

USGS briefing and report highlight expanded rollout of earthquake early warning system

October 10, 2018

The United States Geological Survey (USGS) held a [briefing](#) on October 2 to discuss the ongoing rollout of the ShakeAlert Earthquake Early Warning System. The briefing was held in conjunction with the release of a new USGS [report](#) titled, “Revised technical implementation plan for the ShakeAlert System—An earthquake early warning system for the West Coast of the United States.”

[ShakeAlert](#) uses networks of ground-motion sensors and sophisticated computer algorithms to detect earthquakes moments after they begin, calculate their locations and magnitudes, and estimate the resulting intensity of shaking. Alerts can then be sent to people and systems that may experience damaging shaking, allowing them to prepare appropriately before the shaking begins. Effective implementation of such a system can reduce the impact of earthquakes, save lives, and protect property in earthquake-prone areas.

The briefing was led by Dr. Bill Leith, the Senior Advisor for Earthquake and Geologic Hazards at the USGS. It also featured professors and researchers from four different West Coast universities: Dr. Thomas Heaton from the California Institute of Technology, Dr. Richard Allen from the University of California, Berkeley, Dr. Leland O’Driscoll from the University of Oregon, and Dr. Harold Tobin from the University of Washington.

The ShakeAlert system has been in testing since the early 2010s and, [as of October 2018](#), is being rolled out more widely to public and private organizations in California, Oregon, and Washington. Broader public alerting has not yet begun because existing mass-alert technologies are not currently able to deliver earthquake alerts sufficiently rapidly and widely to be effective.

This long-term implementation plan calls for a total of 1,675 seismic monitoring stations. About 865 seismic stations are currently contributing data to ShakeAlert and 250 more have funding and are currently being built, according to the revised USGS report. The planned U.S. system has similarities to existing [systems](#) in Mexico and Japan. However, the U.S. faces a particular geological challenge in implementing earthquake early warning. In Mexico and Japan, the biggest earthquake-generating faults are largely located offshore, far from major population centers, allowing for more warning time before the arrival of an earthquake. In California, major cities sit directly on or near major faults, requiring much more rapid detection of earthquakes and distribution of alerts to provide any warning at all.

On October 10, Department of the Interior Secretary Ryan Zinke [tweeted](#) that he directed the National Park Service, the Bureau of Land Management, and the Fish and Wildlife Service to streamline regulatory processes and prioritize the deployment of USGS earthquake sensors. The tweet linked to a Wall Street Journal [article](#) published online earlier that same day, which indicated that the Journal had obtained a memo from Secretary Zinke ordering federal agencies to identify and help remove regulatory impediments to deploying the equipment in national parks and Bureau of Land Management properties near major population centers from San Diego, California, to Anchorage, Alaska. According to the article, the secretarial order also applies to volcanic-activity monitoring equipment in Hawaii.

Sources: Berkeley News; MIT Technology Review; United States Geologic Survey; Wall Street Journal.
