Chloride Pollution: What you need to know & what you can do about it Erica Sniegowski, Program & Project Manager

Understanding Our Urban Watershed













It washes down storm drains...

Understanding Our Urban W

Salt doesn't stay put



...to local waterbodies.

Where is causes harm to wildlife, and makes water unsuitable for drinking



Underst



Road salt use is increasing



⁽Novotny et al. 2007).

Understanding Our Urban Watershed

...and it's sticking around



⁽Novotny et al. 2007).

ATERSHED

Understanding Our Urban Watershed



Chloride Standards





Chloride Standards

- Minnesota has both acute and chronic standards for chloride in water
- Chloride standard:
 - 230 mg/L for a 4 day average or
 - a maximum of 860 mg/L



Nine Mile Creek has too much salt



Understanding Our Urban Watershed



Nine Mile Creek has too much salt



Understanding Our Urban Watershed

Nine Mile Creek has too much salt





Invisible but not gone

- Permanent pollutant
- No method to remove it
- No method to stop it









It's not just lakes and creeks:

Groundwater is contaminated too









\$50 of salt = \$1500 in damage

Understanding Our Urban Watershed

http://www.deeproot.com/blog/blog-entries/how-to-avoid-salt-damage-to-trees

http://www.extension.umn.edu/distribution/naturalresources/DD1413.html



Salt: the Impossible Polluter?

- A little pollutes a lot
- Cleaning it out of our lakes and streams is NOT an option

But.....

• It keeps us safe

Where is the balance?





Use just enough salt to allow for mechanical removal of snow and ice.













1. Shovel

Clear walkways before snow turns to ice. Apply salt only if needed.



2. Select

Salt doesn't melt ice below 15°F. Use sand for traction when it's too cold, or a different de-icer.

3. Scatter

Use salt only where critical. Aim for 3 inches of space between salt granules.

4. Sweep

Clean up leftover salt, sand, and de-icer to save and reuse as needed.





linnesota, land of 10,000 salty lakes Shovel first.

If you need salt, use: ^{1/2} scoop or less for 125 sq ft (1 parking stall)

Salt pollutes our waters.





Connect to Resources



Stop-Over-Salting										
Home	How Salt Hurts	Pictures of Oversalting	Using Salt Wisely	Hire a Certified Applicator	Embracing Change	Legislation Can Help	For Applicators			

Road salt is permanently and irreversibly polluting Minnesota's waters.

To Our Fellow Minnesotans,

Over-salting happens anytime more deicing salts than needed are applied to roads, parking lots and sidewalks to melt snow and ice. Over-salting is 100% unnecessary pollution.



The chloride in deicers kills fish and hurts pets. It is <u>accumulating</u> in <u>drinking water</u> sources and cost millions in repairs to roads and bridges, buildings, furnishing and landscaping every year. Every teaspoon of deicer applied this winter will <u>permanently pollute</u> five gallons of water in our Minnesota <u>lakes</u>, rivers and ground water.

Our <u>fact sheet</u> explains why fears about <u>public safety</u> and lawsuits are the main reasons over salting occurs and how legislation to protect commercial applicators from lawsuits will reduce the amount of deicing salts used in Minnesota.

You can help!

- <u>Contact your legislator</u> to support limited liability legislation.
- Ask your winter maintenance professional to become Smart Salt Certified.
- <u>Use best practices</u>. Shovel early and often during storms. Find ways to avoid using deicers.
- Share this information with others.

Sincere Stop Over Salting

<u>StopOverSalting</u> (SOS) is a group of citizen volunteers who found common ground in their concerns about chloride pollution and advocate for strategies to reduce over salting and maintain safe winter surfaces on roads, parking lots and sidewalks.



Trainings

MPCA Smart Salting

- Roads
- Parking Lots & Sidewalks
- Winter Maintenance
 Assessment Tool



Winter Parking Lot and Sidewalk Maintenance Workshop

This training offers information about best practices for managing snow and ice on parking lots and sidewalks.



These practices will help you save money, time, and the environment.

An optional test is offered at the workshop to earn Minnesota Pollution Control Agency (MPCA) Level 1 Certification in Snow & Ice Control Best Practices. Certified individuals are listed on the MPCA website.

Training Topics:

- Material Selection
- Application Rates
- Equipment Calibration
- Deicing & Anti-icing
- Practical Tips

Understanding Our Ur

- New Maintenance Methods
- Environmental Effects

RILEY PURGATORY BLUFF CREE

Funding for these workshops is provided by MPCA through a grant from US EPA, Section 319 Nonpoint Source Management Fund, and matches from local partners. Two dates to choose from!

Oct 20 or Nov 17

9:00 AM - 2:00 PM

Nine Mile Creek Discovery Point 12800 Gerard Dr. Eden Prairie, MN 55346

Get Certified

Save Money

Protect Water



Who should attend? Contractors, staff and volunteers who maintain parking lots and sidewalks, property managers and snowplow drivers.

Training is free (includes lunch).

 Registration is required.

 October workshop registration:

 http://

 octoberwinterworkshop eventbrite.com

November workshop registration: http:// decemberwinterworkshop.eventbrite.com

Questions?

Contact Gael at 952-204-9691 or





- Introduction of MAWD resolution
- •Support of Limited Liability Legislation
 - —HF 3577
 - -SF 3199





District Rules Revisions



All projects triggering the Stormwater Management Rule except those on singlefamily home properties will be required to implement a chloride-management plan that, at a minimum,

1. designates an individual responsible for management of chloride use (for ice and snow removal), and

2. identifies an individual who has been certified by the Minnesota Pollution Control Agency as having completed its salt application training and is responsible for implementation of the training.



Permeable Pavers



Organizational









\$50,000 in grant funds available yearly for chloride reduction projects





Understanding Our Urban Watershed







shed



• Liquid brine



- Apply up to 48 hours before a storm
- Prevents snow and ice from bonding to pavement
- Requires less material than deicing (~1/3rd)









Bloomington Public Schools Salt Use					
Season	Application Amount and Material Type				
2009-10	212.5 tons of sand/salt mix				
2010-11	187.5 tons of sand/salt mix				
2011-12	87.5 tons of salt				
	1,363.5 gallons of brine (about 1.7 tons of salt)				



Winter Maintenance on School Grounds

Erica Sniegowski, Nine Mile Creek Watershed District Craig Nordstrom, Bloomington Public Schools (Retired) Joe Morin, SFM















City's Paradigm Change



Education Provided a New Paradigm

From

Bare pavement ASAP



To Clearing snow and ice "the right way"



Simple Steps to Balanced Priorities



- Annual <u>calibration</u> of equipment
- Base <u>application rates</u> on pavement temperature
- Apply salt to the crown of the road
- Use <u>'low temperature' salt</u> during cold weather events
- Replace past practices with formal <u>policies</u>





City of Richfield Results

Historic Salt Usage



Snow Season	" of Snow	Ton Applied	App Rate
05/06	49.2	1500	30 ton/in
06/07	48.6	1500	31 ton/in
07/08	60.5	1668	28 ton/in
08/09	56.8	1754	31 ton/in
09/10	40.7	1537	38 ton/in
10/11	87.0	986	11 ton/in
11/12	27.0	456	17 ton/in
12/13	80.4	1,483.5	18 ton/inch
13/14	80.9	1,402.5	17 ton/inch
14/15	37.2	787	21 ton/inch







Nine Mile Creek:

www.ninemilecreek.org/get-involved/learn/salt-reduction/

MPCA:

stormwater.pca.state.mn.us/index.php/Educational_resources
 for Smart Salting (S2)

Erica Sniegowski, esniegowski@ninemilecreek.org



Twin Cities Metro Area Chloride Management Plan http://www.pca.state.mn.us/r0pgb86

Nine Mile Creek Chloride TMDL: <u>http://www.pca.state.mn.us/udgx9c5</u>