ATI RESTORATION

How Businesses Can Prepare for Earthquakes

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Introduction

On average, 177 earthquakes with a magnitude of 4.0 or higher strike within 186 miles of the United States every year. Is your business prepared to withstand the next one?

While small tremors may seem inconsequential, it only takes one large seismic event to disrupt entire regions, causing widespread damage to infrastructure and economic systems. In some cases, the damage is so severe that companies are forced to close permanently, unable to recover from the financial and operational losses.

The unpredictability of earthquakes demands proactive planning, including implementing earthquake preparedness and mitigation strategies. Companies that invest in these efforts are more likely to recover quickly, protecting their assets and ensuring the safety of their employees. They can also reduce downtime, ensuring continuity of operations and limiting disruptions to their workforce and customers.

This white paper combines practical insights from our experience in disaster preparedness with key earthquake mitigation strategies. With the right precautions in place, businesses can strengthen their defenses against the devastating consequences of earthquakes and position themselves to survive and thrive, even in the face of unpredictable natural disasters.

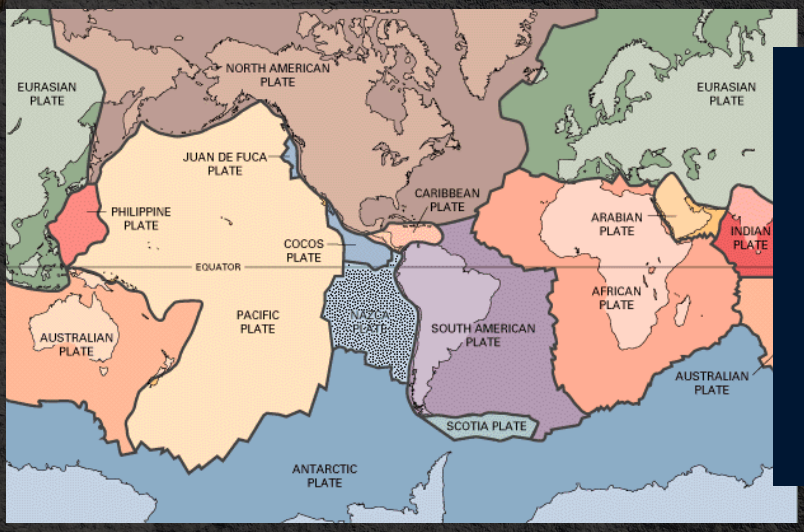
Earthquakes cost the nation an estimated $14.7 billion annually in building damage and associated losses.

Sources: FEMA and USGS

What Causes Earthquakes?

Earthquakes are caused by the sudden release of energy from the Earth's crust, which creates seismic waves that shake the ground. The Earth's outer layer, or crust, is divided into large pieces called tectonic plates. These plates are constantly moving, though usually at a slow pace. However, they can become stuck at the boundaries where these plates meet due to friction. Over time, stress builds up as the plates continue to push against each other.

When the stress overcomes the friction, the plates suddenly slip and release the built-up energy. This movement causes the ground to shake, resulting in an earthquake. The point within the Earth where this movement occurs is called the focus or hypocenter, while the point directly above it on the surface is called the epicenter.



Man-made Earthquakes

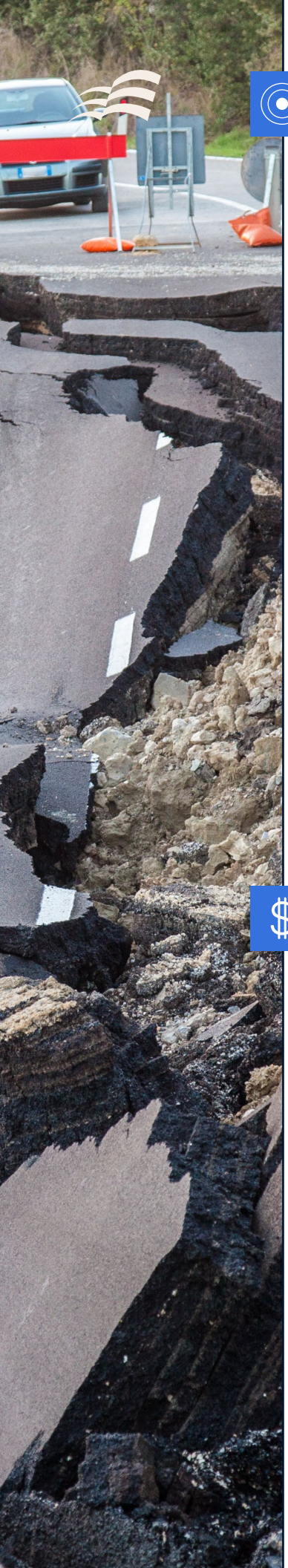
While natural earthquakes result from tectonic forces, human activities can alter the Earth's underground conditions, sometimes triggering seismic events. Human-induced earthquakes have become more common with the rise of industrial activities like oil and gas extraction, geothermal energy production, and the construction of large dams. States like Oklahoma and Kansas have seen a sharp rise in seismic activity due to wastewater injection, transforming once-quiet areas into regions with frequent small to moderate earthquakes.

Impacts and Severity

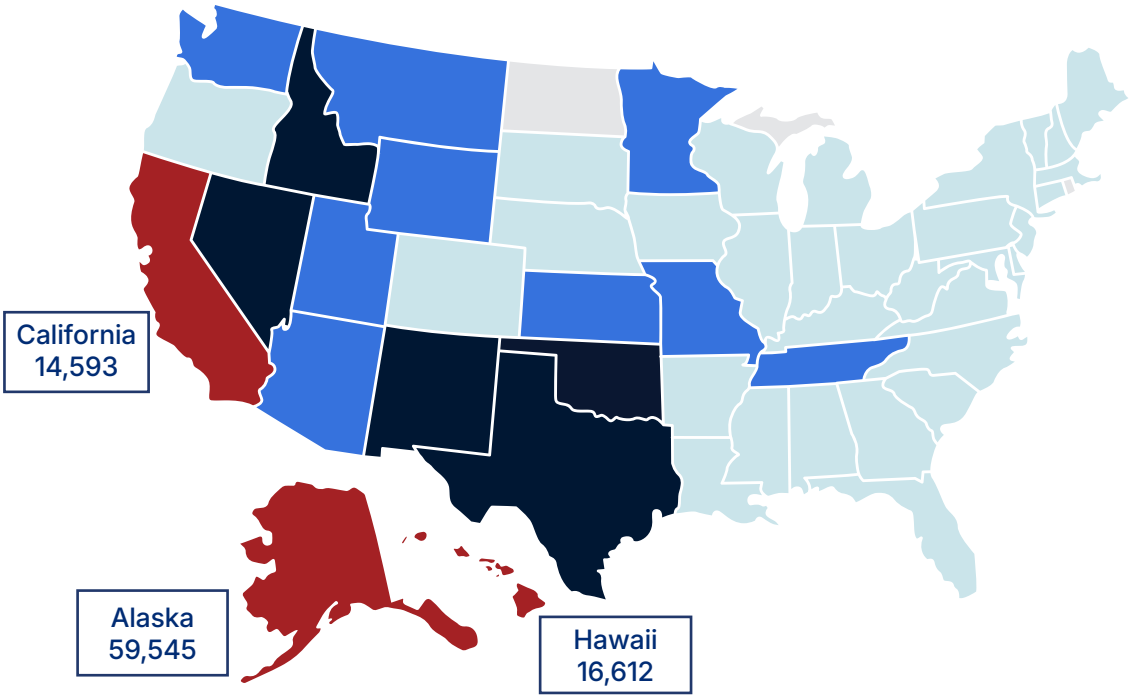
The severity of an earthquake depends on several factors, including the amount of energy released, the depth at which the earthquake occurs, and the distance from the epicenter. Earthquakes can also trigger secondary hazards, such as landslides, tsunamis, and fires, further compounding their destructive potential.

15 Tectonic Plates

North American
Antarctic
Eurasian
Pacific
African
South American
Australian
Nazca
Indian
Philippine
Arabian
Cocos
Caribbean
Scotia
Juan de Fuca



EARTHQUAKES BY STATE FROM 2015-2025



States With 1-200 | States With 201-2,000 | States With 2,001-8,500 | Top States

Source: World Population Review

TOP 10 COSTLIEST U.S. EARTHQUAKES BY INFLATION-ADJUSTED INSURANCE LOSSES

($ Millions)

Rank	Date	Event	Location	Insured losses when occurred	In 2024 Dollars
1	Jan. 17, 1994	Northridge	CA	$15,300	$33,035
2	Apr. 18, 1906	San Francisco	CA	235	8,507
3	Oct. 18, 1989	Loma Prieta	CA	960	2,413
4	Feb. 28, 2001	Nisqually	WA	315	566
5	Jan. 7, 2020	Puerto Rico	PR	425	520
6	Aug. 24, 2014	South Napa	CA	200	274
7	Feb. 9, 1971	San Fernando	CA	32	250
8	Oct. 1, 1987	Whittier Narrows	CA	75	205
9	Nov. 30, 2018	Anchorage	AK	150	189
10	Aug. 23, 2011	Virginia	VA, DC	100	139

Source: Insurance Information Institute

The total estimated **economic exposure** for buildings and contents nationwide is

$107.8 Trillion

CALIFORNIA, TEXAS,NEW YORK, AND FLORIDA

account for more than

29%

OF THE TOTAL

These 10 States

CALIFORNIA
WASHINGTON
OREGON
TENNESSEE
PUERTO RICO
UTAH
NEVADA
MISSOURI
ARKANSAS
HAWAII

have the **highest earthquake risk** to populations and together account for

MORE THAN

27%

of the nation's economic exposure to **earthquake damage**

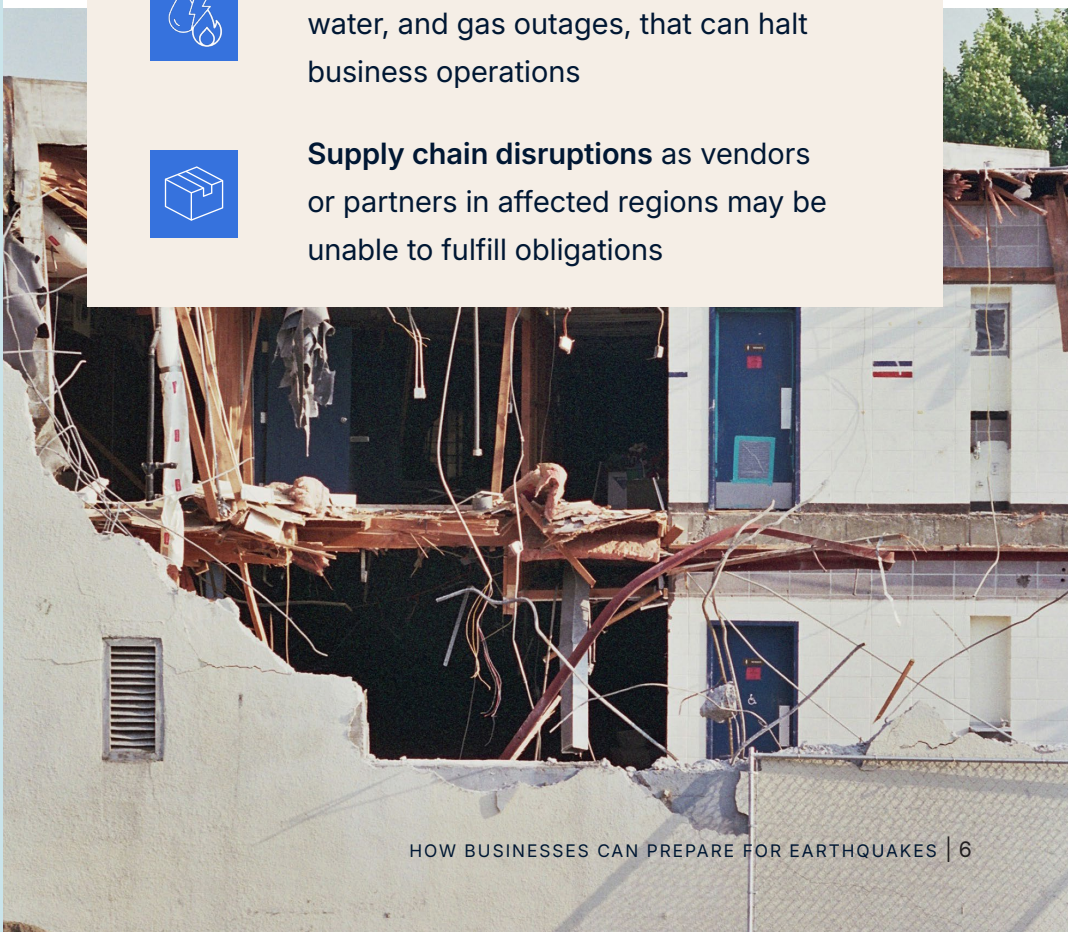
Sources: FEMA, NEHRP, USGS

Business Risks and Costs of Earthquakes

Earthquakes pose both immediate and long-term risks to businesses. Ground shaking is the most recognizable threat, but secondary hazards such as fires, tsunamis, and infrastructure damage can have equally devastating effects. Businesses in all regions should review their preparedness strategies, not just those in high-risk zones.

When earthquakes strike, businesses face a range of risks, including these:

- **Structural damage** to buildings, potentially making them unsafe or unusable.
- **Utility disruptions**, such as power, water, and gas outages, that can halt business operations
- **Supply chain disruptions** as vendors or partners in affected regions may be unable to fulfill obligations



Prepare for and Respond to an Earthquake

How you prepare for and respond to an earthquake can mean the difference between a quick recovery and long-term disruption for your business. While earthquakes are unpredictable, having a solid plan in place ensures you can protect your employees, minimize damage to your property, and maintain business continuity.

In this section, we provide practical steps to help you assess risks, develop an earthquake preparedness plan, and take actions during and after an earthquake to safeguard your people and your property.

Six of the costliest U.S. earthquakes were centered in California. The costliest quake happened in Northridge, California, in 1994 and cost more than $15.3 billion in insured losses — the equivalent of more than $32 billion today.

Sources: Insurance Information Institute

Assess the Risks

If you are in an area with high seismic activity, prioritize retrofitting and securing your infrastructure. Even businesses in traditionally low-risk zones should not overlook the potential for earthquake damage.

- **Evaluate** your building's construction, especially if it was built before modern seismic codes. Structures made from unreinforced masonry, concrete, or those with irregular designs may be more susceptible to damage.
- **Inventory** any hazardous substances that may be released in the event of a tremor

Develop an Earthquake Preparedness Plan

TEAM TRAINING & DISASTER SUPPLIES

- Conduct evacuation drills at least twice a year to familiarize employees with procedures. Train them in the "Drop, Cover, and Hold On" protocol.
- Designate safe spots, like under tables or against interior walls, where no glass can break and heavy furniture won't fall.
- Prepare emergency kits with enough water, non-perishable food, flashlights, and first-aid supplies to last at least 72 hours.

BUSINESS CONTINUITY PLANNING

- Develop a continuity plan outlining how your business will maintain operations after an earthquake — identify backup suppliers, establish temporary workspaces, and implement data protection.
- Compile an emergency contact list for employees and key vendors.
- Review your insurance policy for coverage; consider earthquake insurance and business interruption coverage.
- Set up an Emergency Response Agreement (ERA) to ensure priority service after a catastrophe and faster response amid high call volumes.

Review and update the plan as needed to reflect new construction, changes in business operations, and employee turnover.

REDUCE THE RISKS

- Retrofit older buildings to meet modern seismic codes and prevent collapse. Retrofitting may include reinforcing walls, adding shear panels, or bracing roofs. Consult with an engineer to determine the best course of action for your building.
- Fix any structural vulnerabilities in the building, such as unreinforced masonry.
- Secure office equipment, file cabinets, signs, fans, shelving, lighting fixtures, and large furniture, which can become dangerous during shaking.
- Secure furniture to walls and use straps or Velcro to anchor electronics.
- Secure any hazardous chemicals to prevent leaks and spills.

"DROP, COVER, AND HOLD ON" DURING AN EARTHQUAKE

- Stay updated on earthquake warnings via radio, television, or computer alerts.
- "Drop, Cover, and Hold On": Take cover under sturdy furniture and away from windows.
- If you're outside, stay outside. Move away from buildings, trees, streetlights, and overhead lines, which could fall and injure you.
- Crouch down and cover your head. Many injuries occur within ten feet of the entrance to buildings. Bricks, roofing, and other materials can fall from buildings.

STAY SAFE AFTER THE SHAKING STOPS

Stay indoors and move to a safe location and be prepared for aftershocks and continue following safety protocols.

- If you are trapped, send a text; if you don't have phone access or service, bang on a pipe or wall, and cover your mouth with your shirt for protection.
- If you are in a tsunami zone, move to higher ground immediately.
- If you are outdoors, continue avoiding buildings, trees, and power lines.
- After the shaking stops, use the stairs to leave the building, not the elevator, and watch for falling debris. Earthquakes can activate fire alarms and sprinklers, and elevators may be unsafe

INSPECT THE DAMAGE AFTER THE ALL CLEAR

Personal Safety Precautions and Hazard Awareness

- Wear protective clothing, including a long-sleeved shirt, long pants, work gloves, and thick-soled shoes when cleaning debris to avoid injury.
- Stay clear of fallen utility lines or large debris. Do not try to move heavy debris by yourself.
- Don a mask before you enter buildings with indoor water leaks or mold growth that you can see or smell.
- Look out for downed trees and large limbs on power lines, vehicles, and buildings.
- Inspect for gas leaks and other hazards before re-entering buildings.

Damage Documentation & Reporting

Once it is safe to re-enter the building, document and report property damage to your insurance carrier and restoration services provider. Look for common issues including:

STRUCTURAL DAMAGE

- Cracked interior walls
- Shifted, settled, or cracked foundations
- Damaged ceiling tiles
- Cracked windows and facades
- Cracked concrete, pavement, sidewalks, or other flooring
- Displaced rooftop HVAC equipment
- Buckled or dislodged roof flashing

BUILDING SYSTEMS AND EQUIPMENT

- Gas odor or signs of a gas leak
- Fire damage from gas leaks and electrical issues. Disconnection of fire sprinkler systems
- Damage to electric and water lines
- Water damage from burst pipes and plumbing failures
- Soil liquefaction (loose or water-saturated soil causing sinking or tilting of structures)
- Equipment and machinery damage

The "Drop, Cover, and Hold On" Method

If you feel shaking or get an earthquake alert, immediately take these actions:

DROP onto your hands and knees where you are.

- This position protects you from being knocked down and reduces your chances of being hit by falling or flying objects.

COVER your head and neck with one arm and hand.

- If a sturdy table or desk is nearby, crawl underneath for shelter; if not, crawl next to an interior wall, stay on your knees, and bend over to protect your vital organs.

HOLD ON until the shaking stops.

- Under shelter: Hold on to it with one hand and be ready to move with your shelter if it shifts.
- No shelter: Hold on to your head and neck with both arms and hands

Prepare Your Business for the Next Earthquake

Although earthquakes are unpredictable, businesses that take proactive steps to prepare can protect their employees and assets and increase their chances of bouncing back quickly after an event. ATI has decades of experience helping businesses recover from earthquakes and other catastrophes. Our earthquake-related services include, but are not limited to, the following:

- Immediate assessment of earthquake damage
- Safety evaluation of the premises
- Temporary repairs
- Emergency board-ups and tarping
- Debris removal
- Structural repairs

Contact us to learn more about how to set up an Emergency Response Agreement with ATI to help your business accelerate recovery after an earthquake.

With 70+ Locations Nationwide

ATI responds to major events and day-to-day emergencies across the U.S.

ATI RESTORATION

Contact Us

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