

Are we Earthquake Proof?

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THE PORTLAND OBSERVER

Past Earthquakes predict Portland's next Big One

Most disturbing to our collective subconscious is the recent string of earthquakes to strike without warning around the world; in Haiti, a 7.2 earthquake left 200,000 people dead, in Chile, an 8.8 earthquake killed 800, and in Japan, a 9.0 earthquake and tsunami left nearly 15,000 dead and 12,000 missing.

Our last big earthquake and tsunami occurred 311 years ago in 1700 along the Cascadia Subduction Zone, a 600 mile long earthquake fault stretching from offshore northern California to southern British Columbia.

Recent scientific evidence suggests that 75 percent of the forty giant earthquakes recorded by experts over the last 10,000 years have occurred irregularly between 300-500 years apart.

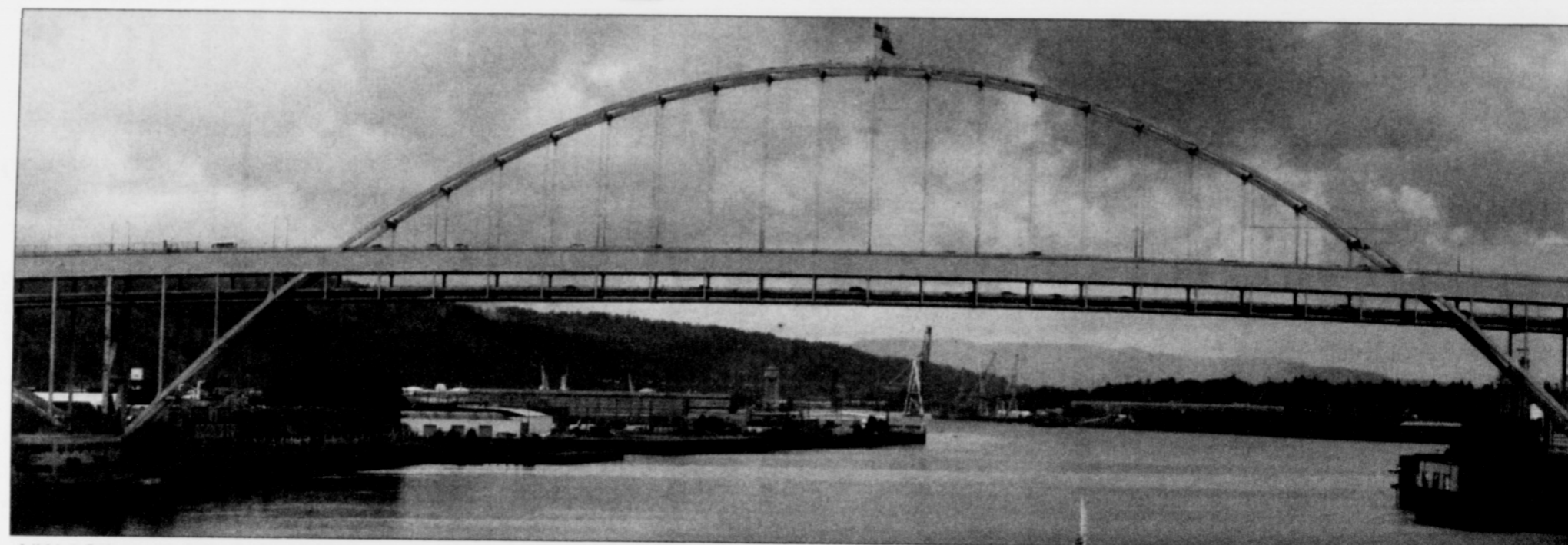
This means, we are well within the window for another big ground shaking and a worst case scenario could hit home as soon as tomorrow or within the next 50 years, experts say.

Oregon's next big one will occur when the Juan De Fuca plate – a region of the Earth's crust – suddenly thrusts under the North American plate, generating an earthquake with a magnitude up to 9.0, capable of dropping coastlines 1-2 meters and triggering tsunami waves over 60 ft high.

A Worst Case Scenario

Long seismic waves generated by quakes of such great magnitude would put much of Portland's ill-prepared infrastructure and electrical grid to shame, engineers and earthquake experts say.

Amplified ground shaking, large-scale landslides, and soil liquefaction near the Willamette River and



NW 13th and Glisan- Buildings constructed of brick and mortar or unreinforced masonry are considered seismic hazards and vulnerable to collapse by engineers and earthquake seismologists. Over a thousand buildings in the Portland Metro area need retrofiting.

other areas resting on ancient soils, would likely wipe out critical lifelines to our city, severing highways for emergency response and supplies, toppling unretrofitted bridges built before 1994, including the 1973 Fremont and most other spans, while leaving a path of destructive fires, hazardous materials, and debris.

"We're confident that a magnitude-9 earthquake will hit Oregon," Yumei Wang, geohazards team leader of the Oregon Department of Geology and Mineral Industries told the Oregonian. She expects coastal U.S. 101 will be inoperable and highways between Interstate 5 and the coast will be blocked by landslides, the article read.

Rigid, elongated objects like sewer and water lines, transmission towers, and anything relying on the electrical grid itself would almost certainly cease to function-- knocking out power and isolating citizens without communication, water and fuel for weeks.

A seismic study conducted by Dr. Franz Rad, PSU professor of Civil & Environmental Engineering, explained that in the Portland Metro area alone, over a thousand buildings built before 1985 in need of retrofiting and made of un-reinforced masonry could alone total a loss of life up to 13,000.

He concluded, "Killerearthquakes don't kill, killer buildings kill."

With a majority of injuries occurring inside buildings where unbolted structures fall atop people, schools, employers, and homeowners need to prevent such risks by bolting top heavy furniture like bookcases to walls, placing breakables low, and installing latches on cabinets.

Experts say, although costly, retrofiting unsafe buildings in Portland is extremely beneficial to saving lives. During extensive ground motion, concrete, steel-reinforced, and wood buildings should withstand, but homes built before the 1970s risk being shifted off foundation.

Understanding the Risk, Damage

Education, outreach, and understanding the risk are the most important things people can do before they get prepared, advises James Roddey, earthquake scientist and spokesman for the Oregon Department of Geology and Mineral Industries (DOGAMI).

Roddey spends most of his time at the Oregon coast educating the public --a better prepared community than Portland he says-- on emergency earthquake and tsunami evacuation.

"If you choose to ignore the idea of getting prepared for something like this, you've basically decided to become a victim," ex explained. "And if you don't share the knowl-

edge with family then you've decided they're are going to be victims, and if you don't share the knowledge with your friends and community - then they too, become victims."

Earthquake experts emphasize that preparation is the responsibility of individuals and families, and people should not rely on the government, police, fire departments, emergency response units, and technology to protect you.

Blackouts and a severely damaged infrastructure mean nobody is coming to help you, your family or your neighborhood for possibly weeks. It took a week for the Japanese to begin a rescue effort and they are the best prepared country on earth, said Roddey.

Although it's going to be scary, you and your family can prepare. How well you prepare determines the quality of life you have after something like an earthquake is over, and if you're prepared for this, you're prepared for any type of disaster.

Preparation and Survival

Who is going to save us? Who will provide food, water, shelter, and medical care? You may be surprised by the answer: You and your neighbors. The following are seven steps that may save your life during and after an earthquake and tsunami,

(2011 Earthquake Symposium, Portland State University).

Three simple steps to prepare for an Earthquake (recommended by ReadyAmerica):

1. Get a Kit—If you must survive on your own, you will need food, water, and supplies to last for at least 3 – 10 days. It's better to have your own kit prepared in case disaster relief workers are delayed, and keep in mind that electricity, gas, water, sewage treatment, and telephones may be cut off for days.

2. Make a Plan—Your family may not be together when disaster strikes, so it is important to plan in advance: how you will contact one another; how you will get back together; and what you will do in different situations? It's a good idea to have an out-of-town contact to call and tell of your status.

3. Be Informed – Prepare your home. Learn more about the potential emergencies that could happen where you live and the appropriate way to respond to them and knowing what to do during an emergency is an important part of being prepared and may make all the difference when seconds count.

For more safety information, visit www.shakeout.org/Oregon, www.earthquakecountry.org, www.ready.gov/america/index.html, www.pdxprepared.net, www.fema.gov/about/process or at visit your local Red Cross office.

Non Profit Spins Wheels of Life

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One program that is evolving for the Community Cycling Center is the Understanding Barriers to Bicycling project, which began in 2008 with a needs assessment to building a healthy community. According to both Graves and Tettah, the effort has driven every program they have created since.

The mission was carried out by first investigating the cultural and transportation histories of north and

northeast Portland and improving the organization's own cultural competence, and then by reaching out to meet the needs of the diverse populations within the community.

One such effort between the Hacienda Community Development Corporation, the New Columbia community, and the cycling center worked to reduce the sense of social isolation that immigrants often experience within their new communities, as well as increase a more attainable healthy

environment.

Currently, the Community Cycling Center is working with these partners build more places for bike storage, which makes biking more practical for many commuters.

"We're focusing our education program and advocacy initiatives with the community out there because the need isn't just about bicycles," said Graves. "The need is also for people to come together and work together to build community."

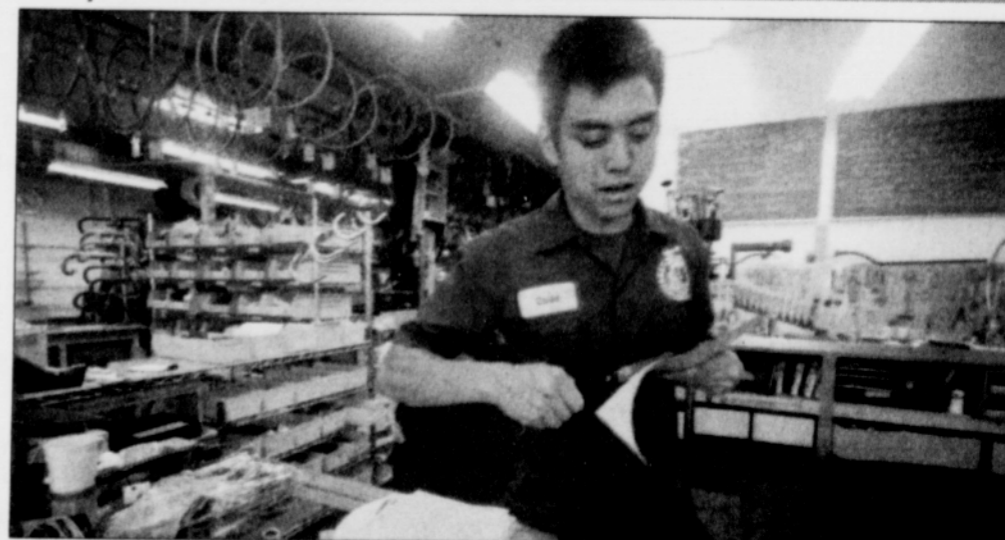


PHOTO BY MINDY COOPER/THE PORTLAND OBSERVER
David Kurushima, 26, works as a bike mechanic and instructor at the Community Cycling Center, a non-profit bicycling shop on Northeast Alberta Street.