

2011 Michigan Severe Weather Awareness



Picture of Willow, MI tornado, June 27, 2010, provided by Steve DeMond and WDIV.

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The Michigan Committee for Severe Weather Awareness (MCSWA) was formed in 1991 to promote safety awareness and coordinate public information efforts regarding tornadoes, flooding, and winter weather.

For more information, visit the MCSWA Web site at www.mcswa.com or visit us on  Facebook.

Michigan Committee for Severe Weather Awareness

March 2011

Rich Pollman, Chair
National Weather Service
9200 White Lake Road
White Lake, MI 48386-1126
248/625-3309, Ext. 726
richard.pollman@noaa.gov

Mary Stikeleather, Secretary
Lapeer County Emergency Management
2332 W. Genesee Street
Lapeer, MI 48446
810/667-0242
mstikeleather@lapeercounty.org

Lori Conarton
Insurance Institute of Michigan
334 Townsend
Lansing, MI 48933
517/371-2880
iim@iiminfo.org

Mark Walton
National Weather Service
4899 South Complex Drive, S.E.
Grand Rapids, MI 49512
616/949-0643, Ext. 493
mark.walton@noaa.gov

Paul Gross
WDIV-TV 4
550 W. Lafayette
Detroit, MI 48226-3140
313/222-0444 ext. 318
paulg@wdiv.com

David Chapman
MI Earth Science Teachers Association
Okemos High School
2800 Jolly Road
Okemos, MI 48864
517/706-4886
dave.chapman@okemosschools.net

Mary Wichman
Michigan Department of State Police
Emergency Management & Homeland Security
4000 Collins Rd
Lansing, MI 48910
517/333-5023
wichmanm@michigan.gov

Kevin Thomason
State Farm Insurance
P.O. Box 4094
Kalamazoo, MI 49003-4094
269/384-2580
Kevin.Thomason.A18Z@StateFarm.com

Joni Hatch
American Red Cross
14600 Beadle Lake Road
Battle Creek, MI 49014
269/962-7528 ext. 223
jhatchredcross@gmail.com

Terry Jungel
Michigan Sheriffs' Association
515 N. Capitol
Lansing, MI 48933
517-485-3135
tjungel@misheriff.org

Les Thomas
Michigan Department of Environmental Quality
P.O. Box 30458 525 W. Allegan
Lansing, MI 48909-7958
517/335-3448
thomasl@michigan.gov

Susan Manente
Michigan Department of Community Health
P.O. Box 30195
201 Townsend St.
Lansing, MI 48913
517/335-9003
manentes@michigan.gov

Terry DeDoes
Consumers Energy
530 W. Willow
Lansing, MI 48909-7662
517/374-2159
tsdedoes@cmsenergy.com

2010 Severe Weather Review

According to the National Weather Service (NWS), Michigan experienced an above average year for severe weather in 2010. Severe thunderstorms and tornadoes were responsible for about \$360 million in damages, one death, and 22 injuries. Nearly half of the damage was associated with an April 6 hail storm that produced hail in excess of 2 inches as it swept across Southwest Lower Michigan and into the northern suburbs of metro Detroit.

Flooding

Flooding in 2010 was not as pronounced as it was in 2009. In 2010, there were 23 flooding and flash flooding events statewide, resulting in \$7 million in damages. One of the incidents included a flash flood in downtown Mt. Pleasant in Isabella County during the evening hours of August 11 with approximately four inches of rain falling in roughly two and a half to three hours. The result was \$3 million in damages to 39 buildings on the campus of Central Michigan University. In addition, street flooding was reported in downtown Mt. Pleasant and the intersection of Isabella and Baseline roads were washed out.

Tornadoes and Severe Thunderstorms

In 2010, there were 27 tornadoes across the state, which is the highest state total since 2001 when 35 tornadoes were recorded. The first tornado in 2010 touched down near Iron River on April 30, which was only the fourth time a tornado occurred in the month of April in Upper Michigan since 1950.

On June 4, scattered severe thunderstorms developed and resulted in four damaging wind swaths. The first area damaged was just west of Eagle in Clinton County where winds of 60 to 75 mph produced a damage swath that was three miles long and one mile wide. Due to the winds, a 70-year-old pole barn partially collapsed and numerous limbs were broken and trees were uprooted. The second area of wind damage occurred near Lansing's Capital Region International Airport in Clinton County. Minor damage was reported to the airport terminal building, numerous branches fell, and a few trees were uprooted. In addition, winds of 65 to 80 mph occurred near the Davis Airport (East Lansing) in Ingham County destroying a small house when a 40 inch-diameter tree fell on it and uprooting approximately 100 trees. The last area of damage was near Novi and Northville, which experienced downed trees from severe winds as well as hail up to two inches in diameter damaging many roofs and siding in the area.

Areas in Southern Lower Michigan were hit by the weather incident on June 5-6, commonly referred to as the "Southern Great Lakes Tornado Outbreak." This tornado outbreak produced 43 tornadoes from Iowa to Pennsylvania, including a devastating EF4 tornado (166 – 200 mph) just south of the Michigan state line near Toledo, Ohio. There were eight tornadoes in extreme Southern Michigan, all along or south of Interstate 94. The strongest tornadoes were rated as EF2 (111 – 135 mph) and hit the communities of Hinchman in Berrien County, La Grange in Cass County, and Dundee in Monroe County. The Dundee
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tornado was the most significant Michigan tornado of 2010, as it tracked for 13 miles across western Monroe County. This tornado caused about \$50 million in damages and 11 injuries as it hit homes and business along highway M-50. Another significant EF1 (86-110 mph) tornado hit the Lake Erie communities of Detroit Beach and Estral Beach. This particular tornado struck the Fermi 2 Nuclear Power Plant, peeling off a section of the roof and other siding on storage buildings.

During the late afternoon and evening of June 18, a squall line developed over northern Illinois and raced across Southern Lower Michigan. The severe thunderstorms produced winds in excess of 70 mph for many locations south of a line extending from Holland to Port Huron. Widespread tree damage was also reported with many power outages. Another squall line moved onshore from Lake Michigan around midnight on June 21. Widespread wind damage and heavy rainfall created numerous problems for portions of Ottawa and Kent counties with winds of 60 to 75 mph that created a swath of damage from just west of Lamont to near Alpine. Damage included a barn, five houses lost shingles, and numerous trees were uprooted or snapped. An EF0 (up to 85 mph) tornado touched down just east of Zeeland in Ottawa County. During the evening hours of June 23 a squall line developed over Illinois and moved into extreme Southern Lower Michigan. In addition to some scattered wind damage, there were two tornadoes – one in Washtenaw County and one in Monroe County.

Severe thunderstorms again developed over Southern Lower Michigan during the afternoon hours of June 27. Four tornadoes touched down in the communities of Gobles in Van Buren County, Willow in Wayne County, Wadhams in St. Clair County, and Marlette in Sanilac County. The Wadhams EF1 tornado hit the Fort Trodd Campground in Clyde Township resulting in one death, four injuries, and 10 campers being damaged or destroyed.

The state had a few weeks to recuperate before the severe weather increased again during the afternoon and early evening hours of July 15. Widespread wind damage was noted south and east of a line extending from Alma to Battle Creek with many downed trees and power lines. The severe storm also caused hail to fall reaching the size of a golf ball.

More severe storms hit on July 18, 23, 27, and 28. In addition to scattered wind damage, downed trees, and power lines, a number of weak tornadoes touched down. Northern Lower Michigan recorded its only tornado of the season on July 18. There was an EF0 tornado near Cadillac, which resulted in minor damage to a lumber yard. Another EF0 tornado hit the Lighthouse County Park near Port Hope in Huron County on July 18. One of the severe thunderstorms was a long track supercell that produced two weak tornadoes in Dickinson County on July 27. The first EF0 tornado touched down along 7th Avenue in the eastern sections of Norway and crossed US2 as it moved east northeast towards Norway Mountain knocking down several trees. The second EF0 tornado touched down in a wooded area about one mile northeast of Vulcan.

On August 19, a severe thunderstorm moved from Saginaw to St. Clair Shores. Along its path, the storm produced wind gusts up to 80 mph and golf ball sized hail that covered the ground, as well as downed trees and damaged roofs. In addition, the storm produced an EF1 and an EF0 tornado in Macomb County. During the evening of August 20, several severe thunderstorms produced damaging winds and large hail over eastern Upper Michigan. Numerous large trees were blown down near Blind Sucker Flooding, a camper was flipped over by thunderstorm winds in Muskallonge State Park, and golf ball sized hail was reported near Germfask.

The last significant severe weather event of 2010 rolled across Lower Michigan on September 21 during the late afternoon and evening hours. Numerous reports of damaging winds and large hail occurred, including reports of golf ball sized hail near Weidman in Isabella County and Morley in Mecosta County. Measured wind gusts reached 76 mph at the Muskegon Great Lakes Environmental Research Lab (GLERL) field station, 75 mph at West County Park in Fennville, and 72 mph at the Tulip City Airport in Holland and Gerald R. Ford International Airport in Grand Rapids. The storms responsible for the strong winds, hail, and associated damage moved across Saginaw, Flint, and the Thumb region before exiting into Lake Huron.



Picture of Willow, MI tornado, June 27, 2010, provided by Jerry Uchtorff and WXYZ.



Michigan Tornado History by County

The following is a list of tornadoes experienced by each county in Michigan.

County	1950-2010	2010	County	1950-2010	2010
Alcona	11	0	Lake	2	0
Alger	6	0	Lapeer	20	0
Allegan	28	2	Leelanau	3	0
Alpena	14	0	Lenawee	32	1
Antrim	9	0	Livingston	24	0
Arenac	7	0	Luce	2	0
Baraga	2	0	Mackinac	5	0
Barry	18	0	Macomb	20	2
Bay	12	0	Manistee	2	0
Benzie	4	0	Marquette	6	0
Berrien	31	3	Mason	5	0
Branch	16	1	Mecosta	9	0
Calhoun	16	1	Menominee	7	0
Cass	15	1	Midland	8	0
Charlevoix	4	0	Missaukee	8	0
Cheboygan	6	0	Monroe	31	3
Chippewa	6	0	Montcalm	11	0
Clare	8	0	Montmorency	6	0
Clinton	17	0	Muskegon	7	0
Crawford	10	0	Newaygo	12	0
Delta	11	0	Oakland	31	0
Dickinson	9	2	Oceana	5	0
Eaton	25	0	Ogemaw	14	0
Emmet	5	0	Ontonagon	2	0
Genesee	41	0	Osceola	16	0
Gladwin	9	0	Oscoda	5	0
Gogebic	3	0	Otsego	3	0
Grand Traverse	4	0	Ottawa	19	1
Gratiot	14	0	Presque Isle	6	0
Hillsdale	23	0	Roscommon	8	0
Houghton	1	0	Saginaw	21	0
Huron	13	1	Sanilac	15	1
Ingham	27	0	Schoolcraft	3	0
Ionia	17	0	Shiawassee	25	0
Iosco	11	0	St. Clair	21	1
Iron	6	1	St. Joseph	10	1
Isabella	13	0	Tuscola	17	0
Jackson	17	0	Van Buren	19	1
Kalamazoo	25	0	Washtenaw	26	2
Kalkaska	7	0	Wayne	29	1
Kent	31	0	Wexford	8	1
Keweenaw	2	0			

A single tornado can cross county lines. Therefore, the sum of the counties will not equal the total number of tornadoes statewide.



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?

An average of 16 tornadoes occur in Michigan each year. Since 1950, 243 persons have been killed due to tornadoes. During this same time, Michigan has experienced 950 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 ten 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.



Flood Preparation and Planning

Steps to Prepare for a Flood

Planning in advance can afford you extra critical time when a flood is coming, and can help you increase the odds of protecting your valuable documents, your real estate, and your personal property – including cherished belongings. Developing a flood plan is one of the advance methods your family, business, or community can put together to help you respond quickly in the event of a flood near your property. A “rapid-response” plan can be as simple as a one-page plan that answers the following questions:

1. How will we find out about a coming flood?

The first part of a Flood Plan is putting yourself in a position to get some advance warning of an unfolding situation. Large-scale flooding on the main stem of a river may occur over many hours or several days, but flash floods can strike in minutes.

Important steps you can take include signing up for flood alerts and monitoring weather patterns and local conditions. Flooding in Michigan can happen any time of year.

- Sign up for National Weather Service Flood Alerts at www.focusonfloods.org/flood-alerts
- Monitor river levels via NOAA Watch at www.noaawatch.gov/floods.php
- Determine your property’s proximity to nearby waterways by learning about and reviewing FEMA’s flood hazard maps at www.floodsmart.gov.

2. At what river level does our property begin to flood?

First, determine “What’s Your Number?” by learning the flood stage at the stream gage nearest you. This information is available through the National Weather Service’s Advanced Hydrologic Prediction Services Web site at <http://water.weather.gov/ahps>. Then, determine the level at which floodwaters begin to affect your property. This step may take research or personal experience to determine, such as talking to neighbors to find out how high the river was during recent floods, and at what point flooding began in your neighborhood. Each neighborhood and each property has its own unique terrain and placement to consider when determining this factor, and it is safest to err on the side of caution.

3. How can we prepare for floods?

Preparing your household for a flood involves steps that will improve your readiness for many different types of disasters. Give yourself plenty of time to evacuate by developing an emergency kit including first aid supplies, a three-day supply of non-perishable food, bottled water, a battery-powered radio, flashlights, and extra batteries. Also, have personal items ready like rubber boots, a rain jacket, warm clothes, and hygiene and sanitation products. Learn additional ways to prepare at www.ready.gov.

4. How will we learn about evacuation orders?

Contact your local emergency management office to find out how your community notifies residents of floods and how it will issue evacuation orders. Make a commitment to follow evacuation orders the first time to help prevent emergency personnel from having to return to the affected area for a rescue when travel is no longer safe.

5. What access roads can we use to evacuate in the case of rising waters?

Research indicates the majority of flood-related fatalities occur when cars become trapped on roads that are known to flood. To prevent this, follow instructions from emergency personnel and before a flood happens talk to neighbors, emergency personnel, and others to determine when and where flooding typically occurs on access roads leading to your home. Know what roads you regularly travel and whether or not they will flood, and plan alternate routes when needed.



Flood Preparation and Planning (Cont.)

6. What steps should we take to prepare our property?

Research the flood-proofing options available to you. Can you install a quick-disconnect furnace, or elevate electrical and mechanical equipment? Are there steps you can take to alleviate pressure on your structure and to prevent extensive damage to doors and windows if flooding does occur? For additional information about protecting your property from floods, visit www.mcswa.com.

5. Where should our family meet if we are separated during a flood event?

Before a flood or other emergency strikes, designate a safe place away from your home where your family members can all meet. Make sure that all family members know the location, you have a plan for contacting each other, and you have an emergency kit ready to take with you. In addition, it is important to know whether your child's school or family members' work place is in a flood zone. If so, what provisions are in place to ensure their safety?

Other Considerations

- A written plan is essential for helping individuals and household members to think through important issues in advance. You should also research whether there are similar plans in place for your work and children's daycare and school, as well as to see how they work with your plan.
- Expect roadways to be blocked during a flood. Contact your friends and family to ensure they are safely sheltered. Listen to local media for flood-prone roads as well as making contact with neighbors in your area..
- Remember, the most common things people regret planning to protect during an emergency include pets, photographs, and computers. Can you pack all these in a vehicle and drive to higher ground in time? Ensure you have a plan in place to protect your pets and keepsakes before an emergency.

Helpful Flood Terms

- **Flood Watch:** Flooding is possible. Tune in to your NOAA Weather Radio, local radio, or television for information and check the flood alert sites on the Internet.
- **Flash Flood Watch:** Flash flooding is possible. Be prepared to move to higher ground and tune in to your NOAA Weather Radio, commercial radio, or television for information.
- **Flood Warning:** Flooding is occurring or will occur soon. If advised to evacuate, do so immediately.
- **Flash Flood Warning:** A flash flood is occurring. Seek higher ground immediately.

Helpful Links

Find additional information on how to plan and prepare for floods, what to do during and after a flood, and learn about available resources by visiting:

- www.floodsmart.gov
- www.fema.gov
- www.weather.gov/floodsafety
- www.weather.com
- www.disasterassistance.gov



Flood Insurance

Why Buy Flood Insurance?

One of the most dramatic – and visible – ways that floods affect communities is by the damage that floods can bring to properties, homes, and personal belongings. A small amount of water can bring a tremendous amount of damage, and many property owners are unaware that their properties are at risk for flooding.

What's worse is that many property owners do not realize their homeowners' or property owners' insurance do not cover flood damage. To be covered from flood damage, one must purchase National Flood Insurance through an insurance broker who works with the Federal Emergency Management Agency (FEMA). Consider that even an inch of water can require the replacement of carpet, drywall, floor boards, moldings, doors, and other belongings. Additionally, clean-up of mud and residue can be costly, as can repairing any mold and mildew damage that may occur.

To help calculate flood damage that might occur to your home, visit www.floodsmart.gov and search for the tool called, "The Cost of Flooding."

1. Is flood damage covered by my homeowners insurance?

Flood damage is excluded in nearly all homeowners and renters insurance policies, but if desired, it can be purchased as a separate policy.

2. Where do I get flood insurance?

Any licensed property/casualty insurance agent can sell a flood insurance policy. If you experience trouble in locating an agent, contact the National Flood Insurance Program's (NFIP) agent referral program at 1-888-CALL FLOOD (1-888-225-5356), ext. 445, or visit www.fema.gov/nfip.

3. Is there a waiting period before my flood insurance policy becomes effective?

There is a 30-day waiting period before a new or modified flood insurance policy becomes effective.

4. Do I need to live in a floodplain to get flood insurance?

It is important to note that nearly 30 percent of all flood claims come from outside the "100-year-floodplain" as determined by the NFIP. The fact that a property is outside of the "legal" floodplain does not mean the river or stream cannot reach that property. You do not need to live in a floodplain to purchase flood insurance – coverage is available to any building located in a community that has qualified for the NFIP. For a listing of Michigan communities participating in the NFIP, visit www.fema.gov/nfip and search "Community Status Book."

5. Is water back-up in basements covered by a flood insurance policy?

Coverage for water back-up in basements (drains/sewers) is excluded from the flood insurance policy.

6. Can I get coverage for water back up in basements?

Although basement water back up is excluded under most homeowners' insurance policies, coverage can be obtained by purchasing an endorsement. Most insurance companies offer sewer and drain back up as optional coverage. Coverage and limits vary by insurance company, so check with your agent/company about specifics. Some insurers include full coverage for sump pump failure while others specify items that are covered.



Lightning Safety

Lightning can provide a spectacular display of light on a dark night, but this awesome show of nature can also cause death and destruction. Lightning is the visible discharge of electrical energy. It is often accompanied by thunder, which is a sonic boom created by the same discharge. If you hear thunder, lightning is a threat, even if the storm seems miles away and the sky is blue. The electrical energy from lightning seeks a path to the ground – your home, the trees in your yard, or even *you* can be the chosen path.

SAFETY TIPS

1. Plan your evacuation and safety measures. At the first sign of lightning or thunder, activate your emergency plan. Lightning often precedes rain, so do not wait for the rain to begin before suspending activities. No place is absolutely safe from lightning; however, some places are much safer than others. The safest location during lightning activity is a large enclosed building. The second safest location is an enclosed metal topped vehicle, but NOT a convertible, bike, or other topless or soft top vehicle.
2. If outdoors, get inside a suitable shelter **IMMEDIATELY**. Your only safe choice is to get to a protected building or vehicle. Avoid seeking shelter under a tree as a tree can attract lightning. In the event you are outdoors without a safe vehicle or shelter, follow outdoor safety tips at www.lightningsafety.noaa.gov/outdoors.htm. Although these tips will not prevent you from being hit, they can HELP lessen the odds.
3. If indoors, avoid water, doors, windows, and using the telephone and headsets. Lightning could strike exterior wires, inducing shocks to inside equipment. Any item plugged into an electrical outlet may cause a hazard.
4. Do not resume activities until 30 minutes following the last observed lightning or thunder.
5. Injured persons do not carry an electrical charge and can be handled safely. If you are qualified to do so, apply first aid procedures to a lightning victim. Call 911 or send for help immediately.

For additional information, visit NOAA's lightning safety Web site:
www.lightningsafety.noaa.gov



*Picture of Midland Severe Thunderstorm, September 21, 2010,
provided by John McCov.*



Disaster Preparedness for Pets

The following information, prepared by the Humane Society of the United States, will help you become better prepared to care for your pets in a disaster or emergency.

Don't Forget Identification

- Your pets should be wearing up-to-date identification at all times.
- In addition to your phone number, include the number of a friend or relative. If your pet is lost, you want to provide a number on the tag that will be answered when you are away from your home.

Find a Safe Place Ahead of Time

- Don't wait until a disaster strikes to do your research.
- Evacuation shelters do not generally accept pets, except for service animals. Plan ahead to ensure your family and pets will have a safe place to stay.
- If you have more than one pet, you may have to prepare to board them separately. Make a list of boarding facilities and veterinary offices that might be able to shelter animals, including 24-hour telephone numbers.
- Ask your local animal shelter if it provides foster care or shelter for pets during an emergency. Animal shelters have limited resources so this should be your last resort.
- Contact hotels and motels outside of your immediate area to check policies on accepting pets. Ask about any restrictions on number of animals, size, and species, as well as whether a "no pet" policy would be waived during an emergency.
- Make a list of pet-friendly places and keep it handy. Call ahead for a reservation as soon as you think you might have to leave your home.
- Check with friends, relatives, or others outside of your immediate area. Ask if they would be able to shelter you and/or your animals, if necessary.

If You Evacuate, Take Your Pets

- The single most important thing you can do to protect your pets if you evacuate is to take them with you. If it's not safe for you to stay in the disaster area, then it's not safe for your pets.
- Animals left behind in a disaster can easily be injured, lost, or killed.
- Animals left inside your home can escape through storm-damaged areas, such as broken windows.
- Animals turned loose to fend for themselves are likely to become victims of exposure, starvation, predators, contaminated food or water, or other accidents.
- Do not leave your animals tied or chained outside during a disaster; this can be deadly.
- If you leave, even if only for a few hours, take your animals. You have no way of knowing if you will be allowed back into the area to care for your pet.
- Leave early; don't wait for a mandatory evacuation order. An unnecessary trip is better than waiting too long, making it unsafe to leave.
- Take pet food, medications, and special items with you such as leashes, toys, or a litter box.

In Case You Are Not Home

- An evacuation order may be issued, or a disaster may strike, when you're at work or out of the house. Make arrangements well in advance for a trusted neighbor to take your pets and meet you at a specified location.
- If you arrange for someone to take your pets, be sure the person is comfortable with your pets, knows where your animals are likely to be, knows where your disaster supplies are kept, and has a way to access your home.
- If you use a pet sitting service, discuss the possibility of getting their assistance well in advance.

NOAA Weather Radio All Hazards

NOAA Weather Radio All Hazards is a service provided by the National Weather Service (NWS). It provides continuous broadcasts of the latest weather information and forecasts from your local NWS office. NOAA Weather Radio All Hazards broadcasts important forecast and warning information as quick as possible.

With NOAA Weather Radio All Hazards, you will always have access to potentially life-saving emergency information. During severe weather, NWS personnel can interrupt routine weather broadcasts and insert warning messages concerning immediate threats to life and property. A special alert tone can also be activated that triggers an alerting feature on specifically equipped receivers. In the simplest case, this signal activates audible or visual alarms indicating that an emergency condition exists within the broadcast area of the station. In the most sophisticated alerting system, receivers equipped with Specific Area Message Encoding (SAME) technology allow listeners to choose which counties and for what events their radio will sound an alarm for when official NWS watches and warnings are issued.

NOAA Weather Radio All Hazards broadcasts warning and post-event information for all types of emergencies, both natural and technological. Working with other federal and local agencies, NOAA Weather Radio is an "all hazards" radio network. This makes NOAA Weather Radio All Hazards the single source for the most comprehensive weather and emergency information available to the public.

NOAA Weather Radio All Hazards is the voice of the NWS and is provided as a public service by the U.S. Department of Commerce's National Oceanic and Atmospheric Administration (NOAA). These life saving receivers, that should be as common as home smoke detectors, can be purchased at many retail stores and through mail order catalogues including Web sites that sell electronic merchandise. It provides the timeliest forecast and warning information from your local NWS office. This information can save your life.

Please take the time to learn more about NOAA Weather Radio All Hazards. For more information, including where you can buy a NOAA Weather Radio, visit www.nws.noaa.gov/nwr.



National Weather Service Offices

MARQUETTE: MQT

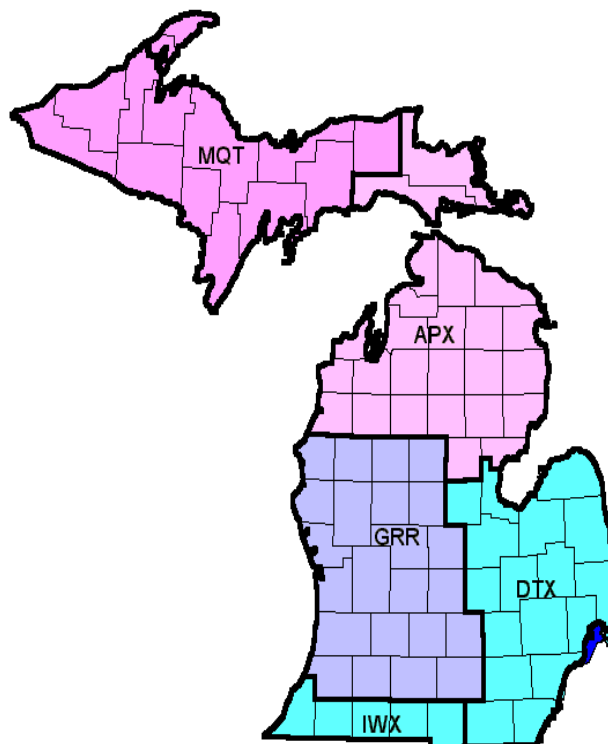
NWS Office, NOAA
112 Airport Dr. South
Negaunee, MI 49866
(906) 475-5782, Ext. 726
Contact: Matt Zika
Matthew.Zika@noaa.gov
<http://www.weather.gov/mqt>

GAYLORD: APX

NWS Office, NOAA
8800 Passenheim Rd.
Gaylord, MI 49735-9454
(989) 731-3384, Ext. 726
Contact: Jim Keysor
James.Keysor@noaa.gov
<http://www.weather.gov/apx>

GRAND RAPIDS: GRR

NWS Office, NOAA
4899 South Complex Dr. SE
Grand Rapids, MI 48512-4034
(616) 949-0643, Ext. 726
Contact: Mark Walton
Mark.Walton@noaa.gov
<http://www.weather.gov/grr>



NORTHERN INDIANA: IWX

NWS Office, NOAA
7506 East 850 N.
Syracuse, IN 46567
(574) 834-1104, Ext. 726
Contact: Michael Lewis
Michael.Lewis@noaa.gov
<http://www.weather.gov/iwx>

DETROIT/PONTIAC: DTX

NWS Office, NOAA
9200 White Lake Rd.
White Lake, MI 48386-1126
(248) 625-3309, Ext. 726
Contact: Rich Pollman
Richard.Pollman@noaa.gov
<http://www.weather.gov/dtx>