

# PREP SCHOOL

Are Portland's schools ready for a MAJOR earthquake? BY ALICE CALLAHAN

Here in the Pacific Northwest, we're living on borrowed time. The region is due for a massive earthquake, followed by a devastating tsunami on the coast. In fact, scientists say there's a 15 to 20 percent chance that a magnitude 9.0 mega-quake will hit in the next 50 years.

Our region has a long history of huge earthquakes caused by the rupture of the Cascadia Subduction Zone off of our coast. Studies show that Cascadia earthquakes have occurred on average every 350 years, with the last one in 1700. After the next one hits – as it inevitably will – Portland will look vastly different. Buildings will have crumbled and bridges will have collapsed. The electric grid will be dark, natural gas lines will be broken and the water supply will be shut off. Both landlines and cell phone communication will likely be down.

Okay, now take a deep breath, and don't panic – we can prepare for this. During and after an earthquake, our kids will depend on us to keep them safe. We can be earthquake ready at home (See "Preparing for an Earthquake at Home" on page 17), but what if the big one hits during the school day?

**Are Portland-area schools ready? To answer that big question, let's look at these five smaller ones:**

## 1 Can our school buildings withstand an earthquake?

Most of Oregon's schools were built long before geologists knew about the sleeping giant beneath us, so they weren't designed to survive a Cascadia earthquake. In the city of Portland alone, 45 schools (both public and private) are built of unreinforced masonry, and their brick walls are expected to be among the first to collapse during the shaking. A 2007 study showed that about half of schools statewide are at high risk of collapse during a Cascadia earthquake, and the state guesses that many wouldn't be fit to reopen for at least 18 months.

Making these buildings safer means retrofitting, rebuilding, or replacing them. Many school districts have started this long and expensive process, with funding from local voter-approved bonds and a state Seismic Rehabilitation Grant Program, which just awarded a round of funding totaling \$125 million to 100 Oregon schools this April.

Yumei Wang, a geotechnical engineer at the Oregon Department of Geology and Mineral Industries (DOGAMI), calls Portland Public Schools (PPS) an "early adopter" in seismic safety, because they got right to work retrofitting and modernizing schools using funds from bonds passed in 1995 and 2012.

But with 91 schools, PPS is also the largest school district in the state, with buildings that are 77 years old on average, which means there's a lot of work left to do. "Portland loves their buildings to look old as can be on the

outside and function like they were built yesterday on the inside, and that's costly," says Jerry Vincent, the district's chief operating officer. "Otherwise, from a safety standpoint, we'd scrape a lot of the brick off these buildings so it doesn't fall and hit someone, but that's not what Portland wants."

Despite these challenges, PPS has made significant progress, completing 84 seismic improvement projects so far using bond funds. These have mainly been summer projects aiming to fix some of the most dangerous structures, but they generally don't bring buildings up to modern seismic safety code. A few schools have been more fully modernized to current seismic standards, including Roosevelt, Franklin, and Grant high schools, and four more schools will get this treatment thanks to a bond approved in May. Vincent says that the district is planning to include at least some space in each of those schools that will be built to higher seismic standards – usually a gym or auditorium – so that they could be used as community shelters after a big earthquake.

In Beaverton, the school district is determined to design all their new school buildings to this higher seismic standard, with a goal that the buildings will be safe and usable for shelters within 72 hours of a major earthquake and ready to reopen for classes within 30 days. Using funds from a 2014 bond, Beaverton has built two new schools and plans to build five more. In the first two buildings, the district estimates that meeting the higher seismic standards and including features like emergency generators and places to plug in portable water tanks added a mere 1 to 2 percent to the cost of the new buildings. (Though that adds up more quickly in a district the size of PPS.)

While there is plenty more work to be done to get our schools ready for a Cascadia earthquake, Wang says she's optimistic for Oregon. "We have come a long way in identifying the risk and establishing very tangible means of helping to reduce the risk," she said.

**How you can help:** Learn about the seismic safety ratings of your children's schools through the DOGAMI website and by talking with school administrators and district officials. Advocate for more funding through district bond measures and state funding, including the state's Seismic Rehabilitation Grant Program.

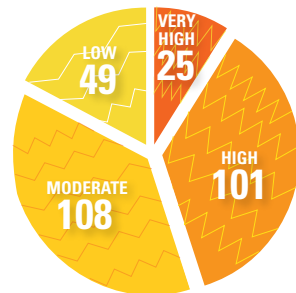
## 2 Are there hazards inside the building?

Fixing our school buildings may take years, but there are other ways to make schools safer that can be done right away at little expense. It's also an area where parents can help, says Susan Romanski, U.S. director of disaster preparedness and community resilience for Mercy Corps and co-founder of Parents4Preparedness, a Portland-based parent advocacy group focused on school earthquake safety. Parents can help identify nonstructural hazards like bookcases, filing and supply cabinets, and large rolling desks – "anything that can slide, tip over, fall, or collapse during an earthquake," Romanski said. Bookcases can be anchored to walls, latches can be added to cabinet doors, and large pieces of furniture can be placed strategically, away from evacuation routes. PPS emergency services manager Molly Emmons says that last year, the district hired a contractor to remove all the big old TVs hanging on classroom walls (which hadn't been used in years), and every fall, she sends a checklist to teachers asking them to arrange their classrooms with an earthquake in mind.

**How you can help:** "One of the most important things for parents to do is to talk to teachers and the administration about earthquake preparedness in a supportive and collaborative way," said Romanski. Parents are usually most effective if they work through the PTA/PTSO, so that's a great way to get involved.

**Portland Metro Area**  
Number of K-12 schools that could collapse in a major Cascadia earthquake, estimated by DOGAMI in 2007

includes Beaverton, Cenntennial, David Douglas, Gresham-Barlow, Hillsboro, Lake Oswego, North Clackamas, Parkrose, Portland, Reynolds, Riverdale, Scappoose, Tigard-Tualatin school districts



The original 2007 seismic scores, as well as yearly updates from each school district, can be found on DOGAMI's website, [oregongeology.org/sub/projects/rvs/activity-updates/status.html](http://oregongeology.org/sub/projects/rvs/activity-updates/status.html).

## For more information about preparing for an earthquake:

Oregon Office of Emergency Management:  
[oregon.gov/oem](http://oregon.gov/oem)  
OPB's Unprepared series:  
[opb.org/unprepared](http://opb.org/unprepared)  
PREP: [preporegon.org](http://preporegon.org)



# The 2017 Great Oregon ShakeOut will be held on October 19. Your kids will be doing earthquake drills in school, and it's a great opportunity to practice how you'll drop, cover, and hold on at home, too.

### 3 Do kids, school staff and parents know what to do?

There is nothing like a good old-fashioned drill for practicing what to do in the case of an emergency, and all PPS schools are required to “drop, cover, and hold on” in earthquake drills twice per year. Parents should plan how they would pick their child up from school after an earthquake and have a friend in the neighborhood listed with the school as someone who could pick up if they can't, especially if they work on the other side of the Willamette River.

PPS offers Neighborhood Emergency Team (NET) training to staff each year, and Emmons says they're also implementing several teen training programs at high schools to teach students disaster response skills. “We have capable students in our buildings, and I find that by giving kids jobs, sometimes that can minimize their anxiety,” she said. She also just started a PPS amateur radio club for staff, with the hope of expanding it to students and parents in the future, because ham radio may be the only way to communicate after a Cascadia earthquake.

**How you can help:** Make a family earthquake plan together. Kids need to know that the school will take care of them after a disaster and that their parents have a plan to pick them up as soon as possible.

### 4 Does the school have adequate emergency supplies?

All classrooms in PPS have emergency buckets with some basic supplies, but beyond that, Emmons says the district hasn't been able to store much emergency food and water in case schools need to care for students for a while. It's challenging to find space for supplies, ensure they don't go bad, and protect them from theft and vandalism. Emmons says that where schools have successfully stockpiled supplies, this has often been a parent-led initiative. At some schools, parents and the PTA make sure that every child has a “comfort kit” with a snack, water, and a comforting photo or toy. At others, they collect bins of granola bars and bottled water at the beginning of the year and use them for field day snacks at the end of the year. At ACCESS Academy, where kids come from all over the district and parents may not be able to pick them up right away, the PTA is storing emergency supplies in a shipping container on the school grounds – a first for the district.

**How you can help:** Brainstorm creative ideas with your PTA and school administration for how to stockpile emergency supplies at your child's school.

### 5 Is the neighborhood resilient?

Susan Romanski emphasizes that being prepared is not just about emergency supplies. After a Cascadia earthquake, first responders and disaster workers will be overwhelmed, and neighbors will count on each other for help. Parents can help now by talking with neighborhood businesses, like grocery stores and restaurants, who might commit to donating food or other supplies to schools after a disaster. Romanski recommends that each school have a network of parents and neighbors, including members of the NET, who are background-checked and can come help at school after a disaster.

**How you can help:** Get involved! Join Parents4Preparedness, and consider getting emergency response training through the NET and/or Community Emergency Response Team (CERT) programs so that you can be a helper in your neighborhood.

Alice Callahan, Ph.D., writes about health and science from Eugene, where she and her family are also busy preparing for a Cascadia earthquake.



## PREPARING FOR AN EARTHQUAKE AT HOME

Until recently, my approach to emergency preparedness was to fill a crate with cans of food, flashlights, a first aid kit, and duct tape, and then try not to think about it too much. I knew it wasn't enough, but the constant scramble of life with young kids always seemed to beat my good intentions of getting more organized.

But I also know this: If the earthquake happened tomorrow, my first thought would be “Where are my kids?” My second thought? “We're not ready.”

It's hard to come to grips with a disaster so huge in magnitude, so unpredictable in timing, and for which the evidence that it's coming literally lies beneath the surface. But the science is certain that it is coming, if not in our lifetimes, then probably in our children's. If we prepare now, our kids will not only be safer, they'll also grow up in a culture where preparedness is second nature.

All of the experts I interviewed for this article told me that one of the best things concerned parents can do is prepare for an earthquake at home. Based on the number of hours our kids spend at school and at home, it's more likely that they'll be at home when an earthquake hits, and either way, it will be our job to take care of them in the aftermath.

In other words, all the questions about schools are ones that we should also be asking ourselves: *Can our home withstand an earthquake? What hazards are inside? Does our family know what to do? Do we have adequate emergency supplies? Is our*

*neighborhood organized for an earthquake?*

I know our family has a lot of work to do. We're working on beefing up our emergency kit to include a full two weeks' worth of food and water, but this is just one piece of preparedness. We're walking through each room of our home, looking for potential hazards that we can fix ourselves. For example, we've removed the framed photos from our hallway (and are now saving up for canvas prints) so that the path from our bedrooms to the front door won't be littered with glass after an earthquake. We're rearranging my daughter's room so that her bed isn't so close to the window and buying some simple straps for securing things like my computer monitor and the refrigerator. Next up: taking a closer look at our home's foundation.

We're also working on forming a more thorough family plan, thinking through different places we might be when an earthquake hits and how we can respond in each one. And learning more about our earthquake risk is also inspiring me to introduce myself to more neighbors. I'd like to work toward a neighborhood plan, so that we can be organized about checking on and helping each other in the aftermath of an earthquake – or any other disaster. It takes time, and it doesn't have to be done all at once, but it's a good investment in our family's safety, our neighborhood's resiliency, and our peace of mind. – A.C.

The author with her daughter, C.J., enough food to feed their family for two weeks, and part of their water and other emergency supplies.

Check out our tips online at [pdxparent.com/earthquake-prep-kids](http://pdxparent.com/earthquake-prep-kids)