

**Winter Maintenance Application Rates and Guidance  
*for Parking Lots, Sidewalks and Trails***

Training Supplement

Prepared for Dane County Land and Water Resources  
Department

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Connie Fortin – Fortin Consulting Inc.

[Connie@fortinconsulting.com](mailto:Connie@fortinconsulting.com)

215 Hamel Road

Hamel MN 55340

## FORWARD

Once you put winter maintenance salt down, it doesn't go away. It alters the composition of soil, slows plant growth and weakens the concrete, brick and stone that make up our homes, garages, bridges, and roads. It travels into our lakes, rivers, streams and wetlands, putting our aquatic life at risk and endangering our freshwater resources.

In Dane County, winter maintenance salt causes large seasonal spikes in chloride levels of area lakes, rivers, streams and wetlands. Groundwater supplies are also being affected, as seen by rising chloride and sodium levels in many of Dane County's drinking water wells. Some estimates show that deicers applied to sidewalks, parking lots and trails make up about one half of the total winter maintenance salt applied in Dane County -- a substantial part of the total chloride reaching our waters. These concerns are not unique to our area. Research published in 2017, led by UW-Madison Center for Limnology, found that many of 371 North American study lakes show increasing chloride trends over the last 10 to 70 years, and thousands more are at risk ("Salting Our Freshwater Lakes," Proceedings of the National Academy of Sciences).

In recognition of these trends, the fact that deicers applied to sidewalks, parking lots and trails make up such a large percentage of overall winter maintenance salt applied in Dane County, and our desire to provide clear guidance to winter maintenance professionals working at this scale, Dane County has developed locally-tailored anti-icing and deicing application rate guidelines for parking lots, sidewalks, and trails. These guidelines, coupled with best practices such as first mechanically removing snow and ice, will help professionals safely and effectively confront winter storms, while having the least impact to our environment.

To develop these guidelines, Dane County invited participation from local private and public sector professionals to serve on the Winter Maintenance Application Rate Advisory Group. This group was led by Connie Fortin, a national expert who integrated her extensive knowledge of winter maintenance best practices and application rate guidelines into this project. Dane County is grateful to the Advisory Group members for their shared perspectives ranging from small and large scale private winter maintenance operations at health care facilities; county parks; college campuses; and municipal parking lots, sidewalks, and trails. Dane County appreciates additional insight from the Wisconsin Department of Transportation, environmental experts, policy experts and winter maintenance equipment and product sales associations. This advice shaped and strengthened the application rate guidelines now available for use by winter maintenance professionals in our area.

Feedback on the use of the guidelines is appreciated, especially during the winter of 2017-18 when they are being piloted and evaluated. Feedback can be sent to [lakes@countyofdane.com](mailto:lakes@countyofdane.com). Dane County will work with Wisconsin Salt Wise partners to address the driving forces that influence the rate and frequency of winter maintenance salt application, and continue to promote best management practices that reduce chloride pollution and protect our environment.

---Project Manager, Susan Jones, Dane County Land and Water Resources Department (Office of Lakes and Watersheds). 5201 Fen Oak Drive, Madison, WI 53718. 608-224-3764.  
[jones.susan@countyofdane.com](mailto:jones.susan@countyofdane.com)

## PROJECT OVERVIEW

This project was designed to develop several pieces of guidance to help lower salt application rates for those maintaining parking lots, sidewalks and trails in the Dane County region of Wisconsin. The components of this project are not intended to be a stand-alone comprehensive guide to winter maintenance. They are intended to be a starting point from which trainings, a training manual, or other educational components can be developed to assist winter maintenance professionals pursuing winter maintenance practices with reduced salt use.

## HOW TO USE THESE MATERIALS

The guidance developed for this project is but a small portion, a chapter in the book of successful winter maintenance operations. For example, aggressive physical removal of snow and ice is required before any de-icing activities should take place. By attending a training class (see [www.wisaltwise.com](http://www.wisaltwise.com) for upcoming training) the winter maintenance professional will receive a well-rounded education in strategies for lower salt use, including a better understanding of how to use this new guidance developed for the Dane County region of Wisconsin.

Please note that without first implementing best management practices throughout the organization (such as calibrating equipment, aggressive mechanical removal, monitoring pavement temperatures, etc.) these charts will not be meaningful to winter maintenance operations.

## THE COMPONENTS

- **Anti-icing (before the storm) Application Rate Guidelines for Parking Lots, Sidewalks and Trails** - a one-page chart that gives application rate advice for brine applied before a storm event. For an interactive version of this chart visit [www.wisaltwise.com](http://www.wisaltwise.com).
- **Anti-icing Winter Maintenance Strategies** – a two-page set of tips that are useful when anti-icing and when using the anti-icing guidelines chart. It is not a comprehensive guide to anti-icing.
- **Deicing Application Rate Guidelines for Parking lots, Sidewalks and Trails** – a one-page guidelines chart that gives application rate advice for granular products applied during and after a storm event. For an interactive version of this chart visit [www.wisaltwise.com](http://www.wisaltwise.com).
- **Deicing Winter Maintenance Strategies** – a two-page set of tips that are useful when deicing and when using the deicing guidelines chart. It is not a comprehensive guide to deicing.
- **The Future of Winter Maintenance Involves Liquid Only Strategies** – a fact sheet that gives a high-level introduction to liquid only maintenance strategies. It is intended to pique interest on the subject; not to be an instructional fact sheet.

Print the PDF versions of each of these components by visiting [www.wisaltwise.com](http://www.wisaltwise.com), and include [them at the end of this training supplement.](#)

## **THE PROJECT TEAM**

### **Project Manager**

Susan Jones - Dane County, Land and Water Resources Department (Lakes and Watersheds)

### **Project Leader**

Connie Fortin - Fortin Consulting Inc.

### **Process Advisors**

Mindy Habecker - Dane County UW Extension

Kathy Lake - Madison Metropolitan Sewerage District

### **Technical Advisors**

Jeremy Balousek - Dane County, Land and Water Resources Department (Engineering)

JR Brimmer - City of Sun Prairie

Josh Churchill - UW Health

Phil Connors - Independent contractor

Angie Dahl - Epic

Dan Dean - Mad Plowing and Mowing

Amanda DePagter - Dane County, Department of Administration (Facilities)

Ryan Doescher - Olson Toon Landscaping

Chris Egger - University of Wisconsin-Madison

Mary Evers Statz - UW Health

Andrew Fritsch - Barnes Inc.

Phil Gaebler - City of Madison Engineering

Mike Gresch - Steve Brown Apartments

Greg Hall - Village of DeForest

Al Johnson - Wisconsin Department of Transportation

Jon Lindert - Strand Associates Inc.

Travis Raymond - UW Health

Conrad Richer - Dane County, Land and Water Resources Department (Parks)

Brooks Rolli - Olson Toon Landscaping

Tom Rosemeyer - Madison Water Utility

Michael Schafer - University of Wisconsin-Madison

Ryan Schwab - Dane County, Land and Water Resources Department (Parks)

Robert Scott - University of Wisconsin-Madison

Mike Sproul - Wisconsin Department of Transportation

LeAnna Wall - Wisconsin Department of Transportation

Robin Werner - UW Health

### **Contributors**

Tom Broadbent - Envirotech Services

Catherine Harris - Madison Metropolitan Sewerage District

Jessica Jacobson - Fortin Consulting Inc.

### **Reviewers**

Pam Dunphy - Dane County, Department of Public Works, Highway and Transportation

Cory Horton - City of Fitchburg

Jeremy Johnson - The Bruce Company