TORNADOES….ARE YOU READY???

EMERGENCY INFORMATION

1. The best protection during a tornado is in an interior room on the lowest level of a building, preferably a safe room.
2. Tornadoes strike with incredible velocity. Wind speeds may approach 300 miles per hour. These winds can uproot trees and structures and turn harmless objects into deadly missiles, all in a matter of seconds. Mobile homes are particularly vulnerable to tornadoes.
3. Injury or deaths related to tornadoes most often occur when buildings collapse, people are hit by flying objects or are caught trying to escape the tornado in a car.
4. Tornadoes are most destructive when they touch ground. Normally a tornado will stay on the ground for no more than 20 minutes; however, one tornado can touch ground several times in different areas.

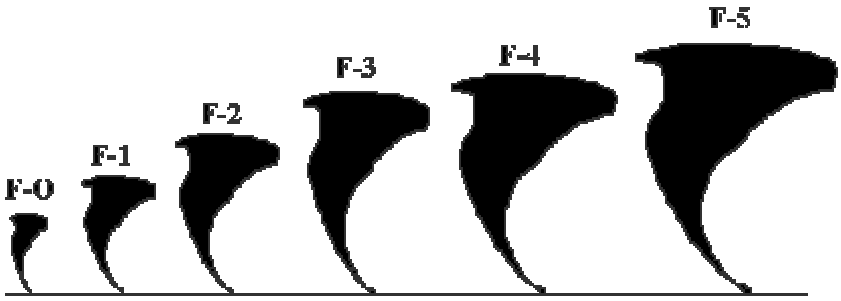
WHAT IS A TORNADO?

A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud. It is spawned by a thunderstorm (or sometimes as a result of a hurricane) and produced when cool air overrides a layer of warm air, forcing the warm air to rise rapidly. The damage from a tornado is a result of the high wind velocity and wind-blown debris. Tornado season is generally March through August, although tornadoes can occur at any time of year. They tend to occur in the afternoons and evenings: over 80 percent of all tornadoes strike between noon and midnight.

DID YOU KNOW...

- Tornadoes can be nearly invisible, marked only by swirling debris at the base of the funnel. Some are composed almost entirely of windblown dust and still others are composed of several mini-funnels.
- On average, the United States experiences 100,000 thunderstorms each year. Approximately 1,000 tornadoes develop from these storms.
- Although tornadoes do occur throughout the world, the United States experiences the most intense and devastating tornadoes.
- Tornadoes produce the most violent winds on earth. Tornado winds can approach speeds as high as 300 miles per hour, travel distances over 100 miles and reach heights over 60,000 feet above ground.
- In November 1988, 121 tornadoes struck 15 south central states, resulting in 14 lives lost and damages reaching $108 million.
- According to the National Weather Service, about 42 people are killed because of tornadoes each year.

Fujita - Pearson Tornado Scale



F-0: 40-72 mph, chimney damage, tree branches broken
F-1: 73-112 mph, mobile homes pushed off foundation or overturned
F-2: 113-157 mph, considerable damage, mobile homes demolished, trees uprooted
F-3: 158-205 mph, roofs and walls torn down, trains overturned, cars thrown
F-4: 207-260 mph, well-constructed walls leveled
F-5: 261-318 mph, homes lifted off foundation and carried considerable distances, autos thrown as far as 100 meters

What to Do Before a Tornado

- **Use a NOAA Weather Radio with a tone-alert feature to keep you informed of watches and warnings issued in your area.** The tone- alert feature will automatically alert you when a watch or warning is issued.
- **If planning a trip or extended period of time outdoors, listen to the latest forecasts and take necessary action if threatening weather is possible.** Knowing what weather could happen helps you be prepared to respond if necessary. Having a raincoat, umbrella, and disaster supplies kit available will make it easier to deal with severe weather if it occurs.
- **Watch for tornado danger signs.** Tornadoes may happen so quickly warnings can't be issued long in advance. Pay attention to weather clues around you that may warn of imminent danger.
    - **Dark, often greenish sky.** Sometimes one or more of the clouds turns greenish (a phenomenon caused by hail) indicating a tornado may develop.
    - **Wall cloud,** an isolated lowering of the base of a thunderstorm. The wall cloud is particularly suspect if it is rotating.
    - **Large hail.** Tornadoes are spawned from powerful thunderstorms and the most powerful thunderstorms produce large hail. Tornadoes frequently emerge from near the hail-producing portion of the storm.
    - **Cloud of debris.** An approaching cloud of debris can mark the location of a tornado even if a funnel is not visible.
    - **Funnel cloud.** A visible rotating extension of the cloud base is a sign that a tornado may develop.
    - **Roaring noise.** The high winds of a tornado can cause a roar that is often compared with the sound of a freight train.

- **Tornadoes may occur near the trailing edge of a thunderstorm and be quite visible**. It is not uncommon to see clear, sunlit skies behind a tornado. They may also be embedded in rain and not visible at all.

If you live in a single-family home in a tornado-prone area, find out how to reinforce an interior room on the lowest level of your home (such as the basement, storm cellar, bathroom or closet) to use as a shelter. *Plans for reinforcing an interior room to provide better tornado protection in your home are available from your local emergency management office or from FEMA's website at www.fema.gov.*

What to Do During a Tornado WATCH

- **Listen to a NOAA Weather Radio or local radio or television stations for updated information.** Tornadoes can change direction, intensity, and speed very quickly.
- **Be alert to changing weather conditions.** Tornadoes accompany severe thunderstorms, and weather conditions can change rapidly. Large hail, blowing debris, or the sound of an approaching tornado may alert you. Many people say approaching tornadoes sound like a freight train.

What to Do During a Tornado WARNING

- **Listen to a battery-powered NOAA Weather Radio, regular radio, or television for updated information.** If the electricity should go out, you will still be able to receive emergency information.
- **If you are inside, go to your safe place to protect yourself from glass and other flying objects.** Tornadoes can change direction, intensity, and speed very quickly. The tornado may be approaching your area.
- **Get under a piece of sturdy furniture, such as a workbench or heavy table, and hold on to it.** Sturdy furniture will help protect you from falling debris. If tornado wind enters the room and the object moves, holding on with one hand will help you move with it, keeping you protected.
- **Use your other arm and hand to protect your head and neck from falling or flying objects.** Your head and neck are more easily injured than other parts of your body. Protect them as much as you can.
- **Stay away from windows.** Opening windows allows damaging winds to enter the structure. Leave the windows alone; instead, immediately go to a safe place. It is a myth that tornadoes cause houses to explode due to changes in air pressure. Flying debris can shatter glass. Violent winds and debris slamming into buildings cause most structural damage.
- **If you're outside in a car or in a mobile home, go immediately to the basement of a nearby sturdy building.** Sturdy buildings are the safest place to be. Tornado winds can blow large objects, including cars and mobile homes, hundreds of feet away. Tornadoes can change direction quickly and can lift up a car or truck and toss it through the air; never try to out-drive a tornado. Mobile homes are particularly vulnerable. A mobile home can overturn very easily even if precautions have been taken to tie down the unit.
- **If there is no building nearby, lie flat in a low spot.** Use your arms and hands to protect your head. Tornadoes cause a lot of debris to be blown at very high speeds, and you can be hurt by this debris if it hits you. Dangerous flying debris can be blown under highway overpasses and bridges, or weaker overpasses and bridges could be destroyed. You will be

safer lying flat in a low-lying area where wind and debris will blow above you. Tornadoes come from severe thunderstorms, which can produce a lot of rain. If you see quickly rising water or flood water coming towards you, move to another spot. **Avoid places with wide-span roofs, such as auditoriums, cafeterias, large hallways, or shopping malls.** Wide-span roofs are frequently damaged or destroyed in tornado winds, providing less protection and more risk of injury, than roofs over smaller rooms.

What to Tell Children

- **Find safe places in your home and classroom.** Make sure these places are away from windows and tall furniture that could tip over. In your safe place, get under something sturdy, or use a large, hard-cover book to help protect your head and neck from flying or falling objects. Locate safe places outside in case you are not able to go inside. Frequently, children in schools are told to move to the inner hallways away from windows. Children need to know that a tornado safe place is not the same as a fire meeting place.
- **Wherever you are, if you hear or see a tornado coming, take cover right away.** Tornadoes can move quickly, blowing objects at very high speeds, even if they are a distance away. Protect yourself from flying debris by taking cover immediately.
- **If you're in a house or apartment building and a tornado threatens, go to the lowest level - a basement or storm cellar if possible. Once on the lowest level, go to the middle of the building away from windows, into a bathroom or closet if possible.** The safest place to be is under the ground, or as low to the ground as possible, and away from all windows. If you have a basement, make it your safe place. If you do not have a basement, consider an interior hallway or room on the lowest floor. Putting as many walls as you can between you and the outside will provide additional protection. Make sure there are no windows or glass doors in your safe place and keep this place uncluttered.
- **Get under something sturdy, such as a heavy table, hold on and stay there until the danger has passed.** Being under something heavy will help protect you from falling objects. If tornado wind enters the room and the object moves, holding on with one hand will help you move with it, keeping you protected.
- **Use your other arm and hand to protect your head and neck from falling or flying objects.** Your head and neck are more easily injured than other parts of your body. Protect them as much as you can.
- **If you're outside in a car or in a mobile home, go immediately to the basement of a nearby sturdy building.** Sturdy buildings are the safest place to be. Tornado winds can blow large objects, including cars, hundreds of feet away. Tornadoes can change direction quickly and can lift up a car or truck and toss it through the air. Never try to out-drive a tornado. Mobile homes are particularly vulnerable. A mobile home can overturn very easily even if precautions have been taken to tie down the unit.
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How to Protect Your Property

- **Make a list of items to bring inside in the event of a storm.** Having a list will help you remember things that may be broken or blown away in strong winds.
- **Keep trees and shrubbery trimmed.** Make trees more wind resistant by removing diseased or damaged limbs, then strategically remove branches so that wind can blow through. Strong winds frequently break weak limbs and hurl them at great speed, causing damage or injury when they hit. Debris collection services may not be operating just before a storm, so it is best to do this well in advance of approaching storms.
- **Remove any debris or loose items in your yard.** Branches and firewood may become missiles in strong winds.
- **Consider installing permanent shutters to cover windows.** Shutters can be closed quickly and provide the safest protection for windows.
- **Strengthen garage doors.** Garage doors are often damaged or destroyed by flying debris, allowing strong winds to enter. As winds apply pressure to the walls, the roof can be lifted off, and the rest of the house can easily follow.

Assemble a Disaster Supplies Kit

Please see the section "Disaster Supplies Kit" for general supplies kit information. Tornado-specific supplies should include the following:

- **A highway map to follow storm movement from weather bulletins.**
- **Disaster Suplies Kit basics.**

What to Do After a Tornado

- **Continue listening to local radio or television stations or a NOAA Weather Radio for updated information and instructions.** Access may be limited to some parts of the community, or roads may be blocked.
- **Help a neighbor who may require special assistance - infants, elderly people and people with disabilities.** Elderly people and people with disabilities may require additional assistance. People who care for them or who have large families may need additional assistance in emergency situations.
- **Help injured or trapped persons.** Give first aid where appropriate. Do not move seriously injured persons unless they are in immediate danger of further injury. Call for help.
- **Watch out for fallen power lines or broken gas lines and report them to the utility company immediately.** Reporting potential hazards will get the utilities turned off as quickly as possible, preventing further hazard and injury.
- **Avoid disaster areas.** Your presence might hamper rescue and other emergency operations, and put you at further risk from the residual effects of tornadoes.
- **Stay out of damaged buildings.** Tornadoes can cause great damage, creating further hazards. If you are away from home, return only when authorities say it is safe.
- **When entering damaged buildings, use extreme caution.** Moving through debris presents further hazards. Carefully watch every step you take.
    - **Wear sturdy shoes.** The most common injury following a disaster is cut feet.
    - **Use battery-powered lanterns or flashlights when examining buildings.** Battery-powered lighting is the safest and easiest, preventing fire hazard for the user, occupants, and building.

- **Examine walls, floors, doors, staircases, and windows to make sure that the building is not in danger of collapsing.**
- **Look for fire hazards.** There may be broken or leaking gas lines, or damage to electrical systems. Clean up spilled medicines, bleaches, gasoline, or other flammable liquids immediately. **Fire is the most frequent hazard following other disasters.**
- **Check for gas leaks.** If you smell gas or hear a blowing or hissing noise, open a window and quickly leave the building. Turn off the gas using the outside main valve if you can, and call the gas company from a neighbor's home. If you turn off the gas for any reason, it must be turned back on by a professional.
- **Look for electrical system damage.** If you see sparks or broken or frayed wires, or if you smell burning insulation, turn off the electricity at the main fuse box or circuit breaker. If you have to step in water to get to the fuse box or circuit breaker, call an electrician first for advice. Electrical equipment should be checked and dried before being returned to service.
- **Watch for loose plaster, drywall, and ceilings that could fall.**
- **Take pictures of the damage, both of the building and its contents, for insurance claims.**

Use the telephone only for emergency calls. *Telephone lines are frequently overwhelmed in disaster situations. They need to be clear for emergency calls to get through.*