

## **DEPARTMENT OF TRANSPORTATION**

As a result of the 1983 Wisconsin Groundwater Law, the Department of Transportation (DOT) regulates the storage of highway salt (ss. 85.17 and 85.18, Wis. Stats.) to protect the waters of the state from harm due to contamination by dissolved chloride. DOT is also responsible for potable well sampling at 69 rest area and seasonal waysides. Other DOT groundwater related activities or assistance include: hazardous material investigation or remediation; wetland compensation; storm water management; and groundwater level monitoring points for the Wisconsin Groundwater-Level Monitoring Network at 16 locations.

### **FY 2016 Highlights**

- Equipped county trucks that work on the state highway system with AVL/GPS equipment to better track salt usage across the state.
- Provided customized forecasts using an advanced Road Weather Information System based on pavement and weather sensors for 58 sites across the state.

### **Details of Ongoing Activities**

#### **Salt Storage**

Highway salt is stored statewide by suppliers, counties, cities, villages, and private companies. Annual inspections occur and reports are provided for salt storage sites to insure that storage practices are in accordance with ch. Trans 277, Wis. Adm. Code (Highway Salt Storage Requirements). The intent of the Code is to help prevent entry of highway salts into waters of the state from storage facilities. All salt must be covered and stored on an impermeable base. The base for stockpiles is required to function as a holding basin and to prevent runoff. The covers must consist of impermeable materials or structures to prevent contact with precipitation. State funded facilities are being added to the DOT salt storage program to provide greater capacity of indoor storage. This will improve groundwater protection and create greater flexibility for scheduling salt purchase at optimal prices.

The DOT annually updates salt storage facility records into a database and assists the DNR Wellhead and Source Water Protection program in locating salt storage facilities for GIS mapping applications. There are currently 1,295 salt storage sites listed in the database and 2,483 sub-sites. Each county keeps detailed inventories of salt which are updated monthly. Facility inventories, inspections, repairs and improvements are included in the database.

#### **Salt Use**

The DOT Bureau of Highway Maintenance produces the Annual Winter Maintenance Report describing statewide salt use based on weekly reports from each county. Current policy in the State Highway Maintenance Manual restricts the spreading of deicer salts to a maximum of 400 pounds per lane mile per initial application, and 300 pounds per lane mile for subsequent applications. Electronic controls for salt spreader trucks are continually tested to record and verify application rates and coverage effectiveness. Other technology is used on county highway patrol trucks to keep salt on pavement surfaces (e.g., zero-velocity spreaders, ground speed controllers, and onboard liquid pre-wetting units). Additional efforts to minimize and conserve salt applications include the use of in-situ weather monitoring system. Pavement

temperature sensors recorded at 64 locations along major highway routes are used to determine application methods. Annual training for snowplowing and salt spreading techniques is provided for county snowplow operators.

### **Salt Usage Tracking**

The DOT Bureau of Highway Maintenance is currently in the process of having all of the county trucks that work on the state system equipped with AVL/GPS equipment. This technology will allow the bureau to better track the application of salt usage across the state. It will also help with the optimization of plow routes to make plowing most efficient. In conjunction with the AVL/GPS equipment the bureau is using new software called the Maintenance Decision Support System or MDSS. MDSS combines the science of snow removal with weather forecasting. The goal is to only apply the minimum amount of salt necessary given the current weather conditions and forecasts. Many other states who have implemented these technologies are seeing cost savings and salt reductions across their highways.

#### *For more information*

*Visit the following web site (<http://www.dot.state.wi.us>)*

*Contact Bob Pearson, Environmental Services Section*

*Room 451, 4802 Sheboygan Ave.*

*P. O. Box 7965*

*Madison, Wisconsin 53707-7965*

*Phone: 608-266-7980, e-mail [robert.pearson@wisconsin.gov](mailto:robert.pearson@wisconsin.gov)*