

FACT SHEET: Obama Administration Announces Steps to Increase Nation's Resilience to Earthquakes

The Obama Administration remains committed to improving the resilience of our communities, States, and the Nation to important hazards, such as earthquakes. A **2015 scientific assessment from the U.S. Geological Survey** shows that more than 143 million Americans in the continental United States could experience potentially damaging earthquakes. This estimate is nearly double the previous 2006 estimate because populations have grown in earthquake-prone areas and there are now better methods for estimating earthquake risks. Improving warning systems, better building protections, and informed citizens can help mitigate losses, injuries, and deaths, and also can help communities recover faster.

Today, the White House is hosting an Earthquake Resilience Summit to highlight how a whole-community approach—including scientists, engineers, public officials, nonprofit entities, and private companies—is the best approach for improving resilience to earthquakes and other hazards; and to explore how science and technology can improve our ability to detect and respond to earthquakes in the future. At the summit, the Administration and stakeholders will announce new commitments toward a future with greater earthquake safety based on next-generation approaches to earthquake-resilient building and warning technologies, including:

Executive Order for Enhanced Seismic Safety

President Obama today (February 2, 2016) signed an Executive Order: *Establishing a Federal Earthquake Risk Management Standard*, which will improve the capability of federal buildings to function after an earthquake, reducing risks to people, lowering post-quake recovery costs, and making it easier for communities to recover swiftly. The Executive Order requires that Federal agencies responsible for the design and construction of a new building, or an alteration to an existing building, ensure that the building is constructed or altered using the earthquake-resistant design provisions in the most current building codes. The latest building codes, which encompass the current understanding of the earthquake hazard potential, are one of the best ways to achieve earthquake safety and preserve the lives of the people who live in a building.

This Executive Order will also help ensure that federal assets are available to support recovery efforts.

Federal Actions to Advance Earthquake Early Warning

- On February 1, 2016, the **United States Geological Survey (USGS)**, along with partners from state government, universities, and private foundations deployed a beta operational phase of **ShakeAlert**, the West Coast earthquake early warning test system. This next-generation production prototype will allow beta users to develop and deploy pilot implementations that take protective actions based on the USGS ShakeAlert warnings in areas with sufficient station coverage.
- **USGS and the United States Forest Service** are announcing that they have begun working together to explore streamlined and expedited permitting for siting of seismic monitoring stations with an initial emphasis on sites important for earthquake early warning and other locations supporting life and safety.
- The independent **Federal Communications Commission** recently issued one set of new proposed rules, which is out for public comment, and another, released January 28, 2016, which is not yet out for comment, that pertain to earthquake early warning and other next-generation warning systems. The proposed rules would:
 - facilitate the delivery of narrowly geo-targeted alerts, such that warnings can be targeted to receivers' locations and everyone in a location can receive a warning;
 - reduce alert delivery delays throughout the IPAWS (Integrated Public Alert and Warning System) and other alerting systems;
 - integrate Emergency Alert System tests, including actual alert signals and text, into community public safety exercises;
 - ensure that alerts will be consistent across different technology platforms, including those that use the internet; and
 - facilitate community feedback to alerts using 911 and social media so that alert initiators can know that the alerts are effective and allow them to efficiently direct resources to areas in need.

State and Local Commitments to Advance Earthquake Early Warning

- **State of Oregon:** Governor Kate Brown is committed to increasing Oregon's seismic readiness. Having just hired a State Resilience Officer, the Governor is directing the officer to prominently feature earthquake early warning in the state resilience planning efforts as the officer's first order of business. Oregon also took a significant step in 2015 by acquiring 15 seismometers for nearly \$700,000. The Governor wants the State to build on that investment in collaboration with

universities and other stakeholders interested in saving lives and capacity through early warning. A crucial component of Oregon's effort is the integration of a robust public-education program giving businesses, schools, critical facilities, and the public actionable information on how to respond to earthquake alerts.

- **The City of Eugene, Oregon:** The City of Eugene, Oregon, will host public forums to further explain earthquake preparedness, answer questions the community may have, and empower the community with knowledge and resources.
- **The Eugene Water and Electric Board:** Eugene Water and Electric Board (EWEB) and the University of Oregon will place four earthquake early warning sensors on EWEB property, which will contribute to the Pacific Seismic Northwest Network, a USGS facility maintained by the University of Washington and the University of Oregon. The sensors will improve the coverage and reliability of the Pacific Seismic Northwest Network.
- **State of Washington:** Today, Governor Jay Inslee is **announcing commitments that the State of Washington is making** in earthquake and tsunami preparedness and resilience, in order to protect lives and speed the recovery of communities in the aftermath of a large-scale seismic event. Washington has experienced approximately 15 major destructive earthquakes in the last 150 years, and its proximity to the Cascadia Subduction Zone—a major fault line off the Pacific Coast of North America—presents the dangers of significant earthquakes and tsunamis in the region. The new commitments include seismic improvements for state building standards; investing \$4.6 million to map, identify, and better anticipate geologic hazards; and a tsunami safe haven project that will open in June 2016 at Ocosta Elementary School in Westport, Washington.

Additional Commitments to Advance Earthquake Early Warning

- **The Gordon and Betty Moore Foundation** is announcing \$3.6 million in grants to advance the ShakeAlert system. The funding to California Institute of Technology; University of California, Berkeley; University of Washington; and the U.S. Geological Survey supports the research behind the technology to detect earthquakes, determine likely magnitude, and provide a warning before shaking begins, potentially saving thousands of lives and millions of dollars in damage. This new funding will take advantage of the particular strengths of each research group to advance three important areas of early warning:
 - UC Berkeley scientists will pursue a novel plan to detect the shaking caused by earthquakes, harnessing the same sensors used in smart phones to count your daily steps;
 - Caltech scientists will work to develop a humanlike decision-making process to gather information from seismic networks to issue prompt and reliable alerts; and

- University of Washington scientists will study implementation of a network of sensors on the ocean floor to provide early warning for earthquakes from the Cascadia Subduction Zone, the largest threat for a catastrophic earthquake in the Pacific Northwest.
- **Puget Sound Energy** is announcing a \$100,000 grant to the University of Washington Pacific Northwest Seismic Network for the purchase of eight strong-motion seismometers that will be installed throughout Washington during the next four years. These modern, low-delay instruments will significantly improve earthquake early warning capability.
- **Pacific Gas & Electric (PG&E)** has recently agreed to join the ShakeAlert beta system and is beginning to work with UC Berkeley's Seismological Laboratory to identify potential applications. This will allow both automated and human actions in the seconds before an earthquake, which will protect lives, lessen property damage and ensure rapid service restoration. PG&E values the potential for early earthquake warnings for their customers and employees. PG&E will continue its participation in the test phase and system build out for California and the West Coast.
- **Intel Corporation** has committed to help lead an effort to ensure private sector businesses play an appropriate role in building and sustaining the ShakeAlert Earthquake Early Warning. Initial meetings are being held this week.

As Oregon's largest private sector employer and largest capital investor, Intel designs and builds its latest generations of microprocessors and other computing innovations at four major campuses in the Portland Metro area. Intel views ShakeAlert as a key part of its Crisis Management program, and has pledged to lead efforts to bring the high-technology community to the table to support it. The business impacts from a Cascadia Subduction Zone earthquake would be extreme. Having advance notice of an event will allow Intel and other private sector companies to safely react to an earthquake before it occurs, saving millions of dollars per hour in potential downtime. Businesses such as Intel will be able to advise staff to take protective actions, such as Drop, Cover and Hold, as well as automatically shut down elevators and production. Intel's leadership role will catalyze their suppliers and customers, as well as other businesses, to support the ShakeAlert system.

- **Amazon Catalyst** is announcing a research grant to the University of Washington to integrate GPS capabilities into the Pacific Northwest Seismic Network in order to better discriminate the size of large earthquakes, a problem that current earthquake warning systems cannot solve well.