

## **Subcommittee on Minnesota Water Policy Chloride Management Plan**

This is my revision of the MPCA summary of the Chloride Management Plan (CMP). I believe there are two topics for potential legislation. The first could provide training and limited liability protection for certified applicators. The second topic would phase out home water softeners that regenerate based on time rather than water consumption. Is related to these topics would focus on policy with little impact on the state budget. The CMP report is over 100 pages in length and a link to the complete plan is provided below.

Jim Stark

### Statewide Chloride Management Plan Highlights: (Effectively managing salt use to protect Minnesota's lakes and streams, MPCA):

Reducing chloride use is necessary in order to restore degraded waters and to protect all water resources. There are multiple sources to consider and a variety of options to reduce chloride. The CMP outlines a strategy to reduce salt (chloride) use to protect our lakes, rivers, and other water resources. The CMP incorporates water quality conditions, sources of chloride, salt reduction, and protection strategies, and monitoring recommendations, as well as measurement and tracking of results.

Chloride enters our waters from a variety of sources, including salt applied to roads, parking lots and sidewalks, water softener brines discharge to municipal wastewater treatment plants, water softener discharge to septic systems, agricultural fertilizer, industrial discharge, land application of manure, application of wastewater treatment plant (WWTP) sludge, and dust suppressant. Elevated concentrations of chloride can kill fish, invertebrates, and some plant species. Chloride can also harm pets and wildlife if they consume deicing materials. The MPCA has adopted the United States Environmental Protection Agency's recommended water quality criteria for chloride: acute (short-term) exposure is 860 mg/L, chronic (long-term) exposure is 230 mg/L. At levels exceeding the water quality standard of 230 mg/L, chloride is toxic to aquatic life.

From a statewide perspective, road salt use, fertilizers, and discharges from WWTPs are the primary sources of chloride. In urban areas, winter maintenance activities are typically the primary source. In rural areas, water softening represent the largest point source. Dust suppressants, fertilizers, and animal manure can also be significant sources of chloride. The trend of increasing chloride concentrations in lakes, wetlands, streams, and groundwater is expected to continue. Treating waters already contaminated by chloride is impractical and cost-prohibitive. A University of Minnesota study found that about 78 percent of salt applied for winter maintenance in the TCMA is either transported to groundwater or stored in lakes, streams, or soil. Groundwater monitoring data collected by the MPCA from 2013-2017 found that 16 percent of monitoring wells tested in shallow sand and gravel aquifers in the TCMA exceeded the state chronic standard for surface waters for chloride, primarily the result of deicing salt application.

Water quality isn't the only concern related to high levels of chloride in the environment. Chloride can damage road and bridges and water treatment facilities that increase maintenance and repair costs. It can also damage vehicles due to corrosion to parts such as brake linings, frames, bumpers. Estimates of damage to infrastructure, automobiles, vegetation, human health, and the environment

due to road salt range from \$803 to \$3,341 per ton of road salt used.

Reducing chloride use comes with a number of challenges. These included meeting the public's winter travel expectations, providing water suitable for drinking and appliance operations, and economic losses in agricultural and industrial settings. Currently, there are no environmentally safe and cost-effective alternatives for melting ice on paved surfaces, and few options to eliminate chloride use in water softening and agriculture. Therefore, the continued use of salt as the

A key challenge in reducing road salt use is balancing the need for safety with the growing expectation for clear, dry roads, parking lots and sidewalks. Public agencies and organization have made progress in improving winter maintenance while reducing salt use. Greater improvement is needed in in and around commercial and public spaces (parking lots and sidewalks,

We need to educate the public on the balance between necessity and preference with water softening practices. Some municipalities offer softening prior to distribution, and many older in-home softening units are less efficient than newer models. These various factors often lead to more chloride use than is necessary

The CMP provides guidance, resources, and information to individuals and organizations to help them make important decisions for reducing the use of chloride. The implementation strategy identified in the CMP is a performance-based approach to reducing chloride. This approach allows stakeholders and regulators flexibility and opportunity to develop specific chloride management strategies that are practical for their individual situations.

Road salt and water softening are two greatest sources of chloride to the environment and many of the reduction strategies focus on how and where implementation strategies should be focused. For the protection of surface and ground water, implementation is encouraged statewide.

I believe there may be two topics of potential legislation. The first could provide training and limited liability protection for certified applicators. The second topic would be a phase out requirement of household water softeners that regenerate based on time rather than water consumption This would reduce salt consumption and a homeowner's cost for purchases of softening salts. These topics focus on policy with little impact on the state budget.

The CMP report is over 100 pages in length and a link to the complete plan is provided below. The statewide CMP provides the overall framework for the implementation strategies that are necessary to protect and restore our water resources. Section 5.4 of this plan provides the implementation activities for specific audiences and all sources of chloride.

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