2007
Michigan Severe Weather Awareness

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The Michigan Committee for Severe Weather Awareness was formed in 1991 to coordinate public information efforts regarding tornadoes, lightning, flooding and winter weather. For more information, visit **www.mcswa.org**.

Michigan Committee for Severe Weather Awareness

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Michigan Committee for Severe Weather Awareness

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FOR IMMEDIATE RELEASE

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March 25 – 31, 2007 Severe Weather Awareness Week in Michigan

(LANSING, MI) The three lightning fatalities and 10 tornadoes that struck Michigan last year highlight the need for residents to be prepared in the event of thunderstorms, tornadoes and flooding. As another severe weather season approaches, Governor Jennifer Granholm has declared March 25-31 as Severe Weather Awareness Week in Michigan.

"Last year's severe weather season was about average for Michigan," said Lori Conarton, Michigan Committee for Severe Weather Awareness Chair. "However, since Michigan weather can change swiftly, it is important to monitor weather conditions and take seriously watches and warnings issued by the National Weather Service."

The Michigan Committee for Severe Weather Awareness encourages residents to review tornado safety procedures, and to have a preparedness plan in place. Members of the severe weather coalition are: National Weather Service, Department of Environmental Quality, American Red Cross, Insurance Institute of Michigan, Emergency Management Association, Michigan Department of State Police, WDIV-TV, State Farm Insurance and Michigan Earth Science Teachers Association.

In 2006, northern lower Michigan had a record number of severe events, while southwest lower Michigan was well below its average. Ten tornadoes were recorded in the state, which is below Michigan's average of 16. The 10 tornadoes did not cause any deaths or injuries, and damage was limited to less than $1 million.

Lightning across Michigan in 2006 was different story. Lightning killed three, injured eight and caused over $2 million in damages. Severe thunderstorms caused two injuries and about $50 million in damages, with $30 million occurring July 15-18 alone.

The first significant severe weather event hit the southern third of lower Michigan on March 31. Widespread severe wind and hail were reported in many locations, including an F1 tornado which struck Leoni in Jackson County, causing minor roof damage and uprooting a dozen large spruce trees.

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A cold front moved through the state from July 15 through 18. Temperatures were in the 90s ahead of the cold front, and this in combination with the cold front, led to the most significant round of severe thunderstorms of the season. These severe thunderstorms produced a recorded wind gust of 69 mph at Michigan Technological University, and hailstones nearly the size of baseballs fell near Leroy. Several areas recorded a "blow down" where hundreds of trees were downed by winds estimated up to 100 mph. The hardest hit areas were Long Lake (west of Traverse City), the lower Au Sable River valley, and in Oceana, Mason and Huron Counties.

The season ended with a few additional severe weather events. On July 28, hail up to 4 inches in diameter resulted in $750,000 worth of damage to roofs, siding, and automobiles in Wakefield, located in Gogebic County. The last round of severe weather in 2006 for Michigan was baseball size hail in Benzie County. An F1 tornado occurred near Cadillac and did extensive damage to a home.

Michigan residents should not be complacent when it comes to severe weather. Michigan's history is littered with significant severe weather events that unfortunately brought millions of dollars in damages along with deaths and injuries. This year will mark the 10th anniversary of the July 2, 1997 tornado outbreak. Sixteen tornadoes rolled through lower Michigan that one day, including the last F3 or stronger tornado to hit the state.

The Michigan Committee for Severe Weather Awareness reminds all citizens in Michigan the best time to prepare for severe weather is before it happens. Plan ahead. Be sure everyone in your household knows where to go and what to do in case of severe weather no matter whether they are at home, workplace or school. As a thunderstorm approaches and you hear thunder, run to the nearest shelter. You are not safe anywhere outside. If a tornado warning is issued for your county or if you feel threatened by the storm, go to the basement and get under something sturdy. If no basement is available, go to an interior part of the building on the lowest level. A good rule of thumb is to put as many walls between you and the tornado as possible. Listen to NOAA Weather Radio All Hazards, or local radio, television and cable stations for the latest weather updates.

Although southern Michigan traditionally experiences more severe weather than northern Michigan, the MCSWA emphasizes that the entire state is at risk for tornadoes, severe thunderstorms, hail, floods and lightning, as was experienced in 2006.

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Following is a list of tornadoes experienced by each county in Michigan:

County	1950-2006	2006	County	1950-2006	2006
Alcona	10	0	Lake	2	0
Alger	6	0	Lapeer	19	0
Allegan	24	0	Leelanau	3	0
Alpena	12	0	Lenawee	31	1
Antrim	8	0	Livingston	23	0
Arenac	6	0	Luce	2	0
Baraga	2	0	Mackinac	5	0
Barry	17	0	Macomb	18	0
Bay	12	0	Manistee	1	0
Benzie	4	0	Marquette	6	0
Berrien	28	0	Mason	4	0
Branch	15	0	Mecosta	9	0
Calhoun	15	0	Menominee	6	0
Cass	14	0	Midland	8	0
Charlevoix	4	0	Missaukee	8	0
Cheboygan	5	0	Monroe	28	1
Chippewa	6	0	Montcalm	10	0
Clare	7	0	Montmorency	6	0
Clinton	17	0	Muskegon	7	0
Crawford	10	0	Newaygo	12	0
Delta	10	0	Oakland	30	0
Dickinson	7	0	Oceana	5	0
Eaton	22	0	Ogemaw	13	0
Emmet	5	0	Ontonagon	2	0
Genesee	39	0	Osceola	15	0
Gladwin	9	0	Oscoda	3	0
Gogebic	3	0	Otsego	3	0
Grand Traverse	4	0	Ottawa	18	0
Gratiot	14	2	Presque Isle	6	0
Hillsdale	23	0	Roscommon	8	0
Houghton	1	0	Saginaw	21	0
Huron	11	0	Sanilac	13	0
Ingham	24	0	Schoolcraft	3	0
Ionia	17	1	Shiawassee	23	0
Iosco	11	0	St. Clair	20	0
Iron	5	0	St. Joseph	9	0
Isabella	13	0	Tuscola	15	0
Jackson	17	1	Van Buren	16	0
Kalamazoo	22	1	Washtenaw	23	1
Kalkaska	6	0	Wayne	27	0
Kent	31	1	Wexford	7	1
Keweenaw	2	0			

***A single tornado can cross county lines. Therefore, the sum of the counties will not equal the State totals.**

Tornado Facts

1. What is a tornado?

It is a column of violently rotating winds extending down from a thunderstorm cloud and touching the surface of the earth.

2. 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.

3. How many tornadoes usually occur in Michigan every year?

An average of 16 tornadoes occurs in Michigan each year. Since 1950, 884 tornadoes have killed 239 people in Michigan.

4. When do tornadoes generally occur?

Most tornadoes occur during the months of May, June, July and August in the late afternoon and evening hours. However, tornadoes can occur anytime of the day or night in almost any month during the year.

5. How fast do tornadoes travel?

Tornadoes generally travel from the southwest and at an average speed of 30 miles per hour. However, some tornadoes have very erratic paths, with speeds approaching 70 mph.

6. 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 5 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.

7. What is a tornado watch?

A tornado/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.

8. What is a tornado warning?

The local Weather Service (NWS) office issues a tornado warning whenever NWS Doppler Radar indicates a thunderstorm 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 capable of producing damaging winds or large hail. Warnings are for smaller areas, such as counties, and are usually 30 to 90 minutes in length. You must act immediately when you first hear the warning.

Tornado and severe thunderstorm warnings have traditionally been issued for entire counties. Scheduled to start on October 1, 2007, the NWS will issue warnings only for those areas with the highest risk of being struck by a particular severe storm, regardless of city or county boundaries. These "polygonal warnings" will significantly reduce the "false alarm" area, resulting in higher confidence and trust in severe thunderstorm and tornado warnings.

9. How do I find out about a warning if my electricity is already out?

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/Thunderstorm Safety

Preparing for a tornado/thunderstorm:

- Plan ahead. Be sure everyone in your household knows where to go and what to do in case of a tornado 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 radio, flashlight and a supply of fresh batteries, first-aid kit, water and cell phone.
- Make an inventory of household furnishings and other possessions. Supplement it with photographs of each room. Keep in a safe place.

What to do when a thunderstorm approaches your area:

- Seek safe shelter when you first hear thunder, see dark threatening clouds developing overhead or lightning. Count the seconds between the time you see lightning and hear the thunder. You should already be in a safe location if that time is less than 30 seconds. Stay inside until 30 minutes after you last hear thunder. 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). You are not safe anywhere outside.
- If you are boating or swimming, get to land and shelter immediately.
- Telephone lines and metal pipes can conduct electricity. Unplug appliances not necessary for receiving weather information. Use plug-in telephones only 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. If no basement is 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 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.
- Mobile homes and vehicles offer virtually no shelter. Leave them and go to the nearest shelter. Highway overpasses **do not** offer shelter.
- If there is no shelter nearby, the best alternative is to find a low spot away from trees, fences and poles, but not in a place subject to flooding. Shield your head with your arms.
- If you are boating or swimming, get to land and shelter immediately.

After a tornado/thunderstorm:

- Inspect your property and motor vehicles for damage. Write down the date and list 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 approved or chlorinated supplies of drinking water. Check food supplies.

Michigan Committee for Severe Weather Awareness

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For Immediate Release

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FLOODING CAUSES MORE THAN $2 MILLION DAMAGES IN MICHIGAN DURING 2006

(LANSING, MI) – In 2006, the National Weather Service issued 10 Flash Flood Warnings and 38 Flood Warnings across the state of Michigan. Fortunately, there were no deaths or injuries from the flooding, which caused over $2 million in economic and property damage.

To focus attention on flood safety planning, Governor Jennifer M. Granholm has declared March 25 – March 31, 2007, as Severe Weather Awareness Week in Michigan. Residents are encouraged to familiarize themselves with flood safety procedures.

In 2006 significant flash flooding occurred in Brown City, located in Sanilac County. An observer in Brown City measured 7.35 inches of rainfall over a four hour period, and flash flooding soon followed. Heavy rains flooded the entire town and damaged many homes in the Brown City area. The lower half of the high school was flooded with 3 to 5 inches of water, and flood waters reached 3 feet deep in a mobile home park.

"Flash flooding can be especially dangerous, as rapid flooding of low lying areas accompanied with swift currents can quickly lead to life threatening situations," said Mark Walton, Service Hydrologist with the National Weather Service in Grand Rapids. "Flash flooding is the number one weather related killer, and is one of the reasons the National Weather Service is promoting the flood safety message of, "Turn Around Don't Drown" <http://tadd.weather.gov/>"."

The Michigan Department of Environmental Quality estimates that about 6 percent of Michigan's land is flood-prone, including about 200,000 buildings. The southern half of the Lower Peninsula contains the areas with the most flood damage potential.

According to the Michigan Committee for Severe Weather Awareness, flooding along Michigan's rivers can occur any time of the year, and is most likely the result of excessive rainfall and/or a combination of rainfall and snowmelt. Ice jams also cause flooding in winter and early spring. Severe thunderstorms may cause flooding during the summer or fall, although these are normally localized, and have more impact on watercourses with smaller drainage areas.

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Oftentimes, flooding may not necessarily be directly attributable to a river, stream or lake overflowing its banks. Rather, it may simply be the combination of excessive rainfall and/or snowmelt, saturated or frozen ground, and inadequate drainage. With no place to go, the water will find the lowest elevations – areas that are often not in a floodplain. That type of flooding is becoming increasingly prevalent in Michigan, as development outstrips the ability of the drainage infrastructure to properly carry and disperse the water flow.

Residents should be aware that regular homeowners' insurance policies do not cover damages that result from flooding. Coverage is available through a federal program; however, in Michigan only about 15 percent of structures subject to flooding are actually insured against the risk.

Currently, there are approximately 771 Michigan communities participating in the National Flood Insurance Program (NFIP), and over 26,000 policies in force with coverage of nearly $3.7 billion. Under the NFIP, a flood is defined in part, as a general and temporary condition of partial or complete inundation of normally dry land areas from overflow of inland or tidal waters, or from the unusual and rapid accumulation of runoff of surface waters from any source.

It is important to note that this flood definition would cover general street flooding that was coming into a home, and does not have to come from a river. In the standard flood insurance policy, direct physical losses by "flood" are covered. Also covered are losses resulting from erosion caused by waves or currents of water exceeding anticipated cyclical levels or erosion accompanied by a severe storm, flash flood, abnormal tidal surge, or the like. Basement flooding is a covered hazard under the NFIP policy. However, homeowners should be aware that personal property is not covered in a basement location. Losses from water seepage, sewer back up, or hydrostatic pressure are covered only when they occur in conjunction with a general condition of flooding.

To purchase flood insurance under the program, residents must live in one of the participating communities. Coverage can be obtained through most licensed property/casualty insurance agents. If you would like more information about the NFIP, please contact Les Thomas, Michigan Department of Environmental Quality, Land and Water Management Division, P.O. Box 30458, Lansing, MI 48909, by email to thomasl@michigan.gov, or by telephone at 517-335-3448.

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Flood Safety

Preparing for a flood:

- Make an itemized list of personal property well in advance of a flood occurring. Photograph the interior and exterior of your home. Store the list, photos and documents in a safe place.
- Know the safest and fastest route to high ground. Assemble a disaster supplies kit containing: first-aid kit, canned food and can opener, bottled water, extra clothing, rubber boots and gloves, NOAA Weather Radio, battery-operated radio, emergency cooking equipment, flashlight and extra batteries.
- If you live in a frequently flooded area, keep sandbags, plastic sheets and lumber on hand to protect property. Install check valves in building sewer traps to prevent flood water from backing up into the drains of your home.
- Know the elevation of your property in relation to nearby streams and other waterways, and plan what you will do and where you will go in a flood emergency.

When a flood threatens:

- If forced to leave your property and time permits, move essential items to safe ground, fill tanks to keep them from floating away and grease immovable machinery.
- Store a supply of drinking water in clean bathtubs and in large containers.
- Get out of areas subject to flooding. This includes dips, low spots, floodplains, etc.

During a flood:

- Avoid areas subject to sudden flooding.
- Even six inches of fast moving floodwater can knock you off your feet, and a depth of two feet will float your car! Never try to walk, swim or drive through such swift water.
- Do not attempt to drive over a flooded road. STOP! Turn around and go another way.
- Keep children from playing in floodwaters or near culverts and storm drains.

After a flood:

- Boil drinking water before using. If fresh food has come in contact with floodwaters, throw it out.
- Seek necessary medical care at the nearest hospital. Food, clothing, shelter and first aid are available at Red Cross shelters.
- Use flashlights, not lanterns or torches, to examine buildings. Flammables may be inside.
- Do not handle live electrical equipment in wet areas. Electrical equipment should be checked and dried before being returned to service.

Where can I find additional safety information?

Turn Around, Don't Drown are literally words to live by. This slogan highlights the nationwide flood safety public awareness campaign to help reduce flood-related deaths in the United States. The poster, a Turn Around, Don't Drown sign, window sticker, FLASH card and a NOAA National Weather Service flood safety brochure are also available online at http://www.nws.noaa.gov/os/water/tadd.

Flood Facts

1. What is a flood and when do most occur?

A flood is the inundation of a normally dry area caused by an increased water level in an established watercourse, such as a river, stream, or drainage ditch, or ponding of water at or near the point where the rain fell. Floods can occur anytime during the year. However, many occur seasonally after winter snow melts or heavy spring rains.

2. What are flash floods?

Flash floods occur suddenly, usually within 6 hours of the rain event, and result from heavy localized rainfall or levee failures. Flash floods can begin before the rain stops. Water level on small streams may rise quickly in heavy rainstorms, especially near the headwaters of river basins. Heavy rains can also cause flash flooding in areas where the floodplain has been urbanized.

3. What are other causes of flooding in Michigan?

Ice jams and dam failures can also cause both flooding and flash flooding.

4. Are people killed as a result of floods?

Many people are killed by flash floods when driving or walking on roads and bridges that are covered by water. **In fact, flash floods are the number one weather-related killer in the United States**. Even six inches of fast-moving flood water can knock you off your feet, and a depth of only two feet of water will float many of today's automobiles. If you are in a car and water starts rising, get out and move to higher ground.

5. What is a flood watch?

A flood watch indicates that flash flooding or flooding is possible within the designated WATCH area -- be alert. It is issued to inform the public and cooperating agencies that current and developing weather conditions are such that there is a threat of flooding, but the occurrence is neither certain nor imminent.

6. What is a flash flood or flood warning?

A flash flood or flood warning indicates that flash flooding or flooding is already occurring or imminent within the designated WARNING area -- take necessary precautions at once. When a flash flood or flood warning is issued for your area, act quickly. Get out of areas subject to flooding and avoid areas where flooding has already occurred.

7. What is a flash flood or flood statement?

A flash flood or flood statement is used for follow-up information regarding a flash flood or flood event.

Flood Protection

Ways to protect your house and property from flooding.

Basement flood protection can involve a variety of changes to your house and property—changes that can vary in complexity and cost. You may be able to make some types of changes yourself. Complicated or large scale changes or those that affect the structure of your house or its electrical wiring and plumbing should be carried out only by a professional contractor licensed to work in your state, county, or city. Below are some examples of flood protection.

- **Install Sewer Backflow Values.** In some flood prone areas, flooding can cause sewage from sanitary sewer lines to back up into houses through drainpipes. Sewage backup not only causes damage, but also creates health hazards. Backflow valves have a variety of designs ranging from simple to complex. This is something that only a licensed plumber or contractor should do.

- **Raise or Flood Proof Heating, Ventilating, and Air Conditioning Equipment**. In flood prone houses, a good way to protect HVAC equipment is to elevate it above the areas that flood. Another method is to leave the equipment where it is and build a concrete or masonry block flood wall around it.

- **Anchor Fuel Tanks.** Unanchored fuel tanks can be easily moved by floodwaters. One way to anchor a tank is to attach it to a large concrete slab whose weight is great enough to resist the force of floodwaters. Elevate tanks to a minimum of at least one foot above the base flood elevation (BFE). Floating and/or damaged tanks pose serious threats not only to you, your family, and your house, but also to public safety and the environment.

- **Raise Electrical System Components.** Any electrical system component, including service panels (fuse and circuit boxes), meters, switches, and outlets, are easily damaged by floodwaters. All components of the electrical system, including the wiring, should be raised at least one foot above the base flood elevation (BFE).

- **Raise Washers and Driers.** Washers and driers can easily be damaged in a flood. In order to prevent this from happening, utilities can be placed on cinder blocks one foot above the base flood elevation (BFE).

- **Add a sump pump in your basement.** Sump pumps can help keep groundwater from entering your home's interior.

- **Cut drywall so that it is one-half to 1-inch off the floor**. This is especially important in basements. Concrete floors commonly absorb ground moisture—especially in winter months. That moisture can wick up the wallboard if it's touching the floor, allowing mold to grow out-of-sight within the walls. (You can hide the gap with wood or rubberized floor trim.)

- **Don't forget to buy flood insurance.** Flood insurance provides year-round financial protection and improves your ability to quickly recover when severe storms strike and cause unexpected flooding. Call your local insurance agent or 1-800-720-1090 to reach National Flood Insurance Program specialists.

Flood Insurance

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.

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 (NFIP) agent referral program at 1-888-CALL FLOOD.

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.

Are all flood insurance policies the same?

Flood insurance coverage can be purchased for homes and businesses – separate coverage must be purchased for the building and its contents.

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

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 http://www.fema.gov/fema/csb.shtm.

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.

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.

Are there steps I can take to minimize losses from water back up in basements?

- Never store perishables or valuables in basements that you can't afford to lose or replace.
- Do not store any item near basement drains.
- Check storm drain lines to make sure they're clear of debris, roots, etc.
- Grade the property around your home to drain water away from it.
- Install gutters and make sure downspouts are extended away from the foundation in order to carry water away from the basement walls.
- Use shelving or store items several inches above the potential water level in order to prevent loss.
- If you do have some water seepage following storms, take corrective measures to alleviate problems in the future.

How an NOAA NWS Warning is Disseminated

Your local National Weather Service (NWS) Office uses available data sources such as Doppler Radar, Satellite Imagery, Surface Reports, and Spotter Reports to monitor hazardous weather threats.

If the threat of a tornado, severe thunderstorm, or flash flood is sufficiently high, then a warning is issued.

Forecasters generate a "hardcopy" of the warning using computer software. Software allows the meteorologists to quickly plot the storm's motion and the software automatically selects the valid time of the warning, the counties that must be warned, affected areas or communities, timing of severe weather, and a safety message.

The warning is then broadcast live on the NOAA Weather Radio All Hazards (NWR). If the warning is within the "official" NWR broadcast range (about 40 miles), a 1050 Hertz alarm tone precedes the warning. This 1050 Hertz alarm tone automatically activates NWR receivers equipped with the alert feature. The alarm tone lasts about 9 seconds, and allows people to deactivate their alarm and listen to the warning broadcast.

The NWR is also able to integrate into the Emergency Alert System (EAS), using the Specific Area Message Encoder (SAME). The EAS is activated for life-threatening weather events in specific areas, and incorporates all radio, TV, and cable stations. The weather threat is quickly disseminated on these commercial TV and radio stations, reaching a wide audience in the affected area(s).

The "hardcopy" of the warning is simultaneously sent, via satellite uplink, to a wide variety of customers, including the NOAA Weather Wire Service, Internet, and to major news wire services, such as the AP. These services distribute the warning to their customers, which include many local TV and radio stations. The local radio and TV stations then disseminate the warning to their listening and viewing audience.

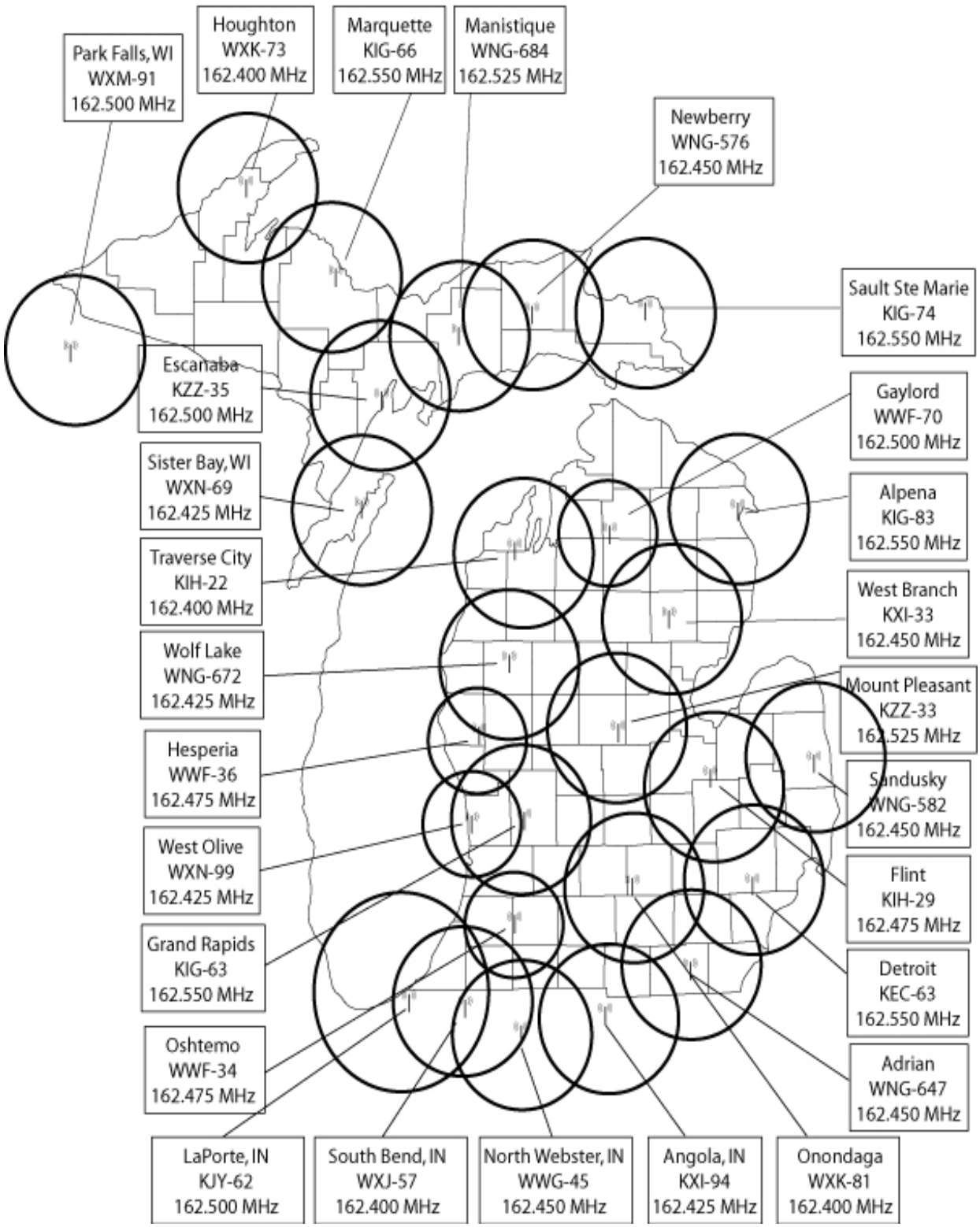
Emergency Managers enact their local severe weather plans, such as activating local dissemination systems, positioning storm spotters, or activating outdoor sirens, as needed.

Updated information on the storm position and spotter reports are provided in follow-up severe weather statements. These statements are broadcast on the NWR, local TV and radio stations, and the Internet as they become available.

Listen to NOAA Weather Radio All Hazards for the most timely and complete warning services!

NOAA Weather Radio All Hazards broadcasts warning and post-event information for all types of hazards - both natural and technological. Working with other Federal agencies and the Federal Communications Commission's Emergency Alert System, NOAA Weather Radio is an "***all hazards***" radio, network making it the single source for the most comprehensive weather and emergency information available to the public.

Michigan NOAA Weather Radio Coverage



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