

Earthquake Regional Impact Analysis

Summary of the Study



Overview

Scientific evidence shows us that a Cascadia Subduction Zone earthquake could happen at any time. The Oregon Department of Geology and Mineral Industries (DOGAMI) has released a new study that examines potential impacts of a Cascadia earthquake for Clackamas, Multnomah, and Washington Counties.

By using updated data and the latest mapping and modelling techniques, the study greatly improves our understanding of potential earthquake impacts for our region – and for each neighborhood within the counties that were studied. These new estimates of building damages, injuries and fatalities, and people needing shelter helps us plan and prepare for potential impacts, and take action to reduce them.

View the full report at <http://www.oregongeology.org/pubs/ofr/p-O-18-01.htm>. The next phase of the study will look at potential earthquake impacts for Columbia and Clark Counties.

Key Findings

Impacts will be much larger if the earthquake happens during:

- The daytime when more people are at work/school, occupying more vulnerable building types.
- The rainy season when soils are saturated, which would lead to more liquefaction and landslides.

Impacts will be much smaller if the earthquake happens:

- At night when more people are at home in wood-frame structures.
- During the dry season when soils are less saturated, which would lead to less liquefaction and fewer landslides.

Assuming the worst-case scenario (a M 9.0 earthquake, during the day, during the rainy season), the following impacts are estimated for the three counties studied (Clackamas, Multnomah, and Washington):

- As many as 27,000 injuries ranging from minor to fatal (2% of population).
- As many as 85,000 people in need of shelter (5% of population).
- As much as \$37 billion in building damages (14% of building value lost).
- As much as 17 million tons of debris from damaged buildings.

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Key Takeaways

- We now have much better data for the Counties studied. It allows each neighborhood to better understand their hazards and plan for estimated impacts.
- We know that impacts will be greater during the daytime on a weekday. We may not be at home when the earthquake strikes.
- We know that impacts will be greater during the winter months.
- Some areas will fare better than others in terms of direct impact, but we will all be affected by damage to roads, electric systems, and other services. We will all need to reach out and help those who are impacted the greatest.

How You Can Prepare

We can't prevent an earthquake, but we can reduce our risk and increase our resilience by taking preparedness actions. Every action you take helps.

- **Know your hazards.** See earthquake and other related hazards for your neighborhood at Oregon HazVu: www.oregongeology.org/sub/hazvu. See the full detailed study about estimated earthquake impacts in your area at www.oregongeology.org/pubs/ofr/p-O-18-02.htm.
- **Make a plan.** Create plans with your family, neighbors, and coworkers based on the hazards and potential impacts for the areas where you live and work. www.ready.gov/make-a-plan
- **Make a kit.** Store enough supplies to take care of your household for at least two weeks. Water, food, and first aid supplies are a good start. www.redcross.org/local/oregon/preparedness
- **Increase your home's earthquake safety.** Identify hazards around the house (what can fall, break, or move during an earthquake) and fix them. Ask your landlord or building manager about safety plans. If you own your home, consult a geotechnical professional about seismic retrofits and other property improvements. www.ready.gov/earthquakes
- **Know your neighbors.** Since first responders will be overwhelmed, neighbors will likely be the first ones to help victims. Get to know your neighbors and contact your local Community Emergency Response Team (CERT) or Neighborhood Emergency Team (NET). www.publicalerts.org
- **Become a resilience champion.** Advocate for earthquake retrofits and preparedness planning at your school, workplace, and place of worship, and with your community leaders. Government and non-government entities are working hard to advance preparedness, and they need public support.

Additional resources: www.portlandoregon.gov/pbem/46475

Questions?

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