

Year 1 Annual Report New Hampshire Small MS4 General Permit Reporting Period: May 1, 2018-June 30, 2019

Part I: Contact Information

Name of Municipality or Organization: New Hampshire Department of Transportation
EPA NPDES Permit Number: NHE043001

Primary MS4 Program Manager Contact Information:

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Stormwater Management Program (SWMP) Information:	SWMP Location (web address):
Date SWMP was Last Updated:	https://www.nh.gov/dot/ July 1, 2019

Part II: Self-Assessment

The New Hampshire Department of Transportation (Department) continues to be committed to implement a program to reduce the discharge of pollutants from the Department's regulated Small MS4s to the maximum extent practicable, with the goals of protecting water quality and satisfying the water quality requirements of the Clean Water Act and State Water Quality Standards while providing a safe and efficient transportation system for the public.

This year the focus has been with the newly published permit. The Department has formed a committee to better understand the goals of EPA and determine best means for the Department to fulfill those goals through our Project Development and Operations Divisions. The Department's primary goal over the last year was completing the new Stormwater Management Plan (SWMP) to be in compliance with the new permit. The new plan draws heavily on existing Department practices to protect water quality which allows us to stay in compliance with the MS4 Permit. These practices also keep the Department in compliance with the NPDES Construction General Permit, Alteration of Terrain regulations and provides for good stewardship practices. The development of the SWMP did push some efforts to the forefront. The Department updated its Salt Management Plan, created a new Illicit Discharge Detection and Elimination plan, a draft Operations and Maintenance plan and developed a mobile paperless Stormwater Treatment Structures inspection and reporting system. Another huge effort was development of the GIS mapping that identifies where and when conditions of the permit are applied. The mapping covers the entire NH Urbanized Area which screened approximately 8,200 locations to identify approximately 2,800 regulated outfalls and interconnections that discharge to nearly 1,800 wetlands and 340 different surface water units throughout the southern portion of New Hampshire. The mapping is constantly being updated. Also, the mapping system architecture is designed for regular updates of the 303(d) impairment listing and addition of new infrastructure. The Department has also continued its public education and outreach efforts through stormwater table display, which has made many appearances at local fairs, schools, and Department events. The Department has completed this self-assessment and has determined that the agency is in general compliance with all permit conditions and completing measurable goals set out initially in the NOI.

Part III: Receiving Waters/Impaired Waters/TMDL

The Department updates its waters list each year. See attached.

Part IV: Minimum Control Measures

MCM1: Public Education

Impaired and TMDL Impaired Waters

For Waters listed as Bacteria Impaired or Bacteria TMDL: The Department maintains dog walking stations at Seabrook Welcome Center which has MS4 discharges to the Cain's Brook.

For Waters Listed as Nitrogen or Phosphorous Impaired or with a nutrient related TMDL: The Department continues to educate the ACEC consulting engineers on optimizing nutrient removal when designing structural Stormwater Treatment, specifically for the Exit 4A project where bio-retention swales are proposed at the east end of the project which has MS4 discharges to Beaver Lake and gravel wetlands along the seacoast.

The Department's Stormwater Outreach Display, April-June 2019, General Public: The Stormwater Outreach Display was used to discuss water quality issues in watersheds and demonstrate how stormwater pollutants can impact freshwater resources at seven events from April, 2019 to June, 2019. One event involved continuous informal discussions with the general public and in a festival setting at which 6,000 community members were in attendance. Six events involved presentations to primarily 4th and 5th grade students in both school educational fair and classroom settings and totaled 406 children. During all presentations, the students remained engaged and interested in discussing stormwater pollutants and the various impacts that they have on our communities, the environment and drinking water resources, as well as potential solutions and strategies for addressing water quality issues on a watershed size scale.

The Department's Monthly New Employee Orientation, July 2018 - June 2019, New Employees: The Bureau of Environment provided monthly training to new employees on the Department's Environmental Policy, emphasizing its commitment to operating in compliance with all environmental regulations, policies, procedures, and instructions; minimizing the waste generated from its ongoing operations; minimizing impacts to the environment; and continuous environmental improvement. The Bureau also provided monthly training on the management of regulated substances at NHDOT facilities (patrol sheds, garages, storage facilities, etc.). This training discussed storage requirements, inspection requirements, spill response procedures, and spill notification requirements for the different types of chemicals and petroleum products used by the Department. Employees were provided the opportunity to ask questions and discuss the issues to better understand their roles and responsibilities in avoiding environmental impacts.

MS4 Update, July 29, 2019, Project Management Staff and Engineers: A two hour session was held to educate our Project Management Staff on the required compliance with Part 2.3.6 of the permit. The staff was fully engaged and discussed many topics not only related to design of facilities in the Urbanize Area, but topics related to construction and eventual Operations and Maintenance of the facilities being designed.

MCM2: Public Participation

The Department has posted the Stormwater Management plan on opening web site www.nh.gov/dot in the “Of Interest” section. Also included is a map viewer showing all the catchments the Department operates. No related comments have been received to date.

MCM3: Illicit Discharge Detection and Elimination (IDDE)

Impaired and TMDL Impaired Waters

For Waters listed as Bacteria Impaired or Bacteria TMDL: The Department has identified 16 outfalls that discharge to bacteria TMDL waters and identified them as High Priority locations to screen. Ten (10) of the outfalls were included in the Dry Weather Screening pilot completed in the summer of 2019

MS4 System Mapping

MS4 mapping effort is an ongoing effort by the Department. To date the Department has identified approximately 2,800 regulated outfalls and interconnections within the Urbanized Area by screening approximately 8,200 locations. The Department is in the process of mapping the associated catchments with the regulated outfalls. Each catchment can be comprised of stormwater flow within pipes, ditches, stormwater treatment facilities and along curb and gutters. Approximately 25,000 flow elements have been organized into 2,800 catchments. This effort is expected to be complete by the end of the year.

Screening of Outfalls/Interconnections

The Department has identified approximately 200 outfalls or interconnections where dry weather flows were initially recorded. A pilot dry weather screening program was completed for about 40 of these locations to test methods and procedures and get a feel for the data that will eventually be collected throughout the Urbanized Area. The pilot study results are attached. The results indicated that finding illicit connection may not be as simple as envisioned in the permit and by the Department in the SWMP. Bacteria counts still seem like the best indicator of possible sewer connections. However, there are mitigating factors that probably influence the results such as very large storm sewer systems, and flooded treatment facilities tend to increase bacteria counts. The chlorine field test may not be sensitive enough by itself to satisfy the threshold limit of 0.2 mg/L published in the permit. Data indicates that Specific Conductance is not a good indicator of sanitary sewer influences since residual road salt masks any indications of sanitary sewer influences. The ammonia and surfactant field tests seem adequate. The pilot testing has indicated six locations for follow up testing and investigation, the breadth and nature of the investigations still need to be determined.

Catchment Investigations

The six locations indicated by the pilot screening will be utilized as test cases for development of

catchment investigation procedures. The six locations included three locations where there were visual and olfactory indicators of “suds and foam” and “petroleum”, and three where bacteria counts were high. The Department plans to investigate these locations in the fall of 2019 to help verify condition and identify next steps as part of the Catchment Investigation Plan to be developed by December 2019.

IDDE Progress

There has been no removal of Illicit Discharges documented to date.

MCM4: Construction Site Stormwater Runoff Control

The Department fully staffed with three Environmental Coordinators overseeing nine (9) projects within the Urbanized Area that require coverage under the Construction General permit. Monitoring reports indicate that sites are in compliance.

MCM5: Post-Construction Stormwater Management in New Development and Redevelopment

Impaired and TMDL Impaired Waters

For Waters listed as Nitrogen Impaired: The Department currently does not have any projects that will discharge to nitrogen impaired waters

For Waters listed as Phosphorous Impaired or Phosphorous related TMDLs: The Department is administrating the design and construction of the Exit 4A project, which at its easterly end discharges to Beaver Lake. The design includes structural stormwater treatment to reduce phosphorous discharges to Beaver Lake.

For Waters listed as Solids, Oil, Grease and Metals (SOGM) Impaired: The Department is designing two projects which discharge to the Taylor River Refuge Pond and Harris Pond in North Hampton and Nashua, respectively. If appropriate, shut off gates will be added to the stormwater structure design.

Green Infrastructure Report

The Department currently has 20 projects in various stages of design within the urbanized area. These projects are being engineered in accordance with Part 2.3.6 of the permit and will include approximately 50 new stormwater treatment structures.

MCM6: Good Housekeeping

Impaired and TMDL Impaired Waters

For Waters listed as Chloride Impaired or Chloride TMDL: The Department will be implementing best management practices as described in the Salt Management plan for discharges to the following waterbodies:

- BEAVER BROOK (NHRIV700061203-09, NHRIV700061203-11, NHRIV700061203-16)
- BORTHWICK AVE TRIBUTARY (NHRIV600031001-09)
- COLLEGE BROOK (NHRIV600030902-09)
- DINSMORE BROOK (NHRIV700061204-01)
- DORRS POND INLET BROOK (NHRIV700060802-13)
- EEL POND (NHLAK600031002-01)
- HUMPHREY BROOK (NHRIV700060803-15)
- LOWER HODGSON BROOK (NHRIV600031001-04)
- PARKMAN BROOK (NHRIV600030806-04)
- PAULS BROOK - PEASE AIR FORCE BASE (NHRIV600031001-07)
- PICKERING BROOK (NHRIV600030904-06)
- POLICY BROOK - PORCUPINE BROOK (NHRIV700061102-18)
- SOUTH PERIMETER BROOK (NHRIV700060804-12)
- STEVENS POND (NHLAK700060803-02)
- UNNAMED BROOK - TO HARRIS BROOK (NHRIV700061102-21)
- UNNAMED BROOK TO WESTERN EMBAYMENT (NHRIV700061102-23)
- UPPER HODGSON BROOK (NHRIV600031001-05)

For Waters Listed as Nitrogen or Phosphorous Impaired or with a nutrient related TMDL: The Department is finishing its catchment plan, which includes curb and gutters that discharge to various nutrient impaired and nutrient TMDL waters. A final Operation and Maintenance plan will be published by July 1, 2020 which will include procedures for these discharges.

For Waters listed as Solids, Oil, Grease and Metals (SOGM) Impaired: The Department is finishing its catchment plan, which includes curb and gutters that discharge to various Solids, Oil, Grease and Metals impaired waters. A final Operation and Maintenance plan will be published by July 1, 2020 which will include procedures for these discharges.

Inventory of Permittee-Owned Properties

The Department had developed scopes of services and negotiated fees, and plans on completing Stormwater Pollution Prevention Plans for 13 facilities this year. The facilities are listed in the SWMP.

Catch Basin Cleaning

The Department recorded approximately 16,000 catch basin inspection events last year for the Patrol Sections servicing highways within the Urbanized Area. As necessary in accordance with the permit and Department's work instructions, the sediment was removed, and transported to Street Waste Storage yards for recycling.

Street Sweeping

The Department completed approximately 1,500 miles of sweeping within the Patrol Sections servicing highways within the Urbanized Area. Volume and weight of material removed from catch basins and curb lines was not recorded in FY 2019. However, the material was transported to our Limited Reuse Soils / Street Waste storage yards where it will be recycled for various highway uses. The Department is currently researching new technologies to improve and streamline the process for collecting, tracking and reporting of permit specific data since some of the street waste is comingled with material from outside the Urbanized Area.

Salt Management

The Division of Operations reviewed and updated their Salt Management Plan in June 2019 in conjunction with the development of the MS4 Stormwater Management plan. The Department continually evaluates and utilizes proven technologies to address recognized concerns raised about adverse impacts that maintenance operations may have on the environment. This includes working to minimize the salt treatment used during winter maintenance operation. As funding has permitted, the Department has upgraded the winter maintenance fleet by adding telematics to plow trucks that allow the Department to track salt usage and delivery of material with more accuracy. The Department is also expanding and tracking the use of more flexible plow blades where possible to improve snow removal during plowing operations. While safety for the traveling public is of primary importance, accomplishing this in an environmentally friendly manner is also goal of the Department.

Stormwater Treatment BMPs

The Department developed an Arc-Online / Arc Survey 1-2-3 survey tool during 2018-2019. The pilot was conducted with four individuals collecting condition data on 617 stormwater treatment structures statewide of which 417 (68%) are in the Urbanized Area. The Department was able to inspect 545 structures in 2019 of which 147 were considered to be in poor condition for either or a combination of: Sedimentation, Erosion, Trash, Vegetation, Flow and/or Structural issues. The Department has or will continue to complete and/or formulate corrective actions to increase the condition rating for all of these facilities.

Activities Planned for Next Reporting Period

- Complete system mapping
- Develop a written catchment investigation procedure
- Begin investigations of catchments associated with Problem Outfalls
- Develop, written operations and maintenance procedures
 - Establish a written program detailing the activities and procedures the permittee will implement so that the MS4 infrastructure is maintained in a timely manner
 - Develop and implement a written SWPPP for maintenance garages, public works yards, other waste handling facilities where pollutants are exposed to stormwater
 - Develop written procedures for State highway curb and gutter inspection and sweeping
 - Develop written procedures for catch basin inspection and cleaning
 - Develop written procedures for stormwater treatment structure maintenance

Part V: Certification of Small MS4 Annual Report 2019**40 CFR 144.32(d) Certification**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Christopher Waszczuk, PE

Title: Deputy Commissioner

Signature:



Date:

9/30/19