Frequently Asked Questions:

Q. **Why do we salt the roadways in the winter?** Salt is used to make the roadways safer during the winter. It lowers the freezing point of snow and ice and keeps the snow "workable" so it is more easily removed. Salt can be used for anti-icing, de-icing, or melting. Anti-icing is a technique where chloride is applied to the roadway prior to a storm to prevent the snow/ice from bonding to the pavement. De-icing and melting is when chloride is applied after the storm has begun in order to break up ice and snow pack or to melt glare/black ice.

Q. **What are the limitations of road salt?** The minimum practical applications range for salt is a pavement temperature of 15-20° F and above. While salt will melt snow and ice down to a pavement temperature of -6F, it can melt over five times as much ice at 30°F as at 20°F. Thus the effectiveness of salt is sensitive to small differences in pavement temperature. We attempt to apply only the amount required for temperature, time and use. Too little and the roadway will refreeze, too much is a waste of money and resources.

When the pavement temperature drops below 15°F the effectiveness of salt is decreased significantly. At these lower temperatures, we typically cease straight salt applications and begin adding other chemicals to the salt such as calcium chloride or magnesium chloride that will lower the freezing point even further. Wind conditions must also be considered when deciding on whether to apply salt or other de-icing agents. As the temperatures drop and the snow becomes dryer, the wind can begin to blow the snow across the pavement. If there is a chemical residue left on the pavement from a previous salt application, blowing snow can be attracted to the residue and stick to the pavement creating hazardous conditions that would not have existed if no de-icing agents were previously applied. This is why we are sometimes reluctant to apply salt or chemicals when the pavement temperatures are below 15°F. The type of pavement can also affect the effectiveness of salt. For example, salt works better on new asphaltic (blacktop) pavements than on concrete pavement.

The salt being used today typically includes other ice melting de-icing agents to increase its effectiveness at lower temperatures and to help it better adhere to the pavements. Adding other de-icing agents to the salt also reduces the number of applications needed. WisDOT is always looking for new ways to reduce the amount of chlorides needed to return the roadways to safe winter driving conditions.

Q. **Why doesn't the County use more sand?** Our experience, and the body of research on the use of sand, indicates the benefits of abrasives (sand) applied to roadways are very minimal. Abrasives are easily displaced from the roadway by traffic and they have no ice melting properties. There are also negative environmental consequences such as air pollution and siltation of waterways.

Q. Am I allowed to pass a snowplow? There are no state laws that prohibit you from passing a snowplow. However, it is illegal (State Statute 346.915) to follow a snowplow closer than 200 feet upon any highway having the posted speed limit of more than 35 mph if the snowplow is engaged in snow and ice removal. The majority of crashes involving snowplows and vehicles happen when a snowplow is rear ended or hit while being passed. Snowplows have wing plow blades that can extend anywhere between 2 and 10 feet beyond the width of the truck. This wing and plow blade is often not seen because of the snow cloud being kicked up by the snowplow. These wing plows can often weigh as much as a compact car.

Q. Who determines when the snowplows are called out? Under department policy, Highway division superintendents determine when and how to respond to a storm, including calling out crews.

Q. Why is it that I never seem to see a snowplow during a winter storm? This department is responsible for snow removal on approximately 1,150 centerline miles of roadway and 130 bridges. The average time to complete a section is approximately 2 hours, but some cycle times can be as long as 3 hours. Time is also needed to load and reload the truck with de-icing materials.

Q. Why the difference in performance from storm to storm? One of the biggest factors that determine performance is the type of storm and range of temperatures. There are reportedly more than 60,000 combinations of winter storms that can hit Wisconsin during the winter and each poses unique problems to snowplow operators. Storms with low temperatures can be difficult because deicing agents become less effective at the lower temperatures. Storms with high winds also are a challenge because the snow quickly blows back onto the roadway after the plows pass.

Q. Why are you spraying water on the roadway on a perfectly clear day? We are actually spraying a liquid salt solution on the roadway that will help keep snow and ice from bonding to the pavement. Spraying a salt solution on the roadway is similar to spraying a frying pan with oil to keep food from sticking to the bottom of the pan. The salt solution acts as a barrier so that the snow and ice won't form a strong bond to the pavement. In many locations we will spray the bridge decks the afternoon before a predicted frost. The early application of the salt solution helps prevent frost from forming on the bridge decks throughout the night.