



NEW HAMPSHIRE SALT REDUCTION

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Axiomatic

IN THE BEGINNING: CONTAMINATION

- EPA identifies chloride as a contaminate in I-93 Watersheds in 2003
 - Beaver Brook
 - Policy Porcupine Brook
 - Dinsmore Brook
 - N. Trib of Canopy Lake
- EPA/NHDES – withhold environmental permit

FHWA-NH-EIS-02-01-F

Final Environmental Impact Statement *Interstate 93 Improvements* *Salem to Manchester* *IM-IR-93-1(174)0, 10418-C*

Volume 1 of 3

April 2004

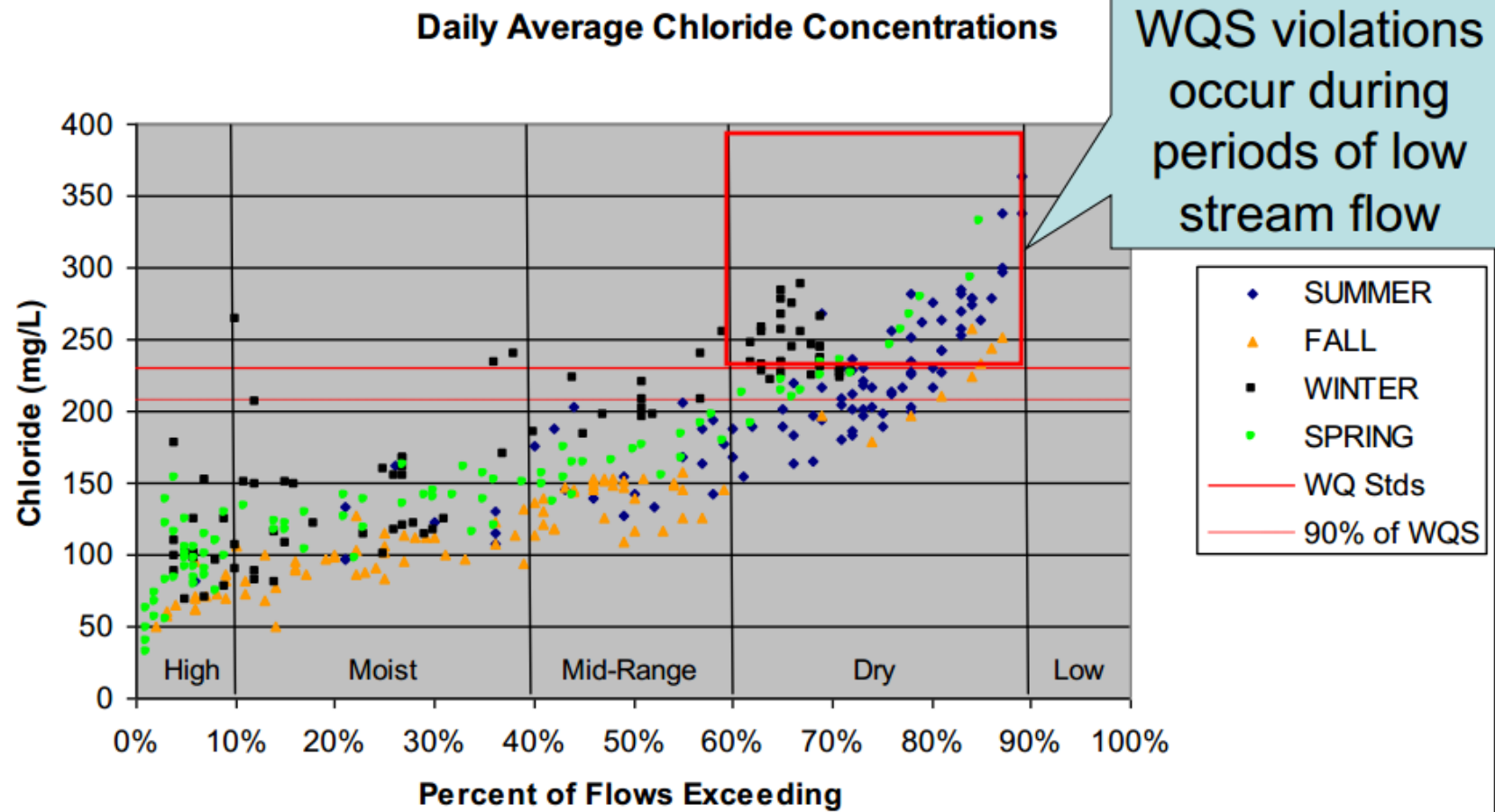


Federal Highway
Administration

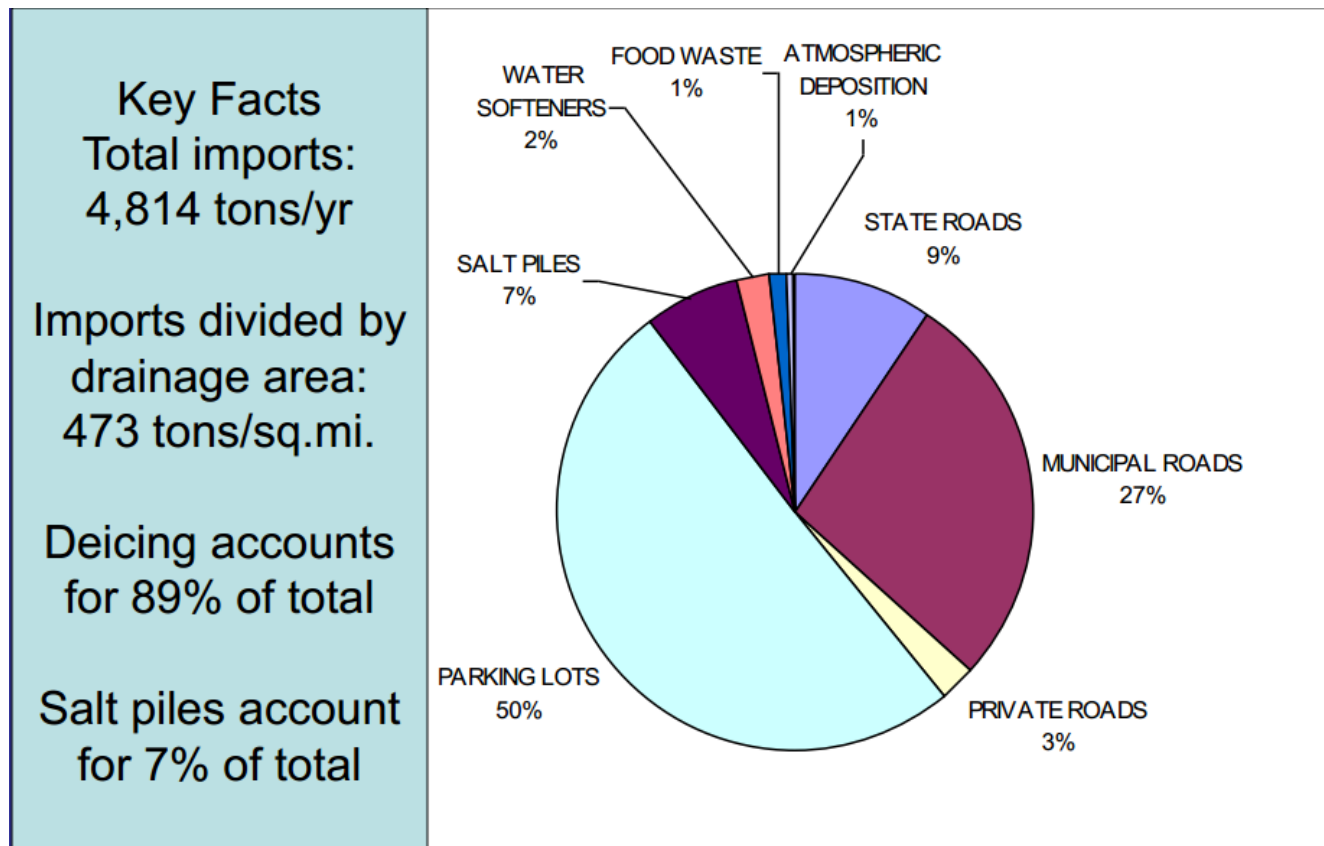


New Hampshire
Department of Transportation

WATER QUALITY MONITORING

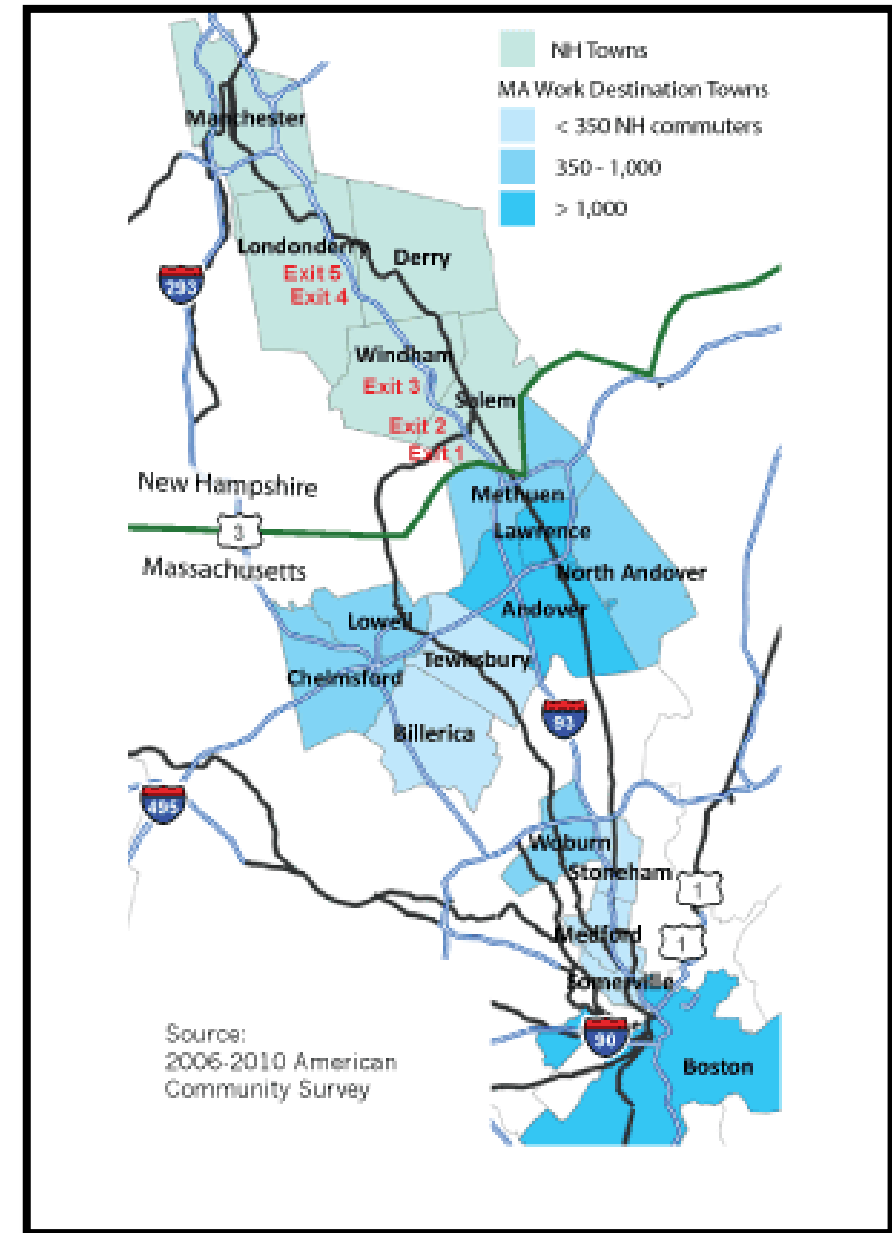


WHERE DOES IT COME FROM



STAKEHOLDERS

- US Environmental Protection Agency
- Federal Highway Administration
- NH Department of Environmental Services
- Municipalities: Derry Londonderry, Salem, Windham
- Private Contractors
- Workgroup & Steering Committee Formed



TOTAL MAXIMUM DAILY LOAD

- Total Allowable Salt Input
- Sector Allocations
 - NHDOT/Municipal/Private
- Continuous Chloride Monitoring
- \$2M Federal Earmark

Source	FY07 Salt Imports (tons salt/yr)	Allocation of Loads (tons salt/yr)	Percent Reduction
State Roads	456.1	364.7 (10.9 tons/lm/yr)	20.0%
Municipal Roads	1,305.7	1,044.1 (9.0 tons/lm/yr)	20.0%
Private Roads	124.9	99.9 (6.6 tons/lm/yr)	20.0%
Parking Lots	2,426.4	1,940.3 (5.1 tons/ac/yr)	20.0%
Salt Piles	315.2	0	100%
Water Softeners	101.8	101.8	0%
Food Waste	52.3	52.3	0%
Atmospheric Deposition	31.9	31.9	0%
Total	4,814.3	3,635.0	24.5%

THE FIVE STAGES OF GRIEF



DENIAL

- Salt Problem? There isn't a salt problem!
- We're saving lives here!
- Safety First Comes FIRST!



ANGER

- I'm not going to risk a lawsuit just to save a couple of fish!



BARGAINING

- If you make these tree huggers go away I will never take out another mailbox!



DEPRESSION

- This is ridiculous!

I can't control the weather!

I can't risk a lawsuit!

I can't control the guy doing 75 in
Porsche during a storm



ACCEPTANCE

- I can use less salt & maintain Level of service





PROJECT COMPONENTS

TRAINING

- Identified Best Practices
- Developed Application Rates
- Developed Calibration Procedure
- Developed 5 Hour Training
- 1500+ People Trained



CERTIFICATION

- Green Snow Pro Certification
 - Liability protection
 - NH RSA 489-C
- Requirements
 - Take Course & Pass Exam
 - 2 CEU's every 2 Years
 - Track Annual Usage
 - Track Applications



Salt Management System

New Hampshire Salt Management System

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Track
Annual
Salt
Usage

Record annual salt use
Report on annual salt use



Log
Book

Store and track clients
Record client services
Track total annual services

[Get Started](#)

[Sign In](#)

ENGAGEMENT

- NH Salt Symposium
- Annual Attendance
 - 200+ Professionals
 - 20 Vendors
- 4th Annual Salt Symposium 2017
- Salt Shaker Awards
 - Salt of the Earth
 - Shaken not Stirred Award
 - Salt-n-Peppa Award



BEST PRACTICES: SALT APPLICATION OVERSIGHT & ENVIRONMENTAL RESPONSIBILITY

with Patrick Santoso and Phill Sexton

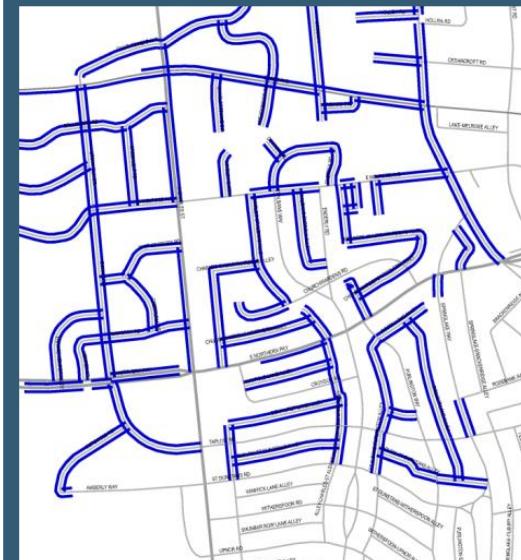
- Understand the environmental and infrastructure impacts of chloride contamination resulting from road salt
- See how the regulatory process has been implemented to resolve the problem in selected New Hampshire watersheds
- Learn how application rates connect to weather and road surface temperatures
- Learn how to reduce your application of road salt without impacting level of service

2 CEU credits // 1 voucher



SALT MANAGEMENT PLANS

- Draft Municipal Plans
 - Document Methods & Reductions
 - Track Funding
 - Incorporate into Snow & Ice Policy



Town of Derry, NH



Salt Reduction Plan For:
Beaver Brook

Original Approved by Council:
Revision 1: 8/1/2011
Revision 2: 3/9/2016

Legal Notices:

These are General guidelines used by the Derry, NH Public Works Dept. Each decision to mobilize crews, extend operation hours, and to apply de-icing, anti-icing, and pre-treatment materials is made based on particular weather conditions, past experience, and the availability of resources and therefore may not adhere strictly to this policy.

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GET OUT EARLY

Typically anti-icing is most effective if applied 1-2 hours before the precipitation begins however it can be applied up to 24 hours in advance.

TRY IT FIRST

Trying anti-icing for the first time? Make a 23.3% brine solution and before a storm spray pavement on your own property using a masonry/plant sprayer. Use this experiment to determine how best to use it with your clients.

LEAVE SOME PAVEMENT BARE

It's always best to use stream nozzles instead of fan tip to avoid creating a slippery condition. If the anti-icing liquid freezes the bare pavement will still provide a traction surface.

USE A FILTER

Having a filter in your liquid dispensing system will reduce clogs in your nozzle. Automobile in line fuel filters work quite well. If your liquid dispenser is not functioning properly be sure to check the filter first.

Anti-Icing

NH Best Management Practices

A Proactive Treatment

Anti-icing before a storm is very similar to using a non-stick spray on a pan before cooking. Just like a non-stick spray prevents food from bonding to the pan, anti-icing prevents snow and ice from bonding to the pavement so that it can be plowed away. Anti-icing can save you money as it costs 50% less than reactive deicing.



Make Your Own Salt Brine

When making brine it is important to add enough salt to produce a 23.3% solution which freezes around 0°F. Roughly 2.5lb per gallon of water will produce a 23.3% solution. You can verify using a salometer (~\$20) a 23.3% solution will have a specific gravity of 1.176, or 85% salinity. Consult the Brine Making BMP sheet for more info.

How Much Should I Use and When?

You can apply brine up to 24 hours in advance of the storm. Typical application rates range from 0.5 to 0.75 gallon per 1000 sq.ft. (10' x 100' area). Other chemicals such as magnesium are also available—consult your supplier for application rates. Anti-icing is *not* advised prior to freezing rain events.



Getting Started

Try making your own salt brine by putting 13 lb of salt in 5 gallons of water to get a 23.3% salt brine solution. Mix the brine until all of the salt is dissolved. Using a masonry sprayer apply the liquid several hours before a storm. Start by applying about 0.25–0.5 gallons to a 10' x 50' area. Adjust the application rates based on your experience. Being careful not to over apply and cause a slippery condition.

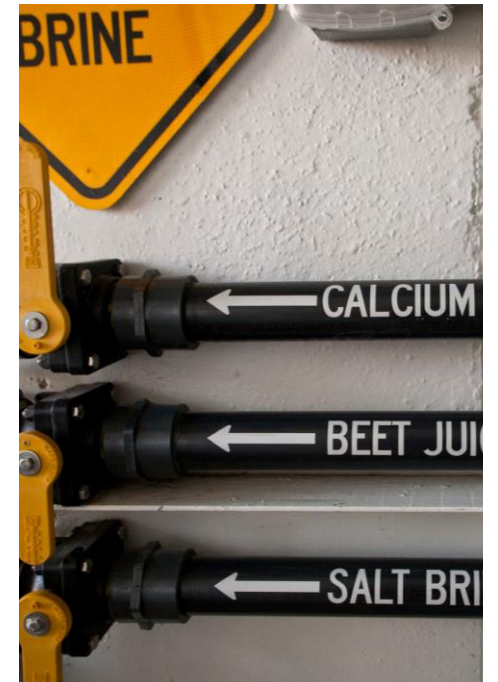
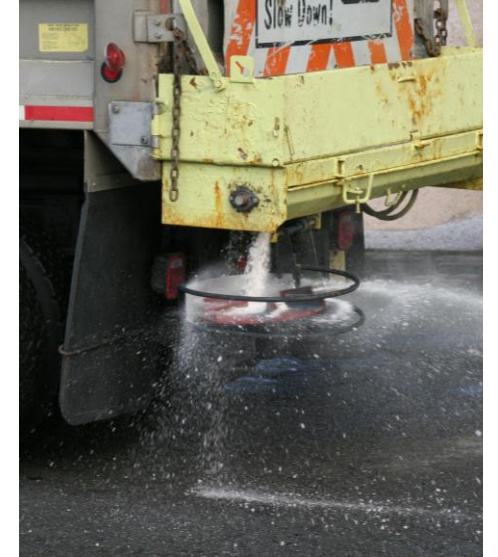


Produced in partnership with:



WHERE ARE WE TODAY

- Average Reduction ~20%
- Several Watersheds haven't shown contamination for 2 seasons
- Liability protection is advancing positively.



Questions?



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