

**New Hampshire Small MS4
Salt Reduction Plan
Appendix H
Town of Seabrook, NH**

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Historic winter road maintenance activities:

Section 1: Introduction:

This document addresses permit requirements set forth in Appendix H Section IV of the NH Small MS4 General Permit based on one of the following permittee categories:

1. Permittees with discharges to waterbodies that are water quality limited due to chloride in categories 5; or
2. Permittees with discharges to waterbodies that are on the most recent EPA approved New Hampshire Clean Water Act section 303(d) list or New Hampshire Integrated Report under Clean Water Act section 305(b) and are listed as 4B, have to complete this section of Appendix H.

This Salt Reduction Plan features BMPs to help reduce the amount of chloride discharging to the impaired waterbodies.

The Town of Seabrook Department of Public Works performs a variety of maintenance activities to ensure safe winter driving conditions on its roads and parking lots as well as activates to limit the amount of snow and/or deicing chemicals entering surface waters. These are described in detail under Section 2 of this document.

The Town of Seabrook Department of Public Works also requires that private property owners track salt usage and develop plans to limit salt application. These are described in Section 3 of this document.

Section 2: Actions or Enhanced BMPs for Municipally Maintained Surfaces

This section applies directly to municipally owned and maintained surfaces. This section provides information on how the amount of salt used will be tracked and also includes the different BMPs that will be used as part of this Salt Reduction Plan.

Section 2.1: Salt Tracking

The Town of Seabrook Department of Public Works will track all salt applied to all municipally owned and maintained surfaces. Salt use will be reported using the New Hampshire Salt Management System online tool at (<http://www.roadsalt.unh.edu/Salt/>) or the Annual Salt Usage Report beginning in year 2 and annually thereafter.

Section 2.2: BMPs for Salt Reduction

This section describes BMPs to help to reduce the amount of chloride discharged to impaired waterbodies.

The Town of Seabrook Department of Public Works currently uses a number of activities related to winter maintenance and salt reduction which include the BMPs and actions items listed under the following sections.

Section 2.2.1 Operational BMPs:

A. Pre-wetting and Pre-Treating the Salt Pile

The Town of Seabrook Department of Public Works currently does the following:

- Pre-wetting agents (e.g., salt brine) are used on salt piles to help them work more efficiently and to reduce road salt scatter and bounce.

Pre-wetting is a term referring to a liquid deicer that is applied to a solid-based deicer in order to create a quicker reaction time for the solid deicer to begin melting snow and ice. Salt doesn't work until it is in solution, so it is recommended that all dry salt be pre-wetted regardless of the temperature. By introducing moisture into salt prior to application, the results are a quicker melting action, reduced bounce and scatter of material, and a reduced application rate. With a quicker melting action, the application rate of pre-wet salt can be decreased by approximately 20 percent over dry salt, which saves money, increases level of service, and reduces chloride in the environment.

B. Increasing Plowing Prior to De-Icing

The Town of Seabrook Department of Public Works currently does the following:

- As much snow as possible is removed using mechanical means like plowing, blowing, or shoveling before deicing agents are applied to reduce the need for road salt or other deicing chemicals.

Proper plowing of the road is essential to controlling the amount of deicer used. Snow plowing needs to remove as much snow as possible prior to the application of deicers. Snow and ice that is left on the pavement will only work to dilute the deicer that has been applied and decrease the effectiveness. Applying more deicer will have little benefit if the snow is not adhering to the pavement surface, when plowing is the appropriate operation. Therefore it is best to remove as much snow as possible from the roads and parking lots before applying deicers.

C. Monitoring of Road Surface Temperatures

The Town of Seabrook Department of Public Works will ensure that:

- Road surface temperatures are monitored during storm events to find the correct treatment options for those certain circumstances.
- Road salt is only applied when pavement temperatures are above 15° F.
- The NH Road Salt Application Rates for Deicing Roads and Parking Lots charts (located on the webpage linked in the background information section below) is referenced during each storm event to find the appropriate treatment options.

The two most critical factors that can produce winter road hazards are pavement temperature and the dew point/precipitation rate. Pavement temperature, not air temperature, is the deciding factor for treatment type and duration. The pavement temperature directly effects the formation, development, and breaking of a bond between fallen or compacted precipitation and the road surface. The pavement temperature also determines the effectiveness of any applied chemicals.

Section 2.2.2 Equipment BMPs / Modifications:

A. Automated Pre-Wetting Equipment Systems

The Town of Seabrook Department of Public Works will ensure that:

- Pre-wetting systems are installed on 1 municipally owned salting trucks to pre-treat the de-icing agents before it is dispensed onto roads and parking lots.
- Pre-wetting systems are installed on 1 contracted salting trucks to pre-treat the de-icing agents before it is dispensed onto roads and parking lots.

Pre-wetting is a term referring to a liquid deicer that is applied to a solid-based deicer in order to create a quicker reaction time for the solid deicer to begin melting snow and ice. Salt doesn't work until it is in solution, so it is recommended that all dry salt be pre-wetted regardless of the temperature. By introducing moisture into salt prior to application, the results are a quicker melting action, reduced bounce and scatter of material, and a reduced application rate. With a quicker melting action, the application rate of pre-wet salt can be decreased by approximately 20 percent over dry salt, which saves money, increases level of service, and reduces chloride in the environment. Pre-wetting systems or automated systems can help improve the pre-wetting operations during a storm.

B. Routine Calibration Rates & Adjustments

The Town of Seabrook Department of Public Works will ensure that:

- Equipment will be calibrated annually to reduce and optimize salt use and ensure deicing agents are being used efficiently.
- A calibration chart will be maintained for each truck. (Calibration charts can be found on the webpage linked in the background information section below)
- Recalibration will be completed if any service is done on a truck or the type of deicing chemical being dispensed from the truck is changed.

The goal of calibrating is to know how much material you are putting down on a roadway or parking lot for every setting on your truck that you use. Calibrating your equipment is the first step to reducing salt use.

During winter operations, changes may occur in mechanical linkages, hydraulic systems and other components. Yearly calibration of equipment allows for better control of application rates for various gate heights/openings. Gate heights or gate openings should be adjusted to

spread the desired chemical application rate for each set of unique conditions. Recalibration should be done if any changes are made to the equipment or if a different deicing material is used.

C. Equipment Cleaning & Maintenance

The Town of Seabrook Department of Public Works currently does the following:

- Equipment is washed using proper procedures stated in the permittee's SWMP under MCM #6 to prevent pollutants from entering the stormwater system. Dry cleanup procedures are used when possible.
- Designated wash areas contain wash-water controls or treatment and ensure that all washing activities only occur in those locations.
- Equipment is regularly inspected and maintained to reduce the potential for leaks.

During winter operations, proper equipment cleaning and maintenance can help ensure equipment and machinery functions properly and maintains calibration measures for longer periods of time. This may require washing equipment on a more routine basis which can produce wash-water or runoff with higher levels of chloride or sand. For this reason, washing and maintenance procedures should be completed following carefully planned procedures and in proper locations.

Section 2.2.3 Facility Modifications and Good Housekeeping BMPs:

A. Snow Storage

The Town of Seabrook Department of Public Works will ensure that:

- Snow is not pushed or dumped into waterbodies or wetlands, into stormwater drainage swales or ditches, or on top of catch basins.
- Snow is not stored near drinking water areas, waterbodies, or wetlands.
- Snow storage is not located in areas that are unstable, areas of potential erosion, or high points where snow may melt and collect debris as runoff before it enters the stormwater system.

Proper snow storage and good housekeeping can help reduce runoff and direct snowmelt from reaching nearby waterbodies and resources, which can minimize chloride loadings.

B. Salt Stockpile BMPs & Protection from Precipitation and Runoff:

The Town of Seabrook Department of Public Works currently does the following:

- Deicing product(s) (salt, sand, or alternative products) storage piles are located under cover or enclosed areas and on impervious surfaces.

- Deicing product(s) (salt, sand, or alternative products) storage piles are stored in areas that will not impact surface water resources, groundwater resources, recharge areas, and wells.
- The deicing product(s) (salt, sand, or alternative products) storage areas have adequate drainage controls to prevent runoff from entering the stormwater system.
- Appropriate loading and unloading procedures are used, such as not overfilling trucks with deicing materials, to reduce the chances of spills.
- The unloading/loading of trucks is performed on impervious surfaces whenever possible.
- Storage/loading areas are frequently swept to reduce the amount of salt, sand, or other materials that are tracked out.
- Liquid deicing chemicals have secondary storage containment.

In addition to managing how salt is applied to parking lots and roadways, it is also important to manage how dry salt, pre-wet salt, salt brine, salt/sand mixtures, and snow piles are stored and handled.

Chloride storage facilities can contribute to both surface and ground water contamination. The location of a storage facility should not be in an area that is environmentally sensitive. Avoid areas where there are wells, reservoirs, or within the footprint of stratified drift aquifers. Ideally deicing material storage facilities should be completely enclosed, with storage and working areas on impervious surfaces such as asphalt or coated concrete. Buildings should have concrete foundations and can be designed using dome, barn, or fabric style structures.

Section 2.2.4 Training, Outreach & Regulations

A. Training and Certifications

The Town of Seabrook Department of Public Works currently does the following:

- Training is provided to municipal personnel through the Green SnowPro certification program that is managed by NHDES to improve efficiency in salt use.
- Additional or independent in-house training is provided to municipal personnel to improve efficiency in salt use.

The Green SnowPro certification is a program managed by NHDES to improve efficiency in salt use, such that the least amount of salt is used to ensure safe conditions on surfaces traveled by pedestrians and vehicles in winter conditions; reduce the amount of salt used by commercial applicators, as measured in tons of salt per acre per year, over time while maintaining safe conditions for pedestrians and vehicles in winter conditions; and establish a voluntary system for commercial salt applicators to track their salt use and provide information annually to the salt accounting system.

Training municipal personnel on best winter maintenance and salt reduction practices is the most effective practice you can employ to ensure your team is successful in reducing salt

usage. There are a variety of viable options for training your team. Training is offered through the Green SnowPro Program and incorporates both a full course and a refresher course. The full course is a 4-hour course with an exam. The refresher course is 2 hours, and reviews basic practices, with a focus on certain aspects of salt reduction such as brine, calibration, and application rates.

B. Adoption of Guidelines for Application Rates for Roads and Parking Lots:

The Town of Seabrook Department of Public Works will ensure that:

- Guidelines have been adopted within the operation plan to apply enough deicer so that plows can remove the snow and ice. The application rate of deicers will be adjusted based on the type of storm, type of agent used, and anti-icing technique used.
- Guidelines have been adopted within the operation plan to pre-treat roads before storm events to help prevent ice from forming and to make plowing easier.

The goal of winter operations is to maintain the specified level of service and safety to the public while using the minimum practical amount of deicer. Spreading rates and timing of application are decisions that need to be made based on variables in weather conditions. By adopting NHDES's application rates, money can be saved on salt usage and also help to reduce the amount of chloride ending up in the MS4's impaired waterbodies. Application rate charts will be used to select the salt application rate depending on different factors of the weather event which include; the pavement temperature, weather condition and type of salt being used.

C. Designation of Low Salt and/or No Salt Zones:

The Town of Seabrook Department of Public Works will ensure that roads within 500 feet of waterbodies that are water quality limited for chloride will be designated as low salt or no salt zones to reduce chloride loadings.

The Town of Seabrook Department of Public Works will designate the following streets as low salt areas:

- Moores Lane – from 9 Moores Lane to the end of the road
- Violette Lane
- Nicholas Way
- Lakeshore Drive – from intersection with Lafayette Road to intersection with Forest Drive

D. Public Education:

The Town of Seabrook Department of Public Works/DPW Consultant will provide public education through posters and online materials covering the following outreach topics:

- Impacts of salt use;
- Methods to reduce salt use on private property;
- Modifications to driving behavior in winter weather;
- Any other educational information about salt/ winter maintenance;

Educating the public can be a good way to help reduce the amount of chloride that ends up in impaired waterbodies. By educating the public on various chloride/winter related issues, they can reduce their salt use as well.

Section 2.3: Estimate of Annual Salt Usage Reductions

The Town of Seabrook Department of Public Works has estimated anticipated salt reduction based on the BMPs listed in this Salt Reduction Plan and these estimates are summarized and totaled in the table below:

BMP or Activity	Estimated % Reduction per Storm per BMP
Spreader Calibration	5-30%
Adapt Rates to Pavement Temperatures	5-10%
Pre-Treated Salt	20%
Total	+/- 30%

Section 2.4: Schedule of Planned Activities / BMPs

The Town of Seabrook Department of Public Works has developed a schedule for implementation of this Salt Reduction Plan based on the BMPs listed above. The anticipated schedule with milestone tracking dates is summarized in the table below:

Schedule of Planned Activities Table			
BMP or Activity	Planned Implementation Date(s):	Actual Implementation Date(s):	Frequency:
Low Salt and No Salt Zones	6/30/2023	9/28/2023	As Needed
Spreader Calibration	Pre-Existing	Pre-Existing	Annually
Adapt Rates to Pavement Temperatures	Pre-Existing	Pre-Existing	Annually
Pre-Treated Salt	Pre-Existing	Pre-Existing	Annually

Section 3: Actions or Enhanced BMPs for Privately Maintained Facilities that Drain to the MS4

Section 3.1: Identification of Private Parking Lots

The Town of Seabrook Department of Public Works has identified and compiled a list of private parking lots with 10 or more parking spaces draining to the designed MS4 area. This list of private parking lots can be found in Attachment A of this plan.

The list of private parking lots with 10 or more parking spaces draining to the designed MS4 area was prepared by a collaborative effort between the UNH Stormwater Center and New Hampshire Department of Environmental Services. For all of the Town of Seabrook Department of Public Work's private parcels containing buildings, if known, the building area was removed from the parcel's total impervious cover. The remaining impervious area was then considered to be paved impervious cover, such as parking lots and driveways. It was then estimated that a typical parking lot containing 10 parking spaces had an approximate area of 185 m². Based on this calculation, only parcels with a minimum of 185 m² of impervious cover were included in the Town of Seabrook Department of Public Work's list.

Section 3.2: Requirements for Private Parking Lots

The Town of Seabrook Department of Public Works plans to adopt regulations in Year 5 requiring private parking lot and street owners and operators to use commercial salt applicators trained and certified in accordance with Env-WQ 2203. Private parking lot and street owners and operators will be required to either report their annual salt usage to the New Hampshire Green SnowPro Program directly or supply their annual salt usage to the Town of Seabrook Department of Public Works so it can be reported in the Town of Seabrook Department of Public Work's annual report.

The Town of Seabrook, NH sent an outreach letter and brochure to the owners and operators of private parking lots with 10 or more parking spaces draining to the designed MS4 area which were identified in Part 3.1 of this Plan. The outreach materials informed the owners and operators that they are required to use commercial salt applicators trained and certified in accordance with Env-Wq 2203 and that they are required to either report their annual salt usage to the New Hampshire Green SnowPro Program directly or supply their annual salt usage to the Town of Seabrook, NH. The letter and brochure contained links to where additional information could be found out about the New Hampshire Green SnowPro program, including a database that includes all currently certified Green SnowPro contractors.

Section 3.3: New Development and Redevelopment

The Town of Seabrook Department of Public Works plans to adopt regulations in Year 5 requiring new development and redevelopment projects to take steps to minimize salt usage and track and report the amounts of salt used to the New Hampshire Green SnowPro Program.

Attachment A

List of Private Parking Lots with 10 or More Parking Spaces

ATTACHMENT A: LIST OF PRIVATE PARKING LOTS WITH 10 OR MORE PARKING SPACES

	Property Address	Impervious Area (M ²)
1	21-1A FOLLY MILL TERR	197,858
2	100 LEDGE RD	48,698
3	240 LAFAYETTE RD	48,077
4	417 LAFAYETTE RD	46,447
5	603 LAFAYETTE RD	39,499
6	13 BATCHELDER RD	35,267
7	380 LAFAYETTE RD	32,844
8	255 LAFAYETTE RD	28,692
9	131 LEDGE RD	27,190
10	325 LAFAYETTE RD	24,030
11	167 BATCHELDER RD	23,372
12	139 FOLLY MILL RD	12,473
13	147 LAFAYETTE RD	11,792
14	6-A WALTON RD	11,570
15	14 WOODWORKERS WAY	11,489
16	15 WOODWORKERS WAY	10,241
17	34 FOLLY MILL RD	9,963
18	35 WOODWORKERS WAY	8,982
19	11 MAIN ST	8,676
20	311 LAFAYETTE RD	8,147
21	9 BATCHELDER RD	7,829
22	106 LEDGE RD	5,568
23	8 BATCHELDER RD	5,433
24	142 BATCHELDER RD	5,260
25	6 SMITHS LN	5,245
26	337 LAFAYETTE RD	4,828
27	137 FOLLY MILL RD	4,796
28	140 BATCHELDER RD	4,681
29	287 LAFAYETTE RD	4,282
30	19A BATCHELDER RD	4,280
31	151 BATCHELDER RD	4,181
32	403 LAFAYETTE RD	4,180
33	5 BATCHELDER RD	3,800
34	153 BATCHELDER RD	3,735
35	135 FOLLY MILL RD	3,585
36	148 BATCHELDER RD	3,579
37	139 LAFAYETTE RD	3,370
38	115 LAFAYETTE RD	3,315
39	145 BATCHELDER RD	3,297
40	361 LAFAYETTE RD	3,215
41	146 BATCHELDER RD	3,164
42	17 BATCHELDER RD	3,152
43	131 LAFAYETTE RD	3,069
44	1 BATCHELDER RD	3,011

45	264 LAFAYETTE RD	3,008
46	99 LAFAYETTE RD	2,956
47	10 LAFAYETTE RD	2,890
48	332 LAFAYETTE RD	2,864
49	111 LEDGE RD	2,847
50	130 LEDGE RD	2,686
51	270 LAFAYETTE RD	2,327
52	180 LAFAYETTE RD	2,208
53	157 LAFAYETTE RD	1,929
54	19 BATCHELDER RD	1,926
55	130 BATCHELDER RD	1,916
56	155 BATCHELDER RD	1,890
57	112 LAFAYETTE RD	1,871
58	265 LAFAYETTE RD	1,803
59	306 LAFAYETTE RD	1,773
60	158 LAFAYETTE RD	1,706
61	271 LAFAYETTE RD	1,691
62	441 LAFAYETTE RD	1,685
63	272 LAFAYETTE RD	1,656
64	146 LAFAYETTE RD	1,546
65	198 LAFAYETTE RD	1,545
66	443 LAFAYETTE RD	1,423
67	25 LAFAYETTE RD	1,360
68	256 LAFAYETTE RD	1,322
69	5 MAIN ST	1,321
70	308 LAFAYETTE RD	1,151
71	248 LAFAYETTE RD	1,132
72	191 LAFAYETTE RD	1,118
73	157 BATCHELDER RD	1,025
74	167 LAFAYETTE RD	1,008
75	134 LAFAYETTE RD	994
76	3 WALTON RD	932
77	3 LAFAYETTE RD	849
78	107 LAFAYETTE RD	845
79	68 LAFAYETTE RD	805
80	58 LAFAYETTE RD	757
81	21 BATCHELDER RD	751
82	268 LAFAYETTE RD	734
83	124 LAFAYETTE RD	709
84	185 LAFAYETTE RD	698
85	100 LAFAYETTE RD	684
86	103 LAFAYETTE RD	301
87	15 BATCHELDER RD	199