



# Smart About Salt Council (SASC)

Developed by: Smart About Salt Council (SASC)

June 2021.



Winter Salt Management Program



# AGENDA



8

Who is Smart About Salt?

9

Before the Season: Procurement

22

Support for BMP's

36

Thank You & Contact Information

01

Poor winter maintenance practices represent a profound and increasing environment and human health challenge.

Some estimates suggest that salt used in winter maintenance represents a cost of \$5B USD/year to US highways alone (Marchand, 2018), The USGS estimates an annual cumulative cost of \$16-19B USD to American infrastructure.



02

The challenges surrounding winter maintenance operations are a magnifying business issue we should all be concerned with.



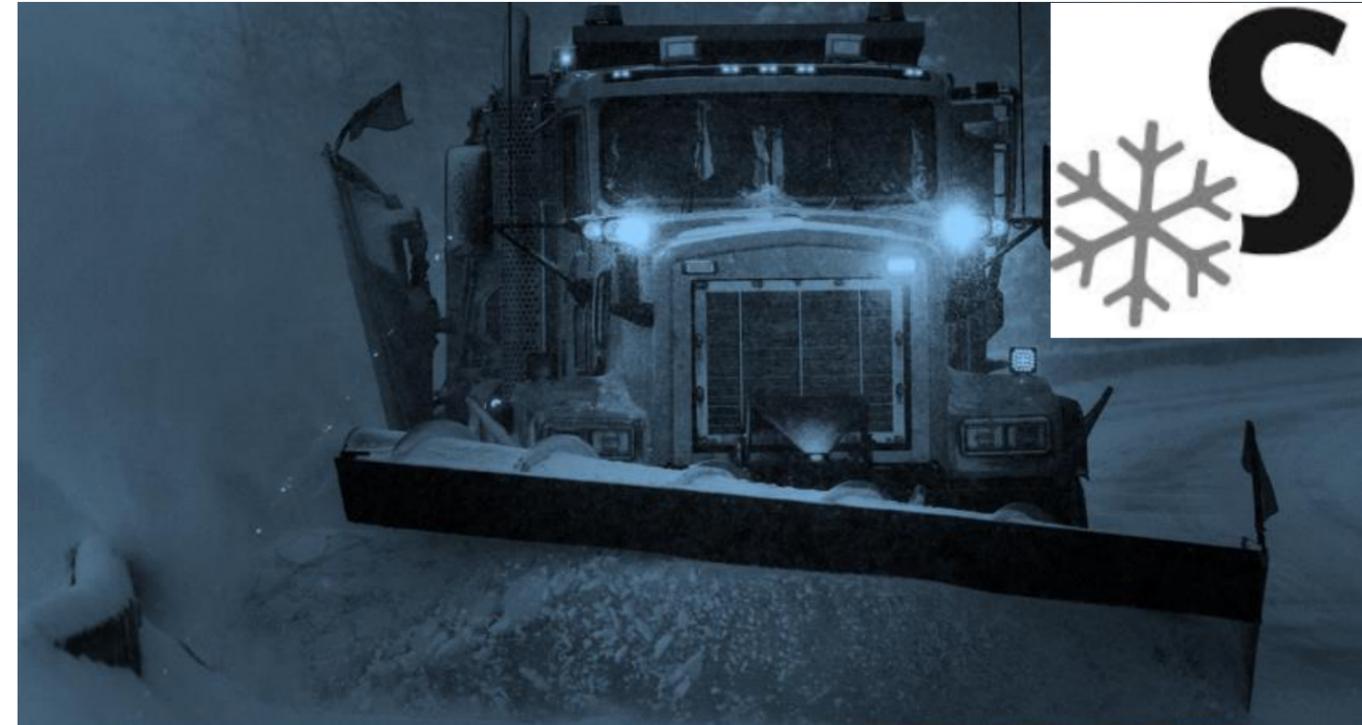
03

Safety and liability concerns drive winter maintenance operations.



04

Collectively there are many stakeholders that are working to understand and meaningfully address the issues related to salt.



## SASC's Mission

To protect freshwater from winter salt applied on facilities.

## SASC's Vision

All professionally designed and managed facilities to improve winter safety and reduce salt use.

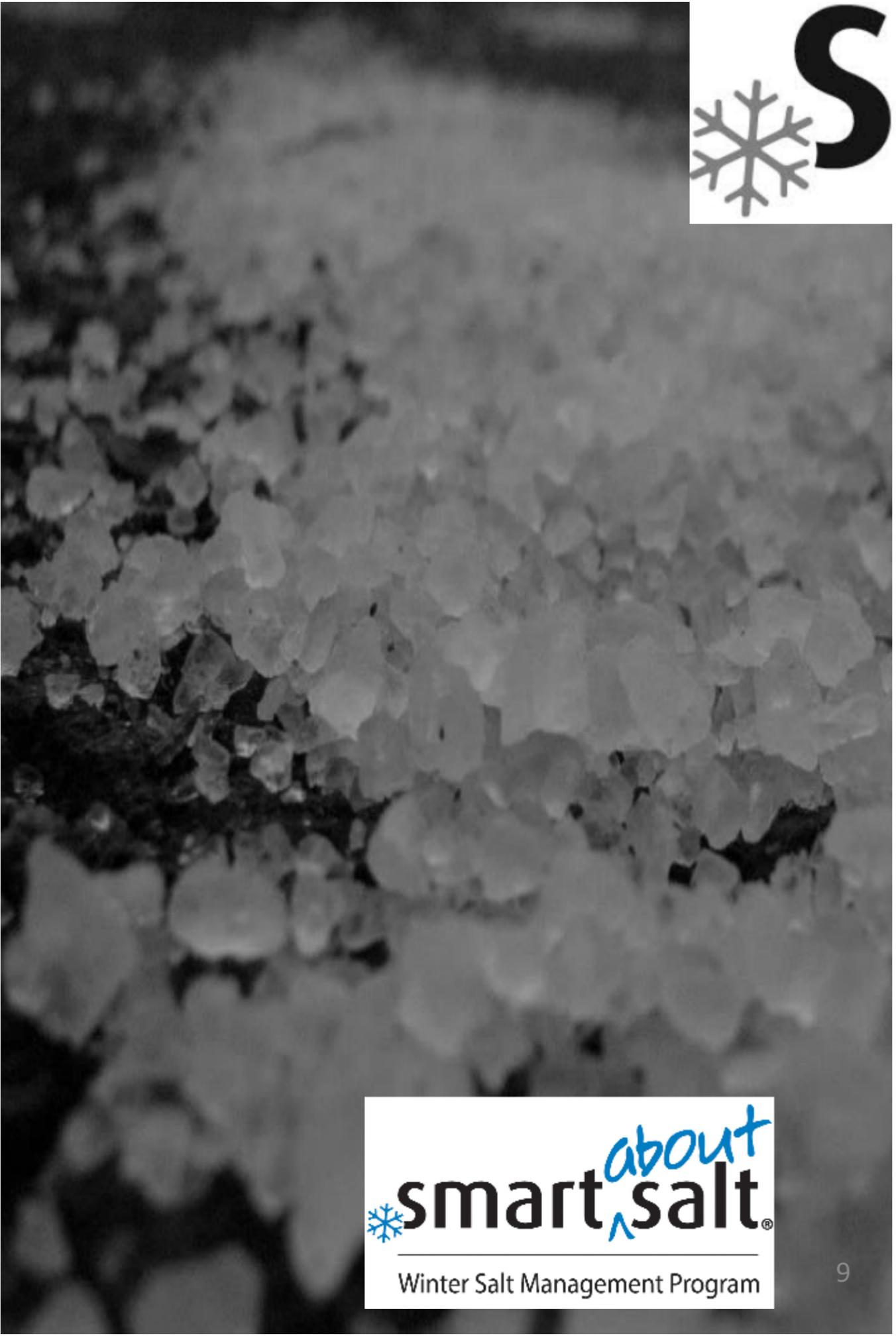
**SASC offers award-winning training to improve winter salting practices and recognizes industry leaders through certification.**

**An NGO incubated by both municipal government and industry, the Smart About Salt Council (SASC) first came into existence in 2009.**



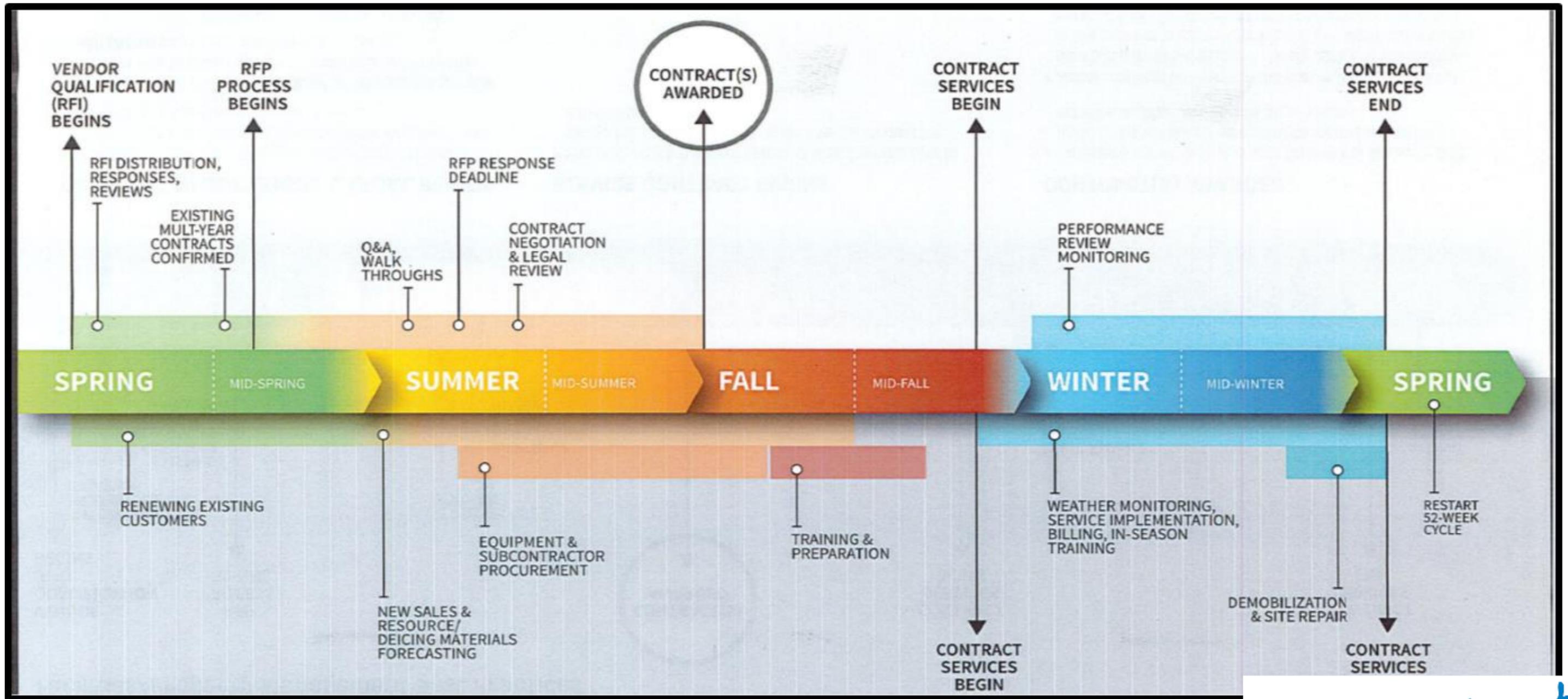


# Before the Snow Falls: Procurement



Winter Salt Management Program

# Timing your procurement efforts



© Snow and Ice Management Association (SIMA), 2021



# Proposal versus tender

## 1. Request for Prequalification (RFPQ), Followed by Request for Tender (RFT)

- Issue a public request for prequalification to determine a list of qualified bidders that meet your organization's criteria (experience, references, safety record, minimum bonding limits, Smart About Salt Council (SASC) and other relevant certifications)
- Issue an Invite-Only Request for Tender to the prequalified list of contractors.
- A tender is a well-defined scope of work (all the details are known) and price is the main consideration.
- In this method, the Contract is typically awarded to the lowest compliant bidder.

## 2. Request for Proposal (RFP)

- Issue an RFP including various pass/fail and weighted scoring criteria (similar to those mentioned in RFPQ process above)
- A proposal, compared to a tender, allows for more flexibility in achieving goals
- Bids are evaluated based on qualitative criteria first and short-listed.
- Short-listed submission prices are opened and considered using the predetermined weighted scoring system.
- In this method the Contract is awarded to the highest scoring proponent.

# The pricing structure



- Where possible, provide salt and de-icer to contractor to remove incentive to apply more and charge more; and,
- If the contractor is including salt and de-icer, have a fixed price per event and not application based.



# Site considerations

- The little things can cause the most problems;
- Curbs need to be cleaned and bare;
- Waste containers should be taken in for the winter, no snow piles;
- Shopping cart storage, bare surface consistent with parking areas;
- Handrails for steps clear, ramps bare;
- No snow piles that will obstruct motorist's sightlines;
- Daily checks even when not snowing - melting snow that causes ice a major concern;
- Loading zones, bulk waste bins, front lift bins, steps ramps etc.; and,
- Don't assume that they are included in contractor services, put them in writing.



# Scope and level of service

- Determine the ‘trigger’, i.e. the depth for snow accumulation, before plowing begins;
- Zero tolerance?
- 5cm (2")? Who is responsible (liable) between 0 and 5 cm (2")
- What is the ‘return cycle’ e.g. return to service every 2.5 cm (1")
- Is dedicated equipment required?
  - If there isn’t dedicated equipment, then the trigger depth and return cycle will be higher
- Specify post-storm clean-up
  - Typical is 12 to 24 hours following the end of a winter storm event, but dependent on the size of the storm event

# Equipment considerations

Vehicles

Spreaders

Sidewalk/walkway equipment

SASC offer a Curated “directory of products and services” online at <http://www.smartaboutsalt.com/Directory-of-Products-&-Services>



**Ground speed controllers, calibration, hand spreading, liquids, etc.**





# Anti-icing versus de-icing

- Most contracts do not differentiate between these;
  - Except sometimes contracts do not allow anti-icing to save money (fear of ‘false alarms’)
    - Understand the liability associated with this - liability must shift to facility in this case
- Anti-icing
  - Proactive, before event
- De-icing
  - Reactive, during/after event
- Recommendation: Request that the option to anti-ice be articulated in the contract.

# Special Considerations for sidewalks/walkways



- Contract must clearly articulate expectations for how sidewalks are maintained;
  - No residual build-up of rock salt on sidewalks, especially internal ones that can potentially result in an increased hazard and/or salt being trekked into building; and,
  - Liquids could be an important strategy for i sidewalks.



Winter Salt Management Program



# Application rates and materials

The Right Material

The Right Time

The Right Amount: Why Use Multiple Application Rates?

The Right Place

Retain it to work

Level of Service	Weather Conditions	Surface Conditions	Materials
<ul style="list-style-type: none"><li>• Service response time</li><li>• Bare pavement regain time</li><li>• Return time</li><li>• Accumulation trigger</li><li>• Product choice</li></ul>	<ul style="list-style-type: none"><li>• Temperature</li><li>• Shading</li><li>• Forecasted trends</li><li>• Precipitation</li></ul>	<ul style="list-style-type: none"><li>• Snow pack versus bare pavement</li><li>• Residual salt present</li><li>• Pavement temperature</li><li>• Surface type</li></ul>	<ul style="list-style-type: none"><li>• Liquid</li><li>• Salt</li><li>• Treated salt</li><li>• Sand</li></ul>



# Risk and liability considerations

- Record-keeping and due diligence legal defenses
- Professionalism: Training and certification
- Contract administration

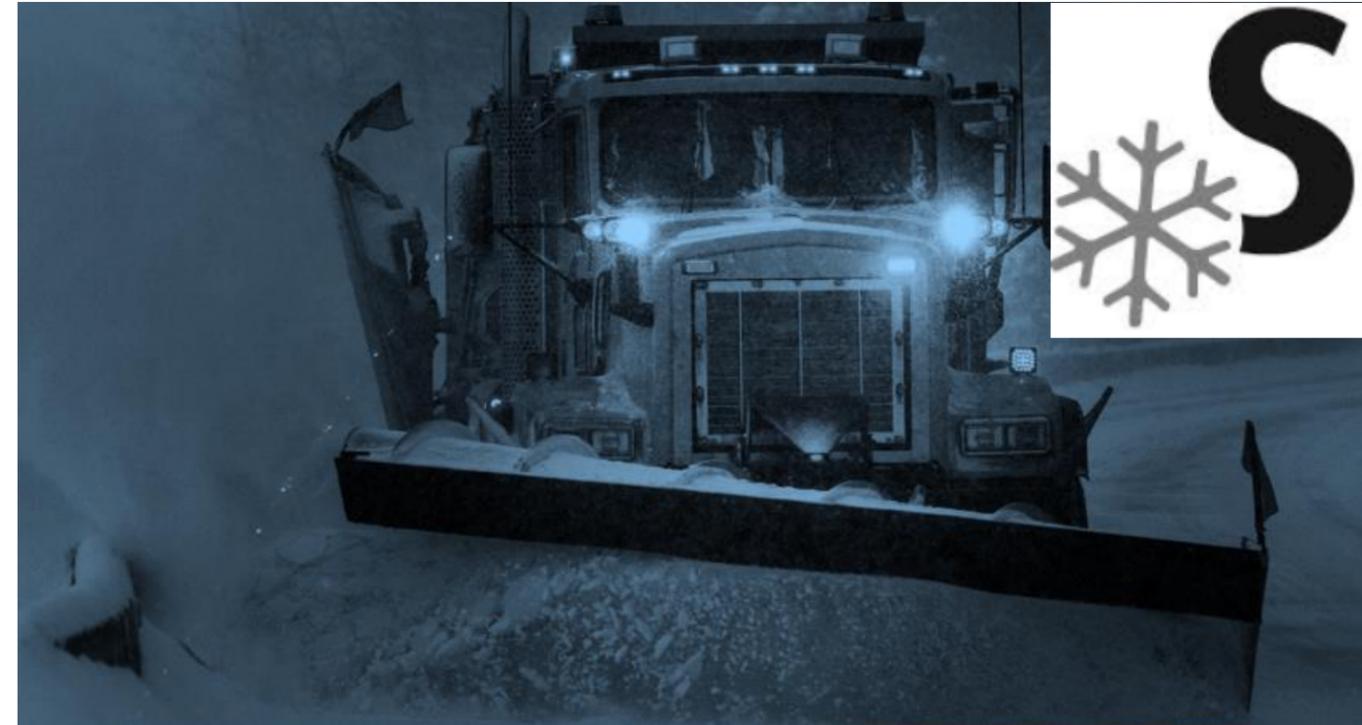
# Demonstrated Professionalism

The Smart About Salt Council (SASC) offers a variety of award-winning, transnational training opportunities including:

1. “The Essentials of Salt Management” course
2. A “refresher” for SASC certified Members

Training is available **online, by webinar or in-person** in either English or French.

**Training is the basis and requirement for certification**



Once SASC **certification** is achieved it's a **quick and simple process to maintain**:

1. An annual renewal needs to be filed
  - Online or through the mail
  - Cost is \$250 CDN (plus tax)
2. Tell us how you're doing:
  - Annual report sharing the total maintenance area you serve, how much salt you applied and how many storm events you recorded
3. Keep your training current or loose your certification:
  - Every 2 years take the "refresher" training and every 5 years complete the "essentials" course



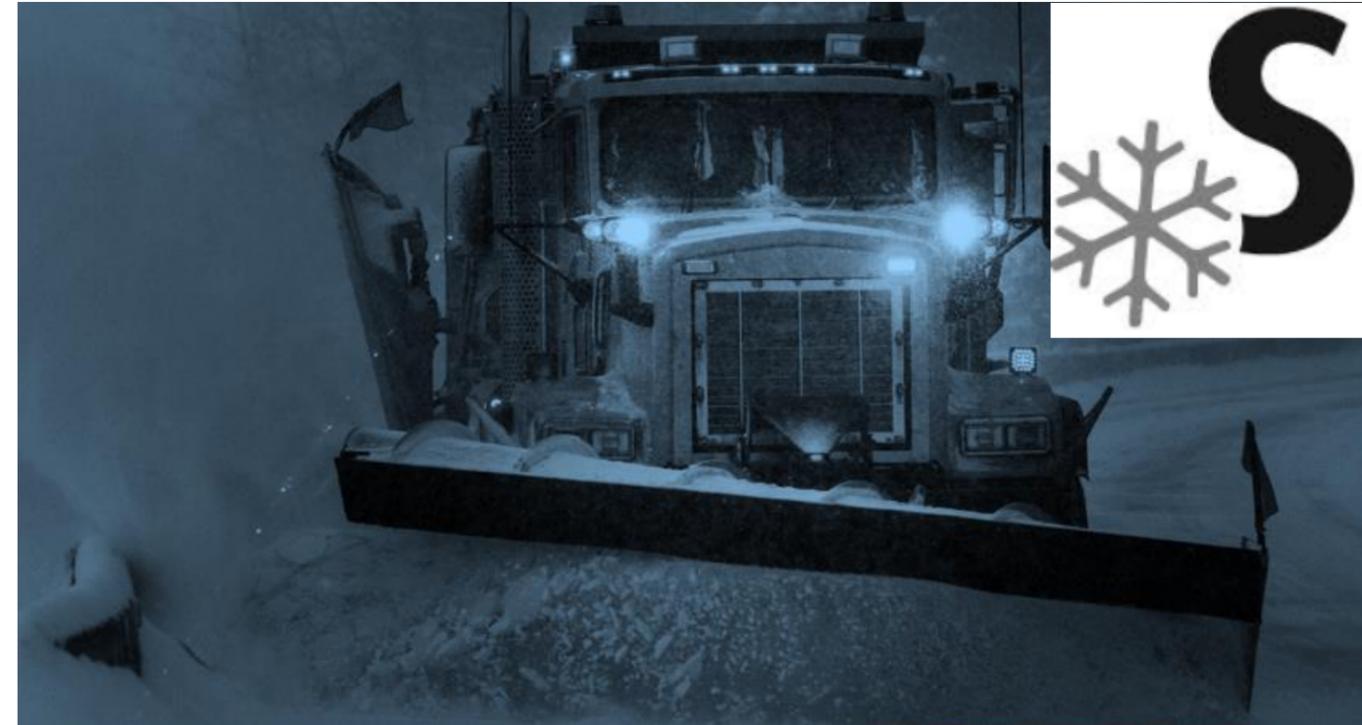
**Smart About Salt Council**  
Supporting the Development and Use  
of  
Best Management Practices (BMPs)



The Smart About Salt Council (SASC) offers a variety of award-winning, transnational training opportunities including:

1. “The Essentials of Salt Management” course
2. A “refresher” for SASC certified Members

Training is available **online or in-person** in either English or French.



# Best Management Practices (BMP) Training

The Smart About Salt Council (SASC) is a not-for-profit organization offering award-winning training for winter maintenance contractors, facility owners & operators and others in the hopes that best management practices (BMP's) are adopted.

Our training for those engaged with winter maintenance can:

- ✓ Help to reduce the costs of winter maintenance
- ✓ Help to provide a defense against legal claims
- ✓ Help to differentiate good contractors from others
- ✓ Help reduce the impacts of salt on infrastructure
- ✓ Help improve client and customer relations
- ✓ Support the environment and drinking water resources

## Program Format

Training is offered online in English and French, via Webinar *and* in-person in the classroom.

For classroom seminars we typically start at 8:30 am and finish by 4:30 pm having taken a break for lunch.



# What's covered with the Essentials of Salt Management Training basic training course?

01

SASC Overview: This module introduces the course and explains the Smart About Salt program and its requirements for individual certification and organizational accreditation.

02

Salt and the Environment: Explains the effects of excessive chlorides (salts) on soil, vegetation, surface water and its biota, wildlife, and groundwater. It explains environment concerns, and provides clear actions to improve salt management and introduces the principles of the 5 R's of salt management.

03

Weather: The weather module focuses on how weather forecasts can be used to improve business practices.

04

Principles of Ice Formation: This module describes how ice forms and explains the principles of dew point as it relates to frost and 'black ice'. It also covers snow drift management, the importance of water management at facilities and the importance of pavement temperatures to snow and ice control decision-making.



# “Essentials” Training Cont’d



05

Mechanical Snow Removal: This module discusses the role of mechanical removal and the role of chemicals. The module covers the wide-variety of equipment that is useful to winter maintenance.

06

Salt Science: This module explains why and how salt works as a de-icing media, what is a freeze point depressant, why we use salt, the phase diagram, the role of brine, and the importance of proactive snow and ice control.

07

5R's of Salt Management: This module considers the right material, the right time, the right amount, the right places and how to retain work.

08

Liquids: This module explores anti-icing, pre-treating, pre-wetting, direct liquid application and the production and use of liquid deicers.



# “Essentials” Training Cont’d



09

Calibration: This module discusses the importance of calibration, how to calibrate equipment, how often to calibrate, and the importance of documentation.

10

Application Rates: This module discusses what are reasonable application rates, the importance of multiple rates, how to calculate services areas, how to calculate application rates and how to apply the right amount of salt.

11

Materials Storage and Handling: This module discusses the problems with poor storage, what are the characteristics of a good storage facility, good and bad salt handling procedures, and the importance of good housekeeping.

12

Risk Management and Record Keeping: This module explains where risks may come from, the importance of managing risk, how to manage risks, the importance of keeping good records, and shares some practical resources.

# “Essentials” Training Cont’d



13

Site Assessment: This module aims to teach how to create a site plan for winter maintenance operations, how to estimate the amount of materials required to complete winter maintenance operations safely, and how to identify hazards.

14

Putting It All Together: This module provides a review of key points, explains the steps to a good winter operation, what is involved in getting organized, how to analyze a site, materials handling, the key step to fighting a storm, and the importance of record-keeping.



Exam: The “Essentials of Salt Management” training is followed by an open-book exam.

It takes an average of 15-30 minutes to complete each of the training modules offered if working online. The online training module are offered for \$25 each (plus applicable taxes) however there is also a summary and exam module which is necessary for certification available for \$50 (plus applicable taxes). [There are no time limits on the online training modules.](#)

In-class training is organized in geographies across Canada, in part, correlated to demand. A minimum of twenty (20) registered paid students are required for an in-class training course to be offered.

[“Riverkeeper” online special = \\$300/student using code 5H8KBBAJ](#)





# Training Cont'd

## Who Should Take Smart About Salt Council (SASC) Training?

The training offered by Smart About Salt is geared to people working in the snow and ice control business. Contractor managers, supervisors and operators will benefit from the course. Facility managers that control winter operations and hire and direct snow and ice contractors should be trained to best understand the business of snow and ice control. Risk managers will learn about winter related risks and how these can be managed as well as the challenge contractors face because of poor site design.

## What Do I Get from the Smart About Salt Council Training

- ✓ You will better understand snow and ice control leading/best practices
- ✓ You will better understand how to identify and manage winter risks
- ✓ You will learn about how to properly use and manage salt
- ✓ You can become Smart About Salt certified and/or accredited.

## Registration and Fees

You can register quickly and easily for any Smart About Salt Council training effort online at [www.smartaboutsalt.com](http://www.smartaboutsalt.com).

Available in-class and online (English and French).



Those that are SASC trained can be publicly listed on the SASC website ([www.smartaboutsalt.com](http://www.smartaboutsalt.com)).

Upon completion SASC presents the trainee with a certificate of completion.



Once SASC **certification** is achieved it's a **quick and simple process to maintain**:

1. An annual renewal needs to be filed
  - Online or through the mail
  - Cost is \$250 CDN (plus tax)
2. Tell us how you're doing:
  - Annual report sharing the total maintenance area you serve, how much salt you applied and how many storm events you recorded
3. Keep your training current or loose your certification:
  - Every 2 years take the "refresher" training and every 5 years complete the "essentials" course



# STEPS TO ACHIEVE SASC CERTIFICATION



1

Complete the training

[www.smartaboutsalt.com/schedule](http://www.smartaboutsalt.com/schedule)

2

Register Your Intent to Certify

[www.smartaboutsalt.com/registrationofintent](http://www.smartaboutsalt.com/registrationofintent)

3

Annually Renew/Update  
Certification

4

Keep Your Certification Current

“Refresher” training every two (2) years

“Essentials” training every five (5) years

 **smart salt**<sup>®</sup>  
*about*

Winter Salt Management Program



Those that are SASC certified are publicly listed on the SASC website ([www.smartaboutsalt.com](http://www.smartaboutsalt.com)).

Upon request SASC can provide a certificate of certification.





# Program Verification (aka Auditing)

Grounded in an evidence-based approach, the verification program that SASC has six (6) guiding principles:

- It meets existing SASC training, certification and accreditation requirements;
- It supports best management practices (BMP's) in salt management/addresses liability concerns;
- It builds upon findings from jurisdictional scan;
- It recognizes the resource limitations of winter maintenance contractors;
- It considers safety first; and,
- It represents performance criteria identified by SASC.

## Program Objectives:

- ✓ Verify certification requirements are met;
- ✓ Verify annual certification reporting is accurate;
- ✓ Verify personnel have appropriate training as per SASC requirements documents;
- ✓ Verify records are retained as per SASC requirements;
- ✓ Verify personnel are competent with respect to implementing SASC BMP's;
- ✓ Verify continuous improvement efforts are being made; and,
- ✓ Identify opportunities for improvement (OFI).

# PROGRAM VERIFICATION STEPS



1

Complete annual certification renewal

Online or via mail

2

SASC may request additional documentation

3

SASC communicates

Results of documentation review provided or site visit arranged

4

Site visit

5

SASC provides feedback





# Thank You! & For More Information

**Lee Gould**

Executive Director, Smart About Salt Council (SASC)

✉ [lee.gould@smartaboutsalt.com](mailto:lee.gould@smartaboutsalt.com)



Winter Salt Management Program