Michigan Severe Weather Awareness Week, April 12-18, 2015



Flooding on US-127 near Mason, Michigan

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.

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

Michigan Committee for Severe Weather Awareness
April 2015

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STATE OF MICHIGAN

CERTIFICATE OF PROCLAMATION

ON BEHALF OF THE PEOPLE OF MICHIGAN

I, Rick Snyder, governor of Michigan, do hereby proclaim
April 12-18, 2015

SEVERE WEATHER AWARENESS WEEK

WHEREAS, Severe weather, in the form of thunderstorms, wind storms, floods and tornadoes, is a threat to the safety and welfare of all Michigan citizens; and,

WHEREAS, Each year, more than 1,000 tornadoes strike the United States, including an average of 15 in Michigan; and,

WHEREAS, Since 1950, 982 tornadoes have been reported in the State of Michigan, resulting in substantial loss of life and property; and,

WHEREAS, Michigan citizens are vulnerable to the devastating effects of tornadoes, flash floods and other severe weather in Michigan; and,

WHEREAS, There were several injuries and three deaths resulting from severe weather in 2014; and,

WHEREAS, Our citizens should be aware of the warning signs of severe weather and proper safety and emergency procedures; and,

WHEREAS, Each year, the State joins with the Michigan Committee for Severe Weather Awareness , other emergency management officials and the media, to educate the public about the dangers of tornadoes and other severe weather events and the precautions that can be taken to save lives and protect families;

NOW, THEREFORE, I, Rick Snyder, governor of Michigan, do hereby proclaim April 12-18, 2015 as Severe Weather Awareness Week in Michigan.

Rick Snyder
Governor

RICK SNYDER
GOVERNOR

2014 Severe Weather Review

Last year, Michigan had a near average number of tornadoes; however, it was the lightning, severe thunderstorm wind, hail, and flooding that was responsible for one death, 13 injuries and the most damaging severe weather season in Michigan's history. While tornadoes are nature's most violent weather, all forms of severe weather can have a huge impact on the State of Michigan. Michigan citizens need to be vigilant whenever severe weather is in the forecast, not only for tornadoes, but also for wind, hail, flooding and lightning.

Michigan experienced the most damaging severe weather event in its history in 2014. On August 11, four to six inches of rain fell over the most populated areas of Wayne, Oakland and Macomb counties in just a three- to four-hour period. The flood affected over 115,000 homes and business, thousands of vehicles and caused $1.8 billion in damages, according to National Weather Service.

According to the National Weather Service (NWS), there was one death and 19 injuries in Michigan from severe weather in 2014. The death occurred from a lightning strike on June 18 in Pittsfield Township in Washtenaw County. Among the reports of injuries, six injuries occurred from a single lightning strike in the Rifle River State Recreation Area in Ogemaw County on June 28, and another six resulted from severe thunderstorm winds on September 5. Five of those injuries occurred as a tent collapsed during a church festival in Dearborn Heights, despite a severe thunderstorm watch being issued by the NWS hours before, and a severe thunderstorm warning being issued over 30 minutes prior to the storm's arrival.

Flooding, severe thunderstorms and tornadoes in 2014 caused over $2 billion in damages, significantly more than the $277 million in damages the year before. 2014 followed a similar pattern as 2013, with fewer days of severe weather activity but, when it hit, the severe weather was more impactful, with higher winds, larger hail and significant damage in the State of Michigan.

Flooding

There were two significant flood events during 2014: the Southeast Michigan floods in August and the spring snowmelt floods in west central Lower and parts of Upper Michigan in April.

Rainfall amounts across Southeast Michigan on August 11 generally ranged from four to six inches, with most of the rain occurring in a three- to four-hour time period. Detroit Wayne County Metropolitan Airport (DTW) recorded 4.57 inches of rain on August 11. This marked the second wettest day in recorded Detroit weather history, which dates back to 1874 (July 31, 1925 – 4.74 inches). Many of the creeks, streams and rivers that feed the two main river systems in Metro Detroit, the Clinton and Rouge Rivers, also flooded. The Clinton River near Clinton Township and Ecorse Creek in Dearborn Heights reached record high stages.

The flooding closed many roads and freeways. Hundreds of vehicles were left stranded on area roads and freeways, necessitating the use of Michigan State Police dive teams to ensure no people were in those stranded vehicles. A few roads, embankments and bridges were damaged or destroyed by the flooding. Over 75,000 homes and businesses were damaged by flood waters, with another 40,000 affected. The total damage from the August 11 floods was estimated to be $1.8 billion. This event qualified for a Presidential Disaster Declaration for individual and public assistance.

A heavy snowpack from the extreme winter of 2013-2014 started to melt in April 2014. This melting snow in combination with some heavy rain resulted in nearly $8 million dollars in damage from flooding for portions of west central Lower and Upper Michigan. The high waters and thawing conditions led to the failure of the Wraco Lodge Dam on Wolf Creek in Roscommon County, and to ice jams along the Tecoosh, Rapid and Escanaba Rivers in Delta County. In all, over 500 homes and business were affected by the flooding with dozens of road closures.

Tornadoes and Severe Thunderstorms

In 2014, there were 13 tornadoes across the state, which is near the average of 15. Two days saw most of the tornado activity: July 6 and September 1. The first tornado on July 6 was an EF0 that moved from Iron County to Marquette County in Upper Michigan. There were four additional tornadoes around the midnight hour as July 6 turned to July 7 across southwest Lower Michigan. The most significant of these was an EF1 tornado in Kentwood that tracked for over 6 miles, damaging homes and causing six injuries. It was a Labor Day to remember across northern Michigan with 4 confirmed tornadoes, including several long-path tornadoes. The largest tornado occurred over eastern Otsego County, cutting a path through several neighborhoods. One person was briefly trapped at home by falling trees but, thankfully, there were no injuries or fatalities. Other damaging EF1 tornadoes occurred with isolated severe thunderstorms. Those tornadoes included June 11 in St. Charles (Saginaw County), June 17 in Hale (Iosco) and September 21 in Rochester Hills (Oakland).

The season's first severe weather event hit portions of southern Lower Michigan on April 12. A warm front that was set up across the state on Saturday served as the focus for multiple storms that traveled east across the middle of Lower Michigan. One storm was able to gather enough strength while moving into a more favorable environment to produce a swath of wind and hail damage from Muskegon to Mt. Clemens. This storm packed high winds up to 75 to 85 mph, and quarter-sized hail as it raced east. Damage included uprooted trees, downed power lines and building damage. April 29 brought a few severe storms to southern Lower Michigan. Up to golf ball size hail was reported with the storms, along with 50-60 mph wind gusts causing downed trees and power lines. These storms formed in association with a warm front that had set up across the area from an associated large low pressure system in the Midwest.

The last day of June and into the first day of July, experienced a line of severe storms form over the plains that quickly raced east across Iowa, Southern Wisconsin, Northern Illinois, Northern Indiana, and into southern Lower Michigan. Southern Michigan saw damaging winds move through during the evening hours on June 30 and the very early morning hours of July 1. A wind gust of 74 mph was measured at Brooks field in Calhoun County as well as in Wixom. A storm survey concluded that winds likely reached 80 to 90 mph just northeast of Albion in Calhoun County.

A powerful upper-level low pressure system dropped southward into the Great Lakes on July 27, sparking several rounds of severe thunderstorms across all of Lower Michigan. Over 120 reports of damaging winds and large hail were reported across Lower Michigan. Some of the storms were prolific hail producers, with hail up to 3" diameter (greater than baseball size) recorded near Midland, up to 2.50" diameter (tennis ball size) near the Highland/White Lake area, and up to 2" diameter in Kalamazoo. The most significant wind damage was reported over Metro Detroit. Total damage across Michigan was estimated to be over 100 million dollars from the severe wind and hail.

Multiple rounds of severe storms rolled across Southern Michigan on September 5, bringing widespread damaging winds. Winds up to 74 mph were reported as the storms raced east ahead of a cold front. The environment was primed for severe weather with temperatures reaching into the upper 80s and lower 90s, along with dewpoint temperatures reaching up into the 70s. About 400,000 homes and businesses in Southern Michigan lost power due to the severe thunderstorms and damage reached over $20 million.

Michigan Tornado History by County

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

County	1950-2014	2014	County	1950-2014	2014
Alcona	11	0	Lake	2	0
Alger	6	0	Lapeer	21	0
Allegan	29	0	Leelanau	4	0
Alpena	14	0	Lenawee	32	0
Antrim	9	0	Livingston	26	0
Arenac	7	0	Luce	3	0
Baraga	2	0	Mackinac	6	0
Barry	18	0	Macomb	21	1
Bay	13	0	Manistee	2	0
Benzie	4	0	Marquette	9	1
Berrien	31	0	Mason	5	0
Branch	17	0	Mecosta	9	0
Calhoun	16	0	Menominee	8	0
Cass	16	0	Midland	10	0
Charlevoix	4	0	Missaukee	8	0
Cheboygan	7	1	Monroe	33	0
Chippewa	6	0	Montcalm	11	0
Clare	8	0	Montmorency	6	0
Clinton	19	1	Muskegon	8	0
Crawford	12	1	Newaygo	13	0
Delta	11	0	Oakland	32	1
Dickinson	9	0	Oceana	5	0
Eaton	25	0	Ogemaw	14	0
Emmet	5	0	Ontonagon	3	0
Genesee	45	0	Osceola	16	0
Gladwin	9	0	Oscoda	5	0
Gogebic	3	0	Otsego	5	1
Grand Traverse	4	0	Ottawa	19	0
Gratiot	15	0	Presque Isle	6	0
Hillsdale	23	0	Roscommon	8	0
Houghton	1	0	Saginaw	24	1
Huron	13	0	Sanilac	15	0
Ingham	28	0	Schoolcraft	3	0
Ionia	19	2	Shiawassee	28	0
Iosco	13	1	St. Clair	21	0
Iron	7	1	St. Joseph	11	0
Isabella	13	0	Tuscola	17	0
Jackson	17	0	Van Buren	19	0
Kalamazoo	25	0	Washtenaw	27	0
Kalkaska	8	1	Wayne	29	0
Kent	32	1	Wexford	8	0
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.

Thunderstorm and Lightning 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 through an app.

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.weather.gov
- Seek safe shelter when you first hear thunder, when you see dark threatening clouds developing overhead, or see lightning. 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 15 tornadoes annually. Since 1950, 243 persons have been killed due to tornadoes. During this same time, Michigan has experienced 995 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 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

Flooding can occur during any season in Michigan. 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 wather.weather.gov/ahps/region.php?state=mi
   - Determine your property's proximity to waterways by learning about and reviewing flood hazard maps at www.floodsmart.gov/floodsmart/pages/flooding_flood_risks/understanding_flood_maps.jsp

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/floods.

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.

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.

7. **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?

8. **How do I keep my family safe during a flood?**
   Floods are among the most frequent and costly natural disasters. For information on keeping your family safe before, during and after a flood, please visit: www.mcswa.com.

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.

Flood Insurance

Why Buy Flood Insurance?

Flooding can occur during any season in Michigan. The National Flood Insurance Program (NFIP) estimates that 90 percent of all natural disasters involve flooding. 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. A home located in the floodplain has a four times greater risk of flooding than burning during the course of a 30-year mortgage.

What's worse: many property owners don't realize that their homeowners' or property owners' insurance doesn't cover flood damage. To be covered from flood damage, one must purchase National Flood Insurance through an insurance agent. Consider that even just an inch of water can require a property to replace 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 click on the link to learn more about "What Could Flooding Cost Me?"

1. **Is flood damage covered by my homeowners insurance?**
   Flood damage is excluded in nearly all homeowners and renters insurance policies but, if desired, 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 Progam's agent referral program at 1-888-CALL-FLOOD. You can also locate an agent by filling out your "One-Step Flood Risk Profile" at www.floodsmart.gov.

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. You can also locate an agent by completing your "One-step risk profile" at www.floodsmart.gov.

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 National Flood Insurance Program. The fact that a property is outside of the "legal" floodplain does not mean that the river or stream can't still 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 National Flood Insurance Program. For a listing of Michigan communities participating in the NFIP, you may visit www.fema.gov/cis/MI.html%20.

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.shtml 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

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.

Warning Systems

NOAA Weather Radio All Hazards

Voice of NOAA's National Weather Service

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 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 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.

For more information, including where you can buy a NOAA Weather Radio, visit www.nws.noaa.gov/nwr.

Wireless Emergency Alerts (WEAs)

Automatic weather warnings on your smart phone: no matter where you are

Imagine being on vacation when a tornado warning is issued for your area. How would you find out? If you own a smart phone or any other cellular phone purchased after January 1, 2013, you no longer have to worry. The Federal Emergency Management Agency, the Federal Communications Commission, the National Weather Service, and CITA-The Wireless Association have developed a cell phone emergency alert system that will automatically notify you through a text-like message about urgent weather warnings, emergency messages from the President of the United States, and amber alerts. If you have a WEA enabled phone, you don’t have to sign up or do anything, you already have it. If you are not sure if your phone supports this new technology, then check with your cell phone carrier. In some cases, all you may need to do is update your device’s software.

Wireless Emergency Alerts are a point-to-multipoint system, which means alert messages will be sent to those within a targeted area, unlike text messages which are not location aware. For example, if a person with a WEA-capable device from Michigan happened to be in Minnesota when a flash flood threatens in that area, they would receive an “Imminent Threat Alert” on their device.

While these alerts will appear on a person’s mobile device similar to a text message, Wireless Emergency Alerts are not text messages. Instead, WEAs use a different kind of technology to ensure they are delivered immediately and are not subjected to potential congestion (or delays) on wireless networks.

You can see additional information on the NWS’ Wireless Emergency Alert website at http://www.crh.noaa.gov/news/display_cmsstory.php?wfo=crh&storyid=83063&source=0.

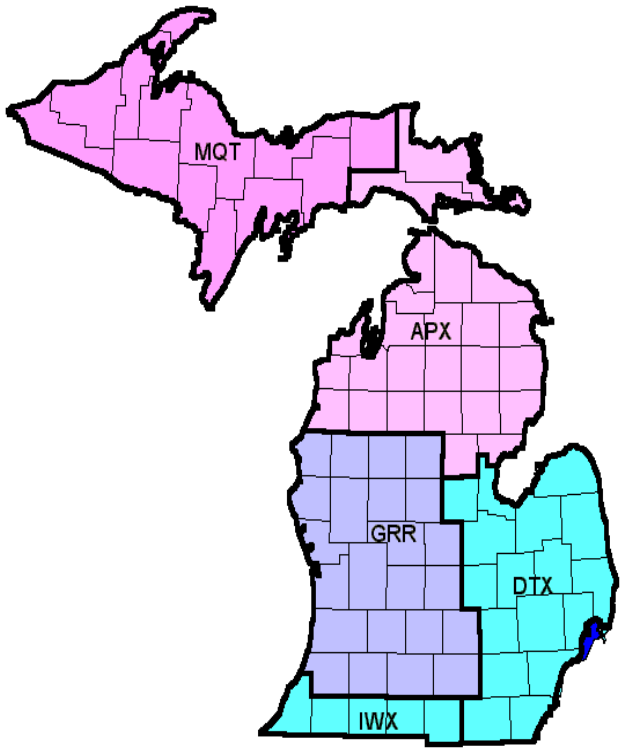
National Weather Service Offices

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