Stormwater Management Program (SWMP)

Rochester, NH

45 Old Dover Road NH 03867-3445

EPA NPDES Permit Number NHR041028

Revision 0 - June 30, 2019

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Attachments

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 gathered and evaluated 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, 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."

Printed Name: Blaine Cox, City Manager

Signature: Blaine Cox

Date: 7-1-2019

Revision History:

No.	Description	Date	Printed Name	Title	Signature
0	Year 1	7/1/19	Blaine Cox	City Manager	See above

BACKGROUND

Stormwater Regulation

The Stormwater Phase II Final Rule was promulgated in 1999 and was the next step after the 1987 Phase I Rule in EPA's effort to preserve, protect, and improve the Nation's water resources from polluted stormwater runoff. The Phase II program expands the Phase I program by requiring additional operators of MS4s in urbanized areas and operators of small construction sites, through the use of NPDES permits, to implement programs and practices to control polluted stormwater runoff. Phase II is intended to further reduce adverse impacts to water quality and aquatic habitat by instituting the use of controls on the unregulated sources of stormwater discharges that have the greatest likelihood of causing continued environmental degradation. Under the Phase II rule all MS4s with stormwater discharges from Census designated Urbanized Area are required to seek NPDES permit coverage for those stormwater discharges.

Permit Program Background

On May 1, 2003, EPA Region 1 issued its Final General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (2003 small MS4 permit) consistent with the Phase II rule. The 2003 small MS4 permit covered "traditional" (i.e., cities and towns) and "non-traditional" (i.e., Federal and state agencies) MS4 Operators located in the states of Massachusetts and New Hampshire. This permit expired on May 1, 2008 but remained in effect until operators were authorized under the 2017 General Permit for Stormwater Discharges from Small MS4 (MS4 Permit), which became effective on July 1, 2018.

Stormwater Management Program (SWMP)

The SWMP describes and details the activities and measures that will be implemented to meet the terms and conditions of the permit. The SWMP describes the permittee’s plans and activities as per the SWMP revision date. The document should be updated and/or modified during the permit term as the permittee's activities are modified, changed or updated to meet permit conditions during the permit term. The main elements of the stormwater management program are (1) a public education program in order to affect public behavior causing stormwater pollution, (2) an opportunity for the public to participate and provide comments on the stormwater program (3) a program to effectively find and eliminate illicit discharges within the MS4 (4) a program to effectively control construction site stormwater discharges to the MS4 (5) a program to ensure that stormwater from development projects entering the MS4 is adequately controlled by the construction of stormwater controls, and (6) a good housekeeping program to ensure that stormwater pollution sources on municipal properties and from municipal operations are minimized.

Rochester MS4 Boundary

The City of Rochester (City) is located in southeastern New Hampshire in Strafford County. The City has a total area of approximately 44 square miles and is one of the largest cities in New Hampshire. The City population was 29,752 as reported in the 2010 census. Based on the City’s current outfall mapping, the City has an estimated 162 stormwater outfalls subject to the MS4 Permit. The MS4 area boundary for the City is outlined in the map included in the Notice of Intent (NOI) (Attachment 1).

SMALL MS4 AUTHORIZATION

The NOI was submitted on September 28, 2018 (see Attachment 1). Authorization to Discharge was granted on June 12, 2019 (see Attachment 2 for the Authorization Letter).

STORMWATER MANAGEMENT PROGRAM TEAM

SWMP Team Coordinator

Name: Michael Bezanson, P.E. (NH)	**Title:** City Engineer
Department: Rochester Department of Public Works	
Phone Number: 603-332-4096	**Email:** Michael.bezanson@rochesternh.net
Responsibilities: Program coordination/implementation	

SWMP Team

Name: Timothy Goldthwaite, P.E. (NH)	**Title:** Assistant City Engineer
Department: Rochester Department of Public Works	
Phone Number: 603-332-4096	**Email:** Timothy.goldthwaite@rochesternh.net
Responsibilities: Program coordination/implementation	

RECEIVING WATERS

The list of receiving waters, impairments and number of outfalls discharging to each waterbody segment is included in the NOI (Attachment 1).

ELIGIBILITY: ENDANGERED SPECIES AND HISTORIC PROPERTIES

*Reminder: The proper consultations and updates to the SWMP must be conducted for construction projects related to your permit compliance where Construction General Permit (CGP) coverage, which requires its own endangered species and history preservation determination, is NOT being obtained.

Attachments:

☒ The results of Appendix C U.S. Fish and Wildlife Service endangered species screening determination

☐ The results of the Appendix D historic property screening investigations

☐ If applicable, any documents from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), or other Tribal representative to mitigate effects

These attachments are required within one year of the permit effective date and are:

☒ Attached to this document (Attachment 1 – NOI)

☐ Publicly available at the website listed below: Not Applicable

Under what criterion did permittee determine eligibility for ESA?

☐ Criterion A ☐ Criterion B ☒ Criterion C

Under what criterion did permittee determine eligibility for Historic Properties?

☒ Criterion A ☒ Criterion B ☒ Criterion C ☐ Criterion D

Below add any additional measures for structural controls that you're required to do through consultation with U.S. Fish and Wildlife Service (if applicable):

Not Applicable

Below add any additional measures taken to avoid or minimize adverse impacts on places listed, or eligible for listing, on the NRHP, including any conditions imposed by the SHPO or THPO (if applicable):

Not Applicable

MCM 1 - PUBLIC EDUCATION AND OUTREACH

Permit Part 2.3.2

Objective: The permittee shall implement an education program that includes educational goals based on stormwater issues of significance within the MS4 area. The ultimate objective of a public education program is to increase knowledge and change behavior of the public so that the pollutants in stormwater are reduced.

Program Summary

Minimum Control Measure #1 (MCM 1) of the MS4 Permit requires that an Education and Outreach Program be developed to increase the awareness and understanding of how certain activities conducted by residents, institutions, developers, and other entities might affect stormwater and water quality issues within the City. The ultimate objective of a public education program is to effectively change the way certain activities are conducted so that the potential for pollutants conveyed to adjacent waterbodies by stormwater can be reduced.

The type and number of educational messages that need to be disseminated each year to the targeted audiences depends on whether there are waterbodies with water quality impairments in the MS4 area. If there are no water quality impairments, the City is required to deliver at least two (2) messages to each of four (4) targeted audiences every other year over the 5-year permit team. The targeted audiences include:

- Residents
- Businesses, Institutions, and Commercial Facilities
- Developers, Engineers and Construction Contractors
- Industrial Facilities

However, since the City has both bacteria and nitrogen impaired waterbodies according to the 2016 state 303(d) list of impaired waterbodies and the Authorization to Discharge (Attachment 2), respectively, the City is required to deliver four (4) different annual messages per Appendix H requirements to promote best practices to reduce bacteria or nitrogen source contributions. Specifically, to address bacteria requirements, the City is required to deliver annual messages to residents and businesses, as appropriate, regarding proper cleanup and disposal of pet waste as well as proper septic system maintenance. To address the nitrogen impairment, the City is required to deliver annual messages to residents and businesses to encourage proper disposal of grass clipping and leaf litter as well as encourage reduced fertilizer use or at a minimum use of only slow release fertilizers for lawn management.

In addition to the water quality impairment related messages, the City is also required to deliver separate messages to developers, engineers or construction contractors and industrial facilities every other year. For developers, engineers and contractors the messaging might focus on increased use of best management practices for erosion control measures and low impact development measures. For industrial facilities, the educational messages might focus on best practices for waste handling and storage, spill control and/or lawn maintenance.

Best Management Practices

Table 1-1 outlines the City's proposed message topics for each of the targeted audiences by permit year. The technical content for these messages will be derived from educational materials developed by the Piscataqua Region Estuary Partnership (PREP), UNH Stormwater Center, NH Department of Environmental Services (DES) and the UNH Cooperative Extension as part of a collaborative effort with municipal members of the Seacoast Stormwater Coalition.

The MS4 Permit requires that measurable goals be developed for each educational message to assess the effectiveness of each message and report on the overall progress in achieving these goals in future annual

reports. Measurable goals have been included in the Education BMP description summaries below.

Annual Reporting Elements

For each Annual Report, due at the end of September during each permit year, the City will summarize what types of messages were delivered to specific audiences, the method of delivery and any feedback or any observed changes in behavior or improvements in reducing pollutant sources (e.g. less dog waste accumulation on the ground, less grass clippings or leaves on the road, more leaf litter collected, more certified SnoPro operators being used, etc.). Any potential changes or opportunities to improve future message delivery and/ or effectiveness will also be noted.

Table 1-1: Summary of the Planned Educational BMPs for each Target Audience by Year

ID	Educational BMP	Target Audience	Target Month / Season	Schedule by Permit Year (Fiscal Year)				
				1 (FY19)	2 (FY20)	3 (FY21)	4 (FY22)	5 (FY23)
1-1	Pet Waste Ed. Flyers/Post Cards/Signage	Residents and Businesses	March-July[1]	X	X	X	X	X
1-2	Grass Clipping /Slow-Release Fertilizer Factsheet	Residents and Businesses	April/May	X [2]	X	X	X	X
1-3	"Get Pumped" Septic System Brochure	Residents	September	X [2]	X	X	X	X
1-4	Leaf Litter Disposal Factsheet	Residents and Businesses	August-October	X [2]	X	X	X	X
1-5	Green SnoPro Cert. / Salt Efficiency Factsheet	Businesses	Fall / Winter			X		X
1-6	Erosion Control Site Plan Review Factsheet	Developers (Construction)	Spring		X		X	
1-7	Low Impact Development Factsheet	Developers (Construction)	Summer				X	
1-8	Lawn Maintenance & Water Use Factsheet	Industrial Facilities	Spring			X		X
1-9	Waste Disposal/Spill Prevention Factsheet	Industrial Facilities	Fall					X

1. Appendix F Part II of the MS4 Permit requires the annual pet waste management message at the time of issuance or renewal of a dog license or other appropriate time. Appendix H Part I of the MS4 Permit requires the annual pet waste management message in the summer timeframe (June/July). Dog licenses in the City are generally renewed in March and April.
2. Was not completed during Permit Year 1, because the Authorization to Discharge (see Attachment 2) indicating the City was subject to Appendix H Part I of the MS4 Permit was not received until June 2019.

The following summarizes the planned educational BMPs including who is responsible for distribution, what type of message will be distributed, and how effectiveness will be measured.

Pet Waste Educational Flyer / Post Cards / Signage

BMP 1-1

FY2019 Completed ☒

FY2020 Completed ☐

FY2021 Completed ☐

FY2022 Completed ☐

FY2023 Completed ☐

Document Name and/or Web Address: https://www.rochesternh.net/stormwater-center

Description: The City will distribute and post educational flyers and post cards at various locations throughout the City to encourage dog owners and residents to cleanup and properly disposed pet waste.

Targeted Audience: Residents

Responsible Department/Parties: Rochester Department of Public Works / Parks and Recreation

Measurable Goals: Reduce the presence of dog waste on the ground in popular dog walking locations such as along the Columbus Avenue trail, Woodman Park, Parson Park and the Riverwalk.

Message Date(s): FY2019, 2020, 2021, 2022, 2023

Grass Clipping / Slow-Release Fertilizer Factsheet

BMP 1-2

FY2020 Completed ☐

FY2021 Completed ☐

FY2022 Completed ☐

FY2023 Completed ☐

Document Name and/or Web Address: https://extension.unh.edu/resource/green-grass-clear-water-fact-sheet

Description: Distribute brochures prepared by UNH Coop Extension detailing proper lawn maintenance topics including fertilizer usage, cutting heights, clipping disposal, natural pest controls, leaf litter/yard waste disposal and composting.

Targeted Audience: Residents and applicable businesses

Responsible Department/Parties: Rochester Department of Public Works

Measurable Goals: Increase the amount of yard waste/leaf litter collected each year. Waste Management provides curb side pickup of yard waste twice in the Spring and twice in the Fall; there is also a Waste Management location for residential yard waste drop off. The Stormwater Team will inquire with Waste Management to see if the City can obtain annual data on volumes of yard waste collected and keep a record to see if collected yard waste has increased.

Message Date(s): FY2020, 2021, 2022, 2023

"Get Pumped" Septic System Brochure / Webpage

BMP 1-3

FY2020 Completed ☐

FY2021 Completed ☐

FY2022 Completed ☐

FY2023 Completed ☐

Document Name and/or Web Address: https://getpumpednh.com/

Description: The City will distribute educational brochures to homes and businesses not serviced by sanitary sewer to encourage residents and businesses to pump out their septic systems. The "Get Pumped" program provides a list of septic haulers participating in a rebate program to encourage pump outs.

Targeted Audience: Residents and applicable businesses

Responsible Department/Parties: Rochester Department of Public Works / Rochester Planning Department

Measurable Goals: Increase septic system awareness and pump-out frequency. Send an annual survey to the same homes and businesses inquiring whether they have pumped their septic systems and how much was pumped. Keep a record of the survey results for each Permit Year to evaluate if pump-out frequency and volume has increased.

Message Date(s): FY2020, 2021, 2022, 2023

Leaf Litter Disposal Factsheet

BMP 1-4

FY2020 Completed ☐

FY2021 Completed ☐

FY2022 Completed ☐

FY2023 Completed ☐

Document Name and/or Web Address: https://www4.des.state.nh.us/nh-ms4/wp-content/uploads/2019/04/DESyardwastebrochure-Barb-layout-mailer.docx

Description: The City will disseminate NHDES' lawn maintenance brochure to encourage residents and businesses to dispose grass clippings, leaf litter and other yard waste at the nearby Turnkey landfill facility.

Targeted Audience: Residents and applicable businesses

Responsible Department/Parties: Rochester Department of Public Works / School Department

Measurable Goals: Collaborate with Waste Management at Turnkey facility to promote yard waste collection and composting for residents. Observe less grass clipping and yard waste blown into City Streets or disposed of in drainage areas based on anecdotal observations.

Message Date(s): FY2020, 2021, 2022, 2023

Green SnoPro Certification/ Salt Minimization Factsheet

BMP 1-5

FY2021 Completed ☐

FY2023 Completed ☐

Document Name and/or Web Address:
https://www.des.nh.gov/organization/divisions/water/wmb/was/salt-reduction-initiative/impacts.htm#waterquality

Description: Distribute salt minimization / snow storage factsheet to institutions within the community. Topics will focus on tools and resources to enhance efficiency in deicing procedures, contractor training and snow storage.

Targeted Audience: Businesses, Institutions, and Commercial Facilities

Responsible Department/Parties: Rochester Department of Public Works

Measurable Goals: Increase the number of business property owners that utilize Green SnoPro Certified applicators.

Message Date(s): FY2021, 2023

Erosion Control Site Plan Review Factsheet

BMP 1-6

FY2020 Completed ☐

FY2022 Completed ☐

Document Name and/or Web Address: TBD

Description: A brief factsheet and checklist detailing a standard erosion control inspection process for new and redevelopment project will be distributed to developers through the site plan approval process. The checklist with outline standard erosion control measures that should be considered and included on site plans for new construction and redevelopment.

Targeted Audience: Developers (Construction)

Responsible Department/Parties: Rochester Department of Public Works / Rochester Planning Department

Measurable Goals: Increase the use and maintenance of proper erosion control measures and reduce the number of incidences of observed tracking or flow of sediment from construction sites.

Message Date(s): FY2020, 2022

Low Impact Development Factsheet

BMP 1-7 **Completed ☐**

Document Name and/or Web Address: TBD

Description: The City will disseminate a factsheet highlighting the benefits of LID design and BMP Practices to encourage more use of LID practices in new and redevelopment projects.

Targeted Audience: Developers (Construction)

Responsible Department/Parties: Rochester Department of Public Works / Rochester Planning Department

Measurable Goals: Increase the use of LID design and BMP practices to reduce the amount of impervious cover in new and redevelopment projects.

Message Date(s): FY2022

Lawn Maintenance & Water Use Factsheet

BMP 1-8 **FY2021 Completed ☐**

FY2023 Completed ☐

Document Name and/or Web Address:

Description: A brief factsheet detailing standard lawn maintenance and water use recommendations for industrial facilities will be distributed to industries within the City. The factsheet will detail water use efficiency goals and how changes in lawn maintenance and water use can benefit downstream water quality.

Targeted Audience: Industrial Facilities

Responsible Department/Parties: Rochester Department of Public Works / Rochester Planning Department

Measurable Goals: Update/distribute new factsheet every other year to improve lawn irrigation efficiency and minimize chemical applications

Message Date(s): FY2021, 2023

Waste Disposal/Spill Prevention Factsheet

BMP 1-9 **Completed ☐**

Document Name and/or Web Address:

Description: A brief factsheet describing best practices for waste disposal/storage for industrial facilities may be considered as an educational message. The factsheet could detail procedures for outdoor storage/ spill prevention.

Targeted Audience: Industrial Facilities

Responsible Department/Parties: Rochester Department of Public Works / Rochester Planning Department

Measurable Goals: Update/distribute factsheet to enhance awareness and improve timely reporting and permit compliance.

Message Date(s): FY2023

MCM 2 - PUBLIC INVOLVEMENT AND PARTICIPATION

Permit Part 2.3.3

Objective: The permittee shall provide opportunities to engage the public to participate in the review and implementation of the permittee's SWMP.

Program Summary

Minimum Control Measure #2 (MCM 2) of the MS4 Permit requires that the City provide opportunities to engage the public to participate in the review and implementation of the City's SWMP.

Consistent with Section 2.3.3 of the MS4 Permit, the City plans to annually make the Annual Report and SWMP available to the public; annually provide the public an opportunity to participate in the review and implementation of the SWMP, which may include websites, hotlines, clean-up teams, monitoring teams or an advisory committee.

Best Management Practices

The BMPs proposed below summarize the planned public involvement and participation BMPs including the location of relevant documents, who is responsible, and how effectiveness will be measured.

Annual Reporting Elements

For each Annual Report, due at the end of September during each permit year, the City will describe the activities used to promote public participation including documentation of compliance with the state public notice regulations (NH: RSA Chapter 91-A). Any potential changes or opportunities to improve future public participation and outreach will also be noted.

Public Review of Stormwater Management Program

BMP 2-1 **FY2019 Completed ☒**

Location of Plan and/or Web Address: https://www.rochesternh.net/stormwater-center

Responsible Department/Parties: Rochester Department of Public Works

Measurable Goal(s): Stormwater Management Plan is publicly available.

Public Participation in Stormwater Management Program Development

BMP 2-2 **FY2019 Completed ☒**

Document Name and/or Web Address:
https://www.rochesternh.net/sites/rochesternh/files/minutes/ccpwc20190620min.pdf

Description: Provide overview of SWMP; announce posting of SWMP on city website; and explain how public can provide comments on SWMP at Rochester Department of Public Works Commission Public Meeting, June 20, 2019.

Responsible Department/Parties: Rochester Department of Public Works/Geosyntec Consultants

Measurable Goal(s): Annual public input provided.

Public Participation in Stormwater Management Program Development

BMP 2-3 **Completed ☐**

Document Name and/or Web Address:

Description: A public meeting with the School Board to present an overview of the MS4 Permit and highlight the MS4 Permit requirements pertaining to public school properties.

Responsible Department/Parties: Rochester Department of Public Works/Geosyntec Consultants

Measurable Goal(s): Annual public input provided.

Public Participation in Stormwater Management Program Development

BMP 2-4 **Completed ☐**

Document Name and/or Web Address:

Description: A presentation to the City Council to present an overview of the MS4 Permit and highlight the MS4 Permit requirements pertaining to public school properties.

Responsible Department/Parties: Rochester Department of Public Works/Geosyntec Consultants

Measurable Goal(s): Annual public input provided.

MCM 3 - ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

Permit Part 2.3.4

Objective: The permittee shall implement an IDDE program to systematically find and eliminate illicit sources of non-stormwater discharges to its municipal separate storm sewer system and implement procedures to prevent such discharges.

Program Summary

Minimum Control Measure #3 (MCM 3) of the MS4 Permit requires that an Illicit Discharge Detection Elimination (IDDE) program be implemented to systematically find and eliminate sources of non-stormwater discharges to its municipal separate storm sewer system and implement procedures to prevent discharges. An "illicit discharge" is any discharge to a drainage system that is not composed entirely of stormwater, except for discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from fire-fighting activities.

Consistent with Section 2.3.4 of the MS4 Permit, the City will develop an inventory of Sanitary Sewer Overflows (SSOs) that have discharged to the MS4 within the previous 5 years and update the inventory annually; revise the system map to include the Phase I required information and update annually; develop a written IDDE plan; develop an initial outfall and interconnection inventory and priority ranking to assess illicit discharge potential based on existing information (catchments draining to any waterbody impaired for bacteria or pathogens shall be designated either Problem Catchments or High-priority); inspect all outfalls/interconnections for the presence of dry weather flow including follow-up inspections and dry weather flow sample collection as applicable; develop a written catchment investigation procedure identifying maps, plans, records, and data sources; outlining a manhole inspection methodology; and establishing procedures to isolate and confirm sources of illicit discharges; investigate catchments associated with Problem Outfalls (begin by year 2 and complete by year 7) and catchments where any information gathered on the outfall/interconnection identifies sewer input (complete by year 7); investigate catchments associated with High- and Low-priority Outfalls by year 10; and provide annual training to employees involved in the IDDE program including how to recognize illicit discharges and SSOs.

Best Management Practices

The BMPs proposed below summarize the planned IDDE program BMPs including the location of relevant documents, who is responsible, a description, and how effectiveness will be measured.

Annual Reporting Elements

For each Annual Report, due at the end of September during each permit year, the City will describe the activities related to implementation of the IDDE program including: status of the map; status and results of the illicit discharge potential ranking and assessment; identification of problem catchments; status of all protocols described in Parts 2.3.4 of the MS4 Permit (program responsibilities and systematic procedure); number and identifier of catchments evaluated; number and identifier of outfalls screened; number of illicit discharges located; number of illicit discharges removed; gallons of flow removed; identification of tracking indicators and measures of progress based on those indicators; updates to the SSO inventory including status of mitigation and corrective measures to address each identified SSO; and employee training.

IDDE Legal Authority

BMP 3-1 **Completed** (by May 1, 2008) ☒

Ordinance Link or Reference: The City adopted Stormwater Management Regulations (Chapter 50, Section 14 of the City's Ordinances) in 2008 that contain language that prohibits illicit discharges and connections to the City storm drain system. The Stormwater Management Ordinance can be found on the City web site. The Stormwater Management Ordinance provides the Department of Public Works with adequate legal authority to:

1. Prohibit illicit discharges
2. Investigate suspected illicit discharges
3. Eliminate illicit discharges, including discharges from properties not owned by or controlled by the MS4 that discharge into the MS4 system
4. Implement appropriate enforcement procedures and actions.

The City is currently in the process of updating its Stormwater Management Ordinance and related permitting and approval policies to be consistent with the 2017 MS4 Permit. See IDDE Plan for more information (Attachment 3).

Department Responsible for Enforcement: Pursuant to the provisions of the Stormwater Management Ordinance, the Rochester Department of Public Works has the lead responsibility for implementing the IDDE program, including reviewing permit applications for new projects and storm drain construction projects that disturb more than 5,000 sq.ft. Other departments with responsibility for aspects of the program include the Rochester Planning and Development Department who are responsible for the Land Use and Site Plan Review Regulations.

Sanitary Sewer Overflow (SSO) Inventory

BMP 3-2 **FY2019 Completed ☒**

Document Location and/or Web Address: See Table 4-1 of the IDDE Plan (Attachment 3)

Description: An inventory of all SSOs that have discharged to the MS4 within the previous five years [Part 2.3.4.4 of the MS4 Permit].

Responsible Department/Parties: Rochester Department of Public Works, VHB

Measurable Goal(s): Annually track and report the following SSO information: the location; a clear statement of whether the discharge entered a surface water directly or entered the MS4; date(s) and time(s) of each known SSO occurrence; estimated volume(s) of the occurrence; description of the occurrence indicating known or suspected cause(s); mitigation and corrective measures completed with dates implemented; and mitigation and corrective measures planned with implementation schedules. Update inventory as needed.

SSO Reporting: In the event of an overflow or bypass, a notification must be reported within 24 hours by phone to EPA. Follow up the verbal notification with a written notification to EPA and NHDES within five days of becoming aware of the SSO occurrence.

The NHDES contact is:
(603) 271-3503
PO Box 95
Concord, NH 03302-0095

The EPA contact is:
EPA New England
(617) 918-1510
5 Post Office Square
Boston, MA 02109

Map of Storm Sewer System

BMP 3-3 **Phase I Completed** (by Year 2) ☐ **Phase II Completed** (by Year 10) ☐

Document Location and/or Web Address: Rochester originally mapped its stormwater outfalls to meet the mapping requirements of the 2003 MS4 Permit. A copy of the existing storm system map is provided in Appendix A of the IDDE Plan (Attachment 3).

Description: The 2017 MS4 Permit requires a more detailed storm system map than was required by the 2003 MS4 Permit.

Phase I Mapping – A revision of the storm sewer system map to include the Phase I required information (outfalls, receiving waters, open channels, interconnections, stormwater treatment structures, waterbodies and impairments, and initial catchment delineations) [Part 2.3.4.5.a of the MS4 Permit].

Phase II Mapping – A revision of the storm sewer map to include the Phase II required information (outfall spatial location, pipes, manholes, catch basins, refined catchment delineations, municipal sanitary sewer system, municipal combined sewer system) [Part 2.3.4.5.b of the MS4 Permit].

Responsible Department/Parties: Rochester Department of Public Works, VHB

Measurable Goal(s): Map 100% of outfalls and receiving waters, open channel conveyances, interconnections with other MS4s and other storm sewer systems, municipally-owned stormwater treatment structures, waterbodies identified by name and indication of all use impairments, and initial catchment delineations within 2 years of the permit's effective date. Map 100% of outfall spatial locations, pipes, manholes, catch basins, refined catchment delineations, municipal sanitary sewer system (if available), and municipal combined sewer system (if applicable) within 10 years of the permit's effective date.

IDDE Program

BMP 3-4 **FY2019 Completed** ☒

Document Location and/or Web Address: See IDDE Plan (Attachment 3)

Description: A written plan referencing the existing legal authority, summarizing IDDE program responsibilities, and outlining procedures (including an outfall and interconnection screening and sampling procedure as outlined in Part 2.3.4.7.b of the MS4 Permit) to implement the requirements of Parts 2.3.4.7 and 2.3.4.8 of the MS4 Permit.

Responsible Department/Parties: Rochester Department of Public Works, VHB

Measurable Goal(s): Conduct 100% of outfall screening on High and Low Priority Outfalls within 3 years of the permit's effective date. Complete catchment investigations for 100% of the Problem Outfalls within 7 years of the permit's effective date. Complete 100% of all catchment investigations within 10 years of the permit's effective date.

The outfall/interconnection inventory and initial ranking and the dry weather outfall and interconnection screening and sampling results can be found: See IDDE Plan (Attachment 3)

Employee Training

BMP 3-5

Description: Annual training provided to employees involved in the IDDE program including how to recognize illicit discharges and SSOs. Training may also include elements specific to the functions of particular personnel and their function within the framework of the IDDE program. Report on the frequency and type of employee training in the Annual Report.

Responsible Department/Parties: Rochester Department of Public Works

Measurable Goal(s): Training occurs annually and is tracked in Appendix E of the IDDE Plan (Attachment 3).

MCM 4 - CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Permit Part 2.3.5

Objective: The objective of an effective construction stormwater runoff control program is to minimize or eliminate erosion and maintain sediment on site so that it is not transported in stormwater and allowed to discharge to a water of the U.S. through the permittee's MS4.

Program Summary

Minimum Control Measure #4 (MCM 4) of the MS4 Permit requires that a construction stormwater runoff control program be implemented to minimize or eliminate erosion and maintain sediment on site so that it is not transported in stormwater and allowed to discharge to a water of the U.S. through the City's MS4.

Consistent with Section 2.3.5 of the MS4 Permit, the City will continue to implement the existing construction site stormwater runoff program and revise as necessary to meet the requirements of Part 2.3.5.3; develop written procedures for site inspection and enforcement of sediment and erosion control measures; and develop written procedures for site plan review; and annually track the number of site reviews, inspections, and enforcement actions.

Best Management Practices

The BMPs proposed below summarize the planned construction site stormwater runoff control program BMPs including the location of relevant documents, who is responsible, a description, and how effectiveness will be measured.

Annual Reporting Elements

For each Annual Report, due at the end of September during each permit year, the City will evaluate the construction runoff management including number of project plans reviewed; number of inspections; and number of enforcement actions.

Sediment and Erosion Control Ordinance

BMP 4-1 **Completed** (by May 1, 2008) ☒

Ordinances Link or Reference: Chapter 50 – Stormwater Management and Erosion Control availab
https://www.rochesternh.net/sites/rochesternh/files/file/file/chapter_50_stormwater_management_and_erosion_control.pdf

Department Responsible for Enforcement: Rochester City Council through a public hearing process

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Site Plan Review Procedures

BMP 4-2 **FY2019 Completed** ☒

Document Name and/or Web Address:

Description: Written procedures for site plan review [Part 2.3.5.3.e of the MS4 Permit]

Responsible Department/Parties: Rochester City Council through a public hearing process

Measurable Goals: Conduct site plan review of 100% of projects according to the procedures outlined in the site plan review process.

Site Inspections and Enforcement of Sediment and Erosion Control Measures Procedures

BMP 4-3 **FY2019 Completed** ☒

Document Name and/or Web Address:

Description: Written procedures for site inspection and enforcement of sediment and erosion controls measures [Part 2.3.5.3.b of the MS4 Permit]

Responsible Department/Parties: Rochester City Council through a public hearing process

Measurable Goals: Inspect 100% of construction sites as outlined in the above document and take enforcement actions as needed.

MCM 5 - POST CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

Permit Part 2.3.6

Objective: The objective of an effective post construction stormwater management program is to reduce the discharge of pollutants found in stormwater to the MS4 through the retention or treatment of stormwater after construction on new or redeveloped sites and to ensure proper maintenance of installed stormwater controls.

Program Summary

Minimum Control Measure #5 (MCM 5) of the MS4 Permit requires implementation of a post construction stormwater management program for new development and redevelopment to minimize the water quality impact from new development and reduce the water quality impact due to stormwater runoff from a redeveloped site.

Consistent with Section 2.3.6 of the MS4 Permit, the City will continue to implement and enforce its post construction stormwater runoff program and revise as necessary to meet the requirements of Part 2.3.6.a and Appendix H Part I of the MS4 Permit; modify the existing stormwater management and erosion control ordinance; develop a street design and parking lot guidelines report, a green infrastructure report, and a list of municipal BMP retrofit opportunities.

Best Management Practices

The BMPs proposed below summarize the planned post construction stormwater management program BMPs including the location of relevant documents, who is responsible, a description, and how effectiveness will be measured.

Annual Reporting Elements

For each Annual Report, due at the end of September during each permit year, the City will evaluate stormwater management for new development and redevelopment, include status of ordinance development; provide status of the street design assessment; provide status of the green infrastructure assessment; report on the permittee-owned properties and infrastructure inventoried that have been retrofitted with BMPs to mitigate impervious area (non-MS4 owned property may also be included beginning in year 5).

Post-Construction Ordinance

BMP 5-1 **FY2020 Completed ☐**

Town Ordinances Link or Reference:

Description: Revised Chapter 50 – Stormwater Management and Erosion Control Ordinance to be consistent with the Construction Site Stormwater Runoff Control [Part 2.3.5 of the MS4 Permit] and Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management) [Part 2.3.6 of the MS4 Permit] requirements contained in the MS4 Permit.

Department Responsible for Enforcement: City Council through public hearing process

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Street Design and Parking Lot Guidelines Report

BMP 5-2 **FY2022 Completed ☐**

Document Name and/or Web Address:

Description: Report assessing current street design and parking lot guidelines and other local requirements that affect the creation of impervious cover to determine if design standards can be modified to support low impact design options. If the assessment indicates that changes can be made, the assessment shall include recommendations and proposed schedules to incorporate policies and standards into relevant documents and procedures to minimize impervious cover attributable to parking areas and street designs [Part 2.3.6.c of the MS4 Permit].

Responsible Department/Parties: Rochester Department of Public Works

Measurable Goals: Implement all recommendations, in accordance with the schedules contained in the assessment. Involve local planning boards and local transportation boards in this assessment to the extent feasible. Report in each Annual Report on the status of this assessment including any planned or completed changes to local regulations and guidelines.

Green Infrastructure Report

BMP 5-3 **FY 2022 Completed ☐**

Document Name and/or Web Address:

Description: A report that assesses existing local regulations to determine the feasibility of making, at a minimum, the following green infrastructure practices allowable when appropriate site conditions exist: (1) green roofs; (2) infiltration practices; and (3) water harvesting devices. The assessment shall indicate whether and under what circumstances the practices are allowed in the MS4 jurisdiction. If the practices are not allowed, the permittee shall identify impediments to the use of these practices, and what changes in local regulations may be made to make them allowable, and provide a schedule for implementation of recommendations. Information is available at: http://www.epa.gov/region1/npdes/stormwater/assets/pdfs/AddressingBarrier2LID.pdf [Part 2.3.6.d of the MS4 Permit].

Responsible Department/Parties: Rochester Department of Public Works

Measurable Goals: **I**mplement all recommendations, in accordance with the schedules contained in the assessment. Report in each Annual Report on findings and progress towards making the practices allowable.

List of Municipal Retrofit Opportunities

BMP 5-4 **FY2022 Completed ☐**

Document Name and/or Web Address:

Description: An inventory and priority ranking of permittee-owned property and existing infrastructure that could be retrofitted with BMPs designed to reduce the frequency, volume and pollutant loads of stormwater discharges to its MS4 through the mitigation of impervious area. Properties and infrastructure for consideration shall include those with the potential for mitigation of on-site impervious area, as well as those that could provide mitigation of off-site impervious area. At a minimum, consider municipal property with significant impervious area (including parking lots, buildings, and maintenance yards) that could be mitigated, and open space and undeveloped land available to mitigate impervious area and associated stormwater from proximate offsite properties. MS4 infrastructure to be considered includes existing street right-of-ways, outfalls and conventional stormwater conveyances and controls (including swales and detention practices) that could be readily modified to provide reduction in frequency, volume or pollutant loads of such discharges through the mitigation of impervious cover. The permittee may also include in its inventory properties and infrastructure that are privately-held or that do not contribute stormwater to its MS4.

The inventory and priority ranking shall, at minimum, be a screening level ranking that may be based on existing or readily obtainable data. In determining the potential for retrofitting particular properties, consider, on a screening level and subject to availability of data, factors such as access for maintenance purposes; subsurface geology; depth to water table; site slope and elevation; and proximity to aquifers and subsurface infrastructure including sanitary sewers and septic systems. Consider public safety when evaluating potential retrofits and any other information the permittee deems relevant to the ranking. In determining priority ranking, consider, on a screening level and subject to availability of data, factors such as schedules for planned capital improvements to storm and sanitary sewer infrastructure and paving projects; current storm sewer level of service; and control of discharges to impaired waters, first or second order streams, and critical receiving waters; the complexity and cost of implementation; and opportunities for public use and education. For the purposes of this Part, critical receiving waters include public swimming beaches, public drinking water supply sources, outstanding resource waters, cold water fisheries, and shellfish growing areas [Part 2.3.6.e of the MS4 Permit]. Retrofit inventory and priority ranking under 2.3.6.e shall include consideration of BMPs to reduce nitrogen discharges [Appendix H Part I].

Responsible Department/Parties: Rochester Department of Public Works

Measurable Goals: The list is completed by Year 4 and updated as needed.

MCM 6 - GOOD HOUSEKEEPING AND POLLUTION PREVENTION FOR PERMITTEE OWNED OPERATIONS

Permit Part 2.3.7

Objective: The permittee shall implement an operations and maintenance program for permittee-owned operations that has a goal of preventing or reducing pollutant runoff and protecting water quality from all permittee-owned operations.

Program Summary

Minimum Control Measure #6 (MCM 6) of the MS4 Permit requires implementation of an operations and maintenance program for City operations that includes a training component and has a goal of preventing or reducing pollutant runoff and protecting water quality from all permittee operations.

Consistent with Section 2.3.7 and Appendix H Part I of the MS4 Permit, the City will develop written operation and maintenance (O&M) procedures for municipal activities including parks and open space, buildings, and vehicles and equipment. The City will also develop written O&M procedures for infrastructure including catch basin cleaning, street sweeping, winter road maintenance, and stormwater treatment structures inspection and maintenance. In addition, the City will develop and fully implement a stormwater pollution prevention plan (SWPPP) for each of the following City-owned or operated facilities: maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater.

Best Management Practices

The BMPs proposed below summarize the planned good housekeeping and pollution prevention program BMPs including the location of relevant documents, who is responsible, a description, and how effectiveness will be measured.

Annual Reporting Elements

For each Annual Report, due at the end of September during each permit year, the City will provide the status of the O&M programs required by Part 2.3.7.1 and the status of SWPPP required by Part 2.3.7.2 including inspection results.

PERMITTEE OWNED FACILITIES

Parks and Open Spaces Operations and Maintenance Procedures

BMP 6-1 **FY2020 Completed** ☐

Document Name and/or Web Address: See Draft O&M Program (Attachment 4)

Description: Written O&M procedures to address the proper use, storage, and disposal of pesticides, herbicides, and fertilizers (PHF) including minimizing the use of these products and using them only in accordance manufacturer's instruction. Evaluate lawn maintenance and landscaping activities to ensure practices are protective of water quality. Protective practices include reduced use of PHFs, integrated pest management (IPM), recycling or proper disposal of lawn clippings and other vegetative waste, and use of native and drought resistant landscaping materials. Establish procedures for management of trash containers at parks (scheduled cleanings; sufficient number), and for placing signage in areas concerning the proper disposal of pet wastes. Establish procedures to address waterfowl congregation areas where appropriate to reduce waterfowl droppings from entering the MS4. Establish procedures to address erosion or poor vegetative cover when the permittee becomes aware of it; especially if the erosion is within 50 feet of a surface water [Part 2.3.7.1.a of the MS4 Permit]. Establish requirements for use of slow release fertilizers on permittee owned property currently using fertilizer, in addition to reducing and managing fertilizer use as provided in 2.3.7.1; establish procedures to properly manage grass cuttings and leaf litter on permittee property, including prohibiting blowing organic waste materials onto adjacent impervious surfaces [Appendix H Part I].

Responsible Department/Parties: Rochester Department of Public Works

Measurable Goals: Implement the SOP listed above on 100% of the parks and open spaces.

Properties List (Optional)**:**

Buildings and Facilities Operations and Maintenance Procedures

BMP 6-2 **FY2020 Completed** ☐

Document Name and/or Web Address: See Draft O&M Program (Attachment 4)

Description: This includes schools (to the extent they are permittee-owned or operated), town offices, police, and fire stations, municipal pools and parking garages and other permittee-owned or operated buildings or facilities. Evaluate the use, storage, and disposal of petroleum products and other potential stormwater pollutants. Provide employee training as necessary so that those responsible for handling these products know proper procedures. Ensure that Spill Prevention Plans are in place, if applicable, and coordinate with the fire department as necessary. Develop management procedures for dumpsters and other waste management equipment. Sweep parking lots and keep areas surrounding the facilities clean to reduce runoff of pollutants [Part 2.3.7.1.b of the MS4 Permit].

Responsible Department/Parties: Rochester Department of Public Works

Measurable Goals: Implement the SOP listed above on 100% of buildings and facilities.

Properties List (Optional)**:**

Vehicles and Equipment Operations and Maintenance Procedures

BMP 6-3 **FY2020 Completed** ☐

Document Name and/or Web Address: See Draft O&M Program (Attachment 4)

Description: Procedures for the storage of permittee vehicles. Vehicles with fluid leaks shall be stored indoors or containment shall be provided until repaired. Evaluate fueling areas owned by the permittee or used by permittee vehicles. If possible, place fueling areas under cover in order to minimize exposure. Establish procedures to ensure that vehicle wash waters are not discharged to the municipal storm sewer system or to surface waters. The permit does not authorize such discharges [Part 2.3.7.1.c of the MS4 Permit].

Responsible Department/Parties: Rochester Department of Public Works

Measurable Goals: Implement the SOP listed above for 100% of vehicles and equipment.

Properties List (Optional)**:**

INFRASTRUCTURE

Infrastructure Operations and Maintenance Procedures

SEE BMP 6-4—6-8 **FY2020 Completed ☐**

Document Name and/or Web Address: See Draft O&M Program (Attachment 4)

Description: A written program detailing the activities and procedures that will be implemented so the MS4 infrastructure is maintained in a timely manner to reduce the discharge of pollutants from the MS4 [Part 2.3.7.1.d.i of the MS4 Permit].

Responsible Department/Parties: Rochester Department of Public Works

Measurable Goals: 100% of infrastructure is maintained to ensure proper function in accordance with the procedures in the document referenced above.

Catch Basin Cleaning Program

BMP 6-4 **FY2019 Completed ☒**

Document Name and/or Web Address: See Draft O&M Program (Attachment 4)

Description: A plan for optimizing catch basin cleaning, inspection plans, or its schedule for gathering information to develop the optimization plan. Documentation shall include metrics and other information used to reach the determination that the established plan for cleaning and maintenance is optimal for the MS4. Keep a log of catch basins cleaned or inspected [Part 2.3.7.1.d.ii of the MS4 Permit].

Responsible Department/Parties: Rochester Department of Public Works

Measurable Goals: All catch basins are cleaned in accordance with the Catch Basin Cleaning Program such that no catch basin is more than 50% full at any given time.

Street Sweeping Program

BMP 6-5 **FY2019 Completed ☒**

Document Name and/or Web Address: See Draft O&M Program (Attachment 4)

Description: Establish and implement procedures for sweeping and/or cleaning streets and permittee owned parking lots. All streets with curbing and/or catch basins in the MS4 regulated area shall be swept and/or cleaned a minimum of twice per year in the spring and fall. The procedures shall also include more frequent sweeping of targeted areas determined on the basis of pollutant load reduction potential, based on inspections, pollutant loads, catch basin cleaning or inspection results, land use, impaired or TMDL waters or other relevant factors as determined [Part 2.3.7.1.iii of the MS4 Permit].

Responsible Department/Parties: Rochester Department of Public Works

Measurable Goals: Bi-annually sweep 100% of all municipal owned streets and parking lots in accordance with the schedule listed in the document referenced above. Report in each Annual Report the number of miles cleaned and the volume or mass of material removed.

Winter Road Maintenance Program

BMP 6-6 **FY2019 Completed ☒**

Document Name and/or Web Address: See Draft O&M Program (Attachment 4)

Description: 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 [Part 2.3.7.1.v of the MS4 Permit].

Responsible Department/Parties: Rochester Department of Public Works

Measurable Goals: Evaluate at least one salt/chloride alternative for use in the municipality.

Stormwater Treatment Structures Inspection and Maintenance Procedures

BMP 6-7 **FY2019 Completed ☒**

Document Name and/or Web Address: See Draft O&M Program (Attachment 4)

Description: Establish and implement inspection and maintenance frequencies and procedures for the storm drain systems and for all stormwater treatment structures such as water quality swales, retention/detention basins, infiltration structures, proprietary treatment devices or other similar structures. All permittee-owned stormwater treatment structures (excluding catch basins) shall be inspected annually at a minimum [Part 2.3.7.1.vi of the MS4 Permit].

Responsible Department/Parties: Rochester Department of Public Works

Measurable Goals: Inspect and maintain 100% of treatment structures to ensure proper function.

SWPPP

BMP 6-8 **FY2020 Completed ☐**

Document Name and/or Web Address:

Description: Develop and fully implement a Stormwater Pollution Prevention Plan (SWPPP) for each of the following permittee-owned or operated facilities: maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater. If facilities are located at the same property, one SWPPP may be developed for the entire property. A SWPPP does not need to be developed for a facility if the permittee has either developed a SWPPP or received a no exposure certification for the discharge under the Multi-Sector General Permit or the discharge is authorized under another NPDES permit [Part 2.3.7.2 of the MS4 Permit].

Responsible Department/Parties: Rochester Department of Public Works

Measurable Goals: Develop and implement SWPPPs for 100% of facilities.

ANNUAL EVALUATION

Year 1 Annual Report
Document Name and/or Web Address:

Year 2 Annual Report
Document Name and/or Web Address:

Year 3 Annual Report
Document Name and/or Web Address:

Year 4 Annual Report
Document Name and/or Web Address:

Year 5 Annual Report
Document Name and/or Web Address:

Year X Annual Report
Document Name and/or Web Address:

TMDLS AND WATER QUALITY LIMITED WATERS

Bacteria/Pathogens

Combination of Impaired Waters Requirements and TMDL Requirements as Applicable

Applicable Receiving Waterbody(ies)	**TMDL Name** (if applicable)
All	Statewide TMDL

Annual Requirements Beginning Year 1

Illicit Discharge Detection and Elimination

Rank outfalls to these receiving waters as high priority for IDDE implementation in the initial outfall ranking

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are: **BMP 3-4**

Public Education and Outreach

(Public education messages can be combined with other public education requirements as applicable (see Appendix H and F for more information))

Annual message encouraging the proper management of pet waste, including noting any existing ordinances where appropriate.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are: **BMP 1-1**

Permittee or its agents disseminate educational material to dog owners at the time of issuance or renewal of dog license, or other appropriate time.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are: **BMP 1-1**

Provide information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are: **BMP 1-3**

Nitrogen Impairment

Applicable Receiving Waterbody(ies)	**TMDL Name** (if applicable)
All	N/A

Annual Requirements Beginning Year 1

Public Education and Outreach

(Public education messages can be combined with other public education requirements as applicable (see Appendix H and F for more information))

Distribute an annual message in the spring (April/May) that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release fertilizers.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are: **BMP 1-2**

Distribute an annual message in the summer (June/July) encouraging the proper management of pet waste, including noting any existing ordinances where appropriate.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are: **BMP 1-1**

Distribute an annual message in the fall (August/September/October) encouraging the proper disposal of leaf litter.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are: **BMP 1-4**

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

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Establish requirements for the use of slow release fertilizers on permittee owned property currently using fertilizer, in addition to reducing and managing fertilizer use as provided in part 2.3.7.1.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are: **BMP 6-1**

Establish procedures to properly manage grass cuttings and leaf litter on permittee property, including prohibiting blowing organic waste materials onto adjacent impervious surfaces.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are: **BMP 6-1**

Increase street sweeping frequency of all municipal owned streets and parking lots subject to Permit part 2.3.7.a.iii.(c) to a minimum of two times per year (spring and fall).

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are: **BMP 6-5**

Nitrogen Reduction Tracking BMP

Any structural BMPs listed in Attachment 3 to Appendix F already existing or installed in the regulated area by the permittee or its agents shall be tracked and the permittee shall estimate the nitrogen removal by the BMP consistent with Attachment 3 to Appendix F. The structural BMPs listed in Attachment 3 to Appendix F are listed below:

- Infiltration Trench;
- Surface Infiltration Practices (i.e., basins, rain gardens and bio-retention);
- Bio-filtration Practice;
- Gravel Wetland System;
- Enhanced Bio-filtration with Internal Storage Reservoir (ISR);
- Sand Filter;
- Porous Pavement;
- Wet Pond or wet detention basin;
- Dry Pond or detention basin; and
- Dry Water Quality Grass Swale with Detention.

The BMP type, total area treated by the BMP, the design storage volume of the BMP and the estimated nitrogen removed in mass per year by the BMP is included in Attachment 5 of this SWMP, Nitrogen Reduction Tracking of Existing BMPs. The information in Attachment 5 will be updated annually at a minimum, and included in each Annual Report.

<u>Requirements Due by Year 2</u>

Stormwater Management in New Development and Redevelopment

The requirement for adoption/amendment of the permittee's ordinance or other regulatory mechanism shall include a requirement that new development and redevelopment stormwater management BMPs be optimized for nitrogen removal.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are: **BMP 5-1**

Requirements Due by Year 4

Complete a Nitrogen Source Identification Report.

The document name (if attached) and/or web address is/are:

Stormwater Management in New Development and Redevelopment

Retrofit inventory and priority ranking under 2.3.6.e shall include consideration of BMPs to reduce nitrogen discharges.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are: **BMP 5-4**

Requirements Due by Year 5

Potential Structural BMPs

Evaluate all permittee-owned properties identified as presenting retrofit opportunities or areas for structural BMP installation under Permit part 2.3.6.e or identified in the Nitrogen Source Identification Report that are within the drainage area of the impaired water or its tributaries.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

Complete a listing of planned structural BMPs and a plan and schedule for implementation.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are:

Solids, Oil and Grease (Hydrocarbons), or Metals Impairments

Applicable Receiving Waterbody(ies)	**TMDL Name** (if applicable)
NHRIV600030603-06	N/A

Annual Requirements Beginning Year 1

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

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Increase street sweeping frequency of all municipal owned streets and parking lots to a schedule to target areas with potential for high pollutant loads.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are: **BMP 6-5**

Prioritize inspection and maintenance for catch basins to ensure that no sump shall be more than 50 percent full; Clean catch basins more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are: **BMP 6-4**

Requirements Due by Year 2

Stormwater Management in New Development and Redevelopment

Stormwater management systems designed on commercial and industrial land use area draining to the water quality limited water body shall incorporate designs that allow for shutdown and containment where appropriate to isolate the system in the event of an emergency spill or other unexpected event.

The relevant BMP number(s) listed above in the Stormwater Management Program OR the description of implementation actions and document location(s) are: **BMP 5-1**

ATTACHMENT 1
NOTICE OF INTENT (NOI)

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part I: General Conditions

General Information

Name of Municipality or Organization: City of Rochester State: NH

EPA NPDES Permit Number (if applicable): NHR041000

Primary MS4 Program Manager Contact Information

Name: Blaine Cox Title: City Manager

Street Address Line 1: 31 Wakefield Street

Street Address Line 2:

City: Rochester State: NH Zip Code: 03867

Email: blaine.cox@rochesternh.net Phone Number: (603) 335-7500

Fax Number:

Other Information

Stormwater Management Program (SWMP) Location (web address or physical location, if already completed): Department of Public Works - 45 Old Dover Road Rochester NH 03867

Eligibility Determination

Endangered Species Act (ESA) Determination Complete? Yes

Eligibility Criteria (check all that apply): ☐ A ☐ B ☒ C

National Historic Preservation Act (NHPA) Determination Complete? Yes

Eligibility Criteria (check all that apply): ☒ A ☒ B ☒ C ☐ D

☑ Check the box if your municipality or organization was covered under the 2003 MS4 General Permit

MS4 Infrastructure (if covered under the 2003 permit)

Estimated Percent of Outfall Map Complete? *(Part II, III, IV or V, Subpart B.3.(a.) of 2003 permit)* 100%

If 100% of 2003 requirements not met, enter an estimated date of completion (MM/DD/YY):

Web address where MS4 map is published:

If outfall map is unavailable on the internet an electronic or paper copy of the outfall map must be included with NOI submission (see section V for submission options)

See attached

Regulatory Authorities (if covered under the 2003 permit)

Illicit Discharge Detection and Elimination (IDDE) Authority Adopted? *(Part II, III, IV or V, Subpart B.3.(b.) of 2003 permit)* Yes

Effective Date or Estimated Date of Adoption (MM/DD/YY): 05/06/08

Construction/Erosion and Sediment Control (ESC) Authority Adopted? *(Part II,III,IV or V, Subpart B.4.(a.) of 2003 permit)* Yes

Effective Date or Estimated Date of Adoption (MM/DD/YY): 05/06/08

Post-Construction Stormwater Management Adopted? *(Part II, III, IV or V, Subpart B.5.(a.) of 2003 permit)* Yes

Effective Date or Estimated Date of Adoption (MM/DD/YY): 05/06/08

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part II: Summary of Receiving Waters

Please list the waterbody segments to which your MS4 discharges. For each waterbody segment, please report the number of outfalls discharging into it and, if applicable, any impairments.

New Hampshire list of impaired waters: http://des.nh.gov/organization/divisions/water/wmb/swqa/

Check off relevant pollutants for discharges to impaired waterbodies (see above 303(d) lists) without an approved TMDL in accordance with part 2.2.2 of the permit. List any other pollutants in the last column, if applicable.

Waterbody segment that receives flow from the MS4	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
NHIMP600030405-04	9	☐	☐	☐	☐	☐	☐	☐	☐	☐	pH
NHIMP600030603-01	15	☐	☐	☒	☐	☐	☐	☐	☐	☐	pH
NHIMP600030603-02	5	☐	☐	☐	☐	☐	☐	☐	☐	☐	pH
NHIMP600030607-02	6	☐	☐	☐	☐	☐	☐	☐	☐	☐	pH
NHLAK600030603-02	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
NHRIV600030405-07	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
NHRIV600030405-08	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
NHRIV600030405-09	11	☐	☐	☐	☐	☐	☐	☐	☐	☐	Benthic-Macroinvertebrate Bioassessments, pH
NHRIV600030405-22	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	
NHRIV600030602-03	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	pH
NHRIV600030603-06	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	Aluminum, Lead, pH
NHRIV600030603-08	13	☐	☐	☐	☐	☐	☐	☐	☐	☐	Benthic-Macroinvertebrate Bioassessments, pH
NHRIV600030603-10	37	☐	☐	☒	☐	☐	☐	☐	☐	☐	Benthic-Macroinvertebrate Bioassessments, pH
NHRIV600030603-11	13	☐	☐	☐	☐	☐	☐	☐	☐	☐	pH
NHRIV600030603-19	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
NHRIV600030603-21	10	☐	☐	☐	☐	☐	☐	☐	☐	☐	
NHRIV600030607-01	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	Benthic-Macroinvertebrate Bioassessments, pH
NHRIV600030607-07	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	

Waterbody segment that receives flow from the MS4	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
NHRIV600030607-08	2	☐	☐	☐	☐	☐	☐	☐	☐	☐	pH
NHRIV600030607-12	5	☐	☐	☐	☐	☐	☐	☐	☐	☐	
NHRIV600030607-13	7	☐	☐	☐	☐	☐	☐	☐	☐	☐	
NHRIV600030607-14	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
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Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary

Identify the Best Management Practices (BMPs) that will be employed to address each of the six Minimum Control Measures (MCMs).

For each MCM, list each existing or proposed BMP by category and provide a brief description, responsible parties/departments, measurable goals, and the year the BMP will be employed (public education and outreach BMPs also requires a target audience). **Use the drop-down menus in each table or enter your own text to override the drop down menu.**

MCM 1: Public Education and Outreach

BMP Media/Category (enter your own text to override the drop down menu)	**BMP Description**	**Targeted Audience**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal**	**Beginning Year of BMP Implementation**
Various delivery methods	Varied. Use Seacoast Stormwater Coalition (SSC) outreach materials and guidance to implement outreach for relevant impairments.	Residents	Department of Public Works in collaboration with SSC	To be determined with coordination with Seacoast Stormwater Coalition	2018
Various delivery methods	Varied. Use Seacoast Stormwater Coalition (SSC) outreach materials and guidance to implement outreach for relevant impairments.	Businesses, Institutions and Commercial Facilities	Department of Public Works in collaboration with SSC	To be determined with coordination with Seacoast Stormwater Coalition	2018
Various delivery methods	Varied. Use Seacoast Stormwater Coalition (SSC) outreach materials and guidance to implement outreach for relevant impairments.	Developers (construction)	Department of Public Works in collaboration with SSC	To be determined with coordination with Seacoast Stormwater Coalition	2019

Various delivery methods	Varied. Use Seacoast Stormwater Coalition (SSC) outreach materials and guidance to implement outreach for relevant impairments.	Industrial Facilities	Department of Public Works in collaboration with SSC	To be determined with coordination with Seacoast Stormwater Coalition	2019

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Part III: Stormwater Management Program Summary (continued)

MCM 2: Public Involvement and Participation

BMP Categorization	Brief BMP Description (enter your own text to override the drop down menu)	Responsible Department/Parties (enter your own text to override the drop down menu)	Additional Description/ Measurable Goal	Beginning Year of BMP Imple-mentation
Public Review	SWMP Review	Department of Public Works	Allow annual review of stormwater management plan and posting of stormwater management plan on website	2019
Public Participation	Implement 1 or more public participation events/activities annually	Department of Public Works	Public participation event(s) conducted	2019
	Annual Reporting	Department of Public Works	Annual reporting of public participation activity(ies)	2019

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 3: Illicit Discharge Detection and Elimination (IDDE)

BMP Categorization (enter your own text to override the drop down menu)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)
SSO inventory	Develop SSO inventory in accordance of permit conditions	Department of Public Works	Complete within 1 year of effective date of permit
Storm sewer system map	Create map and update during IDDE program completion	Department of Public Works	Update map within 2 years of effective date of permit and complete full system map 10 years after effective date of permit
Written IDDE program development	Create written IDDE program	Department of Public Works with assistance of SSC	Complete within 1 year of the effective date of permit and update as required
Implement IDDE program	Implement catchment investigations according to program and permit conditions	Department of Public Works	Complete 10 years after effective date of permit
Employee training	Train employees on IDDE implementation	Department of Public Works	Train annually
Conduct dry weather screening	Conduct in accordance with outfall screening procedure and permit conditions	Department of Public Works with assistance of SSC	Complete 3 years after effective date of permit
Conduct wet weather screening	Conduct in accordance with outfall screening procedure	Department of Public Works with assistance of SSC	Complete 10 years after effective date of permit
Ongoing screening	Conduct dry weather and wet weather screening (as necessary)	Department of Public Works with assistance of SSC	Complete ongoing outfall screening on completion of IDDE program

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 4: Construction Site Stormwater Runoff Control

BMP Categorization (enter your own text to override the drop down menu or entered text)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)
Implement sediment and erosion controls	Adopt ESC Regulations	City Council through a public hearing process	Complete within 1 year of the effective date of permit
Prepare written procedures (adopt in regulations)	Document procedures for site inspections, enforcement, responsible parties, compliance methods	City Council through a public hearing process	Complete within 1 year of the effective date of permit
Develop requirements for construction operators	Adopt requirements for construction operators applicable to all approved construction and building permits	City Council through a public hearing process	Complete within 1 year of the effective date of permit
Construction and site waste controls	Adopt requirements to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes	City Council through a public hearing process	Complete within 1 year of the effective date of permit

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 5: Post-Construction Stormwater Management in New Development and Redevelopment

BMP Categorization (enter your own text to override the drop down menu or entered text)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)
As-built plans for on-site stormwater control	Adoption, amendment, or modification of a regulatory mechanism to meet permit requirements	City Council through public hearing process	Complete 2 years after effective date of permit
Target properties to reduce impervious areas	Complete an inventory and priority ranking of permitee-owned property and existing infrastructure that could be retrofitted with BMPs designed to reduce the frequency, volume and pollutant loads of stormwater discharges to its MS4 through the mitigation of impervious area	Department of Public Works	Complete 4 years after effective date of permit and report annually on retrofitted properties
Determine feasibility and allow for green infrastructure implementation	Develop a report assessing existing local regulations to determine the feasibility of making green infrastructure practices allowable when appropriate site conditions exist	City Council through public hearing process	Complete 4 years after effective date of permit and implement recomendations of report
Street design and parking lot guidelines	Develop a report assessing requirements that affect the creation of impervious cover. The assessment will help determine if changes to design standards for streets and parking lots can be modified to support low impact design options.	City Council through public hearing process	Complete 4 years after effective date of permit and implement recommendations of report

New development and redevelopment guidelines	Adoption, amendment, or modification of a regulatory mechanism to meet permit requirements	City Council through public hearing process	Complete 2 years after effective date of permit

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

MCM 6: Municipal Good Housekeeping and Pollution Prevention

BMP Categorization (enter your own text to override the drop down menu or entered text)	**BMP Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)	**Measurable Goal** (all text can be overwritten)	**Beginning Year of BMP Imple-mentation**
Operation and Maintenance (O&M) Procedures	Create written O&M procedures including all requirements contained in 2.3.7.1 for parks and open spaces, buildings and facilities, and vehicles and equipment	Department of Public Works	Complete and implement 2 years after effective date of permit	2018
Inventory all permittee-owned parks and open spaces, buildings and facilities, and vehicles and equipment	Prepare inventory	Department of Public Works	Complete 2 years after effective date of permit and implement annually	2018
Infrastructure Operations and Maintenance	Establish and record annually implementation of program activities for maintenance, repair and rehabilitation of MS4 infrastructure	Department of Public Works	Complete 2 years after effective date of permit	2018
Stormwater Pollution Prevention Plan (SWPPP)	Create SWPPPs for municipal properties or individual facilities per requirements of section 2.3.7.2	Department of Public Works	Complete 2 years after effective date of permit	2019
Catch basin cleaning	Establish schedule for catch basin cleaning such that each catch basin is no more than 50% full and clean catch basins on that schedule, ensure proper storage of basin cleanings	Department of Public Works	Clean catch basins on established schedule and report number of catch basins cleaned and volume of material moved annually	2019

Street sweeping program	Sweep all (curbed) streets and permitee-owned parking lots in accordance with permit conditions	Department of Public Works	Sweep all streets and permitee-owned parking lots once per year in the spring	2019
Winter road maintenance and road salt use optimization program	Establish and implement a program to minimize the use of road salt and evaluate opportunities for use of alternative materials	Department of Public Works, Use Green SnowPro Program	Implement salt use optimization during deicing season	2018
Inspections and maintenance of stormwater treatment structures	Establish and implement inspection and maintenance procedures and frequencies	Department of Public Works	Inspect and maintain treatment structures at least annually	2019

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

Actions for Meeting Total Maximum Daily Load (TMDL) Requirements

Use the drop-down menus to select the applicable TMDL, action description to meet the TMDL requirements, and the responsible department/parties. If no options are applicable, or more than one, **enter your own text to override drop-down menus.** If submitting a NHDES approved alternative reduction plan, attach and submit it with the NOI.

Applicable TMDL	**Action Description**	**Responsible Department/Parties** (enter your own text to override the drop down menu)
New Hampshire Statewide (Bacteria)	Adhere to requirements in Part II.1 of Appendix F	Department of Public Works

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part III: Stormwater Management Program Summary (continued)

Actions for Meeting Requirements Related to Water Quality Limited Waters

Use the drop-down menus to select the pollutant causing the water quality limitation and enter the waterbody ID(s) experiencing excursions above water quality standards for that pollutant. Choose the action description from the dropdown menu and indicate the responsible party. If no options are applicable, or more than one, **enter your own text to override drop-down menus.**

Pollutant	Waterbody ID(s)	Action Description	Responsible Department/Parties (enter your own text to override the drop down menu)
Lead	NHRIV600030603-06	Adhere to requirements in part V of Appendix H	Department of Public Works

Part IV: Notes and additional information

Use the space below to indicate the part(s) of 2.2.2 that you have identified as not applicable to your MS4 and provide all supporting documentation below or attach additional documents if necessary.

Provide any additional information about your MS4 program below.

The listing of water quality impairments and water quality limited water bodies is based on information included in the Final NHDES 2016 303(d) list dated November 30, 2017 for the City of Rochester.

By submitting this Notice of Intent to Comply with the Provisions of the 2017 New Hampshire Small MS4 General Permit pursuant to Section 1.7.2, the City of Rochester does not waive any rights it has to object or contest the applicability of any provision or requirement of the Permit, including, but not limited to, any issues raised by any party in the appeal of the Permit before the United States Court of Appeals for the District of Columbia Circuit, Case Number 17-1060.

Notice of Intent (NOI) for coverage under Small MS4 General Permit

Part V: 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 gathered and evaluated 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, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than 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:	Blaine Cox	Title:	City Manager
Signature:	Blaine Cox	Date:	9-28-18

[To be signed according to Appendix B, Subparagraph B.11, Standard Conditions]

Note: When prompted during signing, save the document under a new file name

MS4 Regulated Outfalls

City of Rochester, NH

Outfall

MS4 Regulated Area

Date: September 20, 2018

1 0.5 0 1 Miles

S:\GIS\DPW\MS4\NOI\2018\OutfallMap\OutfallMap.mxd 9/20/2018

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Maine and New Hampshire

Local offices

Maine Ecological Services Field Office

(207) 469-7300
(207) 902-1588

MAILING ADDRESS

P. O. Box A
East Orland, ME 04431

PHYSICAL ADDRESS

306 Hatchery Road

East Orland, ME 04431

http://www.fws.gov/mainefieldoffice/index.html

New England Ecological Services Field Office

(603) 223-2541
(603) 223-0104

70 Commercial Street, Suite 300
Concord, NH 03301-5094

http://www.fws.gov/newengland

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Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS

NAME	STATUS
Northern Long-eared Bat Myotis septentrionalis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Flowering Plants

NAME	STATUS
Small Whorled Pogonia Isotria medeoloides No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1890	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

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Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general

public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
American Oystercatcher *Haematopus palliatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8935	Breeds Apr 15 to Aug 31
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31

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Buff-breasted Sandpiper Calidris subruficollis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9488	Breeds elsewhere
Canada Warbler Cardellina canadensis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Dunlin Calidris alpina arcticola This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Eastern Whip-poor-will Antrostomus vociferus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Evening Grosbeak Coccothraustes vespertinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Prairie Warbler Dendroica discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Semipalmated Sandpiper Calidris pusilla This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere

NOT FOR CONSULTATION

Short-billed Dowitcher Limnodromus griseus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Snowy Owl Bubo scandiacus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the *maximum probability of presence* across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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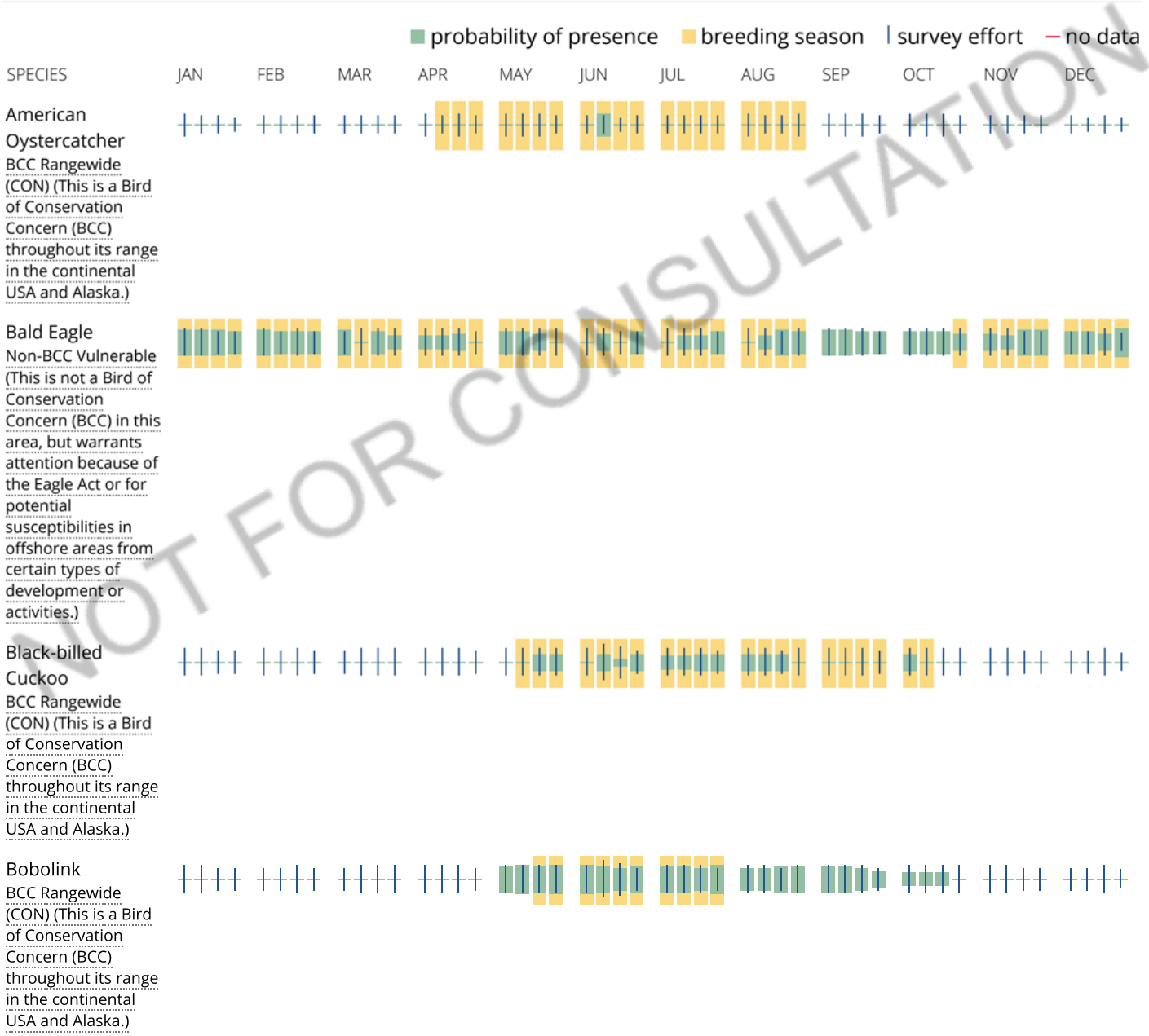
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



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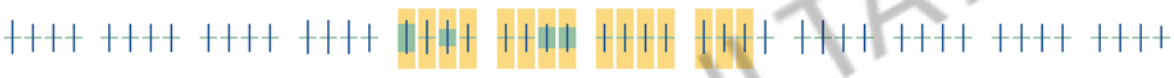
Buff-breasted Sandpiper
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Canada Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Dunlin
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Eastern Whip-poor-will
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

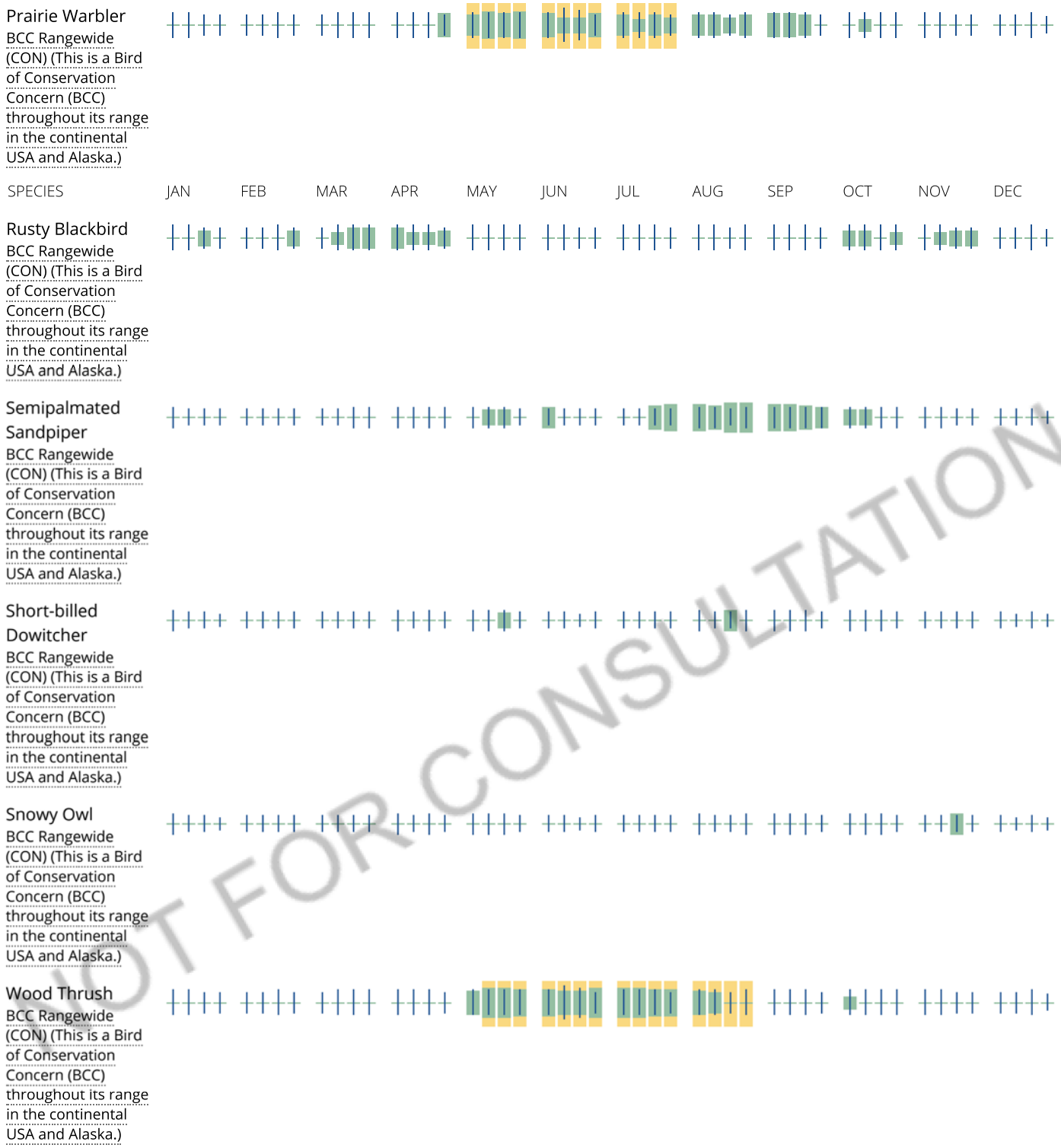


Evening Grosbeak
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Golden Eagle
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

Lesser Yellowlegs
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

NOT FOR CONSULTATION



NOT FOR CONSULTATION

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review.

NOT FOR CONSULTATION

Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

NOT FOR CONSULTATION

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

NOT FOR CONSULTATION

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

ATTACHMENT 2
AUTHORIZATION TO DISCHARGE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MA 02109-3912

VIA EMAIL

June 12, 2019

Blaine Cox
City Manager
31 Wakefield Street
Rochester, NH 03867
blaine.cox@rochesternh.net

Re: National Pollutant Discharge Elimination System (NPDES) Permit ID: NHR041028, City of Rochester, NH

Dear Blaine Cox:

Your Notice of Intent (NOI) for coverage under the 2017 NPDES General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in New Hampshire (MS4 General Permit) has been reviewed by EPA and appears to be complete. You are hereby granted authorization by EPA to discharge stormwater from your MS4 in accordance with applicable terms and conditions of the MS4 General Permit, including all applicable Appendices. This authorization to discharge expires at midnight on **June 30, 2023.**

As a permittee located within the Great Bay Watershed, part 2.2.2.a of the 2017 MS4 General Permit identified your MS4 as discharging to a waterbody impaired due to total nitrogen, or tributary of a waterbody impaired due to total nitrogen. As such, discharges from your MS4 within the Great Bay Watershed are subject to the requirements of Appendix H Part I of the permit.

For those permittees that certified Endangered Species Act eligibility under Criterion C in their NOI, this authorization letter also serves as EPA's concurrence with your determination that your discharges will have no effect on the listed species present in your action area, based on the information provided in your NOI.

As a reminder, your first annual report is due by **September 30, 2019** for the reporting period from May 1, 2018 through June 30, 2019.

Information about the permit and available resources can be found on our website: https://www.epa.gov/npdes-permits/new-hampshire-small-ms4-general-permit. Should you have any questions regarding this permit please contact Suzanne Warner at warner.suzanne@epa.gov or (617) 918-1383.

Sincerely,

Thelma Murphy, Chief
NPDES Permits Branch
Water Division
United States Environmental Protection Agency, Region 1

ATTACHMENT 3
ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PLAN

Illicit Discharge Detection and Elimination (IDDE) Plan

City of Rochester, New Hampshire

June 2019

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City of Rochester, New Hampshire

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1 Introduction

1.1 MS4 Program

This Illicit Discharge Detection and Elimination (IDDE) Plan has been developed by the City of Rochester (the City) to address the requirements of the United States Environmental Protection Agency's (USEPA's) 2017 National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) in New Hampshire, hereafter referred to as the "2017 New Hampshire MS4 Permit" or "MS4 Permit."

The 2017 New Hampshire MS4 Permit requires that each permittee, or regulated community, address six Minimum Control Measures. These measures include the following:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination Program
4. Construction Site Stormwater Runoff Control
5. Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management); and
6. Good Housekeeping and Pollution Prevention for Permittee Owned Operations.

In addition to a Stormwater Management Plan (SWMP), the MS4 Permit requires the City to implement an IDDE program to systematically find and eliminate sources of non-stormwater discharges to its MS4 and implement procedures to prevent such discharges. The IDDE program must also be recorded in a written (hardcopy or electronic) document. This written IDDE Plan has been prepared to address this requirement.

1.1.1 Illicit Discharges

An "illicit discharge" is any discharge to a drainage system that is not composed entirely of stormwater, except for discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from fire-fighting activities.

Illicit discharges may take a variety of forms. Illicit discharges may enter the drainage system through direct or indirect connections. Direct connections may be relatively obvious, such as cross-connections of sewer services to the storm drain system. Indirect illicit discharges may be more difficult to detect or address, such as failing septic systems that discharge untreated sewage to a ditch within the MS4, or a sump pump that discharges contaminated water on an intermittent basis.

Some illicit discharges are intentional, such as a waste hauler or even recreational vehicle owner who may illegally release the contents of hazardous or sanitary waste from an onboard holding tank into a catch basin or on a paved surface that drains into the City's storm system and eventually into surface waters.

The dumping of solid waste into the storm drain system such as pet waste or yard waste can also be significant sources of pollutants including nutrients and bacteria. This material can be minimized through educational outreach in conjunction with having enough waste receptacles available and disposing collected materials on a regular basis.

Regardless of the intention, when not addressed, illicit discharges can contribute high levels of pollutants, such as heavy metals, toxics, oil, grease, solvents, nutrients, and pathogens to surface waters.

1.1.2 Allowable Non-Stormwater Discharges

The following categories of non-storm water discharges are allowed under the MS4 Permit unless the permittee, USEPA or New Hampshire Department of Environmental Services (NHDES) identifies any category or individual discharge of non-stormwater discharge as a significant contributor of pollutants to the MS4 regulated area:

- Water line flushing
- Landscape irrigation
- Diverted stream flows
- Rising ground water
- Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20))
- Uncontaminated pumped groundwater
- Discharge from potable water sources
- Foundation drains
- Air conditioning condensation
- Irrigation water, springs
- Water from crawl space pumps
- Footing drains
- Lawn watering
- Individual resident car washing
- Flows from riparian habitats and wetlands
- De-chlorinated swimming pool discharges
- Street wash waters
- Residential building wash waters without detergents

If these discharges are identified as significant contributors to the MS4, they must be considered an "illicit discharge" and addressed in the IDDE Plan (i.e., control these sources so they are no longer significant contributors of pollutants, and/or eliminate them entirely).

1.1.3 Receiving Waters and Impairments

Table 1-1 lists the "impaired waters" within Rochester's regulated area based on the 2016 New Hampshire Integrated List of Waters. Impaired waters are water bodies that do not meet water quality standards for one or more designated use(s) such as recreation or aquatic habitat.

Table 1-1. Impaired Waters, Rochester, New Hampshire

Water Body Name	Assessment Unit ID	Impairment(s)	Associated Approved TMDL/ Other Impairment
Salmon Falls River – Baxter Mill Dam Pond	NHIMP600030405-04	pH, Non-Native Aquatic Plants	Bacteria (E. coli)
Cocheco River – City Dam 1	NHIMP600030603-01	DO Saturation, pH, Non-Native Aquatic Plants	None
Cocheco River – Hatfield Dam	NHIMP600030603-02	pH	Bacteria (E. coli)
Cocheco River – Gonic Dam Pond	NHIMP600030607-02	pH	Bacteria (E. coli)
Rochester Reservoir	NHLAK600030602-03	Cyanobacteria Hepatoxic Microcystins	pH
Cocheco River	NHRIV600030603-08	Macroinvertebrate Bioassessments, pH, Habitat Assessments	Bacteria (E. coli)
Willow Brook	NHRIV600030603-10	Macroinvertebrate Bioassessments, DO Saturation, pH, Habitat Assessments	Bacteria (E. coli)
Hurd Brook	NHRIV600030603-11	pH	None
Isinglass River	NHRIV600030607-01	Macroinvertebrate Bioassessments, pH	None
Hanson Brook	NHRIV600030607-08	pH	None
Isinglass River	NHRIV600030607-10	DO Saturation, pH	Bacteria (E. coli)

1.2 IDDE Program Goals, Framework, and Timeline

The goals of the IDDE program are to find and eliminate illicit discharges to municipal separate storm sewer system and to prevent illicit discharges from happening in the future. The program consists of the following major components as outlined in the MS4 Permit:

- Legal authority and regulatory mechanism to prohibit illicit discharges and enforce this prohibition
- Storm system mapping
- Inventory and ranking of outfalls
- Dry weather outfall screening
- Catchment investigations
- Identification/confirmation of illicit sources
- Illicit discharge removal
- Follow-up screening
- Employee training

The IDDE investigation procedure framework is shown in **Figure 1-1.** The required timeline for implementing the IDDE program is shown in **Table 1-2**.

Figure 1-1. IDDE Investigation Procedure Framework

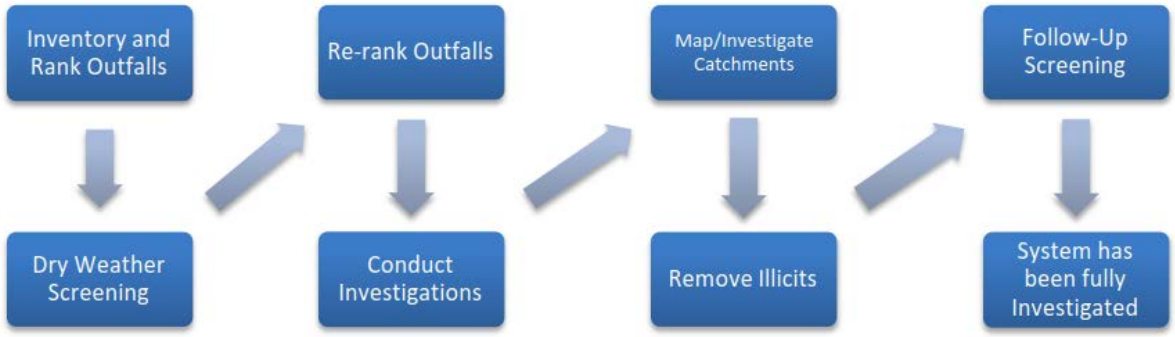

Table 1-2. IDDE Program Implementation Timeline

IDDE Program Requirement	Completion Date from Effective Date of Permit					
	1 Year	1.5 Years	2 Years	3 Years	7 Years	10 Years
Written IDDE Program Plan	X					
SSO Inventory	X					
Written Catchment Investigation Procedure		X				
Phase I Mapping			X			
Phase II Mapping						X
IDDE Regulatory Mechanism or Ordinance (if not already in place)				X		
Dry Weather Outfall Screening				X		
Follow-up Ranking of Outfalls and Interconnections				X		
Catchment Investigations – Problem Outfalls					X	
Catchment Investigations – all Problem, High and Low Priority Outfalls						X

1.3 Work Completed to Date

The 2003 MS4 Permit required each MS4 community to develop a plan to detect illicit discharges using a combination of storm system mapping, adopting a regulatory mechanism to prohibit illicit discharges and enforce this prohibition, and identifying tools and methods to investigate suspected illicit discharges. Each MS4 community was also required to define how confirmed discharges would be eliminated and how the removal would be documented.

Rochester has completed the following IDDE program activities consistent with the 2003 MS4 Permit requirements:

1. Developed a map of outfalls and receiving waters
2. Adopted an Stormwater Management Ordinance (Chapter 50: Prohibits illicit discharges/connections and establishes testing and enforcement/removal procedures)
3. Performed video camera work of sewer and storm drain systems in selected areas
4. Continuing to map storm drain connections and interconnections

2 Authority and Statement of IDDE Responsibilities

2.1 Legal Authority

The City of Rochester adopted Stormwater Management Regulations (Chapter 50, Section 14 of the City's Ordinances) in 2008 that contains language that prohibits illicit discharges and connections to the City storm drain system. The Stormwater Management Ordinance can be found on City website. The Stormwater Management Ordinance provides the Department of Public Works with adequate legal authority to:

- Prohibit illicit discharges
- Investigate suspected illicit discharges
- Eliminate illicit discharges, including discharges from properties not owned by or controlled by the MS4 that discharge into the MS4 system
- Implement appropriate enforcement procedures and actions.

The City is currently in the process of updating its Stormwater Management Ordinance and related permitting and approval policies to be consistent with the 2017 MS4 Permit.

According to Section 50.14-2; The following discharges are allowed into the City storm drainage system and closely align to the 2017 MS4 Permit:

1. Water Line Flushing;
2. Landscape Irrigation / Lawn Watering;
3. Diverted Stream Flows;
4. Rinsing Groundwater;
5. Groundwater Infiltration;
6. Uncontaminated Pumped Groundwater;
7. Foundation / Footing Drains;
8. Crawl Space Pumps;
9. Air Conditioner Condensate;
10. Natural springs;
11. Non-Commercial Washing of Vehicles;
12. Riparian Habitat or Wetland Flows;
13. Dechlorinated Swimming Pool Water (<1 ppm Chlorine); and
14. Fire-Fighting Activities.

2.2 Statement of Responsibilities

Pursuant to the provisions of the Stormwater Management Ordinance, the Rochester Department of Public Works (DPW) has the lead responsibility for implementing the IDDE program, including reviewing permit applications for new projects and storm drain construction for projects that disturb more than 5,000 sq. ft. Other departments with responsibility for aspects of the program include the Rochester Planning and Development Department who are responsible for the Land Use and Site Plan Review Regulations.

3 Stormwater System Mapping

Rochester originally mapped its stormwater outfalls to meet the mapping requirements of the 2003 MS4 Permit. A copy of the existing storm system map is provided in **Appendix A**. The 2017 MS4 Permit requires a more detailed storm system map than was required by the 2003 MS4 Permit. The revised mapping is intended to facilitate the identification of key infrastructure, factors influencing proper system operation, and the potential for illicit discharges.

The 2017 MS4 Permit requires the storm system map to be updated in two phases as outlined below. The Department of Public Works is responsible for updating the stormwater system mapping pursuant to the 2017 MS4 Permit. Rochester will report on the progress towards completion of the storm system map in each annual report

3.1 Phase I Mapping

The City of Rochester is progressing towards completing its Phase I mapping requirements consistent with the Permit, although full completion is not required until two (2) years from the effective date of the permit (by July 1, 2020). Developing initial catchment areas for each outfall is the last task to be completed. Phase I mapping includes the following items:

- Outfalls and receiving waters (previously required by the MS4-2003 permit)
- Open channel conveyances (swales, ditches, etc.)
- Interconnections with other MS4s and other storm sewer systems
- Municipally owned stormwater treatment structures
- Water bodies identified by name and indication of all use impairments as identified on the most recent EPA approved New Hampshire Integrated List of Waters report
- Initial catchment delineations. Topographic contours and drainage system information may be used to produce initial catchment delineations.

The City has completed most of its Phase I mapping elements. Initial catchment areas are still being developed in accordance with the MS4 Permit and will be completed within the designated time.

3.2 Phase II Mapping

Phase II mapping must be completed within ten (10) years of the effective date of the permit (by July 1, 2027) and include the following information:

- Outfall spatial location (latitude & longitude with a minimum accuracy of +/-30 feet)
- Pipes
- Manholes
- Catch basins

- Refined catchment delineations. Catchment delineations must be updated to reflect information collected during catchment investigations.
- Municipal Sanitary Sewer system (if available)
- Municipal combined sewer system (if applicable).

The City of Rochester has completed the following updates to its stormwater mapping to meet the Phase II requirements:

- Outfalls and receiving waters (previously required by the MS4-2003 permit)
- Pipes
- Manholes
- Catch basins
- Water bodies identified by name and indication of all use impairments as identified on the most recent EPA approved New Hampshire Integrated List of Waters report
- Municipal Sanitary Sewer system (if available)

Rochester will update its stormwater mapping by July 1, 2027 to include the remaining Phase II information.

3.3 Additional Recommended Mapping Elements

Although not a requirement of the 2017 MS4 Permit, Rochester will decide whether to include the following recommended elements in its storm system mapping as part of the completion of the Phase II mapping efforts:

- Storm sewer material, size (pipe diameter), age
- Sanitary sewer system material, size (pipe diameter), age
- Privately owned stormwater treatment structures
- Where a municipal sanitary sewer system exists, properties known or suspected to be served by a septic system, especially in high density urban areas
- Area where the permittee's MS4 has received or could receive flow from septic system discharges
- Seasonal high-water table elevations impacting sanitary alignments
- Topography
- Orthophotography
- Alignments, dates and representation of work completed of past illicit discharge investigations
- Locations of suspected confirmed and corrected illicit discharges with dates and flow estimates.

4 Sanitary Sewer Overflows (SSOs)

The 2017 MS4 Permit requires municipalities to prohibit illicit discharges, including sanitary sewer overflows (SSOs), to the separate storm sewer system. SSOs are discharges of untreated sanitary wastewater from a municipal sanitary sewer that can contaminate surface waters, cause serious water quality problems and property damage, and threaten public health. SSOs can be caused by blockages, line breaks, sewer defects that allow stormwater and groundwater to overload the system, power failures, improper sewer design, and vandalism.

Table 4-1 provides a summary of Rochester's SSOs that have discharged within the past five (5) years in the MS4 area. The table includes a description of the completed and planned mitigation or corrective actions based on the known or suspected cause of each SSO. The SSOs that occurred during wet or dry weather were due primarily to pump system failures or blockages.

Upon detection of a future SSO, Rochester will eliminate it as expeditiously as possible and take interim measures to minimize the discharge of pollutants to and from its MS4 until the SSO is eliminated. Upon becoming aware of an SSO to the MS4, Rochester will provide oral notice to EPA within 24 hours and written notice to EPA and NHDES within five (5) days of becoming aware of the SSO occurrence.

The inventory in **Table 4-1** will be updated when and if new SSOs are detected. The SSO inventory will be included in the Annual Report, including the status of mitigation and corrective measures to address each identified SSO.

Table 4-1. SSO Inventory
Rochester, New Hampshire
Revision Date: May 2019

SSO Location[1]	Discharge Statement[2]	Time Start[3]	Time End[3]	Estimated Volume[4]	Description[5]	Mitigation Completed[6]	Mitigation Planned[7]
River Street Pump Station	Yes, some of the SSO entered a surface water but the majority filtered through a treatment swale	4:00 PM, April 1, 2019	1:30 PM, April 3, 2019	170,000 Gallons	Pump station malfunction resulting in no activation of low-level alarm. Due to the malfunction, water was discharging from a manhole and the manual bar screen room.	Bubbler has been replaced in the pump station and both wet wells have been vacuumed. The low-level alarm has also been raised to increase alarm activation for future events.	Increase inspection and cleaning of wet wells at pump station.
Highland Street / Salmon Falls Road	No, the SSO was contained in ditch lines and catch basins	3:00 PM, November 3, 2018	November 3, 2018	Unknown	Sewer main collapse resulting in sewage back-up and discharge from upstream manholes.	Bulk septage haulers were contracted to shut-off and transport effluent from upstream pump stations while 24′ of 18″ sewer main was installed. Saturated leaf debris, ditch lines, and catch basins were all vacuumed.	The City will line the sewer main and investigate the structural integrity further downstream.
86 South Main Street	Yes, illicit connection to the stormwater system for unknown time period	10:30 AM, February 13, 2018	3:00 PM, February 14, 2018	Unknown	Illicit connection of a building's wastewater lateral owned by RM Edgerly and Sons Inc. was directly connected to a catch basin located along South Main Street.	City staff capped the discharge line and closed the business to prevent possible flow. New sewer lateral was run to connect the building to the City's sanitary system. Illicit lateral was abandoned using brick and cement.	Further investigate how illicit connection was created.
Route 11 Pump Station	No, water was contained in a low-lying swale area outside pump station	11:15 PM, December 31, 2017	9:00 AM, January 2, 2017	35-40,000 Gallons	An electric fault caused a failure of the pump station and corresponding overflow alarm. Lack of working pumped caused wet wells to overflow.	Lime was spread over the general area of the overflow after pumping the wet wells. Repair of the electrical connection was completed to restore operations.	Future installation of high-level float with duplicate output for backup control.
Brookside Place at Ledgeview	Unknown	3:00 AM, June 8, 2017	7:00 AM, June 8, 2017	4,800 Gallons	Leak in air bubbler line at pump station resulted in pumps not being signaled due to high wet well levels.	Air bubbler line was replaced, and a pressure transducer was installed for additional high wet level alarm indication.	Replacement of older pump station controllers.
Tara Estates Pump Station	No, SSO ran into large grass field before infiltrating	4:00 PM, October 22, 2016	7:30 AM, October 24, 2016	39,958 Gallons	Cable modem at pump station malfunctioned due to an electrical surge disabling the pump controller/alarm. SSO was discharging from pump station manhole cover.	Damaged modem was repaired, and lime was spread over the affected area.	Upgrade ethernet surge arrestor to prevent future surge malfunctions.
Western Ave Pump Station	Yes, a portion of the SSO reached Willow Brook	1:00 PM, April 12, 2015	2:00 PM, April 12, 2015	2,580 Gallons	Leak in air bubbler line resulted in pumps not being signaled to run. Upstream manholes overflowed into roadway because of backup.	Bubbler tubing was replaced and a backup float for high wet well reporting was installed.	None
Western Ave Pump Station	Yes, a portion of the SSO reached Willow Brook	9:30 AM, March 30, 2015	10:30 AM, March 30, 2015	300-500 Gallons	Leak in air bubbler line resulted in pumps not being signaled to run. Upstream manholes overflowed into roadway because of backup.	Portion of the bubbler tubing was replaced.	None
Thomas Street Pump Station	Unknown	8:30 PM, July 5, 2014	10:30 PM, July 5, 2014	1,000 Gallons	Electrical surge tripped out both pumps and corresponding alarms resulting in a back-up at the pump station overflowing out of upstream manhole.	Lime was spread over the affected area and the electrical systems were repaired to normal operating conditions.	None

[1] Location (approximate street crossing/address and receiving water, if any)
[2] A clear statement of whether the discharge entered a surface water directly or entered the MS4
[3] Date(s) and time(s) of each known SSO occurrence (i.e., beginning and end of any known discharge)
[4] Estimated volume(s) of the occurrence
[5] Description of the occurrence indicating known or suspected cause(s)
[6] Mitigation and corrective measures completed with dates implemented
[7] Mitigation and corrective measures planned with implementation schedules

5 Assessment and Priority Ranking of Outfalls

As described below, the City has completed an assessment and priority ranking of its outfalls in terms of their potential to have illicit discharges and related public health significance consistent with the 2017 MS4 Permit. The ranking will be used to determine the priority order for performing IDDE investigations and meeting permit milestones

The City has approximately 160 regulated stormwater outfalls within the Urbanized Area associated with its roadways, facilities and other properties that have been determined to discharge to surface waters or wetland areas.

5.1 Preliminary Outfall Catchment Delineations

A catchment is the area that drains to an individual outfall[1] or interconnection.[2] The catchments for each of the MS4 outfalls will be delineated to define contributing areas for investigation of potential sources of illicit discharges. Catchments are typically delineated based on topographic contours and mapped drainage infrastructure, where available. As described in **Section 3**, initial catchment delineations will be completed as part of the Phase I mapping, and refined catchment delineations will be completed as part of the Phase II mapping to reflect information collected during catchment investigations.

5.2 Outfall and Interconnection Inventory and Initial Ranking

The Rochester DPW will complete an initial outfall and interconnection inventory and priority ranking to assess illicit discharge potential based on existing information. The initial inventory and ranking will be completed within one (1) year from the effective date of the permit. An updated inventory and ranking will be provided in each annual report thereafter. The inventory will be updated annually to include data collected in connection with dry weather screening and other relevant inspections.

The outfall and interconnection inventory will identify each outfall and interconnection discharging from the MS4, record its location and condition, and provide a framework for tracking inspections, screenings and other IDDE program activities.

[1] **Outfall** means a point source as defined by 40 CFR § 122.2 as the point where the municipal separate storm sewer discharges to waters of the United States. An outfall does not include open conveyances connecting two municipal separate storm sewers or pipes, tunnels or other conveyances that connect segments of the same stream or other waters of the United States and that are used to convey waters of the United States. Culverts longer than a simple road crossing shall be included in the inventory unless the permittee can confirm that they are free of any connections and simply convey waters of the United States.

[2] **Interconnection** means the point (excluding sheet flow over impervious surfaces) where the permittee's MS4 discharges to another MS4 or other storm sewer system, through which the discharge is conveyed to waters of the United States or to another storm sewer system and eventually to a water of the United States.

Outfalls and interconnections will be classified into one of the following categories:

1. **Problem Outfalls**: Outfalls/interconnections with known or suspected contributions of illicit discharges based on existing information shall be designated as Problem Outfalls. This shall include any outfalls/interconnections where previous screening indicates likely sewer input. Likely sewer input indicators are any of the following:
    - Olfactory or visual evidence of sewage,
    - Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water, or
    - Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and detectable levels of chlorine.

    Dry weather screening and sampling, as described in **Section 6** of this IDDE Plan and Part 2.3.4.7.b of the MS4 Permit, is not required for Problem Outfalls.

2. **High Priority Outfalls**: Outfalls/interconnections that have not been classified as Problem Outfalls and that are:
    - Discharging to an area of concern to public health due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds
    - Determined by the permittee as high priority based on the characteristics listed below or other available information.

3. **Low Priority Outfalls**: Outfalls/interconnections determined by the permittee as low priority based on the characteristics listed below or other available information.

4. **Excluded outfalls**: Outfalls/interconnections with no potential for illicit discharges may be excluded from the IDDE program. This category is limited to roadway drainage in undeveloped areas with no dwellings and no sanitary sewers; drainage for athletic fields, parks or undeveloped green space and associated parking without services; cross-country drainage alignments (that neither cross nor are in proximity to sanitary sewer alignments) through undeveloped land.

Outfalls will be ranked into the above priority categories (except for Excluded outfalls, which may be excluded from the IDDE program) based on the following characteristics of the defined initial catchment areas, where information is available. Additional relevant characteristics, including location-specific characteristics, may be considered but must be documented in this IDDE Plan.

- **Previous screening results** – previous screening/sampling results indicate likely sewer input (see criteria above for Problem Outfalls).
- **Past discharge complaints and reports.**
- **Poor receiving water quality** – the following guidelines are recommended to identify waters as having a high illicit discharge potential:
    - Exceeding water quality standards for bacteria
    - Ammonia levels above 0.5 mg/l
    - Surfactants levels greater than or equal to 0.25 mg/l

- **Density of generating sites** – Generating sites are those places, including institutional, municipal, commercial, or industrial sites, with a potential to generate pollutants that could contribute to illicit discharges. Examples of these sites include, but are not limited to, car dealers; car washes; gas stations; garden centers; and industrial manufacturing areas.
- **Age of development and infrastructure** – Industrial areas greater than 40 years old and areas where the sanitary sewer system is more than 40 years old will probably have a high illicit discharge potential. Developments 20 years or younger will probably have a low illicit discharge potential.
- **Sewer conversion** – Contributing catchment areas that were once serviced by septic systems but have been converted to sewer connections may have a high illicit discharge potential.
- **Historic combined sewer systems** – Contributing areas that were once serviced by a combined sewer system but have been separated may have a high illicit discharge potential.
- **Surrounding density of aging septic systems** – Septic systems 30 years or older in residential land use areas are prone to have failures and may have a high illicit discharge potential.
- **Culverted streams** – Any river or stream that is culverted for distances greater than a simple roadway crossing may have a high illicit discharge potential.
- **Water quality limited waterbodies** that receive a discharge from the MS4 or waters with approved TMDLs applicable to the permittee, where illicit discharges have the potential to contain the pollutant identified as the cause of the water quality impairment.

An initial outfall inventory and priority ranking summary can be found in **Table 5-1** below and discussed in more detail in the Technical Memorandum included in **Appendix A.**

Table 5-1. Outfall Inventory and Priority Ranking Summary
Revision Date: June 6, 2019

Outfall Priority	# of Outfalls
Problem	0
High Priority	90
Low Priority	70
Excluded	0
Total Outfalls	**160**

6 Dry Weather Outfall Screening and Sampling

Dry weather flow is a common indicator of potential illicit connections. The MS4 Permit requires all outfalls/interconnections (excluding Problem and Excluded outfalls) to be inspected for the presence of dry weather flow. The DPW is responsible for conducting dry weather outfall screening, starting with High Priority outfalls, followed by Low Priority outfalls, based on the initial priority rankings described in the previous section.

6.1 Weather Conditions

Dry weather outfall screening and sampling may occur when no more than 0.1 inches of rainfall has occurred in the previous 24-hour period and no significant snow melt is occurring. For purposes of determining dry weather conditions, DPW staff will use precipitation data available online at Weather Underground (www.wunderground.com) for three personal weather stations within or closest to Rochester. If any of the three stations document more than 0.1 inches of rainfall in the previous 24-hour period, DPW staff will not count that as a dry weather period.

For purposes of determining dry weather conditions, program staff will use precipitation data from NOAA Station KNHROCHE25 (Rochester 25) on King Street in Rochester, NH . If Rochester 25 Station is not available or not reporting current weather data, then NOAA Station KNHROCHE7 (Rochester 7) on Rochester Hill Road will be used as a back-up.

6.2 Dry Weather Screening/Sampling Procedure

6.2.1 General Procedure

The dry weather outfall inspection and sampling procedure consists of the following general steps:

1. Identify outfall(s) to be screened/sampled based on initial outfall inventory and priority ranking
2. Acquire the necessary staff, mapping, and field equipment (see **Table 6-1** for list of potential field equipment)
3. Conduct the outfall inspection during dry weather:
    a. Mark and photograph the outfall
    b. Record the inspection information and outfall characteristics (using paper forms or digital form using a tablet or similar device)
    c. Look for and record visual/olfactory evidence of pollutants in flowing outfalls including odor, color, turbidity, and floatable matter (suds, bubbles, excrement, toilet paper or sanitary products). Also observe outfalls for deposits and stains, vegetation, and damage to outfall structures.

4. **If flow is observed, sample and test the flow following the procedures described in Section 6.2.3 (Sample Collection and Analysis).**
5. If no flow is observed, but evidence of illicit flow exists (illicit discharges are often intermittent or transitory), revisit the outfall during dry weather within one week of the initial observation, if practicable, to perform a second dry weather screening and sample any observed flow. Other techniques can be used to detect intermittent or transitory flows including conducting inspections during evenings or weekends and using optical brighteners.
6. Input results from screening and sampling into spreadsheet/database. Include pertinent information in the outfall/interconnection inventory and priority ranking.
7. Include all screening data in the Annual Report.

Previous outfall screening/sampling conducted under the 2003 MS4 Permit may be used to satisfy the dry weather outfall/screening requirements of the 2017 MS4 Permit only if the previous screening and sampling was substantially equivalent to that required by the 2017 MS4 Permit, including the list of analytes outlined in Section 2.3.4.7.b.iii.4 of the 2017 MS4 Permit.

6.2.2 Field Equipment

Table 6-1 lists field equipment commonly used for dry weather outfall screening and sampling.

Table 6-1. Field Equipment – Dry Weather Outfall Screening and Sampling

Equipment	Use/Notes
Clipboard	For organization of field sheets and writing surface
Field Sheets	Field sheets for both dry weather inspection and dry weather sampling should be available with extras
Chain of Custody Forms	To ensure proper handling of all samples
Pens/Pencils/Permanent Markers	For proper labeling
Nitrile Gloves	To protect the sampler as well as the sample from contamination
Flashlight/headlamp w/batteries	For looking in outfalls or manholes, helpful in early mornings as well
Cooler with Ice	For transporting samples to the laboratory
Digital Camera	For documenting field conditions at time of inspection
Personal Protective Equipment (PPE)	Reflective vest, Safety glasses and boots at a minimum
GPS Receiver	For taking spatial location data
Water Quality Sonde	If needed, for sampling conductivity, temperature, pH
Water Quality Meter	Hand held meter, if available, for testing for various water quality parameters such as ammonia, surfactants and chlorine
Test Kits	Have extra kits on hand to sample more outfalls than are anticipated to be screened in a single day
Label Tape	For labeling sample containers

Equipment	Use/Notes
Sample Containers	Make sure all sample containers are clean. Keep extra sample containers on hand at all times. Make sure there are proper sample containers for what is being sampled for (i.e., bacteria requires sterile containers).
Pry Bar or Pick	For opening catch basins and manholes when necessary
Sandbags	For damming low flows in order to take samples
Small Mallet or Hammer	For helping to free stuck manhole and catch basin covers
Utility Knife	Multiple uses
Measuring Tape	Measuring distances and depth of flow
Safety Cones	Safety
Hand Sanitizer	Disinfectant/decontaminant
Zip Ties/Duct Tape	For making field repairs
Rubber Boots/Waders	For accessing shallow streams/areas
Sampling Pole/Dipper/Sampling Cage	For accessing hard to reach outfalls and manholes

6.2.3 Sample Collection and Analysis

If flow is present during a dry weather outfall inspection, a sample will be collected and analyzed for the required permit parameters[3] listed in **Table 6-2**. The general procedure for collection of outfall samples is as follows:

1. Fill out all sample information on sample bottles and field sheets (see **Appendix B** for Sample Labels and Field Sheets)
2. Put on protective gloves (nitrile/latex/other) before sampling
3. Collect sample with dipper or directly in sample containers. If possible, collect water from the flow directly in the sample bottle. Be careful not to disturb sediments.
4. If using a dipper or other device, triple rinse the device with distilled water and then in water to be sampled (not for bacteria sampling)
5. Use test strips, test kits, and field meters (rinse similar to dipper) for most parameters (see **Table 6-2**)
6. Place laboratory samples on ice for analysis of bacteria and pollutants of concern
7. Fill out chain-of-custody form (**Appendix B**) for laboratory samples
8. Deliver samples to either the City laboratory or selected commercial laboratory
9. Dispose of used test strips and test kit ampules properly
10. Decontaminate all testing personnel and equipment

If an outfall is submerged, either partially or completely, or inaccessible, field staff will proceed to the first accessible upstream manhole or structure for the observation and sampling and report the location with the screening results. Field staff will continue to the

[3] Other potentially useful parameters, although not required by the MS4 Permit, include **fluoride** (indicator of potable water sources in areas where water supplies are fluoridated), **potassium** (high levels may indicate the presence of sanitary wastewater), and **optical brighteners** (indicative of laundry detergents).

next upstream structure until there is no longer an influence from the receiving water on the visual inspection or sampling.

Field test kits or field instrumentation are permitted for all parameters except indicator bacteria and any pollutants of concern. Field kits need to have appropriate detection limits and ranges. **Table 6-2** lists various field test kits and field instruments that can be used for outfall sampling associated with the 2017 MS4 Permit parameters, other than indicator bacteria and any pollutants of concern.

Table 6-2. Sampling Parameters and Analysis Methods

Analyte or Parameter	Instrumentation (Portable Meter)	Field Test Kit
Ammonia	CHEMetrics™ V-2000 Colorimeter Hach™ Pocket Colorimeter™ II	CHEMetrics™ K-1410 LaMotte 5864-01 Ammonia-Nitrogen Test Strips
Chlorine	CHEMetrics™ V-2000 Hach™ Pocket Colorimeter™ II	SenSafe Total Chlorine Test Strips
Conductivity	YSI Pro30 Extech ExStik® II	NA
Salinity	YSI Pro30 Extech ExStik® II	NA
Surfactants (Detergents)	CHEMetrics™ I-2017	CHEMetrics™ K-9400
Temperature	YSI Pro30 Extech ExStik® II	NA
Indicator Bacteria: *E. coli* (freshwater) or Enterococcus (saline water)	EPA certified laboratory procedure (40 CFR § 136)	NA
Pollutants of Concern[1]	EPA certified laboratory procedure (40 CFR § 136)	NA

[1] Where the discharge is directly into a water quality limited water or a water subject to an approved TMDL, the sample must be analyzed for the pollutant(s) of concern identified as the cause of the water quality impairment.

Testing for indicator bacteria and any pollutants of concern must be conducted using analytical methods and procedures found in 40 CFR § 136.[4] Samples for laboratory analysis must also be stored and preserved in accordance with procedures found in 40 CFR § 136. **Table 6-3** lists analytical methods, detection limits, hold times, and preservatives for laboratory analysis of dry weather sampling parameters.

[4] 40 CFR § 136: *ecfr.gov/cgi-bin/text-idx?SID=b3b41fdea0b7b0b8cd6c4304d86271b7&mc=true&node=pt40.25.136&rgn=div5*

Table 6-3. Required Analytical Methods, Detection Limits, Hold Times, and Preservatives[4]

Analyte or Parameter	Analytical Method	Detection Limit	Max. Hold Time	Preservative
Ammonia	**EPA**: 350.2, **SM**: 4500-NH3C	0.05 mg/L	28 days	Cool ≤6°C, H_2SO_4 to pH <2, No preservative if analyzed immediately
Chlorine	**SM**: 4500-Cl G	0.02 mg/L	Analyze within 15 minutes	None Required
Conductivity (Specific Conductance)	**EPA**: 120.1, **SM**: 2510B	0.2 µs/cm	28 days	Cool ≤6°C
Salinity	**SM**: 2520	-	28 days	Cool ≤6°C
Surfactants	**SM**: 5540-C	- 0.01 mg/L	48 hours	Cool ≤6°C
Temperature	**SM**: 2550B	- *NA*	Immediate	None Required
Indicator Bacteria: *E.coli* Enterococcus	*E.coli* **EPA**: 1603 **SM**: 9221B, 9221F , 9223 B **Other**: Colilert ®, Colilert-18® *Enterococcus* **SM**: 9230 C **Other**: Enterolert®	*E.coli* **EPA**: 1 cfu/100mL **SM**: 2 MPN/100mL **Other**: 1 MPN/100mL *Enterococcus* **SM**: 1 MPN/100mL **Other**: 1 MPN/100ml	8 hours	Cool ≤10°C, 0.0008% $Na_2S_2O_3$
Total Nitrogen (Ammonia + Nitrate/Nitrite, TKN)	**EPA**: Cadmium reduction (automated)-353.2 Rev. 2.0, **SM**: 4500-NO_3 E-F	**EPA**: 0.05 mg/L **SM** : 0.05 mg/L	28 days	Cool ≤6°C, H_2SO_4 to pH <2
Total Phosphorus	**EPA**: 365.3, Automated Ascorbic acid digestion-365.1 Rev. 2, ICP/AES4-200.7 Rev. 4.4 **SM**: 4500-P E-F	**EPA**: 0.01 mg/L **SM** : 0.01 mg/L	28 days	Cool ≤6°C, H_2SO_4 to pH <2

SM = Standard Methods

6.3 Interpreting Outfall Sampling Results

Outfall analytical data from dry weather sampling can be used to help identify the major type or source of discharge. **Table 6-4** shows values identified by the U.S. EPA and the Center for Watershed Protection as typical screening values for select parameters. These represent the typical concentration (or value) of each parameter expected to be found in stormwater. **Screening values that exceed these benchmarks may be indicative of pollution and/or illicit discharges.**

Table 6-4. Benchmark Field Measurements for Select Parameters

Analyte or Parameter	Benchmark
Ammonia	>0.5 mg/L
Chlorine	>0.02 mg/L (detectable levels per the 2017 MS4 Permit)
Surfactants	>0.25 mg/L
Indicator Bacteria[5]: *E.coli* *Enterococcus*[6]	*E.coli*: the geometric mean of the five most recent samples taken during the same bathing season shall not exceed 126 colonies per 100 ml and no single sample taken during the bathing season shall exceed 235 colonies per 100 ml *Enterococcus:* the geometric mean of the three most recent samples taken during a 60-day period shall not exceed 35 colonies per 100 ml and no single sample taken during the bathing season shall exceed 104 colonies per 100 ml

6.4 Follow-up Ranking of Outfalls and Interconnections

Rochester will update and re-prioritize the initial outfall and interconnection rankings based on information gathered during dry weather screening. The rankings will be updated periodically as dry weather screening information becomes available but will be completed within three (3) years of the effective date of the permit (by July 1, 2021).

Outfalls/interconnections where relevant information was found indicating sewer input to the MS4 or sampling results indicating sewer input are highly likely to contain illicit discharges from sanitary sources. Such outfalls/interconnections will be ranked at the top of the High Priority Outfalls category for catchment investigations. Other outfalls and interconnections may be re-ranked based on any new information from the dry weather screening.

7 Catchment Investigations

Once stormwater outfalls with evidence of illicit discharges have been identified, various methods can be used to trace the source of the potential discharge within the outfall catchment area. **Catchment investigation procedures will be finalized following completion of the Dry Weather Inspection and Sampling in a revised IDDE Plan or separate Catchment Investigation Plan currently anticipated to be completed by the end of December 2019.** The catchment investigations may include a review of historic plans, and records; manhole observations; dry and wet weather sampling results ; video inspection; smoke testing; and dye testing. This section outlines a systematic procedure to investigate outfall catchments to trace the source of potential illicit discharges. All data

[5] EPA Illicit Discharge Detection and Elimination: A Guidance Manual: epa.gov/npdes/pubs/idde_chapter-12.pdf
[6] NHDES Water Division: des.nh.gov/organization/divisions/water/wmb/beaches/faq_advisories.htm

collected as part of the catchment investigations will be recorded and reported in each annual report.

7.1 System Vulnerability Factors

The DPW will review relevant mapping and historic plans and records to identify areas within the catchment with higher potential for illicit connections. The following information will be reviewed:

- Plans related to the construction of the drainage network
- Plans related to the construction of the sewer drainage network
- Prior work on storm drains or sewer lines
- Board of Health or other municipal data on septic systems
- Complaint records related to SSOs
- Septic system breakouts.

Based on the review of this information, the presence of any of the following **System Vulnerability Factors (SVFs)** will be identified for each catchment:

- History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages
- Common or twin-invert manholes serving storm and sanitary sewer alignments
- Common trench construction serving both storm and sanitary sewer alignments
- Crossings of storm and sanitary sewer alignments where the sanitary system is shallower than the storm drain system
- Sanitary sewer alignments known or suspected to have been constructed with an underdrain system
- Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints
- Areas formerly served by combined sewer systems
- Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations
- Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs
- Any sanitary sewer and storm drain infrastructure greater than 40 years old
- Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance)
- History of multiple Board of Health actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance).

7.2 Dry Weather Manhole Inspections

Rochester will implement a dry weather storm drain network investigation that involves systematically and progressively observing, sampling and evaluating key junction manholes in the MS4 to determine the approximate location of suspected illicit discharges or SSOs.

The DPW will be responsible for implementing the dry weather manhole inspection program and making updates as necessary. Infrastructure information will be incorporated into the storm system map, and catchment delineations will be refined based on the field investigation, where necessary. The SVF inventory will also be updated based on information obtained during the field investigations, where necessary.

Several important terms related to the dry weather manhole inspection program are defined by the MS4 Permit as follows:

- **Junction Manhole** is a manhole or structure with two or more inlets accepting flow from two or more MS4 alignments. Manholes with inlets solely from private storm drains, individual catch basins, or both are not considered junction manholes for these purposes.
- **Key Junction Manholes** are those junction manholes that can represent one or more junction manholes without compromising adequate implementation of the IDDE program. Adequate implementation of the IDDE program would not be compromised if the exclusion of a particular junction manhole as a key junction manhole would not affect the permittee's ability to determine the possible presence of an upstream illicit discharge. A permittee may exclude a junction manhole located upstream from another located in the immediate vicinity or that is serving a drainage alignment with no potential for illicit connections.

For all catchments identified for investigation, during dry weather, field crews will systematically inspect **key junction manholes** for evidence of illicit discharges. This program involves progressive inspection and sampling at manholes in the storm drain network to isolate and eliminate illicit discharges.

The manhole inspection methodology will be conducted in one of two ways (or a combination of both):

- By working progressively up from the outfall and inspecting key junction manholes along the way, or
- By working progressively down from the upper parts of the catchment toward the outfall.

For most catchments, manhole inspections will proceed from the outfall moving up into the system. However, the decision to move up or down the system depends on the nature of the drainage system and the surrounding land use and the availability of information on the catchment and drainage system. Moving up the system can begin immediately when an

illicit discharge is detected at an outfall, and only a map of the storm drain system is required. Moving down the system requires more advance preparation and reliable drainage system information on the upstream segments of the storm drain system but may be more efficient if the sources of illicit discharges are believed to be located in the upstream portions of the catchment area. Once a manhole inspection methodology has been selected, investigations will continue systematically through the catchment.

Inspection of key junction manholes will proceed as follows:

1. Manholes will be opened and inspected for visual and olfactory evidence of illicit connections. A sample field inspection form will be developed and included in **Appendix C**.
2. If flow is observed, a sample will be collected and analyzed at a minimum for ammonia, chlorine, and surfactants. Field kits can be used for these analyses. Sampling and analysis will be in accordance with procedures outlined in **Section 6**. Additional indicator sampling may assist in determining potential sources (e.g., bacteria for sanitary flows, conductivity to detect tidal backwater, etc.).
3. Where sampling results or visual or olfactory evidence indicate potential illicit discharges or SSOs, the area draining to the junction manhole will be flagged for further upstream manhole investigation and/or isolation and confirmation of sources.
4. Subsequent key junction manhole inspections will proceed until the location of suspected illicit discharge(s) or SSO(s) can be isolated to a pipe segment between two manholes.
5. If no evidence of an illicit discharge is found, catchment investigations will be considered complete upon completion of key junction manhole sampling.

7.3 Wet Weather Outfall Sampling

Where a minimum of one (1) System Vulnerability Factor (SVF) is identified based on previous information or information collected from the catchment investigation, a wet weather investigation must also be conducted at the associated outfall. The DPW will be responsible for implementing the wet weather outfall sampling program and making updates as necessary.

Outfalls will be inspected and sampled under wet weather conditions, to the extent necessary, to determine whether wet weather-induced high flows in sanitary sewers or high groundwater in areas served by septic systems result in discharges of sanitary flow to the MS4.

Wet weather outfall sampling will proceed as follows:

1. At least one wet weather sample will be collected at the outfall for the same parameters required during dry weather screening.

2. Wet weather sampling will occur during or after a storm event of sufficient depth or intensity to produce a stormwater discharge at the outfall. There is no specific rainfall amount that will trigger sampling, although minimum storm event intensities that are likely to trigger sanitary sewer interconnections are preferred. To the extent feasible, sampling should occur during the spring (March through June) when groundwater levels are relatively high.
3. A sample will be collected and analyzed at a minimum for ammonia, chlorine, and surfactants. Field kits can be used for these analyses. Sampling and analysis will be in accordance with procedures outlined in **Section 6**. Depending on initial bacteria sampling results and the occurrence of elevated levels, additional indicator sampling may need to be considered for follow-up catchment investigation process such as "DNA fingerprinting." These additional tests are not required but may be useful in determining potential sources (e.g., bacteria for sanitary flows, conductivity to detect tidal backwater, etc.).
4. If wet weather outfall sampling indicates a potential illicit discharge, then additional wet weather source sampling will be performed, as warranted, or source isolation and confirmation procedures will be followed as described in **Section 7.4**.
5. If wet weather outfall sampling does not identify evidence of illicit discharges, and no evidence of an illicit discharge is found during dry weather manhole inspections, catchment investigations will be considered complete.
6. Sample results should be input into spreadsheet/database; including pertinent information in the outfall/interconnection inventory and priority ranking.
7. All data should be reported in the Annual Report.

7.4 Source Isolation and Confirmation

Once the source of an illicit discharge is approximated between two manholes, more detailed investigation techniques will be used to isolate and confirm the source of the illicit discharge. The following methods may be used in isolating and confirming the source of illicit discharges:

- Sandbagging
- Smoke Testing
- Dye Testing
- CCTV/Video Inspections
- Optical Brightener Monitoring

These methods are described in the sections below. Instructions and Standard Operating Procedures (SOPs) for these and other IDDE methods are provided in **Appendix D**.

Public notification is an important aspect of a detailed source investigation program. Prior to smoke testing, dye testing, or TV inspections, the DPW will notify property owners in the

affected area. Smoke testing notification will include use of message board signs, website postings and use of City newsletter.

7.4.1 Sandbagging

This technique can be particularly useful when attempting to isolate intermittent illicit discharges or those with very little perceptible flow. The technique involves placing sandbags or similar barriers (e.g., caulking, weirs/plates, or other temporary barriers) within outlets to manholes to form a temporary dam that collects any intermittent flows that may occur. Sandbags are typically left in place for 48 hours and should only be installed when dry weather is forecasted. If flow has collected behind the sandbags/barriers after 48 hours, it can be assessed using visual observations or by sampling. If no flow collects behind the sandbag, the upstream pipe network can be ruled out as a source of the intermittent discharge. Finding appropriate durations of dry weather and the need for multiple trips to each manhole makes this method both time-consuming and somewhat limiting.

7.4.2 Smoke Testing

Smoke testing involves injecting non-toxic smoke into drain lines and noting the emergence of smoke from sanitary sewer vents in illegally connected buildings or from cracks and leaks in the system itself. Typically, a smoke bomb or smoke generator is used to inject the smoke into the system at a catch basin or manhole and air is then forced through the system. Test personnel are placed in areas where there are suspected illegal connections or cracks/leaks, noting any escape of smoke (indicating an illicit connection or damaged storm drain infrastructure). It is important when using this technique to make proper notifications to area residents and business owners as well as local police and fire departments.

If the initial test of the storm drain system is unsuccessful then a more thorough smoke-test of the sanitary sewer lines can also be performed. Unlike storm drain smoke tests, buildings that do not emit smoke during sanitary sewer smoke tests may have problem connections and may also have sewer gas venting inside, which is hazardous.

It should be noted that smoke may cause minor irritation of respiratory passages. Residents with respiratory conditions may need to be monitored or evacuated from the area of testing altogether to ensure safety during testing.

7.4.3 Dye Testing

Dye testing involves flushing non-toxic dye into plumbing fixtures such as toilets, showers, and sinks and observing nearby storm drains and sewer manholes as well as stormwater outfalls for the presence of the dye. Similar to smoke testing, it is important to inform local residents and business owners. Police, fire, and local public health staff should also be

notified prior to testing in preparation of responding to citizen phone calls concerning the dye and their presence in local surface waters.

A team of two or more people is needed to perform dye testing (ideally, all with two-way radios). One person is inside the building, while the others are stationed at the appropriate storm sewer and sanitary sewer manholes (which should be opened) and/or outfalls. The person inside the building adds dye into a plumbing fixture (i.e., toilet or sink) and runs a sufficient amount of water to move the dye through the plumbing system. The person inside the building then radios to the outside crew that the dye has been dropped, and the outside crew watches for the dye in the storm sewer and sanitary sewer, recording the presence or absence of the dye.

The test can be relatively quick (about 30 minutes per test), effective (results are usually definitive), and inexpensive. Dye testing is best used when the likely source of an illicit discharge has been narrowed down to a few specific houses or businesses.

7.4.4 CCTV/Video Inspection

Another method of source isolation involves the use of mobile video cameras that are guided remotely through storm drain lines to observe possible illicit discharges or connections. IDDE program staff can review the videos and note any visible illicit discharges or connections. While this tool is both effective and usually definitive, it can be costly and time consuming when compared to other source isolation techniques.

7.4.5 Optical Brightener Monitoring

Optical brighteners are fluorescent dyes that are used in detergents and paper products to enhance their appearance. The presence of optical brighteners in surface waters or dry weather discharges suggests there is a possible illicit discharge or insufficient removal through adsorption in nearby septic systems or wastewater treatment. Optical brightener monitoring can be done in two ways. The most common, and least expensive, methodology involves placing a cotton pad in a wire cage and securing it in a pipe, manhole, catch basin, or inlet to capture intermittent dry weather flows. The pad is retrieved at a later date and placed under UV light to determine the presence/absence of brighteners during the monitoring period. A second methodology uses handheld fluorometers to detect optical brighteners in water sample collected from outfalls or ambient surface waters. Use of a fluorometer, while more quantitative, is typically more costly and is not as effective at isolating intermittent discharges as other source isolation techniques.

7.5 Illicit Discharge Removal

When the specific source of an illicit discharge is identified, Rochester will exercise its authority as necessary to require its removal. The Annual Report will include the status of

IDDE investigation and removal activities including the following information for each confirmed source:

- The location of the discharge and its source(s)
- A description of the discharge
- The method of discovery
- Date of discovery
- Date of elimination, mitigation or enforcement action OR planned corrective measures and a schedule for completing the illicit discharge removal
- Estimate of the volume of flow removed.

7.5.1 Confirmatory Outfall Screening

Within one (1) year of removal of all identified illicit discharges within a catchment area, confirmatory outfall or interconnection screening will be conducted. The confirmatory screening will be conducted in dry weather unless System Vulnerability Factors have been identified, in which case both dry weather and wet weather confirmatory screening will be conducted. If confirmatory screening indicates evidence of additional illicit discharges, the catchment will be scheduled for additional investigation.

7.6 Ongoing Screening

Upon completion of all catchment investigations and illicit discharge removal and confirmation (if necessary), each outfall or interconnection will be re-prioritized for screening and scheduled for ongoing screening once every five (5) years. Ongoing screening will consist of dry weather screening and sampling consistent with the procedures described in **Section 6** of this plan. Ongoing wet weather screening and sampling will also be conducted at outfalls where wet weather screening was required due to System Vulnerability Factors and will be conducted in accordance with the procedures described in **Section 7.3**. All sampling results will be reported in the Annual Report.

8 Training

Annual IDDE training will be made available to all employees involved in the IDDE program. This training will at a minimum include information on how to identify illicit discharges and SSOs and may also include additional training specific to the functions of particular personnel and their function within the framework of the IDDE program. Training records will be maintained in Appendix E. The frequency and type of training will be included in the Annual Report.

9 Progress Reporting

The progress and success of the IDDE program will be evaluated on an annual basis. The evaluation will be documented in the Annual Report and will include the following indicators of program progress:

- Number of SSOs and illicit discharges identified and removed
- Number and percent of total outfall catchments served by the MS4 evaluated using the catchment investigation procedure
- Number of dry weather outfall inspections/screenings
- Number of wet weather outfall inspections/sampling events
- Number of enforcement notices issued
- All dry weather and wet weather screening and sampling results
- Estimate of the volume of sewage removed, as applicable
- Number of employees trained annually

The success of the IDDE program will be measured by the IDDE activities completed within the required permit timelines.

Appendix A

Initial Outfall Prioritization Technical Memorandum

Memorandum

To: Peter Nourse
Michael Bezanson
Timothy Goldthwaite

cc. Dan Bourdeau,

From: Bill Arcieri, VHB
David Horner, VHB

Date: May 2, 2019
Revised: May 23, 2019

Project #: 52323.05

Re: Rochester MS4 -
Outfall/Interconnection Priority Ranking

1) Outfall Priority Ranking

VHB has conducted an initial priority ranking of the City's outfall and interconnection inventory to assess the relative priority for conducting dry weather screening of the mapped stormwater outfalls to detect illicit discharges. As of now, based on the City's current outfall mapping, the City has an estimated 160 stormwater outfalls subject to the MS4 permit. The criteria used to categorize the outfalls into four priority ranking categories are presented below consistent with the permit. Dry weather screening is anticipated to start this summer in 2019 following completion of the IDDE Plan. Depending on weather and available resources, it is expected that the dry weather screening can be completed in 2019 but the permit allows till the end of July 2021 to complete the initial screening process. The results of the dry weather screening collected to date and any changes to the outfall ranking will be included in each annual report.

The Permit outlines the criteria to be used to categorize the known outfalls and interconnections into Problem, High, Low or Excluded categories based on existing conditions and are described as follows:

- **Problem Outfalls**: Outfalls/interconnections with known or suspected contributions of illicit discharges based on existing information shall be designated as Problem Outfalls. This includes any outfalls or interconnections where sewer influences were previously observed. Likely sewer influence indicators are any of the following:
    - Olfactory or visual evidence of sewage,
    - Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water, or
    - Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and detectable levels of chlorine.

Note: Dry weather screening and sampling, as described in Part 2.3.4.7.b of the MS4 Permit, is not required for Problem Outfalls.

- **High Priority**: Outfalls/interconnections that have not been classified as Problem Outfalls and that are:
    - Discharge to an area of public health concern due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds
    - Discharge to a water quality limited water or a water with an approved TMDL
    - Discharges near delineated surface water intake areas
    - Discharges from conveyance systems located near aging sanitary sewer infrastructure (>20 years) with potential for illicit contributions
- **Low Priority Outfalls**: Outfalls/interconnections considered to be Low Priority are remaining outfalls that were not classified as Problem, High Priority or Excluded outfalls.
- **Excluded outfalls**: Outfalls/interconnections considered to have very limited or no potential for illicit discharges because the outfalls are primarily associated with open roadway drainage in undeveloped areas with no dwellings and no sanitary sewers; drainage from athletic fields, parks or undeveloped green space and

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DRAFT

associated parking without services; cross-country drainage alignments (that neither cross nor are in proximity to sanitary sewer alignments) through undeveloped land.

Table 1 presents our initial outfall priority ranking summary based on the aforementioned criteria for mapped outfalls and are shown in **Figure 1.** Due to the presence of bacteria impaired waters, slightly more than half of the outfalls are classified as High Priority and the remaining outfalls are considered Low Priority. None of the outfalls are currently considered Problem Outfalls and at this time and we have not classified any as being Excluded. Based on further discussions with the City, we may re-evaluate whether any Problem or Exclude outfalls exist. There are several outfalls that could potentially be considered Excluded given their location. However, at this time, it seems prudent to categorize all known outfalls as either High or Low priority rather than raise the risk of being questioned as to whether a handful of outfalls met the qualifying criteria to be considered Excluded. The level of effort to conduct the dry weather screening is not expected to change much if several outfalls were excluded from the screening process. Both High and Low priority outfalls need to undergo dry weather screening and, thus, whether they are classified as High or Low priority does not matter much or affect the level of effort.

Table 1. Outfall Inventory and Priority Ranking Summary
Revision Date: May 2, 2019

Outfall Priority	**# of Outfalls[1]**
Problem	0
High Priority	90
Low Priority	70
Excluded	0
Total Outfalls	**160**

Note: [1]The number of outfalls within each priority category is subject to change as more information becomes available.

VHB will proceed in fully developing the IDDE Plan to outline the dry weather screening and sampling protocols. Only outfalls with observed dry weather flow will need to be sampled for indicators of illicit connection and pollutants of concern. Pollutants of concern relate to any listed water quality impairment or water with an approved TMDL.

Following the dry weather screening, the Permit requires that outfalls be re-ranked into the priority categories prior to launching into the next catchment investigation phase based on the dry weather screening results and any system vulnerability factors within the defined initial catchment areas, where information is available. The additional relevant characteristics relate primarily to historical conditions that may suggest there is potential for sanitary sewer or septic systems to influence stormwater quality and will be utilized in future iterations of the priority ranking analysis.

- **Previous screening results** – previous screening/sampling results that may indicate sewer input (see criteria above for Problem Outfalls).
- **Past discharge complaints and reports.**

- **Poor receiving water quality** – the following guidelines are recommended to identify waters as having a high illicit discharge potential:
    - Exceeding water quality standards for bacteria
    - Ammonia levels above 0.5 mg/l
    - Surfactants levels greater than or equal to 0.25 mg/l
- **Sewer conversion** – Contributing catchment areas that were once serviced by septic systems but have been converted to sewer connections may have a high illicit discharge potential.
- **Historic combined sewer systems** – Contributing areas that were once serviced by a combined sewer system but have been separated may have a high illicit discharge potential.
- **Surrounding density of aging septic systems** – Septic systems thirty years or older in residential land use areas are prone to have failures and may have a high illicit discharge potential.

2) Sanitary Sewer Overflow (SSO) Inventory

Another key component of the IDDE Plan required by the Permit, is a summary of any Sanitary Sewer Overflow (SSO) discharges over the last five years. An inventory of SSOs has been provided by the City and has been included in the IDDE Plan consistent with the Permit requirements. VHB will discuss with City and consider any an additional review needed to determine if any of the outfalls may be connected to or have been influenced by SSOs, which may warrant reclassifying them as "Problem Outfalls" in the next priority ranking.

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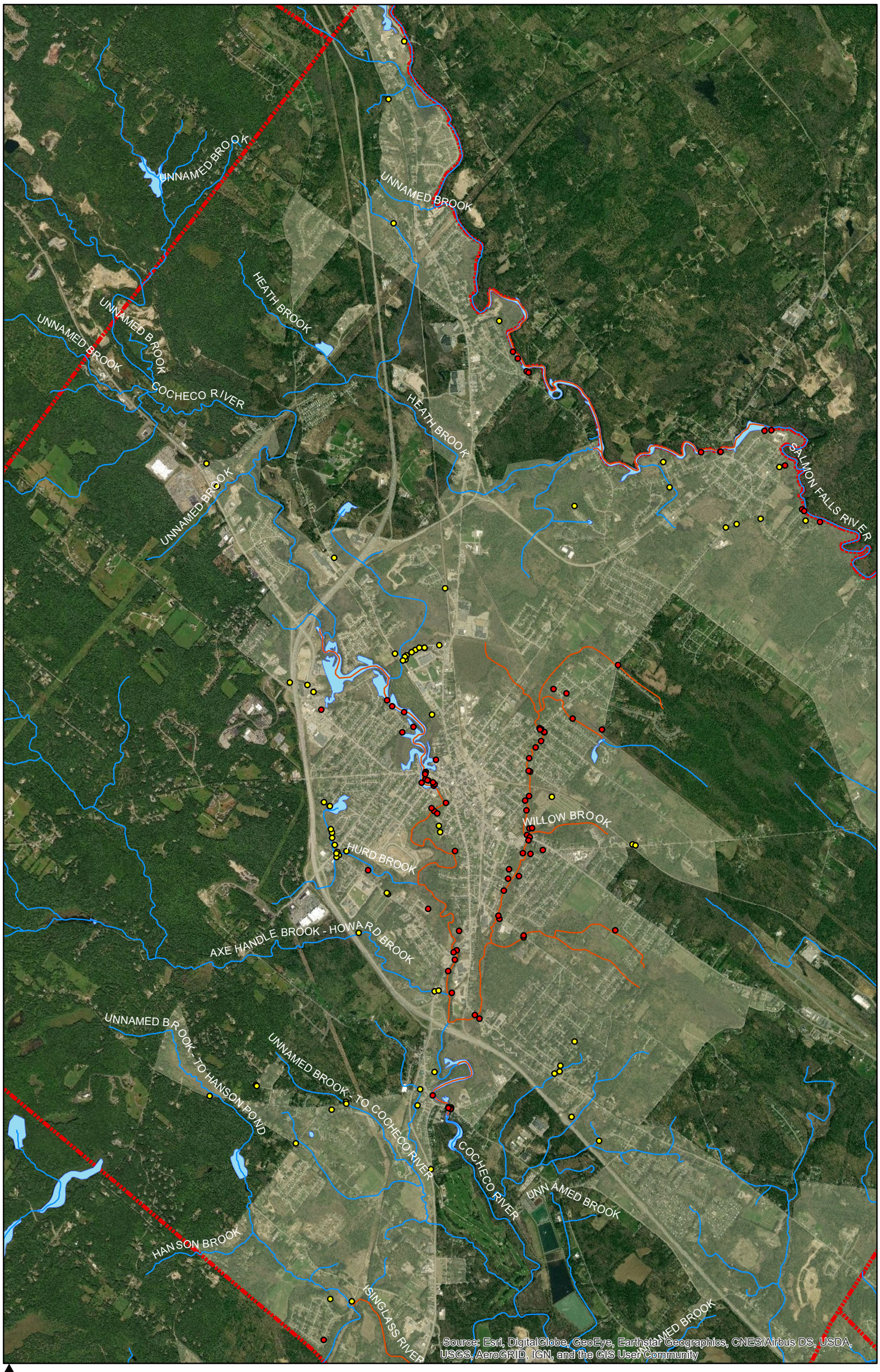
Appendix B

Storm System Map



0 1,650 3,300 6,600 Feet

Rochester MS4 Rochester, New Hampshire

Legend

IDDE_Priority

- Low (70)
- High (90)
- Rivers/Streams
- Bacteria Impaired Rivers/Streams
- Municipal Boundary
- Lakes/Ponds
- MS4 Urban Area

IDDE Outfall Prioritization

ESRI, Geosyntec, GRANIT, VHB

Appendix C

Field Forms, Sample Bottle Labels, and Chain of Custody Forms (placeholder)

Appendix D

Water Quality Analysis Instructions, User's Manuals and Standard Operating Procedures (placeholder)

Appendix E

IDDE Employee Training Record (placeholder)

Appendix F

Source Isolation and Confirmation Methods: Instructions, Manuals, and SOPs (placeholder)

ATTACHMENT 4
DRAFT OPERATIONS & MAINTENANCE (O & M) PROGRAM

Draft Operations and Maintenance (O & M) Program

City of Rochester, New Hampshire

June 2019

Table of Contents

Regulatory Requirements

The Permit requires the City to develop a separate Operations and Maintenance (O&M) Plan within 2 years or by **July 2020** to address the MCM 6: Good Housekeeping and Pollution Prevention measures included in Section 2.3.7 of the Permit. This Draft O&M Plan includes an inventory of City-owned facilities (e.g., buildings, DPW facility, parks and recreational facilities, schools, wastewater treatment facilities, and stormwater infrastructure) in the urbanized area. This Plan describes the specific good housekeeping and adopt pollution prevention measures used by City personnel associated with the operations and maintenance activities of these facilities.

The Permit identifies four (4) principal type of permittee-owned facilities or activities that should be included in the O&M Plan:

a) Parks and Open Spaces

b) Buildings and Facilities

c) Vehicle/Equipment Storage and Maintenance Facilities

d) Stormwater Infrastructure (e.g., catch basins, outfalls and treatment BMPs)

The responsibilities to perform O&M activities for the various City-owned facilities rests with various Departments or Divisions within Departments. The Department of Public Works (DPW) operates and maintains the DPW facility, City roads, parking lots and related stormwater infrastructure as well as the water and wastewater treatment facilities. The Buildings and Grounds Division with the DPW maintains the buildings and grounds for most publicly used buildings, parks and recreation area. Certain City-owned athletic fields and fee-based recreation facilities are operated and maintained by the Parks and Recreation Department. The School Facilities and Maintenance Department maintains the various school buildings and associated ball fields.

The following provides an inventory of City-owned facilities and describes the various O&M conducted at each facility. This City-wide O&M plan is intended to be a living document and should be updated as facilities and/or current practices change. The Plan should also be used as a reference guide to help maintain consistency and understanding of activities amongst the various Departments as well as to help train new employees. The plan can also assist in tracking and documenting relevant activities for compliance purposes relative to future annual MS4 reports.

BMP 6-1: Parks and Open Space Maintenance

Section 2.3.7.1.a. of the Permit requires the City to establish procedures to address the proper use, storage, and disposal of pesticides, herbicides, and fertilizers (PHF) including minimizing the use of these products and using them only in accordance manufacturer's instruction. In addition, evaluate lawn maintenance and landscaping activities to ensure practices are protective of water quality other practices including reduced use of PHFs, greater reliance on integrated pest management (IPM), recycling or proper disposal of lawn clippings and other vegetative waste, and use of native and drought resistant landscaping materials.

Also, MS4 Permit requires procedures be established to manage trash containers at parks (i.e., have sufficient number & cleaning frequency) and place signage in areas promoting proper disposal of pet wastes as well as procedures, where appropriate, to address waterfowl congregation areas and reduce waterfowl droppings from entering the MS4 storm system. In addition, establish procedures to address erosion or poor vegetative cover when the permittee becomes aware of it; especially if the erosion is within 50 feet of a surface water.

Table 6.1-1. Inventory of City Parks, Ball Fields and Open Space Areas

Parks / Ball Fields / Open Space	Managed Turf	Outdoor Fuel / Chemical Storage	Waste Collection	Sanitary Services	Dog Waste Station
Trails and Green Space					
Pickering Ponds	Mow	No	Weekly	No	No
Gonic Trails	No	No	No	No	No
William H Champlin Jr. Forest	No	No	No	No	No
Sports Fields					
Keay Field	No	No	Yes	No	No
Mons. Giles Simard Babe Ruth Field	No	No	Yes		No
Parks and Outdoor Recreation					
Hanson Pines	Mow	No	Daily	No	No
Squamanagonic Recreation Area	No	No	No	No	No
Rochester Common	Mow	No	Daily	Yes	No
Community Center Tennis Court	Mow	No	Daily	Yes	No
Riverwalk / Lilac City Grill	Mow	No	Daily	No	Yes
Parson Main Park	Mow	No	Daily	No	Yes
Columbus Ave Walking Path	Mow	No	Daily	No	Yes
Woodman Park	Mow	No	Daily	No	Yes
Swimming Pools					
East Rochester Pool	Mow	No	Daily	Yes	No
Gonic Pool	Mow	No	Daily	Yes	No
Hanson Pines Pool/Kiddie Pool	Mow	No	Daily	Yes	No

Pesticides, Herbicides, and Fertilizers

The City does not use fertilizers or any other maintenance chemicals to maintain grass on the City-owned ball fields and recreational areas. Turf areas are primarily managed by proper mowing techniques and equipment.

Appendix H Requirements

Since the City is within the Great Bay Watershed and the EPA considers the Great Bay Estuary and its tributaries to be impaired for nitrogen, Part 1 of Appendix H of the Permit requires the City to adopt the following protocols with respect to fertilizer use and managing grass clippings:

- Use slow release fertilizers on City and School maintained property
- Properly manage grass clippings and leaf litter to limit and minimize accumulation on paved surfaces, storm drain systems and adjacent water bodies or wetlands.

Trash Container Management

The City Parks Department empties trash containers approximately three times a week at the various parks during the non-winter months and less frequently during winter months. The City also places signage in areas concerning the proper disposal of pet wastes. Trash disposal containers are managed by the City's Buildings and Grounds Department.

Pet Waste

The City has established pet waste disposal stations in several park locations that are popular locations for dog walking. Dog waste stations are currently located at various locations.

Waterfowl Congregation

In areas where waterfowl congregate due to waste storage or handling or as result of resident feeding in City parks, the City may want to post educational materials/signage related to feeding, deploy predator (decoys) or plant shrubs or tall grasses along waterbodies to discourage geese from feeding on open grass areas.

BMP 6-2: Municipal Buildings and Facilities

Consistent with the MS4 Permit, Table 6.2-1 provides a listing of all City-owned buildings and facilities that use, store and/or dispose of petroleum products, materials, aggregates or chemicals. The City has adopted various practices to minimize exposure of the stored material and/or related maintenance activities to stormwater.

The Building and Grounds Division of the Department of Public Works is responsible for the maintenance of most municipal buildings and recreational facilities. The Water Treatment Division is responsible for maintenance of the drinking water treatment plants, booster stations, storage tanks, and certain dams. The Highway Supervisor is primarily responsible for the operations and maintenance of the DPW Facility as well as the City roads and stormwater infrastructure while the Fire and Police Facilities and vehicles are managed by their own Department Managers/ Chiefs. The Recreation Department maintains and operates the Ice Arena and several athletic fields that are used by teams associated with youth sports organizations that are separate from the school teams like the Little league, Babe Ruth, etc.

Table 6.2-1: City Owned Building and Facility Inventory

Facility Name	Location	Outdoor Fuel or Chemical Storage	Vehicle Maint. / Washing	Outdoor Bulk Materials	Managed Turf	Waste Receptacles
Fire Department Station 1	37 Wakefield St	No	Yes	No	Mow	Yes
Fire Department Station 2 (Gonic)	74 Main St	No	Yes	No	Mow	Yes
Police Department	23 Wakefield St	No	No	No	Mow	Yes
Community Center and Arena	150 Wakefield St	No	No	No	Mow	Yes
Public Library	65 South Main St	No	No	No	Mow	Yes
Revenue Building	19 Wakefield St	No	No	No	Mow	Yes
City Hall	31 Wakefield St	No	No	No	Mow	Yes
City Hall Annex	33 Wakefield St	No	No	No	Mow	Yes
Public Works	45 Old Dover Rd	Fuel	No	Yes	Mow	Yes
Surface Water Treatment Plant	64 Strafford Rd	Heating Fuel	No	No	Mow	Yes
Groundwater Treatment Plant	157 Farmington Road	Fuel (Propane)	No	No	Mow	No
Waste Water Treatment Plant	175 Pickering Rd	Chemical / Fuel	Yes	No	Mow	Yes
Ancillary Material Storage Areas						
Quonset Hut	217 Washington St	No	No	Yes	No	N/A
Former Kane Brickyard	58 Pickering Rd	No	No	Yes	No	N/A
Snow Dump	65 Chamberlain St	No	No	No	No	N/A
Material Storage	183 Haven Hill Rd	No	No	Yes	No	N/A
Bulk Storage and Laydown Area	321 Old Dover Rd	No	No	Yes	No	N/A

Notes: The City only mows turf areas managed by the DPW Buildings and Grounds. There is no use of fertilizers or pesticides

Waste Water Treatment Facility

The Rochester Wastewater Facility is located outside the defined MS4 area (see Map) and is therefore considered not subject to the MS4 Permit. However, there are several pump stations located that have backup generators that have attached fuel storage tanks with many containing diesel fuels. Table 6.2-3 lists 13 sanitary sewer pump stations in the MS4 area that have ancillary petroleum fuel storage. Since the fuel for each pump station is stored onsite, each site should be routinely checked for leaks and potential warning signs.

Table 6.2-3 Inventory of Sanitary Sewer Pump Stations with Petroleum Fuel Storage in the MS4 Area

Pump Station ID	Station Name/Location	Fuel Backup
SPS01	Ryan Circle	Diesel
SPS02	Old 125	Diesel
SPS03	Washington S	Diesel
SPS04	River St Pump Station	Diesel
SPS06	South Main St Pump Station	Diesel
SPS07	Front St Pump Station	Diesel
SPS08	Salmon Falls Rd Pump Station	Diesel
SPS11	Rt. 11 Pump Station	Diesel
SPS12	Rt. 125 Pump Station	Diesel
SPS15	Tara Estates Pump Station	Diesel
SPS19	Ledgeview Pump Station	Diesel
SPS24	Ray Dr Pump Station	Diesel
SPS27	Chestnut Hill Rd Pump Station	Diesel

Water Treatment Plant

The City Surface Water Treatment Plant located off Stafford Road in the western portion of the City is also outside the regulated Urbanized Area. However, there are booster pump stations within the more urban areas of the City that have backup generators that have attached petroleum fuel storage tanks. The Groundwater Treatment Plant located off Farmington Road is in proximity to the Cocheco River and is subject to BMPs for stormwater management. As shown in Table 6.3, there is one water service booster/ pump station within the MS4 area which operates using a petroleum powered back-up generator.

Table 6.2-4 Inventory of Water Pump Stations with Petroleum Fuel Storage in the MS4 Area

Pump Station ID	Station Name/Location	Fuel Backup
WPS01	Richardson Street Pump Station	Diesel

School Facilities

The School Facilities office and maintenance shop is located at 150 Wakefield Street in the Community Center. The School maintenance personnel are responsible for maintaining the school grounds and athletic or playfields.

Table 6.2-4: Inventory of School Department Facilities and Related Operational and Maintenance Activities

School Name	Location	Outdoor Fuel or Chemical Storage	Vehicle Maint. / Washing	Outdoor Bulk Materials	Managed Turf	Waste Receptacles
Spaulding High School	130 Wakefield St	None	None	Clean Soil Aggregates[4]	Full[5]	Yes
Lower Practice Field	130 Wakefield St	None	None	None	Full[5]	None
Hillsdale Practice Field	Hillsdale Rd	None	None	None	Full[5]	None
Field Equipment Storage Barn	135 Wakefield St	None	Minor equipment repairs indoors[2]	None	None	None
R.W. Creteau Reg. Technology Center	140 Wakefield St	None	None	None	None	None
School Maintenance Shop	150 Wakefield St	None	Small engine Repair indoors; occasional vehicle washing[3]	None	None	Yes
Rochester Middle School	47 Brock St	Generator fuel tank[1]	None	None	Full[5]	Yes
Chamberlain Street School	65 Chamberlain St	None	None	None	Limited	None
East Rochester School	773 Portland St	None	None	None	Limited	None
Gonic School	10 Railroad Ave	None	None	None	Mow Only	None
Maple Street Magnet School	27 Maple St	None	None	None	Limited	None
McClelland School	59 Brock St	None	None	None	Full[5]	None
Nancy Loud School	5 Cocheco Ave	None	None	None	Limited	None
School Street School	13 School St	None	None	None	Limited	None
William Allen School	23 Granite St	None	None	None	Mow Only	None

Notes: [1]Double-wall fuel tank associated with emergency generator;

[2] Minor equipment repairs but no fluid draining of field equipment;

[3] Most vehicle washing done at offsite commercial facility but occasional vehicle rinsing during winter months;

[4] Clean soil aggregates consist of extra stone dust and soil for field repairs;

[5] Lawn maintenance consists of mowing and occasional use of lawn care chemicals applications as applied by a licensed applicator,

[6] Limited lawn maintenance consists of mostly mowing with some smaller areas generally in the front lawn areas treated by a contracted licensed applicator

Pesticides, Herbicides, and Fertilizers

The School Department contracts with a licensed commercial applicator to apply fertilizers and any other lawn maintenance chemicals on an as needed basis to maintain grass on the School - maintained ball fields and other recreational areas. Use of lawn chemicals is primarily limited to the higher use fields associated with the middle and high schools. The School Facilities Department does not store any of the lawn chemicals onsite. Mowing is primarily done by the school maintenance personnel typically on a weekly basis.

Appendix H Requirements

Since the City is within the Great Bay Watershed and the EPA considers the Great Bay Estuary and its tributaries to be impaired for nitrogen, Part 1 of Appendix H of the Permit requires the City to adopt the following protocols with respect to fertilizer use and managing grass clippings:

- Use slow release fertilizers on City and School maintained property
- Properly manage grass clippings and leaf litter to limit and minimize accumulation on paved surfaces, storm drain systems and adjacent water bodies or wetlands.

Vehicle Maintenance

School Department vehicle maintenance primarily occurs offsite through a contracted mechanic; however, some small engine repair and regular maintenance occurs at the Field Equipment Storage Barn and the School Maintenance Shop. All in-house vehicle maintenance is conducted on an as needed basis inside each facility.

Most School Department vehicles are washed at a privately-owned car wash facility within the City of Rochester. Some vehicle washing does occur on an as needed basis at the School Maintenance shop, primarily removing salt and sand with water. It should be noted that the School Department also sanctions several car wash fundraising events for clubs and sports teams to take place on school property.

Outdoor Material Storage

The School Department currently stores clean soil aggregates at Spaulding High School for maintenance use. All other materials are stored indoors and are not subject to stormwater.

Trash Container Management

The Rochester City School Department operates an external contract with Waste Management to empty all dumpsters on school property. All remaining outdoor trash receptacles associated with recreational fields are emptied by School Maintenance personnel at least once per week, more frequently dependent on field usage.

Pet Waste

Dogs and other pets are prohibited from school property, including recreation fields, and corresponding signage is in place to prevent the introduction of pet waste.

BMP 6-3: Vehicle Storage and Maintenance Facilities

Department of Public Works (DPW) Facility

The following vehicle maintenance and storage activities are conducted at the Department of Public Works facility that is currently located on Old Dover Road. Vehicle maintenance is done inside within the maintenance bays. Used and new vehicle fluids are stored indoors on container pallets or tanks with secondary containment

Vehicles and Equipment Storage

Fueling Areas

The DPW Facility has one main fueling station supplied by an underground storage tank. There are no catch basins within 50 feet of the fueling station limiting the potential for any inadvertent spill from entering the storm drain system. The dispensing nozzles are equipped with automatic shut-off valves triggered when fuel tanks are full. (need to confirm SW systems and other spill prevention measures).

Vehicle Maintenance

All vehicle maintenance and especially fluid exchanges are done inside the DPW Facility that has multiple vehicle bays. Waste oil is stored indoors within the waste oil tank.

Vehicle Washing

Vehicle washing is done outdoors in a designated area where there is no adjacent catch basins. Occasionally, during winter months, vehicles may be washed indoors in bays equipped with a floor drain that is connected to a sanitary sewer. Smaller vehicles are also at times washed at commercial car wash facilities.

The City's Police Department primarily conducts vehicle washing at a designated commercial car wash facility and not onsite. The Fire Department conducts vehicle washing within the stations vehicle bays where floor drains collect the runoff.

Material Storage

The DPW facility has a covered salt storage shed but stores winter sand consisting of a sand/salt mix outdoors. Sediment material recovered from catch basin cleaning and street sweeping is also stored outside in a designated contained area.

Stormwater Infrastructure Operations and Maintenance

BMP 6-4 Catch Basin Cleaning

The City has an established catch basin cleaning program to minimize the amount of sediment and debris accumulation in the drainage system. In 2018, approximately 750 catch basins were cleaned and approximately 14,911 cubic yards of sediment was removed. The City prioritizes the downtown area and areas that drain directly to the Cocheco River for catch basin cleaning.

General Permit Requirement

The 2017 MS4 Permit states that the cleaning schedule should be frequent enough so that each catch basin sump is no more than 50% full at any time. The permit also states that a cleaning log be kept indicating when and which catch basins have been cleaned and the volume of material recovered to help determine the high priority areas. The Permit requires that catch basin cleanings and street sweepings be properly stored and contained prior to disposal or reuse such that they do not discharge to receiving waters. The Permit also requires that a schedule be developed to prioritize areas that are either under construction, are known to receive heavy sediment loads or a suspected to contribute a higher nutrient load due to managed turf practices and/or improper pet waste disposal.

Appendix H Requirements

Part V of Appendix H of the Permit requires increased catch basin cleaning frequency of all municipal owned streets and parking lots to a schedule determined by the permittee to target areas with potential for high pollutant loads.

Reporting Requirements

For each Annual Report, the City will report on how many catch basins were cleaned and inspected, the total mass of material removed from all catch basins and whether any changes are planned to the catch basin cleaning schedule to help ensure no sump is more than 50% full at any given time. The permittee shall document in the SWMP and in the first annual report its plan for optimizing catch basin cleaning, inspection plans, or its schedule for gathering information to develop the optimization plan.

The City is recording its catch basin inspection and cleaning activity for each catch basin using a GIS-based mobile data inspection and cleaning log accessed from a computer tablet. This allows for effective tracking of the catch basin cleaning activity consistent with the Permit requirements.

Responsible Department/Parties:

Highway Foreman

BMP 6-5 Street/Parking Lot Sweeping

The City currently sweeps the streets in the urbanized areas at least once per year. In the Downtown area, streets are swept more frequently with some streets swept on a weekly basis

and others on a monthly basis from May to October. The City also sweeps its City-owned parking lots at least once per year in the spring (following winter activities such as sanding). In 2018, the City swept approximately 2,000 miles of roadway. The City has sweep route map and is developing a GPS mobile data collection system to help track and record swept areas for reporting purposes, similar to the catch basin cleaning program.

The City has two Vac-Con sweeper trucks and looking to replace one that Is reaching its effective age and has been prone to mechanical issues. The replacement costs are included in the City's Capital Improvement Budget.

General Permit Requirement

The MS4 Permit all City owned roads and parking lots with curbs and/or catch basins be swept at least once per year in early spring months following winter deicing applications.

Appendix H Requirements

Since the City is within the Great Bay Watershed and the EPA considers the Great Bay Estuary and its tributaries to be impaired for Nitrogen, Part I of Appendix H of the Permit requires that City-owned streets and parking lots within the MS4 will need to be **swept a minimum of twice per year** (once in the spring (following winter deicing activity) and at least once in the fall (following leaf fall). Additionally, Part V of Appendix H of the Permit requires increased street sweeping frequency of all municipal owned streets and parking lots to a schedule determined by the permittee to target areas with potential for high pollutant loads. This may include, but is not limited to, increased street sweeping frequency in commercial areas and high-density residential areas, or drainage areas with a large amount of impervious area.

Alternative: In lieu of post-drop leaf street sweeping in the fall, the City can implement a fall leaf litter collection program to effectively minimize the leaf litter on impervious surfaces and in stormwater drainage structures.

Reporting Requirements:

The number of miles swept, and the volume or mass of material removed shall be reported in each annual report. Each annual report shall also include the street sweeping schedule to target high pollutant loads

Responsible Department/Parties:

Highway Foreman

BMP 6-7: Stormwater Treatment BMP Inspection and Maintenance

Table 6.7-1 lists various stormwater treatment BMPs that were developed primarily treat stormwater from residential subdivisions roadway over the years, in which the City has assumed maintenance responsibilities by accepting the roads. **The City has also installed stormwater treatment BMPs to treat approximately 5.0 acres of area in the Franklin Street, Western Avenue, and Adams Avenue area** to improve water quality conditions in the Willow Brook

watershed, which is a tributary to the Cocheco River. These BMPs include a gravel wetland, bioretention rain gardens and a grass treatment swale.

The City also has Vortechnic units on Columbus Avenue, Front Street and Brock Street to treat roadway runoff and collect sediment that collects on the road. These units are cleaned out at least once per year.

The City has also installed rain gardens at the School Street property and permeable pavement within the basketball court. The rain gardens are maintained through a volunteer group associated with an Adopt-a-Garden Program.

Stormwater BMP Inspections:

The City DPW will develop stormwater BMP inspection protocols and reporting tools by **July 1, 2020**, to assist City personnel in conducting inspections and any maintenance of stormwater BMPs to meet the Permit requirements. Typically, stormwater BMPs are inspected annually and maintained on an as needed basis. Maintenance activity may involve trash removal, removal of accumulated sediment, vegetation management, restoring outlet flow capacity and restoring eroded soils to name a few.

Table 6.7-1: Inventory of Stormwater Treatment BMPs in the MS4 Area

Item #	BMP ID	Location	BMP Type
1	SWT0040	Columbus Ave	Vortechnic Unit
2	SWT0041	Brock St	Vortechnic Unit
3	SWT0043	Charles St	Rain Garden
4	SWT0044	River St	SWT System
5	SWT0045	Lupine Ln	Rain Garden
6	SWT0053	Butterfly Ln	Retention
7	SWT0054	Kinsale Dr	Detention
8	SWT0056	Jay Way	Detention
9	SWT0057	Regency Ct	Detention
10	SWT0058	Knobby Way	Detention
11	SWT0059	Eastern Ave	Detention
12	SWT0063	Kodiak Ct	Detention
13	SWT0064	Nottingham Ln	Detention
14	SWT0067	Katie Ln	Detention
15	SWT0068	Allen St	Detention
16	SWT0069	Allen St	Detention
17	SWT0071	Congress St	Detention
18	SWT0077	Chasse St	Retention
19	SWT0091	Alice Ln	Detention
20	SWT0092	Seavey Brook Ln	Detention
21	SWT0095	Trinity Cir	Detention
22	SWT0097	Ledgeview Dr	Detention
23	SWT0098	Ledgeview Dr	Detention
24	SWT0128	Little Falls Bridge Rd	Detention
25	SWT0130	Chestnut Hill Rd	Detention
26	SWT0133	Alice Ln	Detention
27	SWT0136	Ryan Cir	Detention

28	SWT0138	Chestnut Hill Rd	Particle Separator
29	SWT0139	Franklin Street/ Western Ave	Gravel Wetland/Swales
30	SWT0141	Miller's Farm Rd	Detention
31	SWT0144	North Main St	Unknown
32	SWT0145	North Main St	Unknown

**Need to develop BMP I&M procedures for other types of BMPs

BMP 6-8 Winter Maintenance Practices

The Rochester DPW clears snow on approximately 150 miles of roadway and 80 miles of sidewalks as well as a number of parking lots including assistance with School facilities. The City relies on plowing snow as its first line of defense and using road salt to treat roads only when necessary and under appropriate conditions. School bus routes and the downtown area are generally given high priority. To minimize salt use, road salt is applied along the roadway centerline to allow vehicle traffic and the crown slope mix the salt with snow to create a brine mix. Sand is also applied in select areas to assist with traction. Unpaved or gravel roads are only treated with sand.

The DPW calibrates its trucks prior to each winter season to make sure that application settings are putting out the targeted amount. The DPW uses various weather forecast information to help in the decision-making process in determining when plowing and/or deicer applications may be necessary. Several DPW employees have attended the Green SnoPro Certification training program and will look to continue to send its employees to the training in the future as funding allows.

BMP 6-9: Stormwater Pollution Prevention Plans (SWPPPs)

Consistent with Section 2.3.7.2 of the Permit, the City will need to develop a Stormwater Pollution Prevention Plan (SWPPP) for its DPW maintenance facility and associated storage areas, which is the only facility within the MS4 that has outside storage of materials that may potentially exposed to stormwater. The SWPPP shall include a

- A facility map and a description of the activities that occur at the facility. The map shall show locations of the stormwater outfalls, receiving waters, and any structural controls.
- Identify all activities that occur at the facility and the potential pollutants associated with each activity including the location of any floor drains.
- The SWPPP will include instructions for conducting employee training and routine facility inspections and associated documentation forms.

The SWPPP is anticipated to be completed by **July 1, 2020** consistent with the Permit requirements.

ATTACHMENT 5
NITROGEN REDUCTION TRACKING OF EXISTING BMPS

CITY OF ROCHESTER - NITROGEN REDUCTION TRACKING OF EXISTING BMPS

BMP Location	BMP Type	Total Area Treated (Acres)	Design Storage Volume	Estimated Nitrogen Removal (lb/year)	Year Installed	Reference Document
Franklin Street	5 Rain Gardens	1.5		70.3	2015	Long, 2018
Western Avenue/First Street	Gravel Wetland	3		140.6	2015	Long, 2018
Congress Street	Bioretention	0.241		4.9	2012/2013	Long, 2018
Silver Street	2 Rain Gardens	0.038		0.8	2012/2013	Long, 2018
Lupine Lane	Rain Garden	0.313		2.8	2011	Long, 2018
Lupine Lane	Tree Filter	.202		2.5	2011	Long, 2018
Lupine Lane	Tree Filter	.276		2.9	2011	Long, 2018
School Street	Rain Garden	.049		0.9	2011	Long, 2018
School Street	Rain Garden	.070		1.8	2011	Long, 2018

BMP Location	BMP Type	Total Area Treated (Acres)	Design Storage Volume	Estimated Nitrogen Removal (lb/year)	Year Installed	Reference Document
School Street	Drywell	.164		4.2	2011	Long, 2018
School Street	Porous Asphalt	.034		0.9	2011	Long, 2018

Reference Documents

Long, Julian L., Community Development Coordinator/Grants Manager. 2018. Stormwater Management Assessment and Opportunities for the Willow Brook Watershed, A Final Report to the New Hampshire Department of Environmental Services. January 4, 2018.