WISCONSIN DEPARTMENT OF TRANSPORTATION

Snow plowing and ice control guide

"Announced by all the trumpets of the sky Arrives the snow..."

Emerson
The Snow-Storm

Every car traveling outside an urban area should have a winter car kit that includes:

- Booster cables
- Two or more blankets
- Candles and matches
- Snow shovel and scraper
- Flashlight and extra batteries
- Extra clothing: cap, mittens, parka and overshoes in case you have to walk for help
- High calorie, non-perishable food like candy and canned nuts
- Sand or strips of carpet for traction

A cell phone may also be a useful part of a winter car kit.

Listen to weather forecasts and check Wisconsin road conditions before your trip:

From Wisconsin, as well as Iowa, Minnesota, northern Illinois, and Michigan,
call (800)ROADWIS [(800)762-3947]
or on the Internet: *www.dot.wisconsin.gov/travel/road/winter-roads.htm*

For Iowa road conditions:
call *(800)288-1047*
Illinois: *(800)452-4368*
Minnesota: *(800)542-0220*

Wisconsin Department of Transportation
DTID Bureau of Highway Operations
4801 Sheboygan Avenue, Room 501
Madison, WI 53707-7986
For more copies of this brochure,
call (608)266-8370

HS326/11-02

A Wisconsin snowfall can be a beautiful winter sight, blanketing pines, hills, and houses. When winter arrives and the snow flies, Wisconsinites remain active and mobile. We break out the skis, snowmobiles, ice fishing gear and sleds. We appreciate the beauty and activity our winters offer.

You'd think that with an average of 35 snowstorms dumping 50 inches of snow each winter, things like getting to work could be pretty difficult. But according to the federal government's *"Geographic Profile of Employment and Unemployment,"* Wisconsinites rarely miss work because of the weather.

To tame winter storms, county highway department personnel plow and provide ice control on all state and US-numbered highways, the Interstate system as well as their own county highways. For more than 85 years, the Wisconsin Department of Transportation has relied on county crews to provide winter maintenance. It's an effective arrangement that combines state and county resources to keep our roads safe in winter. The most important resource of all, by far, is the years of experience attained by our county and state highway maintenance personnel.

Snow plow guidelines provide consistent road conditions

That experience has been incorporated into guidelines that help make driving in a Wisconsin winter more manageable. **The goal of winter maintenance is to achieve "passable roadways"** ***during a winter storm.*** Passable roadways are defined as roadways that are free of drifts, snow ridges, and as much ice and snow pack as is practical and can be traveled safely at reasonable speeds. A reasonable speed is one in which a vehicle can travel without losing traction. That often will mean that, ***as always, during a winter storm*** **motorists will have to reduce their speeds to maintain traction.**

During a storm, Wisconsin's 11,753 miles of ***state, US, and Interstate*** highways (not including county or municipal streets and highways) are maintained according to five categories. (See map on back.) Traffic volumes and highway use determine the categories. ***During a storm,*** major urban freeways, heavily traveled multi-lane freeways and expressways, and high volume two- and four-lane highways will receive a high level of service and effort 24-hours a day, as conditions allow, in order to maintain "passable roadways." All other low volume, two- and four-lane highways will receive a lower level of service and effort for at least 18 hours a day during the storm.

If extreme weather causes conditions to deteriorate to the point that it is dangerous for both the general public and the crews to be on the roadways, the plows will be removed from the highways until conditions improve. However, if crews are safely able to continue their work, there may be instances, such as freezing rain, where counties will deviate from the guidelines to keep traffic moving.

After the storm, plow operators will shift their attention to cleaning up traveled lanes, bridge decks, slippery spots and intersections on all highway categories as they work toward achieving "bare/dry pavement." **A bare/dry pavement condition will not usually exist until weather conditions improve and may take several days to achieve.**

Consistent implementation of these winter guidelines will help provide travelers with more consistent travel conditions on a given type of highway, regardless of which county they're passing through. In our continuing effort to achieve greater uniformity between counties, **it is possible that motorists within individual counties could experience changes in what they're used to seeing.** For some, it will appear a roadway is receiving less attention, while in others, more. Either way, motorists will have to adjust their driving to existing conditions.

New technologies help crews handle storms more effectively

Before each winter storm, county highway maintenance staffs consider things like traffic density, weather forecast, pavement surface temperature, time of day, terrain and highway category to determine how to best handle the oncoming storm.

The Road Weather Information System (RWIS) provides valuable weather forecast information to highway maintenance managers to make the fight against ice and snow more efficient and economical. Before the system was operational, highway managers had to estimate when the pavement would freeze before deciding when, or if, to spread de-icing agents. Now, through the use of pavement and atmospheric sensors and pavement temperature forecasts, they have much better information about when the pavement will freeze, enabling them to spread materials only when necessary.

While RWIS is an effective tool for highway managers, it is just one resource in the fight against winter. Modern snowplow trucks are outfitted with a variety of equipment including modern front plows, wing plows, underbody plows, anti-icing or de-icing applicators, brine tanks, pavement temperature sensors, and, of course, road salt or other de-icing agents.

To make plowing as efficient as possible, crews will typically apply common rock salt to the highway. Salt prevents the bonding of snow, ice, freezing rain and sleet to the pavement. When the pavement temperature is above 20°F, salt is very effective. Once the pavement temperature drops below 20°F, salt's effectiveness is significantly reduced and other de-icing agents, including calcium or magnesium chloride can be added to lower the freezing point of snow and ice and help prevent their bonding to the road's surface. Below 10°F sand is often applied to a road's surface as an abrasive to improve friction, even though it has minimal snow or ice-melting characteristics. Under certain conditions, neither salt nor sand is applied and just plowing is conducted.

By researching and using new techniques and technologies, county highway departments and the Wisconsin Department of Transportation are working together to minimize harmful impacts to the environment. One technique used by counties to reduce impact to the environment is to wet salt before it is applied. That helps it stick to the pavement and reduces salt loss due to bouncing, thereby allowing counties to achieve lower salt application rates. Less salt on the roadways means less salt entering the environment. Counties also use ground-speed controllers that apply salt at a rate that matches the truck's speed. The department is also testing more environmentally friendly substitutes for sodium chloride.

Winter driving tips

Most crashes in winter are caused by motorists driving too fast for conditions during, or shortly after winter storms. So here are a few safety tips to improve your winter driving skills.

- **Clear snow and ice from all windows and lights—even the hood and roof—before driving.**
- **Pay attention.** Don't try to outdrive the conditions. Remember the posted speed limits are for dry pavement.
- **Leave plenty of room for stopping.**
- **Leave room for maintenance vehicles and plows—stay back at least 200 feet** (It's the law!) **and don't pass on the right.**
- **Know the current road conditions.** Call *(800)ROADWIS* or log onto: *www.dot.wisconsin.gov/travel/road/winter-roads.htm*
- **Use brakes carefully.** Brake early. Brake correctly. It takes more time to stop in adverse conditions.
- **Watch for slippery bridge decks, even when the rest of the pavement is in good condition.** Bridge decks will ice up sooner than the adjacent pavement.
- **Cruise without your cruise control in wintry conditions.** Even roads that appear clear can have sudden slippery spots and the short touch of your brakes to deactivate the cruise control feature can cause you to lose control of your vehicle.
- **Remember that your four-wheel drive vehicle may help you get going quicker than other vehicles but it won't help you stop any quicker.** Many 4x4 vehicles are heavier than passenger vehicles and actually may take longer to stop. Don't get overconfident in your 4x4 vehicle's traction. Your 4x4 can lose traction as quickly as a two-wheel drive vehicle.
- **GO SLOW.**

And ALWAYS buckle up!