



Earthquake planning in Multnomah County: What if 'the big one' hit today?

Deadly earthquake in China

In this photo released by China's Xinhua news agency, people carrying their belongings walk in quake-damaged Gucheng Village in southwest China's Sichuan Province after an April 2013 earthquake. Experts say Oregon is due for "the big one" any time now, and the state's infrastructure is inadequate to withstand such a powerful quake. *(The Associated Press)*

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on February 04, 2014 at 1:25 PM, updated February 04, 2014 at 3:36 PM

When it comes to earthquake preparedness, **Multnomah County** – and the entire state – are facing a wide resilience gap.

That's the term earthquake preparedness experts use to describe the time it takes to restore essential services after a big quake hits. In Oregon, where **we're due for an enormous earthquake up to magnitude-9**, it could take up to three months just to restore electricity in the Willamette Valley.

After the 2011 quake and tsunami ravaged Japan, Oregon's public officials responded with renewed attention to planning for "the big one." In Multnomah County, plans are underway to improve public infrastructure and formulate detailed plans for how service agencies will respond when an earthquake hits.

But closing the resilience gap in Oregon and surrounding states will be a decades-long effort costing trillions of dollars.

During a briefing Tuesday before the Multnomah County Board of Commissioners, Kent Yu, one of the state's lead earthquake preparedness consultants, said it's worth the investment. For example in New Zealand, a utility company reported saving \$10 for every \$1 they spent on retrofitting infrastructure to withstand an earthquake.

Oregon, which has experienced about 41 large earthquakes in the past 10,000 years, is overdue for another.

"It could happen tomorrow or it could happen in 200 years," Yu said. "We just don't know."

Here's what the gap would look like if "the big one" hit today.

Bridges:

Of the eight major Willamette River bridges in Multnomah County (not including the Sauvie Island or Sellwood bridges), four would likely collapse if a 9.0 magnitude earthquake hit. Two would face extensive damage, and **only the I-5 Bridge and the Fremont Bridge would experience moderate damage.**

Many of the bridges are approaching the end of their intended lifespan, Yu said, which gives local leaders with an opportunity to rebuild with earthquake preparedness in mind.

"It's up to us now to lay down this generational investment so the citizens living in the county can benefit from this infrastructure," he said.

Private homes/people:

Many older homes in Multnomah County, which aren't retrofitted to withstand an earthquake, would slide off their foundations. **Portland City Commissioner Steve Novick** has launched an effort to find grant money to offer financial incentives for people to earthquake-proof their homes.

Yu urged Multnomah County leaders to seek other ways to encourage private citizens to get prepared, from reinforcing their homes to stockpiling supplies.

"If every person in Multnomah County just had one gallon of water, that's 760,000 gallons you have in reserve," he said.

Public buildings:

Of Multnomah County's 10 largest public buildings, only one – the Juvenile Detention Center – was built with earthquake preparedness in mind. And even that building, Yu said, could probably use an upgrade.

"Most of our buildings were not designed to resist this type of earthquake," he said.

Statewide, it's expected that **healthcare facilities wouldn't return to full operations for 18 months.** Emergency operations centers wouldn't recover for four months, and other operations, such as police and fire, schools, stores and banks, would also face long recovery times.

Roads:

Top-priorities highways such as Interstate 5 would take between six and 12 months to achieve partial restoration.

Utilities:

Because many of Multnomah County's utility lines run under the Willamette River bridges, we can expect them to suffer major damage along with the bridges. That means residents could face long periods – up to a year -- without running water, electricity, or sewage treatment.

The good news:

If the county invests in infrastructure, they can make a vast impact on the county's ability to bounce back from an earthquake, Yu said.

Take, for example, the 2011 earthquake in Japan. In inland zones, Japan recovered 90 percent of its power supply within 10 days. That's largely because the country's infrastructure was built to modern earthquake preparedness standards, Yu said.

Multnomah County could achieve similar success with major overhauls of both public and private infrastructure. Doing so, he said, will take time.

"You can't eat this whole problem at once," Yu said. "You don't have enough resources to solve it, but that's okay. If we have one bit at a time, eventually we can finish this elephant."

--Kelly House

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