

# *Preparing for Natural Disasters: Floods, Hurricanes, Tornadoes and Earthquakes*

## **Overview**

Steps you can take to prepare your home for possible disasters.

- Possible disasters
- Disaster-proof your home
- Create an emergency plan
- Create a disaster supplies kit
- What to do during a flood or hurricane
- What do during a tornado
- What do during an earthquake
- What to do after a disaster strikes

Disasters such as floods, hurricanes, tornadoes and earthquakes can occur in almost any area of the country, so it's a good idea to prepare for them. Organize your home to minimize damage, create emergency plans and make sure you have emergency supplies. You should also plan what you would do in case of a natural disaster and discuss it with your family to make sure you are all as prepared as possible.

## **Possible disasters**

Any disaster that has occurred in an area can happen again, and other disasters are always a possibility. To find out which disasters to prepare for in your area and how to handle them, contact your local emergency management center, civil defense office, or American Red Cross chapter. Also, learn about your community's warning signals: what they sound like and what you should do when you hear them. The following are some types of disasters that may affect your community:

- A *flood or flash flood* is the overflow of water to a normally dry area. A flood can occur when water slowly rises following prolonged rainfall or rapid melting of snow. A flash flood may occur when sudden, heavy rainfall creates too much hillside runoff, overflowing dams, levees, and dikes. If you live in a flood plain near a river or stream, or in an area surrounded by mountains or hills, your home may be at risk during heavy rains.

- A *hurricane* is an intense tropical storm that spirals around a calm center, called an eye, and gains strength and speed over the open water of an ocean or gulf. When wind speeds reach 74 miles per hour, a tropical storm becomes a hurricane. This type of storm mostly affects coastal areas, especially in the Southeast, and usually occurs between June and December. A hurricane may bring high winds (up to 220 mph), heavy rains, high tides, and inland flooding.

- A *tornado* is an extremely violent, localized storm in which winds up to 200 mph whip around a central vortex. This type of storm may accompany thunderclouds in certain atmospheric conditions, and appears as a funnel cloud that stretches from the ground to the sky. Tornadoes can occur in any state (especially east of the Rockies), and usually travel from southwest to northeast.

- An *earthquake* can be caused by the sudden shifting of rock plates beneath the earth's surface or from the pressure of rising magma in volcanic areas. They usually occur along fault lines (where the rock plates that form the earth's crust meet), or in volcanic areas. The shaking may be very slight, or it may

be quite violent. Loud rumblings often accompany earthquakes, along with significant structure damage, power outages, explosions, or fires.

### **Disaster-proof your home**

Try to learn about the building where you live. Is it safe and able to withstand disaster? Search for danger, and remember, in a severe storm, ordinary items in the home can cause injury and damage. Anything that can move, fall, break, or cause a fire is a potential hazard. To minimize damage to your home in a disaster,

- Repair defective electrical wiring and leaky gas connections.
- Fasten shelves securely and brace overhead light fixtures.
- Avoid placing beds in front of windows. Hang pictures and mirrors away from beds.
- Secure water heater and oil tank to wall studs.
- Store weed killers, pesticides, and flammable products away from heat sources.
- Place oily polishing rags or waste in covered metal cans.
- Clean, repair, and maintain chimneys, flue pipes, vent connectors, and gas vents.
- Repair cracks in ceilings or foundations.
- Anchor heavy appliances, bookcases, and furniture to wall studs or floor.
- Place large, heavy objects on lower shelves.
- Keep hanging plants to a minimum. Use plastic pots instead of ceramic, and close or tie hooks and hangers shut.
- Store dishes, glassware, and pots in closed, latched cabinets instead of hanging or displaying them.
- Check hallways, exits, doors, and windows for hazards and obstructions. Keep the key easily accessible near locked doors or passages. Do not permanently bar, nail or paint windows or doors shut.

### **Create an emergency plan**

The best defense from any disaster is good preparation. Once you are aware of what types of disasters might affect your community, you may want to hold a family meeting to discuss the need for preparation. Explain the dangers of floods, hurricanes, tornadoes and earthquakes to children in terms they can understand. Explain that planning ensures that the family will stay together in case of an emergency. Plan to share responsibilities and work as a team.

- Meet with household members to discuss the types of emergencies that may affect your area. Explain how to respond, and find safe spots in the home for each type of disaster.
- Discuss what to do about power outages and personal injuries.
- Draw a floor plan of your home. Mark two escape routes from each room.
- Show family members how to turn off the water, gas, and electricity at main switches when necessary.
- Post emergency phone numbers near phones. Teach children how and when to call 911, police and fire.
- Instruct household members to turn on the radio for emergency information.
- Pick one out-of-state and one local friend or relative for family members to

call if separated during a disaster (it is often easier to call out-of-state than within the disaster area). Teach these phone numbers to each family member, including children and older adults.

- Pick two emergency meeting places
  - a place near the home in case of fire
  - a place outside the neighborhood in case family members can't return home
- Take a basic first aid and CPR class.
- Keep family records in a waterproof and fireproof container.
- Create a disaster supplies kit. Include a flotation vest for each member of the family if the area is prone to floods.
- Keep fuel in your car at all times and stock it with a car emergency supplies kit.

### **Create a disaster supplies kit**

Keep enough supplies in your home to meet all basic needs for at least three days. Assemble a disaster supplies kit with items that you might need if you are homebound or forced to evacuate. Store these supplies in sturdy containers such as backpacks, duffle bags, or covered trash cans. Prepare a smaller car emergency supplies kit and keep it in the car trunk.

### **Disaster supplies kit**

- A three-day supply of water (one gallon per person, per day) and food that won't spoil. Include a manual can opener, and any pet food and supplies you might need.
- one change of clothing and footwear per person, and one blanket or sleeping bag per person
- a first aid kit that includes prescription medications
- emergency tools including a battery-powered radio, flashlight, plenty of extra batteries, and a utility knife
- an extra set of car keys and a credit card, cash, or traveler's checks
- personal care supplies (toilet paper, soap, toothbrush, etc.)
- any special items or equipment for infants, or for older or disabled family members (formula, diapers, denture or eye care supplies, etc.)
- an extra pair of eyeglasses
- important family documents in a waterproof container

### **Car emergency supplies kit**

- battery-powered radio, flashlight, and extra batteries
- blanket
- booster cables
- fire extinguisher (5 lb., A-B-C type)
- first aid kit and manual
- bottled water and non-perishable, high-energy foods like granola bars and raisins
- maps, shovel, and flares
- tire repair kit and pump

### **What to do during a flood or hurricane**

In a flood or hurricane, follow these precautions:

- Tune in a battery-operated radio for instructions from the Emergency Broadcast System.
- Disconnect electrical appliances and turn off the main circuit breaker or switch.
- If instructed to evacuate, take your disaster supplies kit along.
- In a flood, move to the highest point in your home. If flood waters are rising and you can't evacuate, be sure to have flotation vests.
- In a hurricane, move to the center of the house, preferably to a small room opposite the direction from which the wind is blowing. Stay away from windows.

### **What to do during a tornado**

In a tornado approaches, follow these procedures:

- Stay indoors and move to the basement, if there is one. Duck under the stairs or a heavy work table. Don't stand under heavy appliances or furniture on the floor above.
- If there is no basement, go to a small room in the center of the house, on the ground floor. Get under a sturdy table, desk, or bed.
- Use a pillow, blanket, books, or your arms to protect yourself from wind-born debris.

### **What to do during an earthquake**

In case of an earthquake, protect yourselves using the following guidelines:

- *If you are indoors:*
  - Move away from windows, glass, and breakable or loose objects. Beware of falling, flying and sliding objects.
  - Brace yourselves in a doorway or inside hallway, or slide under a sturdy table, desk or bed.
  - If you can't move to a safer area, sit down where you are and protect your head and body with your arms, pillows, blankets, books, or any nearby object. For anyone in a wheelchair, lock the brakes.
- *If you are outdoors,* move to an open area away from trees, buildings, poles or walls that could break apart or fall in an earthquake.
- *If you are in a car,* stop, park and apply the parking brake. Stay in the vehicle until the tremors stop. Avoid trees, bridges, and power lines.
- *If you are in a high-rise building,* get under a desk or a table. When the shaking stops, evacuate calmly using the stairs (avoid the elevator).

### **What to do after a disaster strikes**

If a disaster does occur, do the following:

- Check for injuries and apply first aid. Call for help if needed.
- Put on heavy shoes in case of broken glass.
- Turn on a battery-operated radio and listen to the Emergency Broadcast System for information and instructions.
- Gather emergency supplies for evacuation, if necessary. If the home is damaged, seek emergency shelter. If you evacuate, post a message telling where you are going.

- If you leave home, do not return until you hear official notice that it's safe.
- If you remain at home, use your disaster supplies kit.
- If you smell gas, open all windows, turn off the gas at the main valve, and exit the home through escape routes.
- If you suspect damage to water pipes or the electrical system, turn off water or electricity at the main valve or circuit breaker.
- If you have pets, confine or harness them safely; if they are frightened they may run away, risking injury.
- Clean up potentially harmful material (broken glass, spills of gas, chemicals or cleaning agents).
- Check house, roof and chimney for damage.
- In the case of an earthquake, open closets and cupboards carefully in case contents have broken or shifted.
- After an earthquake, be prepared for aftershocks.
- If there's been flooding, do not drink tapwater until authorities say it's safe. Don't use plumbing unless the sewer lines are intact.
- Do not eat food contaminated by flood water.
- Avoid using electrical equipment in wet or flooded areas. If electrical equipment has gotten wet, let it dry and have it checked for safety before using it.

The above suggestions include basic information to help you design an emergency or disaster response system. You can also obtain more information from your local government office of emergency services, fire department, American Red Cross, National Weather Service, Federal Emergency Management Agency, local utility companies and local public library.

Adapted from Federal Emergency Management Agency publications on disasters and preparedness.

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