

Staff Report



To	City Council
Service Area	Infrastructure, Development and Enterprise Services
Date	Monday, May 25, 2020
Subject	Council support for Lake Erie Source Protection Authority "Winter Maintenance Chemicals: Challenges and Opportunities for Change"

Recommendation

1. That City Council provide the Lake Erie Source Protection Authority with a letter of support including resolution in support of all of the recommended actions included in SPC-19-12-02 to address the Over-Application of Winter Maintenance Chemicals
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Purpose of Report

The purpose of this report is to seek a Council resolution in support of the recommendations outlined in the December 12, 2019 the Lake Erie Source Protection Committee report entitled "Winter Maintenance Chemicals: Challenges and Opportunities for Change" and to provide the Lake Erie Source Protection Authority with a letter of support on this matter.

Key Findings

- The Lake Erie Source Protection Committee is concerned about groundwater quality trends in their Source Protection Region. Elevated sodium and chloride concentrations are being observed at several locations and 34 municipal drinking water systems have been identified as having an "issue" related to increasing sodium and chloride concentrations as defined under the Clean Water Act, 2006.
- When a municipal drinking water system is flagged as having an "issue" (such as sodium and chloride), the municipality must take corrective action to reduce or eliminate the issue that is causing the elevated concentrations in the well.
- Reducing sodium and chloride concentrations in the environment is challenging since winter maintenance chemicals are required to keep our roadways and parking lots safe for pedestrian and vehicular traffic.
- The current situation is compounded by the potential liability for business owners and operators who apply winter maintenance chemicals. If they under-apply, they risk being blamed for unsafe conditions. The sector has a tendency to over-apply winter maintenance chemicals to reduce the chances of legal actions being taken against them.
- While the Source Protection Program has made significant progress in protecting our municipal drinking water quality and quantity, changes are required in the

Director's Technical Rules to ensure that appropriate thresholds are included to reduce the chances of contaminating our municipal drinking water systems.

- The Lake Erie Source Protection Committee report sends an important call to action to the Province of Ontario on this matter from a technical and legal perspective and solicits support from member municipalities to support this call.

Financial Implications

Funding for the City's Source Water Protection Program is provided within the Council approved 2020 Non-Tax Capital Budget – WT0009 Groundwater Protection. Failure to protect local municipal groundwater supply sources from the impacts of sodium and chloride may drive additional future capital and operational community investments to ensure compliance of treated drinking water volumes produced with the Ontario Drinking Water Standards, Objectives and Guidelines. Such costs are not represented in current Water Services operating and capital forecasts and would be subject to development through progressive detailed engineering design on an individual well-by-well basis.

Report

The Lake Erie Source Protection Committee issued a report at the December 12, 2019 meeting entitled: Winter Maintenance Chemicals: Challenges and Opportunities for Change. The report provided a summary of concerns related to the water quality impacts from winter maintenance chemicals. The City of Guelph is an active municipal member of the Lake Erie Source Protection Committee and collaborated with the Region of Waterloo and Wellington County staff to prepare a report for the Source Protection Committee's review at their December 2019 meeting.

Following presentation of the report, the Lake Erie Source Protection Committee passed the following resolutions:

THAT the Lake Erie Region Source Protection Committee receives report SPC-19-12-02 – Winter Maintenance Chemicals: Challenges and Opportunities for Change – for information.

AND THAT the Lake Erie Region Source Protection Committee receives the Recommended Actions to Address the Over-Application of Winter Maintenance Chemicals for consideration and action.

AND THAT the Lake Erie Region Source Protection Committee direct staff to forward report SPC-19-12-02 to the Ontario Minister of the Environment, Conservation and Parks, Ontario Minister of Transportation, Ontario Minister of Municipal Affairs and Housing and Attorney General of Ontario, for their consideration and action of the outlined recommendations regarding changes to the liability framework, increased requirements for winter maintenance of parking lots and changes to the Clean Water Act, 2006 framework to proactively protect municipal drinking water supplies from winter maintenance activities.

AND THAT the Lake Erie Region Source Protection Committee direct staff to forward report SPC-19-12-02 to the Councils of the single, upper and lower-tier municipalities within the Lake Erie Source Protection Region, all Source

Protection Committees, Ontario Good Roads Association, Association of Municipalities of Ontario, and Rural Ontario Municipal Association, to request resolutions in support of the report's recommended actions and forward the resolutions to the Ontario Minister of the Environment, Conservation and Parks, Ontario Minister of Transportation, Ontario Minister of Municipal Affairs and Housing and Attorney General of Ontario.

Background

The water quality trends that have been observed for a number of municipal drinking water systems in the Lake Erie Source Protection Region indicate that several communities are at risk of having to shut down or consider expensive treatment options, unless action is taken to reduce the impacts.

Within the Lake Erie Source Protection Region, approximately 150 wells have documented a trend of increasing concentrations of sodium and/or chloride. There are 34 municipal drinking water systems that have been identified as having a chloride and/or sodium issue under the Clean Water Act, 2006. The systems that have been identified are located in small medium and large communities throughout the Lake Erie Source Protection Region. Municipal drinking water systems that have been flagged as having an issue require specific action plans to mitigate the water quality issue(s).

Elevated sodium and chloride concentrations can be harmful to the environment. Increasing concentrations of these parameters can impair vegetation and impact wildlife, fisheries, and shallow surface water and groundwater quality. This is further compounded by the effects of climate change as we observe more frequent freezing and thawing cycles in the winter months. Increased precipitation and freezing rain events are forcing municipalities to apply winter maintenance chemicals more frequently, increasing the loadings to the land and subsurface.

There are also legislative issues associated with the application of winter maintenance chemicals. Section 44 of the Municipal Act requires municipalities to maintain roads in a "reasonable state of repair" and to maintain them in accordance with the Minimum Maintenance Standards. While each municipality has their own maintenance standards, there is opportunity for improvement to reduce the amount of products that are applied to roads and sidewalks. There are products that have a lesser environmental impact, however, they tend to be significantly more costly and this alone can limit the use of alternative products due to budgetary constraints.

Building owners are required under the Occupier's Liability Act to provide a duty of care to maintain "reasonably" safe conditions for persons while on their premises. In many cases, winter maintenance for properties is outsourced to contractors who are worried that they may end up in a lawsuit if they do not apply sufficient winter maintenance chemicals. The liability implications associated with under-application have influenced municipalities and winter maintenance contractors to over-apply the products and such practices have resulted in the current situation. The current legislative framework needs to be reviewed and amended to account for "reasonable" use of winter maintenance products so that municipalities and contractors have the necessary procedures and protocols in place to protect them from unnecessary lawsuits. In the United States, efforts have been made to change the liability framework to help address the impacts to water resources due to the over-application of winter maintenance chemicals.

In Ontario, as part of the Source Water Protection Program, the Ministry of Environment, Conservation and Parks is reviewing the effectiveness of the various components of the program to identify opportunities to improve the Director's Technical Rules under the Clean Water Act, 2006. Municipalities have been very active in lobbying for change so that the program can stay ahead of potential problems with water quality in municipal drinking water systems. City of Guelph Source Water Protection staff have played an important role, participating in a number of working groups and committees and bringing issues and recommendations to the attention of the Source Protection Committee and the province.

The full report that was presented at the Lake Erie Source Protection Committee is provided in Attachment 1 and includes the recommendations that were included with the report. The Lake Erie Source Protection Committee identified a number of action items for the province and asked for support from its member municipalities in terms of a Council Resolution supporting the recommendations.

Increasing concentrations of sodium and chloride have been documented in several raw water samples in municipal drinking water systems across Ontario that can be attributed to the application and storage of winter maintenance chemicals. Unless the province makes changes, this trend has the potential to render several municipal drinking water supplies undrinkable.

Local Implications

The City of Guelph has been actively enhancing efforts to improve its handling and application of road salt in 2018 and 2019. Through the Source Water Protection Program, funds were provided to Public Works to facilitate procurement and implementation of new and improved snow plow salt allocation equipment upgrades to permit Public Works to more accurately track road salt application by areas within the City. Use of these technologies in a trial set of City snow plows in late 2018, early 2019 saw a reduction of 20% in salt application. Furthermore, in partnership with the University of Guelph G360 Centre and financial resources from the Natural Sciences and Engineering Research Council of Canada (NSERC), Water Services has expanded its groundwater monitoring well network to provide staff and researchers with a more comprehensive picture of water quality (specifically, sodium and chloride parameters) in working to continue to protect our local finite groundwater resources.

The Risk Management Official (RMO) for the City of Guelph has been an active participant at the Source Protection Committee level involved in program improvements to the Director's Technical Rules related to the Handling and Application of Road Salt as well as a participant member of a joint committee chaired by Conservation Ontario and Ontario Good Roads Association, formed to provide technical input and advocate for changes in provincial regulatory reform. To that end, City staff are highly engaged in discussions and information gathering to invoke the changes that are required by the Province and will ensure that Council is appraised of any substantial changes on such matters and the implications of such changes for the City of Guelph, where applicable.

Financial Implications

Funding for the City's Source Water Protection Program is provided within the Council approved 2020 Non-Tax Capital Budget – WT0009 Groundwater Protection.

Failure to protect local municipal groundwater supply sources from the impacts of sodium and chloride may drive additional future capital and operational community investments to ensure compliance of treated drinking water volumes produced with the Ontario Drinking Water Standards, Objectives and Guidelines. Such costs are not represented in current Water Services operating and capital forecasts and would be subject to development through progressive detailed engineering design on an individual well-by-well basis.

Consultations

Kate Sullivan, Acting Manager of Policy and Intergovernmental Relations, Strategy, Innovation and Intergovernmental Services

Terry Gayman, General Manager, Engineering and Transportation Services

Bruce Banting, Associate Solicitor, Legal, Realty and Court Services

Terry Dooling, Manager, Public Works

Teisha Colley-Balgrave, Corporate Analyst, Finance

Strategic Plan Alignment

This report is aligned with the Strategic Plan Priorities of Sustaining our Future by protecting our community groundwater resources to ensure their future sustainability.

Attachments

Attachment-1 Lake Erie Source Protection Committee Report SPC-19-12-02, December 12, 2019

Departmental Approval

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