



**Minnesota
Pollution
Control
Agency**

Shingle Creek

TMDL: Chloride

wq-iw8.02a • September 2006

Public Comments

Submit in writing to:
Tim Larson
520 Lafayette Rd N
St. Paul, MN 55155-4194

Deadline:

October 24, 2006
4:30 p.m.

The MPCA listed Shingle Creek as an impaired water in 1998, under Section 303(d) of the federal Clean Water Act. Shingle Creek, from its headwaters in Brooklyn Park at the junction of Bass Creek and Eagle Creek to its confluence with the Mississippi River in Minneapolis, is impaired for aquatic life. Data have shown excessive levels of chloride in these waters.

Shingle Creek is located in the northwestern portion of the Minneapolis-St. Paul metropolitan region. It is part of the larger upper Mississippi River basin.

The Shingle Creek watershed covers 44.5 square miles and nine cities are in the watershed; Brooklyn Center, Brooklyn Park, Crystal, Maple Grove, Minneapolis, New Hope, Osseo, Plymouth and Robbinsdale.

TMDL background

Impaired waters are those that do not meet water-quality standards designed to protect their federally designated uses including recreation, aquatic life, agricultural irrigation, livestock watering and others. Examples of pollutants that can land a lake or stream on the impaired list include sediment, nutrients, bacteria, low dissolved oxygen and bioaccumulative toxins including mercury and PCBs. Minnesota's Impaired Waters list currently includes 2250 impairments on 1257 waters.

The Total Maximum Daily Load (TMDL) process provided in federal law begins with a water quality assessment and listing of those waters that do not meet standards. All the sources of the pollutant causing the

impairment are identified and a TMDL study allocates needed reductions among them. A restoration plan is developed and implemented and water quality is evaluated. A lake or stream may need more than one TMDL depending on the listed impairments. Shingle Creek is also impaired for aquatic life based on low dissolved oxygen levels and indices of biotic integrity for fish and invertebrates.

The problem

Chloride can harm aquatic organisms by disrupting natural processes that help regulate their metabolism. The low dissolved oxygen and aquatic life TMDLs will begin soon and will help determine the extent to which excess chloride is having a harmful impact on aquatic life in Shingle Creek.

Sources of chloride

The main source of chloride contributing to the impairment of Shingle Creek is runoff containing deicing products. Chloride is a main component of most deicing products, the most of which is road salt. Road salt is used throughout the Shingle Creek watershed by city, county and state road maintenance authorities for winter snow and ice control. A network of freeways, highways, and local roads, all of which eventually drain to Shingle Creek, crisscross Shingle Creek's watershed including Interstates 94 and 694, and U.S. Highways 169 and 100.



Shingle Creek Culverts, I 94

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In addition, private applicators and homeowners use road salt or similar products containing chloride to control snow and ice.

The report shows that the sources of chloride include:

1. road maintenance authorities 82 percent
2. private commercial applicators seven percent
3. salt storage facility runoff five percent
4. ground water five percent
5. residential one percent

Percentages are approximate.

Reductions needed

The critical condition for the chloride impairment in Shingle Creek is winter runoff. A reduction of approximately 71 percent in chloride levels is needed to achieve water quality standards and avoid future water quality impairments. Chloride reductions will mainly come through the implementation of best management practices (BMPs) by the road maintenance authorities and private commercial applicators.

Implementation plan

Clean up may take one to 15 years. Annual operator training and equipment calibration will begin immediately. Other BMPs, which involve buying new equipment, retrofitting existing infrastructure, converting to new products and new product development, will be phased in over the next several years.

The nine cities in the watershed created a joint powers organization, the Shingle Creek Watershed Management Commission (SCWMC) in 1984. The SCWMC is coordinating the TMDL implementation plan development and implementation for its member cities. Hennepin County and the Minnesota Department of Transportation (MnDOT) also cooperated in the development of the TMDL and implementation plan.

Stormwater management

The nine municipalities maintain roads in their jurisdictions. Hennepin County and MnDOT maintain other roads. The nine communities, Hennepin County and MnDOT are permitted municipal separate storm sewer systems (MS4s) under the Environmental Protection Agency's National Pollutant Discharge Elimination System (NPDES) Stormwater Program. These MS4s are regulated through state issued permits. The MS4s have Stormwater Pollution Prevention Program (SWPPP) plans as part of their permit

requirements. These plans include measures for the reduction of chloride.

Voluntary reductions

The commercial and private application of deicing products is not regulated. The MPCA offers a voluntary Commercial Applicator Certification Program that provides education and training on the proper methods and rates for applying deicing chemicals.

Public involvement

Public notice of the draft TMDL is posted in the State Register and is open for comment from September 25th to October 24th. Submit written comments before 4:30 p.m. on October 24, 2006 to:

Tim Larson
520 Lafayette Road North
St. Paul, MN 55155-4194

The draft TMDL report is available at
www.pca.state.mn.us/water/tmdl.html.

For more information

Contact Tim Larson at 651-282-5559 or timothy.larson@pca.state.mn.us for more information on the Shingle Creek chloride TMDL project.

General information about TMDLs is available online.

Minnesota Pollution Control Agency:
www.pca.state.mn.us/water/tmdl/

U.S. Environmental Protection Agency:
www.epa.gov/owow/tmdl/

TMDLs.net - America's Clean Water Foundation and the Association of State and Interstate Water Pollution Control Administrators: www.tmdls.org/

