

Green SnowPro

The New Hampshire Experience

Aubrey Voelker

NHDES Salt Reduction Specialist and
Green SnowPro Coordinator



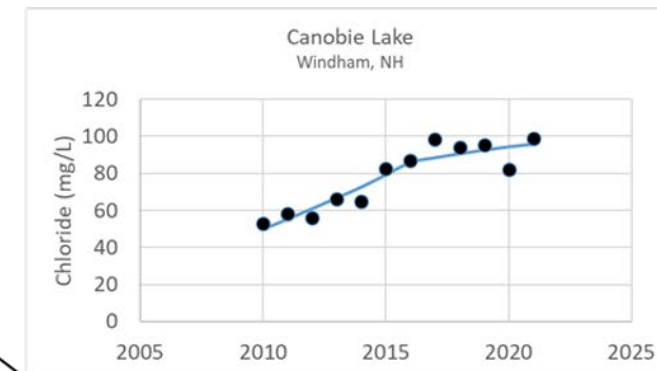
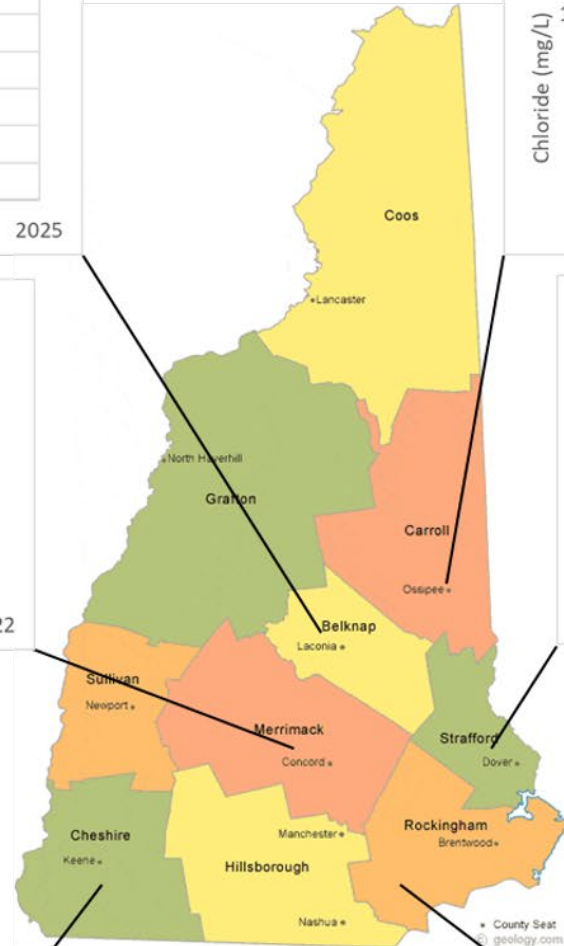
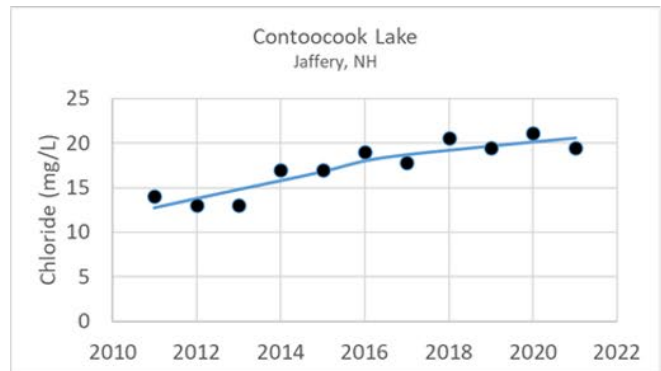
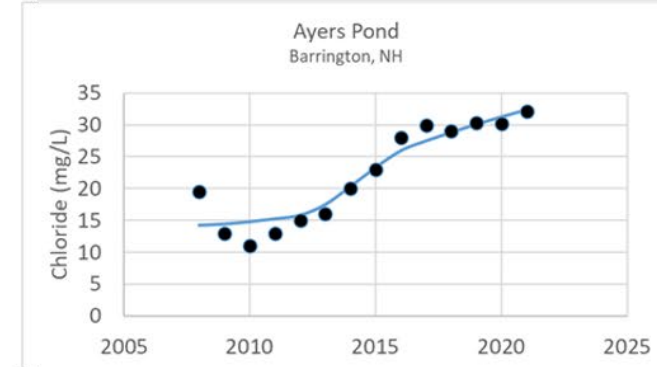
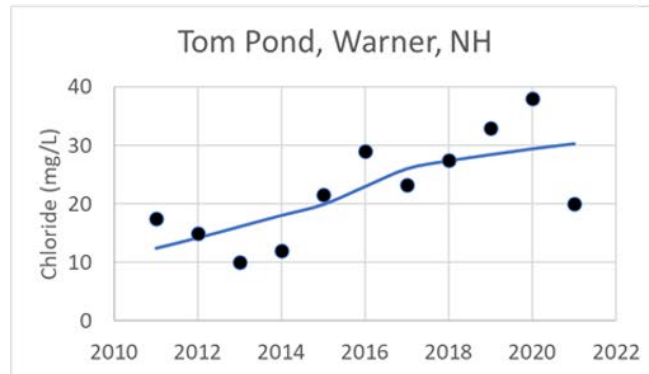
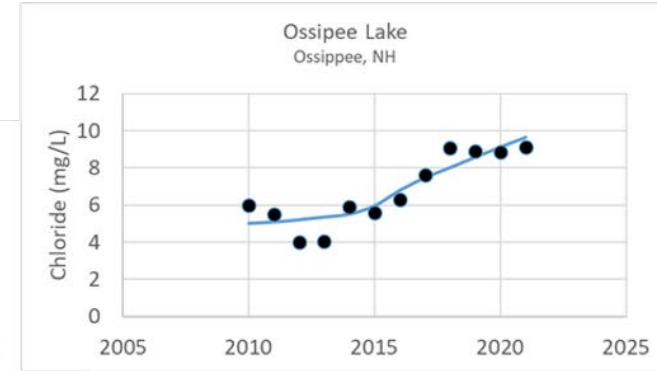
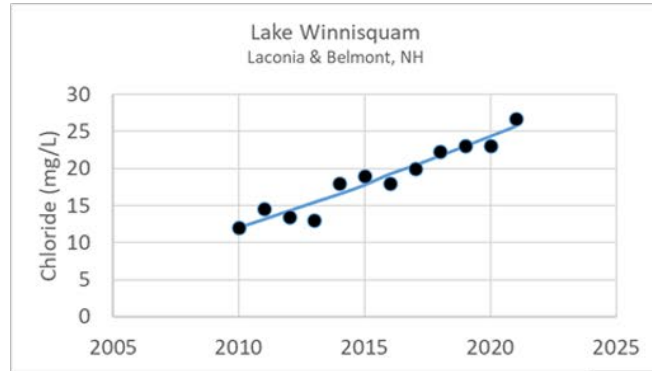


New Hampshire's Salty History



- First in the nation to use salt for regular winter road maintenance
- Approximately 1 million tons of salt is applied in New Hampshire annually
 - A million tons of salt would fill two-thirds of the Empire State Building
- Over-application of salt and improper storage contributes to chloride contamination in NH
- Chloride impairment trend is worsening
 - 18 in 2008, and currently over 50 impaired waterbodies
- Chloride contamination of water supply wells has increased by 150 percent over last 30 years

A Statewide Issue



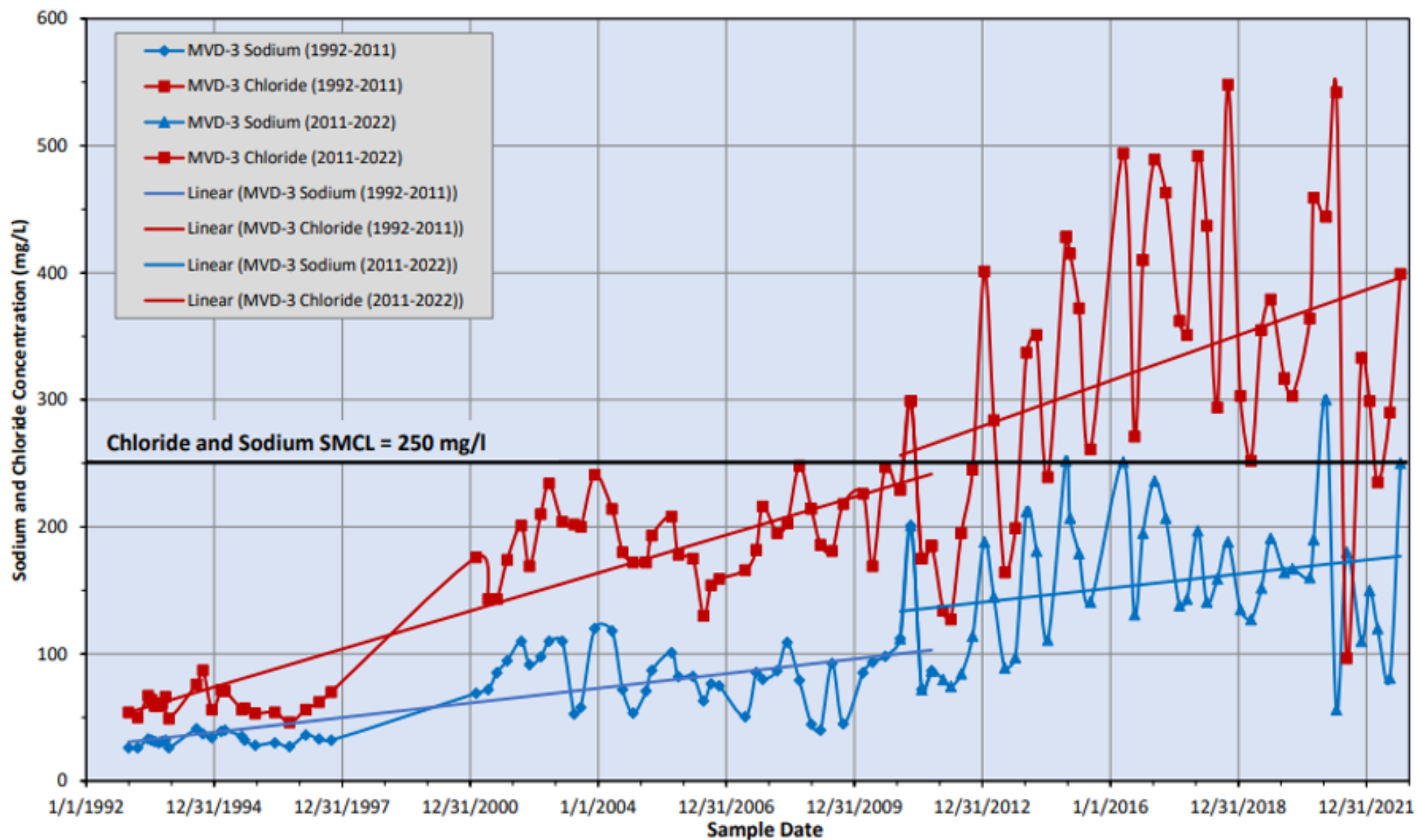
A Statewide Issue

Medians for New Hampshire Lakes and Ponds

Statewide									
Parameter	1986-1995	n	1996-2005	n	2006-2015	n	2016-2025	n	% Change
pH	6.73	470	6.60	431	6.63	271	6.81	280	1.2%
Sp. Cond.	38.95	466	49.89	425	52.36	270	60.99	280	56.6%
Chl-a	4.62	468	4.17	432	3.89	273	3.88	301	-16.0%
TP	12.00	468	9.00	439	9.04	284	9.70	284	-19.2%
TKN	0.35	350	0.30	345	0.29	118	0.26	95	-25.7%
Secchi (no scope)	3.00	416	3.05	414	3.25	276	3.10	284	3.3%
Secchi (scope)					3.94	217	3.62	280	
Chloride	4.00	410	7.00	370	8.40	229	10.20	277	155.0%
Turbidity	1.00	18	0.70	189	0.85	212	0.78	216	-22.0%
Apparent Color (tubes)	27.00	461	26.00	404	29.00	116	23.75	104	-12.0%
Apparent Color (MOD)							48.25	252	
Apparent Color (Both)							40.00	272	
ANC	4.80	470	4.70	439	5.45	281	6.20	289	29.2%

NHDES Biology Section 2026

Sodium and Chloride Concentrations in Production Well MVD-3 Merrimack Village District, Merrimack, New Hampshire



I-93 Expansion

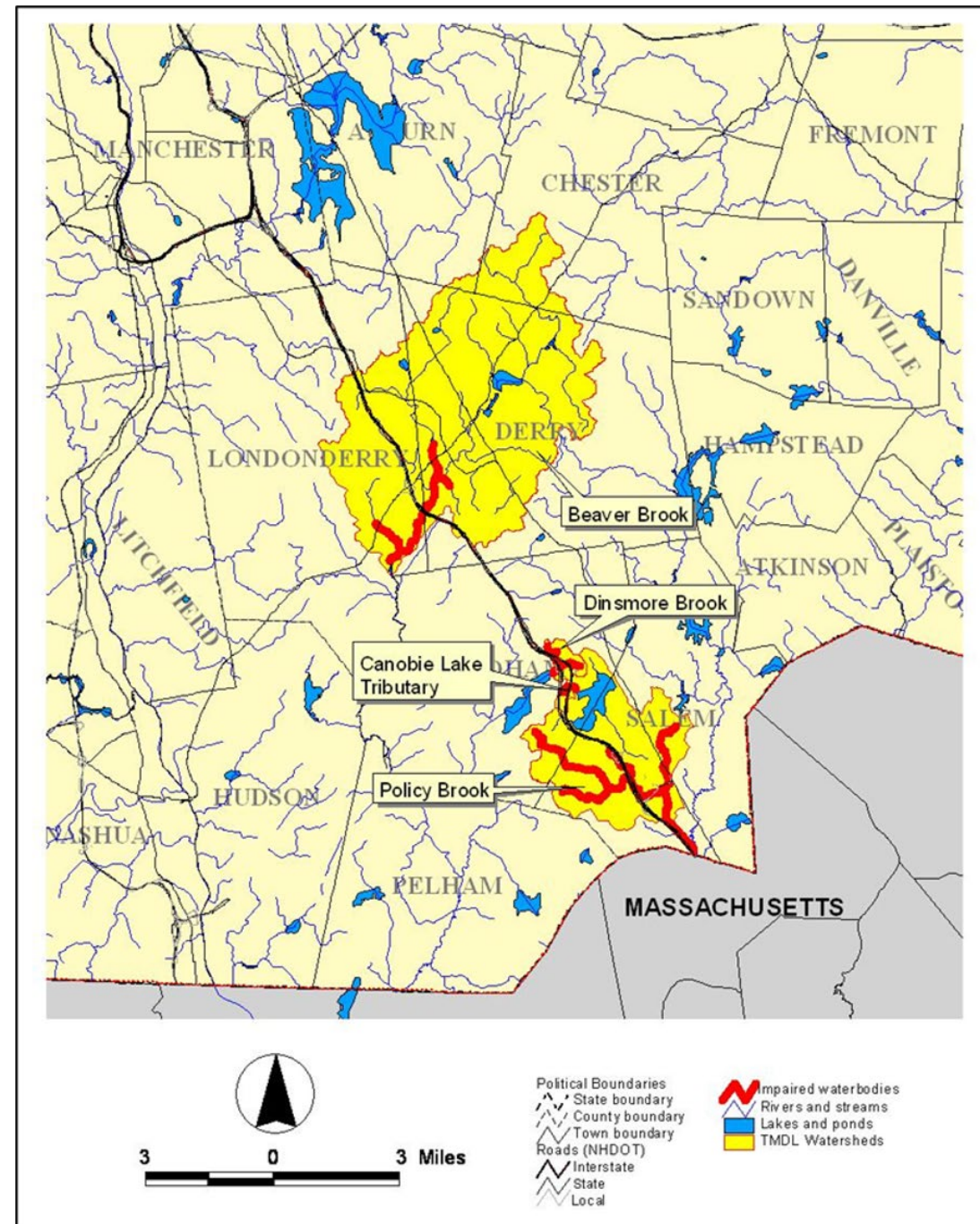
Double the size of the highway.

Bigger off and on-ramps.

Park-n-rides.

Drainage -- open to closed system.

More plowing = more salt.



Parking Lot Areas within the Policy Brook Watershed

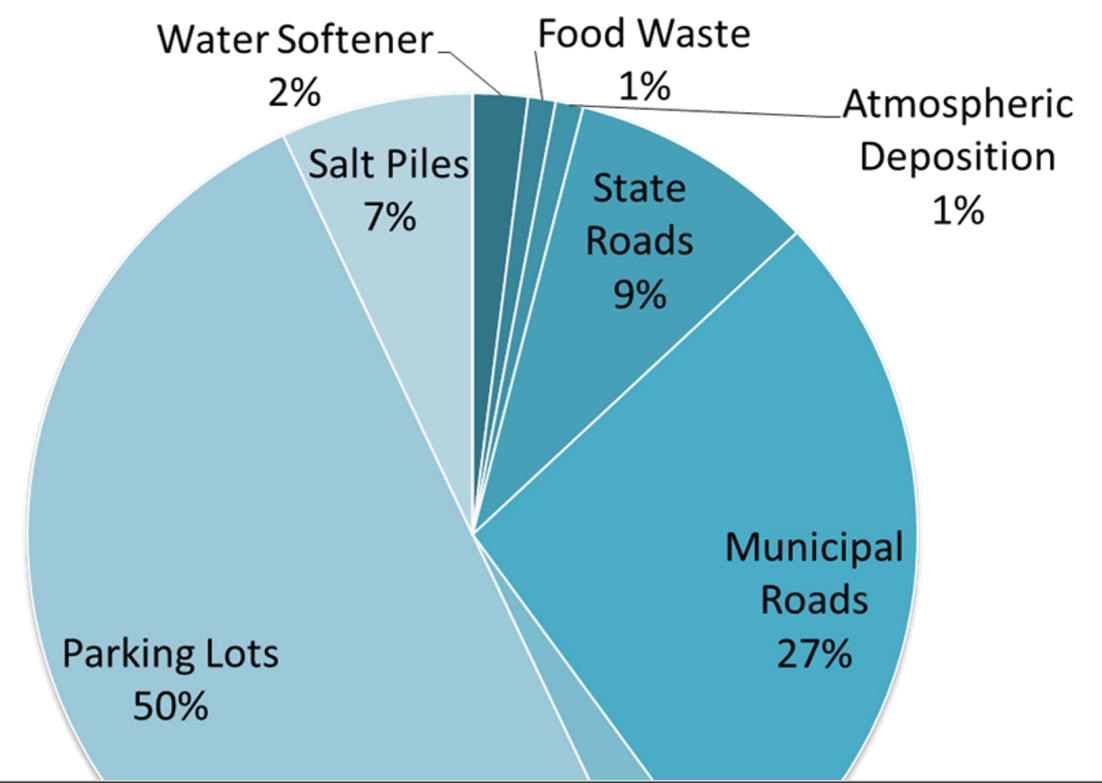
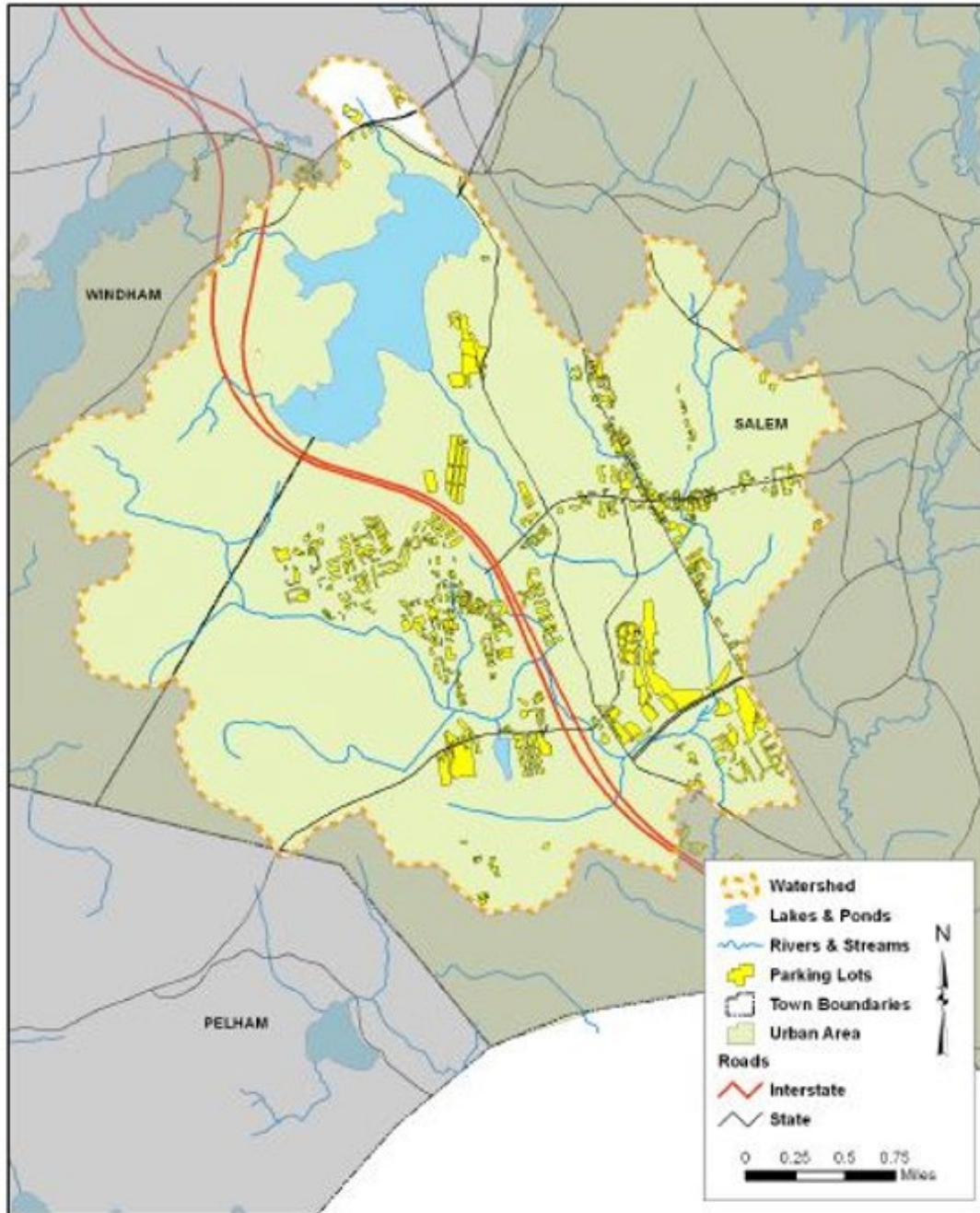


Table 2: Policy Brook Watershed Paved Surface Inventory

Sector	Unit
NH Department of Transportation	37.13 lane miles*
NH Department of Transportation	59.4 lane miles**
Municipal Roads	142.3 lane miles
Private Roads	7.3 lane miles
Private Parking Lots	340.2 Acres (95.3 lane miles)

*Lane Miles maintained upon TMDL completion

**Estimated lane miles to be maintained after I-93 expansion

In 2013, House Bill 523 created the **Voluntary**
Commercial Salt Applicator Certification Program:

Green SnowPro



NHDES Green SnowPro certified Commercial Salt Applicators and property owners who hire them, are granted limited liability protection against damages arising from snow and ice conditions.

508:22 Liability Limited for Winter Maintenance. –

- II. In order to receive the liability protection provided in paragraph I, a commercial applicator as defined in RSA 489-C:1, II, or an owner, occupant, or lessee of land shall keep a **written record describing its winter road, parking lot and property maintenance practices. The written record shall include the type of de-icing materials used, the rate or quantity of deicing materials used, the dates of treatment, and the weather conditions for each event requiring de-icing.** Such records shall be kept for a period of 3 years.

Green SnowPro Program Goals

- Reduce hurdles to salt reduction
 - Limit liability
- Incentivize training
- Build in accountability
 - Track salt use
 - Better documentation
- Decrease environmental impact
- Prevent the over-application of salt while maintaining a high level of safety



Commercial Green SnowPro

Required Coursework

- Anyone seeking certification
- Initial Full Course with Exam + Refresher Courses
- In-person, online, and Approved Trainer options

Application

- Application form – Individual, Master, Subordinate
 - Application required for **each** person seeking certification
- Annual fee
 - Master - \$250
 - Individual - \$150
 - Subordinate - \$25 each (max \$100)

Annual Renewal

- Renewal application and annual fee
- Annual salt use report (Master and Individual)
- Continuing education

Limited Liability Protection

- [RSA 508:22](#)
- Documentation requirements



The State of New Hampshire
Department of Environmental Services

certifies that

Shawn O'Keefe

having submitted satisfactory evidence of knowledge and
training in accordance with the provisions of RSA 489-C
has been awarded this certificate as a

Certified Salt Applicator -- Master

Certificate Number: 358

Date of issue: 09/22/2025

Date of Expiration: 06/30/2026

Administrator, Watershed Management Bureau

2013/2014 Winter Season

- 35 Green SnowPro certificates issued
- 22 companies



2025/2026 Winter Season

- Over 750 Green SnowPro certificates issued
- 171 companies
- 3 Municipal Green SnowPro certificates issued



Municipal Green SnowPro

- The Voluntary Municipal Winter Maintenance Certification (Municipal Green SnowPro) administrative rules were adopted May 2024
- Allows municipalities to be recognized for their commitment to reducing salt usage in their communities
- Three levels of certification available: Standard, Advanced, Expert
- Advanced and Expert require implementing and documenting salt reduction BMPs
- Future program goal of funding to provide grants to assist with buying equipment and implementing BMPs



Municipal Green SnowPro

Required Coursework

- All winter maintenance employees
- Initial Full Course with Exam + Refresher Courses
- In-person, online, and Approved Trainer options

Application

- Application form - Standard, Advanced, Expert
 - One application per municipality
 - BMPs implemented (Advanced and Expert)
- Annual fee - \$450
- Designated Green SnowPro Coordinator(s)

Annual Renewal

- Renewal application and annual fee
- Annual salt use report
- Continuing education
- Self-Audit report (Advanced and Expert)

Additional Requirements

- Salt reduction plan (updated every 5 years)
- Document equipment calibration
- Salt storage requirements
- Implementation and documentation of selected BMPs (Advanced and Expert)

Portsmouth



Dover



Hooksett



Salem





Is salt reduction
being achieved?

Answer: It's complicated

New Hampshire Green SnowPro Limited Liability Case 2022

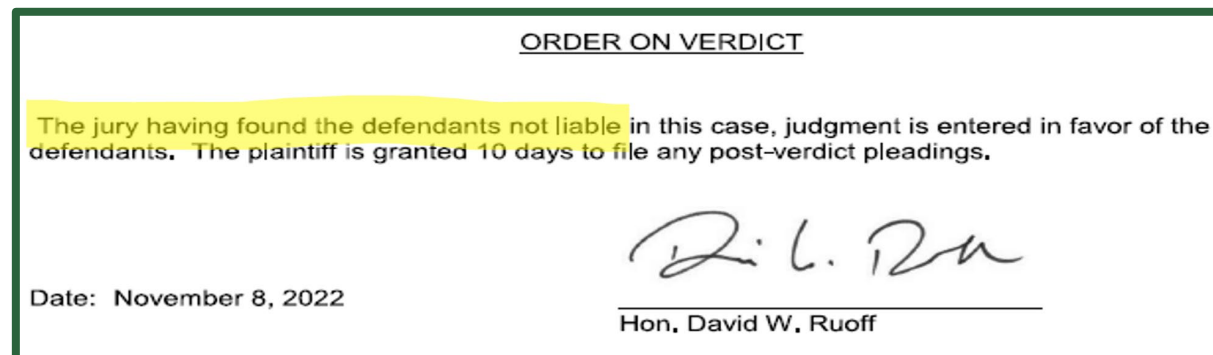
This is a premises liability action stemming from an incident that occurred on February 21, 2019, in which the plaintiff, Amy Rogers, was severely injured after slipping and falling on unmaintained snow and ice in a parking space at the Fairways Apartment complex in Derry, New Hampshire. The plaintiff's claims were based on theories of negligence against the plaintiff's landlord, Chartwell New Hampshire Associates, LLC ("Chartwell"), and the winter maintenance contractor hired to remove snow and ice from the paved areas of the Fairways, North Point Holdings, Inc. D/B/A North Point Outdoors ("North Point").

The trial for the above-captioned matter was held from October 31, 2022 until November 7, 2022. During the trial, the defendants asserted a statutory defense pursuant to R.S.A. 508:22,

Plaintiff Claim to Expose Negligence	North Point Outdoors Defense
Find holes in scope of contract compared to services rendered.	Contract represents best practices which are strictly followed. GPS and ASPIRE software tracking proved that North Point crew time on site for each snow event were appropriate.
Failure to use best practices for snow removal.	North Point site management processes were thorough and supported by evidence by multiple parties.
Failure to follow ALL Green SnowPro Guidance Manual practices.	Green SnowPro is guidance and snow events present thousands of variables that require adaptive decision-making. No one-size-fits-all game plan for any property.

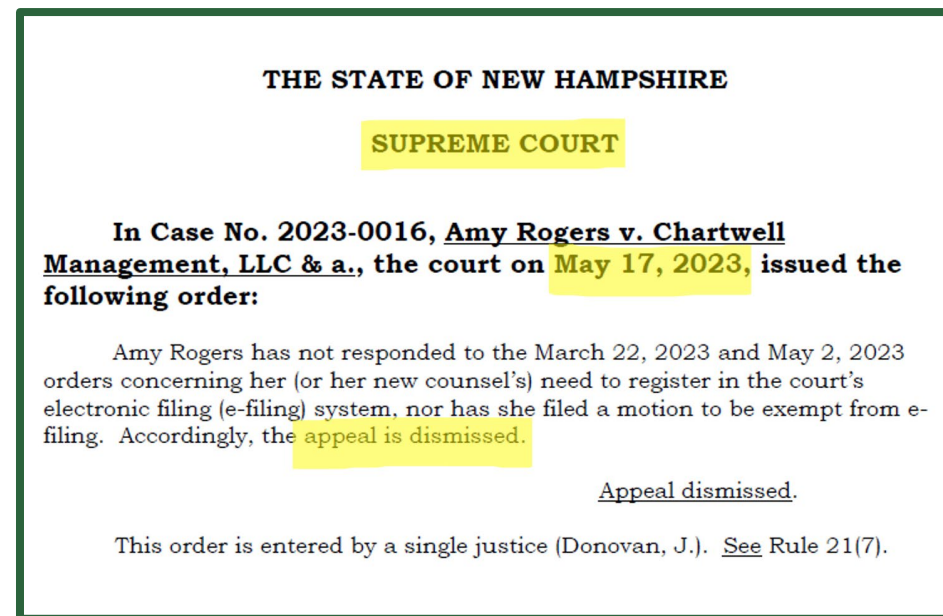
New Hampshire Green SnowPro Limited Liability Case 2022

Following a six-day trial, with eight witnesses, including two experts, and a witness from the NHDES, the jury found that the defendants had proven the statutory defense and returned a defense verdict.



4. On January 9, 2023, Ms. Rogers filed a Rule 7 Notice of Mandatory Appeal.

13. Given the fundamental disagreement between Amy Rogers and her current counsel regarding the merits of the pending appeal, representation of Ms. Rogers by her current counsel has been rendered unreasonably difficult. Therefore, counsel requests to withdraw from representation of Ms. Rogers. Counsel further requests that Ms. Rogers be afforded additional time to retain new counsel prior to incurring the costs associated the compilation of the trial court transcript, or the issuance of a scheduling order for this appeal.



Green SnowPro Plows Ahead

- Updated BMP Manual
- Online applications for Commercial Green SnowPro in development
- Collaboration with Dartmouth College students and faculty to identify chloride sources in Mink Brook watershed
- Increased collaboration with NHDOT
- New Hampshire Salt Bills introduced January 2026 (didn't pass)
 - HB 1810: Salt Mitigation Fee
 - HB 1607: Salt Storage



Questions?

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Me: Who am I to judge?

Also me when I see over-salted parking
lots and walkways:



♡♡ You age like ♡♡
fine salt brine.



Be My Valentine

To:
From:



To:
From:

Pumpkin spice is here today,
but snow and ice are on the way.

It's time to start the preparations,
and ease the winter trepidations.

Reduce your winter salt application,
by performing salt spreader calibration.

Prewet the salt and mix the brine,
reducing chlorides is divine.

Be prepared for the winter snow,
and make sure you're a certified Green SnowPro.

