



ShakeAlert[®] Ready **A CERT Guide to** **Earthquake Early Warning**

Participant Training Manual

September 2026

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Because seconds matter.

ShakeAlert[™]

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***Administrative disclosure:** During preparation of this training, the generative artificial intelligence (AI) tool OpenAI ChatGPT was used to refine the material. All AI-generated suggestions were reviewed, revised as needed, and approved by the authors to ensure accuracy and maintain the integrity of the scientific content.*

About ShakeAlert® Ready CERT Training

Welcome and Purpose

Welcome to the ShakeAlert Ready CERT Training.

Earthquakes cannot be predicted. But once an earthquake begins, earthquake early warning may provide a few valuable seconds of warning before strong shaking reaches your location. Those seconds can give people time to take protective action and allow automated systems to take safety actions.

The ShakeAlert® Earthquake Early Warning System is the nation's only public earthquake early warning system. Managed by the U.S. Geological Survey (USGS), it serves California, Oregon, and Washington as of 2026. Earthquake hazards on the West Coast pose a threat to the safety of more than 55 million people in California, Oregon, and Washington. When possible, ShakeAlert detects an earthquake shortly after it begins and provides information to deliver ShakeAlert-powered alerts before strong shaking arrives.

As a Community Emergency Response Team (CERT) volunteer, you can help your community understand what earthquake early warning is, how people may receive ShakeAlert-powered alerts, and what to do when an alert is received or shaking begins. The most important message is simple: take protective action immediately. For most people, that means Drop, Cover, and Hold On.

This training supports you as a CERT volunteer as you learn how earthquake early warning works, what to do when you feel shaking or receive a ShakeAlert®-powered alert, and how to help others become ShakeAlert Ready.

This Participant Training Manual accompanies both the shorter ShakeAlert Ready CERT Essentials Course and the longer ShakeAlert Ready CERT Full Course. Use it during training and as a reference afterward.

This training will help you to:

- **Enhance personal and public safety:** Understand how ShakeAlert-powered alerts can give people time to take protective action—such as Drop, Cover, and Hold On—or a modified action, depending on the situation.
- **Make informed decisions quickly:** Learn how a ShakeAlert-powered alert can inform immediate actions before strong shaking arrives.
- **Promote awareness:** Share accurate, trusted information about ShakeAlert and earthquake early warning with your team and community.
- **Practice preparedness:** Explore ways to include ShakeAlert in CERT training, drills, and community outreach activities.

What You Will Learn

This training will help you understand earthquake early warning and use that knowledge to support personal, team, and community readiness. All participants will learn the essential information needed to understand ShakeAlert-powered alerts and act quickly when seconds matter. Whether you are in the shorter “Essentials” version of this course, or the longer full course, you will learn how to:

- **Understand earthquake early warning and why it matters.** Learn what it can and cannot do, including that it may provide warning before strong shaking arrives but cannot predict earthquakes.
- **Know how alerts may reach you.** Understand that many newer smartphones may already be capable of receiving ShakeAlert-powered alerts, and learn about other delivery options, including Wireless Emergency Alerts (WEAs) and mobile apps such as MyShake.
- **Take protective action immediately.** Review Drop, Cover, and Hold On, modified actions for different situations and abilities, and the additional actions needed after strong or long shaking near the coast.
- **Share the essentials with others.** Help community members understand what ShakeAlert-powered alerts are, how they may receive them, and what to do when they get one or feel shaking.

In the longer full course, you will also:

- **Explore earthquake science and impacts.** Gain a basic understanding of earthquakes, seismic waves, magnitude, intensity, and hazards that strong shaking can cause.
- **Learn more about how ShakeAlert works.** See how seismic sensors, processing centers, and USGS-licensed Alert Delivery Partners work together to provide ShakeAlert-powered alerts.
- **Consider ways CERT volunteers can support outreach and education.** Build confidence as a trusted messenger who can help others prepare for, understand, and use earthquake early warning.

Earthquakes Science and Impacts

Earthquakes are a natural part of life on the West Coast, and they can happen at any time. While we cannot predict exactly when or where an earthquake will occur, we can understand how earthquakes happen, what they can do, and how to protect ourselves. Learning about earthquakes is an important step toward reducing risk for you, your household, and your community.

The sections that follow explain why earthquakes occur in this region, what people may experience during strong shaking, and the hazards that can follow. This foundation will help you better understand the science behind earthquake early warning and why protective actions matter.

We Live in Earthquake Country

California, Oregon, and Washington are among the most seismically active regions in the United States. Active faults and tectonic plate boundaries can produce earthquakes that range from small, barely felt events to large earthquakes that affect entire communities.

Large earthquakes have happened before and will happen again. Communities across the region have experienced strong shaking that damaged buildings, disrupted transportation and utilities, caused injuries, and affected daily life within seconds. Events such as the 1989 Loma Prieta earthquake in California and the 2001 Nisqually earthquake in Washington are reminders that strong shaking can strike without warning.

WHY THIS MATTERS: More than 55 million people live and work on the West Coast where ShakeAlert operates. Understanding your local earthquake risk is the first step to reducing injuries, saving lives, and supporting faster recovery.



KEY TAKEAWAYS

- Earthquakes can happen without warning.
- Earthquake shaking varies by location.
- Earthquakes can cause cascading hazards and damage.
- Understanding earthquake science helps you prepare.



Earthquakes can cause immediate dangers to health and safety and prolong recovery efforts. Image is courtesy of the USGS.

Earthquake Science Basics

Earthquakes happen when stress builds up underground along faults—fractures or zones of fractures in the Earth's crust where blocks of rock can move past one another. When the stress becomes greater than the rocks can withstand, the rocks suddenly slip. This releases energy that travels through the ground as seismic waves and causes the shaking we feel.

Earthquakes can occur without warning. The location where an earthquake begins and the way its energy travels help explain why shaking can feel different from place to place.

Key Earthquake Terms

An earthquake begins underground at the **hypocenter**. The **epicenter** is the point on the Earth's surface directly above the hypocenter. Different types of seismic waves travel outward from the earthquake.

- **Fault:** A fracture or zone of fractures in the Earth's crust where blocks of rock can move.
- **Hypocenter:** The point underground where an earthquake begins.
- **Epicenter:** The point on Earth's surface directly above the hypocenter.

How Seismic Waves Travel

When an earthquake begins, it releases energy as two types of seismic waves. These waves travel through the ground at different speeds and can cause different kinds of shaking.

- **P-waves (Primary Waves)** are the fastest seismic waves. They arrive first and usually cause lighter shaking, although they can still be noticeable and may cause minor damage.
- **S-waves (Secondary Waves)** travel more slowly than P-waves. They usually produce stronger, more damaging shaking—the movement people typically associate with an earthquake.

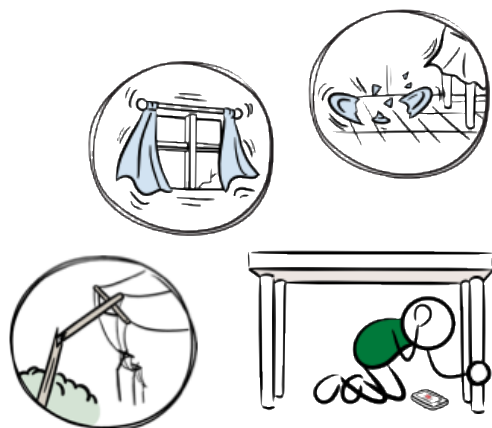
The difference in arrival time between P-waves and S-waves can be only a few seconds near the earthquake's source, or longer at locations farther away. The amount of shaking a person experiences also depends on factors such as the earthquake's size, distance from the fault, local ground conditions, and the type and condition of nearby buildings.

Understanding these basics helps explain why a single earthquake can produce very different experiences across a community. It also provides the scientific foundation for earthquake early warning, which is discussed later in this manual.

What You Might Experience During an Earthquake

Earthquakes strike suddenly. Shaking may begin as a light vibration or jolt and quickly become stronger. Depending on the earthquake, your location, and the buildings or surroundings around you, you may experience:

- ✓ A sudden jolt, rumble, or roar.
- ✓ Objects falling from shelves, walls, or cabinets, and furniture moving or tipping.
- ✓ Lights flickering or going out; alarms, sprinklers, or other building systems activating.
- ✓ Windows breaking or glass falling.
- ✓ People or animals reacting suddenly, becoming frightened, or trying to move quickly.
- ✓ Trees, utility poles, or overhead wires swaying—and, in stronger earthquakes, falling.
- ✓ Damage or disruptions to buildings, roads, utilities, communications, and transportation systems.



Not every earthquake will cause all of these effects.

The most important thing to remember is that you may have little or no warning before shaking begins. If you feel shaking, take protective action immediately. Do not wait to see whether the shaking gets stronger.

Magnitude and Intensity

The same earthquake can feel very different from place to place. One community may experience only a light wobble, while another may experience strong shaking that causes damage. This is because earthquakes are described using two different measures: **magnitude** and **intensity**.

Magnitude

Magnitude describes the total energy released by an earthquake at its source.

- Magnitude is reported as one number for each earthquake, such as M6.0.
- It provides a standardized way to describe the earthquake's overall size.
- Each whole number increase in magnitude represents about 32 times more energy released than the previous whole number.
- Magnitude is the same everywhere, no matter where a person is located during the earthquake.

Higher-magnitude earthquakes generally have the potential to affect a larger area, but magnitude alone does not describe what a person will experience at a specific location.

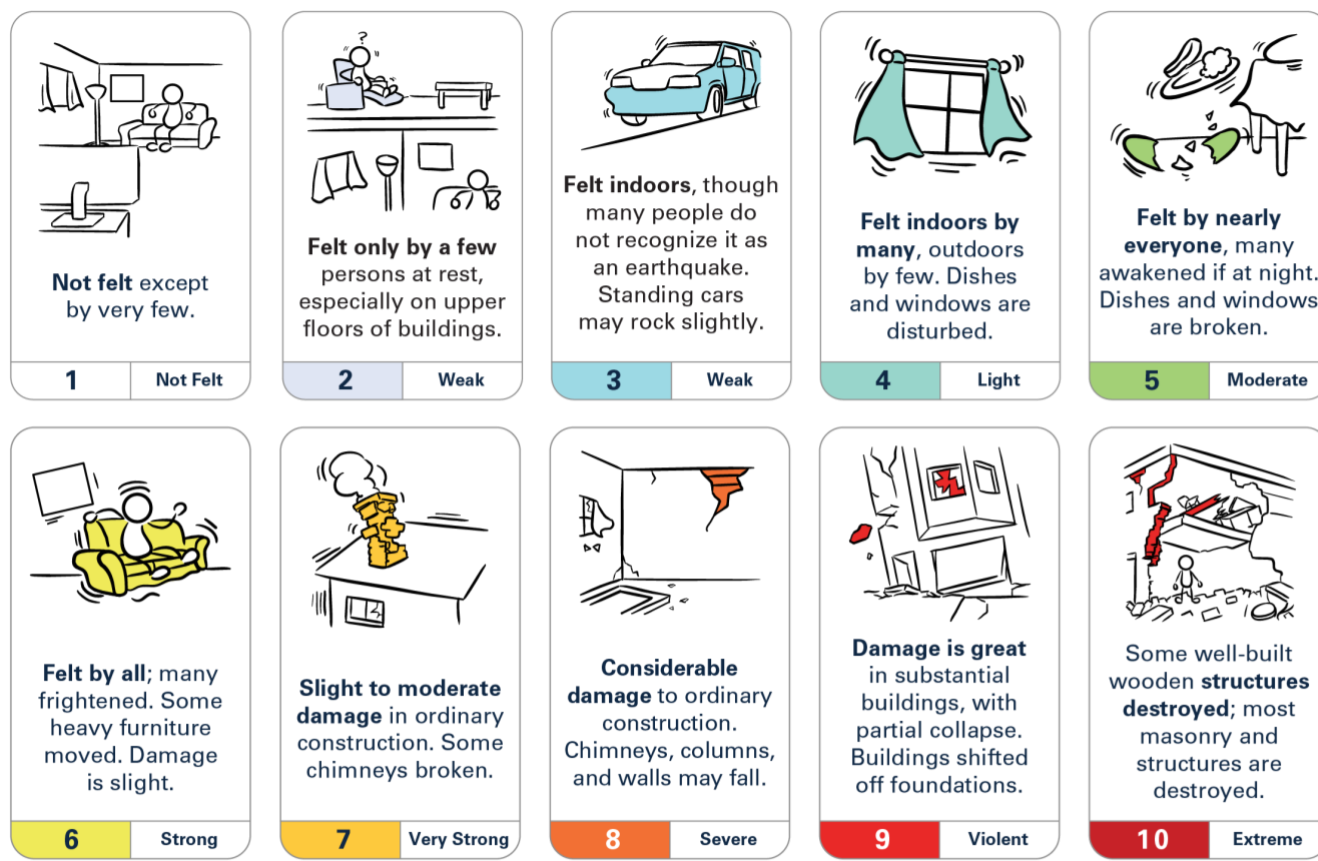
Intensity

Intensity describes the strength of shaking at a specific location and its effects on people, buildings, and the environment.

- Intensity can vary from place to place during the same earthquake.
- It depends on factors such as distance from the earthquake, local ground conditions, and the type and condition of buildings.
- Intensity is commonly described using the **Modified Mercalli Intensity (MMI) Scale**, which ranges from I (not felt) to X+ (extreme).
- Nearby neighborhoods can experience different levels of intensity, especially where ground conditions differ.

Figure 1 illustrates the MMI Scale and examples of what people may feel or observe at different levels of shaking. Earthquake early warning systems use estimates of expected shaking intensity to help determine where alerts may be delivered.

Figure 1: Modified Mercalli Intensity (MMI) and What Shaking Levels Can Feel Like



ShakeAlert[®]
USGS 11.2025

Earthquake-Caused Hazards and Impacts

Strong earthquake shaking can create hazards during the earthquake and in the minutes, hours, and days afterward. Understanding these possible impacts can help CERT volunteers recognize why preparedness, protective action, and situational awareness are so important.

Earthquakes Can Trigger Other Natural Hazards

Strong earthquake shaking can also trigger:

- **Liquefaction:** Water-saturated soil can lose strength and behave more like a liquid.
- **Tsunamis:** Undersea earthquakes can generate dangerous waves in coastal areas.
- **Landslides:** Movement of rock, soil, or debris down a slope.
- **Surface Rupture:** When the ground breaks and shifts along a fault. Surface rupture can damage roads, pipelines, buildings, and other infrastructure located across the fault.

Earthquakes Can Also Damage Infrastructure

Earthquake shaking can damage or disrupt the systems communities rely on every day, including:

- **Buildings and bridges:** Structural damage, falling materials, or—in severe cases—collapse. At home and at work, this might include damage to furnishings, equipment, supplies, and the systems people depend on for safety and daily life.
- **Roads and transportation systems:** Blocked roads, damaged rail lines or bridges, and interruptions to public transportation and emergency access.
- **Utilities and communications:** Interruptions to power, water, gas, internet, telephone, and other essential services.



Earthquake damage to infrastructure can slow the return to normal operations. Image is courtesy of the USGS.

Even after shaking stops, earthquake-caused hazards can continue. CERT volunteers should emphasize situational awareness, personal safety, and careful safety checks before beginning any response activities.

Inside the ShakeAlert System

Earthquake early warning adds an important layer to overall earthquake preparedness. Securing furniture, storing supplies, and practicing protective actions remain essential. ShakeAlert can add valuable seconds for people and systems to act when an earthquake begins.

Because earthquakes develop over time, the earliest calculations are based on only a few seconds of ground motion. As more sensor data comes in, ShakeAlert continually refines these estimates, almost instantly. Large earthquakes grow as more of the fault ruptures, so our understanding of the event improves as the event continues.



KEY TAKEAWAYS

- ShakeAlert detects earthquakes after they begin.
- Sensors and computers quickly estimate where strong shaking is expected.
- Alerts may give people and systems time to act before strong shaking arrives.

System Basics

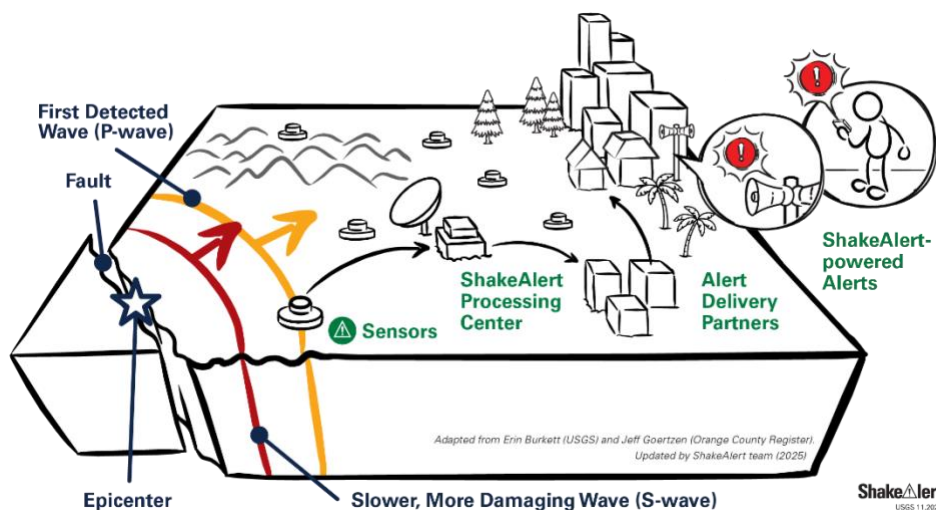
The ShakeAlert Earthquake Early Warning System is the nation's only public earthquake early warning system. Managed by the USGS, it serves California, Oregon, and Washington.

ShakeAlert does not predict earthquakes. Instead, it detects an earthquake quickly after it begins and uses automated processing to estimate where the earthquake started, how large it is, and where strong shaking may occur.

The system works through three connected steps:

- **Detect:** A network of more than 2,000 seismic stations quickly detects shaking when an earthquake begins.
- **Process:** Computers analyze the first available data to estimate the earthquake's location, magnitude, and expected shaking.
- **Deliver:** USGS-licensed Alert Delivery Partners use ShakeAlert information to send ShakeAlert-powered alerts to phones, apps, and automated systems.

Figure 2: How ShakeAlert Earthquake Early Warning Works



When conditions allow, this process can provide people and systems with seconds of warning before strong shaking arrives. Together, these steps allow ShakeAlert to rapidly detect an earthquake, estimate the expected shaking, and provide information to support protective action before strong shaking reaches some locations. Most importantly, these three steps support taking protective actions.

The following sections explain each step in more detail.

Detect

THE GOAL: Detect the earthquake as quickly and reliably as possible.

ShakeAlert relies on a network of seismic sensors across California, Oregon, and Washington that continuously monitor the ground for motion, as well as Global Navigation Satellite System (GNSS) sensors that detect earth-surface movement via satellite. When an earthquake begins, sensors closest to the earthquake detect shaking first.



That early information is sent immediately to ShakeAlert Processing Centers. The faster the system can detect and confirm an earthquake, the more time may be available for people and systems farther from the earthquake to act before strong shaking arrives.

Process

THE GOAL: Produce accurate, timely information that Alert Delivery Partners can use.

At the Processing Centers, computers automatically analyze the first available sensor data. They determine whether the signal is likely to be an earthquake rather than a local disturbance, such as construction activity or a passing train.

Within seconds, the system estimates:

- Where the earthquake started
- Its magnitude
- Where strong shaking is expected
- How strong the shaking may be (intensity)



ShakeAlert Processing Centers analyze earthquake data quickly. Image is courtesy of the USGS.

Because earthquakes develop over time, the first estimates are based on only a few seconds of ground motion. As more information becomes available, ShakeAlert continually refines its estimates. This automated process allows the system to work far faster than any person could.

Deliver

THE GOAL: Get useful earthquake information to people and systems as quickly as possible.

The USGS does not send alerts directly to the public or to automated systems. Instead, it provides real-time earthquake information to USGS-licensed Alert Delivery Partners.

These partners use their own delivery methods to send ShakeAlert-powered alerts to people and systems. Alerts may reach people through newer smartphones, WEAs, and mobile apps such as MyShake. They can also trigger automated safety actions, such as slowing trains, opening firehouse bay doors, or activating a public address system.

Because these Alert Delivery Partners use different tools, people may see slightly different alert formats or timing. While all these partners follow USGS guidelines, their technology determines how alerts appear or act. These alerting methods and what they look or sound like in practice are discussed in more detail in the “*Experiencing ShakeAlert*” section

It is a good idea to have multiple ways to receive alerts. As CERT volunteers, you know that preparedness means building layers of readiness. Using more than one available alerting method can provide an added layer of readiness if a particular device or delivery method is affected by settings, connectivity, or other technical issues.

Figure 3: Examples of How to Get Alerts on Your Cell Phone

of this training.

ShakeAlert™

Earthquake Early Warning on Your Cell Phone

Available in Washington, Oregon, and California

Wireless Emergency Alerts	Cell Phone Operating Systems	Apps
<p>Delivered by FEMA to all WEA-capable cell phones</p> <p>Minimum magnitude 5.0</p> <p>Light Shaking or Greater (MMI 4+)</p>	<p>Delivered by Android* and iOS+ Operating Systems</p> <p>Minimum magnitude 4.5</p> <p>Android: Weak Shaking or Greater (MMI 3+)</p> <p>iOS: Light Shaking or Greater (MMI 4+)</p>	<p>Delivered by the MyShake App (requires download)</p> <p>Minimum magnitude 4.5</p> <p>Weak Shaking or Greater (MMI 3+)</p>

*crisisresponse.google/android-early-earthquake-warnings | *support.apple.com/en-us/102516 | For more examples, visit ShakeAlert.org/f/LtO

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When Are Alerts Sent?

ShakeAlert uses the information available in the first seconds after an earthquake begins to estimate where strong shaking is likely to occur. USGS-licensed Alert Delivery Partners use that information and their own alerting thresholds to determine whether and where to deliver alerts.

Whether you receive a ShakeAlert-powered alert depends on two primary factors:

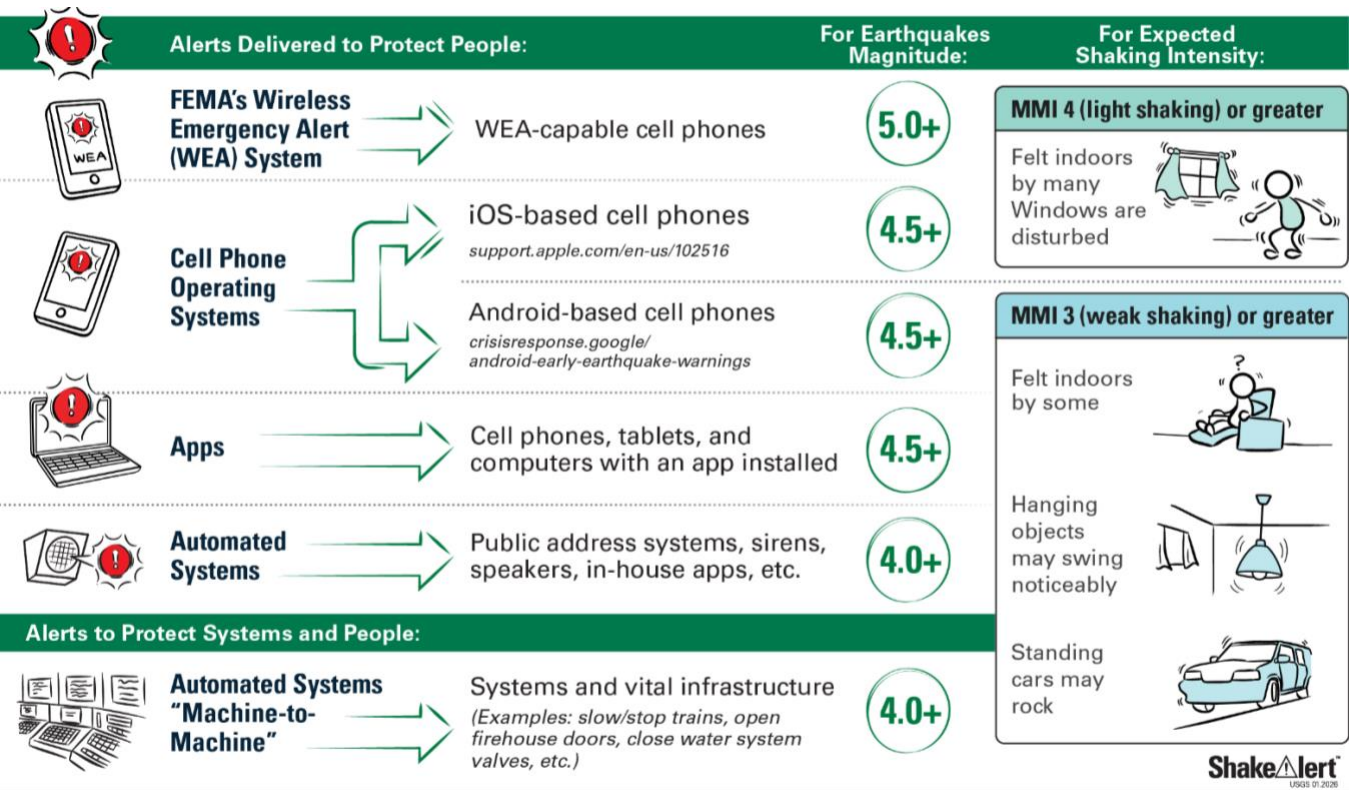
- The **estimated magnitude** of the earthquake.
- The **expected intensity** of shaking at your location.

Alert delivery thresholds can vary by delivery method. This helps ensure that alerts are focused on locations where shaking is expected to be strong enough to affect safety.

ShakeAlert-powered alerts are only delivered if certain thresholds for estimated magnitude and shaking intensity are met, which helps to ensure alerts are delivered when shaking is likely to be strong enough to affect safety. USGS-licensed Alert Delivery Partners use varying alert delivery thresholds¹ to determine if and where alerts are delivered.

An alert is not a prediction.
It is a warning based on the best available information after an earthquake has already started. If you receive an alert—or feel shaking—take protective action immediately.

Figure 4: Examples of How to Get Alerts on Your Cell Phone



¹ To optimize public safety, USGS and its partners constantly evaluate alert delivery thresholds for their effectiveness. Every effort will be made to keep the thresholds listed in this training current. Please visit ShakeAlert.org to find the most current thresholds (under the System Information tab).

How Much Warning Might You Get?

Not everyone in an earthquake-affected area will receive an alert, and warning times vary widely from place to place. The amount of warning you may receive depends on:

- Where the earthquake begins.
- Your distance from the earthquake.

People closer to where an earthquake begins may have less warning because strong shaking can reach them before an alert can be delivered. People farther away may have more time because it takes longer for seismic waves to reach their location. No specific amount of warning time is guaranteed.

You may receive:

- Several seconds of warning.
- Very little warning.
- No warning.

Earthquake early warning is not the same for every person or every earthquake. Always take protective action immediately if you receive an alert or feel shaking.

Why You Might Not Receive an Alert

You might not receive a ShakeAlert-powered alert when:

- The earthquake or expected shaking did not meet the delivery method's alert threshold.
- You were too close to the earthquake to receive a warning before the shaking arrived.
- Your device settings, location services, connectivity, or delivery method affected the receipt of the alert.
- ShakeAlert does not currently serve your location.

Even if you do not receive an alert, take protective action immediately when you feel shaking. For most people, this means Drop, Cover, and Hold On. Do not wait to see if the shaking gets stronger before taking protective action.

Myths and Facts About ShakeAlert Earthquake Early Warning

Earthquake early warning can be easy to misunderstand. Knowing what ShakeAlert does, and what it does not do, helps CERT volunteers set realistic expectations and share accurate information with their communities.

The following myths and facts address common questions about earthquake prediction, when alerts are sent, and why some people may receive little or no warning.



Earthquake early warning alerts can be delivered to compatible devices. Image is courtesy of the USGS.

✗ MYTH

Earthquakes can be predicted.

✓ FACT

Earthquakes cannot be predicted. ShakeAlert detects shaking after an earthquake begins and provides information fast enough that alerts can be delivered to people and vital systems before strong shaking arrives.

Every earthquake will trigger an alert.

Alerts are only delivered when magnitude and intensity thresholds are met. Smaller or distant earthquakes may not trigger alerts at all.

Everyone will get an alert.

Some devices may not get alerts and people near the epicenter may feel shaking before they get an alert. Some devices may miss alerts due to settings or issues with connectivity.

A Layer of Emergency Preparedness

Traditional earthquake preparedness—securing furniture, storing supplies, and practicing protective actions—remains essential. These steps reduce injuries, help households and workplaces function after a disaster, and strengthen community resilience.

KEY IDEA: Earthquake early warning doesn't replace preparedness; rather, it strengthens it by giving you time to act on the plans and drills you already practice.

Figure 5: Earthquake Early Warning is just one tool for mitigating earthquake impacts and staying safe



Experiencing ShakeAlert

People may receive ShakeAlert-powered alerts in several ways. Different alert delivery methods offer different benefits, and many newer smartphones in California, Oregon, and Washington may already be capable of receiving alerts when strong shaking is expected at their location.

Alerts can be delivered through phone operating systems, WEAs, mobile apps such as MyShake, and automated systems. The specific alert format, sound, timing, and settings may vary depending on the device or delivery method.

The most important point is the same in every case: if you receive an alert or feel shaking take protective action immediately.

What Alerts Look and Sound Like

ShakeAlert-powered alerts may look or sound different depending on your device, operating system, or app. Regardless of how an alert appears, the protective action is always the same: **Drop, Cover, and Hold On** or take a modified action, depending on your situation. Alerts may include:

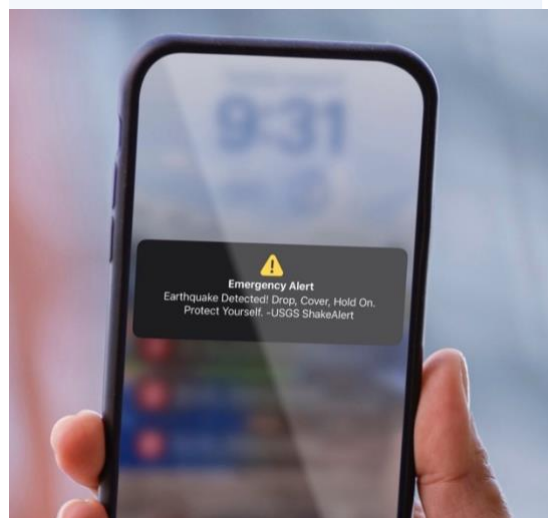
- A distinct sound or vibration
- A full-screen message
- A banner or pop-up notification
- A voice announcement through a public address system.

These differences are normal. Each Alert Delivery Partner designs its alert format based on their system, following USGS guidelines. The goal is always to provide clear, urgent information as quickly as possible.



KEY TAKEAWAYS

- ShakeAlert-powered alerts can reach you in several ways.
- Many newer smartphones can already receive alerts.
- Using multiple alerting methods adds another layer of readiness.
- Some organizations can use ShakeAlert information to trigger automated safety actions.



Earthquake early warning can give people time to take protective action. Image is courtesy of the USGS.

Ways Alerts Reach Your Cell Phone

You can get ShakeAlert-powered alerts on your phone in several ways. Using multiple methods is the best way to make sure you get alerts when strong shaking is expected where you are. Options continue to evolve as more alerting tools and technologies become available. Here are some examples.²

Wireless Emergency Alerts (WEAs)

WEAs are short, text-like alerts sent through the Federal Emergency Management Agency's (FEMA) Integrated Public Alert and Warning System (IPAWS) to WEA-enabled phones in a designated area during emergencies. WEA is commonly used for AMBER Alerts and other public safety messages and does not require an app download or subscription.

ShakeAlert-powered alerts delivered through WEA say this:

- **English:** "Earthquake Detected! Drop, Cover, and Hold On. Protect Yourself. – USGS ShakeAlert."
- **Spanish:** "¡Terremoto detectado! Agáchese, cúbrase, sujétese. Protégase. – USGS ShakeAlert."

In earthquakes, a ShakeAlert-powered WEA is delivered to areas where shaking is expected to reach **Intensity 4 (light shaking)** or higher for earthquakes estimated at magnitude **5.0 or greater**.

Cell Phone Operating System Alerts

In California, Oregon, and Washington, ShakeAlert-powered alerts are delivered to cell phones by both the Android and iOS operating systems.

While the alerting behavior for each operating system differs, they both begin delivering alerts to cell phones for earthquakes estimated at magnitude **4.5 or greater**. Each operating system, however, uses different alert delivery thresholds for expected intensity:

- The Android operating system begins delivering alerts when **Intensity 3 (weak shaking)** or higher is expected.
- The iOS operating system begins delivering alerts when **Intensity 4 (light shaking)** or higher is expected.

Android and iOS users can opt out of ShakeAlert Earthquake Early Warning alert delivery, so it is important to ensure that Earthquake Alerts are turned on in your phone settings.

Mobile Apps, Such as MyShake

Downloading an alerting app, such as **MyShake**, gives you another way to get alerts. These apps:

- Are free on the Google Play Store and Apple App Store
- Are available to both iOS and Android users
- May provide additional features, such as maps, information, and intensity displays.

Apps may deliver alerts at slightly different thresholds or speeds than WEA or operating system alerts, which is why getting alerts by multiple methods is advised.

² The USGS does not endorse any product or service, but recommends that you understand how the services interact with your cell phone.

Automated Protective Actions Powered by ShakeAlert

Some organizations choose to use ShakeAlert information to activate preplanned safety steps before strong shaking arrives. The following overview explains how these capabilities work, and the examples show how organizations are using them in different settings.

How Automated Protective Actions Work

ShakeAlert-powered alerts can also activate automated protective actions that are designed to protect critical systems and reduce earthquake impacts. For organizations that have chosen to connect their systems to ShakeAlert information, alerts can trigger automated safety actions before strong shaking arrives. These capabilities are not universal; they depend on whether a facility has installed, configured, and maintained compatible equipment and procedures.

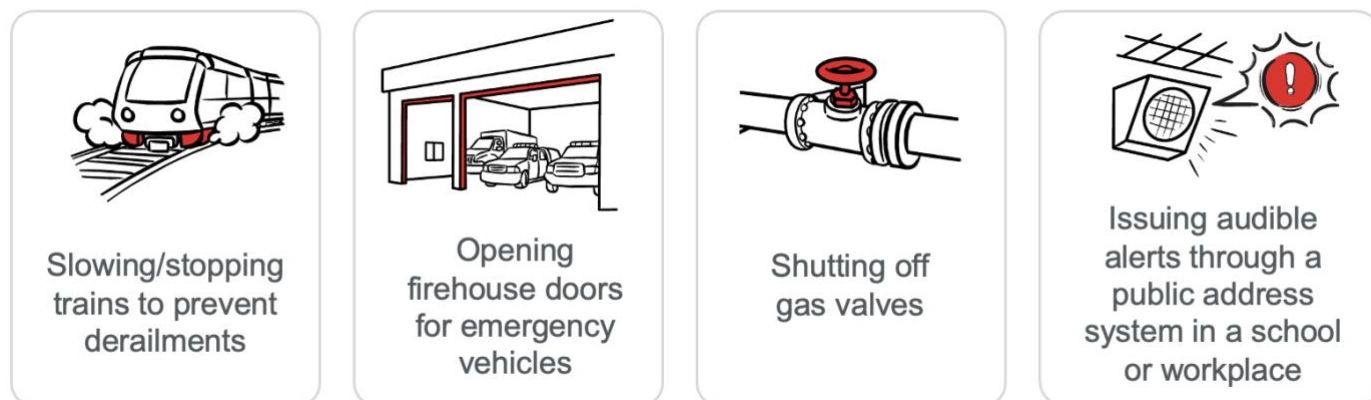
Increasingly, schools, hospitals, businesses, transit agencies, utilities, and research facilities are integrating ShakeAlert into their operations. These “machine-to-machine” actions use ShakeAlert data to issue announcements over public address systems, trigger alarms, or automatically activate safety steps before strong shaking arrives. While these automated protective actions are triggered at thresholds appropriate to their purpose, many begin responding when weak shaking is expected (around **Intensity 3**) from earthquakes estimated at **Magnitude 4.0** or higher.

Examples of automated protective actions include:

- Slowing or stopping trains to prevent derailments
- Opening fire station bay doors to ensure emergency vehicle access
- Shutting off critical utility system valves to reduce leaks and damage
- Sounding alarms or making public announcements

Automated actions help to protect people and vital systems/infrastructure, reduce damage, and support faster response and recovery.

Figure 6: Examples of Automatic Protective Actions



Examples of Automated Protective Actions Powered by ShakeAlert

Figure 7: Automatic Protective Actions Powered by ShakeAlert



Personal Protective Actions

An alert is most useful when you already know how to respond. This section reviews the protective actions that can help reduce injury when you receive an alert or feel shaking.

Drop, Cover, and Hold On

ShakeAlert is a public safety tool that supports existing earthquake preparedness and response practices. It reinforces the importance of being ready for shaking at any time. Even a few seconds of warning before strong shaking arrives can save lives and reduce injuries.

If you feel shaking or get an alert, take protective action immediately. Do not wait to see what happens. The recommended action in most situations is:

Drop, Cover, and Hold On

- **Drop** to your hands and knees so you can't be knocked down.
- Take **Cover** under a sturdy desk or table and cover your head and neck.
- **Hold On** to the cover until the shaking stops.

Depending on your situation, a modified protective action may be necessary. What matters most is that you protect your head, neck, and vital organs by staying in a position that reduces the chance of harm.

Protective Actions in Different Environments

When you receive a ShakeAlert-powered alert or feel shaking, take protective action immediately. For most people, that means Drop, Cover, and Hold On. The safest action may look a little different depending on where you are, what is around you, and your mobility needs.



KEY TAKEAWAYS

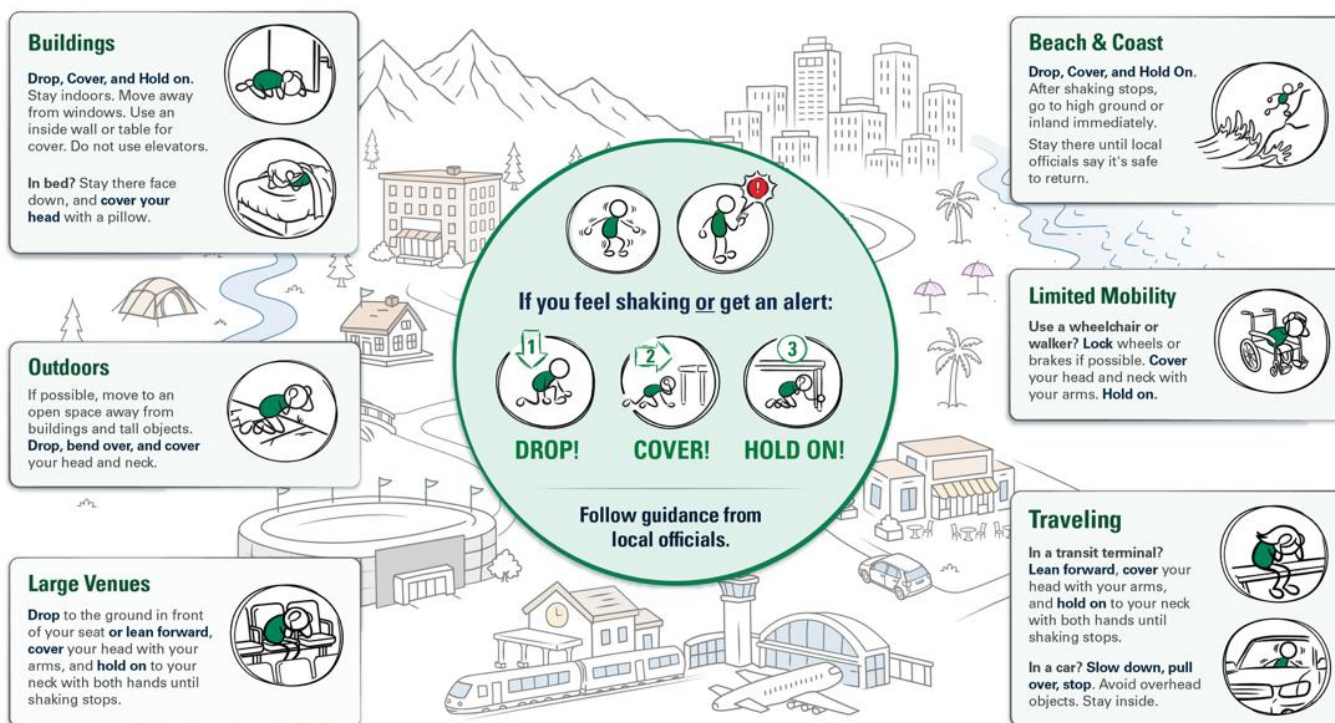
- Act immediately when you receive an alert or feel shaking.
- **Drop, Cover, and Hold On** is the safest action for most people in most situations.
- Use a modified protective action when your environment or abilities require one.
- Near the coast, strong or long shaking may mean you need to evacuate to high ground or inland after the shaking stops.



Practicing Drop, Cover, and Hold On helps people prepare to respond quickly if they feel shaking or get an alert. Image is courtesy of the USGS.

The graphic below provides examples for common settings, including buildings, outdoor spaces, large venues, near the coast, while traveling, and when using a wheelchair or walker. In every situation, protect yourself from falling objects and other immediate hazards, and follow guidance from local officials after the shaking stops.

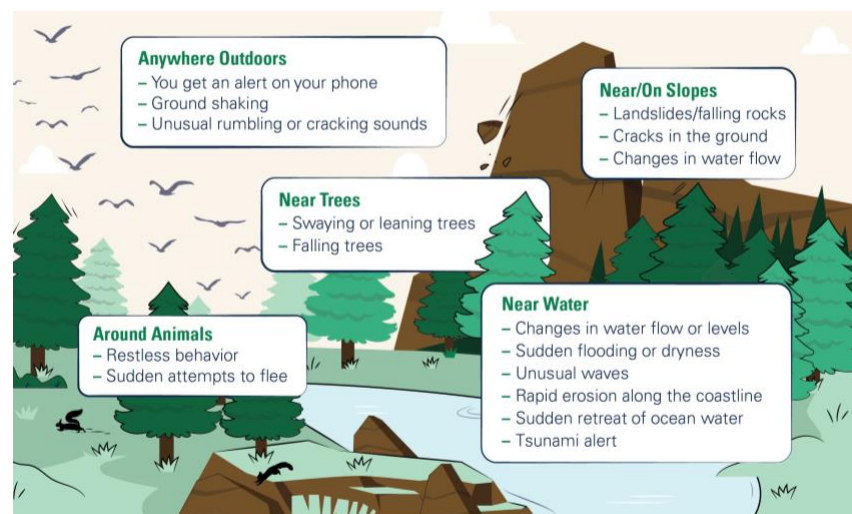
Figure 8: Protective Actions in Different Environments



Know the Signs in Nature

If you are in an area where there is unreliable or no cell service or internet connection (thereby undercutting your ability to get an alert), it is important to know the signs in nature that shaking may be coming your way. If you see or hear any of the signs you see in Figure 9, take immediate protective action.

Figure 9: Signs in nature that may signal strong shaking may be coming



Coastal Considerations

If you are near the coast, strong shaking may be a natural tsunami warning. When shaking stops:

- Strong or long earthquake shaking is your natural tsunami warning.
- After the shaking stops, move immediately to higher ground or inland.
- Don't wait for an official tsunami alert or warning before evacuating.
- Follow local evacuation routes and instructions from emergency officials.

If an earthquake is expected to generate a tsunami, the National Weather Service issues tsunami warnings. **The ShakeAlert Earthquake Early Warning System does not issue tsunami warnings.**

Figure 10: Tsunami Safety After Shaking Stops



What Not to Do When You Get an Alert

Act immediately. Stay where you are unless moving only a few steps will provide safer cover.

- ✗ **Do not run outside.** You could be injured by falling glass, building materials, signs, or other hazards near the exterior of a building.
- ✗ **Do not stand in a doorway.** Modern doorways are not usually safer than other parts of a building, and they do not protect you from falling or flying objects.
- ✗ **Do not move farther than necessary.** During shaking, focus first on protecting your head and neck and getting under sturdy furniture if it is immediately nearby.

For most people indoors, the safest action is to Drop, Cover, and Hold On until the shaking stops.

The CERT Role in Earthquake Early Warning Outreach and Education

CERT Volunteers are Trusted Messengers

CERT volunteers are often the people friends, family members, neighbors, and community members ask about public safety and preparedness. Your role as a trusted messenger is an important part of community readiness. By communicating calmly, clearly, and accurately, you can help others understand what to do before, during, and after an earthquake.

By learning about ShakeAlert earthquake early warning, you can help others:

- Understand earthquake early warning.
- Know how they may receive ShakeAlert-powered alerts.
- Know what to do when they get an alert or feel shaking.
- Trust ShakeAlert earthquake early warning and act when an alert is received.

This section provides information about finding and sharing reliable information, recognizing misinformation and disinformation, incorporating ShakeAlert into CERT activities, and confidently talking about earthquake early warning in your community.



KEY TAKEAWAYS

- CERT volunteers are trusted messengers.
- Be ShakeAlert Ready before you teach others.
- Keep the message simple, accurate, and action-focused.
- Help people understand alerts and take protective action immediately.

Share Trusted Information

As a CERT volunteer, you can and should trust ShakeAlert earthquake early warning. At the same time, emergencies often bring a fast-moving mix of alerts, news reports, social-media posts, images, and videos. Some other sources of information might be incomplete, inaccurate, outdated, or intentionally misleading.

ShakeAlert-powered alerts may look or sound different depending on the phone, app, or delivery method. These differences reflect how the alert is delivered, not the reliability of the ShakeAlert earthquake information behind it. You can trust a ShakeAlert-powered alert and should take protective action immediately if you receive one or feel shaking.

Figure 11: Pause before you share



Pause Before You Share

Ask these 5 questions first.



What is the original source?

Look for expertise, direct knowledge, or responsibility.



Is it specific and current?

Check the location, time, and source.



Can it be confirmed?

Compare it with reliable information or local instructions.



Could the image or video be misleading?

It may be old, altered, or missing context.



Should I share it yet?

If you can't verify it, don't repeat it as fact.

Be ShakeAlert Ready Before You Teach Others

Before talking with others about ShakeAlert, make sure you are ShakeAlert Ready yourself. You do not need to be an earthquake scientist or have all the answers, but you should be familiar with the basic information and actions you are sharing.

Before conducting outreach:

- **Know how you may receive alerts.** Identify which ShakeAlert-powered alerting methods are available to you, such as phone operating-system alerts, WEAs, or MyShake.
- **Check your phone settings.** Confirm that the relevant emergency-alert and location settings are enabled on your device and review any app settings that affect how you receive alerts.
- **Practice protective actions.** Think about where you spend time—at home, at work, in your vehicle, or in other settings—and know what protective action you would take if you feel shaking or receive an alert.
- **Be prepared to explain the ShakeAlert.** Know the basics so you can explain what earthquake early warning is, what ShakeAlert does and does not do, and why warning time can vary.
- **Know where to find trusted information.** If you do not know the answer to a question, use trusted ShakeAlert and USGS resources rather than guessing.

Start a ShakeAlert Conversation

Pair up with another participant.

One person is a CERT volunteer and the other is a community member who asks, “I’ve heard of ShakeAlert, but what is it?”

Practice a clear, one- or two-sentence response. Then switch roles and discuss what made the explanation easy to understand and act on.

Being ShakeAlert Ready yourself can help you share clear, accurate information and help others become ShakeAlert Ready too.

Keep the Message Simple

When talking about ShakeAlert earthquake early warning in your community, focus on a few clear, practical ideas. People do not need to understand every technical detail before they can take the right action.

Reinforce these three messages:

1. Earthquake Early Warning Can Give You Time to Act

ShakeAlert-powered alerts may provide warning before strong shaking reaches a person’s location. The amount of warning can vary, and some people may receive little or no warning, but even a few seconds can give people time to take protective action.

2. You Probably Already Have It

Many newer smartphones can receive ShakeAlert-powered alerts. Encourage people to check their phone settings and learn which alerting methods are available to them. Mobile apps, such as MyShake, can provide another way to receive alerts.

3. Be Ready to Act

If you receive an alert or feel shaking, take protective action immediately. For most people, that means Drop, Cover, and Hold On. Do not wait to see whether the shaking gets stronger or for an alert message to finish.

When in doubt, keep the message focused on what people need to know and do: understand that warning may be possible, know how alerts may reach them, and take protective action immediately.

Start a ShakeAlert Conversation

As a CERT volunteer, you can help make earthquake early warning feel understandable and relevant by starting short, practical conversations. These conversations can happen at CERT meetings, preparedness fairs, workplaces, neighborhood events, or informal gatherings. The goal is to help people become ShakeAlert Ready: know how they may receive alerts and be ready to take protective action immediately if they receive an alert or feel shaking.

A simple way to begin is to ask:

“Did you know you may get an alert before strong shaking reaches you?”

Then explain ShakeAlert in one or two sentences:

“ShakeAlert detects earthquakes quickly after they begin. When possible, it can provide warning before strong shaking reaches your location, giving you time to take protective action.”

Connect the alert to immediate action:

“If you receive an alert or feel shaking, take protective action right away. For most people, that means Drop, Cover, and Hold On.”

You can also help people:

- Check their phone settings.
- Understand the different ways ShakeAlert-powered alerts may reach them.
- Find MyShake or other reliable ShakeAlert information.
- Recognize that warning time may vary and that they should always act immediately if they feel shaking.



Pictured above is a CERT community outreach table. Image is courtesy of the San Jose Neighborhood CERT.

Keep the conversation simple, accurate, and focused on what the person can do to be ready. There are some key talking points for your reference in the Frequently Asked Questions section of this manual

ShakeAlert into CERT Readiness Activities

CERT teams can strengthen community readiness by weaving ShakeAlert into the activities they already do. Integrating earthquake early warning concepts into drills, exercises, outreach, and communication plans helps people to connect the technology to familiar preparedness actions.



Exercises and Drills

When planning or participating in earthquake exercises, consider starting the scenario with a simulated ShakeAlert-powered alert. This allows volunteers to practice responding immediately and using correct protective actions before continuing the drill.



Preparedness Booths, Fairs, Community Events

At outreach events, CERT volunteers can demonstrate how to check phone settings, explain how different alerting methods work, and show examples of what alerts look like. Even a short demonstration can increase someone's confidence in their ability to get and act on alerts.



Communications and Outreach Plans

CERT teams can incorporate ShakeAlert-focused messaging into team communication protocols, educational materials, neighborhood presentations, newsletters, and social media. Emphasize that earthquake early warning complements but does not replace standard preparedness efforts.



CERT Training and Continuing Education

ShakeAlert topics can be included in new CERT classes, refresher trainings, and advanced workshops. This ensures volunteers stay familiar with the ShakeAlert Earthquake Early Warning System and can address common questions accurately.

Be ShakeAlert Ready

Being ShakeAlert Ready means knowing how ShakeAlert-powered alerts may reach you and checking your phone settings, taking protective action immediately when you receive an alert or feel shaking, and helping others understand ShakeAlert and know what to do.

1

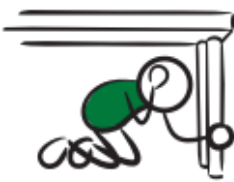


Get alerts on your phone
— confirm your WEA
settings and download the
MyShake app

Know How Alerts May Reach You

Know how you may receive ShakeAlert-powered alerts and confirm that your phone settings are enabled. Remember that not everyone will receive every alert, so always take protective action if you feel shaking.

2



Act immediately
when you feel shaking
or get an alert

Take Protective Action Immediately

If you feel shaking or receive a ShakeAlert-powered alert, act immediately. For most people, this means **Drop, Cover, and Hold On**. The appropriate protective action may vary depending on your location and abilities.

3



Share what you know
— CERT volunteers are
trusted messengers

Help Others Become ShakeAlert

As a CERT volunteer, you can help others understand earthquake early warning, how they may receive ShakeAlert-powered alerts, and what protective action to take. Share clear, accurate information and encourage others to be ready to act.

Take One Action Today

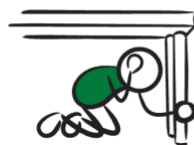
Before you leave this training, choose one thing you can do to become more ShakeAlert Ready:



**Check your
phone settings.**



**Download or
open the
MyShake app.**



**Identify safe
places to take
cover where you
spend time.**



**Explain
ShakeAlert to
someone else.**

Become ShakeAlert Ready—and help someone else do the same.

Frequently Asked Questions

1. What is earthquake early warning?

Earthquake early warning detects significant earthquakes quickly after they begin. When possible, it can provide warning before strong shaking reaches some locations, giving people and systems time to take protective action. Earthquake early warning does not predict earthquakes.

2. What is ShakeAlert?

ShakeAlert is the only public earthquake early warning system in the United States. Managed by the USGS, ShakeAlert rapidly detects earthquakes after they begin and provides information to USGS-licensed Alert Delivery Partners. These partners use ShakeAlert information to deliver ShakeAlert-powered alerts or trigger automated protective actions. When possible, ShakeAlert provides advance warning before strong shaking arrives. The ShakeAlert System serves more than 55 million people in California, Oregon, and Washington

3. Why is ShakeAlert important?

Large earthquakes on the West Coast—such as those along the Cascadia Subduction Zone or the San Andreas Fault—can cause widespread injuries and damage. Earthquake early warning adds another layer of safety by giving people time to take protective action, when warning is possible, and allowing automated systems to take safety actions that can reduce earthquake impacts.

4. Can ShakeAlert predict earthquakes?

No; earthquakes cannot be predicted. ShakeAlert detects a quake after it begins and uses real-time data to estimate where strong shaking will occur. USGS-licensed Alert Delivery Partners use ShakeAlert information to deliver alerts to people or trigger automated protective actions.

5. Who provides the earthquake information?

The ShakeAlert® Earthquake Early Warning System is managed by the USGS. It uses seismic sensors and automated processing to estimate an earthquake's location, magnitude, and expected shaking. The USGS shares this information with USGS-licensed Alert Delivery Partners, which use their own systems to deliver ShakeAlert-powered alerts.

6. How much warning time does ShakeAlert provide?

Warning time varies primarily depending on where the earthquake begins and how far you are from it. You may receive several seconds, very little, or no warning before strong shaking reaches your location. People closer to where an earthquake begins may have less warning because strong shaking can reach them before an alert can be delivered. No specific amount of warning time is guaranteed

7. Is it possible to miss an alert?

Yes. Not everyone will receive every alert. You may not receive an alert if the earthquake or expected shaking at your location does not meet the threshold for your alert delivery method, if you are too close to where the earthquake begins for an alert to reach you before shaking, or because of phone settings, connectivity, or other technical factors. Because alerts are not guaranteed, always take protective action immediately if you feel shaking.

8. Why might someone else receive an alert when I don't?

ShakeAlert-powered alerts may be delivered differently depending on the expected shaking at each location, the alert delivery method, alert thresholds, phone settings, and other factors. Not everyone will receive every alert. If you feel shaking, take protective action immediately, even if you have not received an alert.

9. How do I get ShakeAlert-powered alerts on my phone?

Chances are that your cell phone is *ShakeAlert Ready* when strong shaking is expected near you. In California, Oregon, and Washington, there are several cost-free ways to get ShakeAlert-powered Earthquake Early Warning alerts.

- [Wireless Emergency Alerts](#) from FEMA: Depending on your cell phone, this setting may be found under *Emergency Alerts* or *Government Alerts*.
- Cell Phone Operating Systems: Android and iOS have built-in EEW alerting.
 - For Android: <https://crisisresponse.google/android-early-earthquake-warnings>
 - For iOS: <https://support.apple.com/en-us/102516>
- Apps: Get the [MyShake](#) app from the [App Store](#) (iOS devices) or [Google Play](#) (Android devices). There is no app called “ShakeAlert” to download.

10. What should I do if I feel shaking or get an alert?

Take protective action immediately. For most people, this means Drop, Cover, and Hold On. Depending on your location and abilities, a modified protective action may be appropriate. Do not wait for an alert if you feel shaking, and do not wait to see if the shaking gets stronger before taking protective action.



11. Does ShakeAlert issue tsunami warnings?

No. Tsunami warnings are issued by the National Weather Service. If you are near the coast and feel shaking or get an alert, move to higher ground or inland immediately. Stay there until local authorities say it is safe to leave. The earthquake is your tsunami warning. Be aware that tsunami waves may arrive for hours.

12. What happened to standing in a doorway or using the “triangle of life” during an earthquake?

Neither is recommended as a default protective action in the United States. Most doorways do not provide reliable protection from falling or flying objects, and moving to a doorway during shaking can put you at greater risk.

The “Triangle of Life” is based on observations from an earthquake in Turkey and does not apply to buildings constructed in the United States. Instead, if you are indoors, stay there and use Drop, Cover, and Hold On: get under a sturdy desk or table if one is nearby, protect your head and neck, and hold on until the shaking stops.

13. What is the difference between earthquake magnitude and intensity?

Magnitude measures the total energy released by an earthquake at its source.

Intensity describes how strongly the shaking is felt at a specific location and depends on your distance from the epicenter and ground conditions.

14. What are automated protective actions triggered by ShakeAlert?

ShakeAlert-powered data can automatically activate safety actions, such as slowing or stopping trains, opening fire station doors, shutting off critical system utility valves, and issuing public address announcements. These actions help to protect people and vital systems/infrastructure.

15. Will I get an “all-clear” message after an earthquake?

No. ShakeAlert does not issue “all-clear” messages. After shaking stops, remain alert for hazards and aftershocks and follow instructions from local officials

16. Where can I learn more about ShakeAlert and preparedness?

- Visit ShakeAlert.org
- Follow [@USGS_ShakeAlert on X](https://twitter.com/USGS_ShakeAlert).
- Explore [USGS Latest Earthquakes](https://www.usgs.gov/earthquake-earthquakes).
- Explore the [Earthquake Country Alliance's](https://www.earthquakecountryalliance.org/) preparedness information.
- Explore the [Be 2 Weeks Ready](https://www.be2weeksready.org/) information offered by the Oregon Department of Emergency Management.
- Visit these West Coast Emergency Management Agencies:
 - [California Governor's Office of Emergency Services \(Cal OES\)](https://www.caloes.ca.gov/)
 - [Oregon Department of Emergency Management \(OEM\)](https://www.oregon.gov/DEM/)
 - [Washington Emergency Management Division \(WA EMD\)](https://www.wa.gov/emergency-management)

Key Terms

Aftershock: A smaller earthquake that follows a larger one, originating near the same location. Aftershocks can continue for hours or even days after an earthquake.

Alert Delivery Partner: An entity licensed by the USGS to use ShakeAlert data and deliver alerts to people or automated systems.

Alert Threshold: The minimum magnitude and intensity needed to trigger ShakeAlert alerts or automated protective actions.

AMBER (America's Missing: Broadcast Emergency Response) Alert: A type of Wireless Emergency Alert (WEA) used to locate abducted children; it is included here as an example of another type of WEA.

Automated Protective Actions: System-triggered safety actions, such as slowing trains or shutting off utility system valves to reduce earthquake impacts.

Critical Infrastructure: Essential community systems, such as power, water, and transportation that support public safety and national stability.

Drop, Cover, and Hold On: The recommended immediate protective action during an earthquake. Drop to the ground, take Cover under a sturdy object, and Hold On to the object until shaking stops.

Epicenter: This is the place on the Earth's surface directly above where an earthquake starts underground. Shaking is usually strongest near this point.

Federal Emergency Management Agency (FEMA): A federal agency responsible for coordinating disaster response and recovery efforts across the United States.

Global Navigation Satellite System (GNSS): Satellite-based system, including GPS, used to detect ground movement during earthquakes.

Ground Motion: The movement of the Earth's surface during an earthquake that can cause shaking, displacement, and structural damage.

Hypocenter: The point underground where an earthquake begins.

Integrated Public Alert and Warning System (IPAWS): FEMA-managed platform that delivers ShakeAlert-powered Wireless Emergency Alerts.

Intensity: How strongly an earthquake is felt at a location, measured by the Modified Mercalli Intensity (MMI) scale.

Liquefaction: A process by which water-saturated sediment temporarily loses strength and acts as a fluid, like when you wiggle your toes in the wet sand near the water at the beach. This effect can be caused by earthquake shaking.

Magnitude: Measures the energy released by an earthquake at its source. Magnitude is a fixed value for each earthquake and provides a standardized way to describe its overall size.

Modified Mercalli Intensity (MMI) Scale: Scale from 1 (not felt) to 10+ (extreme) that rates how earthquake shaking is experienced locally.

National Weather Service: A National Oceanic and Atmospheric Administration (NOAA) agency that issues tsunami warnings and other emergency alerts.

Operating System (OS): The software (e.g., Android, iOS) that manages a device's functions and alert settings.

Protective Actions: Safety steps, such as Drop, Cover, and Hold On that are taken during an earthquake.

Seismic Waves: Vibrations that travel through the Earth, carrying the energy released during an earthquake. They include primary (P-waves), secondary (S-waves), and surface waves.

P-waves (Primary Waves): These waves travel the fastest and usually cause less intense shaking, but can still cause damage. They are detected first and are rapidly analyzed at a ShakeAlert Processing Center.

S-waves (Secondary Waves): These waves travel more slowly and arrive after the P-waves. S-waves can be a source of strong shaking and can cause damage.

ShakeAlert Earthquake Early Warning System: USGS-managed earthquake early warning system that detects West Coast earthquakes and includes Alert Delivery Partners who deliver alerts before strong shaking arrives.

Surface Rupture: Surface rupture occurs when movement on a fault deep within the earth breaks through to the surface. Not all earthquakes result in surface rupture.

U.S. Geological Survey (USGS): Federal science agency that manages the ShakeAlert Earthquake Early Warning System and studies earthquakes.

Wireless Emergency Alert (WEA): In this context, short, ShakeAlert-powered emergency messages delivered to warn the public that strong shaking is expected at their location.

Learn More and Stay Connected

U.S. Geological Survey/ShakeAlert®

ShakeAlert Website

This website provides educational resources, technical information, and alert information.

[ShakeAlert Website](#)

ShakeAlert Ready CERT Website

This page provides ShakeAlert Ready CERT training materials and guidance to help CERT programs teach earthquake early warning, promote protective actions, and strengthen community preparedness.

[ShakeAlert Ready CERT](#)

ShakeAlert Messaging Toolkits

ShakeAlert Messaging Toolkits offer information about the ShakeAlert Earthquake Early Warning System and promote protective actions among people in West Coast states. There is a ShakeAlert Messaging Toolkit for Emergency Managers, as well as sector-specific Messaging Toolkits. All offer access to graphics, fact sheets/FAQs, and short videos.

[ShakeAlert Messaging Toolkits](#)

ShakeAlert Tests, Drills, and Exercises Toolkit

The USGS ShakeAlert Tests, Drills, and Exercises Toolkit incorporates earthquake early warning into existing training activities.

[ShakeAlert Tests, Drills, and Exercises Toolkit](#)

Earthquake Detected! Here's How You Can Prepare – U.S. Geological Survey

This provides practical steps to prepare for earthquakes and reduce their impacts.

[USGS Earthquake Preparedness](#)

Earthquake Information Tools for Public Safety

This resource helps members of the emergency management and broader public safety community access, understand, and use USGS earthquake information tools for planning, situational awareness, response coordination, and recovery.

[Earthquake Information Tools for Public Safety](#)

Get Alerts on Cell Phones

Be ShakeAlert Safe

This tells people how to get ShakeAlert-powered alerts on their cell phones.

[Be ShakeAlert Safe](#)

Wireless Emergency Alerts (WEA) Settings for Mobile Devices

Learn how to enable WEA messages on mobile devices, including ShakeAlert-powered alerts.

[FEMA WEA Settings](#)

Emergency Alert Settings – iOS (Apple)

Apple's support page details how to enable emergency alerts, including ShakeAlert-powered alerts.

[Apple iOS Alert Settings](#)

Emergency Alert Settings – Android

Watch this short video tutorial on adjusting emergency alert settings on Android devices.

[Android Alert Settings](#)

How Android Earthquake Alerts System Works

This is an overview of how Android phones use real-time data to provide earthquake alerts.

[Google Crisis Response](#)

State Emergency Management Agencies

California Governor's Office of Emergency Services (Cal OES)

Cal OES is the official government agency responsible for coordinating emergency preparedness, response, recovery, and mitigation efforts in California. It provides guidance on earthquake safety, emergency alerts, and community resilience.

[Cal OES Website](#)

Oregon Department of Emergency Management (OEM)

OEM is the central hub for emergency management and preparedness in Oregon, offering resources on ShakeAlert and ways to build community resilience. OEM also developed a Be 2 Weeks Ready series of preparedness tools to help people be self-reliant for up to two weeks following a large-scale disaster of longer-term duration (such as a major earthquake along the Cascadia Subduction Zone).

[Oregon OEM Website](#)

Washington Emergency Management Division (WA EMD)

The WA EMD coordinates disaster response and recovery efforts in Washington State, providing information about earthquake preparedness, ShakeAlert awareness, and community outreach.

[WA EMD Website](#)

Additional Learning

Putting Down Roots in Earthquake Country: Your Handbook for Earthquakes in Southern CA

This is a practical guide to earthquake preparedness.

[Earthquake Country Alliance Handbook](#)

Rocket's Earthquake Safety (Children's Activity Books/Videos – Multilingual)

These multilingual resources by The Hero in You Foundation are ideal for young learners.

[Rocket's Earthquake Safety Activity Books and Videos](#)

Staying Safe Where the Earth Shakes

This booklet, offered by the Earthquake Country Alliance, includes the "Seven Steps to Earthquake Safety" – basic guidelines for what to do before, during, and after a damaging earthquake.

[Staying Safe](#)

Acknowledgments

Efforts to support CERT training recognize that citizens are often on their own during the early stages of a disaster. CERT volunteers receive fundamental training in disaster preparedness, survival, and rescue techniques that enhance their own capabilities and those of others until professional aid arrives. CERT volunteers, instructors, and the agencies that sponsor and support them provide a valuable service to communities as they build resilience to disasters, including earthquakes.

The ShakeAlert Communication, Education, Outreach, and Technical Engagement (CEO&TE) Community thanks the many people who contributed to this ShakeAlert Ready CERT training. Special thanks to Alison Gross Hodges of California State Polytechnic University Humboldt and Linda Nellist of Humboldt Bay CERT, who developed an early version of this training material, as well as Cassidy Aldrich, Emergency Preparedness Specialist for the City of Marysville, WA, who led the ShakeAlert Focus Team that provided further content build-out.

Efforts of the ShakeAlert CEO&TE Community across California, Oregon, and Washington are reflected herein. From CERT leaders, emergency managers, and earthquake scientists, to disaster risk reduction educators, risk and crisis communicators, and beyond, the expertise and energy invested in this public safety initiative is commendable and important ... *because seconds matter.*

###

Because seconds matter.

Notes

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