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**For Information**

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**REPORT TITLE: Salt Management - Partnership and Outreach Update**

**FROM: Andrea Warren, Interim Commissioner of Public Works**

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**OBJECTIVE**

Further to Resolution 2018-96, this report provides Regional Council with an update on strategies and progress related to improved road salt management and application within the Region of Peel.

**REPORT HIGHLIGHTS**

- Road salts are used as de-icing and anti-icing chemicals for winter maintenance.
- Road salt in stormwater runoff has been linked to increasing levels of chloride concentrations in surface waters and groundwater, posing a risk to the environment, wildlife, stream ecosystems and groundwater.
- In 2018, the Less Salty Working Group was formed to improve road salt management within the Region of Peel, bringing together Peel and the local municipalities.
- This group is also part of a larger external Salt Communication Working Group which includes Conservation Authorities and nearby municipalities who combine efforts for larger scale impact.
- The Less Salty Working Group's mandate is to develop and share best practices for municipal salt management at facilities, and to increase awareness of the importance salt management among private property owners and residents.
- An Operational strategy outlines best practices for salt management, and an accompanying Education and Outreach strategy provides businesses and residents with important information about how best to use salt.
- Moving forward Peel Region together with the local municipal partners will continue to lead by example, using best practices to protect public safety while minimizing the use of salt and supporting local businesses and residents through a suite of outreach and education programs.

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**BACKGROUND**

Road salts are used in Canada as de-icing and anti-icing chemicals for winter road maintenance. More than five million tonnes of road salts are used in Canada each year to mitigate ice and snow conditions on roads and to provide safer driving conditions. Chloride concentrations have been increasing in surface waters and groundwater in urban areas since the 1960s linked to road salt runoff. In 2001 a comprehensive five-year assessment by Environment Canada determined that, in sufficient concentrations, road salts pose a risk to plants, animals, birds, fish, lake and stream ecosystems and groundwater. Following the report, salt was designated as a toxic substance under the *Canadian Environmental Protection Act*.

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The Government of Canada subsequently published a Code of Practice for the Environmental Management of Road Salts. The Code is designed to help municipalities and other road authorities better manage their use of road salts in a way that reduces impacts on the environment while maintaining public safety. The Code of Practice recommends that road authorities prepare salt management plans and identify actions to improve salt management practices. The Region prepared its first Salt Management Plan in 2005.

The Region maintains roughly 225 facility parking lots and walkways, 1670 lane kilometers of paved roads and 23 kilometers of sidewalk. Winter maintenance procedures involve monitoring the weather and road conditions, proactively applying salt to parking lots and anti-icing roads with brine (salt water) in advance of freezing conditions, plowing snow and applying salt where required. Other salt management practices include installing snow fence to avoid blowing snow on the roadways, as well as handling and storing salt in covered facilities.

On February 22, 2018, the Credit Valley Conservation Authority (CVC) delegated to Council and presented the impacts of road salt on waterways throughout Peel, sharing data collected on the Cooksville and Sheridan creeks. CVC reported that in certain sections of the Credit Valley watershed, chloride concentrations can be found well above 1000 mg/L. In contrast, natural freshwater systems have concentrations of less than 30 mg/L. The presentation was referred back to Regional staff to report on strategies to improve road salt management at residential properties and commercial parking lots through public education.

On July 12, 2018, staff provided Regional Council with a report on *Salt Management and Application – Opportunities for Partnership and Outreach*. In this report, staff identified opportunities to build public and municipal awareness about the damaging effects of salt and to provide information about management strategies that would help protect the environment while maintaining public safety. The report also noted that staff had formed a cross-jurisdictional “Less Salty Working Group” which included staff from Peel Region, City of Mississauga, City of Brampton and Town of Caledon.

The Working Group established a mandate to develop and share best practices for municipal salt management, and to increase awareness about the importance salt management among both public and private property owners. To that end, the Working Group established two goals:

- Work collaboratively as regional and local municipalities, together with conservation authorities, to develop and share best practices for salt management, to ensure consistent messaging and to streamline efforts.
- Increase education and awareness among municipal staff and private landowners about the damaging effects of road salt and the importance of using best practices for salt management.

To realize these goals, the Less Salty Work Group collectively developed an *Operational Strategy*, and an *Education and Outreach Strategy* (Appendix I). Throughout 2019 and 2020, the Less Salty Working Group has been working towards implementation of these strategies.

This report provides an update in response to Resolution 2018-96, which requested staff to report back with actions to minimize the use of road salt and an educational approach for reaching public landowners.

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### **DISCUSSION**

The *Operational Strategy* outlines best practices for the effective and efficient use of salt during municipal winter operations, and the *Education Strategy* outlines an approach to provide information to the public on the impacts of salt, and to share salt management options for businesses and residents. The following section provides highlights of actions and successes further to these strategies. A complete list can be seen in Appendix II.

#### **a) Operational Strategy and Municipal Collaboration**

The Less Salty Working Group has developed and adopted a number of operational improvements and best practices to support proactive salt management, such as:

- Salt Management Plans - These plans provide guidance for the storage, application and general management of road salt to minimize the impacts of salt on the environment while protecting public safety.
- Training - Regional and local municipal facility managers and operators are encouraged to obtain third party 'Smart About Salt Council' certification, which is a not-for-profit organization that has established best management practices and standards for winter maintenance activities. Moving forward, contractors providing winter maintenance services to municipal properties will be required to be Smart-About-Salt certified as part of the procurement process.
- Site certification – An increasing number of Regional and local municipal properties (Operational Yards, Admin Offices, Peel Living, Long Term Care, Paramedic and Police) are preparing to become 'Smart About Salt' site certified locations. This third party certification requires locations to plan for proper snow storage, covered salt storage, signage in areas that do not require winter maintenance and identifying areas where water ponds creating an ice hazard that requires extra salt application.
- Planning Process – Examining opportunities through land use planning approvals to incorporate best management practices, including smart parking lot design and salt management plans for the property. These best practices can minimize the use of salt by focusing on parking lot designs that avoid ponding of water and by directing stormwater runoff away from vulnerable areas.
- Municipal Capital Works – Moving forward, design of municipal capital projects will take into account salt-smart landscape and parking lot design techniques.

Through these actions we are collectively demonstrating leadership in salt management within our own municipal operations and leveraging support across agencies to advance and monitor best practices.

#### **b) Education and Outreach Strategy and Partnerships**

The Education and Outreach objectives of the Working Group is an essential part of educating residents and businesses on how salt works, how to use salt effectively, and the effects of salt on our environment. Education can encourage better salting practices through the use of alternatives to salt, practical snow and ice clearing tips as well as third party training programs.

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Through the various communication and education outlets described below, the Working Group aims to increase awareness about the importance of best practices for salt management to various audiences. Actions include:

- Social media communications on snow clearing tips and salt alternatives - These messages are developed by Peel and communicated on the Region's Twitter, Instagram, and Facebook platforms as well as Peel's public-facing website. These messages are supported by the local municipalities through social media shares and posts which helps to increase the audience reach.
- Published communication on snow removal practices and guidance on salt use – Information on these topics are provided in news releases, eNews stories and an annual water bill insert (Appendix III)
- Understanding salt - A presentation has been developed to help train staff on how salt works, how to use it most effectively, and the importance of wearing proper equipment (footwear) in icy conditions. An eLearning training module is currently under development to support this initiative.
- Creating fun-fact activities for events such as the Peel Water Festival - Education materials have been developed to share knowledge about salt and the environment with children and parent volunteers through various Peel events.
- Collaborating with residents and business groups – The Less Salty Working Group works with the CVC to leverage existing programs to improve education and outreach, for example, the Sustainable Neighbourhood Action Plan (SNAP) which offers guidance on proper salt usage for homeowners, and the CVC Greening Corporate Grounds program which provides winter maintenance best practices for businesses.

In addition, the Less Salty Working Group is also a part of a larger Salt Communication Working Group that includes public and private agencies within and adjacent to Peel, including industry members (contractors, Landscape Ontario), government agencies (Region of Waterloo, Region of Halton, City of Markham), conservation authorities (Credit Valley and Toronto Region Conservation Authority, Lake Simcoe Conservation Authority) and non-profit associations (World Wildlife Federation).

This group shares information and combines communication efforts for a larger scale impact. By leveraging support from the Salt Communication Working Group and by aligning key messages, Peel Region's Less Salty Working Group has been able to broaden the reach of its education messaging.

### **c) Challenges and Next Steps**

The Less Salty Working Group has been making great strides in training municipal staff in salt-smart operational practices, and in communicating key messages about salt management to private businesses and residents. At the same time, challenges still exist.

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- Awareness and Education

Communicating effectively across a broad group of stakeholders can be challenging. Salt is used in many municipal services (roads, facility parking lots, etc.); road salt users work in different locations and for different departments. The Less Salty Working Group meets with facility operators biannually to share knowledge and keep municipal staff connected and informed.

Furthermore, private businesses and homeowners are inclined to use excess salt on their own properties. The perception that more salt is better is being challenged through ongoing public education using both digital and traditional communication channels. The Less Salty Working Group is creating awareness about how best to use salt and the impacts of using too much salt to shift resident behaviour over time.

- Salt Application and Tracking

Most municipal contractors maintain multiple facilities during a winter storm and cannot track salt usage at each location; therefore, measuring how much salt is being applied at facilities is a challenge. Working with the facility supervisors, the Region provides information about equipment and tools available in the industry and requests municipal contractors include these products/services in their future contracts.

Excessive salting of private parking lots is common in Ontario. Contractors may apply more salt than needed in an attempt to reduce property owner liability. Contractors also face the risk of liability themselves and can struggle to find insurance for slips and falls. To help address this, the Working Group encourages private businesses to enrol in third-party training that provides information about responsible salt management practices. In addition, Landscape Ontario lobbying the Provincial Government to change the statute of limitations on slip and fall lawsuits on private property from two years to 10 days, the same as the time allotted for municipally managed properties.

There are a limited number of salt alternatives for winter maintenance activities. Sand is used in some municipalities for traction; however, it can cause excessive dust and sediment. Using a salt/sand mix is also an affordable option but would not achieve the Region's "bare pavement" level of service. De-icing materials such as Magnesium Chloride or Calcium Chloride are effective in certain winter situations but financially prohibitive at almost twice and five times the cost respectively. Finally, natural substitutes such as beet juice can be useful for pre-wetting but are linked to equipment malfunctions and must be mixed with salt to provide an effective result. At present, responsible salt use is the most feasible option available for winter maintenance. However, operations staff will continue to explore and test new de-icing chemicals and keep current on innovative solutions and technologies to help reduce environmental impacts while sustaining a safe roadway.

## RISK CONSIDERATIONS

There are two main risks associated with salt use; immediate risk to the safety of the traveling public in winter conditions, and long-term risk to the environment and freshwater systems in Ontario. The Region's Salt Management Plan, together with the effort of the Less Salty Working Group aim to balance these risks and address the complex social, ecological and financial impacts of salt use.

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### **CONCLUSION**

Salt is a cost-effective option for winter maintenance activities that protect the travelling public. At the same time, it can be damaging to the environment in certain concentrations.

The Region and local municipal governments have formed the Less Salty Working Group to collectively inform and educate key audiences about the social, financial and environmental implications of salt use.

The Working Group is currently implementing two strategies; an Operational strategy to implement best practices for municipal salt management and an Education and Outreach strategy to provide information to Peel businesses and residents.

Moving forward, Peel Region together with local municipal partners will continue to promote and educate businesses and residents on salt use best practices and aim to lead by example in minimizing municipal salt use while maintaining public safety.

### **APPENDICES**

Appendix I – Education and Outreach Strategy and Operational Strategy  
Appendix II – Accomplishments Chart, Twitter Messages and Facility Poster  
Appendix III – New Release, eNews and Water Bill Insert

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*For further information regarding this report, please contact Mark Crawford, Manager of Road Operations and Maintenance, Ext. 3415, [mark.crawford@peelregion.ca](mailto:mark.crawford@peelregion.ca).*

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