

Earthquake-warning system that could provide smartphone alerts to Pacific Northwest gets funding boost

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The U.S. Geological Survey is greatly increasing funding for the region's seismic network, putting it on track to send public alerts of impending

earthquake shaking within the next two years, the network's director said.

The federal agency gave \$10.4 million to the Pacific Northwest Seismic Network (PNSN) for the next two years. The University of Washington and University of Oregon, which jointly operate the [network](#), will receive \$7.3 million and just over \$3 million of that [funding](#), respectively, said PNSN director Harold Tobin, who is also a professor in UW's Department of Earth and Space Sciences.

The additional funding will help PNSN add 104 more seismic stations. It operates about 200 in Washington state now. The state of Washington has provided funding for 36 more stations, Tobin said. Another 70 stations would deliver optimal performance, he said.

Each [station](#) improves the speed, reliability and accuracy of the ShakeAlert early warning network, which PNSN operates in the Northwest.

"It will help us detect earthquakes all over our region down to size and with the minimum amount of delay," Tobin said.

Even without the ideal number of [seismic stations](#), a pilot version of the system performed well during a July earthquake near Monroe.

"Between two and three seconds after the P-wave from the earthquake was detected at the closest station, the ShakeAlert system had calculated there was an earthquake," Tobin said.

Primary waves, or P-waves, are seismic waves that travel more quickly than destructive secondary waves.

Tobin said the system calculated the earthquake's magnitude at 4.4.

Scientists eventually measured the tremor at the magnitude 4.6.

Users of a pilot system, like the Northeast Sammamish Water District, received an early-warning signal, Tobin said.

The signal could automatically trigger the activation of control valves there, but the July earthquake was not strong enough to take any action, Tobin said.

The pilot ShakeAlert system provided about 8 seconds of warning to the downtown Seattle area, Tobin said.

That might not sound like much, but it's enough time to trigger automated systems and "give people time to recognize what's going on, stop what they're doing and get under a table," Tobin said.

Soon, the ShakeAlert system will be able to provide early [earthquake](#) warnings directly to the public, through a smartphone app.

"I'm confident we should have that activated within two years," Tobin said.

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