

# 2017 NH Small MS4 General Permit

## Definition of MS4

MS4 stands for Municipal Separate Storm Sewer System.

As defined in 40 CFR 122.26(b)(8) a:

***“Municipal Separate Storm Sewer***  
*means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):*

- (i) *Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law)...including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the Clean Water Act that discharges into waters of the United States.*
- (ii) *Designed or used for collecting or conveying stormwater;*
- (iii) *Which is not a combined sewer; and*
- (iv) *Which is not part of a Publicly Owned Treatment Works as defined at 40 CFR 122.2.”*

## Introduction

Polluted stormwater runoff is frequently transported through municipal separate storm sewer systems to where it is eventually discharged (untreated) into local water bodies. The goal of the MS4 permit is to reduce the pollution caused by stormwater. MS4s are regulated by the US Environmental Protection Agency (EPA) through National Pollutant Discharge Elimination System (NPDES) program in compliance with the Clean Water Act (33 U.S.C. 1251 *et seq.*). Any operator of a MS4 within an urbanized area is required to comply with the NPDES MS4 permit for stormwater discharges. The U.S. Census Bureau defines urbanized areas as “a central place (or places) adjacent to a densely settled surrounding territory that together have a residential population of at least 50,000 and an average density of at least 1,000 people per square mile.”

## History

In 1990, Phase I MS4 regulation was issued requiring cities and certain counties with populations of 100,000 or more to attain NPDES permit coverage for their stormwater discharge. To date there are about 750 Phase I MS4s. Phase II MS4 regulation was issued in 1999, which requires regulated small MS4s in urbanized areas, and also MS4s outside of urbanized areas if specified by the permitting authority, to attain NPDES for all stormwater discharge. There are currently about 6,700 Phase II MS4s. In 2003 the initial MS4 permit was established under the Phase II regulation. This initial permit expired in 2008, but still remains in effect until a new permit becomes effective. In January of 2017, the permit was reissued with an effective date of July 1, 2018.



## Affected Communities

MS4 permits apply to several different areas:

- Municipalities in urbanized areas as defined by the Census Bureau, densely settled areas of 50,000 or more people
- Larger federal and state-owned properties
- Institutions such as hospitals and universities

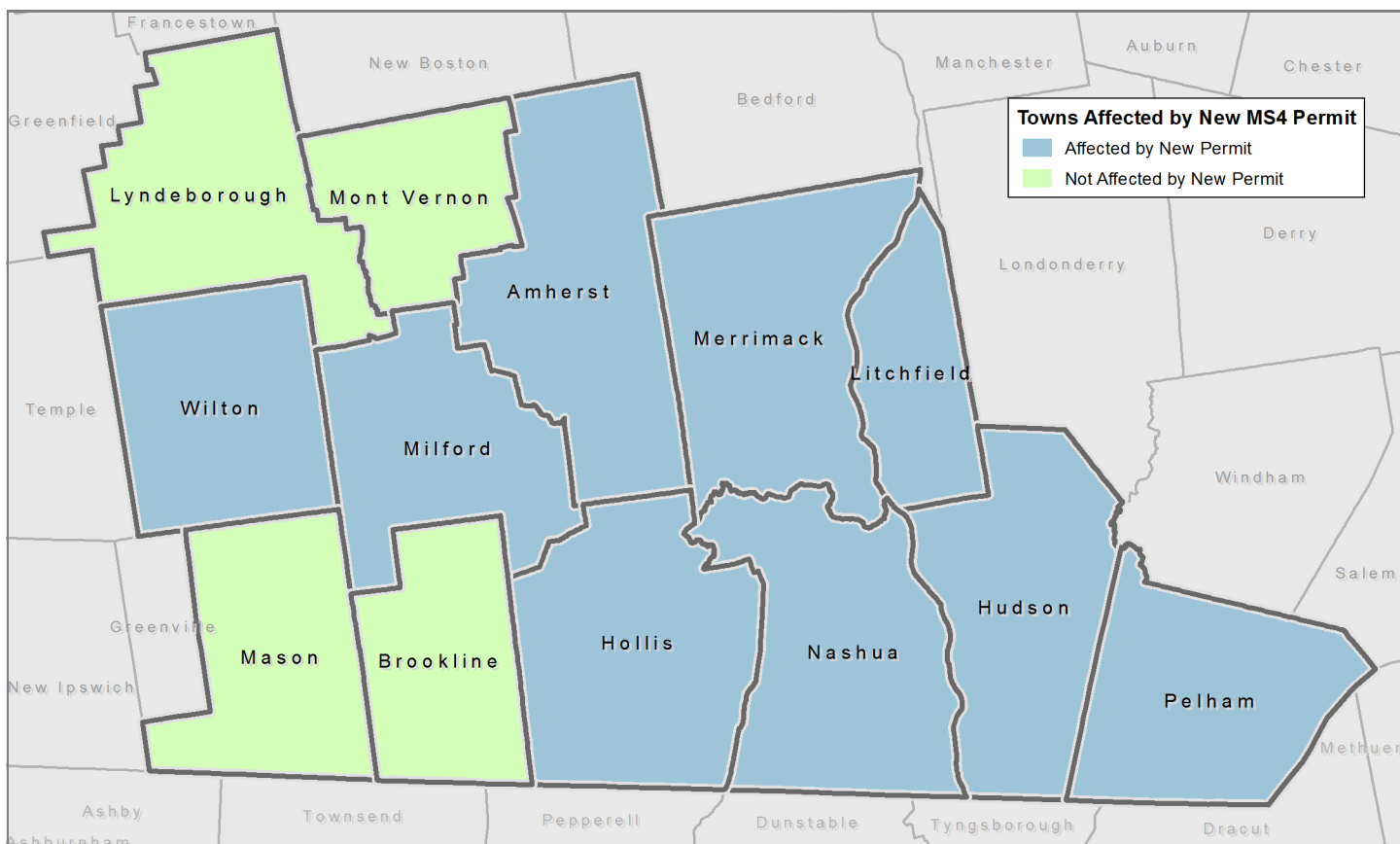
The new MS4 permit applies to 9 of the 13 communities in the NRPC region. Amherst, Hollis, Hudson, Litchfield, Merrimack, Milford, Nashua, and Pelham have been included since the 2003 MS4 permit was issued, and Wilton enters for the first time under the 2017 permit.

The communities not required to obtain permit coverage include Brookline, Lyndeborough, Mason, and Mont Vernon.

Brookline and Mason do not meet the MS4 designated urbanized area requirement and therefore do not apply to the permit (see map below). Lyndeborough and Mont Vernon have small areas that are designated as urbanized but were granted waivers from the EPA because the areas had less than 1,000 people per square mile.



## NRPC Regulated Communities



## MS4 Timeline

New Hampshire's new MS4 permit was released on January 18, 2017 and while the 2003 MS4 permit expired in 2008, it remains in effect until the coverage is obtained under the reissued permit in July 2018. Communities will have 17 months before the permit becomes effective to establish budgets and prepare. During these 17 months municipalities should create a roadmap of steps needed to comply with the new permit (see table below). Timelines of the major permit requirements are available from Regional Planning Commissions and from the State of New Hampshire's Department of Environmental Services (NHDES).



## Major Milestones

Milestones and Requirements	Year 1			Year 2			Year 3			Year 4			Year 5			Wrap Up		
	7/1/2018	10/2/2018	1/1/2019	7/1/2019	10/2/2019	1/1/2020	7/1/2020	10/2/2020	1/1/2021	7/1/2021	10/2/2021	1/1/2022	7/1/2022	10/2/2022	1/1/2023	7/1/2023	10/2/2023	1/1/2024
Permit Effective	★																	
Notice of Intent		★																
Storm water Management Program				★			★						★					
Annual Report	★			★			★			★			★			★		
Education and Outreach-Develop Program				★														
Education and Outreach-Deliver Messages																		
Public Involvement and Participation																		
IDDE-Monitoring and Enforcement																		
IDDE-SSO mapping and reporting				★			★			★			★			★		
IDDE-Phase I System Map							★											
IDDE-Phase II System Map										★			★			★		
IDDE-Written Program				★														
IDDE-Priority Ranking of Outfalls/Interconnections				★						★								
IDDE-Catchment Investigations						★												★
IDDE-Program Process, Screening, & Training																		
Construction Stormwater Procedures				★														
Construction BMPs Implementation																		
Post Construction Runoff Ordinance							★											
Post Construction Streets and Parking Assessment													★					
Post Construction Regulations Assessment													★					
Post Construction Ranking of Municipal Infrastructure													★					
Post Construction Requirements Implementation																		
Good Housekeeping O&M Program							★											
Good Housekeeping SWPPP							★											
Good Housekeeping Requirements Implementation																		

★ Program deliverable or submission deadline



# Municipal Requirements

## Notice of Intent

Within 90 days of the effective date of the permit, or by October 2, 2018, municipalities are required to submit a Notice of Intent (NOI) to Region 1 of the EPA and the NH Department of Environmental Services (NHDES). An NOI documents municipal baseline information and certifies the community's intent to comply with permit requirements. The EPA has provided a template (Appendix E to the Permit) to aid municipalities in completing this task.

### Highlighted Requirements Include:

- Identify receiving waters, impairments, and the number of outfalls
- Identify endangered species and historic properties
- Establish preliminary best management practices (BMPs) for the 6 minimum control measures
- List intended actions to meet total maximum daily load and water quality requirements

## Stormwater Management Program

Regulated MS4s are required to develop a Stormwater Management Program (SWMP) by July 1, 2019 and consistent with permit requirements to minimize the discharge of pollutants from the sewer system. The SWMP Plan is a living document and must be updated and modified as activities are performed or modified. Required content is scheduled on a graduated basis with a core set of plan components due within one year of the permit effective date and additional elements due at the two- and four-year marks. Additional time is allowed for new permittees. The EPA intends to provide a template to aid municipalities in completing this task.

### Highlighted Requirements Include:

Items to be included within 1 year of the effective date:

- Identify responsible people/parties for program implementation.

- Provide a map of the separate storm sewer system
- List of all receiving water bodies as well as discharges that were found to cause/contribute to surpassing water quality standards
- Description of measures to avoid or minimize drinking water impacts
- Measurable goals for all BMPs

Items to be included within 2 years of the effective date:

- Written operations and maintenance procedures
- Detailed listing of all interconnected MS4s

Items to be included within 4 years of the effective date:

- Impervious surfaces report assessing current street design and parking lot guidelines

## Annual Report

Regulated MS4s must prepare and submit a self-assessment of compliance with the permit and conditions. Reports must be submitted to the EPA each year.

### Highlighted Requirements Include:

- Progress on compliance activities
- Assessment of appropriateness of BMPs
- Updated status of any plans or activities required by the Water Quality Based Effluent Limitations
- All outfall screening and monitoring data collected during the reporting period
- Description of activities for the next reporting cycle

## Training

Annual training is required for all permittees. General topics include Illicit Discharge Detection and Elimination (IDDE), spill prevention and response, material handling, and training pertaining to facility SWPPPs.

## Impaired Waters and Water Quality

In most cases, MS4s that discharge to certain waterbodies that have nutrient impairments or Total Maximum Daily Loads (TMDLs) are required to create plans that address water quality impacts from nutrient sources (i.e. nitrogen and phosphorus). These plans must be specific to the waterbody, surrounding area, and pollutant in question. MS4 discharges to waterbodies with other impairments, such as bacteria, require “enhanced BMPs” in addition to the plan. These typically consist of public outreach, regulation requirements, and good housekeeping measures that can be incorporated into the six minimum measures.

### *Water Quality-Based Requirements*

The new permit requirements apply to all bodies of water listed on the current approved list of Impaired Waters (2012) 303(d). NHDES will likely have the 2016 303(d) list completed before the permit effective date of and if it is approved by EPA will be the list upon which permit decisions are based. The latest list can be found on the NHDES website, additionally, the permit includes listings of which municipalities are affected by the various impairment types. The permit has requirements for impaired waters both with and without total maximum daily loads (TMDLs).

### Phosphorus Impaired Waters

MS4 discharge into phosphorus impaired waters is regulated differently depending on whether they have a TMDL. MS4s that discharge into phosphorus impaired waters with a TDML are required to have a phosphorus control plan with a phased approach over 20 years.

The highlighted requirements for MS4s that discharge into phosphorus impaired waters without a TMDL include:

- Nutrient source identification plan with sources
- Load estimates
- Educational messages
- Improved street sweeping

### Chloride Impaired Waters

MS4s that discharge into chloride impaired waters must develop and implement a chloride reduction plan under the new permit. The chloride reduction plan has 3 major components:

1. Tracking and reporting of salt usage
2. Upgrade equipment to enhance efficiencies
3. Training for municipal staff

The new permit also requires local regulations to require certified salt applicators for parking lot (>10 spaces), that all salt piles are covered and that regulations be to minimize salt usage.

## Six Minimum Control Measures

As detailed on the next pages, MS4s must reduce pollutant discharges to the greatest extent possible using the six control measures. For most of the following, current work under the 2003 permit should continue through the first year of the permit being effective. Once the Stormwater Management Program is in place in 2019, communities will commence implementing new actions.

1. Public Education
2. Public Involvement
3. Illicit Discharge Detections and Elimination (IDDE)
4. Construction Site Stormwater Runoff Controls
5. Post-Construction Stormwater Management
6. Good Housekeeping and Pollution Prevention



## Six Minimum Control Measures

### Public Education

Where the 2003 permit only required two generic messages to the general public, municipalities are now required to produce two messages to four different audiences. During the first year of the permit (July 2018-July 2019), permittees are to focus efforts on developing goals, messages, defining target audiences and responsible parties. These details are to be included in the SWMP due in July 2019. Delivery of educational messages then commences in 2019 and the total 8 messages must be delivered over the permit term (by June 30, 2023), with a year between messages to a single audience.

#### Highlighted Requirements Include:

- Two educational messages to four audiences:
  - Residents
  - Businesses, institutions, and commercial facilities
  - Developers
  - Industrial facilities
- Summarize in annual report

### Public Involvement

MS4s are to provide their community members with the opportunity to participate in the review and implementation of the MS4 program. New to this permit, municipalities must make all reports accessible to the public and provide annual opportunities for the public to review and provide input on the SWMP. Communities are encouraged to post all records online and are required to comply with New Hampshire's RSA 91-A relative to access to governmental records and meetings.

#### Highlighted Requirements Include:

- Annual opportunity for public review of stormwater management program implementation
- All reports are to be made available to the public

### IDDE

MS4s are required to not only map the stormwater system, but undertake a program to locate and reduce pollution from illicit discharges, which requires a thorough field investigation of illicit discharges and enforcement.

#### Highlighted Requirements Include:

- Identify and expeditiously eliminate illicit discharges and sanitary sewer overflows
- Monitoring and Enforcement
- Stormwater system and outfall mapping
- Outfall inventory, dry weather screening and sampling of MS4 outfalls and interconnections
- Catchment investigations
- Assessment and Priority Ranking of Catchments

### Construction Site Runoff Controls

Communities must establish a regulation that requires erosion and sediment controls during construction as well as develop a site plan review, inspection, and enforcement methods to reduce pollutants in any stormwater runoff from construction activities. Any construction where the land disturbances, including phasing over time, are equal to or exceed one acre must abide by the permit regulation.

#### Highlighted Requirements include:

- Develop written procedures for site inspections and erosion control practices
- Adopt regulatory controls requiring the use of sediment and erosion control measures

### Post-Construction Management

Post-construction site stormwater controls integrate stormwater design standards into MS4 regulations, assess for low impact development (LID) barriers and opportunities, and identify municipal properties (five) that can be retrofitted with best management practices.

### Highlighted Requirements Include:

- Update existing or adopt a new post construction stormwater runoff ordinance that addresses new and redevelopment projects that disturb one or more acres and require the submission of as-built drawings
- Develop a report that assesses existing local regulations
- Develop an inventory and prioritized ranking of municipal infrastructure that could be retrofitted with BMPs
- Develop a report that assess current design guidelines (i.e. streets and parking lots) that affect the creation of impervious cover. The report is to include:
  - Recommendations
  - Proposed schedules and procedures to incorporate policies/standards into documents and minimize impervious cover attributable to parking or street design

## Good Housekeeping

Permittees are required to establish good housekeeping and pollution prevention operation and maintenance procedures for municipal activities and develop Stormwater Pollution Prevention Plans (SWPPPs) for specific facilities.

### Highlighted Requirements Include:

- Develop an operations and maintenance plan for municipal activities, such as street sweeping, BMP inspections, turf management, etc.
- Develop a stormwater pollution prevention plan (SWPPP) for maintenance garages, public works yards, transfer stations, and other waste handling facilities
- Establish an inventory of permittee owned facilities, including parks and open space, building and facilities, vehicles, and equipment

## What Will it Cost?

There is a lot of variability when estimating the cost of MS4s complying with the new permit. Each community is different and presents variations on items such as infrastructure, types of public outreach, method of catch basin sweeping (rented vs. purchased), etc.

Price of compliance largely depends on:

- Size of existing stormwater systems (number of outfalls and catch basins and roadway miles)
- Status of current management programs
- Number and type of impaired waters
- Community size (number of households and residents)

Preliminary estimates by the EPA and others range from \$40,000 on the low end for a rural community to an upwards amount of \$500,000 in an urban area. These amounts are an annual average of the estimated 5-year costs. [EPA Region I](#) provided a series of cost calculator spreadsheets to assist communities in estimating amounts to budget.

Possible funding sources include:

- Municipal Budget
  - Capital Improvement Program
  - Capital Reserve Fund
  - Direct Appropriation (property taxes)
  - Direct funded staffing (property taxes)
- State Revolving Fund
- Stormwater Utility (user fee typically based on size of impervious area of property)





## Resources

### EPA Region 1

The Environmental Protection Agency (EPA) created a website dedicated to small MS4s in New Hampshire. The website is home to helpful resources including:

- Final 2017 Permit Documents
- NOI Template
- Permit Development History
- Helpful Information and Links including:
  - Tracking and accounting tool for BMP projects
  - Memo and excel spreadsheets on permit costs by requirements and community size

The NH Small MS4 website can be found at:

[www3.epa.gov/region1/npdes/stormwater/MS4\\_NH.html](http://www3.epa.gov/region1/npdes/stormwater/MS4_NH.html)

### Additional Resources

US EPA NH Small MS4 General Permit Presentation:

[www4.des.state.nh.us/blogs/watershed/?p=3494](http://www4.des.state.nh.us/blogs/watershed/?p=3494)

US EPA Stormwater Phase II Final Rule Fact Sheet Series:

[www.epa.gov/npdes/stormwater-phase-ii-final-rule-fact-sheet-series](http://www.epa.gov/npdes/stormwater-phase-ii-final-rule-fact-sheet-series)

NH Department of Environmental Services MS4 Resources:

[www.des.nh.gov/organization/divisions/water/stormwater/index.htm](http://www.des.nh.gov/organization/divisions/water/stormwater/index.htm)

NH Department of Environmental Services Federal Stormwater Permits Factsheet:

[www.des.nh.gov/organization/commissioner/pip/factsheets/wwt/documents/web-8.pdf](http://www.des.nh.gov/organization/commissioner/pip/factsheets/wwt/documents/web-8.pdf)

NRPC Stormwater Management Introduction Fact Sheet:

[www.nashuarpc.org/files/3613/9042/4969/FS9\\_Stormwater.pdf](http://www.nashuarpc.org/files/3613/9042/4969/FS9_Stormwater.pdf)

Southeast Watershed Alliance Stormwater Resources:

[southeastwatershedalliance.org/stormwater-resources/](http://southeastwatershedalliance.org/stormwater-resources/)

