



# Sound Shake

FACILITATING EARTHQUAKE PREPAREDNESS:  
A WORKPLACE GUIDE

# Introduction

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Thank you for taking the time to better prepare your business or organization for the potential impacts of an earthquake or other disaster. The time you invest now will go a long ways towards helping you manage and recover from a disaster.

As you'll see, disaster preparedness and planning doesn't have to take endless hours of research or plan writing – it can be a simple learning process you and your co-workers can participate in.

By completing this exercise, you will not only be better prepared, but also have a sense of calm and confidence that you and your organization have taken reasonable and responsible steps to provide a foundation for your response to a disaster.

## GOALS OF THIS GUIDE

- Help private sector and non-profit agencies identify organizational risks and hazards.
- Assist in the development and testing of an emergency plan.
- Help in the building of a emergency kit specific for your workplace.
- Help your employees identify risks and dependencies in their home life.

## HOW TO USE THIS GUIDE

This guide is designed to help a facilitator walk your organization through testing and evaluation of current disaster response and recovery plans. The exercise outlined in this guide is designed to meet the needs of a wide variety of organizations (small to mid-sized businesses, non-profits, etc.). It is general enough to be helpful for a wide range of audience, but can also be modified by you to meet specific needs of your organization. The guide progresses through the days following a major earthquake. **The facilitator should read each section outlining the impacts to your organization, then ask the set of specific questions for you to work through as a team, or small groups.** After each section, it is recommended that you share answers amongst your team, and come to conclusions on how you may change or update your organization's emergency plans and procedures to be better prepared for an earthquake or other disaster.



# Seattle Fault Scenario

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Please read or explain the below scenario to your team to help set the stage for the exercise.

Because the Puget Sound region sits in a highly volatile geological zone, local emergency experts consider earthquakes the most potentially damaging natural hazard for our region. While predicting when and where an earthquake will strike is nearly impossible, geologists and earth scientists have conducted wide ranging research on the geology and the history of earthquakes in the Puget Sound region to better understand the hazards facing our communities. The most recognized and comprehensive research resulted in the Seattle Fault Scenario project, which is the basis on which this exercise document is based.

The Seattle Fault extends more than 40 miles and runs from west of Seattle, across the I-90 corridor, to the Cascade Mountains. Because of its proximity to large population centers and associated infrastructure, a shallow, but expectedly strong earthquake would likely cause significant damage across our region.



For the purpose of this exercise, the expected impacts of a 6.7 magnitude earthquake, as outlined in the Seattle Fault Scenario report, are used to simulate damage and disruptions to our region's infrastructure, such as hospitals, roadways, and utilities.

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## Helpful Links:

Seattle Fault Scenario  
<http://seattlescenario.eeri.org>

Cascadia Region Earthquake Workgroup (CREW)  
<http://www.crew.org>

Pacific Northwest Seismic Network  
<http://www.pnsn.org>

USGS Earthquake Hazards Program  
<http://earthquake.usgs.gov>



# An Earthquake Strikes

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**FACILITATOR - READ THIS SECTION ALOUD:** Another day in your workplace starts off as any other would, with employees arriving onsite from their morning commutes. Just as the day gets going, there is a sudden large jolt of the building, followed quickly by more violent shaking. The shaking lasts for more than 30 seconds, but not more than a minute.

A 6.7 magnitude earthquake has struck the Puget Sound region with people from as far north as Everett and Bellingham, and as far south and Vancouver and Portland feeling the ground shake.

Once the earthquake has subsided the initial impacts at your workplace include furniture, equipment, and supplies scattered about, your phone lines appear to be down, power to your building may be disrupted – or inconsistent, as is cell phone coverage. Depending on the age and location of the building, there is minimal to serious structural damage. In older buildings, especially brick, roof and wall collapse has occurred, windows have broken, and doorways may be unusable or blocked with debris. Utility pipes including water, sewer, and natural gas may be broken, and may even be exposed.



## Facilitator – Ask These Questions:

Now is the time to assess the initial damage to you, your workplace, and your team. Use the following questions to start your discussion:

1. What would you do at your desk or workspace when the earthquake hits?
2. How would you know if all of your employees and team members are accounted for after the initial shaking?
3. If you had to evacuate the building, where would you go?
4. How would you do the basic clearing of debris and broken glass?
5. What if there were injuries to your team? Could you treat them?
6. How would you communicate with other offices, employees not onsite, and employees' families?

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## Helpful Links:

[Ready Business](https://www.ready.gov/business)  
ready.gov/business

[American Red Cross  
Workplace Preparedness](https://www.redcross.org/workplace-preparedness)  
redcross.org

[3 Days, 3 Ways  
Small Business Preparedness](https://govlink.org/3days3ways/business.html)  
govlink.org/3days3ways/business.html

[Institute for Business & Home Safety](https://disastersafety.org)  
disastersafety.org

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## Facilitator Prompts:

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1. In most situations, experts recommend to DROP to you hands and knees under your desk or other shelter, COVER your head and neck, and HOLD ON to your shelter.
2. Prepare a list of employees (a roll call) and a system of checking on workgroups or teams of employees throughout your building.
3. Examine your building and prepare an emergency evacuation plan, planning multiple routes should one be blocked.
4. Keep heavy gloves or other necessary equipment in your organization’s emergency kit to handle debris.
5. Provide training for employees in basic first aid and CPR procedures and keep a first aid kit as part of the office emergency supplies.
6. Assess communication needs and develop an emergency communication plan utilizing alternative means of communication.

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### NOTES - NEXT STEPS FOR IMPROVEMENT:

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### SELF EVALUATION: IF AN EARTHQUAKE STRUCK TODAY, HOW READY ARE WE?

1   -   2   -   3   -   4   -   5

NOT READY

PREPARED



# The First 24 Hours

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**FACILITATOR - READ THIS SECTION ALOUD:** The initial 24 hours after the earthquake can be the most critical in not only ensuring the safety of your employees and team, but also making sure your business or organization gets back on its feet as fast as possible. During this time your organization can assess the impacts to your stakeholders, decide upon immediate steps, and begin to plan for longer-term recovery.

After the ground stops shaking, more details on the impacts on the entire region are becoming known. The local media is reporting impacts to the following key sectors:

**TRANSPORTATION** The region's transportation system has been devastated, making moving around the region very difficult for residents as well as responders. More than 80 bridges across the Puget Sound area are damaged or destroyed beyond use, freeway overpasses have collapsed, and many major thoroughfares are blocked. The regional airports have been temporarily closed due to needed inspections of the runways and damage to facilities. The Washington State Ferry system is not operation at this time, with severe impacts to many of the terminals.

**UTILITIES** (Power, Water/Sewer, Internet, Phones) – In the initial hours after the earthquake, power to your building is inconsistent, remaining out for several hours at a time. Land line phones appear to be operational but frequently overloaded. Cell phone coverage is very inconsistent, with minimal coverage, and without power, limited options for recharging batteries. Likewise, internet service is not operational due to power outage and damage to infrastructure. In older buildings, water mains have broken, and the sewer systems have stopped working..

**HEALTHCARE** While many of the region's hospitals have emergency power and supplies to keep them up and running during an emergency, various facilities have physical damage, or are being evacuated because of loss of water or other key utilities. Health officials are asking that only life threatening emergencies come to the hospital. Impacts to the transportation system are making it even more difficult to respond to emergencies.

**SHELTER/HOUSING** Local media are reporting that thousands of residents of the region are being forced to stay out of their homes or residences because of damage or loss of key utilities. In these early hours of the disaster, neighbors are helping neighbors, but it is too early for large shelter and feeding centers to have opened. Some of your employees and team members may not be able to return to their homes because of damage to their structure, or due to blocked roadways.





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## Facilitator – Ask These Questions:

The wide-ranging impacts of the earthquake are now coming to light and could effect your organization. Use the following questions to start your discussion:

1. How will the limited transportation system impact our operations?
2. Is the facility we rent, own, or use safe to occupy?  
Who can determine if it is or not?
3. What are the impacts to our facility with the loss of utilities (power, water, sewer, internet, phones)? Will they affect our ability to run daily operations?
4. Do we have customers or clients relying on the services we provide in the first 24 hours? If so, can we provide them, or are there other options to provide critical services?
5. If needed, can employees stay overnight in our facility or office space?

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## Facilitator Prompts:

1. Assess employee transportation, supply chain limitations, and delivery options impacted by disruptions to transportation options.
2. Conduct a visual inspection of your facility. If there is any question on the viability of your facility, find alternative shelter. As soon as possible, be in contact with the building owner or landlord.
3. Assess impacts and discuss if viable options exist.
4. Determine how you may provide critical services to those depending on your organization or business. Research alternative partnerships or options for providing service.
5. Examine what supplies may be needed in case of emergency sheltering.

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### NOTES - NEXT STEPS FOR IMPROVEMENT:

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**SELF EVALUATION: HOW MUCH HAVE YOU EVALUATED THE MAJOR IMPACTS TO YOUR OPERATIONS IN FIRST 24 HOURS FOLLOWING AN EARTHQUAKE?**

1 - 2 - 3 - 4 - 5  
NONE FULL ASSESSMENT



# Recovery Begins: 24-72 Hours

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**FACILITATOR - READ THIS SECTION ALOUD:** After the initial 24 hour period, the widespread impacts of the earthquake are becoming more apparent – not only for your organization, but across the region. During this time period, some of the basic and emergency services will be coming back online, while others will be deemed unusable for long periods of time and alternatives will begin to emerge. Many small aftershocks (up to a 4.0 magnitude) have jolted the region, causing not only unease with the population, but additional damage to infrastructure, roads, and utilities.

Other serious issues are also arising around the availability of key supplies such as gas, food, and cash as supplies run low and resupply unavailable. Many schools have stranded students in their buildings, and establishing communications with their parents has been difficult, if not impossible.

**TRANSPORTATION** The transportation system is at a near standstill, with little improvement. Interstate 5 is closed from Tacoma north to Everett due to multiple collapses of the roadway; both bridges of Interstate 90 across Lake Washington are damaged, leaving Mercer Island unreachable by car. The I-405/I-90 interchange near Bellevue has collapsed, as has the Alaskan Way Viaduct. The State’s ferry system remains shut down because of damage to the docks, but Sea-Tac Airport is now running limited flight operations, mainly to support the emergency response. The region’s railways are also suspended from Portland to Bellingham due to landslides across the tracks throughout the region.

**HEALTHCARE** The region’s healthcare system continues to be overwhelmed with injuries and fatalities. Estimates are hundreds of fatalities and thousands of injuries due to the earthquake. The 9-1-1 call centers are overwhelmed with callers seeking assistance, reporting damage, and trying to find other people. Local health officials are also concerned about water safety issues, as well as keeping families warm without electricity. Specialty services such as dialysis are unavailable and patients may need to be transported out of the area.

**SHELTERING/MASS FEEDING** While many are making the best of the situation by “sheltering in place” at their home or in their neighborhood, this is not a viable long term solution for sheltering thousands who have lost their homes. Small community shelters in churches, community centers or other central areas have sprung up across the region. Large scale shelters and mass feeding sites are not operational at this time, but emergency officials are in the process of establishing sites in key areas around the Puget Sound.





## Facilitator – Ask These Questions:

The severity of the situation is now clear to the region and the longer-term impacts are beginning to set in. Use the following questions to start your discussion:

1. What resources do you need to restore your operations?
2. What resources do you have that you can help the broader recovery in your community?
3. If your employees cannot come to work, can they work from home, or at another site?
4. Do your employees have school-aged children? If they are stuck at school, how does that impact your team and your operations?
5. Do your operations require access to gasoline for your fleet vehicles, or cash to operate? If these are unavailable, do you have other alternatives?

## Facilitator Prompts:

1. Compile a list of supply chain dependencies for your organization.
2. Evaluate if your business can provide key supplies or services to aid in your community's recovery.
3. Assess telecommuting or remote working options, including set up of technology needed to begin this.
4. Conduct a survey of your team and their family dependencies which will likely take first priority in an emergency.
5. Evaluate alternative supplies or access to key supplies such as gasoline and cash.

### NOTES - NEXT STEPS FOR IMPROVEMENT:

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**SELF EVALUATION: HOW PREPARED ARE YOU IF KEY SYSTEMS AND LOGISTICS WERE CUT OFF FOR MORE THAN 24 HOURS?**

1   -   2   -   3   -   4   -   5

NOT READY PREPARED



# Long Term Rebuilding...3 Days in

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**FACILITATOR - READ THIS SECTION ALOUD:** While the main earthquake occurred more than three days ago, small aftershocks continue to shake the region. Immediate life safety issues have been addressed in the region, and planning for recovery is still in the early stages. Priorities include repairs to transportation systems, long term housing for those displaced, and restoration of key utilities.

**TRANSPORTATION** The transportation system is slowly coming back online, though debris removal delays opening up many local routes. Bridges, overpasses, and elevated roadways throughout the Puget Sound were heavily damaged and will take months or longer to repair. Alternate routes are being developed, but transportation times have slowed, particularly on main thoroughfares such as I-5, I-405, and Highway 167. The I-90 and 520 floating bridges, as well as the Alaskan Way viaduct, will remain closed for some time as decisions are made on how to rebuild. Airports, railways, and ferry traffic are coming back online, though there will be some impacts to frequency and speed of travel due to temporary infrastructure.

**HEALTHCARE** The region's healthcare system has seen a surge in support from state and federal resources. Many hospitals were damaged and repairs are being prioritized, but it will be months to years before operations are back to normal. Because of the impacts, some patients are being transported to other regional hospitals outside of the impacted area.

**UTILITIES** So main utilities have come back online across the region, however damage from broken water, sewer, or natural gas lines may remain unserviced for some time as crews continue to prioritize areas.



## Facilitator – Ask These Questions:

While the situation is now stable, the region is coming to grips with the lengthy rebuilding process and mitigating future damage. Use the following questions to start your discussion:

1. During the recovery process, how will you adapt operations to account for impacts on facility, employees, and supply chain?
2. What plans will you now put in place to be better prepared for the next disaster?

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## Planning

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1. Does your organization have a business continuity plan?
2. Do employees regularly meet to discuss this plan?
3. How many days supply of basic materials do you need to run your business and do you have those on hand?
4. Which of your employees are trained in CPR and First Aid?
5. Can you set up a meeting with other businesses in your building or neighborhood to plan together?
6. What plans and skills you have learned for an earthquake could be applied to other disasters such as flooding, wind storms, or severe snow?

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## Protecting Your Business

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1. Have we fastened down fixtures, furniture, computers, etc. to reduce damage in the workplace?
2. Do you back up computer data often and regularly?
3. Do you have emergency lighting onsite, or can you buy or have your landlord install it?
4. Do you have earthquake insurance? Does your insurance cover other natural disasters?

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## Communication

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1. Do you have physical lists of employee phone numbers or a phone tree to help with communication?
2. Do you have remote access to voicemail to leave employees messages, or an out of area contact for your organization?
3. Which employees are closest to the physical office/building location? Do they have keys/alarm codes to enter the building if management cannot arrive?
4. Do you have an AM or NOAA Emergency Radio onsite to receive updated emergency information?
5. Do you know what the emergency AM radio station is in your community?

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### NOTES - NEXT STEPS FOR IMPROVEMENT:

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[WWW.RPIN.ORG](http://WWW.RPIN.ORG)