Road Salt Use in Oshawa

O.E.A.C. Road Salt Working Group Report

March 1, 2022

Introduction

This working group formed to begin addressing the negative environmental impacts of road salt application in the City of Oshawa. Road salts are most commonly the chloride salts of sodium, calcium, magnesium, and potassium. These salts were scientifically assessed under the *Canadian Environmental Protection Act, 1999*, the results of which determined that road salts pose a significant problem when large amounts of chloride ions enter into waterways. Freshwater plants, fish and invertebrates are particularly affected by road salt application because they are not adapted to saltwater environments (Government of Canada, 2018). Chlorides from road salts can also enter groundwater sources. Road salts have been recommended for addition to Schedule 1 of the Toxic Substances list (Government of Canada, 2013).

The City of Oshawa applies a salt brine solution to road surfaces prior to an anticipated storm to prevent ice from forming (City of Oshawa, n.d.). This is a practice that uses less salt than if rock salt were applied. However, private businesses and residents in the city would likely use rock salt, and apply it in such a volume as to pose a risk to the Oshawa Creek watershed. Elevated concentrations of chloride have been detected at Oshawa Creek surface water quality monitoring stations (Greenbelt Foundation, 2021).

Alternatives to Road Salt

Other municipalities in Canada have used alternative anti-icing/de-icing substances to road salt with success. For example, Calgary and Winnipeg use beet brine (Dormer, CBC News, 2018; Dacey, Global News, 2018). Winnipeg also uses *treated sand* (sand with 5% salt added by weight) (City of Winnipeg, 2022). These alternatives have the advantage of not containing chlorides that will subsequently enter our waterways. However, it should be noted that the by-products of beet, corn, and similar products can reduce dissolved oxygen in water, impacting aquatic organisms (Salt Vulnerable Areas Working Group, 2018). Suitable quantities and proportions of chloride salts and alternative de-icing substances will likely depend on Oshawa’s specific circumstances.

Our Recommendations

- The Road Salt Working Group recommends that the City of Oshawa assess the viability of alternatives (such as sand, beet juice, and other brines) for the use of chloride salts on its roads, in an effort to reduce the usage of corrosive, environmentally toxic salts to the extent that it is possible.

- We recommend that the City identify *salt vulnerable areas* of Oshawa, and establish risk management plans accordingly (see *Good Practices for Winter Maintenance in Salt Vulnerable Areas* under Additional Resources).

- We recommend that City Council formulate and implement a plan to educate the public and private property owners on the detrimental environmental impacts of chloride salts and give them the tools to apply road salt more responsibly. Brochures and online materials explaining the toxicity of road salts and encouraging their responsible application should be disseminated widely.

Next Steps

The Road Salt Working Group intends on doing further research and continuing to meet to address this issue.

Works Cited

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Greenbelt Foundation. 2021. *Oshawa Creek.* Retrieved from https://www.greenbelt.ca/oshawa_creek

Salt Vulnerable Areas Working Group. 2018. *Good Practices for Winter Maintenance in Salt Vulnerable Areas.* Retrieved from https://www.cloca.com/_files/ugd/b3995f_9d715c2601cd4181a59ccaa753f8d837.pdf

Additional Resources

The Road Salt Working Group recommends consulting the following web pages and documents:

Road salts: Frequently asked questions. https://www.canada.ca/en/environment-climate-change/services/pollutants/road-salts/frequently-asked-questions.html

Good Practices for Winter Maintenance in Salt Vulnerable Areas. https://www.cloca.com/_files/ugd/b3995f_9d715c2601cd4181a59ccaa753f8d837.pdf

Water Quality in Ontario 2014 Report. https://www.ontario.ca/page/water-quality-ontario-2014-report