

## **Policy Committee Meeting Agenda**

Clean Water Council

April 24, 2026

9:30 a.m. – 12:00 p.m.

[WebEx Only](#)

*Policy Committee: John Barten, Rich Biske (Chair), Gail Cederberg, Kelly Gribauval-Hite, Chris Meyer (Vice Chair), Peter Schwagerl, and Jessica Wilson*

### **9:30 Regular Business**

- Introductions
- Approve today's agenda and previous meeting minutes
- Chair update
- Staff update

### **Public Comment**

Members of the public who would like to provide comment about something not on the agenda are welcome to do so at this time.

### **10:15 (DISCUSSION ITEM) Chloride de-icers policy statement**

The chloride de-icers policy statement has been further revised since our last meeting. Changes are concentrated around the summarized recommendations list, the description of the audience and purpose, and the expanded versions of the recommendations at the end. Please review and come prepared to discuss.

### **12:00 Adjourn**

**Policy Committee Meeting Summary**  
**Clean Water Council (Council)**  
**March 27, 2026, 9:30 a.m. to 11:30 p.m.**

**Committee Members present:** John Barten, Rich Biske (Chair), Gail Cederberg, Kelly Gribauval-Hite, Chris Meyer (Vice Chair), Peter Schwagerl, and Jessica Wilson.

**No members are absent.**

To watch the Webex video recording of this meeting, please go to <https://www.pca.state.mn.us/clean-water-council/policy-ad-hoc-committee>, or contact [Brianna Frisch](#).

**Regular Business**

- Introductions
- Approve today's March 27<sup>th</sup> meeting agenda and February 26<sup>th</sup> meeting summary, motion by John Barten, seconded by Chris Meyer. Motion carries unanimously.
- Chair update
  - We received compliments for hiring Jen Kader as the Council's Administrator, specifically from Representative Heintzeman. Jen did a great job representing the Council at the legislature this week at the House Legacy Finance Committee.
  - There are several bills in the legislature on water that the Council is tracking. We should point out a few. The certified salt applicator (HF793, SF492), rebate program to replace time-based water softeners (HF3324, SF3519), and Jen has a large list to be mindful of as well. Council members can review the bills that Jen has collected, to see if there are any to add or track closer. The deadline to introduce bills is today, so it will be following progress at this point.
- Staff update
  - At the House Legacy Finance Committee meeting, there were a few items to bring back to the Council. There were questions about the Clean Water Fund (CWF) investment in infrastructure of providing treatment for drinking water. There was encouragement for the Council to look at that area. Another comment was regarding Aquatic Invasive Species (AIS), looking at treating it. The Council has a resolution that the CWFs would not be treated for AIS, but there is a role for prevention. A committee member would like to see the Council work to address it.
  - Next round of CWF proposals are available for Council members to review.

**No Public Comment** (*Webex 00:35:30*)

**Large-volume Water Users Policy Statement** (*Webex 00:36:00*)

At the last meeting, some final changes were made to the policy statement, focused mostly on organization and responsible parties. This is to review the draft and prepare it for sending on to the full Council. Additionally, some time will be spent identifying next steps, to finish this policy statement.

*Discussion:*

- Rich Biske: This policy statement looks good. Thank you to Bonnie Keeler (University of Minnesota) for her input. We would like to have a motion at the end of this discussion.
- Jen Kader: From the last meeting, the Council wanted to keep the summary statement at the top of the policy. If people do not go further than the first page, they at least are reading this info. It does repeat some of the language but is not too redundant. The bullets reflect the revised language in the sections below. Otherwise, there are only a few changes to the language from previous versions. One item to discuss is whether the Committee wants to expand more on why the Environmental Quality Board (EQB) report was helpful (page 3). It could also be left alone because it is in the background section. In the recommendations section, it has been cleaned up based on the previous meeting discussions. The groups identified as the parties responsible for the actions should also be reviewed accurately. This is to verify it is correct before the full Council approval.
- Jessica Wilson: This is a good background baseline document, in where we are at in responding to this emerging risk and threats.

- Tannie Eshenaur, Minnesota Department of Health (MDH): The Interagency Groundwater Drinking Water team worked with EQB on that report.
- *Motion by John Barten to adopt policy statement and move to the full Council. Seconded by Jessica Wilson.*

Further Discussion:

- Peter Schwagerl: I believe we want agency feedback before we formally adopt the policy statement.
- Jason Moeckel, DNR: Regarding draught plans, we are focused on extreme climate versus extreme weather. This is specific to statewide draught, perhaps we should be specific about draughts. We are not talking about rain events; we are considering the impact of draughts. Document updated to reflect word choice.
- Peter Schwagerl: Regarding 1c., what mechanisms there are, or are not, in cross-border groundwater regulation?
  - *Answer from Jason Moeckel, DNR:* From a groundwater standpoint there is not a lot of structural coordination. There are several boards and councils that collaborate across the state with surface level. However, I am not recalled examples of groundwater with nearby states and Canada.
  - Peter Schwagerl: Do we need more there? *Answer:* I understand the intent of collaboration, but if you want to make a stronger statement you can include establishing a structural mechanism or collaboration.
  - Rich Biske: Sounds like we are leaving it as, because it is inclusive of surface and groundwater.
  - Jen Kader: We can update it to include the wording of surface water and groundwater to be clear.
  - Wording updated to include change.
  - John Barten accepts the changes to amend the motion. Seconded by Jessica Wilson.
- *Motion carries unanimously.* The policy will move to the full Council meeting for review and approval.
- It would be good for the Policy Committee to review past policy statements, as a reminder of which policy statements have been adopted. It would help to keep track of relevant bills.

**Chloride De-icers Policy Statement** (*Webex 01:08:45*)

In December, this topic was introduced for additional work in January and February. A small work group from the Policy Committee along with staff from the Chloride Reduction Program at the Minnesota Pollution Control Agency (MPCA) worked together to produce a highly revised policy statement from the one on file, acknowledging that some of the previous recommendations were complete and that new research, policies, practices, or examples are available now that were not when the previous version was written. Both the previous and current versions are in the meeting packet.

*Discussion:*

- Jessica Wilson: Public road authorities have been working on chloride reduction for a long time. There has been significant progress in chloride pollution reduction and operational efficiency among municipalities. This policy revision reflects that evolution and maturity of the management of this pollution and reflects those changes that have been implemented over the past decade. There is no acceptable, affordable, efficient change for this issue currently. There is no mitigation either, it is a tricky problem to address. Some of the proposed changes include:
  - Items 1, 2, 4, 5, 6, and 7 are new ideas.
  - One item was removed. This is the MPCA ability to charge a fee. This was achieved, so it can be taken off the list.
  - Feedback from various groups (EQB, Upper Mississippi River Basin Association, Minnesota Cities Stormwater Coalition, etc.).
  - This policy statement helps set the framework for where we go next.

*Questions/Comments/Discussion:*

- Glenn Skuta, MPCA: There was a section with a note that Minnesota watersheds in 2024 proposed a regulatory approach to address chloride pollution. They are moving away from that position; it was true at the

time but has now changed. You may want to connect with Minnesota Watersheds on it. *Response from Jessica Wilson:* Yes, I will follow up. There still may be broad support for a regulatory approach. We could incorporate something else too. To make sure we represent the watersheds fairly.

- Rich Biske: Does the MPCA have a program like the Nitrogen Fertilizer tonnage fee that goes into a dedicated account. *Answer:* They do not have a fee. The idea is to model it after that.
- Sue Nissen (public member): I am a member of Stop Over Salting (SOS), a community volunteer who have worked since 2014 on chloride reduction in our communities. We need to be out in front of the chloride problem. How much are we going forward? I see all the road salt every year, and I know it is going into our water bodies permanently and impacting our infrastructure and those costs. It is a wicked problem. We have a lot of answers, and I am glad to see this list. I want to encourage this work, and the multifaceted approaches. I hope others are working on it too. We have a chloride problem, and we have a lot of answers. The leadership we have had with the MPCA is amazing. I am happy to see this policy be rewritten.
- Sarah Wein, Capitol Region Watershed District (CRWD) (public member): We submitted a letter of support to MPCA to encourage increasing the funding to the chloride reduction program. We all need to rise and support this work. This matters to us as a highly impervious Watershed District (WD). Road salt is a primary tool for managing snow and ice on our public and private road surfaces. We have one lake listed as impaired for chloride since 2014, another trending in that direction, and two others at high risk for it. In addition, we have observed and documented across different divisions in our office significant damage to stormwater infrastructure from chloride pollution. This includes damaged and failed underground stormwater BMPs as well as crumbling concrete and rebar in the trout brook interceptor storm sewer tunnel. The estimated repair costs are around \$12.5 million over the next decade. We have been thinking a lot about it. We are finalizing a chloride pollution prevention plan specific to our district. We know the support of the larger scale policy changes are where we need to move to, we need to expand the work. We need to continue to think of this on a larger scale. These items in the Council's policy statement closely align with the planning efforts we are working on, so we want to affirm our support for the Council's policy statement. We support this work.
- Paige Ahlborg, on behalf of the Ramsey County League of Local Governments, including a climate action group (public member): We are working on developing a model ordinance that Ramsey County can use, looking at licensure methods for private snow removal contractors within the county (trained and informed). Also, looking at collecting data on chloride use. From the WD side, we are working on a chloride reduction strategy. We have a robust stewardship grant program, and it has included a few projects on chloride reduction. We are increasing communication and outreach as well. There are a lot of things moving around this topic.
- Liz Stout, City of Minneapolis Public Works and Minnesota Cities Stormwater Coalition (public member): We have regulatory requirement around chloride. From the City of Minneapolis, we have been tracking our road salt use since 2001 and have seen a forty percent reduction in that period. However, we are not seeing that reflected in our water quality. So, it points to the fact that we need a larger scale, systemic approach. This policy statement of shifting direction away from that limited liability, where we weren't getting the traction, into places where we can get those wins, we are very supportive of that approach.
- Rich Biske: What is public awareness of this issue?
  - *Jessica Wilson:* There are several initiatives that communities are working on. The MS4 communities are required to do some education on chloride. There are other more expansive frameworks (such as Low Salt, No Salt Minnesota). There is Winter Salt Awareness Week, which has been regional for the last few years. It would be nice to have a larger state push towards it, to help the smaller communities do that local engagement. There could be more statewide push.
  - *Sue Nissen (public member):* I think about all the people I talk to. People assume it will break down in the environment. The shock when they realize it isn't going to do that. Their first question is what can we do instead? I think there is more awareness among applicators and managers. I do not think the public is informed. I think they know it is bad, but do not know how bad it is. It is qualitative information from my experience.

- *Jessica Wilson*: It is complex, and there are tradeoffs, it is a tricky pollutant. It is hard to have a quick conversation on it.
- *Jen Kader*: Next steps that might be helpful. There should be re-work to figure out the behavioral change items, as well as future needs (research, monitoring, standards, etc.) that could help folks enter the conversation for multiple pathways of trying to make a change. It helps clarify multiple pursuits at the same time. This could also be used by an audience and purpose, as a part of these recommendations. We can call out what is working, that could be enhanced or assisted as part of the recommendations – to continue the work.
  - *Response from Rich Biske*: Those are good options. I think there are distinct audiences to identify.
  - *Jessica Wilson*: Perhaps the next revision can include more of these details. For now, I think we can have a clean version move forward. We can continue to edit from there.
  - *Rich Biske*: That sounds good. I think by accepting those changes and looking forward we can include more with the audience piece. The problem statement could be expanded (looking at the infrastructure).
  - *Glenn Skuta, MPCA*: I appreciate the work being done on this policy, the revision of this work. As it is getting further along, I will need to connect more with MPCA staff. It is not directly under me, but I will be pulling those folks in, so we can fully engage in this work.
  - *Jessica Wilson*: Would there be any benefit in inviting Brooke Asleson to talk or answer questions about the MPCA smart salting work. I talk to her all the time, but she would be a good resource if anyone wants to connect.
  - *Jen Kader*: The chloride reduction program will come up for the April full Council meeting. So, keep that in mind, and you can ask her questions then. We can also invite her to a future meeting to talk more on the topic.
  - *Rich Biske*: Let's see how the next meeting goes, how many questions she receives for the program. If there are some that relate to policy, I think we can make that decision then. For the revision, if Jen and Jessica are willing to review and update, we can talk at the April meeting.

**Adjournment** (*Webex 02:10:30*)

# Reducing Chloride Pollution from Winter De-icing Chemicals

## Summarized Policy Statement

The Clean Water Council recommends that the State of Minnesota implement the following actions to reduce chloride pollution from winter de-icing chemicals (salts) in Minnesota surface and groundwater:

### *Data & Accountability*

- (1) Expand and strengthen chloride monitoring statewide

### *Research & Remediation*

- (2) Provide research funds to develop new technology, best management practices, and alternatives to chloride-containing de-icing chemicals.
- (3) Research and develop a remediation pathway.

### *Standards & Requirements*

- (4) Incorporate low salt design standards into building and site development.
- (5) Establish an occupational licensure program for winter maintenance professionals.
- (6) Require Smart Salting for state contracts and facilities.
- (7) Expand requirements for proper storage of de-icing chemicals.
- (8) Develop standardized labeling requirements for de-icing chemicals sold in Minnesota.

### *Awareness & Behavior Change*

- (9) Establish a statewide community-based social marketing campaign.
- (10) Sustain and enhance funding for the MPCA's Chloride Reduction Program including the Smart Salting training and certification program.

### *Risk & Liability*

- (11) Provide liability protection for certified applicators using best practices.

### *Incentives & Financial Sustainability*

- (10) Sustain and enhance funding for the MPCA's Chloride Reduction Program including the Smart Salting training and certification program.
- (12) Implement a granular salt fee.

These actions are further expanded under the "Recommendations" section.

## Problem Statement

Chloride pollution from the application of de-icing salt for winter maintenance of roads, parking lots, and sidewalks disrupts aquatic ecosystems, alters food webs, damages soil, damages infrastructure (estimated at \$1,700 to \$17,000 per ton of salt applied in 2023 dollars, MPCA Smart Salting for Roads Manual), and contaminates groundwater and drinking water. Many waterbodies in the state have elevated levels of chloride pollution with a trend that is increasing.

Winter de-icing salts are among the primary sources of chloride pollution in Minnesota waters.

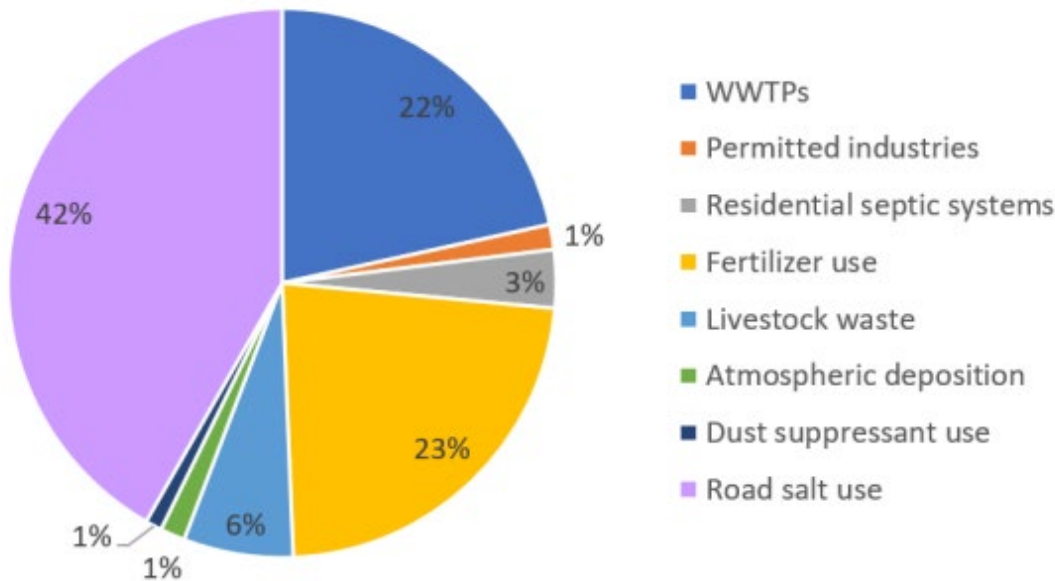


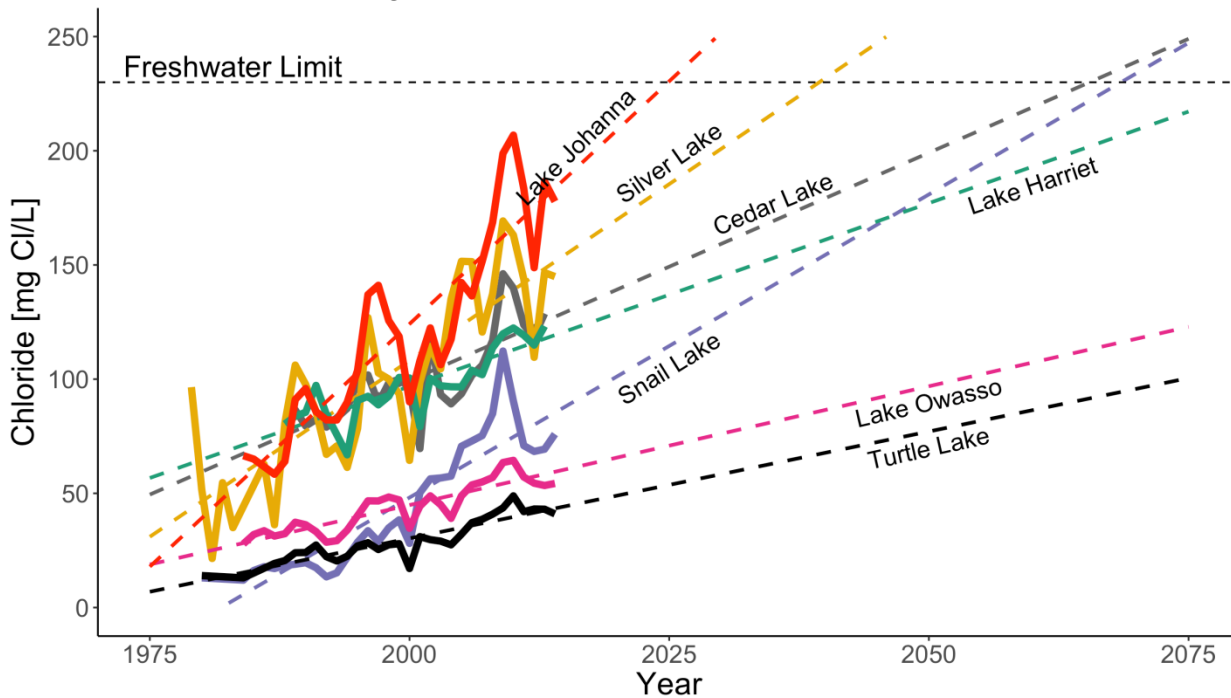
Figure 4: Fraction of annual chloride contributions from major point and nonpoint sources for State of Minnesota (Overbo et al. 2019)

*\*Please note that Road salt use is actually all de-icing salt applied to roads, parking lots, sidewalks, and trails.*

Statewide, approximately 404,000 tons of de-icer is used annually. It takes just one teaspoon in 5 gallons of water to exceed the water quality standard and become toxic for freshwater fish and other aquatic life under long-term exposure. The de-icing salts applied to hard surfaces eventually wash off and/or infiltrate, contaminating nearby lakes, streams, wetlands, and groundwater.

The Metropolitan Council published a report (Regional Assessment of Chloride in Select Twin Cities Metro Streams (1999 – 2019) which revealed rising chloride levels in nearly all streams. While the metro has been most heavily studied, chloride pollution is not a metro-only problem. The Minnesota Pollution Control Agency published its Milestones report (Water Quality Trends for Minnesota Rivers and Streams at Milestone Sites) in 2014 which identified significant, largely statewide increases in chloride concentrations. Chloride from de-icing salts has been attributed in part to the impaired waters designations for chloride impaired waters in St Louis, Rice, Jackson, Meeker, Le Sueur, Douglas, Lyon, and Kittson counties. A study of chloride impacts to groundwater predicts groundwater in multiple Twin Cities aquifers is likely to reach chronic chloride exposure thresholds by mid-century due to de-icing salt (McDaris, John R et al. "Documentation and Prediction of Increasing Groundwater Chloride in the Twin Cities, Minnesota." Ground water vol. 60,6 (2022): 837-850. doi:10.1111/gwat.13227). As of 2026, there are 68 impairments statewide for chloride, and 14 were added in just the last two years.

## Historical and Projected Chloride Concentration



Graph credit: Freshwater Society

Excess chloride contributes to a phenomenon often referred to as freshwater salinization syndrome, mobilizing heavy metals and creating a chemical cocktail (Kaushal et al., 2022). It leads to direct toxicity and biodiversity loss, macroinvertebrate sensitivity and reduced reproductive success, amphibian mortality, reduced zooplankton populations shifting phytoplankton communities from green algae toward cyanobacteria, density stratification and anoxic conditions which can trigger phosphorus release from sediments.

There is currently no alternative to de-icing salt that doesn't have other tradeoffs in effectiveness, cost, or other environmental harm. Chloride is considered a "permanent" pollutant because it does not degrade over time by typical environmental processes. Additionally, there is no practical way to remove chloride once it enters a waterbody so it accumulates. Therefore, it's prudent to control the pollutant at the source. This will require a broad range of knowledge building, behavior change, implementation activities, and policy. Additionally, a remediation pathway must be researched and established to address the existing and growing inventory of waters impaired by excess chloride.

In recent years, calls for more enhanced and comprehensive approaches to reducing chloride pollution have gained momentum. The Environmental Quality Board (EQB) identified chloride pollution as an emerging issue in the 2015 Water Policy Report. In September 2025, the EQB published the Groundwater Policy Report and in the chloride section noted gaps and opportunities, specifically, "Implementation of policies that support chloride reduction are needed to move beyond voluntary chloride reduction actions". The Upper Mississippi River Basin Association issued a resolution in 2022 calling for collaboration and progress on chloride pollution. Minnesota Watersheds adopted a resolution in 2024 calling for a regulatory approach to addressing chloride pollution. The Minnesota Cities Stormwater Coalition issued a position statement in 2025 expressing urgency and offering ideas for a comprehensive approach to meet the challenge.

## Audience and Purpose

This policy statement is intended for the Minnesota Legislature, the Minnesota Pollution Control Agency, other state agencies, and local governments responsible for water quality protection, transportation systems, and land use regulation. It is also directed toward private sector parties, including winter maintenance professionals, commercial applicators, property managers, developers, and de-icing product manufacturers whose decisions influence use across Minnesota. It applies statewide, with particular relevance to developed areas where impervious surfaces and winter maintenance activities are concentrated.

Chloride pollution from winter de-icing chemicals presents a growing statewide challenge with significant environmental, infrastructure, and economic impacts. While awareness has been increasing, continued progress depends on deepening that awareness across all groups (general public, decision-makers, practitioners, and industry leaders). At the same time, awareness alone is not sufficient to drive the scale of change needed. Progress will require translating awareness into more comprehensive and coordinated action.

The purpose of this document is to recommend a suite of actions to reduce chloride pollution from de-icing chemicals while maintaining public safety and effective winter maintenance. These recommendations are intended to inform legislative and regulatory decision-making, guide state and local program development, and support the adoption of best practices across public and private sectors.

This updated policy statement reflects an inflection point in chloride pollution management in Minnesota. Early efforts have focused on improving operational efficiency and advancing voluntary best practices, yielding measurable reductions in de-icing chemical use, particularly among public road authorities. However, chloride concentrations continue to rise in many waterbodies, indicating that additional progress will require a strategic shift beyond operational efficiency improvements in the public sector alone. A more comprehensive approach that integrates standards, incentives, research, accountability, and behavior change is necessary to make meaningful progress in source control and restoration of impaired waters.

This policy statement is issued by the Clean Water Council, reflecting its role in advising on strategies and investments to protect and restore Minnesota's water resources.

## Recommendations

- 1. Expand Strategic Chloride Monitoring.** Incorporate strategic chloride monitoring into the Minnesota Pollution Control Agency's surface water and groundwater monitoring programs to better track statewide conditions and identify trends. This should include strategic enhancements to the MPCA's ambient groundwater monitoring network and the Watershed Pollutant Load Monitoring Network to sufficiently capture patterns in high-risk areas and across the state. Enhanced strategic monitoring and reporting of conditions and trends will support early detection of problems in vulnerable waterbodies, evaluate the effectiveness of chloride reduction strategies, and provide the data needed to guide policy, prioritize investments, and engage with interested parties on addressing chloride pollution.
- 2. Fund Research and Innovation.** Referring to the Forever Green Initiative as a model, establish a research program to develop improved winter maintenance practices and alternatives to chloride-based de-icing chemicals. Chloride based deicers, acetate-based deicers, and carbohydrate products have their tradeoffs (cost, safety, effectiveness). Innovation in this sector is essential to develop a cost-effective alternative that can perform and is less harmful to the environment. A list of needed research areas can be found in Section 5 of the

TCMA Chloride Management Plan. Additionally, a partnership with the new Cold Climate Stormwater Center of Excellence (CCSCoE), co-led by the University of Minnesota (UMN) and University of New Hampshire, could be leveraged to do this work with their focus on developing, testing, and implementing stormwater solutions specifically for cold, snowy environments.

- 3. Research and Develop a Remediation Pathway.** While source control is and should remain a top priority, it is prudent to advance a solution to remediate surface water that is or is imminently impaired by chloride. The State should lead a feasibility effort to evaluate remediation options and assess engineering feasibility, cost and scalability, waste management challenges and opportunities, risks, tradeoffs, energy demand, ecosystem impacts, and policy barriers. The goal is to determine if, where, and how chloride remediation can be implemented effectively.

Case Study: Leveraging Watershed Based Implementation Funding, the Bassett Creek Watershed Management Commission and City of Plymouth studied options for delisting Parker's Lake. The study analyzed two primary alternatives to reduce chloride in Parkers Lake: 1) pumping lake bottom water directly to the sanitary sewer, and 2) pumping lake bottom water, treating it, and returning treated water to the lake. Two different treatment systems were evaluated for this alternative – a small-scale reverse osmosis system (RO) and an ion exchange system (IX). Ultimately, the decentralized treatment systems were cost prohibitive. More information on the study is available at [Parkers\\_Lake\\_Chloride\\_Dilution\\_Extraction\\_Tech\\_Memo\\_final.pdf](#)

- 4. Incorporate Low Salt Design Standards.** Infrastructure should be designed with winter maintenance in mind. Poor designs with inadequate snow storage, inefficient drainage, and snow removal obstacles drive salt overuse. Design improvements can reduce long term maintenance costs, improve safety, and minimize environmental impacts. The state should incorporate established low salt design principles into building and site development standards, state-funded project requirements, and sustainability frameworks such as the Minnesota B3 (Buildings, Benchmarks, and Beyond) Guidelines.
- 5. Establish an Occupational Licensure Program.** Establish a statewide occupational licensure program for winter maintenance professionals, or authorize counties to do so, to ensure consistent training and accountability. Licensure should include completion of an approved training program (such as the MPCA's Smart Salting certification program) and periodic continuing education. This approach would professionalize the industry, reduce overuse, and provide assurance to property owners and the public that winter maintenance services are being delivered safely and responsibly.
- 6. Require Smart Salting for State Contracts and Facilities.** Require Smart Salting certification, use of best practices, and proper storage of de-icing chemicals for all winter maintenance conducted under state contracts and at state-owned or state-managed facilities. Contract specifications should clearly define performance expectations, documentation requirements, and compliance measures, including calibration of equipment, application rate tracking, and recordkeeping. State agencies should incorporate accountability mechanisms such as incentives, audits, or penalties. By leading through its own operations and procurement standards, the State can set a strong example and accelerate adoption across the private sector.

A model contract for responsible snow and ice management that embraces best practices to minimize environmental impacts from de-icing chemicals while also maintaining safety and addressing liability risk allocation is available on the MPCA's Chloride Resources website.

- 7. Expand Proper Storage Requirements.** Proper storage of de-icing chemicals is a cost-effective and common-sense measure to reduce pollution.

Proper storage is required in communities regulated under the MPCA's Municipal Separate Storm Sewer System (MS4) program; the permit requires local controls for proper bulk storage of de-icing chemicals at commercial, institutional, and non-NPDES permitted industrial facilities. The MPCA's Chloride Reduction Model Ordinance Language document provides guidance for creating and implementing an ordinance.

The MPCA should review waste management programs and pollution discharge elimination programs to see where proper storage of de-icing chemicals could be further incorporated.

8. **Develop Standardized Labeling Requirements.** Develop standardized labeling requirements for de-icing chemicals sold in Minnesota to address misleading or incomplete information. De-icers can be labeled as “eco-friendly” or as an alternative to salt, but they may pose other problems for water quality. The MPCA should convene interested parties from a variety of sectors and lead a process to develop recommendations for new labeling requirements on packages of de-icing chemicals sold in Minnesota. Some key areas to establish requirements for include, but would not be limited to:
  - Ingredient disclosure
  - Verified environmental and safety claims
  - Realistic performance information
  - Clear application guidance

Improved labeling would support informed decision-making and reduce unintended environmental harm.

9. **Establish a Statewide Community-Based Social Marketing Campaign.** A coordinated, statewide community-based social marketing campaign is needed to increase awareness and drive behavior change. State leadership can amplify and align existing local efforts, similar to the successful We Are Water program.
10. **Sustain and Enhance the MPCA Chloride Reduction Program including the Smart Salting Training Certification program.** The MPCA Smart Salting training and certification program supports a range of audiences involved in de-icing decisions and operations, from private and public winter maintenance professionals who maintain roads, rural roads, parking lots, and sidewalks, to MnDOT, property managers, and community leaders. The Statewide Chloride Management Plan identifies the Smart Salting training program as the top implementation strategy to reduce salt overuse in the winter. Case studies have shown that participating organizations have been able to reduce salt use by 30% to 70%, without compromising safety. Further, the program provides low-interest loans and grants for equipment and retrofit projects.

The program has been exclusively funded by Clean Water Funds since January 2021. The State should sustain and enhance the MPCA’s **Chloride Reduction Program** to support the development and maintenance of tools, resources, policies, trainings and assistance programs to assist communities, private sector applicators, and property managers in their effort to reduce chloride pollution and at least half of the chloride reduction budget should be dedicated to adoption of best practices to reduce chloride from de-icing chemicals.

Lastly, growing the chloride reduction program in Minnesota is critical as adoption of best practices and other policies in this document could accelerate progress and would put more demand on the training and cost share programs.

11. **Liability Protection.** Provide liability protection to certified private salt applicators against slip and fall lawsuits who follow established best practices and document their work. The primary goal is to reduce overapplication driven by fear of litigation, encourage adoption of Smart Salting practices, and maintain safety while improving environmental outcomes.
12. **Implement a Granular Salt Fee.** To curb overuse, the costs of infrastructure and environmental damage should be partially shifted to those who overapply salt. A granular salt fee, modeled after the agricultural fertilizer fee, would incentivize more judicious use while generating revenue for and supporting financial sustainability of chloride reduction efforts. Funds could be reinvested in training and certification programs, research and innovation, implementation of best practices, and equipment and facilities upgrades. A fee structure would also enable improved tracking of salt use statewide, supporting benchmarking and accountability.

## Conclusion

Chloride pollution from de-icing chemicals is a growing threat to Minnesota's water resources. Because chloride accumulates and cannot be feasibly removed, proactive and coordinated action is essential. This policy framework outlines a comprehensive approach that combines incentives, standards, knowledge building, monitoring, research, and accountability. Together, these actions can significantly reduce chloride pollution while maintaining public safety, protecting infrastructure, and preserving Minnesota's freshwater resources for future generations.