HOW TO PREPARE

FOR A WINTER STORM

AMERICA'S PrepareAthon!™

BE SMART. TAKE PART. PREPARE.

How to Prepare for a Winter Storm

Winter storms can bring freezing rain, ice, snow, high winds, or a combination of these conditions. They can cause power outages that last for days, make roads and walkways very dangerous, and can affect community services. Planning and preparing can help you manage the impact of a winter storm and keep you and your family safe. A sustained power outage can have a significant impact on people who require electricity to power medical equipment, so make sure that you have a plan to take care of yourself and your family during an outage.

KNOW YOUR RISK

WHAT: A winter storm occurs when there is significant precipitation and the temperature is low enough that precipitation forms as sleet or snow, or when rain turns to ice. A winter storm can range from freezing rain and ice, to moderate snowfall over a few hours, to a blizzard that lasts for several days, or be a combination of several winter weather conditions. Many winter storms are accompanied by dangerously low temperatures.

WHEN: Winter storms can occur from early autumn to late spring depending on the region of the country.

WHERE: Winter storms and colder than normal temperatures can happen in every region of the country.

IMPACT: Extreme winter weather can immobilize an entire region. Ice and heavy snowfall can knock out heat, power, and communications services, sometimes for several days. Driving and walking can become extremely hazardous due to icy conditions, snowfall accumulation, low visibility, or extreme cold. People may need to stay at home or work without utilities or other services, until driving is safe. Pipes and water mains can break.

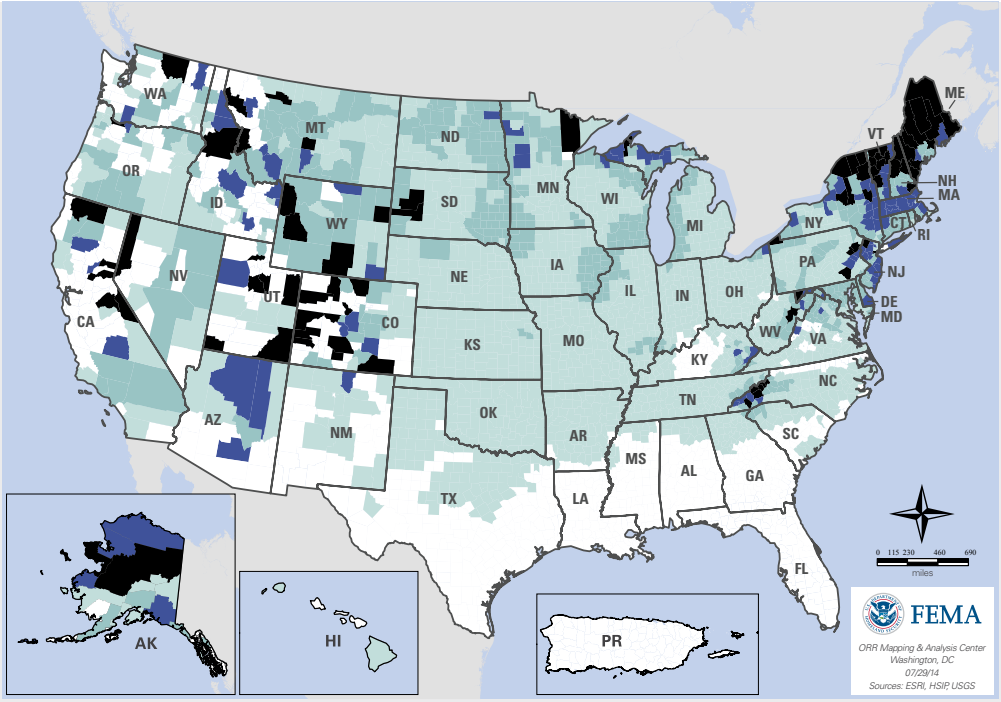
How to Prepare for a Winter Storm

Frequency of Winter Storm Events By County: 1996-2013

Average Number of Storms per Year per County from 1996-2013

- Less than 1 event per year
- Between 1 and 4 events per year
- More than 4 but less than 8 events per year
- Between 8 and 12 events per year
- More than 12 events per year

"Winter Storms" include all events identified by NOAA as blizzard, heavy snow, ice storm, lake-effect snow, winter storm, or winter weather.



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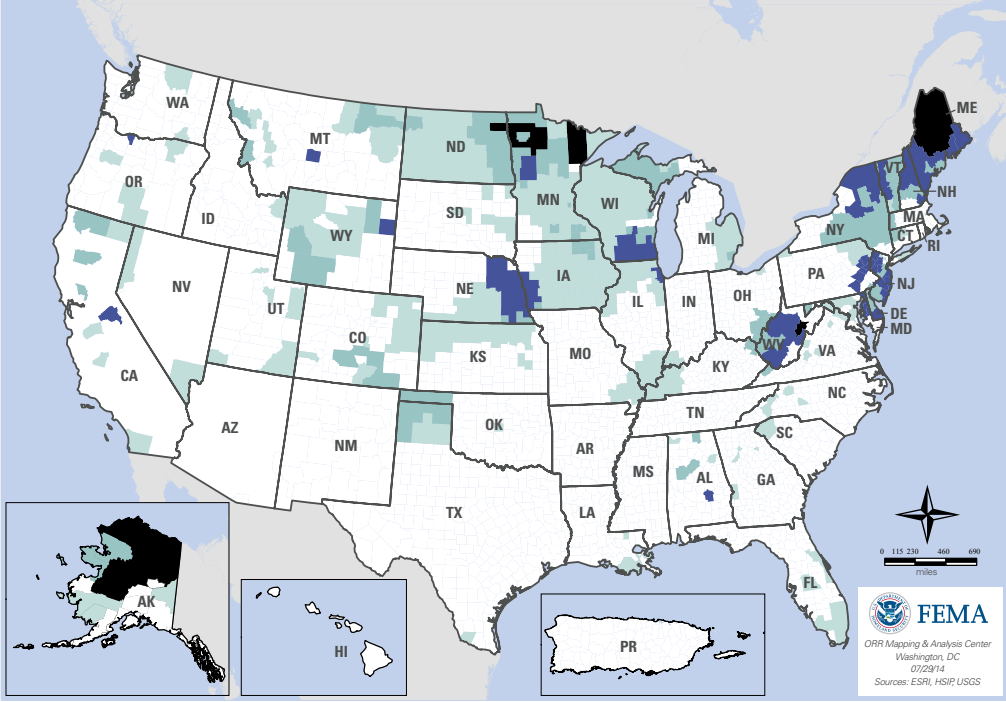
Frequency of Abnormally Cold Days Per Year By County: 1996-2013

Number of Extreme Cold/Wind Chill and Cold/Wind Chill Days per Year by County: 1996-2013

- Fewer than 1 day every 6 years
- Between 1 day every 6 years and 1 day every 2 years
- Between 1 day every 2 years and 1 day every year
- More than 1 day every year
- More than 1 day every year plus more than 1 extreme cold/wind chill day every year

"Cold/extreme cold/wind chill" events are determined by local and regional meteorologists and standards differ.



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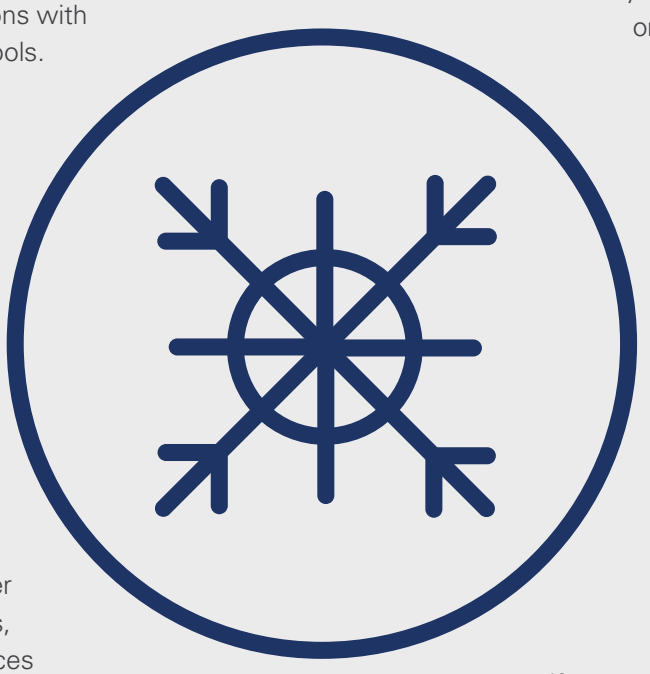
Protect Yourself Before, During, and After a Winter Storm

This page provides an overview of protective actions to take before, during, and after a winter storm. Additional information is provided in the following pages for each phase.

1 | BEFORE: PREPARE

Prepare now in case a winter storm hits and you are home for several days without power and heat.

- Prepare by gathering emergency supplies, making a family plan, and discussing emergency notifications and expectations with your workplace and/or schools.
- Install battery-powered or battery back-up carbon monoxide detectors.
- If you have access to an OUTSIDE generator, have an electric cord long enough to keep the generator at least 20 feet from any door, window, or vent.
- Make specific plans for how you will avoid driving.
- Be alert to changing weather conditions using local alerts, radio, and other news sources for information and instructions.



2 | DURING: SURVIVE

Stay indoors and avoid driving as much as possible.

- If the power goes out, close off unused rooms to consolidate and retain heat.
- Wear layered clothing and use blankets or sleeping bags to stay warm.
- Bring pets inside.
- NEVER use generators, outdoor heating or cooking equipment, such as a grill, camp stove, or a gasoline or propane heater, indoors.
- NEVER heat a home with a stove.
- If driving is absolutely necessary, keep disaster supplies in your vehicle, make sure your vehicle is properly equipped, and use extra precaution on the roads.
- Limit your time outdoors. If you are outside, protect yourself from frostbite and hypothermia by wearing several layers of warm, loose-fitting, light-weight clothing.

3 | AFTER: RECOVER

Driving conditions will still be dangerous; only drive if necessary.

- If the power is out for more than a few days, your community may set up warming shelters.
- If you do not have adequate supplies to stay warm in your home and you can get there safely, you may want to go to a shelter.
- If you go outside, dress in warm clothing, stay dry, and avoid prolonged exposure to cold and wind to protect yourself from frostbite and hypothermia.

Protect Yourself Before, During, and After a Winter Storm

WINTER STORMS CAN BE DECEPTIVE KILLERS

The National Weather Service (NWS) refers to winter storms as "deceptive killers" because most deaths are indirectly related to the storms. The majority of deaths caused by winter storms are from vehicle accidents due to ice and snow. In addition, people can die from carbon monoxide poisoning when using portable generators indoors, including in attached garages, or too close to the house. Generators should be used only outdoors and should be located at least 20 feet away from doors, windows, or vents. Individuals also suffer cold injuries, such as frostbite or hypothermia, from being outside too long and by not being well protected from wind and cold.

EMERGENCY NOTIFICATIONS

Winter storms and extreme cold are events with advance notice. The NWS of the National Oceanic and Atmospheric Administration (NOAA) issues advisories, watches, and warnings for significant accumulations of snow, freezing rain, sleet, or extreme cold. Emergency information will be provided through radio and TV broadcasts and via Wireless Emergency Alerts texted to cell phones.

In addition to commercial radios, NOAA Weather Radio broadcasts alerts and warnings directly from the NWS for all hazards. You may also sign up in advance to receive notifications from your local emergency services. Download *Be Smart. Know Your Alerts and Warnings* for a summary of notifications at: **www.ready.gov/prepare**. Free smart phone apps, such as those available from FEMA and the American Red Cross, provide information about finding shelters, providing first aid, and seeking assistance for recovery. (Search for the FEMA App or Red Cross Apps on your iPhone, android, or other mobile device.)

DEVELOP A COMMUNICATIONS PLAN

Your family may not be together when a winter storm hits, so it is important to know how you will contact one another in an emergency, and how you will get back together when it is safe to travel again. A storm may overwhelm landline and cellular phone systems. You may need to use text messaging or social media to communicate with family and friends. Keep important numbers written down in your wallet in case you cannot access the contact list in your phone. For more information, including a sample household communications plan, visit **www.ready.gov/make-a-plan.**

Protect Yourself Before, During, and After a Winter Storm

KNOW THE TERMS

Know the terms used to describe changing winter weather conditions and what actions to take. These terms can be used to determine the timeline and severity of an approaching storm.

ADVISORY	The NWS issues a **winter weather advisory** when conditions are expected to cause significant inconveniences that may be hazardous. If caution is used, these situations should not be life-threatening.
WATCH	The NWS issues a **winter storm watch** when severe winter conditions, such as heavy snow and/or ice, may affect your area but the location and timing are still uncertain. A winter storm watch is issued 12 to 36 hours in advance of a potential severe storm. Tune in to NOAA Weather Radio, local radio, TV, or other news sources for more information. Monitor alerts, check your emergency supplies, and gather any items you may need if you lose power.
WARNING	The NWS issues a **winter storm warning** when 4 or more inches of snow or sleet are expected in the next 12 hours, or 6 or more inches in 24 hours, or ¼ inch or more of ice accumulation is expected. The NWS may also issue a warning if the storm is expected to hit during high-traffic times, like rush hour. Stay indoors, and keep warm and dry. Minimize driving.

The NWS also issues advisories and warnings for other winter weather, including blizzards, freezes, wind chill, lake effect snow, and dense fog. Be alert to weather reports and tune in for specific guidance when these conditions develop.

UNDERSTANDING WIND CHILL

As the wind increases, your body is cooled at a faster rate causing the skin temperature to drop. This is why it "sometimes feels" colder than the actual temperature. Windchill is the temperature it "feels like" when you are outside. The NWS provides a Windchill Chart to show the difference between air temperature and the perceived temperature and the amount of time until frostbite occurs. For more information, visit: **www.nws.noaa.gov/om/windchill.**

1 | Protect Yourself Before a Winter Storm

Plan now to be able to stay where you are when a storm hits. If you are not at home when the storm starts, you may need to stay where you are until the roads are safe. This means having basic supplies of food and water in several locations, including your workplace, vehicle, and, if possible, other places where you and members of your household regularly spend time (e.g., house of worship, community center, and school).

ASSEMBLING EMERGENCY SUPPLIES

You may be without power and heat for several days. Have a family discussion; think through what three days without power, water, or heat would feel like. Gather the basic supplies your family would need if grocery stores and other services are unavailable; if power, water, and gas is interrupted; or if you cannot leave your home. Be sure to review your emergency supplies every fall. Basic emergency supplies should include the following, most of which you probably already have in your home.

✔	**WATER** – Ensure you have at least 1 gallon of water per person per day for at least 3 days. (Store a longer than 3-day supply of water, if possible). An average person needs to drink about 3/4 of a gallon of fluid daily. Individual needs vary depending on age, gender, health, level of activity, food choices, and climate. You may also need stored water for food preparation.
✔	**FOOD** – Store at least a 3-day supply of non-perishable food for members of your household, including pets. Consider special dietary needs (e.g., infant formula). Include a non-electric can opener for canned food.
✔	**FLASHLIGHT, RADIO,** and **CELL PHONE CHARGER** – You will need to be able to charge these items without electricity. Your flashlight and radio should be either hand-cranked or battery-powered, and stored with extra batteries. Your cell phone charger should be hand-crank, solar, or able to be charged from a car outlet.
✔	**MEDICAL** – Include first aid kit, prescription and non-prescription/over-the-counter medications, and medical supplies.
✔	**SANITATION** – Pack supplies for sanitation, such as hand sanitizer, towelettes, paper products, diapers, and plastic bags, for use when water resources are limited.
✔	**ASSISTIVE TECHNOLOGY** – Include battery backup power for power-dependent mobility devices, oxygen, and other assistive technology needs.
BEFORE WINTER APPROACHES, MAKE SURE YOU HAVE THESE ADDITIONAL EMERGENCY SUPPLIES:	
✔	**EXTRA CLOTHING, BLANKETS,** and **SLEEPING BAGS** – Dress in layers to keep warm if you lose power. Ensure you have enough clothing, hats, mittens, and blankets or sleeping bags for everyone in the house.
✔	**ITEMS FOR SNOW AND ICE** – Stock up on rock salt to melt ice on walkways or sand or kitty litter to improve traction and snow shovels or other snow removal equipment.
✔	**WOOD** – Store a supply of dry, seasoned wood if you have a working fireplace or wood-burning stove with a safe flue or vent.

It is important to consider the unique needs of your family, including access and functional needs, and the needs of children and pets. You may need to include: extra water; special food, such as infant formula or pet food; and supplies or equipment, such as diapers, glasses, or medical equipment.

Download Emergency Supply Checklist at www.ready.gov/build-a-kit.

1 | Protect Yourself Before a Winter Storm

PROTECT YOUR HOME

Keep fire extinguishers on hand and make sure everyone in your home knows how to use them. If your smoke alarms get power from your home's electrical system (hardwired), make sure the backup battery is replaced at least once a year so that your alarms will work during a power outage.

Insulate water pipes with insulation or newspaper and plastic and allow faucets to drip or trickle during cold weather to avoid freezing. Learn how to shut off water valves if a pipe bursts.

Hire a contractor to check the structural ability of your roof to sustain unusually heavy weight from the accumulation of snow or ice.

Winterize your home by insulating walls and attics, caulking and weather-stripping doors and windows, and installing storm windows or covering windows with plastic.

Clear rain gutters, repair roof leaks, and cut away tree branches that could fall on a house or neighboring structure during, or following, a storm. Keep pathways and driveways clear between storms to avoid buildup of snow piles and icing.

Maintain heating equipment and chimneys by having them cleaned and inspected every year by a qualified professional.

Install battery-operated carbon monoxide detectors or electric detectors with battery backup in central locations on every level of your home and outside sleeping areas to provide early warning of accumulating carbon monoxide, which is a colorless, odorless, tasteless, and potentially deadly gas.

WINTERIZE YOUR VEHICLE

Winter driving conditions can be extremely dangerous. During the fall, before winter weather sets in, make sure you or a mechanic completes a winter weather check on your vehicle.

ANTIFREEZE LEVELS – Ensure they are sufficient to avoid freezing.

BATTERY AND IGNITION SYSTEM – Keep in top condition and clean battery terminals.

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. Maintain a full tank of gas to keep the fuel line from freezing.

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 – Confirm 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 vehicles to be equipped with chains or snow tires with studs to drive on their roads.

2 | Protect Yourself During a Winter Storm

STAY OFF THE ROAD

Federal Highway Administration reports indicate that the risk of vehicular accidents rises sharply in winter weather conditions. In an average year, there are more than half a million vehicle crashes when the roads are snowy, slushy, or icy, resulting in nearly 2,000 fatalities and 150,000 injuries.[1] Driving is very dangerous during and immediately after a winter storm and you should make plans to stay off the road when advisories and watches are issued.

ESSENTIAL TRAVEL ONLY

If driving is absolutely necessary, ensure you have emergency supplies of food and water, warm clothing, and a full tank of gas in case you are stuck in traffic or have an accident and have to wait several hours for assistance. Try to travel during the day and do not travel alone. Stay on main roads. Let someone know your destination, route, and expected arrival time.

SNOW SHOVELING: OVEREXERTION AND INJURY

Snow shoveling can be hazardous. More than 10,000 people visit emergency rooms each year due to overexertion and injury from snow shoveling, including strains, cuts, and fractures from slipping and falling. Nearly 100 people die every year from heart attacks brought on by shoveling snow.[2] Use caution, take breaks, push the snow instead of lifting it when possible, and lift lighter loads.

WHAT TO DO IF STRANDED

STAY

- If stuck on the road to avoid exposure and/or rescue is likely.
- If a safe location is neither nearby nor visible.
- If you do not have appropriate clothing to go outside.
- If you do not have the ability to call for help.

GO

- If the distance to call for help is accessible.
- If you have visibility and outside conditions are safe.
- If you have appropriate clothing.
- Once the storm has passed, if you are not already home, follow instructions from your local transportation department and emergency management agency to determine which route will be safest for you to get home. Drive with extra caution.

CAUTION: CARBON MONOXIDE KILLS

Each year, an average of 430 Americans die from unintentional carbon monoxide poisoning, and there are more than 20,000 visits to the emergency room with more than 4,000 hospitalizations.[3] Carbon monoxide-related deaths are highest during colder months. These deaths are likely due to increased use of gas-powered furnaces and alternative heating, cooking, and power sources used inappropriately indoors during power outages. To that end, NEVER use a generator, grill, camp stove, or charcoal burning device inside or in any partially enclosed area; keep these devices at least 20 feet from doors, windows, and vents. If the alarm sounds, move quickly to a fresh air location outdoors or by an open window or door. Call for help from the fresh air location and remain there until emergency personnel arrive to assist you.

1 U.S. Department of Transportation, Federal Highway Administration, "How Do Weather Events Impact Roads?" Last modified: February 25, 2014. Accessed July 28, 2014. www.ops.fhwa.dot.gov/weather/q1_roadimpact.htm
2 American Journal of Emergency Medicine, January 2011. www.nationwidechildrens.org/cirp-snow-shoveling
3 U.S. Consumer Product Safety Commission, "Carbon Monoxide Poisoning: Frequently Asked Questions." Updated July 23, 2013. Accessed June 25, 2014. www.cpsc.gov/Safety-Education/Safety-Education-Centers/Carbon-Monoxide-Information-Center.

COLD WEATHER DANGERS

The U.S. Centers for Disease Control and Prevention (CDC) recommends that, if you detect symptoms of frostbite, you seek medical care IMMEDIATELY. Because frostbite and hypothermia both result from exposure, first determine whether the person also shows signs of hypothermia. Hypothermia is a more serious medical condition and requires emergency medical assistance.

SIGNS OF FROSTBITE Occurs when the skin and body tissue just beneath it freezes	Loss of feeling and white or pale appearance in extremities, such as fingers, toes, earlobes, face, and the tip of the nose
WHAT TO DO If symptoms of frostbite are detected	Cover exposed skin, but do not rub the affected area in an attempt to warm it up. Seek medical help immediately.
SIGNS OF HYPOTHERMIA Dangerously low body temperature	Uncontrollable shivering Memory loss, disorientation Incoherence, slurred speech Drowsiness Apparent exhaustion
WHAT TO DO If symptoms of hypothermia are detected	Get the victim to a warm location. Remove wet clothing. Warm the center of the body first by wrapping the person in blankets or putting on dry clothing. Give warm, non-alcoholic beverages if the person is conscious. Take the person's temperature. If it is below 95°F, seek medical attention immediately.

DRESS

- If you must go outside, 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.
- Cover all of your body. Wear a hat and a scarf, covering your mouth to protect your face and to help prevent loss of body heat.

3 | Protect Yourself After a Winter Storm

IF YOUR HOME LOSES POWER OR HEAT FOR AN EXTENDED PERIOD

If your home loses power or heat for more than a few hours or if you do not have adequate supplies to stay warm in your home overnight, you may want to go to a designated public shelter if you can get there safely. Text SHELTER + your ZIP code to 43362 (4FEMA) to find the nearest shelter in your area (e.g., SHELTER 20472). Bring any personal items that you would need to spend the night (such as toiletries, medicines). Take precautions when traveling to the shelter. Dress warmly in layers, wear boots, mittens, and a hat.

LEARN FROM EVERY STORM

- Restock your emergency supplies to be ready in case another storm hits.
- Assess how well your supplies and family plan worked. What could you have done better?
- Take a few minutes to improve your family plan and supplies before the next winter storm hits.
- Talk to your neighbors and colleagues about their experiences and share tips with each other.

ADDITIONAL INFORMATION

The following resources and websites can help you further prepare for, respond to, and recover from a winter storm.

El Paso County Office of Emergency Management
www.epcoem.com
(719)575-8424

El Paso County CERT (Community Emergency Response Team) training and classes:
www.epccert.org
(719) 575-8858

RELATED WEBSITES

America's PrepareAthon! **www.ready.gov/prepare**

Ready Campaign, **www.ready.gov/winter-weather**

American Red Cross, **www.redcross.org**

Federal Emergency Management Agency (FEMA), **www.fema.gov**

National Oceanic and Atmospheric Administration (NOAA), **www.noaa.org**

U.S. Centers for Disease Control and Prevention (CDC), **http://emergency.cdc.gov/winter/index.asp**

U.S. Fire Administration Winter Fire Safety (USFA), **www.usfa.fema.gov/winter**

*For more information on America's PrepareAthon!, log on to **www.ready.gov/prepare**, email us at prepareAthon@fema.dhs.gov, or join the conversation online at **#PrepareAthon**.*

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