

## **WINTER WEATHER FACTS AND INFORMATION**

### **THE DANGERS OF EXTREME COLD TEMPERATURES**

Extreme cold temperatures are a big danger during winter months in Oklahoma. Prolonged exposure to the cold can cause frostbite, hypothermia, or in extreme cases death. In fact, excessive cold is one of the leading weather-related causes of death across the United States. Infants and the elderly are most susceptible to extreme cold. Freezing temperatures also cause damage to crops and property.

### **WHAT IS FROSTBITE?**

Frostbite occurs when the skin becomes cold enough to actually freeze. A loss of feeling and a white or pale appearance in extremities, such as fingers, toes, ear lobes, or the nose are symptoms of frostbite.

### **WHAT IS HYPOTHERMIA?**

Hypothermia (low body temperature) can occur during long periods of exposure when the body temperature drops below 95 degrees F. A person will become disoriented, confused, and shiver uncontrollably, eventually leading to drowsiness and apparent exhaustion. In severe cases, death is possible.

### **STRANDED AT HOME**

Severe winter weather can strand you in your own home. Every home and business in Oklahoma should have an emergency supply kit, with enough water, food and supplies to allow you to be totally on your own for at least three days. You should maintain this kit all year long, since it will help you in a variety of situations and disasters.

### **TREACHEROUS TRAVEL**

Traveling in winter weather is extremely dangerous. Often the best option is to just cancel or postpone your travel plans if hazardous winter weather is occurring or is expected, either where you are, where you're going, or anywhere in between. Sometimes it's not possible to cancel your trip. In these situations, the best thing to do is to plan ahead. Use information from the National Weather Service to determine the timing, location and intensity of the winter precipitation and make your plans accordingly. You can also find road condition information for most states on the Internet. Make sure other people know your travel plans and know how to contact you. If you can, travel in convoy with other vehicles.

Keep a survival kit in your vehicle. This kit should include non-perishable food, an extra set of clothing, blankets, a battery powered NOAA weather radio, an AM-FM radio, a shovel, a flashlight with extra batteries and sand. If you get stranded, experts say the best thing to do is to stay in the vehicle. Tie a bright colored cloth to the antenna so rescuers can find you. Run the engine occasionally for heat, making sure to keep the exhaust pipe clear. Open windows occasionally for fresh air.

## **POWERFUL WINTER STORMS CAN LEAVE YOU POWERLESS**

Severe winter storms can cut off your supply of electricity and other winter fuels for extended periods of time. It's a good idea to have an alternative heat source available. However, you have to be extremely careful in using fireplaces or wood stoves. Make sure they are properly ventilated to avoid the build up of carbon monoxide, an odorless, colorless, and deadly gas. Do not use charcoal indoors as it gives off large amounts of carbon monoxide. Have your furnace checked to make sure it is in good working order.

Many people use portable electric generators. They can be an excellent piece of equipment to have should you lose electric power for an extended period of time. However they must be used safely. The main thing is to make sure the generator is placed **OUTSIDE!** The exhaust from the engine emits deadly carbon monoxide gas. You should consult with a licensed electrician and follow all the recommended safety precautions before using a generator.

## **WINTER ROUGH ON THOSE OUTDOORS**

Working in cold weather puts a tremendous strain on the body, even for people in good shape. Take frequent breaks and don't overexert yourself. Make sure you dress properly for the conditions. Wear several layers of lightweight clothing. Air trapped between the layers helps keep the body warm. Protect the extremities, such as the hands, feet and ears as they are the most susceptible to frostbite. Wear a hat as a large percentage of the body's heat is lost through the top of the head.

## **ARE YOU PREPARED FOR WINTER WEATHER?**

Winter weather often catches people off guard. Studies have shown that about 70 percent of deaths related to ice and snow happen in vehicles, with about 25 percent of all winter weather related fatalities happening when people are caught by surprise out in the storm.

## **HARD AT WORK DURING DANGEROUS WEATHER**

While most of us stay home from work or school during winter storms, National Weather Service meteorologists are hard at work. 24 hours a day, every day of the year, a staff of local weather experts maintains a weather watch over your county from a network of 122 local weather forecast offices. Detailed local forecasts, current conditions, radar and satellite pictures, watches, warnings and advisories for all the places you care about area available free of charge on our website – [weather.gov/norman](http://weather.gov/norman).

## WIND CHILL – HOW COLD IT FEELS

Wind Chill is the term used to describe the rate of heat loss on the human body resulting from the combined effect of low temperature and wind. As winds increase, heat is carried away from the body at a faster rate, driving down both the skin temperature and eventually internal body temperature. While exposure to low wind chills can be life threatening to both humans and animals alike, the only effect that wind chill has on inanimate objects, such as vehicles, is that it shortens the time it takes the object to cool to the actual air temperature (it cannot cool the object below that temperature). For example, water freezes at 32 degrees F, regardless of what the wind chill temperature is. Before the 2001/2002 winter season, the NWS implemented a new wind chill temperature index.



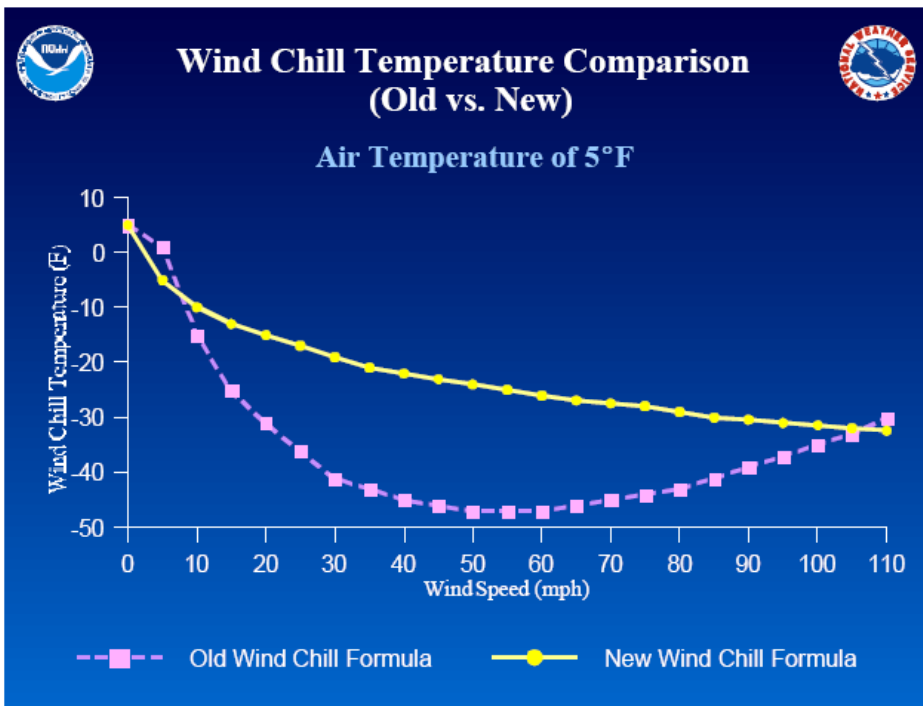
## NWS Windchill Chart



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

Frostbite Times    ■ 30 minutes    ■ 10 minutes    ■ 5 minutes

**Wind Chill (°F) = 35.74 + 0.6215T - 35.75(V<sup>0.16</sup>) + 0.4275T(V<sup>0.16</sup>)**  
 Where, T= Air Temperature (°F) V= Wind Speed (mph)      *Effective 11/01/01*



## **WINTER WEATHER SAFETY TIPS AND GUIDELINES**

### **Around the Home**

Keep ahead of advancing winter weather by monitoring the latest forecasts, watches and warnings. Your local television stations and AM/FM radio stations are usually great sources for local weather information. You can also access a huge amount of detailed weather information by visiting the National Weather Service on the Internet – [weather.gov/norman](http://weather.gov/norman).

An ice storm will take down power lines knocking out electricity, sometimes for many days. Make sure you have ways to keep warm, and that you have plenty of batteries on hand.

Check your food, and stock an extra supply. Make sure at least part of your food supply is made up of food that does not have to be cooked. If there are infants or people who need special medication at home, make sure you have a supply of the proper food and medicine. Make sure pets and animals have shelter and a water supply.

If appropriate, check your supply of heating fuel. Fuel carriers may not be able to reach you due to closed roads.

Be careful when using fireplace, stoves, or space heaters. Proper ventilation is essential to avoid a deadly build-up of carbon monoxide. Don't use charcoal inside as it gives off large amounts of carbon monoxide. Keep flammable material away from space heaters and do not overload electric circuits.

Dress for the conditions when outdoors. Wear several layers of light-weight, warm clothing: layers can be removed to prevent perspiring and subsequent chill. Outer garments should be tightly woven, waterproof and hooded. For the hands, mittens, snug at the wrists, offer better protection than fingered gloves.

Be careful when shoveling snow. It is extremely hard work for anyone in less than prime physical condition. It can bring on a heart attack, a major cause of death during and after winter storms.

### **Automobiles**

Your automobile can be your best friend or worst enemy during winter storms. Get your car winterized before winter arrives. The following items should be checked; ignition system, cooling system, fuel system, battery, lights, tires, heater, brakes, wipers, defroster, oil, exhaust. Keep water out of your fuel tank by keeping it full.

If you travel often during winter, carry a winter storm kit in your car. It should include; flashlight with extra batteries, windshield scraper, paper towels, extra

clothes, booster cables, compass, maps, sand, chains, blankets, high calorie non-perishable food.

Winter travel by car is serious business. If the storm exceeds or tests your driving ability, seek available shelter immediately.

Plan your travel. Try not to travel alone and drive in convoy when possible.

Drive carefully and defensively.

## **WINTER WEATHER INFORMATION SERVICES**

Your local National Weather Service office is responsible for providing a continuous flow of weather information to help you make decisions. This is most important when dangerous weather – including winter storms – threatens.

You can access all of our information on the National Weather Service website, including the latest forecasts, outlooks, watches, warnings and advisories for your county.

Here is a brief summary of some of the information services we provide:

### **Outlook**

The Hazardous Weather Outlook is issued every day, and contains information on any expected weather threats from today to a week in the future. This includes an outlook for upcoming winter precipitation. Sometimes the National Weather Service will issue a special Winter Storm Outlook, days in advance of an approaching winter storm.

### **Watch**

A watch is used when there is a risk of hazardous winter weather. A watch does not guarantee the event will happen. A watch should be a heads-up for you to pay extra attention to the weather.

### **Warning**

A warning is a more urgent message, and is issued when the dangerous winter weather is imminent, or has a very high probability of occurrence.

### **Advisory**

An advisory is issued for less dangerous events, but for those that still require special attention and actions. Advisory events usually do not pose an immediate threat to life and property, but still may cause travel delays and problems.

### **GraphiCasts**

NWS Norman produces graphical weather information all year long. During the winter months, you can expect graphics showing expected winter precipitation

and forecast snowfall amounts, actual snowfall totals plotted on a map, and much more. To see the GraphiCast, visit <http://www.srh.noaa.gov/oun/enhanced.php>.

## **WINTER WEATHER TERMS**

Here are some definitions of terms used in National Weather Service information. Some of the information is specific to the Norman Forecast Office's county warning and forecast area. For exact details on criteria used by other NWS offices, contact the individual office for more information.

Also remember that these criteria are only guidelines, and will not always be exact. Many factors are considered by forecasters making winter weather warning and forecast decisions, and watches, warnings and advisories may be issued based on a variety of factors.

### **WINTER STORM WATCH**

Issued when there is a significant chance of a winter storm affecting the area. A watch does not guarantee the event will happen, but is designed to serve as a heads-up that dangerous winter weather could occur within the next day or two.

In rare circumstances, a more specific watch (heavy snow watch, ice storm watch, for example) may be issued when confidence is high that one kind of precipitation will be dominant.

### **WINTER STORM WARNING**

Issued when dangerous winter weather conditions are likely, imminent or occurring. A warning implies that the event could be a hazard to life and/or property.

The term winter storm warning is generally used when a combination on dangerous winter precipitation is expected. If the forecaster can identify that a specific type of precipitation is likely, then they may issue a more specific warning, like heavy snow warning, ice storm warning, sleet warning, etc.

### **WINTER WEATHER ADVISORY**

Issued when a variety of winter precipitation is expected or imminent. An advisory implies that the event will not pose an immediate threat to life and property. An advisory event may still cause inconvenience and maybe even travel problems.

### **SNOW ADVISORY**

Issued when mainly snow is expected, and we are expecting up to three inches of snow

### **HEAVY SNOW WARNING**

Generally means snow accumulating to four or more inches in 12 hours; OR, six or more inches in 24 hours.

**ICE STORM (WATCH or WARNING)**

A prolonged period of freezing rain or freezing drizzle producing damaging ice accumulations (usually  $\frac{1}{4}$  inch or more), or producing significant disruptions to travel or utility services. This is one of the most significant winter weather events we will encounter in our area.

**BLIZZARD WARNING**

This is rarest of winter weather information service we provide, but is typically the most life-threatening. A blizzard is characterized by sustained winds (or frequent gusts) of 35 MPH or more, accompanied by considerable falling or blowing snow, which lasts for at least three hours.