TORNADO PREPAREDNESS

AND INFORMATION MANUAL

What is a Tornado?

A tornado is defined as a violently rotating column of air extending from a thunderstorm to the ground. The most violent tornadoes are capable of tremendous destruction with wind speeds of 250 mph or more. Damage paths can be in excess of one mile wide and 50 miles long.

What causes Tornadoes?

Thunderstorms develop in warm, moist air in advance of eastward-moving cold fronts. These thunderstorms often produce large hail, strong winds, and tornadoes. Tornadoes in the winter and early spring are often associated with strong, frontal systems that form in the Central States and move east. Occasionally, large outbreaks of tornadoes occur with this type of weather pattern. Several states may be affected by numerous severe thunderstorms and tornadoes.

Tornadoes occasionally accompany tropical storms and hurricanes that move over land. Tornadoes are most common to the right and ahead of the path of the storm center as it comes onshore.

Tornado Variations

- Some tornadoes may form during the early stages of rapidly developing thunderstorms
- Tornadoes may appear nearly transparent until dust and debris are picked up.
- Occasionally, two or more tornadoes may occur at the same time.

Waterspout

- Waterspouts are weak tornadoes that form over warm water.
- Waterspouts are most common along the Gulf Coast and southeastern states. In the western United States, they occur with cold late fall or late winter storms, during a time when you least expect tornado development.
- Waterspouts occasionally move inland becoming tornadoes causing damage and injuries.

Tornadoes – Weak – Strong - Violent

Weak Tornadoes

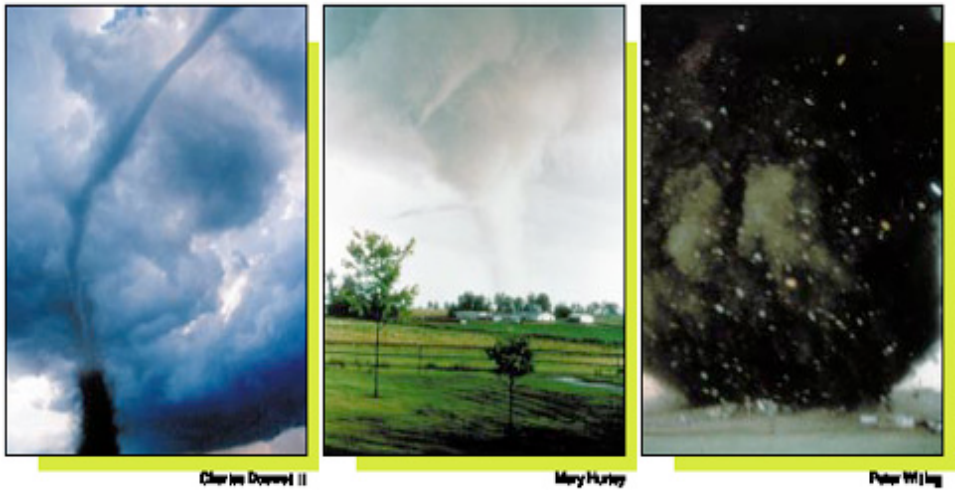
- 69% of all tornadoes
- Less than 5% of tornado deaths
- Lifetime 1-10+ minutes
- Winds less than 110 mph

Strong Tornadoes

- 29% of all tornadoes
- Nearly 30% of all tornado deaths
- May last 20 minutes or longer
- Winds 110-205 mph

Violent Tornadoes

- Only 2% of all tornadoes
- 70% of all tornado deaths
- Lifetime can exceed 1 hour
- Winds greater than 205 mph



Tornado Myths:

MYTH: Areas near rivers, lakes, and mountains are safe from tornadoes.
FACT: No place is safe from tornadoes.

MYTH: Low pressure from tornados causes buildings to "explode" as it passes overhead.
FACT: Violent winds and debris slamming into buildings cause most structural damage.

MYTH: Windows should be opened before a tornado approaches to equalize pressure and minimize damage.
FACT: Opening windows allows damaging winds to enter the structure. Leave the windows alone; instead, immediately go to a safe place.

Frequency of Tornadoes:

☞In the southern states, peak tornado occurrence is in March through May.

☞Tornadoes can occur at **any time** of the year.

☞Note, in some states, a secondary tornado maximum occurs in the fall.

☞Tornadoes are most likely to occur between 3 and 9 p.m. but have been known to occur at all hours of the day or night.

☞The average tornado moves from southwest to northeast, but tornadoes have been known to move in any direction. The average forward speed is 30 mph but may vary from nearly stationary to 70 mph.

STAY INFORMED ABOUT THE STORM

Listen to NOAA Weather Radio, commercial radio, and television for the latest tornado WATCHES and WARNINGS. When conditions are favorable for severe weather to develop, a severe thunderstorm or tornado **WATCH** is issued. Weather Service personnel use information from weather radar, spotters, and other sources to issue severe thunderstorm and tornado **WARNINGS** for areas where severe weather is imminent.

Severe thunderstorm warnings are passed to local radio and television stations and are broadcast over local NOAA Weather Radio stations serving the warned areas. These warnings are also relayed to local emergency management and public safety officials who can activate local warning systems to alert communities.

NOAA WEATHER RADIO IS THE BEST MEANS TO RECEIVE WARNINGS FROM THE NATIONAL WEATHER SERVICE

The National Weather Service continuously broadcasts updated weather warnings and forecasts that can be received by **NOAA** Weather Radios sold in many stores. The average range is 40 miles, depending on topography. Your National Weather Service recommends purchasing a radio that has both a battery backup and a tone-alert feature, which automatically alerts you when a watch or warning is issued.

You can also receive weather warning updates from weather.com, www.tnema, www.srh.noaa.com and most local TV Channel's web sites.

What To Listen For...

When a tornado is possible, there are different types of alerts you may hear on the television or radio. Such as…

TORNADO WATCH: Tornadoes are possible in your area. Remain alert for approaching storms.

TORNADO WARNING: A tornado has been sighted or indicated by weather radar. If a tornado warning is issued for your area and the sky becomes threatening, move to your pre-designated place of safety.

ADVISORY: Hurricane and storm information is disseminated to the public every six hours.

When the situation changes, you will hear a…

SPECIAL ADVISORY: Information is disseminated when there is significant change in storm-related weather conditions.

When the situation worsens to severe, you could hear a…

SEVERE THUNDERSTORM WATCH: Severe thunderstorms are possible in your area.

SEVERE THUNDERSTORM WARNING: Severe thunderstorms are occurring.

GALE WARNING: Sustained winds of 35-54 mph and strong wave action are expected.

Remember, tornadoes occasionally develop in areas in which a severe thunderstorm watch or warning is in effect. Remain alert to signs of an approaching tornado and seek shelter if threatening conditions exist. Also, remember that flooding is also possible.

Environmental Clues

Look and Listen for:

- Dark, often greenish sky
- Wall cloud
- Large hail
- Loud roar; similar to a freight train

Other Thunderstorm Hazards

These dangers often accompany thunderstorms:

- Flash Floods: Number ONE weather killer - 146 deaths annually
- Lightning: Kills 75-100 people each year
- Damaging Straight-line Winds: Can reach 140 mph
- Large Hail: Can reach the size of a grapefruit - causes several hundred million dollars in damage annually to property and crops.

Cover Photo by Bill Bunting

BE SAFE!

Each year, many people are killed or seriously injured by tornadoes despite advance warning. Some did not hear the warning while others received the warning but did not believe a tornado would actually affect them. The information herein is to inform you of the dangers and to encourage you to listen to severe weather watches and warnings that could save your life in the event a tornado threatens your area. After you have received the warning or observed threatening skies, YOU must make the decision to seek shelter before the storm arrives. It could be the most important decision you will ever make!

EMERGENCY PLAN

Tornados: What to Do Before, During & After!

Before Severe Weather:

- **Develop an emergency plan for your office workers**.
- Have drills and inform your employees of the safest place in your building to congregate. Ensure you have a place large enough for all employees to safely gather.
- Do not leave the building.
- Have employees move away from all glass windows and doors.
- Keep a map nearby to follow possible tornado movement from weather bulletins.
- Observe threatening skies. Look for dark clouds, hail and high winds.
- Have several flashlights with plenty of extra batteries.

- Have a NOAA Weather Radio with a warning alarm tone and battery back-up to receive warnings.
- Listen to radio and television for up-to-the-minute information. Have extra batteries for the radio.
- If you have any items outside, bring them in to reduce flying debris.
- Turn off and unplug all computers and all other valuable equipment to protect it from power surges.
- If you are in a high-rise building, move to an interior room or hallway on the lowest floor possible.
- Make sure you have your computer data backed up. It is advisable to have a nightly backup of all vital business and patient information kept either on an off site server or a physical tape or disk copy is made that is stored off site to insure your ability to recover this information and limit any interruption to your business.

During Severe Weather:

- Sometimes storms develop so fast there is no time for an alert, remain alert for signs of an approaching tornado.
- Keep personnel and equipment away from windows and exterior glass areas.
- Take shelter in an interior room (one without windows) until the warning has ended.
- The designated office warden should instruct personnel to avoid fallen wires, electrical cords, water leads and broken glass. Overall, the warden should keep everyone calm.
- Flying debris causes many deaths, stay in a safe place until the tornado has passed. The force of the wind alone can cause tremendous devastation by toppling trees and down power lines.
- After severe weather, report damages directly to Holladay Properties via the Call Center (888) 774-2446. **DO NOT REPORT DAMAGES DIRECTLY TO HOSPITAL ENGINEERING.** Holladay Properties will contact various service providers to assist in emergency repairs. **(TN Call Center – Change as Applicable)**

After Severe Weather:

- Listen to radio/television to ensure that all threats have passed.
- Be aware of debris and careful for down power lines.
- Take pictures of any damage for insurance claims and contact your agent
- When checking for damage, use a flashlight. Do not use candles in case of a gas leak.
- Report downed power lines and gas leaks to the appropriate vendor. Be aware of possible electrical dangers. Watch for sparks or frayed wires.

Links For Additional Weather-Related Information:

www.tnema.org

www.redcross.org

www.noaa.gov