

WHAT IS YOUR EARTHQUAKE RISK IF YOU LIVE IN CALIFORNIA?

While there is more than a 99 percent chance of at least one magnitude 6.7 or greater earthquakes occurring over a 30-year period anywhere in the Golden State, the specific risk you face from a major earthquake is based on what part of the state you live in.

SOUTHERN CALIFORNIA EARTHQUAKE PROBABILITIES

When many people living in Southern California, and specifically, the Greater Los Angeles Area (Los Angeles, Orange County, San Bernardino County, and Ventura County), think about earthquake risk and earthquake probabilities, they think of the region's proximity to the Southern San Andreas fault. The San Andreas Fault is California's longest fault and the one that gets the most attention. It slices through Los Angeles County along the north side of the San Gabriel Mountains. It can cause powerful earthquakes—as big as magnitude 8.

In their most recent, the USGS's earthquake forecast predicted a 93% chance of a larger earthquake—aka one or more magnitude 6.7 or greater earthquakes—striking Southern California.

While the San Andreas is Southern California's most well-known fault, earthquakes in the region also happen on other, smaller faults. In 1994, the magnitude 6.7 earthquake struck near Northridge, killing 58 people, injuring more than 9,000 and causing more than \$49 billion in economic loss. This was caused primarily by the Northridge Blind Thrust fault, which triggered activity in several other faults.

More recently, the 2019 Ridgecrest earthquakes were California's biggest in more than 20 years, and a USGS report suggested they involved as many as five fault zones, including the Owens Valley fault zone, Panamint Valley fault zone, Garlock fault zone, Blackwater fault zone, and San Andreas fault zone. On the morning of Thursday, July 4th, a magnitude 6.4 earthquake struck in the Mojave Desert near Searles Valley. Multiple aftershocks followed, and on the evening of July 5th, another earthquake struck in the same area with a magnitude of 7.1.

Many SoCal residents feel shaking from earthquakes a couple of times a year, most are mild or moderate with little damage and no injuries. But, on average, a quake of magnitude 6 or larger is likely to hit somewhere in Southern California every few years.

CENTRAL VALLEY EARTHQUAKE PROBABILITIES

Like all of California, the Central Valley, which is surrounded by faults, is earthquake country. Earthquake shaking can begin suddenly and have lasting impacts.

The San Andreas fault system is to the west, the Garlock fault is to the south and the faults of the Sierra Nevada are to the east. The San Andreas fault system could create the biggest earthquakes in the region—as big as magnitude 8—that would disrupt a wide-ranging area of the Central Valley. However smaller magnitude earthquakes could also cause damaging levels of ground shaking.

Magnitude 6.7 or higher

In their most recent report, the USGS predicted more than a 99 percent chance of one or more magnitude 6.7 or greater earthquakes striking somewhere in California.

Furthermore, a study by the USGS indicates that a portion of the San Andreas fault near Tejon Pass could be overdue for a major earthquake. As the study notes, when it comes to earthquake probabilities along this section of the San Andreas fault, earthquakes occur about every 100 years with the last major earthquake occurring in this area in 1857. That earthquake was called the Fort Tejon quake and was a magnitude 7.9.

HOW TO KEEP YOUR FAMILY SAFE IN AN EARTHQUAKE

There are ways you can protect your home and your family in the event of a major earthquake.

They include:

- Bolt and brace water heaters and gas appliances to wall studs. Have a professional install flexible fittings to avoid gas or water leaks.

- Do not hang heavy items, such as pictures and mirrors, near beds, couches and anywhere people sleep or sit.
- Install strong latches or bolts on cabinets. Large or heavy items should be closest to the floor.
- Learn how to shut off the gas valves in your home and keep a wrench handy for that purpose.
- Place large and heavy objects and breakable items on lower shelves, use museum putty to hold items in place.
- Anchor overhead fixtures to joists.
- Anchor top-heavy, tall and freestanding furniture, such as bookcases and china cabinets, to wall studs to keep these from toppling over.
- Ask about home repair and strengthening tips for exterior home features, such as chimneys, porches, decks, sliding glass doors, canopies, carports and garage doors.
- Go to the Red Cross Earthquake Safety page for more useful information and tips.

Learn the seven steps to earthquake safety

No one can predict when or where potential earthquakes will strike, but you and your family can be prepared before the next big one hits. The following earthquake preparation tips take only a few hours and will help you create a plan and organize supplies that will keep you safer.

Seven steps to earthquake safety

Step 1: Secure your space by identifying earthquake hazards.

Step 2: Plan to be safe by creating a disaster plan and deciding how you will communicate in an emergency.

Step 3: Organize disaster supplies in convenient locations.

Step 4: Minimize financial hardship by organizing important documents, strengthening your property and considering insurance.

Step 5: Drop, cover, and hold on when the earth shakes.

Step 6: Improve safety after earthquakes by evacuating if necessary, helping the injured and preventing further damage.

Step 7: Reconnect and restore daily life by communicating with others, repairing damage and rebuilding.

HOW TO PROTECT YOUR HOME

Even though it is impossible to accurately predict when an earthquake will occur, you can still take measures to reduce damage and improve the chances of staying safe by preparing in advance for earthquakes. The ways in which you can protect your home and your family in the event of a major earthquake include:

- Create an earthquake safety plan for you and loved ones, including pets.
- Know your risk for earthquakes in your area and what you must do to stay safe.
- Make or purchase earthquake safety kits.
- Identify and fix potential earthquake hazards in your home.
- Secure fixtures, furniture, appliances and other items inside your home.

