaking
- Have a Go Bag and Emergency Kit
- Evacuate the building. Stay out until cleared by building inspector
- Be prepared to be on your own for the first 48-72 hours. Our plan will start then.
- Information Station: University & 13th

School of Journalism
and Communication

Lawrence School
of Architecture and...

E 13th Ave

E 13th Ave

E 13th A

University St

Johnson Lane

Starbucks

Uni
of C

EMERGENCY GO BAGS AND KITS

EMERGENCY PREPAREDNESS @ THE OFFICE

Put together your Go Bag:

- Water
- Snacks
- Sturdy Shoes
- Flashlight & Spare batteries
- First Aid Kit





IF YOU ARE PREPARED FOR THE
zombie apocalypse,
then you are prepared for any emergency.

- Water, (1 gallon/per person/ per day for at least two weeks)
- Food, (at least a two-week supply of non-perishable food)
- Battery-powered or hand crank radio
- Extra batteries
- First aid kit
- Whistle
- Basic personal hygiene products
- Garbage bags
- Wrench or pliers to turn off utilities
- Can opener for food
- Cash
- Copies of insurance policies
- Extra clothes, tennis shoes

Week 10: First Aid

- ☐ Diarrhea medicine, allergy medications
- ☐ Vitamins
- ☐ Latex gloves
- ☐ Rubbing alcohol

☐ Speak to neighbors to find out who may need help during an emergency, such as the elderly or disabled. Discuss who can help your children if an emergency occurs when you are not home.

☐ Include extra clothes in your supply kit.

Week 11: Hardware & Supplies

- ☐ Fire extinguisher
- ☐ Pliers and work gloves
- ☐ Extra batteries for flashlight and radio
- ☐ Extra nails and screws
- ☐ Emergency blankets, rain protection

☐ Find out about your workplace's emergency preparedness planning.

☐ Include cash in the kit as you are able.

Week 12: Grocery Store

- ☐ Dry cereal and crackers
- ☐ Quick snacks (e.g. raisins, etc.)
- ☐ Assorted plastic storage containers with lids
- ☐ Instant coffee, tea, drinks, etc.

☐ Have an earthquake or severe weather drill at home.


Questions? Want more info?

Visit UO Emergency Management and Continuity on the web or contact us directly.


emc.uoregon.edu -- 541.466.8070

A few more things to keep in mind.

If you have pets... Remember that pets will need food and water during an emergency too. Be sure to store a few gallons of water for your cat or dog. Also be sure to have a pet carrier or leash available in case you need to leave your home.




If you have kids... Children are particularly vulnerable during an emergency so make sure you have plenty of supplies to keep them comfortable. Your kit should include their favorite snacks and some games or other activities to help keep them calm and happy if an emergency occurs.



Emergency Supply Kit

3-Month Calendar & Shopping List

Assemble everything you need for a robust emergency kit by purchasing or collecting a few items each week over the course of three months.



Enterprise Risk Services
Emergency Management & Continuity

WHAT DO YOU ALREADY HAVE?



Don't Forget...



WHAT DO YOU ALREADY HAVE?



Source: Saraandpatrick.blogspot.com

ADDITIONAL STEPS

@ THE OFFICE



Source: University of Christchurch

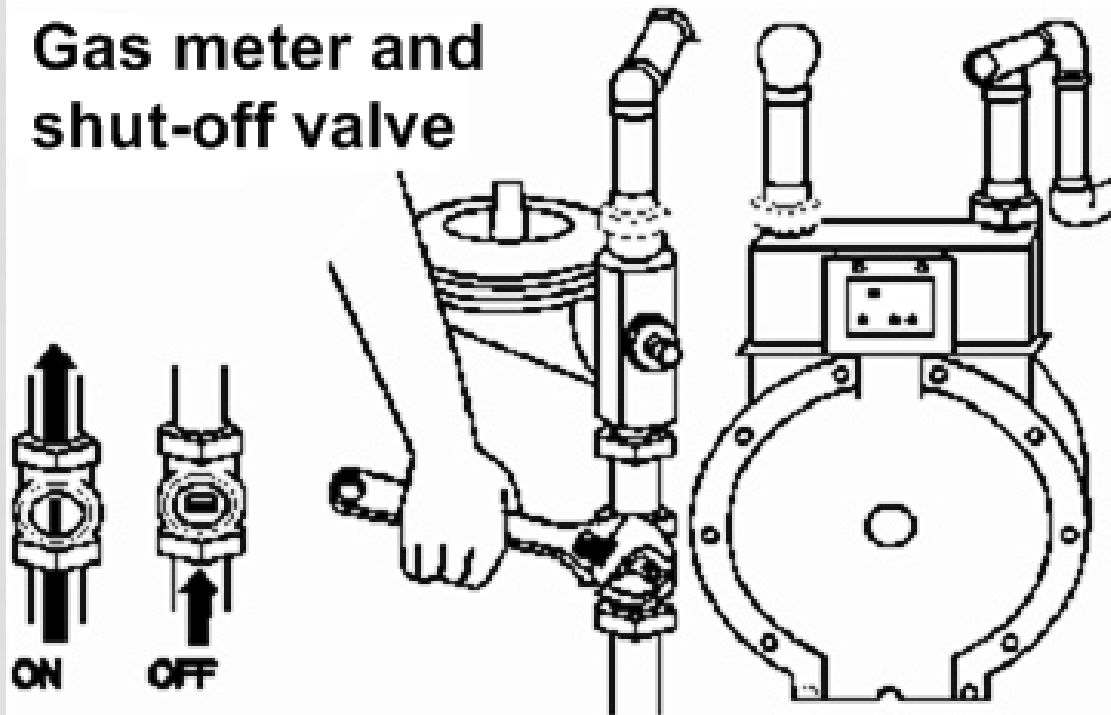
SECURE WATER HEATER



Source: plumbingcircle.com

TURN GAS OFF

Gas meter and shut-off valve



Have wrench stored in a specific location where it will be immediately available

STRAP FOUNDATION

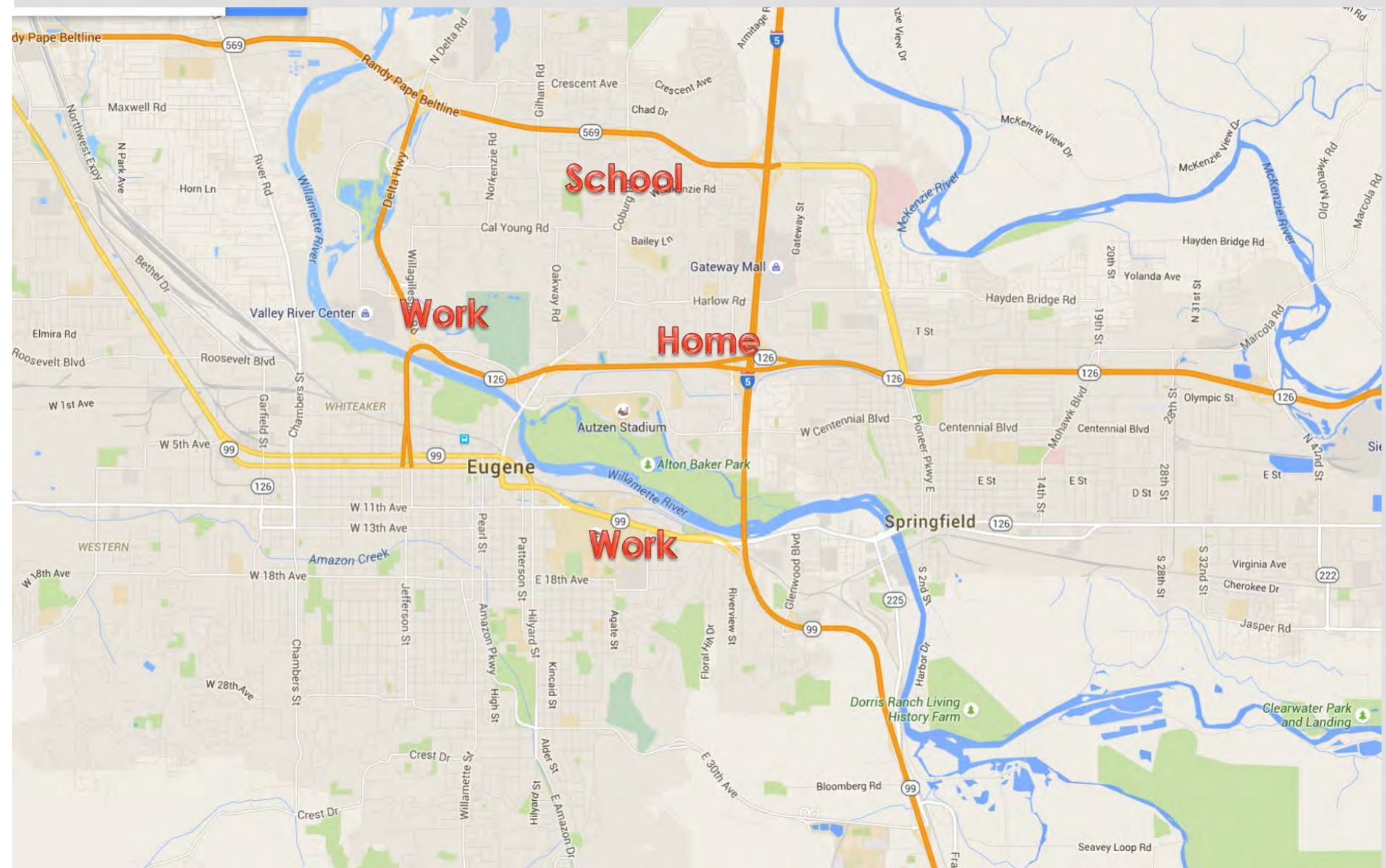


Source: California Foundation Works

SECURE CHIMNEY



Source: earthquaketech.com



PROTECTING ORIGINAL DOCUMENTS

- Deeds, titles, and other ownership records for home, autos, RVs, boats
- Birth certificates / naturalization papers
- Marriage license/divorce papers/child custody papers
- Passports and military papers
- Trust agreements
- Living wills, power of attorney and health care power of attorney
- Certificates of stocks, bonds and other investments
- Insurance policies
- Home improvement records
- Household inventory documentation

INSURANCE

- Not covered by standard homeowners, separate policy
- Deductible typical 10-15% of dwelling value
- Average annual cost in Oregon \$200 - \$300 annually
- Can also cover temporary housing costs

ADVANCED PREPARATION

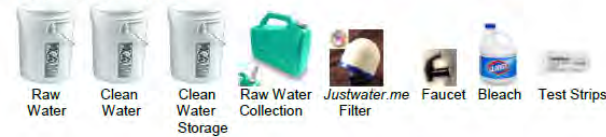


EMERGENCY WATER, SANITATION AND HYGIENE HOUSEHOLD PREPARATION SUPPLIES

WATER

Stored drinking water: 3 gallons per person minimum.

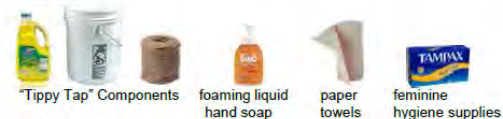
Water Treatment System:



SANITATION



HYGIENE



Source: Oregon Partnership for
Disaster Resilience

HOMEWORK

- Do Something, Do 1 Thing
 - <http://do1thing.com/>
 - Tell us about it – uoem@uoregon.edu
 - Send photos, stories, etc...Let us know if you are ok with it going on our FB page
 - <https://www.facebook.com/UOEMC?ref=hl>
- Tell someone else about it...

I'M TOO PREPARED

SAID NO ONE EVER

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