

Learn more at:

**Shingle Creek Watershed:**

[www.shinglecreek.org](http://www.shinglecreek.org)

**Riversides Stewardship Alliance:**

[www.riversides.org/review/riversides/low\\_salt\\_diet.htm](http://www.riversides.org/review/riversides/low_salt_diet.htm)

**Duluth Streams:**

[www.duluthstreams.org/understanding/impact\\_salt.html](http://www.duluthstreams.org/understanding/impact_salt.html)

**Center for Transportation Studies:**

[www.mnltap.umn.edu/pdf/snowicecontrolhandbook.pdf](http://www.mnltap.umn.edu/pdf/snowicecontrolhandbook.pdf)

[www.mnltap.umn.edu/resources/snow.html](http://www.mnltap.umn.edu/resources/snow.html)

**The Salt Institute:**

[www.saltinstitute.org/30.html](http://www.saltinstitute.org/30.html)

**US Geological Survey:**

[waterdata.usgs.gov/mn/nwis/uv?05288705](http://waterdata.usgs.gov/mn/nwis/uv?05288705)



**Shingle Creek  
Watershed Management Commission**

3235 Fernbrook Lane  
Plymouth, MN 55447

Phone: 763.553.1144

Fax: 763.553.9326

E-mail: [judie@jass.biz](mailto:judie@jass.biz)

[www.shinglecreek.org](http://www.shinglecreek.org)

# A Low-Salt Diet for Shingle Creek

## A chloride reduction guide for parking lots and private properties

D R A F T June 5, 2006



**Shingle Creek  
Watershed Management Commission**

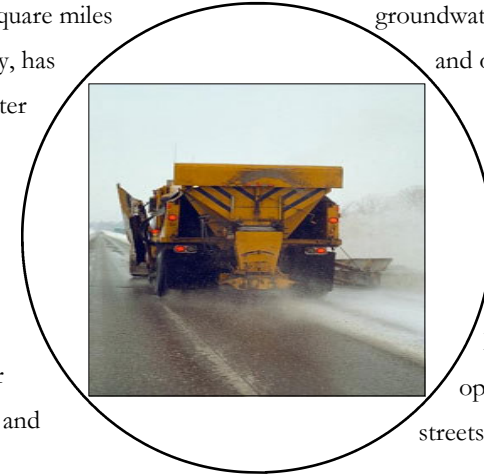
# A Low-Salt Diet for Shingle Creek

Shingle Creek, which drains 43 square miles in nine cities in Hennepin County, has been designated an Impaired Water by the Minnesota Pollution Control Agency and the Environmental Protection Agency. The Creek has high levels of chloride contamination, high enough to impact or even kill fish and other aquatic life. Many other streams and lakes in the metro area also have elevated chloride concentrations in their waters, and state and federal agencies now recognize that chloride contamination of waters is a major issue throughout the "Snow Belt." The source of this chloride? Most of it comes from road salt.

Road authorities such as cities, counties, and state transportation departments apply road salt throughout the winter season to control ice buildup on roads. About 85 percent of the chloride in Shingle Creek is estimated to come from those sources.

However, private applicators clearing parking lots, walkways or private streets account for up to 10 percent of this chloride. The rest comes from

groundwater, individual homeowners, and other smaller sources.



### Where does the chloride come from?

We have high expectations for snow and ice control in Minnesota. Our snowplow operators take pride in clearing streets and highways as quickly and efficiently as possible. We expect our roadways and parking lots to be cleared

to pavement and ice-free within a very short time after a snowstorm concludes. To accomplish this, snowplow operators use a lot of salt. The most common form of road salt is sodium chloride.

All that salt has to go somewhere. And where it goes is into our lakes, streams, and wetlands. The Shingle Creek Watershed Commission studied how to bring chloride levels in Shingle Creek down to the state standard, and determined that it would take a 71 percent decrease in the amount of salt applied in the watershed to meet the state and federal standard.

*Road salt used for ice control on streets and highways accounts for about 85 percent of the chloride in Shingle Creek.*

# Salt use questions and answers

## How much is too much?

Excessive chloride in our lakes and streams stresses fish and other aquatic life. Prolonged exposure to chloride concentrations as low as 230 mg/L can harm aquatic organisms. Testing in Shingle Creek and the storm sewers draining into it recorded concentrations averaging between 150-250 mg/L. The highest concentration recorded in Shingle Creek was over 8,000 mg/L. At that level, water in the creek can be toxic to fish.



Salt damage on roadside trees

Using too much road salt has other impacts. The corrosive salt causes cars and other metals to rust, and causes bridges to deteriorate. Salt spray damages lawns, trees, and

other vegetation. Eventually the salt works its way into our groundwater, where it can contaminate our drinking water.

## How does deicing salt work?

Salt lowers the freezing point of water. Sprinkling salt on an icy road or sidewalk turns snow and ice into brine (salty water).

## When should I use salt, and how much?

Use deicers to make snow and ice removal easier, not to melt them away. Remove as much snow and ice using other means first, then use salt (or an alternative deicer) to break down remaining ice buildup.

Use just enough deicer to melt through the snow and ice and leave a “honeycomb” pattern of melt holes. This will break the bond between the ice and the pavement so a plow, shovel or flat hoe can slide underneath.

If you need traction in an icy spot, use sand instead of salt, or mix a small amount of salt into a larger amount of sand. If you do use salt, there are ways to calculate just how much to use—see [www.shinglecreek.org](http://www.shinglecreek.org) for more information about best practices for salt application.

## The city uses salt on the streets, why shouldn't I in my parking lot?

The cities in the Shingle Creek watershed, Hennepin County, and MnDOT are all required to begin using less salt to bring Shingle Creek back down below the chloride concentration standard. Many cities are moving away from using salt at all, except under certain conditions. Cities, counties, and state highway departments are investing in new types of technology and materials that allow them to use less salt without compromising public safety. Plow operators are getting special training to help them fine-tune their ice control practices.

## What can I do?

There are a growing number of alternatives that are chloride-free or that work faster so less can be used. If you only need to keep a small area clear these might be good options.

Keep your salt pile dry and prevent brine runoff by storing salt in a building or covering with tarps. Clean up any spillage from loading or unloading trucks. During winter thaws and in the spring-time, sweep up any salt and sand residue and dispose of it in the trash.

Everyone who adds chloride to the environment needs to rethink their practices. The best thing you can do is to **use salt smarter**. Don't use salt routinely—use it only when necessary. Learn how

*Even small reductions can add up when everyone does it.*

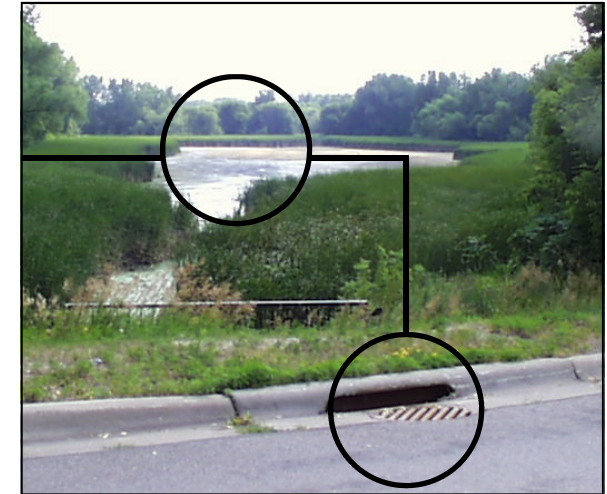
salt works, and you will use less salt to control ice. That's better for Shingle Creek, the environment, and your bottom line.

## What's the next step?

Cities, the county, and MnDOT will develop or adjust their Salt Management Plans and change their practices as necessary to progress toward the

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watershed's chloride reduction goals. The watershed commission will offer training to private contractors so they understand how they can use Best Management Practices to use road salt more effectively. Finally, the commission will continue to monitor chloride levels in Shingle Creek and inform the public about how these changes are affecting water quality and ecological integrity in Shingle Creek.

The **Shingle Creek and West Mississippi Watersheds** cover 67 square miles in ten northwest Metro area cities. Their Watershed Management Commissions are joint powers boards of citizens from those cities who are charged with protecting and improving water resources in the watershed. The Commissions help prevent flooding; monitor, protect, and improve water quality in lakes and streams; protect fish and wildlife habitat; protect wetlands and groundwater; and help control erosion.

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