# Sustainable Salt Management
## CHECKLIST

Road salt is a major component of winter maintenance plans to reduce accidents, injury, and mortality associated with icy conditions. However, it is all too common that roadways, parking lots, and walkways are covered with too much salt, which can damage nearby infrastructure, soils, plants, aquatic ecosystems, and groundwater. Property owners and managers can update their road salt application practices to reduce salt use with this Sustainable Salt Management Checklist, developed by Partners in Project Green (PPG) with materials and resources developed by Sustainable Technologies Evaluation Program (STEP). The checklist is to be used as a starting point to assess if salt management best practices are currently being implemented and identify opportunities for improvement. For more tips on sustainable salt management, check out PPG's Sustainable Salt Management Resource Hub.

**Instructions:** Walk the exterior of your property while completing the form below and calculate the overall value of your assessment (Yes=1 point, All others= 0 points). A higher score indicates several best practices are already being implemented. A lower score indicates more opportunities to take action to reduce salt use. A few best practices for winter salt management are provided on page 3.

**Partners in Project Green (PPG), Toronto and Region Conservation Authority (TRCA) and the Sustainable Technologies Evaluation Program (STEP) are not responsible for any loss or damage which might occur as a result of your reliance or use of the content in this checklist tool.**

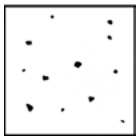
## Sustainable Salt Management Checklist

| | | | | |
|---|---|---|---|---|
| 1. | My organization has an updated Winter Maintenance Plan. | Yes (1) | No (0) | ☐ N/A (0) ☐ Unsure (0) |
| 2. | The Winter Maintenance Plan includes a strategy for temperatures below -7°C when salt is less ef ective[1]. | ☐ Yes (1) | ☐ No (0) | N/A (0) Unsure (0) |
| 3. | Direct roof drainage is directed away from paved areas, ideally towards permable surfaces to reduce risks of ice formation leading to slips and falls. | Yes (1) | No (0) | N/A (0) Unsure (0) |
| 4. | The property is always shovelled/plowed before salt is applied. | Yes (1) | No (0) | N/A (0) Unsure (0) |

[1] Van Seters, T., Review of Snow and Ice Control Practices on Parking Lots and Walkways. Toronto and Region Conservation Authority, Sustainable Technologies Evaluation Program. Ontario.

## Sustainable Salt Management Checklist

5. If salt is applied to walkways, parking lots, and roads during a moderate winter event, it is applied at a rate of 58g/m$^2$
*approximately 4 Tbsp per sidewalk square[2]



Yes (1) No (0) N/A (0) Unsure (0)

6. Excess salt is cleaned up following a snow melt.

Yes (1) No (0) N/A (0) Unsure (0)

7. Are unused areas of the parking lot and walkways closed of dur ing winter months to prevent unnecessary salting?

Yes (1) No (0) N/A (0) ☐ Unsure (0)

8. Are building entrances with low foot trafc closed of dur ing winter months to prevent unnecessary salting?

Yes (1) No (0) N/A (0) Unsure (0)

9. If you have a winter management contract, is that contractor certifed thr ough the Smart About Salt Council (SASC) or other equivalent certifca tion/ training program?

Yes (1) No (0) N/A (0) Unsure (0)

10. Winter maintenance contracts include salt by unit price per event or a lump sum per season.

Yes (1) No (0) ☐ N/A (0) Unsure (0)

11. Do you use “pre-wetting”, anti-icing or direct liquid application (DLA) techniques such as brines in addition to applying “pre-wetting” rock salt to aid in your snow and ice control on site?[3]

☐ Yes (1) ☐ No (0) ☐ N/A (0) ☐ Unsure (0)

12. Have you asked your salting and plowing contractors if they of er low chloride alternatives for your site (i.e., acetates and organic products made from corn, sugar beets, and other plant material)?

☐ Yes (1) No (0) ☐ N/A (0) Unsure (0)

13. Have you asked your salting and plowing contractors if they apply salt at a measured rate dependent on the amount of snow set to or have already fallen on your property?

Yes (1) No (0) N/A (0) ☐ Unsure (0)

14. Is there an absence of salt residue around external doors, below-grade stairs, and/or windows in the summer months?

Yes (1) ☐ No (0) N/A (0) Unsure (0)

**SCORING** 11 > = **Good** 8 -10 = **Average** < 8 = **Poor** TOTAL SCORE _____

[2] Lake Simcoe Region Conservation Authority. 2018. Friction and Parking Lots. Technical Bulletin, v. 3. https://lsrca.on.ca/wp-content/uploads/2023/07/Friction-and-Parking-Lots.pdf
[3] Pre-wetting refers to the practice of applying de-icing liquids to rock salt using a spinner or auger immediately before salt is applied to the surface. Anti-icing is the practice of applying a liquid or solid freeze point depressant material to the pavement before a snow event to prevent snow and ice from sticking to the surface. Direct liquid application involves applying brine before, during and after snow events to prevent ice formation on hard surfaces. Van Seters, T., Review of Snow and Ice Control Practices on Parking Lots and Walkways. Toronto and Region Conservation Authority, Sustainable Technologies Evaluation Program. Ontario.

## Implementing Winter Salt Management Best Practices:

### 1. What does the right amount of salt look like?

After the area has been plowed/shoveled, best practices indicate that approximately 58g/m2 of salt is an appropriate amount to apply to parking lots, roads, and walkways. However, evidence shows that the amount of salt being applied to industrial, commercial, and institutional properties greatly exceeds this recommendation, causing watersheds across the GTA to greatly exceed federal guidelines for long-term exposure to chloride. Using too much salt not only has detrimental ef ects to the environment, but costs more money and studies have shown it to be less ef ective at reducing accidents than best practice levels because friction with the ground is inhibited.

58g/$m^2$= approximately 4 Tbsp/sidewalk square
10$m^2$ (an average small driveway)= 2 1/2 cups
100$m^2$ (a medium parking lot)= ~25 cups or 6.5kg

For more information and resources regarding winter maintenance parking lot and walkway best practices, please review STEP's Review of Snow and Ice Control Practices on Parking Lots and Walkways Guideline.

### 2. What is a Smart about Salt certifed c ontractor?

Smart about Salt is an Ontario certifca tion of ered by the Smart About Salt Council (SASC). The certifca te demonstrates that the winter maintenance professional knows how to ef ectively balance winter safety and environmental protection. It of ers the skills to become more efcien t with salt application along with the tools to reduce liability and maintenance costs.

Applying the right material at the right amount at the right time and place can only be achieved by knowledgeable contractors and property management staf . Developing this knowledge requires training and experience. Requesting evidence of this experience and requiring training and certifca tion through the Ontario Smart about Salt program can help to ensure that the contractor and property operation staf ha ve the skills necessary to implement best practices for road salt use. Find a Smart About Salt certifed c ontractor.

### 3. How do I reduce salt use with my contractor?

Ef ective pricing of services - Often payment for services is based on the amount of work or the quantity of salt applied which can encourage using more salt than is necessary. Contract pricing structures based on a lump sum by season, a fx ed sum per event with extra paid for standby costs, or some combination of these payment options creates a fnancial inc entive to apply less salt.

Accurate salt delivery - Calibration of salt spreaders help ensure that the equipment is functioning properly and the amount of salt applied matches the rate of application set by the driver. Automated salt delivery systems that control application rates by vehicle ground speed can signifcan tly reduce the amount of salt applied compared to conventional spreaders. These delivery systems ensure a more even spread of salt and allow contractors to precisely track the amount of salt applied.

For more information and resources regarding procurement, pricing, application rates, low chloride alternatives, and reducing risk of liability, please review STEP's Procurement for Parking Lots Snow and Ice Management Guide.

### 4. What are some salt alternatives to consider?

Consider using low chloride alternatives, which can signifcan tly reduce the harmful ef ects of chloride-based salts. Alternatives may include chloride-based brines (23% NaCl solution to 77% water), or typical rock salt pre-treated with liquid MgCl2, both of which can be used at colder temperatures to traditional rock salt. You can review additional details, including cost comparisons, application rates, and more by reviewing these two resources by STEP:

- Alternatives to Salt: What else melts snow and ice?
- Evaluation of Organic Anti-Icing Materials for Winter Maintenance

### 5. Additional Resources

Partners in Project Green's Sustainable Salt Management Resource Hub

STEP Winter Salt Management

STEP Salt Reduction Best Practices

*Prepared by:*

Partners in Project Green
Brought to you by:
Toronto and Region Conservation Authority and Toronto Pearson

Sustainable Technologies EVALUATION PROGRAM
Supported by Toronto and Region Conservation Authority