

TORNADO AWARENESS



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INTRODUCTION

You've just gotten home from a hard day at the office and you are ready to relax for a while before supper. Your evening meal is almost ready and the kids are outside playing, despite the poor weather on the horizon.

Your television program is interrupted.

The announcer says, with a sense of urgency, "The National Weather Service has just issued the following bulletin for residents of our viewing area:

A TORNADO WARNING IS IN EFFECT UNTIL
8:00 P.M. FOR PERSONS IN FOND DU LAC,
CALUMET AND MANITOWOC COUNTIES.
A TORNADO WAS SIGHTED ON THE GROUND
SIX MILES SOUTHWEST OF OAKFIELD,
WISCONSIN, AT 6:45 P.M. THE TORNADO
WAS MOVING TOWARD THE NORTHEAST
AT TWENTY MILES PER HOUR. IF A TORNADO OR
THREATENING WEATHER IS SIGHTED, MOVE TO
A SAFE PLACE. TO REPEAT, THE NATIONAL
WEATHER SERVICE . . ."

What does this mean to you and your family? What should you do to protect yourselves and your property? Have you made plans for shelter? Do you know how to recognize an approaching tornado? What if a tornado does strike – what do you do? The answer to each of

these questions is vital. Your individual actions could save lives and minimize property damage.

This booklet is a quick reference guide for pre-disaster information and post disaster recovery.



WEATHER WORDS

SEVERE THUNDERSTORM: Winds more than 58 mph (95 kph) or hail $\frac{3}{4}$ inch (2 cm) or more in diameter.

SEVERE THUNDERSTORM WATCH: Severe thunderstorms are possible in a specific area for a specified period of time.

SEVERE THUNDERSTORM WARNING: Severe thunderstorms have been sighted or indicated on radar in a specific area.

TORNADO: A violently rotating column of air, which descends from a thunderstorm cloud system and which is in contact with the ground.

TORNADO WATCH: Issued to alert you to the possibility of tornado development in a specific area for a specific period of time. Keep tuned to a radio or television station for further developments.

TORNADO WARNING: Issued when a tornado has actually been sighted or indicated by radar. The warning will indicate the location of the tornado, direction of travel and period of time for movement through a specific area. ***Take immediate cover.***

TORNADOES ARE DANGEROUS

Tornadoes occur in many parts of the world and in all 50 states. Normally, the number of tornadoes is at its lowest in the United States during December and January, and at its peak in May. The months of greatest frequency in Wisconsin are April through September, with June being the peak month.

A tornado is a violently rotating column of air which descends from a thunderstorm cloud and touches the ground. It nearly always starts as a funnel-shaped, rotating extrusion from the thunderstorm cloud, builds downward to the ground, and darkens as it picks up debris. On a local scale, the tornado is the most destructive of all atmospheric phenomena.

Tornadoes form several thousand feet above the earth's surface, usually during warm, humid, unsettled weather, and usually in conjunction with a severe thunderstorm. Sometimes a severe squall line many miles long may contain a number of tornado-producing thunderstorms. As the parent thunderstorm moves along, tornadoes may form, travel along in touch with the ground for a few miles, dissipate or lift, and then touch down again – maybe several times!

Your knowledge of these general characteristics of all tornadoes will be useful in your tornado preparedness planning:

TIME OF DAY during which tornadoes are most likely to occur is mid-afternoon, generally between 3:00 and 8:00 p.m., but they may occur at any time.

DIRECTION OF MOVEMENT is usually from the southwest to the northeast, but their direction can be erratic and may change suddenly.

LENGTH OF PATH averages four miles, but may reach up to 300 miles.

WIDTH OF PATH averages about 300 – 400 yards, but tornadoes have cut swaths a mile or more in width.

SPEED OF TRAVEL averages from 25 – 40 mph., but speeds up to 68 mph. have been reported.

THE CLOUD directly associated with a tornado is a dark heavy cumulonimbus (the familiar thunderstorm cloud) from which a whirling funnel-shaped pendant extends to the ground.

PRECIPITATION associated with the tornado usually occurs first as rain just preceding the storm, frequently with hail, and as a heavy downpour immediately to the left of the tornado's path.

SOUND occurring during a tornado has been described as a roaring, rushing noise, closely approximating that made by a train speeding through a tunnel or over a trestle, or the roar of many airplanes.

WEATHER FORECASTS

To help citizens prepare for and to lessen the damage of a tornado, the National Weather Service issues forecasts. You should know what a specific forecast means in relation to you and your property.

At the National Oceanic and Atmospheric Administration's (NOAA's) National Severe Storms Forecast Center in Kansas City, meteorologists constantly analyze weather conditions in order to keep the country informed of possible destructive events.

Along with the use of sophisticated radar, the detection of tornadoes involves a dense network of storm spotters and reporting procedures in each tornado watch area. This network is called SKYWARN. SKYWARN spotters report conditions to the National Weather Service, law enforcement agencies and/or local emergency management offices.

Television and radio are excellent sources of current information and conditions. When a threat is possible, a TORNADO WATCH is issued:

**THE TORNADO WATCH MEANS CHECK YOUR
PREPAREDNESS REQUIREMENTS, KEEP
INFORMED AND BE READY TO TAKE SHELTER
IMMEDIATELY IF A TORNADO WARNING IS
ISSUED . . .**

When radar or observer reports indicate that a threat is likely or is occurring, a TORNADO WARNING is issued:

Available sirens will be sounded for a three minute period. Turn on a local radio station for information.

THE TORNADO WARNING REQUIRES IMMEDIATE ACTION, SEEK SHELTER IF YOU ARE IN THE THREATENED AREA.

FOLLOW ESTABLISHED SAFETY RULES . . .

In addition to television and radio, most Wisconsin communities are serviced by NOAA's F.M. weather stations. They are excellent sources of current conditions.

The Manitowoc County Emergency Management Office sells NOAA radios. Call: 683-4207.

**TWENTY-FOUR HOUR
NATIONAL OCEANIC AND ATMOSPHERIC
ADMINISTRATION F.M. WEATHER STATIONS**

<u>Town</u>	<u>Mhz</u>
Duluth	162.55
Menomonie	162.40
Wausau	162.475
Green Bay	162.55
LaCrosse	162.55
Dubuque	162.40
Madison	162.55
Milwaukee	162.40

KNOW WHAT TO DO

If a **TORNADO WATCH** is announced, you should:

- Listen to the radio or TV for weather advisory information. Keep a battery powered radio on hand in case electrical power is lost;
- Get loose objects inside or securely tied down if they are to be left outside.

If a **TORNADO WARNING** is announced, you should move to your shelter area immediately, avoiding windows on the way.

In **OFFICE BUILDINGS**, move to an interior hallway on a lower floor or go to a designated shelter area.

At **SCHOOL**, follow the school disaster plan. Stay away from auditoriums, gymnasiums and any area with wide free-span roofs. Remember to stay away from windows!

In **OPEN COUNTRY**, move away from the tornado's path at right angles. If there is not enough time to move into a shelter or to avoid the storm, lie flat in a ditch, ravine, culvert or under a bridge with your hands shielding your head. Be alert for flash flooding. **DO NOT STAY IN YOUR CAR!**

If power lines are downed onto your vehicle
STAY IN YOUR CAR!! Do not touch metal in your car, remain calm, and wait for utility crews to arrive. **(If you open the car door and put your foot on the ground you will be electrocuted.)**

AT HOME, go to the basement, avoid windows and chimneys and seek cover under a strong piece of furniture. If you have no basement, seek shelter at the lowest level in the center of the house, in a small room or closet or under a piece of sturdy furniture like a bed or sofa. Protect your head.

WHILE SHOPPING, seek shelter inside a solidly built structure. Avoid buildings with wide, free-span roofs.

IN TRAILER OR MOBILE HOME, move to a shelter area far enough away from the trailer or mobile home to avoid being injured if it is overturned. All mobile homes should be tied down.

**IN ANY CASE,
DO NOT STAY IN YOUR TRAILER
OR MOBILE HOME!**

REPORT THAT TORNADO . . .

If you observe a tornado, report it promptly to the nearest local law enforcement office (**9-1-1**) or the National Weather Office, giving its location and direction of movement. When you are making a report, be sure to include your name, address and phone number.

MOBILE HOME SAFETY

Securely anchored mobile homes have successfully withstood high-force winds (up to 80 miles per hour). Only shelters, however, can provide the real security needed during a violent storm. To enhance the safety of your mobile home, consider the following tips:

POSITIONING: Placement of your mobile home with the narrow side facing prevailing winds will provide some degree of continuing protection. A 12 x 60 foot mobile home so positioned presents only 20% as much wall surface to the prevailing winds as it would if the long side were so positioned. Don't think that proper positioning alone can assure safety. Your unit should also be securely tied down.

TIE DOWNS: Tie down systems are easy to install on existing units. Manufacturers of mobile homes are including concealed tie down straps under the skin of their new units in compliance to Federal regulations. The use of tie downs offers the most consistent and effective means of minimizing mobile home damages from high winds. You need to use two types of ties: the over-the-top tie, and the frame tie. The first keeps the unit from overturning and the second prevents it from being blown off its supports.

WINDBREAKS: Natural barriers such as trees provide excellent windbreaks. The protection to be gained from trees outweighs the danger of falling limbs in a severe storm. Two or more rows of trees are more effective than single rows. Trees at least 30 feet in height are most effective.

SHELTER: Even though your unit may be well anchored and have substantial windbreaks, you are advised to seek other shelter when warned of an approaching tornado. Some operators of mobile parks provide shelter for residents. If your park does not have a community shelter, consult with the management and request that one be provided.

Shelters in public buildings will be made available to persons who live in mobile homes without on-premises shelter available.

Tune in to a local Manitowoc County radio station when sirens are sounded and tornado warnings are issued, for location of those facilities.

Cleveland:	WLKN	98.1 FM
Manitowoc/ Two Rivers	WCUB	980 AM
	WLTU	92.1 FM
	WOMT	1240 AM
	WQTC	102.3 FM
Two Rivers	WTRW	1590 AM

EMERGENCY SUPPLIES

TO IMPROVE YOUR CHANCES OF SURVIVAL CONSIDER KEEPING THE FOLLOWING ITEMS ON HAND . . .

- A portable radio with extra batteries
- A NOAA weather radio
- A first aid kit
- A flashlight with extra batteries
- A few tools that can be used to escape from your shelter or make emergency repairs. Keep a hammer, screw drivers, crow bar, saw, nails, rope, plastic sheeting, tape, plywood, etc.
- A supply of emergency drinking water. Commercially prepared supplies will last indefinitely. If you store your own, keep in mind:
 - Store water in plastic containers.
 - Sterilize storage containers
 - Purify the water unless it comes from a public source.
 - Seal the containers properly.

AFTER THE TORNADO . . .

There are potential hazards that need to be considered when re-entering your home following a tornado:

- Gas Leaks
- Electrical Hazards
- Structural Damage
- Unsafe Drinking Water

Gas leaks: Use your sense of smell when you check for gas leaks. **DO NOT** turn on any light switches: instead, use a flashlight when checking for damages. Lanterns, torches, electrical sparks and cigarettes can cause an explosive fire if there is a gas leak. Call the gas company for help if you find a leak.

Electrical: Wear rubber gloves and rubber soled shoes to avoid electrocution. **DO NOT** turn on any lights or appliances if there has been any damage to the house. To avoid any problems shut off the circuit breaker until a representative of the electric company can check for damages.

Structural Damage: Watch for falling debris. Check the floors and walls for damage. Knock down any hanging plaster. To get a full evaluation of the potential structural damage, call the city building inspector or engineer.

Drinking water – if there is any doubt about the purity of your water, use one of these methods to be safe . . .

Mix $\frac{1}{2}$ teaspoonful of commercial laundry bleach with 2 $\frac{1}{2}$ gallons of water. Let stand five minutes before drinking. Bring water to a boil for ten minutes in a clean container. The flat taste of the water can be corrected by shaking the water in a bottle or by pouring from one container to another, or by adding a pinch of salt. (Where water is obtained from a public supply, you will be advised by responsible authorities if boiling of water is considered necessary.)

Add five drops of tincture of iodine solution to one quart of water. Mix thoroughly and allow to stand for 30 minutes before drinking.

Water purifying tablets may be available in drug stores or camping equipment outlets.



RECOVERY

In the aftermath of a tornado, as with any other disaster, community recovery actions will begin as soon as possible. Those actions will likely fall into two categories: short-term clean-up and restoration of vital services, and long-range reconstruction and hazard mitigation.

As each of you returns to your home to begin your clean-up efforts, remember to re-enter your property safely, checking for damage and planning your requirements before you get started with your actual clean-up.

KEEP RECORDS OF DISASTER-RELATED EXPENSES

Whether or not you have insurance coverage, complete records of losses and disaster-related expenses must be kept for use in making allowable income tax deductions and in making application for State or Federal aid that may become available. Remember that some losses are deductible for income tax purposes.

1. All actual losses, including furniture, clothes, paintings, artifacts, food and equipment, regardless of your intent to replace the objects.

2. All related expenses, including the additional cost of living, if any, for your family and you such as motel and restaurant bills, temporary rental of cars or home rental.
3. Clean-up expenses, including materials, rented equipment and depreciation of equipment purchases;
4. Restoration expenses, including all costs to return your home to its prior condition, including all labor and material purchased.

Complete records of objects lost should be kept. Photographs of ruined homes or objects are excellent for later documentation.

Make every attempt to document the value of each individual object lost, including bills of sale, cancelled checks, charge account records and prior insurance evaluations. If you have no such records, estimate approximately the value, purchase place and date of purchase. Include this information with your list.



SUMMARY OF TORNADO SURVIVAL FACTS

BEFORE THE TORNADO . . .

- **Learn all you can about the threat of tornadoes.**
- **Keep informed of daily weather conditions.**
- **Identify a shelter**

DURING A TORNADO WATCH . . .

- **Listen to weather advisories.**
- **Be prepared to act quickly.**
- **Move loose objects inside or tie them down.**

DURING A TORNADO WARNING . . .

- **TAKE SHELTER IMMEDIATELY.**
- **Stay away from any windows.**
- **Take your portable radio and other emergency supplies, if time permits.**
- **Remain calm.**

AFTER THE TORNADO . . .

- **Keep your family together.**
- **Re-enter building with caution.**
- **Be alert for hazards**
- **DO NOT sightsee in disaster area.**