

REPORT

Council

Meeting Date: December 16, 2024

FROM: Roads and Works Operations

DATE: December 3, 2024

SUBJECT: Salt Management Plan Update

LOCATION: Town-wide

WARD: Town-wide

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RECOMMENDATION:

That the update to the Salt Management Plan (the “SMP”) as detailed in the report from the Roads and Works Operations Department, dated December 3, 2024, be received.

KEY FACTS:

The following are key points for consideration with respect to this report:

- Salt is vital for the safety of drivers and necessary to sustaining our communities in the winter. Salt is key to ensuring that the Town maintains a safe corridor for all our constituents and road users, while keeping the economy moving.
- In 2024, Oakville partnered with Halton area municipalities to review the SMP. Individual plans were finalized in 2024 for each municipality.
- The Town’s policy on the use and management of road salt is to comply with all applicable legislation, use in an environmentally responsible manner, and minimize the negative impact to the natural and built environment.
- The Town’s salt management practices continue to meet industry best management practices with continuous improvement actions identified.

BACKGROUND:

Town’s policy on the use and management of road salt is to comply with all applicable legislation, use in an environmentally responsible manner, and minimize the negative impact to the natural and built environment.

Environment Canada Road Salt Overview (2023) highlights that road salts, in high concentrations, pose risks to plants, animals, and aquatic environments and the Canadian Environmental Protection Act, 1999, published a Code of Practice (the “Code”) for the Environmental Management of Road Salts. The Code recommends road authorities to develop Salt Management Plans to improve salt storage, road use, and snow disposal practices. The Town has been doing this proactively through iterations of the SMP since 2003, in partnership with Halton Region.

The town’s Salt Management Plan forms an integral part of the Town of Oakville’s Winter Control program, and it includes all areas where road salt is used such as roads, sidewalks, parking lots and pathways.

Winter salts are essential for North American winter operations, ensuring safe, traversable roads for vehicles, including emergency services, and supporting economic activity. At the Town, salt is used in three main strategies:

- **De-icing:** Applying dry or prewet salt to remove snow and ice bonded to the roadway surface, crucial for our plowing operations to achieve bare pavement on primary and secondary roads.
- **Anti-icing:** Applying liquid brine (a direct liquid application or DLA) before winter events to prevent frost and black ice from forming, especially on bridge decks.
- **Abrasives:** An abrasive material is applied to sidewalks and residential roads with the purpose of adding traction to surfaces and not to necessarily melt snow or ice. The abrasive material contains salt, with the main purpose of preventing the abrasive from freezing.

COMMENT/OPTIONS:

The SMP update includes a comprehensive comparison of current Town practices against salt best management practices.

In 2024, Oakville partnered with Halton area municipalities to review the SMP. Individual plans were finalized in 2024 for each municipality. This SMP update includes the following:

- Developed a comprehensive list of current requirements, policies, guidelines and leading practices for salt management.
- Compared current practices against this list.

- Documented where Oakville is consistent with current requirements, polices, guidelines and leading practices for salt management, and identified opportunities for improvement.
- Developed short-and long-term goals for continuous improvement that allows the town to continue to provide the public with the safe and efficient transportation systems they expect, while minimizing effects of road salt use on the environment.
- Identified actions, training, monitoring, and reporting activities to support the goals and this Plan.

Town's salt management practices continue to meet industry best management practices with continuous improvement actions identified.

The Town has made numerous improvements based on the 2018 SMP update and several best practices, including the use of pre-wetted salt, anti-icing strategies, winter route optimization, GPS-equipped fleet, and automatic spreader controls. Additionally, the Town is at the forefront of using alternative and treated salts and advanced equipment technologies to optimize or reduce the amount of salt applied on roadways. Further, the existing training programs and operational procedures are well-documented and regularly updated.

Number of areas for continuous improvement has been identified, with the main themes noted below:

1. Utilize data analytics and reporting - Utilizing winter operations software to analyze reported data from our equipment, weather stations, and salt usage. This approach will provide valuable insights and help identify opportunities to optimize routes and reduce salt usage.
2. Develop decision support tool - to standardize salt application rates, ensuring the right amount of salt is used at the right time. By considering factors such as road surface temperature, precipitation type, and intensity, the tool will help staff apply salt consistently and responsibly, optimizing usage and minimizing waste.
3. Optimize salt application - expand anti-icing program and enhance pre-wetting (brine application) where both can significantly reduce the amount of salt needed. Anti-icing prevents ice formation before snow accumulations bond to the pavement and pre-wetting, which replaces 20% of solid salt with salt brine, making the salt more effective.
4. Update standard operating procedures – regularly refresh existing standard operating procedures and incorporate into staff training.

5. Continuous training program - Train all Town personnel involved in winter maintenance (e.g. Roads and Works, Parks and Open Space, and Facilities). This is crucial as it ensures staff use best practices and advanced techniques in salt application while meeting the policies set out in the SMP.
6. Initiate public education - Develop outreach programs for the public. Educating the public on the environmental impacts of excessive salt use and promoting best practices can lead to more responsible salt usage, further optimizing and reducing overall salt application.

Staff will continue to enhance our salt management practices with the commitment to review the SMP yearly.

The Salt Management Plan will be reviewed yearly to ensure:

- Consistent adoption across the corporation,
- Continuous improvement opportunities are being identified and executed,
- Tracking salt usage and identify opportunities for savings

A comprehensive review and update will occur as needed (typically 5 to 7 years) and will include a reevaluation of continuous improvement goals and targets and an update of best practices.

CONSIDERATIONS:

(A) PUBLIC

The update to the SMP and related information about road salt usage will be made available on the Town website to promote awareness of the environmental impacts of salt usage.

The SMP exemplifies the Town's leadership and environmental stewardship and can be a resource to help private property owners, contractors, and salt users learn about best management practices that should be used in winter maintenance operations.

(B) FINANCIAL

The strategies, procedures and initiatives and/or proposed recommendations included in the SMP pertaining to equipment technologies, operations, training and processes are carried out as part of the Roads and Works Operations winter maintenance program and are subject to the Department's annual operating and capital budget approvals.

(C) IMPACT ON OTHER DEPARTMENTS & USERS

This SMP (2025-2030) expands the scope of public roads in previous SMP's to include bicycle infrastructure, sidewalks and parking lots for which the Town undertakes winter maintenance. This will affect internal training and winter maintenance contract specifications within the Parks & Open Spaces and Facilities Services departments.

The recommendations from the SMP require the collaboration and involvement of other groups, such as Corporate Communications, Transportation and Engineering, Planning and Development Services, Facility Services, and Parks and Open Space. There has been a lot of collaboration and support from other Town groups to optimize and ultimately reduce salt usage.

(D) COUNCIL STRATEGIC PRIORITIES

The SMP addresses the following Council Strategic Plan and 2023-2026 Action Plan items:

- Growth Management by ensuring we have efficient safe mobility across the Town including that of sustainable modes of travel such as by foot, cycle and transit. This is achievable by executing sustainable winter operations and responsible salt use to maintain a safe corridor and help keep the economy moving during winter.
- Environmental Sustainability to act on climate change adaptation by promoting environmental stewardship to protect resources and natural areas.
- Accountable Government by exploring solutions that increase efficiency and scalability of services and developing mechanisms to ensure continual improvement of organizational performance and service delivery.

(E) CLIMATE CHANGE/ACTION

The SMP is consistent with the Town's Environmental Sustainability Policy (ESP, 2011) where the Town shall promote environmental initiatives advancing Oakville as a sustainable community.

The SMP incorporates the following goals from the ESP:

- To sustain and enhance our natural resources – watersheds, shorelines, flora and fauna.

- To reduce consumption and increase efficiency in resources and material use.
- To maintain and improve the health, cleanliness, safety and vitality of our neighborhoods.
- To foster an educated, aware and engaged community acting as responsible stewards for the environment.
- To create, adapt and apply best environmental and risk minimization practices.

In addition, the Town Climate Change strategy and experts have recognized an increase of winter temperatures and precipitation events, including the increased risk of more frequent mild temperature high salt usage winter events such as freezing rain, sleet and hail. The SMP recommendations takes these considerations into account by future proofing the Town through the following:

- Considering investing in modern weather forecasting and monitoring solutions, including maintenance decisions support tools which leverage road monitoring sensors, weather forecast and artificial intelligence into providing winter operations insights and thus optimizing the use of resources (including salt).
- Continue to invest in new technologies that make the use of salt more efficient, such as: trying out alternate de-icing materials, pre-wetting, blended brines, etc.

APPENDICES:

APPENDIX A – 2025-2030 Salt Management Plan

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