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## COMMUNITY EMERGENCY RESPONSE TEAM

### TORNADOES

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## TORNADOES

Tornadoes are powerful, circular windstorms that may be accompanied by winds in excess of 200 miles per hour. Tornadoes typically develop during severe thunderstorms and may range in width from several hundred yards to more than a mile across.

### TORNADO RISKS

Tornadoes pose a high risk because the low atmospheric pressure, combined with high wind velocity, can:

- Rip trees apart
- Destroy buildings
- Uproot structures and objects
- Send debris and glass flying
- Overturn cars and mobile homes

### TORNADO FACTS

While tornadoes have been reported in every state, they are most prevalent east of the Colorado-Wyoming-New Mexico area. Most frequently, tornadoes are found in the area from Kansas to Kentucky, the Great Plains, and the Upper Midwest. “Tornado Alley” includes Texas, Oklahoma, and Kansas.

More than 800 tornadoes are reported nationwide in an average year. Tornadoes can happen any time of the year and any time of day.

Tornado season lasts from March to August, but can occur year-round. More than 80 percent of tornadoes occur between noon and midnight, and one quarter occur from 4:00 p.m. to 6:00 p.m. Tornadoes are most likely to occur between 3:00 p.m. and 9:00 p.m.

About 9,000 deaths have been attributed to tornadoes in the past 50 years—an average of about 180 people each year. Annual damage from tornadoes can run into the hundreds of millions of dollars.

The population in the ten tornado-prone states is increasing because of more rapid urban development, which increases the likelihood of injuries and deaths.

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#### **FUJITA WIND-DAMAGE SCALE**

Tornado strength is measured on the Fujita Wind-Damage Scale, which correlates damage with wind speed. There are six wind-damage levels on the scale:

- F0:
  - Winds: Up to 72 miles per hour (mph)
  - Damage: Light
- F1:
  - Winds: 73–112 mph
  - Damage: Moderate
- F2:
  - Winds: 113–157 mph
  - Damage: Considerable
- F3:
  - Winds: 158–206 mph
  - Damage: Severe
- F4:
  - Winds: 207–260 mph
  - Damage: Devastating
- F5:
  - Winds: 261 mph or greater
  - Damage: Incredible

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**Fujita Wind Damage Scale**

<u>Wind-Damage Level</u>	<u>Wind Speed and Anticipated Damage</u>
F0	<ul style="list-style-type: none"><li>▪ Winds: Up to 72 miles per hour (mph)</li><li>▪ Damage: Light</li></ul>
F1	<ul style="list-style-type: none"><li>▪ Winds: 73–112 mph</li><li>▪ Damage: Moderate</li></ul>
F2	<ul style="list-style-type: none"><li>▪ Winds: 113–157 mph</li><li>▪ Damage: Considerable</li></ul>
F3	<ul style="list-style-type: none"><li>▪ Winds: 158–206 mph</li><li>▪ Damage: Severe</li></ul>
F4	<ul style="list-style-type: none"><li>▪ Winds: 207–260 mph</li><li>▪ Damage: Devastating</li></ul>
F5	<ul style="list-style-type: none"><li>▪ Winds: 261 mph or greater</li><li>▪ Damage: Incredible</li></ul>

Although the Midwest and sections of the Southeast have the highest risk of tornadoes, with the help of sophisticated radar and other measures, meteorologists are now able to predict when conditions favorable for tornado formation exist and are able to warn the public better.

Many tornadoes (usually F0 and F1) are still unreported or unconfirmed.

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#### PREPARING FOR A TORNADO

- Know the risk for tornadoes in the area. Although tornadoes have been reported throughout the United States, some areas are clearly at higher risk than others.
- Identify potential shelter areas where family members can gather during a tornado.

The best shelter from a tornado is to be underground.

If an underground shelter or tornado-safe room is not available, move to an interior room or hallway on the lowest floor and get under a sturdy piece of furniture. The idea is to get as many walls and roofs between you and the outside as possible. Avoid rooms with large free-span roofs.

Mobile homes, even if tied down, offer little protection from tornadoes and should be abandoned in favor of more substantial shelter.

- Learn the community's warning system. Many areas use Emergency Alert System (EAS) to warn of imminent hazards. Within these areas, though, communities may have other warning systems for tornadoes, including sirens that are also used to signal fires and other hazards. For those who live in communities that use sirens, it is critical to learn the siren warning tone to ensure recognition. Also, when severe weather threatens, NOAA weather radio carries current information and instructions.
- Conduct periodic tornado drills with the family to ensure that all family members know what to do and where to go during a tornado emergency.

The “obvious” is not always as obvious as we think.

- Tornadoes may appear nearly transparent until they pick up dust and debris.
- Tornadoes can be wrapped in heavy rain, which may limit visibility; however, because tornadoes are associated with powerful updrafts, rain does not always fall in or near tornadoes.

#### TORNADO CLUES

Occasionally tornadoes develop so rapidly that advance warning is not possible. Remain alert to signs of an approaching tornado, notably the sound that is something like an approaching freight train.

The most obvious clues that a tornado may be forming or has formed are high winds and very large hail. Be alert for these clues and to take protective action, even if no tornado warning is issued.

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#### DURING A TORNADO

- Damage often occurs when wind gets inside a home. Keep all windows and doors closed. Houses do not explode because of air pressure differences.
- Go immediately to an underground shelter or tornado-safe room, or interior room or hallway on the lowest floor.
- Put as much shielding material (such as furniture, blankets, bike helmets, etc.) as you can around you.
- Listen to EAS or NOAA Weather Radio for current emergency information and instructions.

If you are driving and see a tornado go to a nearby sturdy building and seek an area on the lowest level, without windows. If there are no buildings nearby, get out and away from the vehicle and lie down in a low spot on the ground. Protect the head and neck.

Following a tornado, citizens should continue listening to EAS or NOAA weather radio for updated information and instructions. As with many other hazards, post-tornado actions include:

- Avoiding fallen power lines or broken utility lines and immediately reporting those you see
- Staying out of damaged areas until told that it is safe to enter
- Staying out of damaged buildings
- Using a flashlight to look for damage and fire hazards and documenting damage for insurance purposes
- Turning off utilities, if necessary
- Reserving the telephone for emergencies

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<b>Myth:</b>	<b>Areas near lakes, rivers, and mountains are safe from tornadoes.</b>
<b>Fact:</b>	No place is safe from tornadoes. A tornado near Yellowstone National Park left a path of destruction up and down a 10,000-foot mountain.
<b>Myth:</b>	<b>The low pressure with a tornado causes buildings to explode as the tornado passes overhead.</b>
<b>Fact:</b>	Violent winds and debris slamming into buildings cause most structural damage.
<b>Myth:</b>	<b>Windows should be opened before a tornado approaches to equalize pressure and minimize damage.</b>
<b>Fact:</b>	Windows should be left <u>closed</u> to minimize damage from flying debris and to keep the high wind out of the structure.
<b>Myth:</b>	<b>If you are driving and see a tornado, you should drive at a right angle to the storm.</b>
<b>Fact:</b>	The best thing to do is seek the best available shelter. Many people are injured or killed by remaining in their vehicles.
<b>Myth:</b>	<b>People caught in the open should seek shelter under highway overpasses.</b>
<b>Fact:</b>	Do <u>not</u> seek shelter under highway overpasses or under bridges. If possible, take shelter in a sturdy, reinforced building.