

The 5.0 earthquake that occurred on June 18 which was centered in southern Indiana but felt in parts of central and southwestern Ohio, is a reminder of the importance for individuals and families to understand that the potential for an earthquake is very real. This event presents an opportunity for Butler County families to ensure that they have an earthquake plan in place.

The greatest earthquake risk in the United States east of the Rocky Mountains is along the New Madrid seismic zone. Scientists estimate that there is a 9 in 10 chance that a magnitude 6.0 to 7.0 earthquake could occur in the next 50 years. The results would be serious damage to schools, other masonry buildings, lifelines, transportation systems, communications and utility systems from Memphis to St. Louis.

Please take the time to look at the Earthquake Preparedness materials on this site (Click here to see:

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## **Family Earthquake Plan**

### ***Know Your Environment***

- **Safest place in the house**  
During an earthquake, stay away from heavy furniture, appliances, large panes of glass, shelves holding heavy objects and masonry veneer (such as a fireplace). These items tend to fall or break and can injure you. Usually, a hallway is one of the safest places if it is not crowded with objects. Kitchens and garages tend to be the most dangerous. Also, know the safest place in each room. It will be difficult to move from one place to another during a severe earthquake.
- **Exits and alternate exits**  
Know the possible ways to exit your house and workplace in emergency situations.
- **Location of shutoff valves**  
Know the location of the shutoff valves for water, gas and electricity, and how to operate the valves. If you are not sure, contact your utility company.

### ***Make Special Provisions***

- **Elderly, disabled or persons on medication**  
These people may have difficulty moving around after an earthquake. Plan to have someone help them evacuate if necessary. They may need special foods or medications. Be sure to store several days' worth of these items.
- **Persons who do not speak English**  
People who cannot speak English often rely on their family or friends for information. If they are separated during an earthquake, they may need help. Prepare emergency cards in English that include name, address and any special needs.
- **Pets**  
After an earthquake, you should be concerned with your personal safety before taking care of your pets. Storing extra food and water for pets is always a good idea. Keep pets in a secure place at home after an earthquake. If you evacuate, they will not be allowed in an emergency shelter.

### ***Know Community Resources***

- **Police and fire**  
Know the locations and phone numbers of the nearest fire and police station. Contact them only for emergency response.
- **Shelter and medical care**  
After a damaging earthquake, emergency shelters and temporary medical centers will be set up in your community. Contact your local office of Emergency Services to find out the plans for your area.
- **Community assistance**  
It may be several days before outside assistance arrives. Know your neighbors and their skills. You may be able to help each other after an earthquake. Be prepared to assist outside your neighborhood.

### **Plan to Meet**

- **Family plan**  
*Decide where and how your family will reunite. Choose a location outside your neighborhood where family members can reunite if unable to return home. Choose a person outside the immediate area to contact if family members are separated. Long distance phone service will probably be restored sooner than local service. Do not use the phone immediately after an earthquake to reunite your family.*
- **Plan for children** *Know the policies of the school or daycare center your children attend. Make plans to have someone pick them up if, after an earthquake, you are unable to do so.*

### **Plan Responsibilities**

Develop a plan with your family, friends and neighbors assigning specific responsibilities to each person. Including children when assigning responsibilities will help calm their fears and make them feel useful. Remember that it may be difficult to get around after an earthquake, so each person's task should be related to where he or she may be.

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### **About the New Madrid Seismic Zone**

The New Madrid seismic zone (NMSZ) extends more than 120 miles southward from Cairo, Illinois, at the junction of the Mississippi and Ohio rivers, into Arkansas and parts of Kentucky and Tennessee. It roughly follows Interstate 55 through Blytheville down to Marked Tree, Arkansas, crossing four state lines and the Mississippi River in three places as it progresses through some of the richest farmland in the country.

The greatest earthquake risk east of the Rocky Mountains is along the NMSZ. Damaging earthquakes are not as frequent as in California, but when they do occur, the destruction covers more than 15 times the area because of the underlying geology and soil conditions prevalent in the region. The zone is active, averaging about 200 earthquakes per year, though most of them are too small to be felt. With modern seismic networks, the capability to detect earthquakes has greatly increased, and many more very small earthquakes are being detected now than in the past. There is a common misconception that the number of earthquakes has increased over the years, but the increase is due to more sophisticated recording methods that can detect earthquakes that were previously unrecorded. The history of the region tells us, however, that the earthquake risk is the most serious potential disaster we could face.

In the winter of 1811-1812, a series of very large earthquakes occurred along the fault system buried deep within the NMSZ. Using felt information reported in newspapers and from eyewitness accounts of effects, magnitudes have been estimated to be 7.8, 8.0, and 8.1. In addition to the main shocks in

December, January, and February, there were more than a thousand aftershocks, some of which were almost as large as the main shocks. The earthquakes were felt throughout the eastern United States and into Canada, ringing church bells as far away as Richmond, Virginia, and Charleston, South Carolina. Closer to home, much of the area was flooded, making it unfit for farming for many years, and most of the building infrastructure in the epicentral region was destroyed. In some areas, land rose or subsided as much as 20 feet, and small waterfalls or rapids were observed on the Mississippi River, causing part of the river to flow backwards for a short time. Seismologists now believe the New Madrid earthquakes represent the greatest known release of seismic energy in the world. As a result of the earthquakes, Congress passed the nation's first disaster assistance bill, offering arable land to farmers in exchange for ruined cropland, the initiation of a federal disaster policy that continues today.

Since 1811 and 1812, two more large earthquakes have occurred in the NMSZ — an estimated magnitude 6.4 near Marked Tree, Arkansas, in 1843, and an estimated magnitude 6.8 near Charleston, Missouri, in 1895. While scientists believe magnitude 8.0 earthquakes are very rare in this area, they are concerned about smaller but potentially damaging earthquakes similar in size to those in 1843 and 1895, which occur more frequently. With the older infrastructure in our region and the relatively unprepared population, even a magnitude 6.0 event could be devastating to people and communities in the epicentral region.

Scientists have also learned that the New Madrid fault system may not be the only fault system in the Central U.S. capable of producing damaging earthquakes. The Wabash Valley fault system in Illinois and Indiana shows evidence of large earthquakes in its geologic history, and there may be other, as yet unidentified, faults that could produce strong earthquakes.

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## **Residential Care Facility Earthquake Plan**

### **Plan**

Each facility is unique. It may be beneficial to work with others when developing plans, but make sure the plan you adopt fits your situation. If you are in a facility in which there is only one care giver at a time, encourage staff members to coordinate their family plans with the plan for the residential facility. Offer the facility as a meeting place for families of staff. This will provide peace of mind for staff members and supply extra personnel at a crucial time.

Inform residents of what could happen during an earthquake and the steps being taken to provide for their safety. Involve residents whenever possible by incorporating their suggestions.

Develop an employee training program. Include training on procedures for providing first aid, securing utilities, suppressing fire, calming/directing residents, conducting light search and rescue, evacuating the facility, providing emergency power, supplying water and food, and providing care to residents with special needs. Ensure that each employee knows his or her earthquake assignment.

### **Prepare**

Look for items in each room that could become a hazard during an earthquake and correct them. Secure medical equipment, heavy appliances, bookcases, plants, and other items that might fall. Place heavy objects on lower shelves. Move beds away from windows. Check exit routes and remove items that might block them after an earthquake. Determine a meeting place outside, far enough from the building to be clear of falling debris and safe in case of fire. Install automatic security lights in each room and hallway.

Stock supplies. Be sure to include the following items:

- Canned fruits and vegetables (the liquid will supplement water supplies and aid with health concerns)
- Hard candy (for energy and comfort)
- Sturdy folding chairs
- Thermal ground covers
- A commode or plastic toilet with a seat, and a supply of trash bags and toilet paper
- Cards, games and books (to divert residents' attention and keep them busy)
- Keep part of your emergency supplies, including an extra first aid kit, outside the facility in a storage shed or other nearby secure location.

Unless a change in medication is imminent, keep at least a seven to ten day supply of prescription medications in a secure area. Have a plastic trash bag nearby so that medicines may be gathered quickly when evacuating the building.

### **Protect**

Identify a safe spot in each room where residents can go when an earthquake occurs. If they can't reach the safe spot, teach them to get down on the ground, or as low as possible, and cover their heads with their arms. Conduct earthquake drills with staff and residents regularly.

Hold drills to test the facility's earthquake plan. Emphasize to residents that their care givers are prepared. Hold discussions with staff after each drill to identify procedures that worked well and those that need to be changed.

When an earthquake occurs, staff members need to consider their own personal safety first. They will not be able to provide for the needs of those in their care if they are severely injured themselves. The staff should assist mobile residents to safety before assisting those with mobility problems.

### **Special Tips**

Maintain a list of the medications and equipment each resident needs; the name, address and phone number of each resident's doctor and pharmacist/pharmacy; and the name, address, and phone number of the relative or other responsible person with whom you deal.

If the resident uses equipment to aid in mobility, have him or her keep it nearby at all times. Place extra canes near exits. Store extra hearing aid batteries and eyeglasses in a secure area.

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### **Local Government, Business and School Planning Guide**

Earthquakes strike suddenly and destructively, causing deaths, injuries, and property damage. Yet, injuries and damage can be reduced or avoided entirely if appropriate preparedness measures are taken. Steps that local governments, businesses, and schools can take to prepare for earthquakes follow:

- Prepare and regularly update disaster plans. Address both response and recovery issues.
- Institute ongoing training programs in emergency procedures, first aid, CPR, evacuation, search

and rescue, use of fire extinguishers, and damage assessment.

- Hold periodic drills and exercises.
- Consult local building codes to ensure that your building meets current structural safety standards.
- Conduct "hazard hunts" to find nonstructural hazards in offices, classrooms, storerooms, laboratories, warehouses, and manufacturing areas.
- Determine and post primary and alternate routes for emergency evacuation of the building, should that be necessary after an earthquake. Establish procedures for those needing evacuation assistance.
- Educate staff, as applicable, on earthquake effects on high-rise buildings. (Lower floors will shake rapidly. Movement on upper floors will be slower, but the building will sway farther from side to side.)
- Secure and anchor equipment and furniture, including bookshelves, cabinets, computers, typewriters, water heaters, other gas appliances, and laboratory equipment.
- Include articles on business and home earthquake safety in employee newsletters, or provide employees with brochures or flyers.
- Obtain agreements with vendors for post-earthquake operations.
- Develop an inventory of critical supplies and equipment.
- Assemble emergency kits with water, first aid supplies, radios, flashlights, batteries, heavy gloves, food, and sanitation supplies. Maintain the kits in a secure, accessible location.

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### **Individual, Family, Home and Community Planning Guide**

If a major earthquake occurred in your area today, you might be without direct assistance for up to 72 hours. Are you prepared to be self-sufficient? Is your family? Your neighborhood?

#### **Individual and Family Preparedness**

- Know the safe spots in each room (under sturdy tables, desks or against inside walls).
- Know the danger spots (windows, mirrors, hanging objects, fireplaces and tall furniture).
- Conduct practice drills. Physically place yourself and your children in safe locations.
- Learn first aid and CPR (cardiopulmonary resuscitation) from your local Red Cross Chapter or other community organization.
- Decide where your family will reunite if separated.

- Keep a list of emergency phone numbers.
- Choose an out-of-area friend or relative whom separated family members can call after the quake to report their location and condition.

### **Home Preparedness**

- Learn how to shut off gas, water and electricity in case the lines are damaged.
- Check chimneys, roofs, walls and foundations for stability. Make sure your home is bolted to its foundation. Call a licensed contractor if there are any questions.
- Secure water heaters and appliances that could move enough to rupture utility lines.
- Keep breakable and heavy objects on lower shelves.
- Secure hanging plants and heavy picture frames or mirrors (especially those hanging over beds).
- Put latches on cabinet doors to keep them closed during shaking.
- Keep flammable or hazardous liquids such as paints, pest sprays or cleaning products in cabinets or secured on lower shelves.
- Maintain emergency food, water and other supplies, including medicine, a first aid kit and clothing.

### **Community Preparedness**

- Suggest those local organizations of which you are a member undertake a specific preparedness program or acquire special training to be of assistance in the event of a damaging earthquake.
- Organize a neighborhood earthquake preparedness program.
- Conduct training for neighborhood residents in first aid, preparedness, fire suppression, damage assistance and search and rescue.
- Develop self-help networks between families and the neighborhood through a skills and resource bank, which includes a listing of tools, equipment, materials and neighborhood members who have special skills and resources to share.
- Identify neighbors who have special needs or will require special assistance.
- Have neighbors agree to hang a white flag outside their homes after the quake if everyone and everything are OK.