



**Salt Management Plans  
The Regional Municipality of  
Durham's Perspective**

2011 North American Snow  
Conference



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LOS: Council Approved w/Policy and  
Procedure

Durham's Salt Management Plan Adopted  
and implemented by Council in 2005.

Population: 610,000 (8 Local Municipalities)  
Lane Kilometers: 2,150  
(or 1,340 Lane miles)



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Winter Statistics

- 30,000 tons salt used per year
- Winter Budget of \$ 8 M
- 5 Works depots
- Average of 60 events / year, (300 total)
- 35 Regional Combination Units with  
21 Contracted Units
- Staff compliment 280



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Purpose: To establish the Regions new Salt  
Management Plan into a larger comprehensive  
Winter Maintenance Control plan.  
Combining it with our existing LOS and Standard  
Operating Policy and Procedures.

End Goal: To manage and control how we  
operate, and what we use, both materials and  
methodology, in a more efficient way.



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A Successful Plan SMP  
Requires, an approach that fits with your  
operation, is manageable, practical and  
measurable.  
The SMP will also provide the benefit of acting  
as a Risk Management tool



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As Toronto, Durham required a plan to involve staff, a buy in at every level.  
A partnership to become more responsible to the environment and the Region as a whole.




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#### Durham's Present Results

- ✦ Achieved 12% reduction in salt usage over last 5 years. (\$ 400,000 in material savings).
- ✦ Tangible savings in fuel, labour, and fleet.
- ✦ Buy in from senior management, and politicians to allow us to continue to maintain and progress.




### Salt Management Plans The Regional Municipality of Durham's Perspective

#### Inclusions in a typical Salt Management Plan

- ✦ Introduction;  
w/ Purpose, Mission Statement, Authority
- ✦ Corporate Policy;  
Environmental Statement, Implementation Guidelines
- ✦ Winter Maintenance Standards;  
Levels of Service Intro, Materials and Application rates  
Snow Removal, Storage and Disposal, Sidewalk Snow



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#### Inclusions in a typical Salt Management Plan

- ✦ Operational Practices;  
Equipment / Fleet Allocation, Upgrading, Maintenance, Calibration, and Washing
- ✦ Materials;  
Application Rates, Materials and Blends, Ordering, Storage/Handling, Good Housekeeping Practices for Yards



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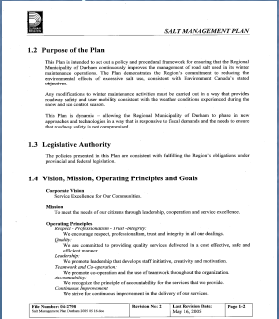

#### Inclusions in a typical Salt Management Plan

- ✦ Storm Response;  
Weather Forecasting, Decision Making Support Technology
- ✦ Training;  
Operators Equipment, Materials, Technology Resources
- ✦ Monitoring;  
Measuring your Outcomes



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#### S.M.P Crafting the Plan

## Salt Management Plans The Regional Municipality of Durham's Perspective

### S.M.P Crafting the Plan

**2.0 POLICY CONTEXT**

**2.1 Corporate Environmental Policy**

The Regional Municipality of Durham's goal is to create a leader in municipal environmental performance in the region of Durham.

**2.2 The Regional Municipality of Durham's Works Department Statement**

The objective of the Durham Region Works Department is to ensure that the Region's roads and infrastructure are safe, reliable and meet the needs of the Region's residents.

**2.3 Salt Management Policy**

While the Regional Municipality of Durham's overall policy context, the following is the Region's policy on salt management:

- To comply with applicable federal and provincial legislation regarding the storage and use of salt and controlled products.
- To use salt in an environmentally responsible manner, and ensure the negative environmental effects of salt are minimized.
- To provide the total Level of Service, the Regional Municipality of Durham will continue to strive for the highest level of service to its residents.

**2.3.1 Salt Management Principles**

- Minimize salt use to the extent possible.
- Use salt in a manner that minimizes environmental impacts.
- Use salt in a manner that minimizes the risk of salt contamination of water resources.
- Use salt in a manner that minimizes the risk of salt contamination of the environment.

SALT MANAGEMENT PLAN

This Number: 44-016  
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**3.0 WINTER MAINTENANCE STANDARDS**

**3.1 Introduction**

This chapter describes the winter maintenance standards for the Region's roads and infrastructure.

**3.2 Level of Service Policy**

The Level of Service (LOS) is a measure of the quality of service provided to the Region's residents. The LOS is defined as the number of days per year that the Region's roads and infrastructure are in a state of good repair.

SALT MANAGEMENT PLAN

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### 4.0 OPERATIONAL PRACTICES AND STRATEGIES

**4.1 Overview**

This chapter provides a detailed overview of the operational practices and strategies used to manage salt in the Region. It covers the following areas:

- Inventory Management
- Storage and Handling
- Application Methods
- Performance Monitoring
- Reporting and Record Keeping

**TABLE 4.1: Inventory Management**

Category	Item	Quantity	Location	Notes		
Inventory Management	Inventory	1	2	3	4	5
	Storage	1	2	3	4	5
	Handling	1	2	3	4	5
	Application	1	2	3	4	5

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### 4.2 Management Practices

**4.2.1 Level of Service**

The Level of Service (LOS) is a measure of the quality of service provided to the Region's residents. The LOS is defined as the number of days per year that the Region's roads and infrastructure are in a state of good repair.

**4.2.2 Inventory Management**

Inventory management is the process of tracking and controlling the Region's salt inventory. It involves the following steps:

- Inventory Assessment
- Inventory Tracking
- Inventory Reporting

**4.2.3 Storage and Handling**

Storage and handling practices are designed to minimize the environmental impacts of salt. Key practices include:

- Proper Storage
- Proper Handling
- Proper Spill Response

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### 5.0 Snow and Ice Control Training

**5.1 Snow and Ice Control Training**

Training is essential for ensuring that all staff involved in snow and ice control are properly equipped and trained. Key training topics include:

- Equipment Operation
- Safety Procedures
- Application Techniques
- Record Keeping

**5.2 Snow Removal and Disposal Guideline**

The following guidelines should be followed when removing and disposing of snow and ice:

- Remove snow and ice as soon as possible.
- Use appropriate equipment and techniques.
- Dispose of snow and ice in designated areas.

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### 6.0 Application Rates

**6.1 Application Rates - Salt**

Application rates for salt are determined based on weather conditions and road conditions. Key factors include:

- Temperature
- Wind Speed
- Road Surface
- Vehicle Traffic

**6.2 Application Rates - Abrasives**

Application rates for abrasives are determined based on road conditions and vehicle traffic. Key factors include:

- Road Surface
- Vehicle Traffic
- Weather Conditions

**6.3 Application Rates - Liquids**


Application rates for liquids are determined based on road conditions and vehicle traffic. Key factors include:

- Road Surface
- Vehicle Traffic
- Weather Conditions

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*Thank you  
Questions ?*

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