

EARTHQUAKE WARNING CALIFORNIA



Earthquake Warning California

Scientists are still unable to predict earthquakes, but thanks to new technology, individuals and organizations can potentially receive a few seconds of notice to take appropriate safety precautions before an earthquake strikes. Earthquake Warning California utilizes the California Integrated Seismic Network, which is a partnership between Cal OES, United States Geological Survey (USGS), UC Berkeley, the California Institute of Technology, and the California Geological Survey.

The system uses ground-motion sensors to detect earthquakes that have already started and estimates their size, location, and impact. When it detects a significant magnitude, the system issues a ShakeAlert® Message, providing a warning before shaking begins.

To receive earthquake warnings, individuals and families should download the MyShake App and ensure phone settings are adjusted to receive emergency alerts, including:

Earthquakes can happen in California at any time, and places of the utilities sector should be appropriately prepared to react and respond quickly when an earthquake occurs. The California Governor's Office of Emergency Services (Cal OES) invites the utilities workforce and their families to learn about how they can receive warning before shaking is felt with California's comprehensive earthquake warning program, "Earthquake Warning California." The program includes tools and resources to help warn Californians and visitors as soon as shaking is detected.

This document is intended to supplement existing emergency preparedness procedures. Please review existing organizational earthquake preparedness plans for full instructions on how to proceed during an emergency.

To receive earthquake warnings, individuals and family members can download the MyShake App and ensure phone settings are adjusted to receive emergency alerts, including:

- **Wireless Emergency Alerts (WEAs):** No-cost text messages for emergency situations (magnitude 5.0 or higher and Modified Mercalli Intensity IV shaking);
- **MyShake App:** Free smartphone app that provides iPhone and Android users with audio and visual warnings (magnitude 4.5 or higher and Modified Mercalli Intensity III shaking). Available in the Apple App and Google Play stores; and
- **Android Earthquake Alerts:** Android phones with updated operating systems are automatically subscribed to Android Earthquake Alerts, which uses the same technology as the MyShake App.

Benefits and Applications

Electricity Providers

- Power outages often occur during and after a significant earthquake. Electric utility providers can prepare equipment using Earthquake Warning California to reduce damage with no downstream negative impacts.
- Electric utility providers can apply Earthquake Warning California resources at strategic locations to achieve the greatest benefits with the lowest costs. For example, it would not be appropriate to apply earthquake warning systems to automatically shut-off substations or transformers that supply power to essential services for hospitals, transportation agencies, elevators, or to any part of the power grid that would cause natural gas to be shut down outside the area of concern.

- Assess the potential negative impact an earthquake may have across geographic regions and determine whether automatic shut offs would be appropriate in mitigating secondary damage.

Gas Providers

- Gas utilities are particularly vulnerable to earthquake damage because gas travels predominantly through an underground network of transmission and distribution pipes.
- Gas line ruptures can cause severe fires during and after an earthquake. Automated actions associated with Earthquake Warning California could reduce the potential for gas-leak fires, primarily through automatic shut off valves.

Water Providers

- Water providers are vulnerable to earthquake damage because water and wastewater travel predominantly through a network of pipes underground and tend to be several years old.
- Automated shutoffs enable water providers to ensure that reserve water supplies are available quickly, and that any failures in the system are readily repaired to expedite resumption of essential service.
- Ensure backup systems are ready and would commence in the wake of an earthquake.
- Resuming water delivery after an earthquake depends on engineers, technicians, and trained staff being able to mobilize quickly.

Getting Utility Providers Prepared

In addition to the damage caused directly by earthquakes, additional hazards can be triggered as a secondary effect, such as dam failures, hazardous material spills / leaks, downed power lines, and electrical fires. Below are five tips that can aid in the preparation process:

1. Conduct Vulnerability & Risk Assessment.

To reduce damage and injuries that could result from an earthquake, utility providers should identify potential risks and areas of vulnerability. Evaluate all utility channels to determine what could fail in the event of an earthquake and whether steps can be taken in advance to reduce the likelihood of a secondary disaster from utility damage. Ensure all equipment is anchored down and cannot easily topple over in an earthquake. Evaluate whether retrofitting can reinforce existing equipment.

2. Develop Organizational & Employee Preparedness Plans.

Utility providers should have a series of emergency plans for different levels of emergencies and develop potential responses for each situation. The plan should identify clear roles and responsibilities for all levels of personnel to take in advance of, during, and after a major earthquake. These steps should also be incorporated into emergency drills / training in preparation of emergency situations.

3. Download the MyShake App and Adjust Phone Settings.

The MyShake App, Android Earthquake Alerts, and WEAs can supplement existing warning systems and give employees time to take cover before shaking starts. Demonstrate to employees what an earthquake warning sounds and looks like.

Employees should take steps to ensure earthquake warnings can be activated and heard in an emergency situation, such as ensuring WEA is enabled and ensuring their phone location settings are set to “always on” for MyShake App and Android Earthquake Alerts.

4. Integrate Earthquake Warnings.

Utilities should evaluate which functions of their operations can be automatically enabled in advance of an earthquake and which can be quickly done by employees while still keeping them safe, such as putting machinery into safety mode. Utility providers can implement internet-connected devices, also known as monitor or control, to listen for earthquake warnings. When a warning is issued, the software evaluates the warning to determine whether it meets the criteria to stop or start equipment. For example, the software can stop rotating machinery, sound an alarm, or shut off power to prevent electrical fire.

5. Share Information with Customers.

Utility providers are an essential service and can aid in educating a broad range of groups on earthquake preparedness and mitigation planning. Consider including information about earthquake safety and Earthquake Warning California resources into customer communications, including steps the utility organization is taking to prepare.

For more information:

Earthquake Warning California is managed by Cal OES. It provides individuals, organizations, and communities with easily accessible earthquake warning and emergency preparedness information, as well as resources. For the latest news and resources, visit earthquake.ca.gov. Send questions or comments regarding this fact sheet to earthquakeinfo@caloes.ca.gov.

For information, questions, or comments relating to this fact sheet, email Cal OES at: earthquakeinfo@caloes.ca.gov.

