DRAFT Operations and Maintenance (O & M) Plan

The City of Portsmouth

680 Peverly Hill Road, Portsmouth, New Hampshire 03801

EPA NPDES Permit Number *NHR041027*

June 2020

Draft

This is a living document updated regularly as needed.

Last update: June 2021

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INTRODUCTION

The City of Portsmouth has developed this Operations and Maintenance (O&M) Plan to describe specific procedures and best practices that are used to perform Good Housekeeping and Pollution Prevention measures at its facilities and for its stormwater drainage infrastructure consistent with the requirements of Part 2.3.7.1 of the 2017 New Hampshire Municipal Separate Storm Sewer System (MS4) Permit (herein referred to as the 2017 MS4 Permit). The 2017 MS4 Permit requires that the O&M Plan will be completed by July 2020 or 2 years from the effective Permit date.

The 2017 MS4 Permit identifies four (4) principal type of permittee-owned facilities or activities that must be addressed in the O&M Plan:

- Buildings and Facilities
- Vehicle/Equipment Storage and Maintenance Facilities
- Parks and Open Spaces
- Stormwater Infrastructure (e.g., catch basins, outfalls and treatment BMPs)

As described in Part 2.3.7.1 of the 2017 MS4 Permit, the overall goal of the O&M Plan is to identify and implement source control and preventative measures to minimize the amount of pollutants being exposed and transported by stormwater runoff into nearby water bodies from the City roadways, material storage/ handling and recreational facilities as well as vehicle maintenance activities, as well as to maintain the functional integrity of the stormwater infrastructure system.

This 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). It describes specific good housekeeping and pollution prevention procedures and measures used by City personnel in the operations and maintenance activities associated with these facilities.

This O&M Plan is also intended to be a living document that will be periodically updated as procedures and practices are revised and/or as facilities or operations are modified. Although the City has had well-established good housekeeping and pollution prevention measures in place, practices, equipment, tools and technologies are constantly evolving based on new research and information on best practices.

It is important to Note that this O&M Plan is still a work in progress and remains in Draft form due to the disruption of the Covid-19 virus outbreak in the Spring of 2020. The Plan will continue to be updated and is anticipated be completed in late 2020 or at least by the end of Year 3 (June 2021) depending on the effects of the Covid19 virus.

The City also plans to develop a Stormwater Pollution Prevention Plans (SWPPPs) for its DPW facility and its wastewater facilities later in 2020 to describe specific good housekeeping and pollution prevention measures for these facilities to minimize the potential for pollutants to be exposed and conveyed by stormwater to receiving

waters. The O&M Plan will include an employee training component and a process to review and assess operations and report on progress in each future annual report.

This O&M Plan describes the various Best Management Practices (BMPs) used for the various City facilities and/or maintenance activities listed under Minimum Control Measure (MCM) 6 Good Housekeeping and Pollution Prevention Measures in Section 2.3.7 of the 2017 MS4 Permit. These BMPs include the following:

BMP 6-1: Parks and Open Spaces

BMP 6-2: Buildings and Facilities

BMP 6-3: Vehicle/Equipment Storage and Maintenance

BMP 6-4: Street and Parking Lot Sweeping

BMP 6-5: Catch Basin Cleaning

BMP 6-6: Stormwater Treatment BMPs Inspection and Maintenance

BMP 6-7: Winter Road Maintenance

BMP 6-8: Stormwater Pollution Prevention Plans (SWPPPs)

BMP 6-9: Future Nitrogen Control Plan

BMP 6-10: Future Stormwater BMP Retrofits for City-owned Property

BMP 6-1: Parks and Open Space

The Parks and Greenery Division (PGD) of the Department of Public Works is responsible for the operations and maintenance activities at twenty-one (21) City's parks, recreational facilities and open space areas (see Map in Attachment A). **Table 6.1** lists the various City parks, recreational ball fields and open space areas. The School Department's Facility Maintenance manages five (5) school-based facilities. Typical O&M activities involve trash collection, litter and other waste control, maintaining sanitary facilities (where applicable) as well as turf maintenance and other vegetation management.

With respect to turf management, both the PGD and the School Dept. have adopted an organic based approach relying mainly on organic-based, fertilizers and pest control products. The PGD relies mostly on a compost "tea" to improve soil nutrient conditions in landscaped areas and turf fields instead of synthetic fertilizers. This compost tea is produced by vegetation waste collected by the DPW and has shown to improve turf vitality and durability on the recreational fields. Turf maintenance and landscaping activities are done by knowledgeable personnel familiar with the use of integrated pest management (IPM) practices. When weed or other pest control measures are needed, particularly on the more heavily used, athletic fields, the School Facilities personnel will use organic based products certified as organic by the Organic Management Research Institute (OMRI) a Canadian-based non-profit organization. Grass clippings are either left in place or composted at the DPW yard waste facility.

Table 6-1 lists the various City parks, recreational ball fields and open space areas. The City DPW also maintains trash containers and sanitary facilities at its recreational parks, which are inspected and emptied at varying frequencies depending on usage and time of year. Also, the City has placed signage and containers in select areas to promote pet waste disposal and discourage waterfowl feeding to limit waterfowl congregation and prevent waterfowl droppings from entering the MS4 storm system. In addition, the City maintains healthy turf and other vegetation in the City parks and open space areas to minimize soil erosion, especially areas along the City's waterfront.

Table 6-1: Inventory of City Parks, Ball Fields and Open Space Areas

Parks / Ball Fields / Open Space	Managed Turf	Sanitary Services	Dog Waste Station
Maple Haven Park	No	No	No
Pannaway Park	No	No	No
Portsmouth Plains Field	No	Restrooms[1]	No
Portsmouth Plains Playground	Yes	Restrooms[1]	No
Lafayette Playground	No	Seasonal Port-a-Let	No
Clough Field	No	Seasonal Port-a-Let	No
Langdon Park	No	No	No
Leary Field / Central Little League	Yes	Yes	No
Alumni Field	Yes	Yes	No
South Mill Pond Playground	No	Seasonal Port-a-Let	No
South Street Playground	No	No	No
Peirce Island Playground	No	Seasonal Port-a-Let	No
Haven Park	No	No	No
Aldrich Park	No	No	No
Daniel Street Pocket Park	No	No	No
Rock Street Playground	No	No	No
Goodwin Park	No	No	No
Cater Park	No	No	No
Pine Street Playground	No	No	No
Hislop Field	Yes	Restrooms	No
Atlantic Heights Playground	No	Restrooms[1]	No
Bug Rock Park	No	No	No
Hanscom Park	No	No	No
Prescott Park	Yes	Seasonal Port-a-Let	No
Four Tree Island Park	No	Seasonal Port-a-Let	No
Pease Ball Field	Yes	Seasonal Port-a-Let	No
Route 33 Dog Park	No	No	Yes
South Mill Pond Dog Park	N/A	Seasonal Port-a-Let	Yes

1 Restrooms are only open during games or events.

Turf Management and Landscaping

As discussed above, the City uses organic based fertilizers and pest control products turf maintenance on City recreational ball fields, parks and open space areas. In addition, the City uses the following best practices to maintain healthy turf areas:

- Mower blades are routinely sharpened to reduce plant damage:

- Grass heights are generally maintained at 3" or more to reduce plant stress;
- Grass clippings are either left in place or disposed of at City yard waste compost area.
- Residual clippings on mowers (reels and decks) and tractors are removed on grassy areas or disposed of as leaf litter material.
- Equipment cleaning/washing is done in a manner where residual material (i.e. clippings) is contained and disposed of properly and not left on paved areas to drain away into storm drains
- In select areas, appropriate barriers/fencing is used around maintained turf areas to protect against vehicle traffic and damage due to compaction and tire wear.
- Where appropriate, the City utilizes non-chemical, best practices to promote healthy turf such as aeration, dethatching and reseeding or topdressing with soil amendments;
- Establish reduced or/no-mow areas in lesser-used spaces where appropriate to reduce maintenance needs.

Nitrogen Impairment Requirements

The City has adopted practices that are consistent with the requirements of Part 1 of Appendix H of the MS4 Permit which include the following protocols with respect to fertilizer use and managing grass clippings:

1. The City's uses organic fertilizers and compost tea represent slow release forms of nitrogen fertilizers on City and School maintained property.
2. Grass clippings are mostly left in place for nutrient recycling or, if collected, and disposed of at the DPW yard waste compost facility.

Trash Container Management

The City provides trash containers in select park areas, which are emptied approximately three times a week during the non-winter months and less frequently during winter months. Dog walking is allowed in certain areas and the City has placed signage in these areas to encourage proper disposal of pet wastes. Trash disposal containers are managed by the City's Buildings and Grounds Department. The following preventative and good housekeeping measures are used in managing trash receptacles and disposal.

Best Practices for Trash/Recyclables in City Parks and other Open Spaces

- Lids on dumpsters and containers are generally closed except when adding or removing material.
- Dumpsters are generally located on paved surfaces as far away from catch basins as possible and utilize available berms or curbs area to limit run-on and run-off.
- Waste receptacles are outfitted with tight-fitting lids or covers.
- Wherever possible, waste receptacles are placed in areas protected from wind to minimize trash from being blown out of the container.
- Prior to transporting waste material, containers are checked for leaks and covers are secured to prevent leakage and fugitive debris during transport.
- Clean and sweep up around outdoor waste containers regularly.
- Waste or recycling receptacles are emptied frequently enough to prevent containers from being overfilled.

- Trash or recycling containers are not rinsed or washed outdoors.
- Waste storage facilities in commercial and construction work zones are periodically inspected to check for leaks and spills.

Pet Waste

The City has established pet waste disposal stations in several park locations that are popular locations for dog walking (see Attachment A for a map of dog walking areas). **Table 2** presents an inventory of pet waste disposal stations and dog waste sign locations.

Table 2: Inventory of Pet Waste Stations

Location	# Bag Stations	Bag Dispenser	# Trash Cans	# Dog Waste Signs	Notes
South Mill Pond Along Shore	0	No	2	0	
South Mill Pond Dog Park	1	No	4	4	Small dog park-uses mailbox. Trash cans are outside the fence.
Haven Park	0	No	1	0	
Goodwin Park	2	Yes	2	1	
Langdon Park	0	No	0	6	
Ward Park	0	No	1	1	
Islington Trails	1	Yes	1	2	Trash cans near the trail entrance at park and ride
Islington Area	1	Yes	1	3	
Peirce Island	0	Yes	0	2	

Waterfowl Congregation

In areas where waterfowl congregate due to open water or vegetated feeding areas or as result of resident feeding in City parks, the City will continue to discourage waterfowl or seagull feeding using the following measures:

- Place signage in key areas to prohibit feeding of ducks, geese and other waterfowl
- Using predator decoys (owls, eagles, coyotes)
- Plant shrubs or establish tall grass using no mow zones along water shorelines to discourage geese from moving from the water body to mowed feeding areas.
- Intermittent noise makers or strobe lights

Erosion and Poorly Vegetated Areas

The City will use the following erosion control procedures to minimize the discharge of eroded sediment into water bodies.

- Damaged or poorly vegetated areas are repaired as soon as possible to minimize erosion.
- Streambank or shoreline areas within recreational areas are periodically inspected to identify areas of erosion or poor vegetation,
- In select areas, appropriate barriers/fencing will be used to avoid vehicle traffic and damage due to compaction and tire abrasion.

BMP 6-2: Building and Facilities

Consistent with Section 2.3.7.1(b) of the MS4 Permit, the following provides an inventory of City-owned buildings and facilities that may use, store and/or dispose of petroleum products or other chemicals be evaluated to determine that practices are in place to minimize exposure of these products/chemicals to stormwater. Buildings and facilities include town offices, fire and police stations, schools, library, municipal pools and parking garages. **Table 6.3** provides a listing of City Buildings and Facilities, an inventory of materials at school facilities is still being developed by the City.

Table 6.3: City Owned Building and Facility Inventory

Facility Name	Outdoor Fuel or Chemical Storage	Vehicle Maint. / Washing	Outdoor Bulk Materials	Managed Turf / Dogs Stations
City Hall	N/A	N/A	N/A	N/A
Police Department	N/A	N/A	N/A	N/A
Fire Station 1	N/A	Wash Bay in Garage	N/A	N/A
Fire Station 2	N/A	Wash Bay in Garage	N/A	N/A
Public Works Facility	Brine, Fuel (UST)	Wash Bay in Garage	Salt Shed	N/A
Transfer Station	Used Oil	N/A	Yard Waste	N/A
Library	N/A	N/A	N/A	N/A
Old Library	N/A	N/A	N/A	N/A
South Meeting House	N/A	N/A	N/A	N/A
High/Hanover Parking Facility	Diesel, Road Salt	N/A	N/A	N/A
Foundry Place Garage	N/A	N/A	N/A	N/A
Cemeteries	N/A	N/A	N/A	N/A
Senior Activity Center	N/A	N/A	N/A	N/A
School Facilities				
Portsmouth High School	Outdoor Storage Cabinet[1]	N/A	N/A	Athletic Fields
Portsmouth Middle School	none	N/A	N/A	Limited
Little Harbor School	none	N/A	N/A	Mowing
New Franklin School	none	N/A	N/A	Mowing
Dondero School	none	N/A	N/A	Mowing
Recreational Facilities				
Greenleaf Recreation Center	N/A	N/A	N/A	N/A
Spinnaker Point Recreation Center	N/A	N/A	N/A	N/A
Indoor Swimming Pool at HS	N/A	N/A	N/A	N/A
Peirce Island Outdoor Pool	Chlorine (55 Gal Drums, Acid[2]	N/A	As Listed	N/A

Notes: [1]Used motor oil is stored in 55-gal drums inside enclosed drum cabinet located just outside auto shop. [2]Chemicals stored inside a secured enclosure within fenced in area.

Best Practices and Standard Operating Procedures

Trash and Waste Management (See Best Practices under Parks and Open Spaces)

Turf Management (see Best Practices listed under Parks and Open Space)

Chemical and other Material Storage

The following represents best practices and preventative measures used for chemical and other material storage in City buildings and facilities.

- Hazardous materials and chemicals are stored indoors in designated, labeled containers in secure areas with secondary containment.
- Containers are labeled to indicate contents along with its hazard rating symbol according to hazardous material regulations.
- Chemical and petroleum storage areas are routinely inspected to detect possible leaks or spills.
- In the event of spill or leak, liquids are contained and absorbed using absorbent materials and dry materials area cleaned up using dry cleanup methods. The City has developed Spill Response and Control Standard Operating Procedures (SOPs) for spill control containment and disposal methods (See Attachment B).

BMP 6-3: Vehicles and Equipment Storage and Maintenance

Vehicles Fueling Areas

The City has a vehicle fueling station at the DPW Facility. This fueling station has spill response kits to contain and respond to an inadvertent spill and prevent the discharge of petroleum-based products to surface waters. This facility has a Spill Prevention Control and Countermeasure (SPCC) Plan that outlines spill response and good housekeeping/ pollution prevention measures at the fueling station.

Best Practices / Preventative Measures

Vehicle Storage / Maintenance

- Vehicles are primarily stored indoors, and vehicle maintenance activities are done indoors within the DPW Facility
- Vehicles and equipment are routinely inspected for leaks and repaired as necessary.
- If a leak is discovered, fluids are contained using drip pans and spill response kits appropriate,
- Vehicle fluids generated from vehicle maintenance are disposed of using a licensed waste hauler.
- The auto repair shop inside the high school also conducts vehicle maintenance and stores any petroleum and other materials in appropriate secure containers.

Vehicle Fueling

- Fuel storage tanks and vehicle fueling areas are inspected at a minimum on a monthly basis
- Spill response kits are maintained in the vehicle refueling area and storage areas.
- The City has developed Spill Response Standard Operating Procedures (see Attachment B).

Vehicle Washing

- Washing of DPW vehicles is typically done indoors in the Wash Bay that is connected to an oil/water separator and then the sanitary sewer system
- Police vehicles are either washed at commercial facilities or at the DPW facility which has floor drains that are connected to municipal sewer.
- The Fire Department either washes its vehicles indoors that also has floor drains connected to the sanitary sewer or occasionally washes vehicles outdoors.

Stormwater Infrastructure Operations and Maintenance

BMP 6-4: Street/Parking Lot Sweeping

The City DPW has instituted a rigorous Street Sweeping Program and sweeps approximately 790 roadway lane miles including parking lot areas as part of its annual Sweeping Program. As described further below, the City has twenty (20) different sweeping routes targeting roadways with curbing and/or catch basins and City-owned parking lots that are generally swept at least twice per year from April to October.

General Permit Requirements

Section 2.3.7.1.d.iii of the MS4 Permit requires all City owned roads and parking lots with curbs and/or catch basins be ***swept at least once per year*** in early spring following winter deicing applications.

The Permit also requires tracking and annual reporting of which streets are swept and the amount of sediment material recovered.

Nitrogen Impairment-Appendix H Requirements

For areas that drain to water bodies that are considered nutrient impaired, either nitrogen or phosphorus impaired, Part 1 of Appendix H of the MS4 Permit requires City streets and parking lots **to be swept *at least twice per year***.

Reporting Requirements:

The number of miles swept, and the volume or mass of material removed shall be reported in each annual report.

Current Sweeping Practices

The City has twenty (20) different sweeping routes that are swept at least twice consistent with the added MS4 Permit requirements and most streets are swept as much as four times per year from April to the end of October. Downtown area streets are swept weekly by the downtown parking division that has its own sweeper (See Sweeping Route Map in Attachment C). Roadways and parking lots that are closest to and/or drain directly to tidal waters are considered the highest priority. Completion of sweeping routes and volume of material recovered is recorded daily using a Sweeping Log.

During FY2019, approximately 790 roadway miles were swept and 320 tons of street sweeping material was collected and disposed of. The City also utilizes a sidewalk sweeper to help reduce debris entering the stormwater system. Table 6.4-2 provides an annual summary of the City street sweeping activity. The City will continue to record the number of miles cleaned and the volume or mass of material removed and will be reported in future Annual Reports.

Table 6.4-2 Fiscal Year Summary of Sweeping Activity

Fiscal Year	*# of Miles Swept*	*Material Recovered (tons)*
FY2019	790	320
FY2020	790	201
FY2021	790	147
FY2022		
FY2023		

Sweeping Material Storage /Disposal

Sediment and debris recovered during street sweeping is stored in a designated, open stockpile located behind the DPW facility. This area is contained by jersey barriers and does not drain directly to a storm water drainage system or adjacent water body.

Responsible Department/Parties:

Utilities Maintenance Supervisor/ Downtown Parking Division

BMP 6-5: Catch Basin Cleaning

The City maintains an intensive catch basin cleaning for approximately 2,700 storm drain catch basins located in the MS4 area. Approximately 50% of the City's catch basins are inspected and cleaned each year.

General Permit Requirement

The MS4 permit requires the following conditions be met:

- Establish a cleaning schedule with goal that ensures that catch basins are cleaned frequently enough that no catch basin will be more than 50% full at any time.
- Keep of a log of catch basins cleaned and ensure proper storage of catch basin cleanings and street sweepings prior to disposal or reuse such that they do not discharge to receiving waters. The Permit also requires that

Develop a prioritization schedule to prioritize areas that may have higher sediment loads due to construction activities, steep terrain or erosion issues or higher nutrient load loads due to fertilizer usage, agricultural practices and/or improper pet waste disposal.

Reporting Requirements

For each Annual Report, the City will report on the following items:

- The number of catch basins that were cleaned and inspected,
- The total mass of material removed from all catch basins, and
- Whether any changes are planned to catch basin cleaning schedule to help ensure no sump is more than 50% full at any given time.

The Permit also requires the City to 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's Catch Basin Cleaning Practices

The City has established Standard Operating Procedures (SOPs) for catch basin cleaning (see Attachment D). Catch basins are currently prioritized based on past observations of the storm drain system and receiving water bodies. The City has given higher priority for catch basin cleaning in areas that drain to North Mill Pond Hodgson Brook and Sagamore Creek.

City personnel conduct catch basin cleaning for one of three (3) reasons, Emergency, Routine Maintenance, and new Construction. The following procedures are used for catch basin cleaning:

- Each catch basin is inspected for structural damage, noxious materials, sewage, or heavy flow. If any of these conditions are present, the inspectors are to contact the Utilities Management Supervisor for further instructions.
- Prior to cleaning, the initial depth to sediment from top of the grate frame is recorded (see Diagram in City SOP's in Attachment D.).
- Cleaning is done using vacuum equipment while limiting the use of excessive wash-down waters to remove debris. Cleaning generally begins at the upstream end and working downstream of a closed drainage system.
- Following sediment removal, the depth to the catch basin bottom is measured and reported on the catch basin cleaning/inspection log.
- All personnel engaged in catch basin cleanings should be familiar with the City's SOPs related to confined space entry procedures.

Table 6.5-1 provides a summary of the annual catch basin cleaning activity and material removed by fiscal year. In FY2019, approximately 1,010 catch basins were inspected and cleaned with a total of 322 tons of sediment removed as documented using the City's mobile data collection system.

Table 6.5-1 Catch Basin Activity and Material Recovered by Fiscal Year

Fiscal Year	# of CB's Inspected/ Cleaned	Material Recovered (tons)
FY2019	1,010	322
FY2020	1278	149
FY2021	550	115
FY2022		
FY2023		

Catch Basin Grit Storage

Material recovered from catch basin cleaning activity is stored in an enclosed, designated catch basin drying area contained by concrete barriers located behind the back left corner of the property up on the hill of the Pease Waste Water Treatment Plan. The trucks are dewatered into the sewer system closest to the cleaning sight.

Responsible Department/Parties:

Utilities Maintenance Supervisor

BMP 6-6: Stormwater Treatment BMP Inspection and Maintenance

Inspection and Maintenance Procedures

The City has several different types of stormwater BMPs to treat stormwater runoff from roadways and/or parking lots that require varying types and levels of inspection and maintenance activities that are to be done on a routine basis. Standard Operating Procedures (SOPs) have been developed to guide stormwater BMP inspections. The inspection frequency and maintenance procedures differ mostly between underground vault type BMPs and above-ground, vegetated treatment BMPs as described further below.

UNDERGROUND TREATMENT BMPS

Table 6.6-1 provides a listing of the underground stormwater BMPs maintained by the City DPW. Inspection and maintenance details for underground vault type BMPs are described in the South Mill Pond Stormwater Treatment BMP Operations and Maintenance Manual. Inspectors will document observations using the City's Stormwater BMP inspection log (see Attachment E).

Table 6.6-1: Summary of City Maintained Stormwater BMPs

BMP Type	BMP ID #	Location	Frequency
Vortechnics 2436CIP	10311	*Lincoln Avenue Area*	Sediment (grit) chamber is inspected quarterly Cleaning of system will occur on an as needed basis according to inspections
Downstream Defender	25194	Memorial Bridge	System are inspected quarterly to evaluate sediment and floatable accumulation
	6145	Bartlett Street	
	12814	Rogers Street	

** The City will include information on other installed BMPs as it becomes available.

Inspectors will inspect and note the following information:

1. Depth of sediment, trash accumulation or other debris,
2. Any unusual staining, discoloration, foams, oil sheens, noxious odors or any other indicator of potential stormwater contamination.
3. Any structural damage or blockages or flow.

Trapped oils and grease, other observed floatable materials within the BMP should be removed using appropriate vacuum truck prior to removing any accumulated sediment.

Vegetated Stormwater Treatment BMPs

Vegetated treatment BMPs generally require less frequent inspections and maintenance since any prevailing issues are much more visible and these BMPs are generally sized to handle larger water quality volumes or flow rates compared to underground vault and swirl type BMPs. These BMPs are also not designed to trap and retain petroleum products or other floatables. Semi-annual and/or annual inspections are generally considered appropriate for these types of BMPs.

The City maintains various vegetated stormwater treatment BMPs including tree well filters, rain gardens, biofiltration areas, extended detention basins and gravel wetlands. Table 6.6-2 describes basic inspection and maintenance requirements for vegetated BMPs.

Table 6.6-2 Inspection and Maintenance Activities for Vegetated BMPs

BMP Type	Activity	Time of Year	Frequency
Detention Basins	Inspect and repair eroded soil or other damaged areas caused by channelized flow	Spring	Annually
	Seed/mulch areas with poor vegetation cover (<75% cover) - Replace dead herbaceous plantings	Spring	Annually
	Remove excessive sediment and/or trash accumulation	Spring	Annually
	Inspect and remove invasive species by hand if present	Spring	Annually
	Ensure outlet is free-flowing and no channel scour downstream	Spring	Annually
Tree Box Filters, Rain Gardens, Filter Media BMPS	Inspect and remove trash and other organic debris	Spring and fall	Bi-annually
	Inspect for prolonged periods of ponded water following storm events – ensure outlet media/outflow is free-flowing	Spring and fall	Bi-annually
	Inspect BMP outlet and repair any channel scour damage	Spring and fall	Bi-annually

Other Stormwater Treatment BMPs

Infiltration /Filtration Devices;

In addition to the items listed above, the following are conditions /maintenance items are specific to infiltration/ filtration devices and should be part of the annual inspection process and corrected, if necessary, for these types of BMPs.

1. Inspect infiltration and filtration BMPs annually during or immediately following storm events to assess whether standing water is present for prolonged periods of up to 48 to 72 hours after a storm event: prolonged standing water usually indicates clogged filter media and/or poor infiltration conditions
2. If prolonged periods of standing water are observed, corrective actions will be required to restore the intended treatment efficiency.
3. Winter Conditions – no snow storage or sand applications should be allowed directly upstream or on top of infiltration/filtration devices

Permeable Pavement / Concrete

In addition to the items listed above, the following inspection and maintenance activities should be performed for permeable pavement or concrete surfaces:

1. Inspect surfaces biannually for excess sediment, leaf litter or debris that may affect infiltration. Vacuum or use leaf-blower to remove excess debris
2. Inspect surfaces during or immediately following storm events to assess whether stormwater pools on surface for more than 30 minutes;
3. Vacuum at least once per year with high-efficiency, regenerative air vacuum truck;

BMP 6-7: Winter Road Maintenance

The City DPW maintains approximately 105 miles of roadway in accordance with its own Snow and Ice Removal Plan. The City also maintains several municipal parking lots and sidewalks in critical areas and seeks to provide practical safe access to homes, businesses and municipal facilities during winter storms. poses. Road salt applications may be supplemented with liquid calcium chloride during cold temperatures below 20ºF.

There are five streams with the City limits that are listed as chloride impaired according to the 2016 303(d) list. Most of these streams, except for Sagamore Creek, originate in areas adjacent to the Pease International Tradeport and flow through major roadway corridors associated with multi-lane roadways maintained by the NHDOT including Routes I-95 and NH Route 16 (Spaulding Turnpike) before flowing through the main portions of the City.

The City utilizes the following basic practices to optimize its snow and ice control operations and minimize its deicing chemical usage:

- Plowing snow is considered the first line of defense for clearing roads
- School bus routes and the downtown area are generally given highest priority.
- Applying road salt to roads is done only when necessary and under appropriate temperature conditions.
- Road salt is generally applied along the roadway centerline to allow vehicle traffic and the crown slope mix the salt with snow to create a brine mix.
- DPW spreader trucks are calibrated each year prior to each winter season to make sure that application settings are putting out the targeted amount.
- 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 are familiar with the Green SnowPro® Certification training program and will look to train employees in the future as funding allows
- Sand is only applied in select areas and only during unusual cold temperatures to assist with traction.
- Road salt and sand mixed with salt are stored under cover or enclosed buildings.

In Permit Year 3, the City plans to develop a more detailed Salt Reduction Plan to describe various current and future best practices to increase its effectiveness and efficiency of road salt use including the increased use of liquid deicers. This future Salt Reduction Plan will be included in this O&M Plan as Attachment F.

BMP 6-8: Stormwater Pollution Prevention Plans (SWPPPs)

Description: Consistent with Section 2.3.7.2 of the 2017 MS4 Permit, the City plans to develop a Stormwater Pollution Prevention Plan (SWPPP) for its DPW maintenance facility associated storage areas and its Pierce Island Wastewater Facility, which are the only facilities within the MS4 that have outside storage of materials that may potentially exposed to stormwater. The SWPPP shall include a map of the facility and a description of the activities that occur at the facility. The map shall show the location 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.

Due to the Covid-19 virus outbreak, completion of the SWPPP has been postponed Year 3 given the disruption to operations and limitations placed on conducting facility inspections. The SWPPPs are anticipated to be completed by the end of July 1, 2021. The SWPPP will include instructions for conducting employee training and routine facility inspections and associated documentation forms.

BMP 6-9: Nitrogen Source Identification Report

Description: Given the nitrogen water quality impairment associated with the coastal waters, the City will need to develop a Nitrogen Source Identification Report within 4 years of the effective permit date (July 2022) consistent with Part I of Appendix H requirements. The Report will need to be submitted to EPA as part of the year 4 Annual Report. The report will include the following elements:

1. Calculation of total MS4 area draining to the impaired water quality segments or their tributaries, using updated mapping and catchment delineations produced pursuant to Part 2.3.4.6,
2. All screening and monitoring results pursuant to Part 2.3.4.7.d., targeting the receiving water segment(s)
3. Impervious area and DCIA for the target catchment
4. Identification, delineation and prioritization of potential catchments with high nitrogen loading
5. Identification of potential retrofit opportunities or opportunities for the installation of structural BMPs during redevelopment.

BMP 6-10: Stormwater BMP Retrofit Evaluation/Inventory

Description: Per Appendix H requirements for the nitrogen impairments, the City will evaluate and develop an inventory of municipal property that may represent feasible locations for stormwater BMP retrofits to treat existing paved areas and reduced existing pollutant loads. The inventory and feasibility assessment will be incorporated into the Nitrogen Source Identification Report with updates on planned implementation included in the 5th year Annual Report.

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ATTACHMENTS

Attachment A: City Parks Map

Attachment B: City Spill Response SOP

Attachment C: Street Sweeping Route Map

Attachment D: City Catch Basin Cleaning SOPs and Inspection Log

Attachment E: Stormwater BMP Inspection SOP's and Forms

Attachment F: Future Salt Reduction Plan

ATTACHMENT A:

City Parks Map

ATTACHMENT B:

City Spill Response SOP

ATTACHMENT C:

Street Sweeping Route Map

ATTACHMENT D:

Catch Basin Cleaning SOP and Inspection Form

ATTACHMENT E:

Stormwater BMP Inspection SOP and Forms

APPENDIX F:

Future Salt Reduction Plan