Michigan Severe Weather Awareness Week, April 10-16, 2016

This packet was prepared by the Michigan Committee for Severe Weather Awareness (MCSWA), a coalition formed in 1991 to promote safety awareness and coordinate public information efforts regarding tornadoes, flooding, lightning and winter weather.

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

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April 2016

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➢ 2015 Severe Weather Review

Last year, Michigan had an average number of tornadoes, but it was a below average year for overall severe weather, including lightning, severe thunderstorm wind, hail, and flooding.

Severe weather was responsible for seven injuries in the state during 2015, all on June 22. A tornado outbreak that spawned five tornadoes hit the state during the afternoon of June 22 and continued into the overnight hours of June 23. The Portland EF1 tornado was responsible for five of the injuries while the Birch Run-Millington EF2 tornado caused the other two injuries. 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.

Flooding, severe thunderstorms and tornadoes in 2015 caused over $130 million in damages. Nearly half of that total statewide damage occurred on one date, August 2, 2015. The total 2015 damages was down dramatically from the $2 billion in damages caused by severe weather in 2014, most notably from the August 11, 2014 Detroit floods. 2015 followed a similar pattern as past two years, 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 Michigan.

Tornadoes and Severe Thunderstorms

In 2015, there were 14 tornadoes across the state, which is near the average of 15. Two days experienced most of the tornado activity: June 22-23 and November 6. The first tornado on June 22 was the Portland EF1 tornado that moved through the heart of the community during the afternoon hours affecting over 50 homes, businesses and churches.

There were four additional tornadoes around the midnight hour as June 22 turned to June 23 across southeast Lower Michigan. The most significant of these was an EF2 tornado that developed near Birch Run before dissipating 10 miles later near Millington. This tornado touched down near the Pine Ridge RV Campground and severely damaged a couple houses as it moved into Tuscola County. A rare November severe line of thunderstorms developed over central Lower Michigan during the pre-dawn hours of November 6. This line would spawn three tornadoes across the Thumb region of Lower Michigan. The strongest was an EF1 just southwest of Applegate where a mobile home and several barns and outbuildings were destroyed.

Other damaging EF1 tornadoes occurred with severe thunderstorms. Those included the August 2 tornado in Owendale (Huron County), the August 8 tornado near Rose City (Ogemaw), and the December 23 tornado in Canton (Wayne). The Rose City tornado developed on September 8 and was on the ground for nearly nine miles. Most of the damage from this tornado was trees snapped or downed by the swirling winds. The Canton EF1 tornado was the first Michigan tornado in the month of December since records started in 1950! This storm proved once again that severe weather can develop during any month of the year if the atmospheric conditions are favorable.

The first severe weather event to hit the state occurred on April 9. Thunderstorms developed along a warm front across far southern Lower Michigan. These storms produced wind damage in Hillsdale, Muskegon, Kent and Montcalm counties totaling $100,000. The first Michigan tornado of 2015, a short-lived EF0, developed near the Hillsdale-Jackson County line.

A significant hail storm developed over Menominee County and then dropped two-inch diameter hail near the town of Stephenson on May 27. The hail damaged many homes, especially the roofs, for a half million dollars' worth of damage.

Western Upper Michigan was again hit with severe storms on June 10. Thunderstorm winds up to 70 mph across Dickenson and Marquette counties downed numerous trees causing over $50,000 in damages.

During the late evening of July 13 and just past midnight on July 14, severe thunderstorms moved across west central Lower Michigan. Significant wind damage was reported across the region with many trees downed and a short-lived EF0 tornado near Alto. There was approximately $200,000 in estimated damages from the severe weather events.

By far, the most significant severe weather day for Michigan was August 2. It was the largest severe weather day in northern Michigan in more than a decade and the costliest severe weather day in the 20+ years for that region. In the day after the storm, nearly 75% of southern Leelanau County was without power. It took nearly a week to restore power to many of these areas. There were 100 mph winds around Sleeping Bear Dunes and Glen Arbor that caused widespread tree damage. Thousands of trees were damaged, closing roads and damaging hundreds of homes and businesses. Most of the attractions at Sleeping Bear Dunes National Lakeshore were closed for nearly a week due to impassable roads and tree damage. The winds were so strong that they pushed water out of Little Glen Lake for a brief period in southern Leelanau County. Governor Rick Snyder declared states of disaster in both Leelanau and Grand Traverse counties.

A squall line developed across eastern Wisconsin and then raced into northwest Lower Michigan during the early afternoon of August 2. This line of storms then pivoted southeast across most of the rest of Lower Michigan during the late afternoon and evening hours. Severe wind damage was recorded down to the border in Lenawee and Monroe counties. These storms also spawned an EF1 tornado in the Thumb town of Owendale. Wind damages from these storms were nearly $40 million.

The largest hailstone ever recorded in northern Michigan (since 1950), 4.25 inches, fell during the storm in West Branch. It was the 5th largest hailstone ever recorded in the state of Michigan (record is 4.50 inches). There was widespread hail damage throughout West Branch with hundreds of cars, homes and businesses damaged by the large hail. The total damage from the West Branch hail was over $30 million.

Flooding

Remarkably, there was very little flooding in the state during 2015. The only flood to cause any damage was in Lenawee County on June 27 when three to five inches of rain fell across far southeast Lower Michigan on June 27 to cap one of the wettest Junes on record for that portion of the state. Many roads were closed and a few were washed out. Total damage was estimated to be around $100,000.

➢ Michigan Tornado History by County

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

County	1950-2015	2015	County	1950-2015	2015
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	0
Bay	13	0	Manistee	2	0
Benzie	4	0	Marquette	9	0
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	0	Monroe	33	0
Chippewa	6	0	Montcalm	11	0
Clare	8	0	Montmorency	6	0
Clinton	19	0	Muskegon	8	0
Crawford	12	0	Newaygo	13	0
Delta	11	0	Oakland	32	0
Dickinson	9	0	Oceana	5	0
Eaton	25	0	Ogemaw	15	1
Emmet	5	0	Ontonagon	3	0
Genesee	45	0	Osceola	16	0
Gladwin	9	0	Oscoda	5	0
Gogebic	3	0	Otsego	5	0
Grand Traverse	4	0	Ottawa	19	0
Gratiot	15	0	Presque Isle	6	0
Hillsdale	24	1	Roscommon	8	0
Houghton	1	0	Saginaw	25	1
Huron	15	2	Sanilac	17	2
Ingham	28	0	Schoolcraft	3	0
Ionia	20	1	Shiawassee	29	1
Iosco	13	0	St. Clair	23	2
Iron	7	0	St. Joseph	11	0
Isabella	13	0	Tuscola	19	2
Jackson	17	0	Van Buren	19	0
Kalamazoo	25	0	Washtenaw	28	1
Kalkaska	8	0	Wayne	30	1
Kent	33	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.

➢ 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 1009 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.

➢ 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 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.

➢ 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 NOAA National Weather Service Flood Alerts at www.focusonfloods.org/flood-alerts
   - Monitor river levels from NOAA National Weather Service at: http://water.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 in the nighttime sky, 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. It is important to remember that if you hear thunder, a storm is close enough for lightning to strike you, even if the storm seems miles away and the sky is blue.

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.

➢ Weather 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 Wireless Emergency Alerts from the NWS at: http://www.nws.noaa.gov/com/weatherreadynation/wea.html.

➢ National Weather Service Contacts

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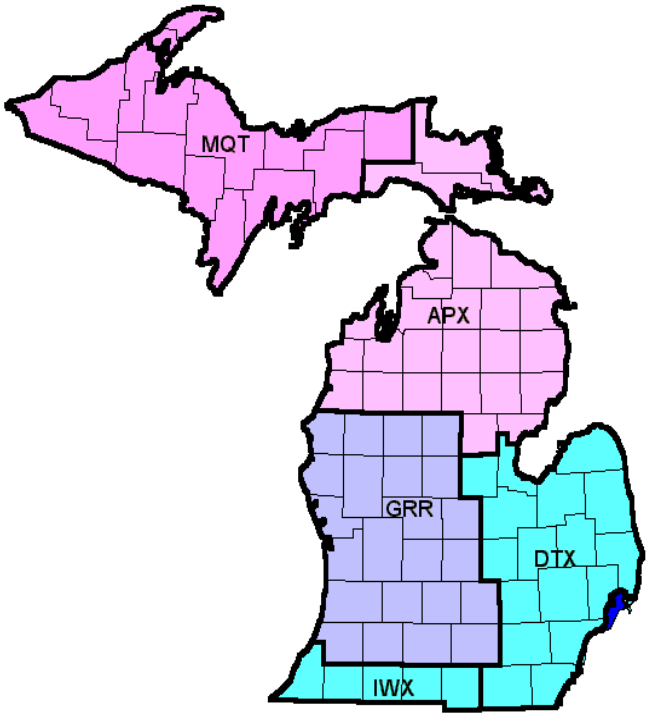

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