



City of Johnstown Emergency Management Agency

Tropical Storms, Tornadoes, Windstorms and Thunderstorms



Tropical storms, spawned from hurricanes that have moved inland from the Atlantic and the Gulf of Mexico, have caused flood damage and human suffering in many areas of the state. Tropical Storms Hazel (1954), Diane (1955), Agnes (1972) and Eloise (1975), Juan (1985), Floyd (1999) and Allison (2001) caused widespread flooding that threatened or claimed lives and ravaged public and private property.

Tornadoes and windstorms, which occur more frequently, can also be very deadly. In the past 20 years, there have been 11 verified tornadoes and two high windstorms. Of the former, three resulted in the major disaster declarations issued by the governor and president.



Tornadoes

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.

When a tornado threatens, individuals need to have a safe place to go and time to get there. Even with advances in meteorology, warning times may be short or sometimes not possible. Lives are saved when individuals receive and understand the warning, know what to do, and know the safest place to go.

What Should I Do?

[Before A Tornado](#)

To Protect Your Property, includes information on Tornado [Safe Rooms](#)

[During A Tornado](#)

[After A Tornado](#)

[Know Your Tornado Terms](#)



City of Johnstown Emergency Management Agency

Tropical Storms, Tornadoes, Windstorms and Thunderstorms

Hurricane Information

Fact Sheet: Thunderstorms and Lightning

Some thunderstorms can be seen approaching, while others hit without warning. It is important to learn and recognize the danger signs and to plan ahead.

BEFORE

Learn the thunderstorm danger signs.

- Dark, towering, or threatening clouds.
- Distant lightning and thunder.

Have disaster supplies on hand

- } Flashlight with extra batteries
- } Portable, battery-operated radio and extra batteries
- } First aid kit and manual
- } Emergency food and water
- } Non-electric can opener
- } Essential medicines
- } Cash and credit cards
- } Sturdy shoes



Check for hazards in the yard.

Dead or rotting trees and branches can fall during a severe thunderstorm and cause injury and damage.

Make sure that all family members know how to respond after a thunderstorm.

Teach family members how and when to turn off gas, electricity and water.

Teach children how and when to call 9-1-1, police, fire department, and which radio station to tune for emergency information.

Severe Thunderstorm Watches and Warnings

A *severe thunderstorm watch* is issued by the National Weather Service when the weather conditions are such that a severe thunderstorm (damaging winds 58 miles per hour or more, or hail three-fourths of an inch in diameter or greater) is likely to develop. This is the time to locate a safe place in the home and tell family members to watch the sky and listen to the radio or television for more information.

A *severe thunderstorm warning* is issued when a severe thunderstorm has been sighted or indicated by weather radar. At this point, the



City of Johnstown Emergency Management Agency

Tropical Storms, Tornadoes, Windstorms and Thunderstorms

danger is very serious and everyone should go to a safe place, turn on a battery-operated radio or television, and wait for the "all clear" by the authorities.

Learn how to respond to a tornado and flash flood.

Tornadoes are spawned by thunderstorms and flash flooding can occur with thunderstorms. When a "severe thunderstorm warning" is issued, review what actions to take under a "tornado warning" or a "flash flood warning."

Develop an emergency communication plan.

In case family members are separated from one another during a thunderstorm (a real possibility during the day when adults are at work and children are at school), have a plan for getting back together.

Ask an out-of-state relative or friend to serve as the "family contact". After a disaster, it's often easier to call long distance. Make sure everyone knows the name, address, and phone number of the contact person.

Contact your local emergency management office or American Red Cross chapter for more information on thunderstorms and lightning.

DURING

If indoors:

Secure outdoor objects such as lawn furniture that could blow away or cause damage or injury. Take light objects inside.

Shutter windows securely and brace outside doors.

Listen to a battery operated radio or television for the latest storm information.

Do not handle any electrical equipment or telephones because lightning could follow the wire. Television sets are particularly dangerous at this time.

Avoid bathtubs, water faucets, and sinks because metal pipes can transmit electricity.

If outdoors:

Attempt to get into a building or car.

If no structure is available, get to an open space and squat low to the ground as quickly as possible. (If in the woods, find an area protected by low clump of trees--never stand underneath a single large tree in the open.) Be aware of the potential for flooding in low-lying areas.

crouch with hands on knees.

Avoid tall structures such as towers, tall trees, fences, telephone lines, or power lines.

Stay away from natural lightning rods such as golf clubs, tractors, fishing rods, bicycles, or camping equipment.

Stay from rivers, lakes, or other bodies of water.

If you are isolated in a level field or prairie and you feel your hair stand on end (which indicates that lightning is about to strike), bend forward, putting your hands on your knees. A position with feet together and crouching while removing all metal objects is recommended. Do not lie flat on the ground.



City of Johnstown Emergency Management Agency

Tropical Storms, Tornadoes, Windstorms and Thunderstorms

If in a car:

Pull safely onto the shoulder of the road away from any trees that could fall on the vehicle.
Stay in the car and turn on the emergency flashers until the heavy rains subside.
Avoid flooded roadways.

Estimating the Distance from a Thunderstorm

Because light travels much faster than sound, lightning flashes can be seen long before the resulting thunder is heard. Estimate the number of miles you are from a thunderstorm by counting the number of seconds between a flash of lightning and the next clap of thunder. Divide this number by five.

Important: You are in danger from lightning if you can hear thunder. Knowing how far away a storm is does not mean that you're in danger only when the storm is overhead.

Hail

Hail is produced by many strong thunderstorms. Hail can be smaller than a pea or as large as a softball and can be very destructive to plants and crops. In a hailstorm, take cover immediately. Pets and livestock are particularly vulnerable to hail, so bring animals into a shelter.

AFTER

Check for injuries.

A person who has been struck by lightning does not carry an electrical charge that can shock other people. If the victim is burned, provide first aid and call emergency medical assistance immediately. Look for burns where lightning entered and exited the body. If the strike cause the victim's heart and breathing to stop, give cardiopulmonary resuscitation (CPR) until medical professionals arrive and take over.

Remember to help your neighbors who may require special assistance--infants, elderly people, and people with disabilities.

Report downed utility wires.

Drive only if necessary. Debris and washed-out roads may make driving dangerous.

Mitigation

Mitigation includes any activities that prevent an emergency, reduce the chance of an emergency happening, or lessen the damaging effects of unavoidable emergencies. Investing in preventive mitigation steps now, such as installing lightning rods to carry the electrical charge of lightning bolts safely to the ground or purchasing flood insurance, will help reduce the impact of severe thunderstorms in the future. For more information on mitigation, contact your local emergency management office.