



# EARTHQUAKES

## HOW TO PREPARE

SPONSORED BY: **QUAKE KARE**



# WHAT IS AN EARTHQUAKE?

**Earthquakes are the release of energy caused by a sudden slip in tectonic plates along a fault line.**

**The Moment Magnitude Scale (MMS) measures the magnitude of an earthquake. The Modified Mercalli Scale measures the intensity of the quake based on a scale between 1 and 10.**

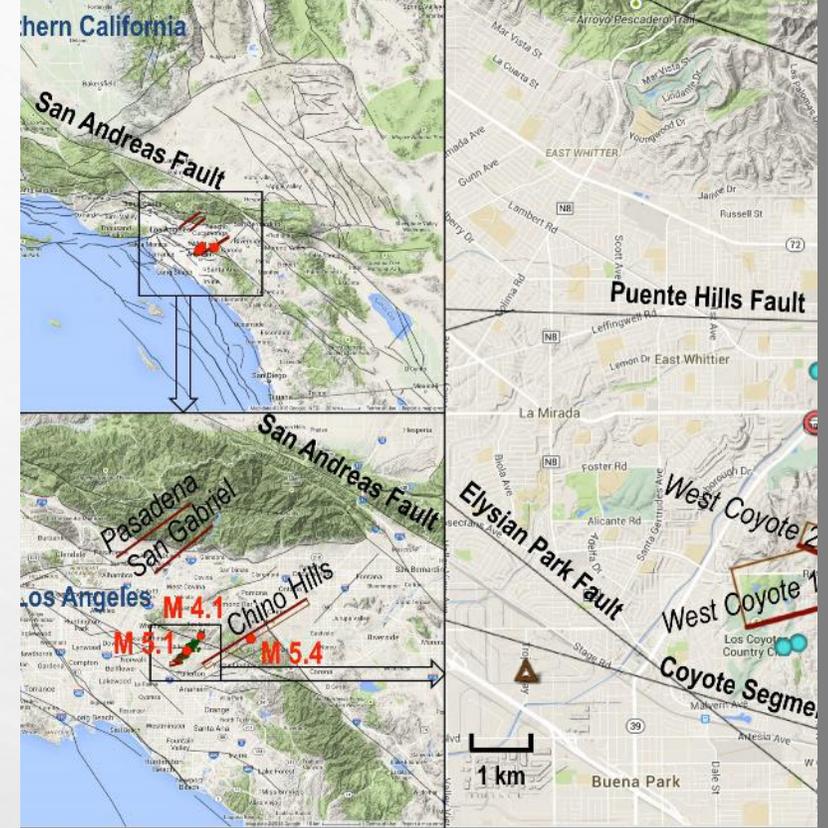
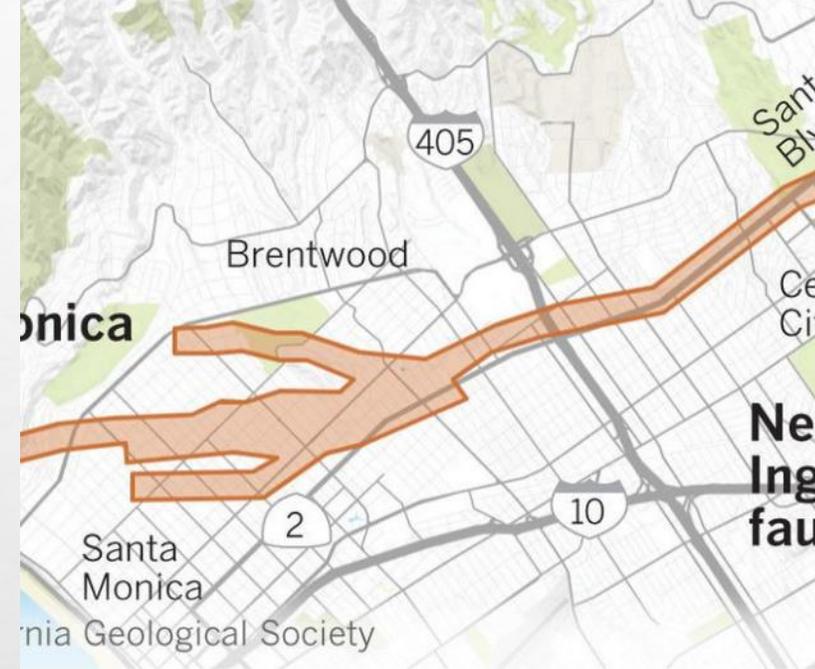
**The largest earthquake in California history occurred in 1857 around Fort Tejan, CA. The magnitude 7.9 earthquake caused surface ruptures, sand plumes, liquefaction, water flow anomalies and left a 225 mile fissure in the earth's crust.**

**The San Andreas Fault Line in CA extends 10 miles into the ground and runs 650 miles up the state. It is one of the most active fault lines in the world averaging over 10,000 earthquakes each year.**

**An earthquake swarm is a series of smaller earthquakes not triggered by a large earthquake. Aftershocks are the small readjustment quakes that follow a bigger earthquake.**

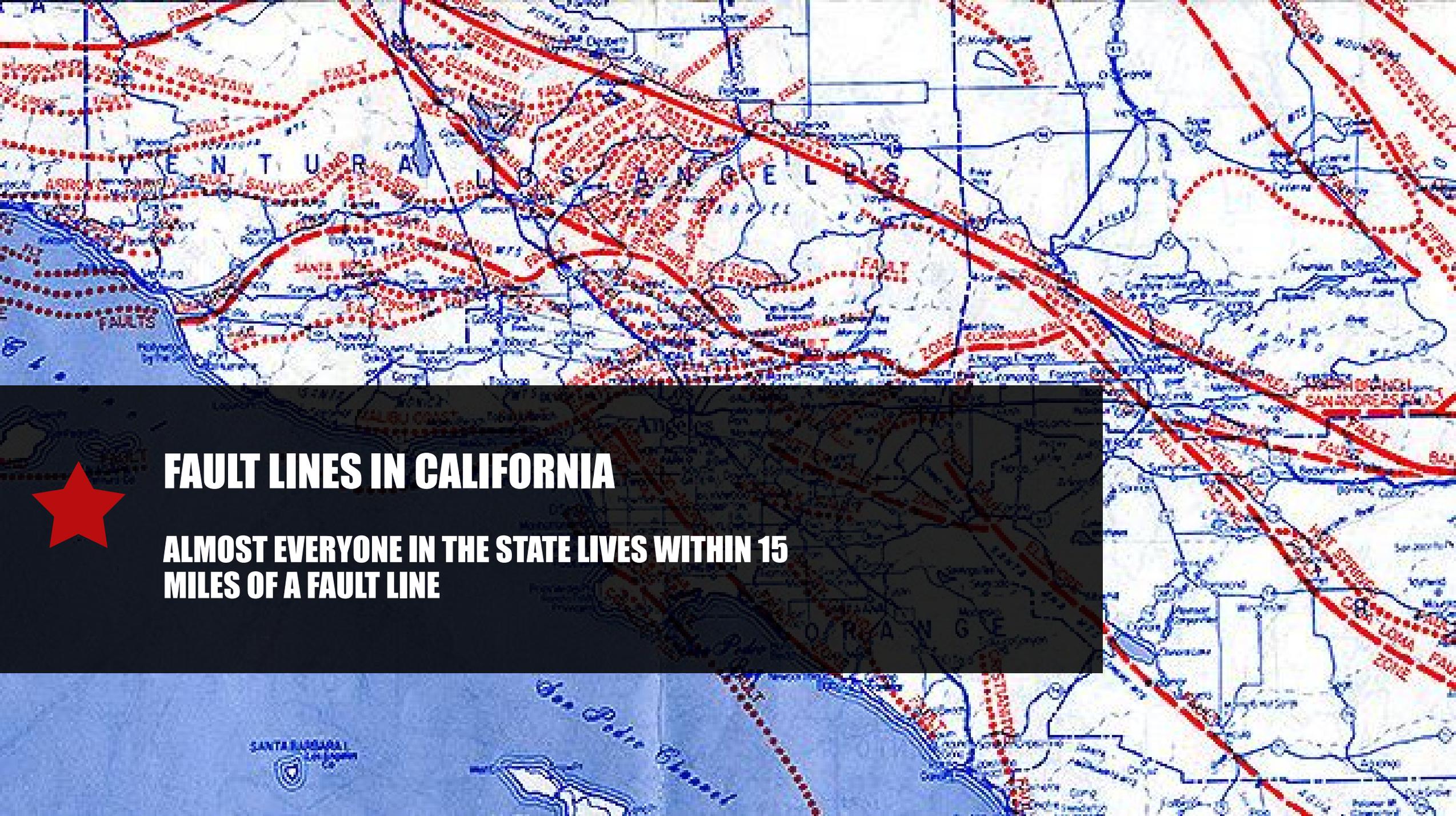


## Known earthquake faults and fault zones



**YOU ARE CLOSER TO A FAULT LINE THAN YOU MAY THINK**

**FAULT LINES ARE LOCATED IN THE WESTERN, CENTRAL AND EASTERN PARTS OF L.A. AND SURROUNDING AREAS**



**★ FAULT LINES IN CALIFORNIA**

**ALMOST EVERYONE IN THE STATE LIVES WITHIN 15 MILES OF A FAULT LINE**

# **AUTHORITIES ARE READY TO HELP IF THE BIG ONE HAPPENS, SO WHY DO I NEED TO BE PREPARED?**

- California has very thorough emergency action plans in place for major earthquakes and disasters that integrate with FEMA, the National Guard, other government agencies, non-profit aid agencies, cities and municipalities.
- Catastrophic events such as Hurricane Irma, Hurricane Katrina, the Northridge earthquakes and most recently, the COVID-19 pandemic have prompted authorities to recommend individuals take on a more proactive role in disaster preparation.
- Earthquakes can disrupt electric, water and sewer systems, and may impeded access to and from the impacted region. The damage to infrastructures can be severe, roads, bridges, railways and airports may be inoperable. Police, fire and rescue will be dealing with the most serious situations first leaving you and your family sheltering-in-place for several days or more.

# **AUTHORITIES ARE READY TO HELP IF THE BIG ONE HAPPENS, SO WHY DO I NEED TO BE PREPARED?**

- There are many other factors that play a role in a quick rescue including the proximity of the disaster to highly populated areas, and how wide-spread the devastation. It takes time to mobilize search and rescue efforts and to prepare emergency shelters. Shelters may take days to set up before they have adequate supplies of food, water and hygiene products ready for disaster victims.
- Cities and municipalities have plans in place; however, there are a lot of what “if’s” and contingencies surrounding these plans. Help will eventually arrive but not as soon as you may think.
- Prepare your family for a shelter-in-place situation that could last up to a week. Your family’s self-sufficiency during a disaster will be key to their survival and comfort.

# HOW LONG SHOULD I BE PREPARED FOR?

- COVID-19 may impact emergency relief efforts, reduce shelter availability and lengthen lead times to restore utilities.
- FEMA and The Red Cross currently recommend households store a 2-week supply of food and water per person in shelter-in-place kits.
- Maintain a 72-hour supply of non-perishable rations in your go-bag.



# WHAT TYPES OF PRODUCTS SHOULD BE INCLUDED IN A SURVIVAL KIT?



## EMERGENCY FOOD & WATER

Store a minimum two-week supply of non-perishable food and potable water for each person in your home survival kit. A UV protected 55-gallon water storage barrel provides a safe and cost-effective means of storing emergency water. Maintain 72-hours of food and water per person in your go-bag. Keep a list of your ration's expiration dates and replace them as necessary. Canned goods and bottled water may have limited shelf-lives of 6 months to a year. Storing these items in locations exposed to temperature fluctuations i.e. a car or garage may further reduce their shelf-lives.



## NON-BATTERY POWERED LIGHTING

If an earthquake occurs at night, alternative forms of lighting will be needed to navigate to a safe location. Electricity may be disabled for several days or weeks. Store a solar-powered/hand-crank flashlight, candles, matches and glow sticks in your emergency kit.



## EMERGENCY RADIO

An emergency radio is a lifesaver when determining where or when an evacuation is necessary. A radio will also keep you informed of important news bulletins. Choose one that can broadcast NOAA weather band stations.

# CONTINUED: WHAT TYPES OF PRODUCTS SHOULD BE INCLUDED IN A SURVIVAL KIT?



## **FIRST AID KIT**

Set aside a dedicated first aid with your survival supplies to ensure items are not removed for everyday accidents.

## **EMERGENCY SHELTER SUPPLIES**

Prepare to shelter-in-place outdoors for several days if not weeks. Thermal mylar blankets and sleeping bags provide an inexpensive, compact and effective means of keeping warm. Tents provide shelter from rain, wind and snow.

## **SEARCH AND RESCUE SUPPLIES**

A pry bar and shovel will be valuable commodities following a damaging earthquake. Include a gas and water shut off wrench next to your home's water and gas utilities. Broken gas lines are the leading cause of fire following a disaster.

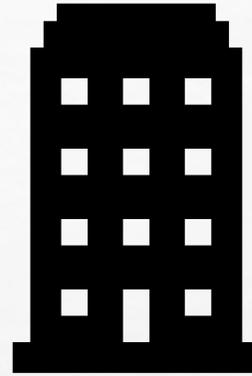
## **EMERGENCY SANITATION SUPPLIES & PPE**

Maintaining sanitary conditions while sheltering-in-place at home or in a public emergency shelter is even more imperative during the COVID-19 pandemic. Include in your kit: a bottle of hand sanitizer, disinfectant wipes, face masks (2 per person), personal hygiene products, toilet paper, tissue paper and a portable toilet (5-gallon bucket with toilet seat lid or folding portable toilet)



## **WHY IS IT IMPORTANT TO HAVE EMERGENCY SUPPLIES AT WORK, IN YOUR VEHICLE, AND AT HOME?**

The unpredictability of earthquakes prevents you from foreseeing where you may be when one occurs. The purpose of the go-bag is to sustain you until you reach your shelter-in-place supplies. Same with your office or classroom survival kits. Depending on the degree of infrastructure damage, you may be unable to reach your home supplies for several days. Keep a survival kit in the locations you spend the most time, i.e., your home, vehicle, and office/classroom.



**Shelter-in-place Kit  
72-hours – 1 week of  
supplies**



**Go-Bag  
72-hours of supplies**



**Shelter-in-place Kit  
2 weeks of supplies**

# MITIGATE DAMAGE - PREPARE YOUR HOME AND OFFICE

- Move heavy or large items, such as potted plants or large speakers to the floor or low shelves.
- Move things that can fall directly on you away from places where you spend a lot of time (bed, couch, desk, etc).
- Move heavy unstable objects away from doors and escape routes.
- Secure water heater to the wall studs with two metal straps. (Average cost \$20)
- Secure (or brace) electronic items such as computers and TVs with straps. (Average cost \$15)
- Hang mirrors and pictures on closed hooks. (Average cost \$2 per hook)
- Secure top-heavy furniture and appliances to wall studs. (Average cost \$12)
- Secure small items on shelves with museum wax. (Average cost for tub of wax \$10)
- Install latches on kitchen cabinets. (Average cost \$8)



# 2 IMPORTANT QUESTIONS



**What is the biggest cause of injury in an earthquake situation?**



**What should you not do in a moderate to severe earthquake situation?**

# 2 IMPORTANT QUESTIONS - ANSWERS



**The Biggest cause of earthquake-related injuries result from collapsing walls, flying glass, and falling objects as a result of the ground shaking.**



**What should you not do in a severe to moderate earthquake? Do not follow your initial instinct – No running. Do not try to run out of your home or office.**

# **DROP, COVER, AND HOLD ON (USE TO BE STOP, DROP, COVER)**



## **WHY SHOULD I NOT RUN OUT OF THE BUILDING?**

- When people try to run out of a building while the ground is shaking, they are more likely to sustain a moderate injury by being thrown into a wall, towards a window or down stairs.
- Your past experience in earthquakes may give you a false sense of safety; you didn't do anything, or you ran outside, yet you survived with no injuries.
- However, you likely have never experienced the kind of strong earthquake shaking that is possible in much larger earthquakes: sudden and intense back and forth motions of several feet per second will cause the floor or the ground to jerk sideways out from under you, and every unsecured object around you could topple, fall, or become airborne, potentially causing serious injury.

**DROP, COVER AND HOLD ON HAS BEEN ADOPTED BY THE STATE OF CALIFORNIA EOC, MUNICIPALITIES, THE CALIFORNIA EARTHQUAKE ALLIANCE AND THE GREAT SHAKE OUT**

# DROP, COVER, HOLD ON





**DROP** where you are, onto your hands and knees.

- This position protects you from being knocked down and also allows you to crawl to a shelter if nearby.



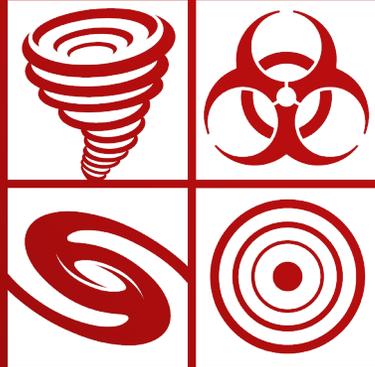
**COVER** your head and neck with one hand and hand.

- If a sturdy table or desk is nearby, crawl underneath it for shelter.
- If no shelter is nearby, crawl next to an interior wall (away from windows).
- Stay on your knees and bend over to protect vital organs.



**HOLD ON** until shaking stops.

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



EMERGENCY  
R E A D Y

**QUAKE KARE**

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**John Caine**

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**Director, Quake Kare Division**

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**314.423.4333 x204**

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**[jcaine@quakekare.com](mailto:jcaine@quakekare.com)**

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**[www.quakekare.com](http://www.quakekare.com)**