

9th Annual Road Salt Symposium



Sponsored By:
Fresh Water
Society

Minnesota
Pollution
Control Agency

Minnesota
LTAP

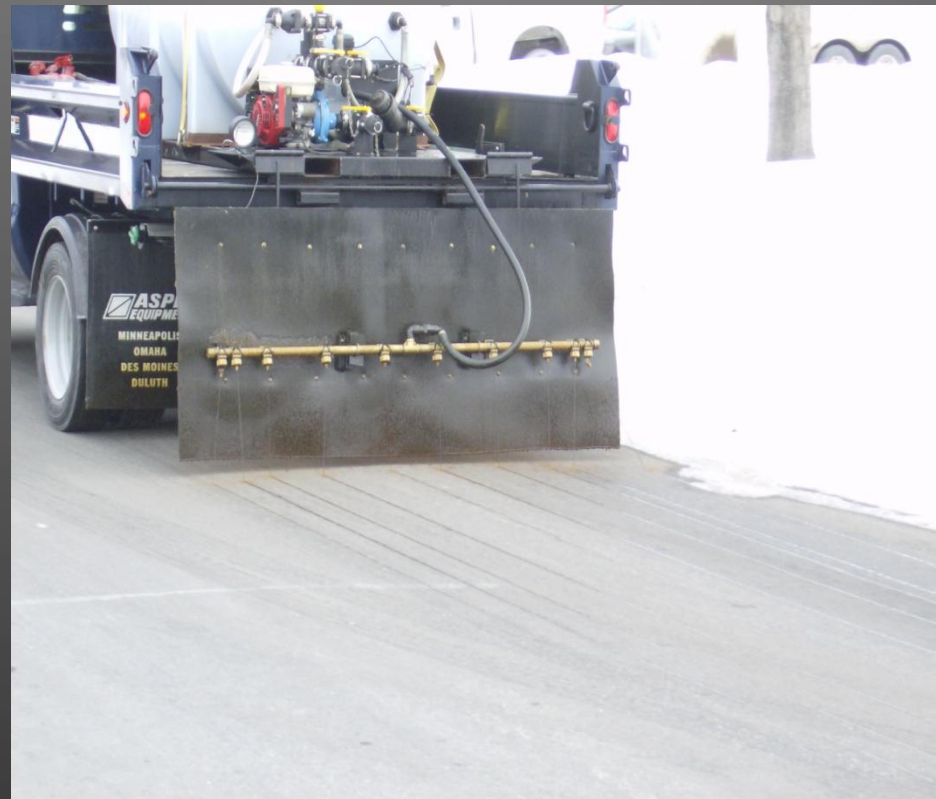
Fortin
Consulting,
INC.



Craig Eldred, City of
Prior Lake, Minnesota

Presentation Overview

- ▶ Anti-icing and De-icing
- ▶ Prior Lakes History with each
- ▶ Our Experiences
- ▶ Research Projects
- ▶ Quick Tips
- ▶ Rewards





Historical Applications and Equipment >>



Implementing the Anti-icing Program >>

What is he doing spraying on such a beautiful day for?

Brew Master's Facility







Liquid Loading and Unloading area >>



12/28/2009



12/28/2009



12/03/2009



12/29/2009



Most Recently Purchased Winter Maintenance Vehicle >>

Elliptical Box, 200 gallons of Liquid Storage, Falls Salt
Special Material Applicator, Force America 6100 Controller



BLIND LAKE

RESEARCH



DE-ICING

The City of Prior Lake Public Works Department, Engineering Department and outside sources are studying the travel and impacts of chlorides from de-icing products in the Blind Lake Watershed area.



Targeting Chloride Reduction:

- ❖ Working in a confined water shed consisting of 82.5 acres and 1.6 miles of residential streets
- ❖ Utilization of Liquids only for Anti-icing and De-icing winter maintenance activities
- ❖ Initial Chloride levels in 2008 were in a range of 142 and 97 mg/l

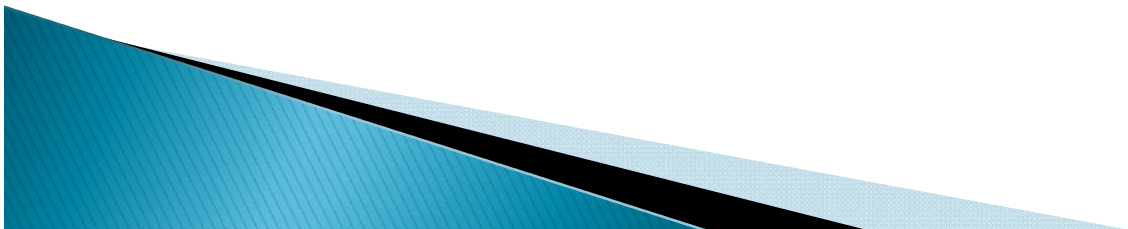
Results from winter of 2008-09:

- ❖ 702.2 gallons of salt brine were applied
- ❖ 2,451.3 gallons of blended products were applied
- ❖ Chloride levels were 120 and 50 mg/l in the same period as 2008
- ❖ Levels were lowered by 20 to 40 mg/l respectively



Product Mixtures Utilized and Tested in 2009

Blends	Pavement Temperatures Ranges	Rate per lane mile	Costs per lane mile	Results
100% Salt Brine	15 degrees	50 gallons	\$3.50	Cheapest alternative great for frost prevention
80% Salt brine 10% Geomelt 5% Calcium or Mag Chloride	15 degrees or below	35 – 40 gallons	\$12.10	Excellent Results “Super Mix”
85% Salt brine 15% Ice Ban	15 degrees or below	35 – 40 gallons	\$11.60	Works well a little more expensive additional Ice Ban
85% Salt brine 10% Ice Ban 5% Mag or Calcium Chloride	15 degrees or below	35 – 40 gallons	\$10.50	Receptive mixture, works well
85% Salt Brine 10% molasses 5% mag or calcium chloride mixed 50/50 with “Super Mix”	15 degrees or below	35 – 40 gallons	\$10.90	LTAP grant study, new mixture. Will continue to test and include in pre-wet study. Worked well in anti-icing practice



- ▶ Research Products or materials
- ▶ Visit Experienced Agencies
- ▶ Training; LTAP, CTAP, Manual of Practice for an Effective Anti-icing Program, APWA Anti-icing/RWIS CD, AASHTO Clear Roads CD Series, Attend APWA Snow Conference, This Salt Symposium
- ▶ Radar or Ground speed controls
- ▶ Purchase storage tanks to hold material
- ▶ If you make your own brine, Salometer
- ▶ Calibration is critical, utilize Minnesota Snow and Ice Control Field Book
- ▶ Weather service or on-line applications
- ▶ Take a lot of pictures



Quick Tips or Information

Rewards and Benefits

- ▶ Reduction of salt purchased
- ▶ Reduced cost associated with pre-treated products
- ▶ Reduced labor costs
- ▶ Return to bare pavement on collector streets
- ▶ Reduction of chloride impacts on water sheds
- ▶ Reduction of labor and equipment costs for winter maintenance, street sweeping and environmental structures and outlets







Questions or Comments?



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