**Section 6.6 – MCM #6**

**Good Housekeeping and Pollution Prevention for Permittee-Owned Operations and Procedures**

Permit Part 2.3.7

**Year 1 & 2 Requirements**

**Addendum – Winter Road Maintenance Procedures**

**Prepared By:**

**New Hampshire Department of Environmental Services in conjunction with**

**Seacoast Stormwater Coalition &**

**New Hampshire Lower Merrimack Valley Stormwater Coalition**

**Introduction:** These procedures address the requirements of the New Hampshire MS4 General Permit (Permit) that fall under MCM #6, page 53 of 67, section 2.3.7.1.d.v, regarding Winter Road Maintenance Procedures. All NH MS4 permittees are required to establish and implement Winter Road Maintenance Procedures regardless of whether they fall under the requirements of Appendix F (TMDL) or Appendix H (Water Quality Limited Waterbodies) for chloride impaired surface waters. The goal of these procedures is to provide guidance to permittees and their employees on winter maintenance activities and procedures. If services are contracted, it is the responsibility of the permittee to relay all winter maintenance procedures and expectations to their contractor(s).

Once this plan has been completed, it should be incorporated into the permittee’s SWMP under the section titled, *Section 6.6 – MCM #6 Good Housekeeping and Pollution Prevention for Permittee-Owned Operations and Procedures, BMP: Winter Road Maintenance Program*.

Permit Language (Page 53, section 2.3.7.1.d.v): *The permittee shall establish and implement procedures for winter road maintenance including the use and storage of salt and sand; minimize the use of sodium chloride and other salts, and evaluate opportunities for use of alternative materials; and ensure that snow disposal activities do not result in disposal of snow into waters of the United States. See NHDES, Fact Sheet WMB-3 Snow Disposal, for guidance as to selection and maintenance of snow disposal areas. For purposes of this MS4 Permit, salt shall mean any chloride-containing material used to treat paved surfaces for deicing, including sodium chloride, calcium chloride, magnesium chloride, and brine solutions.*

**Winter Road Maintenance Procedures**

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| ***INSTRUCTIONS:****The following are statements to consider. You should select the option, or combination of options, that your municipality/entity has (or plans to) adopted.*  |

* **Description: ##MUNICIPALITY** has adopted a Salt Reduction Plan in accordance with Appendix H that will be implemented in the MS4 regulated area and/or community-wide. **##MUNICIPALITY** Salt Reduction Plan can be found at: **##LINK**

***INSTRUCTIONS:*** *If this option is selected, you can delete the remainder of the narrative contained in this template.*

* **Description: ##MUNICIPALITY** has adopted a Chloride Reduction Plan in accordance with Appendix F that will be implemented in the MS4 regulated area and/or community-wide. **##MUNICIPALITY** Chloride Reduction Plan can be found at: **##LINK**.

***INSTRUCTIONS:****If this option is selected, you can delete the remainder of the narrative contained in this template.*

* **Description:** **##MUNICIPALITY** will implement the following winter maintenance procedures to reduce the discharge of pollutants from the MS4 while maintaining public safety:

***INSTRUCTIONS:****If this option is selected, please proceed.*

## Use and Storage of Salt and Sand

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| ***INSTRUCTIONS:****The following are practices to consider. You should select any of the following if this is an option that you would like to implement* ***or*** *if your municipality is already implementing this practice. More information about the activities located below are in the* [*Storage and Management of Deicing Materials Fact Sheet.*](https://www4.des.state.nh.us/nh-ms4/wp-content/uploads/2020/11/Salt-Storage.pdf) |

* Prevents exposure of deicing product(s) (salt, sand, or alternative products) storage piles to precipitation by enclosing or covering the storage piles. Implements good housekeeping, diversions, containment or other measures to minimize exposure resulting from adding to or removing materials from the pile. Piles of salt and/or sand are stored in such a manner as not to impact surface water resources, groundwater resources, recharge areas, and wells. For more information see the [*Storage and Management of Deicing Materials Fact Sheet*](https://www4.des.state.nh.us/nh-ms4/wp-content/uploads/2020/11/Salt-Storage.pdf)and [Road Salt and Water Quality Fact Sheet.](https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/wmb-4.pdf)
* Materials are stored under cover or enclosed areas are located on impervious surfaces.
* Trucks are not overfilled with deicing materials to prevent spills.
* Perform unloading/loading of trucks on impervious surfaces whenever possible. These areas are frequently cleaned and swept to reduce the tracking and runoff of salt and to capture any spills.
* Adequate drainage controls in storage areas to prevent runoff from entering the stormwater system.
* Follow appropriate loading and unloading procedures.
* Frequently sweep near the storage/loading areas to reduce the amount of salt, sand, or other materials that is tracked out.
* Do not store salt near drinking water supplies, surface water resources, groundwater resources, recharge areas, and/or wells.
* For liquid deicing chemicals, secondary storage containment is provided.
* Wash equipment using proper procedures to prevent pollutants from entering the stormwater system. Dry cleanup procedures are used when possible. Vehicles dirtied from salt or sand application are washed according to procedures in **##MUNICIPALITY’s** SWMP. See section above titled Vehicle Washing Procedures.

## Minimize the use of Sodium Chloride and Other Salts

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| ***INSTRUCTIONS:*** *The following are practices to consider. You should select any of the following if this is an option that you would like to implement* ***or*** *if your municipality is already implementing this practice. More information about the activities located below can be found on the* [*MS4 Blog*](https://www4.des.state.nh.us/nh-ms4/?page_id=1544) *under BMP (Winter Maintenance) Resources.* |

* Calibrate equipment to reduce and optimize salt use and ensure deicing agents are being used efficiently. Provide employee training on proper calibration procedures. See the [Calibration handout](https://www4.des.state.nh.us/nh-ms4/wp-content/uploads/2020/11/Calibration.pdf) for more information.
* Use of automated application equipment like zero velocity spreaders. See the [Calibration handout](https://www4.des.state.nh.us/nh-ms4/wp-content/uploads/2020/11/Calibration.pdf) for more information.
* Vehicles are retrofitted to include equipment such **as on-board application regulators, temperature sensors for air and pavement, and anti-icing and pre-wetting equipment**.
* Optimize sand and/or chemical application rates through the use of **automated application equipment (e.g., zero velocity spreaders), anti-icing and pre-wetting techniques, implementation of pavement management systems, and alternate chemicals.**
* Regularly inspect and maintain equipment to reduce the potential for leaks. See **##MUNICIPALITY’s** SWMP for procedures on equipment inspections and maintenance.
* Use alternative deicing materials instead of sodium chloride. **##MUNICIPALITY** uses the following: (**e.g., calcium magnesium acetate, magnesium chloride, or calcium chloride**).
* Avoid mixing road salt and sand.
* Only apply enough deicer so that plows can remove the snow and ice. Adjust the application rate of deicers based on the type of storm, type of agent used, and anti-icing and pre-wetting techniques used.
* Remove as much snow as possible using mechanical means like plowing, blowing, or shoveling before deicing to reduce the need for road salt or other deicing chemicals.
* Use anti-icing practices to prevent ice formation and reduce the need for deicers.
* Apply anti-icing agents 1-2 hours before winter weather events to ensure optimal performance (can be applied up to 24 prior).
* Only apply road salt when the pavement temperature is above 15° F.
* When using deicers, use pre-wetting agents (e.g., salt brine) to help them work more efficiently and to reduce road salt scatter and bounce.
* Salt brine solution used for anti-icing and pre-wetting is stored for up to a year –and concentration is tested before use. If temperatures fall below 0° F, use a circulator pump to prevent the brine from freezing.

## Evaluate Opportunities for use of Alternative Materials

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| ***INSTRUCTIONS:*** *The following are practices to consider. You should select any of the following if this is an option that you would like to implement* ***or*** *if your municipality is already implementing this practice. For more information about the activities located below see the* [*Salt Alternatives* handout](https://www4.des.state.nh.us/nh-ms4/wp-content/uploads/2020/11/Salt-Alternatives.pdf)*.*  |

* **##MUNICIPALITY** has evaluated and/or implemented the following alternatives to salt:
* Calcium Magnesium Acetate
* Potassium Acetate
* Agricultural By-Products
* Urea
* Other

## Snow Disposal Activities

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| ***INSTRUCTIONS:*** *The following are practices to consider. You should select any of the following if this is an option that you would like to implement* ***or*** *if your municipality is already implementing this practice. For more information about the activities located below see the* [*Snow Disposal Guidelines Fact Sheet*](https://www4.des.state.nh.us/nh-ms4/wp-content/uploads/2020/11/Snow-Disposal.pdf)*.*  |

* Snow disposal and storage activities, including selection of appropriate snow disposal sites, adhere to the NHDES [Snow Disposal Guidelines](https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/wmb-3.pdf) in NHDES Factsheet.
* 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 is not stored 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.
* Snow is stored in areas with higher sun exposure.
* Snow fences are used to contain snow piles and reduce snow drifting.
* The **##MUNICIPALITY** currently disposes of snow at **##SNOW DISPOSAL AREA** in compliance with NH MS4 Permit regulations.

**Employee Training**

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| ***INSTRUCTIONS:*** *The following are practices to consider. You should select any of the following if this is an option that you would like to implement* ***or*** *if your municipality is already implementing this practice. A* [*Winter Maintenance Training Log template*](https://www4.des.state.nh.us/nh-ms4/wp-content/uploads/2020/11/Winter-Maintenance-Personnel-Training-Log.docx) *can be found on the MS4 Blog.* [*Green SnowPro*](http://des.nhdoit.acsitefactory.com/land/roads/road-salt-reduction/green-snowpro-certification) *approved training options, can be found on the NHDES webpage. (Look for this image)* |

**##MUNICIPALITY** ***employees*** are trained using the following methods. **##MUNICIPALITY’s** employee training records are kept on file and included in the SWMP under **##APPENDIX**.

[ ]  Employees who perform winter road maintenance are trained **##NUMBER** times per year on BMPs pertaining to winter maintenance activities.

[ ]  Employees have attended Green SnowPro trainings.

[ ]  A select number of employees have attended Green SnowPro trainings and have taught all other employees the BMPs and techniques learned during the trainings.

[ ]  Employees received training as part of an overall employee training in conjunction with stormwater pollution prevention, illicit discharge detection and elimination (IDDE) procedures, and spill and response procedures. See **##MUNICIPALITY’s** SWMP for procedures on employee trainings.

[ ]  **##MUNICIPALITY’s** employee training records are kept on file and included in the SWMP.

**##MUNICIPALITY** ***contractors*** are trained using the following methods. A training log of all the contractor’s employees are kept on file and included in the **##MUNICIPALITY’s** SWMP under **##APPENDIX**.

[ ]  Contractors who perform winter road maintenance are trained **##NUMBER** times per year on BMPs pertaining to winter maintenance activities.

[ ]  Contractors are Green SnowPro certified. **The contractor name and Green SnowPro certificate number(s) are listed below**:

[ ]  A copy of the **##MUNICIPALITY’s** Winter Road Maintenance Program procedures has been provided to the contractor.

## Reporting

***INSTRUCTIONS:*** *This section is* **optional.**

The **##MUNICIPALITY** is tracking the following information:

## Road/Lane Miles Treated

The total road/lane miles treated can be tracked using one of the following methods:

1. The New Hampshire [Salt Management System](https://sso.roadsalt.unh.edu/Authorization/Login?returnToUrl=https://roadsalt.unh.edu/Authorization/Login&siteName=NHDES%20Salt%20Management).

Tutorials on how to use the New Hampshire Salt Management System, hosted by UNH T2, can be found on the [NH MS4 blog](https://www4.des.state.nh.us/nh-ms4/?page_id=54).

1. NHDES Annual Salt Accounting Report can be found on the NH MS4 Blog under [Winter Maintenance](https://www4.des.state.nh.us/nh-ms4/?page_id=1544).

## Type and Amount of Deicer used

***INSTRUCTIONS:*** *Indicate every type of deicer used below on the checklist.*

**##MUNICIPALITY** uses the following deicer(s):

[ ]  Salt, dry

[ ]  Salt, pre-wetted in the spreader

[ ]  Salt, pre-wetted in the pile

[ ]  Calcium chloride, dry

[ ]  Calcium chloride, liquid

[ ]  Calcium magnesium acetate, dry

[ ]  Calcium magnesium acetate, liquid

[ ]  Potassium acetate, dry

[ ]  Potassium acetate, liquid

[ ]  Sand

[ ]  Other:

**Equipment Calibration Records**

***INSTRUCTIONS:*** Indicate each type of apparatus that is used to dispense salt or salt alternative. Also indicate how often the apparatus are calibrated.

**##MUNICIPALITY** uses the following apparatus to dispense salt or salt alternative:

[ ]  Ground Speed Oriented Spreader

[ ]  Standard Spreader, Hydraulic-Run

[ ]  Standard Spreader, Pony Motor

[ ]  Zero Velocity Spreader

[ ]  Pre-wetting Spreader (w/ saddle tanks)

[ ]  Electric Spreader

[ ]  Other:

Liquid Spreader (select type):

[ ]  Spinner Type

[ ]  Distributor Bar with Nozzles

[ ]  Chassis Mounted

[ ]  Slip-in

[ ]  Tow-behind

##MUNICIPALITY calibrates the spreaders as noted below:

[ ]  Annually [ ]  Monthly [ ]  Once, prior to first use

[ ]  Other:

## Historic Winter Road Maintenance Activities

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| ***INSTRUCTIONS:*** *This section is* **optional** *and a place to document your historical practices for winter road maintenance. This should include any type of BMPs, plans or activities that were already in place before adopting these Winter Road Maintenance Procedures.* |

**##MUNICIPALITY**