

Michigan Committee for Severe Weather Awareness
4000 Collins Road, P.O. Box 30636, Lansing, MI 48909-8136
(517) 333-5032

October 24, 2005

Dear Emergency Preparedness Stakeholder:

In Michigan, fierce snow and ice storms that occur during winter months can create blizzard conditions, blinding wind-driven snow, ice coated trees and power lines, and dangerous wind chill, all of which can be hazardous to Michigan residents and pose serious travel risks. Overall, winter storms can immobilize a region, disrupt utilities and commerce, and even cause flooding.

The winter of 2004-2005 will be remembered quite differently depending in which region of the state one lives. Across Upper and northern Lower Michigan temperatures were above average with less than average snowfall. In southern Lower Michigan however, a parade of winter storms left the region with near average temperatures and well above average snowfall. Despite these average temperatures, there were many arctic air masses that intruded into Michigan. Unfortunately, one person died during one arctic outbreak in January. The temperature fluctuated enough to get thick river ice to develop and to cause ice jams along many rivers. During the peak of the ice jams over 40 miles of the Grand River was choked with ice, and extended all the way from Grand Haven through Robinson Township and into the city of Grand Rapids. The ice jams across the state resulted in the flooding of 65 homes, overtopping of two dams, and sandbagging of wastewater treatment plants.

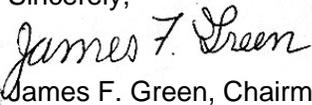
In an effort to increase awareness about winter hazards, Gov. Granholm has declared the week of November 6 - 12, 2005, as Winter Hazards Awareness Week in Michigan. The Michigan Committee for Severe Weather Awareness has created a safety information campaign to encourage residents to prepare for the hazards of Michigan winter weather.

The information is for your use during Winter Hazards Awareness Week, as well as in the future should a winter storm occur in your area. Your assistance in distributing the information to the public is appreciated. This effort helps citizens prepare themselves and their families to minimize the harmful consequences that often occur during a severe winter storm.

Additional information on Winter Hazards Awareness Week, not included with this release, is available on the Michigan Committee for Severe Weather Awareness web page at www.michiganweather.org.

I encourage you to contact any of the Michigan Committee for Severe Weather Awareness members or your local representatives from the National Weather Service, Emergency Management, or American Red Cross offices for more information about winter safety in Michigan.

Sincerely,



James F. Green, Chairman

JG:dw

Enclosures

STATE OF MICHIGAN



Executive
Office

Jennifer M. Granholm
Governor

CERTIFICATE OF PROCLAMATION

On behalf of the citizens of Michigan, I, Governor Jennifer M. Granholm do hereby proclaim the week of November 6, 2005, as

Winter Hazards Awareness Week

Whereas, Each year in the State of Michigan, countless people are injured or suffer property damage due to winter storms that bring extreme cold, freezing rain, and snow; and,

Whereas, Michigan citizens encounter winter hazards such as icy roads, frostbite from extremely cold temperatures, over-exertion from snow removal, and isolation within their own homes due to heavy snowfalls; and,

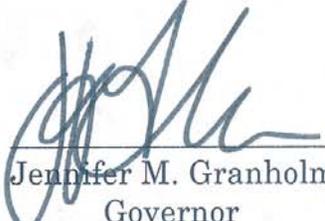
Whereas, The use of wood, kerosene, and space heaters as alternative heating methods greatly increases the probability of residential fires; and,

Whereas, Inclement winter weather requires that drivers take extra precautions to insure that they reach their destinations safely; and,

Whereas, The "Michigan Committee for Severe Weather Awareness" and other emergency management officials, in conjunction with the news media, are cooperating to educate the public about these hazards and how to prepare for them; and now therefore be it,

Resolved, That I, Jennifer M. Granholm, Governor of the State of Michigan, do hereby proclaim the week of November 6, 2005, as Winter Hazards Awareness Week in Michigan, and I encourage all citizens to learn more about how to prepare for winter hazards to protect themselves, their families, and their homes during the winter season.




Jennifer M. Granholm
Governor

Michigan Committee for Severe Weather Awareness
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Press Release

For Immediate Release
October 24, 2005

For more information contact:
Any MCSWA committee member

WINTER HAZARDS AWARENESS WEEK IS NOVEMBER 6 - 12

Lansing, Michigan - To focus attention on winter safety precautions, Gov. Jennifer M. Granholm has declared Nov. 6 - 12 as Winter Hazards Awareness Week in Michigan. Heavy snow, extreme cold, ice and wind routinely affect Michigan during winter and, individually or together, pose dangers to life and property. Michigan residents must remember it does not necessarily take record-breaking low temperatures or mountains of snow to make winter in Michigan dangerous. The abrupt changes in weather are enough to turn enjoyment of the season into tragedy.

The 2004-2005 winter season will be remembered for having a little of everything across the state. Across Upper and Northern Lower Michigan, temperatures were above average with less than average snowfall. In Southern Lower Michigan, a parade of winter storms left the region with near average temperatures and well above average snowfall. Despite these mostly average temperatures, there were arctic air masses that intruded into the state, causing one temperature-related death during an arctic outbreak in January. Throughout the winter, temperatures fluctuated enough that thick river ice developed causing ice jams along several rivers. There were also thunderstorms, some even severe, in January and a historic late season snowstorm in late April.

As is typical in the Great Lakes in the fall, a strong storm system moved through the region on Oct. 30, pummeling much of Southern Lower Michigan with high winds. Gusts in excess of 60 mph were common, with the highest wind gusts estimated at 70 mph. The winds caused widespread downed trees and extensive power outages, which left tens of thousands of customers without power and nearly \$5 million in damages.

This was not the only major storm during the fall. A winter storm hit much of the Lower Peninsula on the Wednesday before Thanksgiving dropping nearly 10 inches of snow on Grand Rapids, over 8 inches on Saginaw and 6 inches on Niles. Winds gusted up 45 mph, causing blowing and drifting snow and scattered power outages as the heavy and wet snow coated the power lines. On this busy holiday travel day, the conditions led to hundreds of traffic crashes across the state.

MORE

Another storm system passing through the Great Lakes region on Dec. 12 dropped 20 to 26 inches of snow on the lake-effect snow belts over Western and Central Upper Michigan. Accumulations reached as high as 10 inches around Lake Superior and over 8 inches in Sault Ste. Marie.

On Dec. 20, strong southerly flow ahead of an Alberta Clipper produced lake-enhanced snowfall over Eastern Upper and Northwest Lower Michigan. Manistique reported 22 inches of snowfall and locations in the Northwest Lower Peninsula recorded up to 10 inches. The near blizzard conditions resulted in numerous traffic crashes along the Lake Michigan shoreline. A stretch of U.S. 2 between Rapid River and Manistique was even closed for several hours.

The final storm of December roared through the Ohio Valley on Dec. 23, leaving a swath of 6 to 10 inches of snow across Southeast Lower Michigan. The gusty winds of up to 45 mph created blizzard conditions in the Thumb region.

The year 2005 started with the biggest ice storm to hit the state in several years on Jan. 2. In Northern Lower Michigan and in the Upper Peninsula, up to a half-inch of ice accumulation was reported. The heavy coating of ice brought down trees and power lines, and numerous traffic crashes were reported due to nearly impassable roads.

In mid-January, there was a significant cold-air outbreak across the state. From Jan. 14 - 18, daily average temperatures were 10 to 20 degrees below normal with wind chills as low as 40 below zero reported in Western Upper Michigan on Jan. 14 and 15. Several locations along the Wisconsin border did not see temperatures rise above zero until this cold air outbreak left the area on Jan. 18. This arctic outbreak was responsible for one death in Metro Detroit.

In January, this combination of temperature variations, precipitation and the physical nature of impacted rivers caused major ice jamming on many rivers, especially in Lower Michigan. During the peak, over 40 miles of the Grand River was choked with ice, extending all the way from Grand Haven through the City of Grand Rapids. At least 16 other lesser incidents of ice jamming were recorded. The jams resulted in the flooding of 65 homes, the overtopping of two dams and the sandbagging of numerous wastewater treatment plants.

A potent Alberta Clipper moved through the Southern Great Lakes on Jan. 21 and 22, dropping more than 6 inches of snow on most of the state. The southern half of the Lower Peninsula received the worst of the storm with most locations getting around 12 inches of snow. Locations near Port Huron reported nearly 18 inches and 14 inches was reported in Eaton Rapids. Both Grand Rapids and Metro Detroit

MORE

received just over 12 inches. The strong winds and bitterly cold temperatures associated with this storm produced blizzard conditions across the Thumb and near blizzard conditions elsewhere in Southern Lower Michigan.

Major snow storms again hit the state on Feb. 20 and on Feb. 27 - March 1, leaving many areas of the state with 6 to 12 inches of snow and a few locations closer to the Great Lakes with 18 inches of snow.

The final winter storm in last year's long and snowy winter for Southern Lower Michigan was one for the record books. On April 23 and 24, a very strong storm moved into Southwest Ontario and remained stationary for nearly two days. The storm pulled in very cold air for late April and left Southeast Michigan under a blanket of heavy wet snow. The gusty winds created near blizzard conditions and in combination with the heavy snowfall, created tens of thousands of power outages. Snowfall ranged from 3 inches near the Ohio boarder, up to 15 inches from Northern Oakland County into the Thumb. The snowfall from this storm pushed Detroit to its seventh snowiest winter, Flint to its fifth snowiest and Saginaw to its third snowiest.

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Winter Safety Tips

PREPARING FOR A WINTER STORM

At home:

- Keep handy a battery-powered flashlight, NOAA weather radio and portable radio, extra food (canned or dried food is best), can opener, and bottled water (at least 3 gallons per person).
- Make sure each member of household has a warm coat, gloves, hat and water-resistant boots.
- Ensure that extra blankets and heavy clothes are available.
- Keep on hand items for infant, elderly or disabled family members.
- Be aware of potential fire and carbon monoxide hazards if you plan to use an emergency heating source such as a fireplace, wood stove or space heater.

In a vehicle:

- Ensure the vehicle is winterized by late fall. Keep the gas tank close to full.
- Have the following emergency supplies in your auto: shovel, blankets, windshield scraper, container of sand, battery booster cables, tow chain or rope, flashlight, battery-operated radio, first-aid kit and high energy snacks (e.g. nuts, raisins).
- If travel is necessary, let someone know your destination and arrival time. Take along a cell-phone in case you must call for help.

Outside:

- Avoid overexertion, such as shoveling heavy snow, pushing a car, or walking in deep snow. Sweating could lead to chill and hypothermia.
- Walk carefully on snowy, icy sidewalks.
- Wear loose-fitting, lightweight warm clothing in layers. Wear wool hat and mittens.
- Keep your clothes dry. Change wet socks and clothing quickly to prevent loss of body heat.
- Understand the hazards of wind chill. As wind speed increases, heat is carried away from a person's body more rapidly.

DURING A WINTER STORM

At home:

- To save heat, close off unneeded rooms, cover windows at night and stuff towels or rags in cracks under doors.
- Maintain adequate food and water intake. Food provides the body with energy for producing its own heat.

If stranded in a vehicle:

- Attach a bright cloth to your antenna to attract attention and then remain in the vehicle.
- Run the motor about 10 minutes each hour for heat. However, open the window slightly for fresh air and make sure that the exhaust pipe isn't blocked.
- Get attention by turning on the dome light and emergency flashers when running the engine.
- Exercise by moving arms, legs, fingers and toes to keep blood circulating and to keep warm.

If stranded outside:

- Try to stay dry and cover all exposed parts of the body.
- Prepare a windbreak or snow cave for protection from the wind. Build a fire for heat and to attract attention.
- Do not eat snow. It will lower your body temperature. Melt it first.

Winter Safety Tips



ANYTIME

Listen for All-Hazards NOAA Weather Radio or local radio, television and cable stations for the latest updates on hazardous winter weather.

- To ensure a continuous flow of weather information, make sure the NOAA Weather Radio, or another radio or television has a battery backup.
- For All-Hazards NOAA Weather Radio information, including a station near you, see the NOAA Weather Radio page on the Internet at <http://www.nws.noaa.gov/nwr> or contact your National Weather Service office.

Know the difference between a winter storm WATCH (conditions make the storm possible) and winter storm WARNING (the storm is headed for your area).

A blizzard WARNING means strong winds, blinding wind-driven snow, and dangerous wind chill. Avoid driving and seek shelter.

For more information on winter storms, see <http://www.nws.noaa.gov/om/brochures/winterstorm.pdf>.



Winter Hazards FAQs

On average, a major winter storm hits part of Michigan at least once per month between October and April. Since 1993, 22 persons have died as a direct result of severe winter weather. This is in addition to victims of auto accidents due to slippery roads and those who suffer heart attacks while shoveling snow. The following are frequently asked questions about winter weather.

1. What is wind chill?

Wind chill is the perceived temperature resulting from the effect of wind, in combination with cold air, which increases the rate of heat loss from the human body.

2. What is frostbite and what can you do to treat it?

Frostbite is damage to body tissue caused by that tissue being frozen. Frostbite causes a loss of feeling and a white or pale appearance in extremities, such as fingers, toes, ear lobes, or the tip of the nose. Frostbite varies in severity from frostnip to deep frostbite, depending on the length of exposure, temperature to which the skin is exposed and wind speed. For frostnip, place firm, steady pressure from a warm hand against the area. Also, blow on the surface holding the frostnipped area against the body. Do not rub the area, apply snow or plunge it into very hot or cold water. Victims of severe frostbite must receive prompt medical attention.

3. What is hypothermia and what are the warning signs?

Hypothermia occurs when the body temperature drops to 95 degrees F. or lower. It can develop whenever body heat loss exceeds heat gain. Hypothermia is not exclusive to winter. It can occur during the wind and rain of spring and summer. Hypothermia is often mistaken for fatigue, irritability, or dehydration and may include some of these signs: abnormal decision making; improper response to cold; apathy, lethargy; decreased cooperation; slurred speech; disorientation; shivering; stumbling; and stiffness progressing to inability to move.

4. How do you treat hypothermia?

Mild to moderate hypothermia (body temperature greater than 90 degrees F., conscious, shivering, able to walk)

- Prevent further heat loss. Dry, remove from cold and insulate.
- Rewarm by warming the body core first. Rehydrate with warm broth.
- Seek medical attention.

Severe hypothermia (body temperature less than 90 degree F., unconscious, not shivering).

- Prevent further heat loss.
- Seek immediate medical attention.

5. What are the various winter weather warnings and advisories?

- A **winter storm watch** indicates that severe winter weather conditions may affect your area.
- A **winter storm warning** indicates that severe winter conditions are imminent.
- A **winter storm warning** for heavy snow indicates snowfalls of at least 6 inches in 12 hours or 8 inches in a 24-hour period are expected. In the Upper Peninsula, it indicates 8 or more inches in 12 hours and 10 or more inches in a 24-hour period.
- **Blizzard warnings** are issued when sustained wind speeds or frequent gusts of at least 35 miles per hour are accompanied by considerable falling and/or blowing snow. Visibility is greatly reduced during a blizzard.
- **Snow advisories** are issued when snowfalls of 4 to 5 inches are expected in a 12-hour period for the average of the forecast range. In the Upper Peninsula, it would result when 4 to 7 inches of snow are anticipated in that same time period.



Preventing Frozen Pipes

YOU CAN PREVENT FROZEN PIPES

Frozen pipes aren't just an inconvenience. An average of a quarter-million families have their homes damaged and their lives disrupted each winter...all because of water pipes that freeze.

An eighth-inch (three millimeter) crack in a pipe can spew up to 250 gallons (946 liters) of water a day, destroying floors, furniture, and personal property. Both plastic (PVC) and copper pipes may burst.

Before the Cold Hits...

INSULATE pipes in crawl spaces and attics. These exposed pipes are most susceptible to freezing. Remember: The more insulation you use, the better protected your pipes will be.

HEAT TAPE or thermostatically-controlled heat cables can be used to wrap pipes. Be sure to use products approved by an independent testing organization, such as Underwriters Laboratories, Inc., and only for the use intended (exterior or interior). Closely follow all manufacturer's installation and operating instructions.

SEAL leaks that allow cold air inside, near where pipes are located. Look for air leaks around electrical wiring, dryer vents and pipes. Use caulk or insulation to keep the cold out and the heat in. With severe wind chill, a tiny opening can let in enough cold air to cause a pipe to freeze.

DISCONNECT garden hoses and, if practical, use an indoor valve to shut off and drain water from pipes leading to outside faucets. This reduces the chance of freezing in the short span of pipe just inside the house.

When the Mercury drops...

A TRICKLE of hot and cold water might be all it takes to keep your pipes from freezing. Let warm water drip overnight, preferably from a faucet on an outside wall.

OPEN cabinet doors to allow heat to get to uninsulated pipes under sinks and appliances near exterior walls.

If you're away...

SET the thermostat no lower than 55 (12 degrees Celsius).

ASK a friend or neighbor to check your house daily to make sure it's warm enough to prevent freezing, or...

SHUT OFF and drain the water system. Be aware that if you have a fire protection sprinkler system in your house, it will be deactivated when you shut off the water.

If your pipes freeze...

DON'T TAKE CHANCES. If you turn on your faucets and nothing comes out, leave the faucets turned on and call a plumber. If you detect that your water pipes have frozen and burst, turn off the water at the main shut-off valve in the house; leave the water faucets turned on. (Make sure everyone in your family knows where the water shut-off valve is and how to open and close it.)

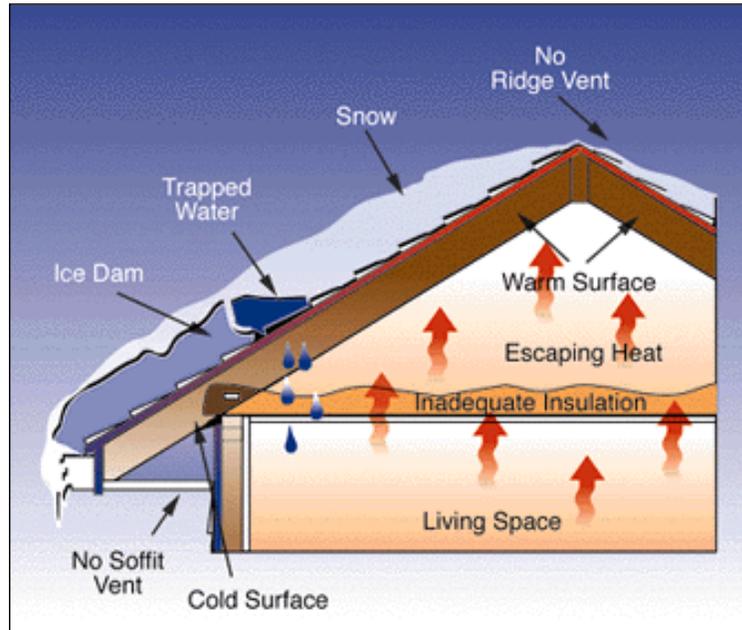
NEVER try to thaw a pipe with a torch or other open flame. Water damage is preferable to fire damage. You may be able to thaw a frozen pipe with the warm air from a hair dryer. Start by warming the pipe as close to the faucet as possible, working toward the coldest section of pipe.

DO NOT use electrical appliances in areas of standing water because you could be electrocuted.

Hot Tips for Preventing Cold Weather Damage



Preventing Roof Ice Dams



Prevent Ice Dams

Ice dams are most common in northern climates. They occur when heavy snow buildup melts during the day and then refreezes when temperatures drop overnight.

After several days of melting-freezing cycles, it's common for the melted water and ice to work up under the shingles until water enters the attic and eventually does damage to the ceilings, wall and contents. In cases where the ice dam goes unnoticed for an extended period of time, it can do significant damage to the building and its contents.

There's no way to guarantee an ice dam won't damage your home, but you can take steps to cut the chances of an ice dam forming in the first place:

- If you haven't already, thoroughly clean all leaves, sticks and other debris from your home's gutters and down spouts. This allows melting roof snow to flow into gutters and through down spouts.
- Make every effort to keep snow on your roof to a minimum. Long-handled devices on the market called "roof rakes" let you stand on the ground and pull the snow off the roof. Keeping heavy snow loads off your roof reduces the chances for both ice dam formation and roof failure due to the weight.
- All winter long, keep gutters and down spouts clear of snow and icicles.
- Evaluate the insulation and ventilation in your attic. Most experts agree the R-value of attic insulation should be at least R-30 (R-38 is preferable in northern climates). In addition, good airflow from under the eaves or soffit area along the underside of the roof and out through the roof vents is essential. The insulation prevents heat loss from the interior of the home. The venting allows the attic air to stay cold enough to prevent or minimize the freeze/thaw cycle on the roof. Consult a reputable roofing and/or insulation contractor about these improvements.



Ice Jams/Flooding

1. What is an ice jam?

Pieces of floating ice carried with a stream's current can accumulate at any obstruction to the stream flow. These ice jams can develop near river bends, mouths of tributaries, points where the river slope decreases, downstream of dams and upstream of bridges or obstructions. The water held back can cause flooding upstream, and if the obstruction suddenly breaks, flash flooding can then occur downstream as well.

2. When was the last time ice jam flooding occurred in Michigan?

Record flooding from backwater caused by ice jams occurred along the Grand River in Robinson Township during January 2005. Ice jams also caused flooding on the Muskegon, Flat, Thornapple, and Kalamazoo Rivers last year.

3. When is an ice jam likely to occur?

An ice jam can occur anytime from early winter to late spring in Michigan, depending upon changes in temperatures that cause alternate freezing and melting of water surfaces. The most likely times are early winter before the surfaces are completely frozen and early spring when the ice cover begins to break up due to melting.

4. What effect does snow have on flooding potential?

When the snow melts, it adds water to the ground that drains away in the same way as water from rainfall. On average, one inch of fresh snowfall contains about a tenth of an inch of water. However, as snow accumulates and becomes compacted during the winter, the ratio of snow to water decreases. Thus, ten inches of snow remaining on the ground into early spring may contain as much as five inches of water.

5. How fast do the snow and ice melt?

Three days with the maximum temperature of about 50 degrees would create enough melting to cause ice breakup on small streams. That amount of warming would also melt two inches of snow.

6. What happens when rain falls on top of snow?

Air temperature is still the most important factor in melting snow. Rain will usually not add much heat to the process. At 40 degrees, one inch of rain will only produce a tenth of an inch of added water from snow melt. At the same time, frozen ground will result in more of the available water running off directly to streams.

7. What is a Hydrologic Outlook?

A Hydrologic Outlook issued by the National Weather Service provides information on hydro meteorological conditions that could cause flooding or impact water supply. This product will typically be issued if precipitation forecasts and/or snowmelt potential indicate the possibility of flooding beyond 36 hours. The National Weather Service also issues a monthly probabilistic hydrologic outlook that provides the probability of the river reaching a given height over the next 90 days. The Hydrologic Outlook for the spring snowmelt flood potential defines the flood potential from snowmelt based on normal precipitation and rate of melt projected through the normal snowmelt period.

If the actual conditions bring more rapid melt or heavier rains than normal, or if ice jams occur, the flood threat would increase substantially. On the other hand, a gradual or intermittent melt, with minimal additional precipitation, would decrease the flood threat.



Ice Jams/Flooding

Outlooks are based on calculation of existing conditions (snow cover, soil conditions, and stream flow) together with predicted future weather conditions. Normal precipitation and snowmelt rates for the future period are presumed in making these projections. An earlier melt than expected may reduce flood potential. Alternatively, if snow persists into late March, the flood potential increases.

The river crest stage values given in the outlooks are only an indication of potential stream crests rather than specific forecasts. An increase in the potential can be expected if above normal precipitation and/or rapid melting develops. Likewise, the potential will decrease if below normal precipitation and/or more gradual melting occurs.

The main factors contributing to spring snowmelt flooding are:

- High soil moisture in the fall
- Significant frost in the ground
- High water content of existing snow cover
- Rapid, continuous melting
- Moderate to heavy rain during melting
- Ice jams

Flood Potential Categories (assume normal precipitation and melt rates):

Minor snowmelt flood potential - A general term indicating minimal or no property damage but possibly some public inconvenience.

Moderate snowmelt flood potential - The inundation of secondary roads; transfer to higher elevation necessary to save property, some evacuation may be required.

Major snowmelt flood potential - A general term including extensive inundation and property damage (usually characterized by the evacuation of people and livestock and the closure of both primary and secondary roads).

Severe snowmelt flood potential - Large-scale inundation, requiring substantial resources from outside the local communities; record or near record flooding.



The 2006 Hydrologic Outlooks for the spring snowmelt flood potential will be issued in February and March.



Ice Jams/Flooding

How to prevent flood damage in your home.

Are you at Risk?

Your local floodplain manager, building official, city engineer, or planning and zoning administrator can typically tell you whether you are in a flood or other hazard area. Your local community official is also a good source of information on how to protect yourself, your house and property from flooding and other hazards

Ways to protect your house and property.

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 Valves.** 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

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 Program's (NFIP) agent referral program at 1-888-CALL FLOOD or go to <http://www.fema.gov/nfip/>.

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

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

4. 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.

5. 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. [Click here](#) or go to <http://www.fema.gov/nfip/10110412.shtm#mit> for Michigan's flood insurance participating community listing from the NFIP.

6. 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.

7. 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.

8. 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.



Heat Sources Safety

Each year fire claims the lives of 4,000 Americans, injures tens of thousands, and causes billions of dollars worth of damage. People living in rural areas are more than twice as likely to die in a fire as those living in mid-sized cities or suburban areas. The misuse of wood stoves, portable space heaters and kerosene heaters are especially common risks in rural areas.

The United States Fire Administration (USFA) believes rural fire problems can be reduced by teaching people to recognize the hazards. By following some of the outlined precautionary steps, individuals can greatly reduce their chances of becoming a fire casualty.

Wood Stoves

Wood stoves cause over 9,000 residential fires every year. Carefully follow the manufacturer's installation and maintenance instructions. Look for solid construction, such as plate steel or cast iron metal. Check for cracks and inspect legs, hinges and door seals for smooth joints and seams. Use only seasoned wood for fuel, not green wood, artificial logs, or trash. Inspect and clean your pipes and chimneys annually and check monthly for damage or obstructions. Be sure to keep combustible objects at least three feet away from your wood stove.



Electric Space Heaters

Buy only heaters with the Underwriter's Laboratory (UL) safety listing. Check to make sure it has a thermostat control mechanism, and will switch off automatically if the heater falls over. Heaters are not dryers or tables; don't dry clothes or store objects on top of your heater. Space heaters need space; keep combustibles at least three feet away from each heater. Always unplug your electric space heater when not in use.

Kerosene Heaters

Buy only UL-approved heaters and check with your local fire department on the legality of kerosene heater use in your community. Never fill your heater with gasoline or camp stove fuel; both flare-up easily. Only use crystal clear K-1 kerosene. Never overfill any portable heater. Use the kerosene heater in a well ventilated room.

Fireplaces

Fireplaces regularly build up creosote in their chimneys. They need to be cleaned out frequently and chimneys should be inspected for obstructions and cracks to prevent deadly chimney and roof fires. Check to make sure the damper is open before starting any fire. Never burn trash, paper or green wood in your fireplace. These materials cause heavy creosote buildup and are difficult to control. Use a screen heavy enough to stop rolling logs and big enough to cover the entire opening of the fireplace to catch flying sparks. Don't wear loose-fitting clothes near any open flame. Make sure the fire is completely out before leaving the house or going to bed. Store cooled ashes in a tightly sealed metal container outside the home.

Finally, having a working smoke alarm dramatically increases your chances of surviving a fire. And remember to practice a home escape plan frequently with your family.



The following information, developed by the Red Cross with technical advice from the Centers for Disease Control and Prevention, the National Fire Protection Association (publisher of the National Electric Code®) and the U. S. Consumer Product Safety Commission, is provided to address questions about using a generator when disaster strikes.

1. Purchasing a Generator

If you choose to buy a generator, make sure you get one that is rated for the amount of power that you think you will need. Look at the labels on lighting, appliances, and equipment you plan to connect to the generator to determine the amount of power that will be needed to operate the equipment.

For lighting, the wattage of the light bulb indicates the power needed. Appliances and equipment usually have labels indicating power requirements on them. Choose a generator that produces more power than will be drawn by the combination of lighting, appliances, and equipment you plan to connect to the generator including the initial surge when it is turned on. If your generator does not produce adequate power for all your needs, plan to stagger the operating times for various equipment.

If you can not determine the amount of power that will be needed, ask an electrician to determine that for you. (If your equipment draws more power than the generator can produce, then you may blow a fuse on the generator or damage the connected equipment.)

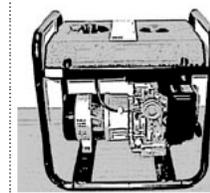
2. Using a Generator

The primary hazards to avoid when using a generator are carbon monoxide (CO) poisoning from the toxic engine exhaust, electric shock or electrocution, and fire. Follow the directions supplied with the generator. Every year, people die in incidents related to portable generator use.

Under no circumstances should portable generators be used indoors, including inside a garage, carport, basement, crawlspace, or other enclosed or partially-enclosed area, even with ventilation. Opening doors and windows or using fans will not prevent CO buildup in the home. The CO from generators can rapidly lead to full incapacitation and death, but CO can't be seen or smelled. Even if you cannot smell exhaust fumes, you may still be exposed to CO. If you start to feel sick, dizzy, or weak while using a generator, get to fresh air RIGHT AWAY - DO NOT DELAY.

Because you may have windows open to get fresh air while the power is out, be sure to place the generator away from windows, doors, and vents that could allow CO to come indoors. To avoid electrocution, keep the generator dry and do not use in rain or wet conditions. To protect the generator from moisture, operate it on a dry surface under an open canopy-like structure, such as under a tarp held up on poles. Dry your hands if wet before touching the generator.

It is a good idea to install battery-operated CO alarms or plug-in CO alarms with battery back-up in your home, according to the manufacturer's installation instructions. If CO gas from the generator enters your home and poses a health risk, the alarm will sound to warn you. Test the battery frequently and replace when needed.



3. Be sure to turn the generator off and let it cool down before refueling. Gasoline spilled on hot engine parts could ignite.

Store fuel for the generator in an approved safety can. Use the type of fuel recommended in the instructions or on the label on the generator. Local laws may restrict the amount of fuel you may store, or the storage location. Ask your local fire department for additional information about local regulations. Store the fuel outside of living areas in a locked shed or other protected area. Do not store it near a fuel-burning appliance, such as a natural gas water heater in a garage. If the fuel is spilled or the container is not sealed properly, invisible vapors from the fuel can travel along the ground and can be ignited by the appliance's pilot light or by arcs from electric switches in the appliance.

Generators



Generators

4. Plug appliances directly into the generator. Or, use a heavy duty, outdoor-rated extension cord that is rated (in watts or amps) at least equal to the sum of the connected appliance loads. Check that the entire cord is free of cuts or tears and that the plug has all three prongs, especially a grounding pin. Never try to power the house wiring by plugging the generator into a wall outlet, a practice known as “backfeeding.” This is an extremely dangerous practice that presents an electrocution risk to utility workers and neighbors served by the same utility transformer. It also bypasses some of the built-in household protection devices.

5. Future Considerations

The only recommended method to connect a generator to house wiring is by having a qualified electrician install a power transfer switch. This switch must be installed in accordance with the National Electrical Code® (NEC), which is published by the National Fire Protection Association, and all applicable state and local electrical codes. Call a qualified electrician or check with your utility company to see if they can install the appropriate equipment.

For power outages, permanently installed stationary generators are better suited for providing backup power to the home. Even a properly connected portable generator can become overloaded. This may result in overheating or stressing the generator components, possibly leading to a generator failure. Be sure to read instructions that come with the generator to make sure you operate it within its limitations for power output.



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Michigan Committee for Severe Weather Awareness November 2005

The Committee was formed in 1991 to coordinate public information efforts regarding flood, tornado and winter safety.

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