From: Paula Davies pdavies889@gmail.com
To: Infrastructure and Environment Committee
Subject: Comments for **2020.IE12.13** on March 11, 2020
Date: March 10, 2020

The Impacts of Salt Overuse on Natural Environments in Toronto

For the foreseeable future, for safety, we will continue to need to use salt on roads, parking lots, sidewalks, driveways and building entrances, but there is an opportunity to use less.

What is concerning is the dramatic overuse of salt in many locations in the city on both public and private land. Overuse of salt concerns us because of the negative impacts on plants and animals in our natural areas. Salt contaminated soil does not favor native species of plants which we want to encourage, and when ice and snow melt, they dissolve and the salty water and other pollutants end up in our streams and rivers, and ultimately in Lake Ontario - our drinking water source.

TTC bus stops seem to have the worst over-salting followed by entrances to subways. The TTC Corporate Plan indicates that it will be "accelerating our efforts around energy management, conservation, and environmental stewardship".(*TTC CORPORATE PLAN*).

TTC must improve its salt application procedures!

THE PROBLEM

Plants are affected by salt spray:

White cedars 'burned' by salt spray

deciduous tree with 'Witches' Brooms' caused by road salt
source: infamous ginger.wordpress.com

Animals, particularly in our aquatic ecosystems are being harmed by overuse of salt:

The baby Rainbow Trout shown on top has been affected by high salt concentrations in water, while the trout below is from water with a low salt concentration. [photo courtesy of William Hintz of the Rensselaer Polytechnic Institute]

(from https://www.stateofthebay.ca/how-does-road-salt-affect-our-ecosystem/)

What is actually going on? Some examples:

Greenwood Subway entrance - over salted!

The plastic salt storage bin beside the subway entrance

Inside the plastic salt storage bin -

There is no calibrated control over the amount of salt being applied!

Mound of salt in a community centre parking lot. The glove shows the scale of the mound!

Over salting without calibrating equipment application in a grocery store area. (Lots of impervious pavement exacerbates the problem)

It is not just city properties that are contributing to the problem as these photos illustrate:

Plastic salt storage bin at a local grocery store

Inside the bin - no device to calibrate salt application

Untrained employee scattering salt from the bin

Over salting (a stock photo) showing no use of calibrating equipment

This is a stock photo to illustrate a method of salt application that I witnessed at a TTC bus stop on Donlands Ave.

Over salting of path to Todmorden Mills Park which has Todmorden Mills Wildflower Preserve and ESA #81.

Note the natural area to the right. No special care seems to be taken near vulnerable natural locations.

This the little brook stickleback (5 cm) who must live in the salty runoff - we found it while dipping a pail of water taken from the oxbow. Is it still alive?

SOME SOLUTIONS!

1. Mandate the use of Spreaders!

https://wiki.ezvid.com/best-salt-spreaders

2. Implement a 'Solar Road Panel' Pilot Project at some TTC Bus Stops!

Solar roads are engineered to be an all-in-one system that will eliminate requirements for resurfacing, repainting and even winter maintenance. LED lights are embedded within the panels to provide lane markings, turning arrows, HOV, cycling infrastructure or any other type of marking necessary. These markings car be illuminated on the surface of the panels as required.

Solar road panels are made from tempered glass that has the traction of asphalt and can support the weight of a semi-truck. They are also self-heating to prevent snow and ice accumulation thereby reducing winter maintenance costs. The panels are equipped with microprocessors that enable communication with each other, operators and users.

https://solarroadways.com/

from The Toronto Green Technical Standards page 27

3.. Implement new liability guidelines :

The Truth Behind Road Salt Use: Why Contractors Use So Much Salt
https://dozr.com/blog/road-salt-use-contractors/

NH Voluntary Salt Applicator Certification & Liability Protection
https://www.des.nh.gov/organization/divisions/water/wmb/was/salt-reduction-initiative/salt-applicator-certification.htm

4. Educate and Communicate about overuse of salt and proper application of salt to all users.

Salt application best practices for winter maintenance contracts
https://sustainabletechnologies.ca/app/uploads/2019/06/Salt-application-best-practices-for-winter-maintenance-contracts-brochure.pdf

Curb the Salt Brochure http://www.wrdsb.ca/wp-content/uploads/Region-of-Waterloo-Curb-the-Salt-Campaign-Poster.pdf

Excellent Resources

Wildlife is dying due to road salt, and it must stop
https://blog.wwf.ca/blog/2018/01/10/wildlife-dying-due-road-salt-must-stop/

Dr. Claire Oswald at Ryerson https://www.treehugger.com/infrastructure/its-time-put-our-roads-low-salt-diet.html

How Canada's Addiction to Road Salt is Ruining Everything
https://nationalpost.com/news/canada/how-canadas-addiction-to-road-salt-is-ruining-everything

Where the Water Flows the Salt Goes
http://www.wwf.ca/conservation/freshwater/the_great_lakes/?&utm_campaign=Fieldnotes_email6&mc_cid=f27e4c8fb4&mc_eid=7bf5c678a0

Mr. Tim Van Seter, Senior Manager, Toronto and Region Conservation is an expert in this area and presented in 2018 at the RAP (Remedial Action Plan) Lake Ontario Evening presentation. Our waterways and the wildlife that depend upon these habitats are particularly impacted as this section from the website indicates:

Chloride in Toronto Area Streams https://sustainabletechnologies.ca/home/urban-runoff-green-infrastructure/pollution-prevention/road-salt-management/chloride-in-toronto-area-streams/

and

https://sustainabletechnologies.ca/home/urban-runoff-green-infrastructure/pollution-prevention/road-salt-management/

The International Association for Great Lakes Research (IAGLR) is a scientific organization made up of researchers studying the Laurentian Great Lakes, other large lakes of the world, and their watersheds, as well as those with an interest in such research. IAGLR members encompass all scientific disciplines with a common interest in the management of large lake ecosystems on many levels.

Chloride Trends in Ontario Lakes and Streams

http://iaglr.org/conference/proceedings/2018/prof186.html