

Pacific Northwest deemed unprepared for Cascadia Subduction Zone megaquake or tsunami

Tim Fought and Alicia Chang, Associated Press, 3-28-11

CANNON BEACH, Ore. - When the big one hits the Pacific Northwest, the best place to escape the wall of water moving at jetliner speed from 50 miles off the coast may be a City Hall on stilts.

Once the ground finishes two to four minutes of lurching and shaking, residents and tourists in Cannon Beach would flock to the refuge on concrete columns 14 feet above the waves racing beneath.

They would ... if the refuge gets built. There's nothing like it from Northern California to British Columbia and, so far, no money for anything like it.

It's an example of how underprepared the West Coast is for an earthquake and tsunami on the scale of what happened in Japan.

Scientists say it's inevitable that an offshore seismic menace called the Cascadia Subduction Zone will one day unleash a megaquake. The last time it happened was 300 years ago when a magnitude-9 shaker spawned enormous ocean waves that slammed into the West Coast and damaged Japanese fishing villages.

Mindful of the risks of waves as high as 60 feet, communities in the Pacific Northwest have worked on their defenses, installing sirens to warn of dangerous waves, posting hazard signs to mark inundation zones, designating evacuation routes and holding evacuation drills.

Scientists in the Pacific Northwest hadn't understood the geology and the threat it poses until recent decades when they discovered evidence of big quakes near the coast over the last 10,000 years - about 20 the size of the March 11 quake in Japan.

By contrast, the Japanese have long paid close attention to quakes and tsunamis. Their written records from 1700 allowed North American scientists a few years ago to fix the timing of the last Pacific Northwest megaquake, right down to the hour it occurred.

So the death and damage caused by this month's earthquake and tsunami in Japan were worrisome on the other side of the Pacific.

"We're not nearly as well prepared as the Japanese, and clearly they were overwhelmed," said Bill Steele, coordinator of the University of Washington's Seismology Laboratory. "It is a problem."

Elevated refuges are among the Japan-style responses to the tsunami threat that experts say helped to mitigate the destruction and death.

And these are just pieces in a giant puzzle for the Northwest in dealing with the aftermath of a disaster that could bring Katrina-style devastation to a region of 13 million people west of the Cascade Range.

In Cannon Beach, Jay Raskin is terrified at the prospect - "terrified" is a word he uses three times in the first few minutes of an interview.

The former city council member and mayor has proposed replacing the current City Hall, seismically unsound, with a two-story building on stilts to provide refuge to as many as 1,500 people. The second floor would house city offices. Atop that would be a terrace.

The idea is still conceptual, awaiting vetting by structural and geophysical engineers. That could add to the tentative \$4 million price tag Raskin puts on it.

There are no current plans in California to build special tsunami-resistant structures, but some communities are looking at ways to herd residents to existing buildings perched on higher ground in the event of dangerous waves, said Rick Wilson, senior engineering geologist with the California Geological Survey.

In Washington state, emergency managers are working with coastal communities to develop local plans for elevated evacuation structures that could do double duty, such as steel-reinforced earthen berms 20 feet high that could support bleachers at a stadium.

"Right now, there's no funding for anything like this, through state and federal funding," said John Schelling of the Washington State Emergency Management. He argues, though, that it's important to develop the plans for the day when money is available.

That's particularly the case, he said, for places on the Pacific Northwest coast that don't have high ground close to the beach, such as the flats of southwest Washington's Long Beach peninsula.

Among the critics of such work is Patrick Corcoran, an Oregon State University extension worker who specializes in marine hazards and argues that the regional emphasis on geology and engineering misses the mark.

"This is a cultural, behavioral issue far more than an engineering issue," he said.

The message that has to be driven home for coastal residents, he said, is there are just a few keys to surviving a tsunami, including the importance of getting to higher ground and staying there, even if your family is scattered. It's also important to find a way to hoof it to higher ground - rather than trying to drive and dealing with gridlock - while also designating someone on solid ground as the family contact point.

Governments, he said, can make it easier for people to survive tsunamis by creating shelters on high ground, and making sure paths uphill are clear of the invasive blackberry brambles that plague the coast.

In Cannon Beach, the 1,500 capacity of the proposed City Hall refuge is about the size of the town's permanent population. At the height of the tourist season, there are three to four times as many people.

Most would have to rely on following an evacuation route to get above the waves - something locals would likely know well but could be difficult for tourists already panicked by the quake.

Raskin said his concern about earthquakes dates to his work as an architect in the San Francisco Bay area during the 1989 Loma Prieta earthquake and argues that Cannon Beach has a responsibility to the tourists the town has invited to the coast.

Choking up in an interview, he said, "I don't want to be in a position to say that I didn't do enough."