



Tornado and Thunderstorm Safety

Preparing for a tornado or thunderstorm:

- Plan ahead. Be sure everyone in your household knows where to go and what to do in case of a tornado or thunderstorm warning.
- Know the safest location for shelter in your home, workplace, and school. Load-bearing walls near the center of the basement or lowest level generally provide the greatest protection.
- Know the location of designated shelter areas in local public facilities, such as schools, shopping centers, and other public buildings.
- Have emergency supplies on hand, including a battery-operated NOAA Weather Radio, flashlight, and a supply of fresh batteries, first-aid kit, water, and cell phone.
- Keep a three-day supply of food on hand. Keep some food in your supply kit that doesn't require refrigeration. For more information on food safety following an emergency, visit www.bt.cdc.gov/disasters/poweroutage/needtoknow.asp.
- Make an inventory of household furnishings and other possessions. Supplement it with photographs of each room and keep it in a safe place.
- Sign up to receive text or e-mail alerts from your local media, weather provider or the Weather Channel at www.weather.com.

What to do when a thunderstorm approaches your area:

- Stay tuned to your weather radio or local news station for the latest updates from the National Weather Service or go to the National Weather Service Web site, www.nws.gov.
- Seek safe shelter when you first hear thunder or when you see dark threatening clouds developing overhead or see lightning. To determine the proximity of the severe weather, count the seconds between the time you see lightning and hear thunder. If the time between is less than 30 seconds, ensure you are in a safe location and stay inside until 30 minutes after you last hear thunder or see lightning. Remember, lightning can strike more than 10 miles away from any rainfall.
- When you hear thunder, run to the nearest large building or a fully enclosed vehicle (soft-topped convertibles are not safe). It is not safe anywhere outside.
- If you are boating or swimming, get to land and seek shelter immediately.
- Telephone lines and metal pipes can conduct electricity. Any item plugged into an electrical outlet may cause a hazard during a tornado or thunderstorm. Do not use corded (plug-in) telephones except in an emergency.

What to do when a tornado warning is issued for your area:

- Quickly move to shelter in the basement or lowest floor of a permanent structure.
- In homes and small buildings, go to the basement and get under something sturdy, like a workbench or stairwell. If a basement is not available, go to an interior part of the home on the lowest level. A good rule of thumb is to put as many walls between you and the tornado as possible.
- In schools, hospitals, and public places, move to the designated shelter areas. Interior hallways on the lowest floors are generally best.
- Stay away from windows, doors, and outside walls. Broken glass and wind blown projectiles cause more injuries and deaths than collapsed buildings. Protect your head with a pillow, blanket, or mattress.
- If you are caught outdoors, a sturdy shelter is the only safe location in a tornado.
- If you are boating or swimming, get to land and seek shelter immediately.

After a tornado or thunderstorm:

- Inspect your property and motor vehicles for damage. Write down the date and list the damages for insurance purposes. Check for electrical problems and gas leaks, and report them to the utility company at once.
- Watch out for fallen power lines. Stay out of damaged buildings until you are sure they are safe and will not collapse. Secure your property from further damage or theft.
- Use only chlorinated or bottled supplies of drinking water.
- Check on your food supply. Food stored in a refrigerator or freezer can spoil when the power goes out.



Tornado and Thunderstorm Facts

1. What is a severe thunderstorm?

A severe thunderstorm produces large hail that is one inch in diameter or larger, damaging winds of 58 mph or greater, and/or a tornado.

2. What is a tornado?

A tornado is a column of violently rotating winds extending down from a thunderstorm cloud and touching the surface of the earth.

3. What is the difference between a tornado and a funnel cloud?

A funnel cloud is also a column of violently rotating winds extending down from a thunderstorm; however, it does not touch the earth as a tornado does.

4. How many tornadoes usually occur in Michigan every year?

Michigan experiences an average of 16 tornadoes annually. Since 1950, 243 persons have been killed due to tornadoes. During this same time, Michigan has experienced 965 tornadoes.

5. When do tornadoes generally occur?

Most tornadoes occur during the months of May, June, July, and August primarily in the late afternoon and evening hours. However, tornadoes can occur anytime of the day or night in almost any month during the year.

6. How fast do tornadoes travel?

Tornadoes generally travel from the southwest at an average speed of 30 mph. However, some tornadoes have very erratic paths, with speeds approaching 70 mph.

7. How far do tornadoes travel once they touch the ground?

The average Michigan tornado is on the ground for less than 10 minutes and travels a distance of about five miles. However, they do not always follow the norm and have been known to stay on the ground for more than an hour and travel more than 100 miles.

8. When is a tornado or severe thunderstorm watch issued?

A tornado or severe thunderstorm watch is issued whenever conditions exist for severe weather to develop. Watches are usually for large areas about two-thirds the size of Lower Michigan and are usually two-to-six hours long. Watches give you time to plan and prepare.

9. When is a tornado or severe thunderstorm warning issued?

The local National Weather Service (NWS) office issues a tornado warning whenever NWS Doppler Radar indicates a thunderstorm is capable of producing a tornado or when a tornado has been sighted by a credible source. A severe thunderstorm warning is issued whenever a severe thunderstorm is observed or NWS Doppler Radar indicates a thunderstorm is capable of producing damaging winds or large hail.

Warnings are issued for even smaller areas, such as parts of counties. These "storm-based" NWS warnings are issued for the threatened area in a shape of a polygon. The "polygon" warnings only include sections of a county or group of counties and usually last for 30 to 90 minutes in length. You must act immediately when you first hear the warning. If severe weather is reported near you, seek shelter immediately. If not, keep a constant lookout for severe weather and stay near a shelter.

10. What is a special marine warning?

The NWS will issue a special marine warning for the Great Lakes and the connecting waterways when a strong or severe thunderstorm develops or moves over the water. The special marine warning is issued for boaters, both recreational and commercial. For residents and visitors of Michigan's many coastal communities, the special marine warning provides valuable information about a storm that is about to move onshore.

11. How do I find out about a warning if my electricity is already out?

A NOAA Weather Radio All Hazards with battery back-up capability is your best source to receive the warning. In some areas, civil emergency sirens may be your first official warning. In addition, if your television or radio has battery back-up capability, you may receive NOAA's National Weather Service warnings from local media.