

Chloride Emission Reduction is More than Possible

1. **How** Commercial Contractors are using alternative anti/deicing methods in the Private Snow & Ice Industry
2. **Why** Commercial Contractors are using them
3. **What** more can be done



Who am I & Why Should You give me (10) Minutes of your time this morning?

I'm the founder, President and Visionary of



This is me...



And this is the CPHort Team I'm blessed to serve & work alongside everyday...



The HOW: Going Against the GRAIN

The basic science of snow/ice melting with chemical applications

- Applying an ice melting chemical (i.e.: salts) creates 1 of 2 chemical reactions:
 - **Endothermic:** energy is absorbed from surroundings in the form of heat (NaCl Sodium Chloride Rock Salt)
 - **Exothermic:** energy is released from the reaction into the surroundings (CaCl₂ Calcium Chloride)



The HOW: Going Against the GRAIN

For either type of Chemical (Endo or Exo) to become effective and begin the ice/snow melting process, what must happen? What element must be present?



The HOW: Going Against the GRAIN

MOISTURE! What do we call the result when moisture mixes with a dry Salt or Chloride and changes its composition?



Photo Credit: Alaska Dept. of Transportation & Public Facilities

The HOW: Going Against the GRAIN

So if our traditional dry salts & chlorides are actually useless unless moisture transforms them into a liquid brine state, why not apply them in a liquid state?

Why not reduce the “wait time” & remove the need for moisture for that reaction to happen?



The WHY: Going Against the GRAIN

Anti-icing (pre-storm) prevents bonding & hardpack while providing melt down during on-going snowfall events.



The WHY: Going Against the GRAIN

What SHOULD the expectations of Anti-Icing be?



The WHY: Going Against the GRAIN

Anti-icing reduces the amount of Deicing (post-storm) materials needed after mechanical removal, in some events eliminating the need for Deicing.



The WHY: Going Against the GRAIN

When bonding/hardpack occurs, an excessive amount of chlorides tend to be used to melt down, resulting in waste, runoff contamination, tracking and actually a more dangerous surface (“marbles”).



The WHY: Going Against the Grain

Liquid Brines result in a cleaner, safer end result!



The WHY: Going Against the GRAIN

Liquids do have their limitations and in my humble opinion, granulars will always have a place in our snow fighter tool box.

*When liquids should **NOT** be used...*

*Freezing rain/sleet: liquids can dilute
Causing the 23.3% salt content to fall
Out of solution and turn to pure water.
Liquids should be used with surface temps
Are 10+Fdegrees F to avoid re-freeze.*



The WHY: Going Against the GRAIN

*When liquids should **NOT** be used...*

*When heavy blowing/drifts are expected.
Liquid applications will “catch” the snow
And stick in place rather than allow it to
Blow across lots/streets.*



The WHY: Going Against the GRAIN

Put the liquids away when...



Pavement is wet (raining/sleet) or Pavement Temps are +32 degrees F

The WHAT: Going Against the GRAIN

Deice Applications (Granulars)

What is the recommended granular deice application rate per Acre?



How do you know? What accurate measuring device are you using? Does your salt truck have a weight scale on it?

The WHAT: Going Against the GRAIN

We have a MAJOR water pollution problem and those in authority know about it (THANKFULLY)! Even if you're not compassionate about the environmental impact of our Snow/Ice operations and the catastrophe that it will leave behind for our next generation, you may be motivated by monetary means to your business.

Restrictions, legislation and fines are underway and currently being presented to Municipality, State and Government officials to regulate Chloride Emissions and target the most obvious offenders, US. The private commercial snow contractor.

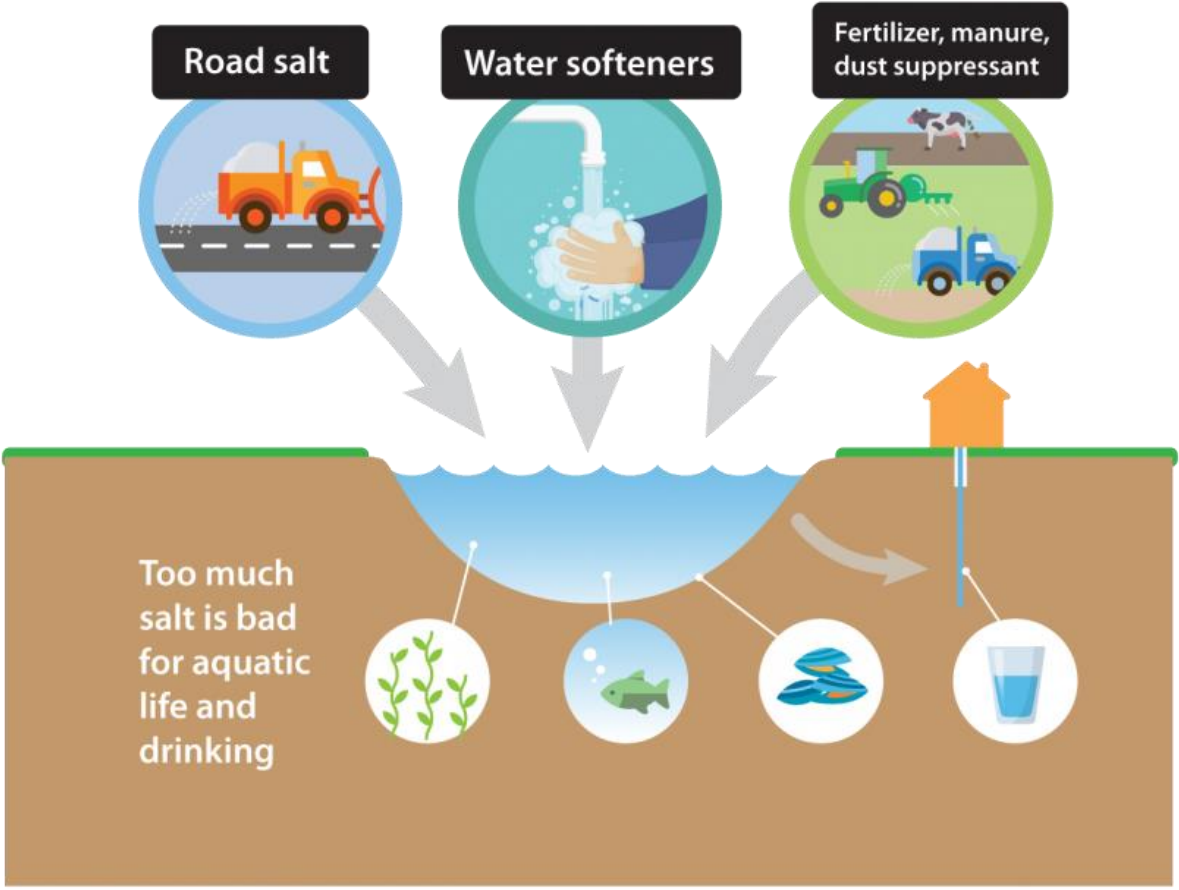
If there was ever a time to get ahead of the curve to protect the environment, protect your business and protect your bottom line:

it's TODAY



The WHAT: Going Against the GRAIN

Minnesota DOT



The WHAT: Going Against the GRAIN

Maryland / Virginia DOT Co-Op



CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

3 THINGS YOU SHOULD KNOW ABOUT SNOW & THE BAY

SNOW MELT 1

Polluted runoff enters our water ways via snow melt, but not as quickly as it does from rainstorms.



ROAD SALT 2

Salt is currently the least-expensive and most-efficient de-icer available for municipal use.



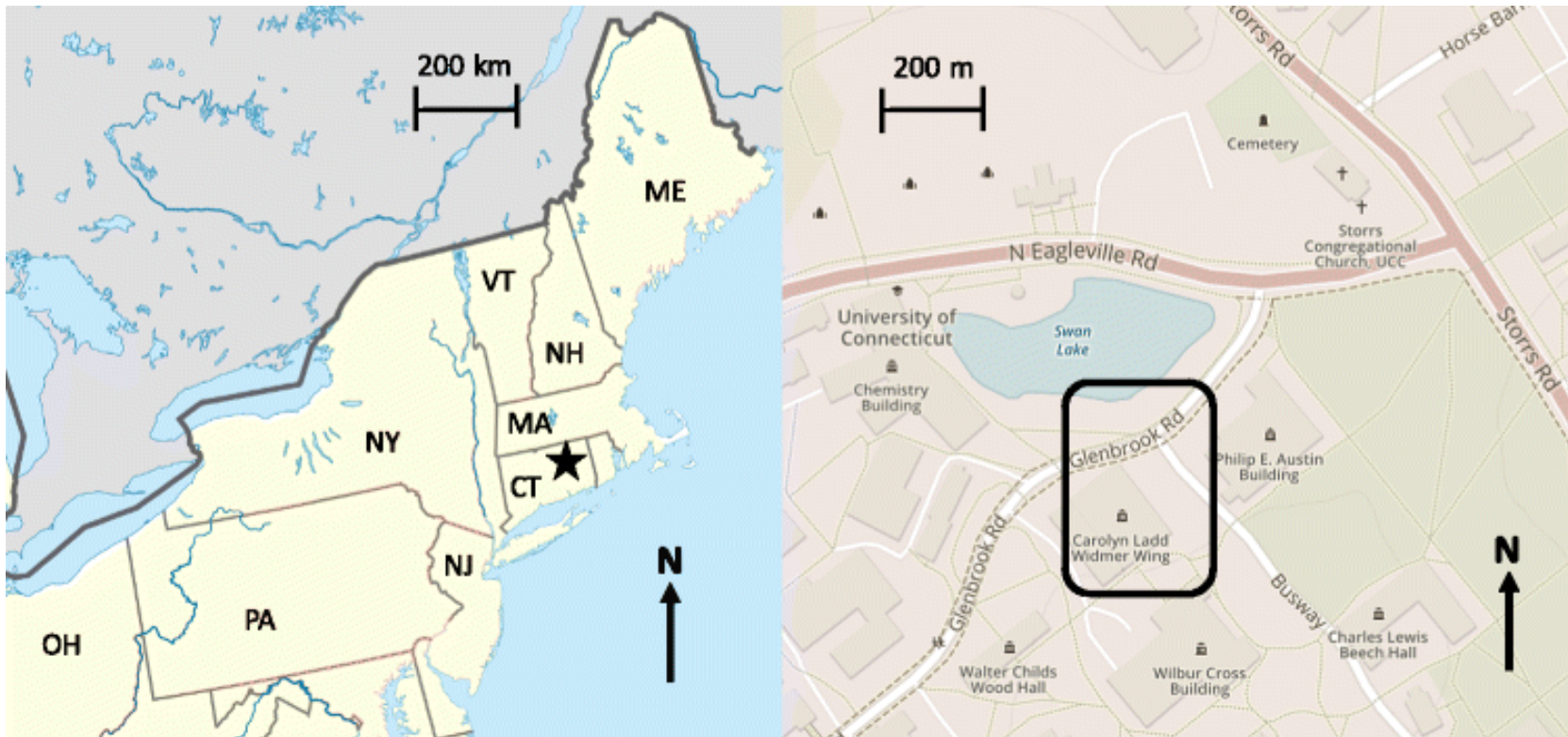
BAY HEALTH 3

Large amounts of salt can disrupt the balance in our water ways. It is better to let salted snow melt on land for a more gradual influx.



The WHAT: Going Against the GRAIN

University of Connecticut Study: NE Coast



Legislation that is already in Motion

Could 'smart salting' keep Minnesota roads and waters safe?

Max Nesterak · St. Paul · Mar 5, 2018



Legislation that is already in Motion

Snow Removal Service Liability Limitation Act Passes in Colorado



On May 30, 2018, Colorado Governor John Hickenlooper signed into law [Senate Bill 18-062](#), referred to as the “Snow Removal Service Liability Limitation Act” (the Act), codified at C.R.S. § 13-21-129. The Act is based on model legislation drafted by the [Accredited Snow Contractors Association \(ASCA\)](#), which saw similar legislation pass in Illinois, with bills before lawmakers in New Jersey, New York, Pennsylvania, Indiana and Massachusetts. The primary focus of the Act is to void certain indemnity

agreements that are common in condominium association and commercial property snow removal contracts. It becomes effective on August 8, 2018.

What this Means for Colorado Snow Removal Contractors?

Legislation that is already in Motion



Compliance Notice (11/2/2016) - IL Snow Removal Services Liability Limitations Act



On August 25, 2016, Illinois adopted into law the Snow Removal Service Liability Limitations Act. The law, in part, provides that any provision, clause, covenant or agreement entered into on and after August 25, 2016 that is part of or in connection with a snow removal and ice control services contract is against public policy and void if it requires one party to indemnify or hold harmless the other party from any tort liability resulting from its own acts or omissions.

The full text of the Illinois law can be found by clicking [here](#).

The WHAT: Going Against the GRAIN



1. Stretch bulk salt capacity; salt shortages will be a thing of the past
2. Promote LEED Certification Building Owners & Property Management
3. Reduce Chloride Emissions **before** it becomes mandated to do so
4. **Increase** your bottom line and Net Profits by using Liquid Brines when applicable in lieu of Granular Rock Salt
5. Off-set the anticipated 16% predicted increase in deicing rock salt costs for the 2019/2020 season
6. Phase out granular rock salt spreaders with highly efficient and automated GPS tracking liquid salt brine rigs
7. Train your operators and crews **NOW**



The WHAT: Going Against the GRAIN



Typ. 500 gal 3-lane Spray Boom Rig with 200' Hose Reel

The WHAT: Going Against the GRAIN

Self-Performed Brine Manufacturing



The WHAT: Going Against the GRAIN

Client: "I know, I know; but the tenants want to drive over marbles. It's all about their perception."



The Challenge: Selling to Clients

How do we set the correct level of expectation, scope of work with private sector clients?

1. SIMA Glossary of Terms
2. Explain the benefits in written form (for added validity) referencing unbiased sources such as local Municipal and Industry resources
3. Remind them that its in BOTH the client and contractor's best interest to provide the right services and solutions to properly maintenance their properties
4. Reiterate the benefits of infrastructure, landscape and environmental protection that liquids can provide
5. Refer them to unbiased sources such as SIMA's sustainable salt initiative and various other municipal agencies:

www.SaltAboutSalt.com

<https://facilityexecutive.com/2018/10/sustainable-winter-management-guidelines/>

www.WIWISaltWise.com

<http://saltinstitute.org>

Go Forth with Confidence!

