

Annual Report City of New Bedford, Massachusetts



MS4 General Permit Compliance

Year 3

(July 1, 2020 to June 30, 2021)

September 28, 2021



**CDM
Smith**

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Attachments (Under Separate Cover)

Attachment A – SSO Inventory

Attachment B – Priority Ranking of Outfalls/Interconnections

Attachment C – Nitrogen Removal by BMP

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Attachment E – Catchment Investigation Results

Attachment F – IDDE Tracking

Section 1

Contact Information

The City's EPA NPDES Permit number is MAR041140.

The City of New Bedford submits this Annual Report under the Massachusetts Small MS4 General permit for the following reporting period:

Permit Year: Year 3

Reporting Period: July 1, 2020 to June 30, 2021

Primary MS4 Program Manager

Name:	Jamie Ponte
Title:	Commissioner
Department:	Public Infrastructure
Email:	Jamie.Ponte@newbedford-ma.gov
Phone Number:	508-979-1550
Street Address:	1105 Shawmut Avenue
City: New Bedford	State: MA Zip Code: 02746

Stormwater Management Program (SWMP) Information

The SWMP was last updated: June 28, 2019

The SWMP can be found at the web address: <http://s3.amazonaws.com/newbedford-ma/wp-content/uploads/sites/49/20191219211632/Final-New-Bedford-SWMP-6-28-19.pdf>

Section 2

Self-Assessment

Table 1 states the impairments and the in state TMDLs that are applicable to the City’s MS4 permit.

Table 1: Summary of Impairments of Receiving Waters

Impairments	TMDLs In state
Bacteria/Pathogens	Bacteria/Pathogens
Nitrogen	
Oil/Grease (Hydrocarbons)	
Metals	

Year 1 Requirements

Year 1 permit requirements are listed below and were reported on in the annual report titled “MS4 General Permit Compliance Year 1 (May 1, 2018 to June 30, 2019)” dated September 30, 2019.

- Develop and begin public education and outreach program.
- Identify and develop an inventory of all known locations where SSOs have discharged to the MS4 in the last 5 years.
- The SSO inventory is included in **Attachment A**.
- Develop written IDDE plan including a procedure for screening and sampling outfalls.
- IDDE ordinance complete.
- Identify each outfall and interconnection discharging from MS4, classify into the relevant category, and priority rank each catchment for investigation.
- The priority ranking of outfalls/interconnections is included in **Attachment B**.
- Construction/Erosion and Sediment Control (ESC) ordinance complete.
- Develop written procedures for site inspections and enforcement of sediment and erosion control measures.
- Develop written procedures for site plan review.
- Keep a log of catch basins cleaned or inspected.
- Complete inspection of all stormwater treatment structures.

Year 2 Requirements

Year 2 permit requirements are listed below. Additional information on each of the requirements are discussed in later sections.

- Completed Phase I of system mapping.
- Developed a written catchment investigation procedure and assess the procedure to the SWMP.
- Developed written procedures to require the submission of as-built drawings and ensure the long-term operation and maintenance of completed construction sites and added these procedures to the SWMP.
- Enclosed or covered storage piles of salt or piles containing salt used for deicing or other purposes.
- Developed written operations and maintenance procedures for parks and open space, buildings and facilities, and vehicles and equipment and added these procedures to the SWMP.
- Developed an inventory of all permittee-owned facilities in the categories of parks and open space, buildings and facilities, and vehicles and equipment and added this inventory to the SWMP.
- Completed a written program for MS4 infrastructure maintenance to reduce the discharge of pollutants.
- Developed written SWPPPs, included in the SWMP, for all 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.
- The SSO inventory has been updated, including the status of mitigation and corrective measures implemented.
 - The updated SSO inventory is attached as an appendix.
- Updated outfall and interconnection inventory and priority ranking as needed.

Year 3 Requirements

Year 3 permit requirements are listed below. Additional information on each of the requirements are discussed in later sections.

- Inspect all outfalls/interconnections (excluding Problem and Excluded outfalls) for the presence of dry weather flow
- Complete follow-up ranking as dry weather screening becomes available

- ☒ Stormwater Rules and Regulations revisions were memorialized on June 24, 2021 to include modifications to the requirements for New Development and Redevelopment in accordance with the amendments (2020) to the 2016 MS4 permit

Annual Requirements

Items to be completed on a recurring annual basis are noted below.

- ☒ Annual opportunity for public participation in review and implementation of SWMP.
- ☒ Comply with State Public Notice requirements.
- ☒ Keep records relating to the permit available for 5 years and make available to the public.
- ☒ Properly store and dispose of catch basin cleanings and street sweepings so they do not discharge to receiving waters.
- ☒ Annual training to employees involved in IDDE program.
- ☒ All curbed roadways have been swept a minimum of one time per year.

Bacteria/Pathogens

Annual Requirements

Public Education and Outreach

- ☒ Annual message encouraging the proper management of pet waste, including noting any existing ordinances where appropriate.
- ☒ Permittee or its agents disseminate educational material to dog owners at the time of issuance or renewal of dog license, or other appropriate time.
- ☐ Provide information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria. (N/A)

Nitrogen

Annual Requirements

Public Education and Outreach

- ☒ 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.
- ☒ Distribute an annual message in the summer (June/July) encouraging the proper management of pet waste, including noting any existing ordinances where appropriate.
- ☒ Distribute an annual message in the fall (August/September/October) encouraging the proper disposal of leaf litter.

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

- ☒ 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).

Structural BMPs

- ☒ Any structural BMPs listed in Table 3-5 of Attachment 3 to Appendix F of the MS4 permit 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.
- ☒ A “Nitrogen Removal by BMP” table can be found in **Attachment C** of this report. This table reports total area treated, storage volume and estimated nitrogen removal for each City owned BMP.

Solids, Oil and Grease (Hydrocarbons), or Metals

Annual Requirements

Good Housekeeping and Pollution Prevention for Permittee Owned Operations

- ☒ Increase street sweeping frequency of all municipal owned streets and parking lots to a schedule to target areas with potential for high pollutant loads.
- ☒ Prioritize inspection and maintenance for catch basins to ensure that no sump shall be more than 50% full. Clean catch basins more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings.

Section 3

Receiving Waters/Impaired Waters/TMDL

Changes have been made to the lists of receiving waters, outfalls, and impairments since the NOI was submitted:

- Revisions to the outfall/interconnections list were made during the reporting period, including the removal and addition of structures or connections that were field verified during screening. **Table 2: List of Receiving Waters, Outfalls and Impairments** includes these updates. (Year 3)
- “Other pollutants causing impairments” column was updated in **Table 2: List of Receiving Waters, Outfalls and Impairments** to reflect the most recent data in the Massachusetts Integrated List of Waters 2018/2020 Reporting Cycle. (Year 3)
- Two 30-inch outfall pipes, east of Covell Street, were located along the Acushnet River in March 2021. **Table 2: List of Receiving Waters, Outfalls and Impairments** has been updated to reflect this discovery. (Year 3)
- Turner Pond was added to the list of receiving waterbodies. No outfalls or interconnections are tributary to this receiving water. (Year 2)
- Following field activities and a more detailed review of available record drawings, five City-owned outfalls/interconnections were removed. The removed locations fell into one of two categories: 1) outfalls owned by other MS4s (e.g., MassDOT) that had been incorrectly mapped as owned by the City, or 2) the downstream end of culverts with no internal pipe connections (i.e., are strictly receiving water conveyance). (Year 2)
- Following clarification of definition of an “outfall”, 181 additional City-owned discharge locations have been added. These discharges are connected to combined sewer outfall pipes, downstream of regulating structures. Note: discharges were identified based on existing GIS mapping. An update will be provided following field inspection(s) as appropriate. (Year 2)

Table 2 summarizes the most current list of receiving waters, outfalls, and impairments.

Table 2: List of Receiving Waters, Outfalls and Impairments

Waterbody segment that receives flow from MS4	# Outfalls/ Interconnections	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Other pollutants causing impairments
Acushnet River (MA95-33)	39	X	X	X	Fecal Coliform, (Debris/Trash), Color, PCBs, Odor, Metals, Enterococcus
Buttonwood Brook (MA95-13)	16				Fecal Coliform, Enterococcus, E. Coli
Clarks Cove (MA95-38)	20				Fecal Coliform, PCB Fish tissue, Enterococcus
New Bedford Inner Harbor (MA95-42)	145	X	X	X	(Debris/ trash), Fecal Coliform, PCBs, PCB in fish tissue, Enterococcus, Metals, Odor
Outer New Bedford Harbor (MA95-63)	32	X	X		Fecal Coliform, PCB in Fish tissue, Enterococcus, Metals, Other Organics
Buttonwood Park Pond (MA95020)	1				N/A
Sassaquin Pond (MA62232)	10				Algae, Harmful Algal Blooms, Fecal Coliform, Odor, Curly Leaf Pondweed
Copper Brook	7				N/A
Nash Pond	3				N/A
Brooklawn Brook	2				N/A
Paskamanset River (MA95-11)	21				Enterococcus, E. Coli, Combined Biota/Habitat Bioassessments
Acushnet Cedar Swamp	33				N/A
Deep Brook	2				N/A
Wetlands/Open Space	27				N/A
Turner Pond (MA95151)	0				Mercury in Fish tissue
Total Number of Outfalls	358				

Section 4

Minimum Control Measures

MCM 1: Public Education

In total, 8 educational messages were distributed during the reporting period. The City did not attend any in person events due to federal and local social distancing mandates resulting from the COVID-19 pandemic. In addition, the availability of educational pamphlets and brochures at City offices was limited because City owned facilities were closed during this reporting period and did not reopen to the public until June 2021 due to the COVID 19 pandemic.

The City plans to complete all year four educational messages during the next reporting period provided that federal and/or local regulations pertaining to the COVID-19 pandemic do not restrict access to municipal buildings, public events or gatherings. In addition, the City is going to begin using other outlets such as social media and bill stuffers to maximize outreach efforts for targeted audiences.

The following summarizes the Public Education and Outreach completed during the reporting period.

BMP: 1-1: Nitrogen Brochures/Pamphlets

Message Description and Distribution Method

A Nitrogen lawn management pamphlet was developed in 2019 and was displayed at the DPI office billing window starting in June 2021, after City offices were reopened.

Targeted Audience

Businesses/Commercial/Institutional & Residential

Responsible Department/Parties

Departments of Public Infrastructure and Parks, Recreation and Beaches

Measurable Goals

Distribute pamphlet during the March/April timeframe and made available continuously through the spring and summer months at the DPI office.

Message Date(s)

The pamphlet was displayed and continuously available at the DPI office starting in June 2021.

Comments

Typically, this pamphlet would be distributed during summer months (peak lawn maintenance period); however, due to the COVID 19 pandemic, the DPI office was closed to the public during this time and the pamphlet could not be distributed.

BMP 1-2: Bacterial/Nitrogen Brochures/Pamphlets

Message Description and Distribution Method

A Scoop the Poop pamphlet was developed in 2019. This educational pamphlet will be reviewed and revised by the City during the next reporting period.

Typically, the pamphlet was distributed to dog owners at the time of issuance or renewal of dog license as well as being disseminated to residents and businesses at local events attended by DPI and discussed at school educational presentations and discussed with students at school presentations. The City has found that in-person discussion and handout is much more successful. Unfortunately, due to the COVID 19 pandemic, all City offices and events were cancelled which hindered the City's ability to distribute these documents.

Targeted Audience

Residential

Responsible Department/Parties

Department of Public Infrastructure

Measurable Goals

Distribute pamphlet to dog owners at the time of issuance or renewal of a dog license. Pamphlets are also available at the DPI office as well as at various public events throughout the year.

Message Date(s)

The pamphlet was continuously available at City Hall, and the DPI office with emphasis on distributing starting in June 2021 once City offices were reopened. This would have occurred continuously throughout the year; however, due to the closure of City Hall and all other City offices, distribution of the pamphlets was not possible.

Comments

This message was completed for Appendix H requirements and is not different than what was proposed in the NOI.

BMP: 1-3: Leaf Litter Brochures/Pamphlets

Message Description and Distribution Method

A pamphlet describing proper disposal of leaf litter poster was developed in 2020 and was displayed at DPI office at the billing window starting in June 2021. Typically, this would have occurred in the fall months; however, due to the closure of City offices from the COVID 19 pandemic, this was not possible.

Targeted Audience

Businesses/Commercial/Institutional

Responsible Department/Parties

Departments of Public Infrastructure and Parks, Recreation and Beaches

Measurable Goals

Distribute pamphlet during the August/September/October timeframe

Message Date(s)

The pamphlets were available continuously at the DPI office starting in June 2021 once City offices were reopened.

Comments

The time of distribution for this message is different than what was proposed in the NOI due to the closure of City offices during the COVID-19 pandemic. Typically, this pamphlet would be posted during end of summer and fall months.

BMP: 1-4: Dumpster Management Brochures/Pamphlets

Message Description and Distribution Method

A pamphlet describing good stormwater housekeeping practices, including dumpster management, was developed in 2019. Pamphlets are distributed during IPP inspections, FOG inspections, available at leave at the Board of Health (BOH) office, and at issuance of permit for temporary dumpsters.

Due to the closure of the BOH office resulting from the COVID 19 pandemic, residents and businesses were not able to pick them up at that location.

Targeted Audience

Businesses/Commercial/Institutional

Responsible Department/Parties

Department of Public Infrastructure and Board of Health

Measurable Goals

Distribute pamphlet to the target audience at least once over the permit term.

Message Date(s)

Approximately 400 pamphlets were distributed to food service establishments and other industries throughout the reporting year during FOG inspections.

Comments

This message is not different than what was proposed in the NOI.

BMP: 1-5: Rain Barrel Program

Message Description and Method of Distribution

A rain barrel program was offered to City residents through The Great American Rain Barrel Company in the spring 2021. The rain barrel program was advertised on the City's Facebook and Twitter accounts and rain barrels were distributed at DPI.

Targeted Audience

Residential & Business/Commercial/Institutional

Responsible Department/Parties

Department of Public Infrastructure

Measurable Goals

Rain barrels were available for order between March 2021 and May 2021. The program distributed 22 rain barrels.

Message Date(s)

The rain barrel program was advertised and distributed during the spring months of 2021.

Comments

This message is not different than what was proposed in the NOI.

BMP: 1-6: Proper Disposal Brochures/Pamphlets

Message Description and Method of Distribution

An informational brochure including information on the proper disposal of water from car washing, dog washing, pools and sump pumps was developed in 2019.

Proper disposal of water from car/bike washing, dog washing, patio washing, sidewalk washing, and driveway washing is also typically discussed during school presentations and summer camp presentations. However, the City did not attend any in person events due to federal and local social distancing mandates resulting from the COVID-19 pandemic

Targeted Audience

Residential

Responsible Department/Parties

Department of Public Infrastructure

Measurable Goals

Distribute pamphlet to the target audience at least once over the permit term.

Message Date(s)

Approximately 159 pamphlets were distributed as door hangers in different neighborhoods throughout the year in response to complaints.

Comments

This message is not different than what was proposed in the NOI.

BMP: 1-7: Hazardous Waste Disposal Day Brochures/Pamphlets

Message Description and Distribution Method

An informational brochure encouraging residents and industries to participate in hazardous waste disposal days was developed by the Department of Fleet and Facilities Management (DFFM). The City advertised waste collection days on the City's webpage, Facebook page and Twitter account.

Targeted Audience

Residents, Business/Commercial/Institutional, and Industrial

Responsible Department/Parties

Department of Public Infrastructure

Measurable Goals

Distribute pamphlet to the target audience at least once over the permit term.

Message Date(s)

Household hazardous waste days were advertised by DFFM and ABC on the City's Facebook page and Twitter accounts in the fall of 2020 and spring of 2021. During this reporting period the City collected approximately 7,181 gallons of hazardous waste at household hazardous waste events.

Comments

This message is not different than what was proposed in the NOI.

BMP: 1-8: City Construction Standards Meeting

Message Description and Distribution Method

A City Construction Standards meeting was held virtually on April 5, 2021 in accordance with Center for Disease Control (CDC) and local COVID-19 protocols. Construction site stormwater controls and permitting were reviewed with attendees.

Targeted Audience

Developers/Contractors

Responsible Department/Parties

Department of Public Infrastructure

Measurable Goals

Hold annual meeting.

Message Date(s)

The Construction Standards meeting was held virtually April 5, 2021 on freeconferencecall.com with 30 attendees and three DPI representatives in attendance.

Comments

This BMP as originally submitted in the NOI consisted of distributing a pamphlet. However, it was felt that in-person discussion would be more effective. Contractors currently bonded with the City as well as contractors that have lapsed in renewal within the last two years were sent letters inviting them to join the virtual meeting. Under normal circumstances, when in person meetings are allowed, the City advertises the meeting in accordance with public meeting laws.

BMP: 1-9: Parking Lot Care and Maintenance Brochures/Pamphlets

Message Description and Distribution Method

A pamphlet including information on the care and proper maintenance of parking lots was developed in 2021 and will be finalized in the next reporting period.

Targeted Audience

Business/Commercial/Institutional & Industrial

Responsible Department/Parties

Department of Public Infrastructure

Measurable Goals

A draft pamphlet was developed in June 2021. The pamphlet will be distributed during the next reporting period (year 4).

Message Date(s)

Pamphlets will be made available at the DPI office and distributed to commercial properties throughout the reporting period. It will be available at the City's website and distributed periodically on social media.

Comments

This message is not different than what was proposed in the NOI.

MCM 2: Public Participation

The Stormwater Management Program is publicly available on the City's website. Meetings and reviews that the public had the option to attend were posted in accordance with state public notice requirements (MGL Chapter 30A, Sections 18-25). These opportunities are consistent with what was proposed in the NOI.

During this reporting period the City held one formal public meeting related to the Stormwater Rules and Regulations (SMRRs).

MCM 3: Illicit Discharge Detection and Elimination

Sanitary Sewer Overflows (SSOs)

Data pertaining to Sanitary Sewer Overflows (SSOs) is included in **Attachment A**.

During this reporting period:

- Number of SSOs identified in the MS4 system: 2
- Number SSOs removed: 2

SSO Record Keeping:

- Reporting Period (Last 5-years): June 2016 – June 2021
- Number SSOs identified in the MS4 system: 35
- Number of SSOs removed: 35

MS4 System Mapping

The City's MS4 mapping is available in the Geographical Information System (GIS) and includes the following elements:

- Outfalls and receiving waters
- Open channel conveyances
- Interconnections with other MS4s
- Municipally owned stormwater treatment structures
- Receiving waterbodies and indication of use impairments
- Initial catchment delineations
- Drainage pipes, manholes, and catch basins
- Sanitary and combined sewer pipes, manholes, and catch basins

MS4 mapping is updated continuously throughout the year by the City's Asset Management team as new information becomes available.

Screening of Outfalls/Interconnections

After the definition of an outfall was clarified in Year 2 to include partially separated areas that discharge downstream of CSO regulators, 181 additional locations were added to the City's list of screening locations. The City had previously completed all dry weather screening. The City determined that dry weather screening of all outfalls and interconnections would have a greater positive impact on the stormwater program, regardless of original priority rankings (i.e. problem, excluded, high or low) based on preliminary system knowledge. During this reporting period, the City began a fast-track sampling program to inspect and sample the 181 additional outfalls. Due

to COVID-19 restrictions and weather-related issues, all outfalls were not sampled. As such the City has implemented a plan to complete all dry weather screening by the end of the next reporting period (Year 4).

In the Year 2 reporting period and during this reporting period, (Year 3), screening and sampling efforts were hindered by the COVID-19 pandemic, whether through lack of staffing or for compliance with Federal and/or local mandates or restrictions. Despite these obstacles, the City and CDM Smith continued dry weather screening during this reporting period and updated priority designation for outfalls/interconnections as data became available. Updated priority rankings of outfalls can be found in **Attachment B**.

Outfall monitoring results from this reporting period are included in **Attachment D**. The results include the date, outfall/interconnection identifier, location, weather conditions at time of sampling, precipitation in previous 48 hours, field screening parameter results, and results from analyses.

- To date 85% (244 of 285) of the outfalls and interconnections, excluding those designated as problem or excluded (based on preliminary ranking completed in 2019), have been screened. The remaining 41 outfalls will be completed in the next reporting period.
- Total Outfalls/interconnections screened during this reporting period (dry weather): 37% (133 of 358)
- To date, total outfalls/interconnections screened (dry weather): 85% (306 of 358)

Catchment Investigations

The City and CDM Smith continued catchment investigation efforts during this reporting period through CCTV and dye testing. To date a total of 21,405 feet of internal CCTV inspection of storm drains and 439 dye tests have been completed. In addition to these sampling efforts, the City contracted Ted Berry to complete 420 feet of multisensory inspection including sonar, laser, and CCTV at DP-202, a 30-in reinforced concrete outfall pipe.

Data collected for catchment investigations during this reporting period are included in **Attachment E**.

- Catchment investigations completed during this reporting period (wet weather): 16% (60 of 358)
- To date, total catchments investigated (wet weather): 31% (112 of 358)

IDDE Progress

During this reporting period:

- Number of illicit discharges identified: 11
- Number of illicit discharges removed: 5
- Estimated volume of illicit discharges removed: 46,800 gpd

To date (from July 2018 to June 2021):

- Number of illicit discharges identified: 22
- Number of illicit discharges removed: 12
- Estimated volume of illicit discharges removed: 48,500 gpd

Work orders for the removal of illicit discharges will remain in Lucity™, the City's asset management system, for those that were removed by City crews. Illicit connection locations and data, identified through the City's IDDE program, can be found in **Attachment F**. The following summarizes major IDDE findings and work completed:

- The three Kearsarge Street illicit connections, identified but not removed in the previous reporting period (Year 2 MS4 Compliance Report), were removed by a contractor in accordance with City developed plans in June of 2021 at a total cost of \$85,419.00.
- A significant source of dry weather flow was identified on Collette Street during IDDE work. A 10-in sewer was found discharging directly to a storm drain that discharges to Outfall 024. This was immediately addressed by City crews. It was determined that the structure was an unidentified CSO regulator with a weir. Once the blockage was removed, flow was directed to the sanitary sewer and the dry weather overflow ceased. The City has subsequently blocked the storm drain connection eliminating the potential for any future dry weather discharges.
- The sewer lateral connection on Mathew Street flows to the sewer system via an open over-under manhole. Given system complexities, City crews are working to develop an approach to remove the connection and connect it directly to the sanitary sewer and seal the open over-under manhole. This work is being completed in conjunction with the City's Administrative Order Project CSO 8G.
- The remaining illicit connections identified during this reporting period have been prioritized and are scheduled to be removed by City crews during the next reporting period. The remaining illicit connections identified during this reporting period, that have not already been removed, discharge to storm drains upstream of regulators which divert the dry weather flow back to the sewer system and do not directly discharge to outfalls.

Employee Training

A handout presentation on the City's IDDE program, including how to recognize and report illicit discharges and SSOs was updated, printed and distributed to 121 DPI employees throughout June 2021. These presentations were reviewed one-on-one with new hires and any other staff that requested more information.

Due to the COVID 19 pandemic and associated restrictions, an in-person meeting of DPI employees was not conducted; pending COVID-19 protocol changes, in person training will resume in the next reporting period.

MCM 4: Construction Site Stormwater Runoff Control

During this reporting period:

- Number of site plan reviews completed: 15
- Number of Active Construction Sites Over 1-Acre: 8
- Number of inspections completed: 109
- Number of enforcement actions taken: 3

Construction site sediment and erosion control inspections and corrective action inspections are collected with the Survey123 application and maintained in ESRI™ ArcGIS. The existing written standard operating procedure (SOP E-2) for construction sediment and erosion control inspections, developed in 2019, was revised and updated during this reporting period to include updated inspection and corrective action procedures.

City inspectors attended a webinar training offered by the EPA, Region 1 on May 12, 2021 that reviewed inspection procedures and common problem areas of a construction site's sediment and erosion control management.

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

Ordinance Development

In 2017 the City passed an ordinance and associated Stormwater Rules and Regulations (SMRRs) giving authority to enforce and implement aspects of the MS4 Permit associated with reduction of pollutants to the MS4 system and reduction in peak flows associated with new development and redevelopment projects.

Revisions to the SMRRs were promulgated on June 24, 2021 to include supplemental requirements included in the 2016 MS4 Permit. A formal public meeting was advertised and held at DPI in accordance with state public meeting law requirements prior to the SMRR revisions being adopted. Two DPI employees attended the meeting; no one from the public attended. The City continues to work to streamline and update these regulations based on lessons learned and evolving best practices.

As-built Drawings

The City's existing SMRRs currently requires the submittal of as-built drawings. Submittal of as-built drawings are required prior to the issuance of a final certificate of occupancy.

Street Design and Parking Lots Report

The City continues the process of reviewing available ordinances and planning documents for opportunities to promote low impact development designs for streets and parking lots. The street design and parking lot report will be completed by Year 4.

Green Infrastructure Report

The City continues the process of reviewing available ordinances and planning documents for possible implementation of green infrastructure projects or programs. Several pilot green infrastructure projects have been implemented including rain gardens and tree filter boxes. The green infrastructure report will be completed by Year 4.

In May 2021, the City submitted a Municipal Vulnerability Preparedness (MVP) grant to the Massachusetts Executive Office of Energy and Environmental Affairs (EOEA) for the development of a City-Wide Green Infrastructure Master Strategy and Implementation Roadmap. Notice of award will be during the next reporting period.

Retrofit Properties Inventory

The City continues the process of identifying City-owned parcels and gathering GIS information (e.g., soil types, impervious area) that will be used to evaluate retrofit opportunities. The report will be completed by Year 4.

The City has taken initiative to begin planning retrofit projects for City owned properties. During this reporting period the City completed the following:

- The City finalized a design and obtained the required permits for the construction of several rain gardens at the Oneida Street parking lot, which is tributary to Buttonwood Park Pond. This work was completed with a Community Preservation Act Grant.
- The City applied for a Coastal Pollution Remediation Grant through the Office of Coastal Zone Management for the preparation of permits, plans and specifications to complete green infrastructure improvements to the parking lots for East Beach. This area is directly tributary to the Outer Harbor and the project will help improve water quality to waters directly adjacent to City beaches.

MCM 6: Good Housekeeping

Catch Basin Cleaning

The City developed forms for catch basin inspections/cleanings in 2020 that utilizes the Survey 123 application for data collection and allows records to be maintained in ESRI™ ArcGIS software. During this reporting period the City conducted “visual inspections” and “physical inspections” using the Survey 123 forms to record inspection data. Inspection results were used to identify locations and create work orders (created and maintained in Lucity™) for catch basin cleaning.

During this reporting period:

- Number of catch basins visually inspected: 139
- Number of catch basins physically inspected: 1,182
- Number of catch basins cleaned: 850
- Volume or mass of material removed: 2,207 cubic yards

- Number of catch basins in MS4: 2,623
- Number of catch basins in the City: 6,138

No duplicate inspections were completed within the year to identify any catch basins with sumps more than 50 percent full during two consecutive routine inspections/cleaning events.

The City's combined sewer and drainage systems are intricately intertwined. The catch basin cleaning data presented here are for streets that are physically located within the 2010 Census MS4 Regulated Area regardless of whether they discharge to a drainage or combined sewer system.

During this reporting period the City located an additional 339 catch basins not previously mapped in the GIS. Of these located catch basins, 108 are in the MS4. As noted above, all catch basins in the City were GNSS located. Total catch basins that have been located include 2,623 MS4 catch basins and 3,515 catch basins in the combined sewer system and partially separated areas. In total there are 6,138 catch basins in the City.

Street Sweeping

Written procedures for sweeping streets and municipal-owned lots were developed in 2019 and were implemented during this reporting period.

Data for curb miles swept is obtained through a review of driver logged odometer readings on the equipment at the beginning and end of a sweeper operating shift. The City is in the process of reviewing new methods of obtaining this data that would provide a more accurate measure of curb miles being swept. Using the current measuring technique and during this reporting period:

- Total curb miles of streets cleaned: 9,312 miles
- Material removed: 2,574 cubic yards

Every street and municipal owned lot in the City was cleaned at a minimum of two times during the reporting period and is reflected in the above data. Street sweeping is tracked using driver logs.

Note: The City's combined sewer and drainage systems are intricately intertwined. The street sweeping data presented here are for streets that are physically located within the 2010 Census MS4 Regulated Area regardless of whether they discharge to a drainage or combined sewer system.

Winter Road Maintenance

The City reviewed the written procedures for winter road maintenance including the storage of salt and sand (formerly memorialized in 2019). No formal changes were made during this reporting period.

Specific use of organic de-icing agents was reviewed and assessed for the Sassaquin Pond drainage area with the goal of identifying a low/no-phosphorous and/or nitrogen option. The

City continues to assess options for this area. Once an appropriate solution is developed, the City's SOP will be updated.

Inventory of Permittee-Owned Properties

The City completed the inventory of permittee-owned properties in the Year 2 reporting period (2019-2020). The City continues to review and update this list as needed.

No changes were made in Year 3.

O&M Procedures for Parks and Open Spaces, Buildings and Facilities, and Vehicles and Equipment

The City has memorialized standard operating procedures (SOPs) for parks and open spaces, buildings and facilities, and vehicles and equipment. The City continues to review and update SOPs as needed. During this reporting the City did not review or update any existing SOPs for Parks and Open Spaces, Buildings and Facilities or Vehicles and Equipment.

Stormwater Pollution Prevention Plan (SWPPP)

SWPPPs for City owned vehicle/equipment maintenance and storage facilities were completed in 2020 and were based on the best available data at the time of the report development. Initial field investigations of each facility were completed as part of the SWPPP development. During the SWPPP development, the City found that there was limited record drawing data available for the various sites. GIS information was pieced together based on historical knowledge and anecdotal information.

Over the past reporting period, the City has been working to update the existing utility information which has included a detailed review of existing plans, interviews with staff and limited field inspections. Based on this initial inventory, an approach was developed to GPS locate existing utilities, conduct dye testing and complete detailed field inspections to accurately update the utility mapping.

The City believes that the SWPPPs are intended to be a "living document" that is continually updated and refined based on new practices and data. Due to the extensive amount of field investigations and information needed to thoroughly develop an accurate SWPPP, it is the City's goal to implement the next phase of the program in Year 4 and Year 5 of the MS4 permit. In addition, these detailed field investigations will suffice as the first round of official inspections detailed within the SWPPPs.

O&M Procedures for Stormwater Treatment Structures

All of the City's stormwater BMPs are GPS located and within the City's GIS network. Specific preventive maintenance tasks have been created in Lucity™ that align with the formalized written procedures for maintenance of stormwater treatment structures. The City is implementing inspection and maintenance procedures per the SOPs and maintenance schedule established in the asset management system.

The following activities were completed in the current reporting period:

- Detention Ponds – The City conducted cleaning and maintenance of all City owned detention ponds twice during the reporting period. Work orders are created and stored in Lacity™.
- Jelly Fish – The City cleaned and maintained the Jellyfish structure and its supporting catchment system. All material and debris were removed and disposed of from the Jellyfish sump, the filters were cleaned to manufactures specification.
- Tree Filter Boxes – The City installed four tree filter boxes and is developing a maintenance schedule in accordance with manufacturers recommendations and structural BMP SOPs.
- Catch Basin Hoods – The City installed one new catch basin hood during this reporting period.

Additional Information

Administrative Order MS4 Mandates

In December 2019, the City received an Administrative Order from the EPA which requires accelerated MS4 action. In accordance with MS4 actions required under the Administrative Order, the City conducted IDDE investigations of the area tributary to DP-200 including wet weather investigations, dry weather investigations, dye testing and CCTV investigations.

To date the City has completed 99% of investigations in this area and identified three illicit connections (reported on in the MCM3 section of this report). The illicit connections have been removed by contractors hired by the City, in accordance with design drawings developed by the City.

During this reporting period no new illicit connections were identified in the DP-200 area. The City will continue investigations in this area as wells as DP-133 and DP-122 which are also required to be inspected per the Administrative Order.

Monitoring or Study Results

Results from any other stormwater or receiving water quality monitoring or studies conducted during the reporting period not otherwise mentioned previously, where the data is being used to inform permit compliance or permit effectiveness are not applicable:

- N/A

Additional Information

- The City continues to review development and redevelopment projects of all sizes and types with consideration for the SMRR (this includes permits/projects that do not require “site plan reviews”). Reviews are conducted for applicable projects and stormwater BMP’s are implemented to the extent practicable in accordance with the City’s SMRR.
- A separate stormwater permit process is being implemented and the City is being vigilant in enforcing the SMRR. During this reporting period and in addition to full site plan reviews the City reviewed permits for residential additions, residential foundations, commercial parking lots and re-roofing projects. In addition to these reviews the City issued two SMRR

violations for non-compliance and work completed without proper permitting and review. Stormwater projects are currently jointly permitted with wastewater projects.

- The City completed a Watershed Management Plan for Sassaquin Pond that outlines immediate, short term and long-term action items for addressing stormwater quality and quantity within the watershed. During the next reporting period, the City will begin moving forward with recommendations provided in the report as funds are available.

COVID-19 Impacts

The largest impact to the City's MS4 program due to COVID-19 was seen in the Public Outreach schedules and ability to effectively distribute messages given current practices. Unfortunately, all City events beginning on March 10, 2020 through June 30, 2021 were cancelled. In lieu of face-to-face meetings, the City did its best to utilize social media to continue outreach efforts to its residents and commercial/industrial businesses.

As soon as City offices were reopened to the public, all paper outreach materials were made available. In regard to inspections, sweeping and basin cleanings and hindered consultants' ability to enter private residences and confined space for sampling; COVID-19 at times reduced the City's work staff; however, to the extent feasible, the City met its anticipated requirements.

Activities Planned for Next Reporting Period

The SWMP has been, or will be, updated to comply with applicable permit requirements including but not limited to the Year 4 requirements summarized below. The SWMP also has been, or will be, updated to comply with applicable permit requirements for impaired waters and TMDL requirements, not included below.

- Complete street design and parking lot report
- Complete green infrastructure report
- Complete inventory of City owned properties retrofit report
- Complete remaining outfall/interconnection and catchment area screenings and investigations
- Finalize and implement recommendations from the Sassaquin Pond Watershed Plan
- Update and refine the public outreach program

Annual Requirements

- Annual report submitted and available to the public
- Annual opportunity for public participation in review and implementation of SWMP
- Keep records relating to the permit available for 5 years and make available to the public
- Properly store and dispose of catch basin cleanings and street sweepings so they do not discharge receiving waters
- Annual training to employees involved in IDDE program
- Update inventory of known locations where SSOs have discharged to the MS4 in the last 5 years
- Continue public education and outreach program to the extent feasible given COVID-19 restrictions

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- Update outfall and interconnection inventory and priority ranking and include data collected in connection with the dry weather screening and other relevant inspections conducted
 - Continue implementation of the IDDE program
 - Review site plans of construction sites as part of the construction stormwater runoff control
 - Conduct site inspection of construction sites as necessary
 - Inspect and maintain stormwater treatment structures
 - Log catch basins cleaned or inspected
 - Sweep curbed streets at least twice annually
 - Continue investigations of catchments associated with Problem Outfalls
 - Review inventory of all permittee-owned facilities in the categories of parks and open space, buildings and facilities, and vehicles and equipment; update if necessary

In December 2019, the City received an Administrative Order from the EPA which requires accelerated MS4 actions. The following summarizes the Administrative Order MS4 action to be completed in the Year 4 MS4 reporting period (July 1, 2021 through June 30, 2022):

- Begin IDDE investigation of the area tributary to DP-133 (formerly CSO-021) and DP-122
- Complete IDDE investigation of area tributary to DP-200

Section 5

Certification of Small MS4 Annual Report 2021

40 CFR 144.32(d) Certification

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

Name: Jamie Ponte

Title: DPI Commissioner

Signature: 

Date: 9/28/2021