



State of Illinois  
Illinois Emergency Management Agency

# Winter Storm Preparedness







# Illinois Winter Weather Facts

## Cold Temperatures

A total of 109 people have died from exposure to cold temperatures in the state of Illinois since 1997. This is much more than severe thunderstorms and tornadoes (30 deaths), floods (20 deaths), and lightning (12 deaths) during the same period.

The coldest temperature on record in Illinois occurred on January 5, 1999, when the mercury dipped to -36 °F near Congerville in Woodford County!

## Winter Storms

Illinois normally experiences five severe winter storms each year. During the winter of 2007-08 there were 16 severe winter storms, five of which impacted one third or more of the State.

As few as two (in the winters of 1921-1922 and 1980-1981) and as many as 18 (in the winters of 1977-1978 and 1981-1982) winter storms have occurred.

There has not been a winter in Illinois without a winter storm in the past century.

## Snowfall

Average annual snowfall ranges from nearly 39 inches of snow in Rockford and Chicago, to as little as 10 to 15 inches in the southern tip of Illinois.

The greatest snowfall on record from a single storm occurred near the town of Astoria, in west central Illinois, where 37.8 inches were measured February 27-28, 1900.

## Ice Storms

On average, locations from just south of Quincy, through Lincoln, to Watseka experience more freezing rain and ice storms than any other part of the state.

Several major ice storms have impacted Illinois recently. On December 1, 2006, most of southwest and central Illinois had 1 to 2 inches of ice, which disrupted power to about 500,000 people and caused more than \$125 million in damages.

Another major ice storm impacted southern Illinois from January 26th-28th, 2009. Nearly 2 inches of ice caused more than \$50 million in damages and caused week-long power outages.

# Winter Weather Terms

The National Weather Service uses the terms below to convey the weather threat to the public.

## Watches, Warnings & Advisories

**Winter Storm Watch** – Indicates severe winter weather, such as heavy snow or ice, is possible within the next day or two. Prepare now!

**Winter Storm Warning** – Indicates heavy snow (greater than 6”), heavy sleet ( $\frac{1}{2}$ ” +), or a combination of winter weather hazards are highly likely or occurring. Stay indoors and adjust travel plans!

**Ice Storm Warning** – Heavy accumulations of ice will create extremely dangerous travel, damage trees and likely cause extended power outages.

**Blizzard Warning** – Strong winds of 35 mph or greater will combine to produce blinding snow, near zero visibility, deep drifts, and life threatening conditions – especially for those attempting travel.

**Wind Chill Warning** – Life-threatening wind chills of 25 to 30 below zero or colder.

**Winter Weather Advisory** – Indicates snow accumulating 2 to 5 inches, or a combination of winter weather conditions will cause significant inconveniences and may be hazardous, especially to motorists. Use caution if you venture out!

**Freezing Rain Advisory** – Light accumulations of ice will cause hazardous travel.

**Wind Chill Advisory** – Dangerous wind chills of 15 to 24 below zero.

## Winter Weather Definitions

**Freezing Rain** – Precipitation that falls from the clouds as rain, but freezes into a glaze of ice on ground based objects (trees, power lines, roads, cars, etc.).

**Sleet** – Small pellets of ice, created by frozen raindrops. Sleet bounces when hitting a surface and does not stick to objects.

**Wind Chill** – A calculation of how cold it feels outside when the effects of temperature and wind speed are combined. Wind chill ONLY applies to bare, human skin. The effects of wind chill are different for animals, and doesn't apply at all to non-living objects.

# Effects of Winter Storms

Severe winter storms can cause widespread damage and disruption. Heavy snow often results in paralyzed transportation systems, automobile accidents due to slippery roads, and stranded vehicles. Glazing from ice storms topples utility lines and poles and makes travel virtually impossible. These conditions can be a threat to life. Nearly 80 people in the United States die from winter storms and extreme cold every year, which is more than the fatalities due to tornadoes!

## BEFORE A WINTER STORM OR EXTREME COLD

- Know the terms related to winter storms and extreme cold.
- Know the names of the counties in which you live, work and travel. County names are used to identify areas at risk.
- Learn how to protect your family's health during the winter months:
  - ❄ Dress appropriately for the winter.
  - ❄ Learn the physical dangers to your body.
- Gather emergency supplies for work and home:

Create a Family Disaster Kit. Be prepared for at least three days, if not more. Go to [http://ready.illinois.gov/pdf/IHS\\_Disaster\\_Kit.pdf](http://ready.illinois.gov/pdf/IHS_Disaster_Kit.pdf) for details. A few important items are listed below:

- ❄ A battery-powered NOAA Weather Radio.
- ❄ A battery-powered commercial radio and extra batteries.
- ❄ Foods that do not require cooking or refrigeration are best. Include high energy foods, such as dried fruit and granola bars.
- ❄ Extra medications and special items for babies, the disabled or elderly.
- ❄ Extra water in clean containers.
- ❄ Flashlights and extra batteries. Do not use candles.
- ❄ A first-aid kit, non-prescription drugs and personal sanitary items.

- Winterize your home to extend the life of your fuel supply:
  - ❄ Insulate walls and attics.
  - ❄ Caulk and weatherize doors and windows.
  - ❄ Install storm windows or cover windows with plastic.
- Take steps to prevent frozen water pipes:
  - ❄ Locate and insulate pipes most susceptible to freezing--typically those near outer walls, in crawl spaces, or in attics.
  - ❄ Wrap pipes with heat tape (UL approved).
  - ❄ Seal any leaks that allow cold air inside where pipes are located.
  - ❄ Disconnect garden hoses and shut off and drain water from pipes leading to outside faucets.
  - ❄ Make sure you and your family know how to shut off the water, in case pipes burst.
- Prepare for possible isolation in your home for several days:
  - ❄ Make sure you have sufficient heating fuel. After a severe winter storm, regular fuel carriers may not reach you for days.
  - ❄ Have emergency heating equipment (fireplaces, wood burning stoves or space heaters) and ample fuel so you can keep at least one room of your house warm. Always ensure proper ventilation to avoid carbon monoxide poisoning. NEVER use an outdoor grill to heat your home or to cook food indoors.
  - ❄ Keep fire extinguishers on hand, and make sure your family knows how to use them.
- Prepare your vehicle for the winter:
  - ❄ Winterize your vehicle or have your vehicle serviced by a reputable dealer, garage, or mechanic.
  - ❄ Check your wipers, tires, lights, and fluid levels regularly. Make sure the brakes and transmission are working properly. Lubricate door and trunk locks to prevent them from freezing.
  - ❄ Prepare a Winter Storm Survival Kit and carry it in your vehicle.

# Winter Storm Survival Kit for Travelers

- ❄ Cell phone and charger
- ❄ Blankets/sleeping bags
- ❄ Flashlight with extra batteries
- ❄ First-aid kit
- ❄ High calorie, non-perishable food
- ❄ Water
- ❄ Windshield scraper and brush
- ❄ Extra clothing to keep dry
- ❄ Booster cables
- ❄ Compass and road maps
- ❄ Sack of sand (or cat litter)
- ❄ Shovel
- ❄ Tool kit
- ❄ A smaller can and water-proof matches to melt snow for drinking water
- ❄ A large empty can and plastic cover with tissues and paper towels for sanitary purposes
- ❄ Tow rope with loops (avoid chains & hooks if at all possible)
- ❄ Knife

# During Winter Storm and Extreme Cold

## When At Home

- Stay indoors in a heated room as much as possible.
- Hang blankets over windows at night, but let the sun shine in during the day. Cover cracks around doors with rugs, newspapers, towels, or other such material.
- When using alternative heat from a fireplace, wood stove, space heater, etc., use safeguards and ensure proper ventilation to avoid carbon monoxide poisoning.
- Refuel kerosene heaters outside and keep them at least three feet away from flammable objects.
- If you have no heat, close off unneeded rooms and place towels or rags under the doors.
- If your water pipes freeze:
  - ❄ Shut off water at the main source. This can minimize the damage to your home.
  - ❄ Call a plumber and contact your insurance agent.
  - ❄ Never try to thaw a frozen pipe with an open flame or torch.
  - ❄ Always be careful of the potential for electric shock in and around standing water.

## Outside

- Avoid overexertion, such as shoveling heavy snow, pushing a car, or walking in deep snow. The strain from the cold and the hard labor of snow shoveling could cause a heart attack at any age - a major cause of death in the winter. Don't ignore chest pain or tightness in your chest.
- If you become stranded outdoors:
  - ❄ Seek shelter to stay dry.
  - ❄ Cover all exposed parts of the body.
  - ❄ If no shelter is nearby, prepare a lean-to, windbreak or snow cave for protection from the wind. Build a fire for heat and to attract attention.
  - ❄ Do not eat snow as it will lower your body temperature. Melt it first.



- Watch for signs of frostbite and hypothermia.

**Frostbite** is a severe reaction to cold exposure of the skin that can permanently damage fingers, toes, the nose, and ear lobes. Symptoms are numbness and a white or pale appearance to the skin. When symptoms are apparent, seek medical help immediately. If medical help is not immediately available, slowly warm the affected areas.

**Hypothermia**, or low body temperature, is a condition brought on when the body temperature drops to less than 95 degrees F. It can be life-threatening!

#### **Symptoms include:**

- ❄ Slow or slurred speech
- ❄ Incoherence
- ❄ Memory loss
- ❄ Disorientation
- ❄ Uncontrollable shivering
- ❄ Drowsiness
- ❄ Repeated stumbling
- ❄ Apparent exhaustion

If these symptoms are detected, take the person's temperature. If below 95 degrees F, immediately seek medical attention. If medical help is not available, begin warming the person slowly.

- Always warm the body core first. Do NOT warm the arms and legs first – this can force the cold blood toward the heart and can lead to heart failure.
- Get the person into dry clothing, and wrap them in a warm blanket covering the head and neck.
- Do not give the victim alcohol, drugs, coffee, or any hot beverage. Warm broth is better.

#### **RECOMMENDED WINTER ATTIRE**

- Wear loose fitting, lightweight, warm clothing in several layers (the trapped air between the layers insulates). Layers can be removed to avoid perspiration and subsequent chill.
- Wear outer garments that are tightly woven, water repellent, and hooded.
- Wear a hat (half of body heat is lost through the top of the head).
- Wear mittens that are snug at the wrist. Mittens offer better protection. Gloves allow your fingers to cool much faster than mittens do.
- Cover the mouth and nose with scarves to help protect lungs from cold air.

- Attempt to keep your feet as dry as possible. Wear wool socks.

### On The Farm

- Move animals to sheltered areas.
- Haul extra feed to nearby feeding areas.
- Have a water supply available. Most animal deaths in winter storms occur from dehydration.

### When Traveling

If you decide a trip cannot be delayed, consider using public transportation if it is available. If you decide to drive your vehicle:

- **Before You Leave**

- ❄ Plan your travel and check the latest weather conditions along your travel route. Listen to weather forecasts on TV, local radio stations or NOAA Weather Radio. Call 1-800-452-IDOT or go to the IDOT website ([www.gettingaroundillinois.com](http://www.gettingaroundillinois.com)) to get current road conditions for Illinois' interstate systems.
- ❄ Check your wipers, tires, lights, and fluid level. Lubricate door and trunk locks with lock lubricant to prevent them from freezing. Start with a full tank of gas.
- ❄ Travel during daylight hours on main roads and don't travel alone.
- ❄ Carry a Winter Storm Survival Kit in your vehicle. (see Page 5)
- ❄ Provide your itinerary to a friend, relative, or co-workers. Include information on where you are going, the routes you will travel, and when you expect to arrive. When you reach your destination, make a call to report that you have arrived.

- **On The Road**

- ❄ Buckle your seat belts!
- ❄ Be prepared to turn back and seek shelter if conditions become threatening.
- ❄ Keep your windows clear of snow and ice. Do not start driving until your windshield is defrosted.
- ❄ Drive slower and increase your following distance. Your speed should be adjusted for the conditions and match the flow of traffic.

- \* Roadway conditions may vary depending on the sun, shade, or roadway surface. Watch for slick spots especially under bridges, on overpasses, and in shaded spots.
- \* If the pavement is snow or ice covered, start slowly and brake gently. Begin braking early when you come to an intersection. If you start to slide, ease off the gas pedal or brakes. Steer into the direction of the skid until you feel you have regained traction, then straighten your vehicle.
- \* If your vehicle becomes stuck in the snow, contact a towing company – but be prepared to wait in the cold weather for up to several hours. If you can be safely pulled out by another vehicle, make sure you use tow ropes with loops on the ends. Avoid chains or hooks if at all possible, since these can slip off and recoil very quickly – causing injury or death.
- \* When a snowplow is coming toward you, allow plenty of room for the truck to pass. When the center line is being cleared and salted, the plow tip may be on or over the line.
- \* When you approach a snowplow from behind, pass with care and only when you can see the road ahead of the truck. You should not try to pass in blowing snow; there may be a vehicle in that cloud of snow. Allow more distance between you and the plow, which may be spreading salt.
- \* While traveling, refuel often ---- keep your gas tank near full to prevent ice in the tank and fuel lines, which could leave you stranded. These frequent stops should also help relieve tense muscles.

- **If Stranded**

- \* Pull as far off the road as possible, set your hazard lights to "flashing," and hang or tie a colored cloth (preferably red) to your antenna, window, or door. After the snow stops falling, raise the hood to indicate trouble. If you have a cell phone, call for help.
- \* Stay 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.
- \* Make sure the exhaust pipe is not blocked by snow, and then run the engine and heater about 10 minutes each hour to keep warm. Turn on the dome light at night when running the engine. When the engine is running, open a window slightly for ventilation. Periodically clear away snow from the exhaust pipe.
- \* Exercise to keep blood circulating and to maintain body heat by vigorously moving arms, legs, fingers, and toes. In extreme cold or if you don't have a Winter Storm Survival Kit, use road maps, seat covers, and floor mats for insulation.
- \* Take turns sleeping. One person should be awake at all times to look out for rescue crews.
- \* Be careful not to use up battery power. Balance electrical energy needs -- the use of lights, heat, and radio -- with supply.

# Safety For Schools

Children can be especially susceptible to the dangers associated with winter weather. Even if they are cold, wet, or exhausted, they often are not conscious of the potential impact these conditions could pose. School administrators, principals, and teachers need to be aware of the dangers of winter weather. Emergency plans and procedures must be established or reviewed before the onset of the winter season to ensure children's safety. Winter safety procedures should include:

- A means of receiving current weather information. The National Weather Service (NWS) provides this information via NOAA Weather Radio. Commercial radio and television also air winter weather conditions.
- Guidelines for children's outdoor activities.
- Plans and procedures for closures, early dismissal, or holding children and staff at school due to snow, ice, or extreme cold.
- Provisions for children who arrive earlier than usual or stay later than usual due to driving conditions parents may encounter.
- **Considerations for bus drivers:**
  - ❄ Training for winter conditions.
  - ❄ Procedures for altered school schedules.
  - ❄ Changes in routes (alternate) during winter conditions.
  - ❄ Procedures to deal with stranded buses.



# Wind Chill

Most of the time, cold is judged in terms of a thermometer reading. With people and other living things though, both temperature and wind speed are needed to produce a “**wind chill factor.**” The wind chill is based on the rate of heat loss from exposed skin caused by the combined effects of the wind and cold. As the wind increases, heat is carried away from the body at an accelerated rate, driving down the body temperature. The wind chill shows how cold the wind makes exposed flesh feel and is a good way to determine the potential for frostbite or hypothermia.

Remember, wind chill values apply only to people and other living things. If the temperature is 35 °F and the wind chill is 10 °F, objects such as pipes or cars will only cool to 35 °F. The wind chill factor does not apply to non-living objects.

## NATIONAL WEATHER SERVICE WIND CHILL CHART

Read right, and down from the calm-air line. For example, a temperature of 0 °F combined with a 20 mph wind, has an equivalent cooling effect of -22 °F.

		Temperature (°F)																		
		Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
Wind (mph)	5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63	-69
	10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72	-78
	15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77	-83
	20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81	-87
	25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84	-90
	30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87	-93
	35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89	-95
	40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91	-97
	45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93	-99
	50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95	-101
	55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97	-103
	60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98	-105
Frostbite Times		30 minutes			10 minutes			5 minutes												

# Additional Sources of Information

For additional information on winter storms or other hazards, contact the following:

- Your local Emergency Management Agency (EMA or ESDA)
- Illinois Emergency Management Agency web page: [www.state.il.us/iema](http://www.state.il.us/iema)
- Illinois Preparedness web page: <http://ready.illinois.gov>
- The website of the nearest National Weather Service (NWS) office:

❄ Davenport, IA [www.weather.gov/Davenport](http://www.weather.gov/Davenport)

❄ Romeoville, IL [www.weather.gov/Chicago](http://www.weather.gov/Chicago)

❄ Lincoln, IL [www.weather.gov/Lincoln](http://www.weather.gov/Lincoln)

❄ St. Louis, MO [www.weather.gov/StLouis](http://www.weather.gov/StLouis)

❄ Paducah, KY [www.weather.gov/Paducah](http://www.weather.gov/Paducah)

- Your local chapter of the American Red Cross (ARC) or [www.redcross.org](http://www.redcross.org)
- Illinois Dept. of Transportation – Road Conditions: [www.gettingaroundillinois.com](http://www.gettingaroundillinois.com)

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