

Winter Storms and Extreme Cold

Heavy snowfall and extreme cold can immobilize an entire region. Even areas that normally experience mild winters can be hit with a major snowstorm or extreme cold. Winter storms can result in flooding, storm surge, closed highways, blocked roads, downed power lines and hypothermia.

Know Your Winter Storm and Extreme Cold Terms

Familiarize yourself with these terms to help identify a winter storm hazard:

Winter Storm Watch

Alerts the public to the possibility of a blizzard, heavy snow, heavy freezing rain, or heavy sleet. Winter Storm Watches are usually issued 12 to 48 hours before the beginning of a Winter Storm. Tune in to NOAA Weather Radio, commercial radio, or television for more information.

Winter Storm Warning

Issued when hazardous winter weather in the form of heavy snow, heavy freezing rain, or heavy sleet is imminent or occurring. Winter Storm Warnings are usually issued 12 to 24 hours before the event is expected to begin.

Winter Storm Outlook

Issued prior to a Winter Storm Watch. The Outlook is given when forecasters believe winter storm conditions are possible and are usually issued 3 to 5 days in advance of a winter storm.

Winter Weather Advisories

Issued for accumulations of snow, freezing rain, freezing drizzle, and sleet which will cause significant inconveniences and, if caution is not exercised, could lead to life-threatening situations.

Frost/Freeze Warning

Below freezing temperatures are expected.

Sleet

Rain drops that freeze into ice pellets before reaching the ground. Sleet usually bounces when hitting a surface and does not stick to objects. However, it can accumulate like snow and cause a hazard to motorists.

Freezing Rain

Rain that falls onto a surface with a temperature below freezing. This causes it to freeze to surfaces, such as trees, cars, and roads, forming a coating or glaze of ice. Even small accumulations of ice can cause a significant hazard.

Wind Chill Warning

Issued when wind chill temperatures are expected to be hazardous to life within several minutes of exposure.

Wind Chill Advisory

Issued when wind chill temperatures are expected to be a significant inconvenience to life with prolonged exposure, and, if caution is not exercised, could lead to hazardous exposure.

Blizzard Warning

Issued for sustained or gusty winds of 35 mph or more, and falling or blowing snow creating visibilities at or below $\frac{1}{4}$ mile; these conditions should persist for at least three hours.

Snow Flurries

Light snow falling for short durations. No accumulation or light dusting is all that is expected.

Snow Showers

Snow falling at varying intensities for brief periods of time. Some accumulation is possible.

Snow Squalls

Brief, intense snow showers accompanied by strong, gusty winds. Accumulation may be significant. Snow squalls are best known in the Great Lakes region.

Blowing Snow

Wind-driven snow that reduces visibility and causes significant drifting. Blowing snow may be snow that is falling and/or loose snow on the ground picked up by the wind.

Extreme Cold

Prepare your home and family

- **Prepare for possible isolation in your home** by having sufficient heating fuel; regular fuel sources may be cut off. For example, store a good supply of dry, seasoned wood for your fireplace or wood-burning stove.
- **Winterize your home** to extend the life of your fuel supply by insulating walls and attics, caulking and weather-stripping doors and windows, and installing storm windows or covering windows with plastic.
- **Winterize your house, barn, shed or any other structure that may provide shelter** for your family, neighbors, livestock or equipment. Clear rain gutters; repair roof leaks and cut away tree branches that could fall on a house or other structure during a storm.
- **Insulate pipes** with insulation or newspapers and plastic and allow faucets to drip a little during cold weather to avoid freezing.
- **Keep fire extinguishers on hand**, and make sure everyone in your house knows how to use them. House fires pose an additional risk, as more people turn to alternate heating sources without taking the necessary safety precautions.
- **Learn how to shut off water valves** (in case a pipe bursts).
- **Know ahead of time what you should do to help elderly or disabled friends, neighbors or employees.**
- **Hire a contractor to check the structural ability of the roof** to sustain unusually heavy weight from the accumulation of snow - or water, if drains on flat roofs do not work.

Prepare your car

- **Check or have a mechanic check the following items on your car:**
 - **Antifreeze levels** - ensure they are sufficient to avoid freezing.
 - **Battery and ignition system** - should be in top condition and battery terminals should be clean.
 - **Brakes** - check for wear and fluid levels.
 - **Exhaust system** - check for leaks and crimped pipes and repair or replace as necessary. *Carbon monoxide is deadly and usually gives no warning.*
 - **Fuel and air filters** - replace and keep water out of the system by using additives and maintaining a full tank of gas.
 - **Heater and defroster** - ensure they work properly.
 - **Lights and flashing hazard lights** - check for serviceability.
 - **Oil** - check for level and weight. Heavier oils congeal more at low temperatures and do not lubricate as well.
 - **Thermostat** - ensure it works properly.
 - **Windshield wiper equipment** - repair any problems and maintain proper washer fluid level.
- **Install good winter tires.** Make sure the tires have adequate tread. All-weather radials are usually adequate for most winter conditions. However, some jurisdictions require that to drive on their roads, vehicles must be equipped with chains or snow tires with studs.
- **Maintain at least a half tank of gas** during the winter season.

- **Place a winter emergency kit in each car** that includes:
 - a shovel
 - windshield scraper and small broom
 - flashlight
 - battery powered radio
 - extra batteries
 - water
 - snack food
 - matches
 - extra hats, socks and mittens
 - First aid kit with pocket knife
 - Necessary medications
 - blanket(s)
 - tow chain or rope
 - road salt and sand
 - booster cables
 - emergency flares
 - fluorescent distress flag

Dress for the Weather

- **Wear several layers** of loose fitting, lightweight, warm clothing rather than one layer of heavy clothing. The outer garments should be tightly woven and water repellent.
- **Wear mittens**, which are warmer than gloves.
- **Wear a hat.**
- **Cover your mouth** with a scarf to protect your lungs.

Add the following supplies to your disaster supplies kit:

- **Rock salt** to melt ice on walkways
- **Sand** to improve traction
- **Snow shovels** and other snow removal equipment.

Winter Storm

During a Winter Storm

- **Listen to your radio, television, or NOAA Weather Radio** for weather reports and emergency information.
- **Eat regularly and drink ample fluids**, but avoid caffeine and alcohol.
- **Conserve fuel, if necessary**, by keeping your residence cooler than normal. Temporarily close off heat to some rooms.

- **If the pipes freeze**, remove any insulation or layers of newspapers and wrap pipes in rags. Completely open all faucets and pour hot water over the pipes, starting where they were most exposed to the cold (or where the cold was most likely to penetrate).
- **Maintain ventilation when using kerosene heaters** to avoid build-up of toxic fumes. Refuel kerosene heaters outside and keep them at least three feet from flammable objects.

If you are outdoors

- **Avoid overexertion when shoveling snow.** Overexertion can bring on a heart attack—a major cause of death in the winter. If you must shovel snow, stretch before going outside.
- **Cover your mouth.** Protect your lungs from extremely cold air by covering your mouth when outdoors. Try not to speak unless absolutely necessary.
- **Keep dry.** Change wet clothing frequently to prevent a loss of body heat. Wet clothing loses all of its insulating value and transmits heat rapidly.
- **Watch for signs of frostbite.** These include loss of feeling and white or pale appearance in extremities such as fingers, toes, ear lobes, and the tip of the nose. If symptoms are detected, get medical help immediately.
- **Watch for signs of hypothermia.** These include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness, and apparent exhaustion.
- **If symptoms of hypothermia are detected:**
 - get the victim to a warm location
 - remove wet clothing
 - put the person in dry clothing and wrap their entire body in a blanket
 - warm the center of the body first
 - give warm, non-alcoholic or non-caffeinated beverages if the victim is conscious
 - get medical help as soon as possible.

If you are driving

- **Drive only if it is absolutely necessary. If you must drive, consider the following:**
 - Travel in the day, don't travel alone, and keep others informed of your schedule.
 - Stay on main roads; avoid back road shortcuts.
- **If a blizzard traps you in the car:**
 - **Pull off the highway.** Turn on hazard lights and hang a distress flag from the radio antenna or window.
 - **Remain in your vehicle where rescuers are most likely to find you.** Do not set out on foot unless you can see a building close by where you know you can take shelter. Be careful; distances are distorted by blowing snow. A building may seem close, but be too far to walk to in deep snow.
 - **Run the engine and heater about 10 minutes each hour to keep warm.** When the engine is running, open a downwind window slightly for ventilation and periodically clear snow from the exhaust pipe. *This will protect you from possible carbon monoxide poisoning.*

- **Exercise to maintain body heat, but avoid overexertion.** In extreme cold, use road maps, seat covers, and floor mats for insulation. Huddle with passengers and use your coat for a blanket.
- **Take turns sleeping.** One person should be awake at all times to look for rescue crews.
- **Drink fluids to avoid dehydration.**
- **Be careful not to waste battery power.** Balance electrical energy needs - the use of lights, heat, and radio - with supply.
- **Turn on the inside light at night** so work crews or rescuers can see you.
- **If stranded in a remote area,** stomp large block letters in an open area spelling out HELP or SOS and line with rocks or tree limbs to attract the attention of rescue personnel who may be surveying the area by airplane.
- **Leave the car and proceed on foot - if necessary** - once the blizzard passes.

Recovering from Disaster

Recovering from a disaster is usually a gradual process. Safety is a primary issue, as are mental and physical well-being. If assistance is available, knowing how to access it makes the process faster and less stressful. This section offers some general advice on steps to take after disaster strikes in order to begin getting your home, your community, and your life back to normal.

Ensure your safety

Your first concern after a disaster is your family's health and safety. You need to consider possible safety issues and monitor family health and well-being.

Aiding the Injured

Check for injuries. Do not attempt to move seriously injured persons unless they are in immediate danger of death or further injury. If you must move an unconscious person, first stabilize the neck and back, then call for help immediately.

- If the victim is not breathing, carefully position the victim for artificial respiration, clear the airway, and commence mouth-to-mouth resuscitation.
- Maintain body temperature with blankets. Be sure the victim does not become overheated.
- Never try to feed liquids to an unconscious person.

Health

- Be aware of exhaustion. Don't try to do too much at once. Set priorities and pace yourself. Get enough rest.
- Drink plenty of clean water.. Eat well.. Wear sturdy work boots and gloves.

- Wash your hands thoroughly with soap and clean water often when working in debris.

Safety Issues

- Be aware of new safety issues created by the disaster. Watch gas leaks, damaged electrical wiring, and slippery floors.
- Inform local authorities about health and safety issues, including downed power lines and dead animals.

Returning Home

Returning home can be both physically and mentally challenging. Above all, use caution.

- Keep a battery-powered radio with you so you can listen for emergency updates and news reports.
- Use a battery-powered flash light to inspect a damaged home.
Note: The flashlight should be turned on outside before entering - the battery may produce a spark that could ignite leaking gas, if present.
- Stay off the streets. If you must go out, watch for downed electrical wires, and weakened bridges, roads, and sidewalks.

Before You Enter Your Home

Walk carefully around the outside and check for loose power lines, gas leaks, and structural damage. If you have any doubts about safety, have your residence inspected by a qualified building inspector or structural engineer before entering.

Do not enter if:

- You smell gas.
- Your home was damaged by fire and the authorities have not declared it safe.

Going Inside Your Home

When you go inside your home, there are certain things you should and should not do. Enter the home carefully and check for damage. Be aware of slippery floors. The following items are other things to check inside your home:

- **Natural gas.** If you smell gas or hear a hissing or blowing sound, open a window and leave immediately. Turn off the main gas valve from the outside, if you can. Call the gas company from a neighbor's residence. If you shut off the gas supply at the main valve, you will need a professional to turn it back on. Do not smoke or use oil, gas lanterns, candles, or torches for lighting inside a damaged home until you are sure there is no leaking gas or other flammable materials present.

- **Sparks, broken or frayed wires.** Check the electrical system unless you are wet, standing in water, or unsure of your safety. If possible, turn off the electricity at the main fuse box or circuit breaker. If the situation is unsafe, leave the building and call for help. Do not turn on the lights until you are sure they're safe to use. You may want to have an electrician inspect your wiring.
- **Roof, foundation, and chimney cracks.** If it looks like the building may collapse, leave immediately.
- **Water and sewage systems.** If pipes are damaged, turn off the main water valve. Check with local authorities before using any water; the water could be contaminated. Pump out wells and have the water tested by authorities before drinking. Do not flush toilets until you know that sewage lines are intact.
- **Food and other supplies.** If power has been out for more than a few hours, throw out all food in refrigerator or freezer.
- **Call your insurance agent.** Take pictures of damages. Keep good records of repair and cleaning costs.