

Annual Report

City of New Bedford, Massachusetts



MS4 General Permit Compliance

Year 4

(July 1, 2021 to June 30, 2022)

September 28, 2022



**CDM
Smith**

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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 4

Reporting Period: July 1, 2021 to June 30, 2022

Primary MS4 Program Manager

Name:	Jamie Ponte
Title:	Commissioner
Department:	Public Infrastructure
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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 lists 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

Year 4 Requirements

Year 4 permit requirements are listed below. Additional information on each of the requirements are discussed in later sections.

- Report Assessing current street design and parking lot guidelines and other local requirements within the municipality that affect the creation of impervious cover
- Report Assessing existing local regulations to determine the feasibility of making, at a minimum, the following practices allowable when appropriate site conditions exist: green roofs, infiltration practices and water harvesting
- Complete Inventory of permittee owned properties with five permittee-owned properties identified for modification or retrofit of BMPs (2.3.6.d)
- Nitrogen Source Identification Report

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.

Nitrogen

Annual Requirements

Public Education and Outreach

- ☒ Distribute an annual message that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release fertilizers.
- ☒ Distribute an annual message encouraging the proper management of pet waste, including noting any existing ordinances where appropriate.
- ☒ Distribute an annual message 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:

- Following Year 4 sampling activities revisions were made to GIS mapping and the City's outfall/interconnection list to include the addition and removal of connections. These revisions are reflected in **Table 2: List of Receiving Waters, Outfalls and Impairments**. (Year4)
- An accounting error in Year 3 had connection 031-10 listed twice in the Priority Ranking of Outfalls/Interconnections Table (**Attachment B**). This connection is tributary to the Inner Harbor. Additionally, the receiving waters of the Acushnet River (MA95-33) was incorrectly listed as having 39 outfalls/interconnections rather than the actual count of 37 outfalls/interconnections. These errors have been corrected in Year 4 and **Table 2: List of Receiving Waters, Outfalls and Impairments** reflects these changes. (Year 4)
- 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. (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)	37	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)	21				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)	11				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 will continue using outlets such as social media and bill stuffers to maximize outreach efforts for targeted audiences in conjunction with the existing in-person efforts DPI implements. The City plans to update public education documents in Year 5.

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

BMP: 1-1: Nitrogen Brochures/Pamphlets

Message Description and Distribution Method

A Nitrogen lawn management pamphlet was developed in 2019. Pamphlets are displayed at the DPI office billing window and the City Clerk's counter.

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 make available continuously through the spring and summer months at the DPI office. During this reporting period the City distributed 50 pamphlets to Buttonwood Park area residents and 50 pamphlets at the City Clerk's Office continuously throughout the reporting period.

Message Date(s)

The pamphlet was displayed and continuously available at the DPI office starting in June 2021. Pamphlets were also distributed by the City Clerk's Office and to residents located near Buttonwood Park.

BMP 1-2: Bacterial/Nitrogen Brochures/Pamphlets

Message Description and Distribution Method

A Scoop the Poop pamphlet was developed in 2019 and was revised in 2021. The pamphlets are distributed to dog owners at the time of issuance or renewal of dog licenses; at local events attended by DPI; presented at educational seminars held at public grade schools and summer programs; to residents living near City parks; and, by the Parks, Recreation, and Beaches Department to individuals visiting that office. The scoop the poop pamphlet was also posted to City social media accounts.

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. During this reporting period: the City distributed 80 pamphlets at the City Clerk's Office; 50 pamphlets at the Parks, Recreation, and Beaches Department; 50 pamphlets were distributed to residents living near Buttonwood Park; in the months of September 2021 and April 2022 the City attended public events with a total attendance of approximately 1,950; and, in the month of November 2021 the pamphlet was shared on the City's Twitter account with a total of 350 impressions.

Message Date(s)

The pamphlets were continuously available at City Hall and the Parks, Recreation, and Beaches office.

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. Pamphlets were displayed at the DPI office at the billing window and posted to City social media accounts.

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. During this reporting period: 50 pamphlets were distributed at City offices; in the month of November 2021 the pamphlet was shared on the City's Twitter account with a total of 304 impressions; and, in the months of September 2021 and April 2022 the City attended public events with a total attendance of approximately 1,950.

Message Date(s)

The pamphlets were available continuously at the DPI office.

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 the Board of Health (BOH) office, and at issuance of permit for temporary dumpsters.

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. During this reporting period 160 pamphlets were distributed to food service establishments and other industries that require FOG permits.

Message Date(s)

Pamphlets were distributed during FOG and IPP inspections throughout the reporting period.

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. The rain barrel program was advertised on the City's social media accounts, at in-person events, and at the DPI office. In addition, rain barrels were recommended for practicable compliance with the City's SMRR for building permit applicants whose existing site conditions and/or limited disturbance areas prevented other structural stormwater BMPs. Rain barrels sold under the City's rain barrel program were distributed at DPI.

Targeted Audience

Residential & Business/Commercial/Institutional

Responsible Department/Parties

Department of Public Infrastructure

Measurable Goals

During this reporting period 61 rain barrels were distributed under the program and the advertisements were posted on Twitter during the months of August 2021 and March 2022 with a total of 352 impressions.

Message Date(s)

Rain barrels were available for order in August 2021 and between March and May 2022.

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 and is discussed during educational presentations at schools and summer camps.

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. During this reporting period: 114 door hangers were distributed; two educational presentations were held with 43 attendees; and, in the months of September 2021 and April 2022 the City attended public events with a total attendance of approximately 1,950.

Message Date(s)

Door hangers were distributed throughout the year in response to complaints, various public events were attended, and multiple educational presentations were held.

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)

During this reporting period the City collected approximately 6,061 gallons of hazardous waste in the months of October 2021 and May 2022. The events were advertised in the months of October 2021, March 2022, April of 2022 and May of 2022 DFFM's Twitter page.

BMP: 1-8: City Construction Standards Meeting

Message Description and Distribution Method

A City Construction Standards meeting was held at the DPI Conference Room on where revisions to the City of New Bedford Department of Public Infrastructure Construction Standards and Specifications made for the 2022 construction season were highlighted. 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 in-person meeting. At the meeting construction site stormwater controls, permitting and inspections were emphasized with attendees.

Targeted Audience

Developers/Contractors

Responsible Department/Parties

Department of Public Infrastructure

Measurable Goals

Hold annual meeting. DPI invited 111 contractors/developers, of which 27 contractors/developers attended the meeting with nine DPI representatives in attendance.

Message Date(s)

The Construction Standards meeting was held in person at the DPI Conference Room April 1, 2021.

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.

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 during the year three reporting period. The pamphlets are issued during FOG inspections.

Targeted Audience

Business/Commercial/Institutional & Industrial

Responsible Department/Parties

Department of Public Infrastructure

Measurable Goals

Distribute pamphlet to the target audience at least once over the permit term at the time of FOG/IPP inspections. During this reporting period 205 pamphlets were distributed.

Message Date(s)

Pamphlets will be made available at the DPI office and distributed to commercial properties throughout the reporting period.

MCM 2: Public Participation

The Stormwater Management Program remains 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.

In addition to the eight MS4 mandated public messages (MCM 1-1 to MCM 1-9), the City held several neighborhood meetings providing general information about the sources of and the effects of stormwater pollution. The City completed green infrastructure designs with public participation and input for the East Beach Parking Lots, Buttonwood Park Senior Center and Brooklawn Park Duck Pond area. Three in-person meetings were held during the design phases of these projects to gather input from the public and to educate the community (these events had a total of 71 attendees).

During this reporting period the City developed a City-wide Green Infrastructure Strategy and Implementation Road Map (Master GI Plan) participation and input from the public. City representatives and consultants attended nine neighborhood meetings with a total of 134 participants in attendance and developed informational handouts that were available in three languages (English, Portuguese, and Spanish). A digital survey was developed and made available for public participation between January 3, 2022 and April 22, 2022 (123 responses were received). The survey questions provided useful opinions and input from the public that was then used in the final report. Additionally, an interview was conducted with City representatives to discuss the benefits of implementing green infrastructure in the community that was aired on local cable access Channel 95 broadcasted to the entire city.

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 City-wide: 4
- Number SSOs removed: 4

SSO Record Keeping:

- Reporting Period (Last 5-years): June 2017 – June 2022
- Number SSOs identified in the MS4 system: 32
- Number of SSOs removed: 32.

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. In Year 3 the City developed a plan to complete all dry weather screening by end of Year 4. During this reporting period the City completed all dry weather screening. 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 100% (285 of 285) of the outfalls and interconnections, excluding those designated as problem or excluded (based on preliminary ranking completed in 2019), have been screened.
- Total Outfalls/interconnections screened during this reporting period (dry weather): 15% (54 of 356)
- To date, total outfalls/interconnections screened (dry weather): 100% (356 of 356)

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 29,165 feet of internal CCTV inspection of storm drains and 593 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 356)
- To date, total catchments investigated (wet weather): 37% (131 of 356)

IDDE Progress

During this reporting period:

- Number of illicit discharges identified: 5
- Number of illicit discharges removed: 2
- Estimated volume of illicit discharges removed: 770 gpd

To date (from July 2018 to June 2022):

- Number of illicit discharges identified: 27
- Number of illicit discharges removed: 14
- Estimated volume of illicit discharges removed: 49,270 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:

- City crews removed one illicit connection at 2734 Acushnet Avenue in July of 2021 and one illicit connection at 278 Harwich Street in January of 2022 at a total cost of \$16,965.81. In total, the City has spent \$126,966.00 removing illicit connections.
- 176 Harwich Street was identified by the City's consultant as having an illicit connection during the first round of sampling and investigations. Their investigation results were non-conclusive as they were unable to enter the property for a dye test, and therefore used information from surrounding properties and record information to determine that 176 Harwich Street had to be the cause of results in exceedance of sampling parameters. DPI crews conducted follow up dye tests after preliminary plans for removal and several site visits contradicted the information provided by the consultant. DPI gained access to the property and conducted a dye test to confirm that 176 Harwich Street is not an illicit connection. During the next reporting period the City plans to conduct further investigation in this area, upstream of 176 Harwich Street, to identify the source causing exceedance of sampling parameters.
- 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 and in previous reporting periods have been prioritized and are planned to be removed by City crews or contractors. Those connections that discharge directly to downstream outfalls have been prioritized for removal over those that are redirected back to the sewer system via weirs. The City will continue to work on securing funding for the removal of illicit connections during the next reporting period. The City will also continue with in-house illicit connection removals for those locations that have site parameters within the construction capabilities of City crews.

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 120 DPI employees throughout June 2022. These presentations were reviewed one-on-one with new hires and any other staff that requested more information.

During this reporting period seven DPI staff attended an Illicit Discharge Detection and Elimination seminar held by UMASS Transportation in December of 2021. The seminar provided updated program information and case studies.

MCM 4: Construction Site Stormwater Runoff Control

During this reporting period:

- Number of site plan reviews completed: 28
- Number of Active Construction Sites Over 1-Acre: 6
- Number of inspections completed: 130
- Number of enforcement actions taken: 2

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, revised in 2021, received no updates during this reporting period.

In addition to sediment and erosion control inspections on sites over one acre, the City monitored and enforced stormwater construction controls on all construction sites, regardless of scope or size. Unofficial inspections were conducted on several sites less than one-acre during this reporting period where contractors were required to add sediment and erosion controls or make repairs to existing controls on the site. These field adjustments were made at the time

contractors were individually given verbal notification and therefore required no corrective actions.

During this reporting period two City inspectors attended training in the months of January 2022 and February 2022 to become certified stormwater inspectors for sediment and erosion controls on construction sites.

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. During this reporting period no revisions were made to the SMRR.

As-built Drawings

The City's existing SMRRs 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

CDM Smith completed a holistic review of City ordinances, regulations, standards and policies, summarized in a memorandum titled "Updates to New Bedford Documents in Support of Low Impact Development" dated April 28, 2020 (Attachment H). The memorandum was developed in compliance with Sections 2.3.6.b (street and parking lots report) and 2.3.6.c (green infrastructure report) of the 2016 MS4 Permit. The City has begun reviewing this memorandum for practicable implementation based on the recommendations provided by CDM Smith. In year five, the City plans to complete the review of this memorandum and develop an implementation approach for inclusion in the final report.

Green Infrastructure Report

In addition to the memorandum included in Attachment H through the Municipal Vulnerability Preparedness (MVP) program, a grant was awarded to the City by the Massachusetts Executive Office of Energy and Environmental Affairs (EOEA), for the development of a City-Wide Green Infrastructure Master Strategy and Implementation Roadmap (Master GI Plan) was completed in June of 2022. In year five, the City will update the memorandum to include findings and proposals of the Master GI Plan.

The City has installed several pilot green infrastructure projects including rain gardens, tree filter boxes and bioswales, discussed in detail in the “Retrofit Properties Inventory” section of this report. During the next reporting period the City will continue to design and install green infrastructure retrofits on City projects when suitable conditions and funding exist utilizing the Master GI Plan as a guide.

Retrofit Properties Inventory

The Master GI Plan includes a list of City-owned properties identified as ideal candidates for retrofitting green infrastructure and low impact development designs. Section 2.3.6.d of the MS4 permit requires that a minimum of five permittee-owner properties be identified as candidates for retrofitting or modifying existing site BMPs to reduce frequency, volume and pollutant loads of stormwater discharges. The Master GI Plan identified a total of 270 opportunities City wide including privately-owned parcels, City-owned parcels, and public rights of way. Of the 270 locations identified, the Master GI Plan details retrofit of 16 City-owned parcels as follows (area in parenthesis is approximate acres proposed for treatment if proposed BMPs are implemented):

- Bolton Street area (1.6-acres)
- Brock Avenue (1.7-acres)
- Brooklawn Street Parking (2.3-acres)
- Sassaquin Pond (0.6-acres)
- “White’s Pond Stream Corridor” Victoria Street/Glen Street/Abrams Street (1.0-acre)
- Kempton Street (3.4-acres)
- Roosevelt School (4.1-acres)
- James B. Congdon School (1.0-acre)
- Riverside Park (1.1-acre)
- Dr. Paul F. Walsh and New Bedford High School Athletic Fields (37-acres)
- Cisco Overflow Parking Lot, East Rodney French Blvd (18-acres)
- Payne Cutlery Vacant Site (15.8-acres)
- New Bedford Police Headquarters, Rockdale Ave (2.4-acres)
- New Bedford Department of Public Infrastructure, Shawmut Ave (3.3-acres)
- Sawyer Street Municipal Parking Lot (0.3-acres)
- Buttonwood Park Zoo Parking Lot (1.85-acres)

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

- The City began construction on Phase II of the Union Street Improvement Project which is to include the installation of two new rain gardens. The rain gardens will be completed, and plantings installed during the next reporting period.
- The City developed plans and obtained permits to begin implementing recommendation from the Sassaquin Pond Watershed Management Plan. These plans include the reduction of impervious cover and installation of low impact designs for drainage swales that discharge to the Sassaquin Pond. These designs will be installed and implemented during the next reporting period.
- The City began developing plans for impervious area removal and the installation of a new traffic island as part of a road rehabilitation project on Mount Pleasant Street at the intersection of Tarkiln Hill Road and Lang Street. Impervious areas will be removed, and design plans will be developed for a green infrastructure/landscaped area at the proposed traffic island during the next reporting period.
- The City installed a new bioswale at the former Hathaway Triangle located at the intersections of Mount Pleasant Street and Hathaway Road. This work was completed as part of a traffic improvement project titled, “Hathaway Road, Mount Pleasant Street and Nauset Street (Hathaway Triangle Improvements)”. The new stormwater BMP will be maintained in accordance with City SOPs.
- The City finalized a design and obtained the required permits for the construction of several rain gardens and stormwater system upgrades at the Oneida Street parking lot at the Buttonwood Park Senior Center, which is tributary to Buttonwood Park Pond (MA 95-13). This work was completed with a Community Preservation Act Grant. The City continues to look for grants for construction funding.
- The City received 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 New Bedford Outer Harbor (MA 95-63) and the project will help improve water quality to waters directly adjacent to City beaches. The grant documents including design plans, permitting and specifications were completed in June of 2022. The City plans to try to secure funding for construction during the next reporting period through additional grant programs.
- The City completed design plans, specifications and received an order of conditions for retrofitting constructed wetlands at the Brooklawn Park duck pond. The constructed wetlands will reduce the peak flow rate and improve the water quality that discharges to the Acushnet River (MA 95-33) via the overflow weir in the duck pond at outfall DP-200. The City will work to secure funding for construction during the next reporting period.
- In June of 2022 the City submitted an MVP grant for the design of green infrastructure improvements along the Kempton Street corridor between Route 140 and Rockdale Avenue. This project was a recommendation out of the Master GI Plan and once fully constructed will address stormwater discharges to Buttonwood Brook (MA 95-13).

- During this reporting period the City installed three new tree filter boxes on Rockdale Avenue as part of the Rockdale Avenue and Allen Street traffic improvement project. These tree filter boxes will be maintained in accordance with City SOPs.
- The Kings Highway Improvement project includes the installation of new rain gardens. Construction began on this project in 2021 and continued during this reporting period. During the next reporting period the new rain gardens will be installed addressing discharge to the New Bedford Inner Harbor (MA 95-42).

MCM 6: Good Housekeeping

Catch Basin Cleaning

The City developed SOPs and 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 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 inspected: 988
- Number of catch basins cleaned: 707
- Volume or mass of material removed: 1,787 cubic yards
- Number of catch basins in MS4: 2,712
- Number of catch basins in the City: 6,378

From July 2018 thru June 2022:

- Number of catch basins inspected: 2,872

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. It is the City's intent to fully inspect all of the catch basins in the City first and then go back to verify sediment deposit rates over time.

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 240 catch basins not previously mapped in the GIS. Of these located catch basins, 89 are in the MS4. All catch basins in the City were GNSS located. Total catch basins that have been located include 2,712 MS4 catch basins and 3,666 catch basins in the combined sewer system and partially separated areas. In total there are 6,378 catch basins in the City.

Street Sweeping

Written procedures for sweeping streets and municipal-owned lots were developed in 2019 and were revised 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 methods and during this reporting period:

- Total curb miles of streets cleaned: 10,681 miles
- Material removed: 2,787 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 4.

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

The City has memorialized 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 update any existing SOPs for Parks and Open Spaces, Buildings and Facilities or Vehicles and Equipment.

Stormwater Pollution Prevention Plan (SWPPP)

Draft 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 compiled based on historical knowledge and anecdotal information.

During this reporting period the City conducted a full walk-through inspection of the DPI Facility. As part of the inspection, follow up investigations of the catchment systems on the property were completed. The information gathered during the walk-through and investigations allowed DPI to update the existing SWPPP for the DPI Facility. The updated DPI Facility SWPPP will be used in the next reporting to conduct quarterly inspections and monitor the effectiveness of existing pollution prevention practices. The City will continue to review the DPI Facility SWPPP on an annual basis and make revisions as needed.

It is the City's goal to complete the remaining revisions and investigations for the Central Garage Facility (under the operation of DFFM) and the Brooklawn Garage Facility SWPPPs during the next reporting period. As with the DPI Facility SWPPP, the City will conduct walk through inspections of each facility and complete the necessary follow-up investigations of the catchment areas. In addition, these detailed field investigations will serve as the next round of official inspections detailed within the SWPPPs.

O&M Procedures for Stormwater Treatment Structures

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 reviewed and revised the SOP for Structural Stormwater BMP maintenance during this reporting period. 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:

- A representative from each of the following City departments obtained green infrastructure certifications: DPI, the Environmental Stewardship, and Parks, Recreation and Beaches. These City representatives attended classes that covered green infrastructure design, installation and maintenance qualifying them to train other City staff in these areas.
- 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 Lucity™.
- Jelly Fish – The City cleaned and maintained the Jellyfish structure on Leroy Street at Sassaquin Pond and its supporting catchment system. All material and debris were removed and disposed of from the Jellyfish sump. The filters were also replaced during this reporting period.

- Tree Filter Boxes – The City installed two new tree filter boxes in addition to the four installed in previous reporting periods and is developing a maintenance schedule in accordance with manufacturers recommendations and structural BMP SOPs.
- Rain Gardens – The City performed maintenance on rain gardens that were installed during Phase I of the Union Street Improvements. Trash and debris were removed and new plantings and mulch were installed. The City will continue to perform maintenance on these and any newly installed rain gardens in accordance with SOPs.
- Bioswales – A new Bioswale was completed at the Hathaway Triangle Traffic Improvement Project. The City will review the Structural Stormwater BMPs SOP and make necessary revisions to include the maintenance of this Bioswale. A maintenance schedule will be developed and implemented with Lucity™ during the next reporting period.

Additional Information

Nitrogen Source Identification Report

In year four the City completed various initiatives simultaneously, that collectively will be used in the development of the nitrogen source identification report. The City completed the Master GI Plan on June 30, 2022. The plan includes an analysis of the City's drainage infrastructure and development of appropriate BMPs based on several factors including but not limited to receiving water impairments. The plan also analyzed all City owned properties for potential retrofits of green infrastructure that would reduce pollutant loading. In addition, the City continued efforts to complete sampling and investigations of outfalls and interconnections. Because all of these ongoing initiatives impact the recommendations of the Nitrogen Source Identification Report the City delayed completion until the ongoing projects could be completed. With results from these efforts the City plans to complete the nitrogen source identification report in year 5.

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 is required to complete IDDE investigations in areas tributary to DP-200, DP-133, DP-122/201, Outfall 023, Outfall 024, and Outfall 016. Work in DP 200 was previously completed. During this reporting year, IDDE investigations occurred in DP 133, DP 122/201, Outfall 023, Outfall 024 and Outfall 016 tributary areas including wet weather investigations, dry weather investigations, dye testing and CCTV investigations.

Based on the work completed to date, the following summarizes the status of each of the above areas:

- DP-200 – 100-percent complete
- DP-133 – 90-percent complete. Dye testing remains to be completed.
- DP-122/201 – 100-percent complete
- Outfall 023 – 100-percent complete

- Outfall 024 – 90-percent complete. Dye testing remains to be completed.
- Outfall 016 – 100-percent complete

In addition to the above areas, drainage connection downstream of CSO regulators is also being investigated in the above noted areas. Approximately 50-percent of the work is complete on those IDDE efforts.

In total four illicit connections have been located of which three have been removed (reported on in the MCM3 section of this report). The illicit connections have been removed either by contractors hired by the City or in-house City crews, in accordance with design drawings developed by the City.

During this reporting period one new illicit connection was identified in the above listed areas. The City will continue investigations in these areas which are 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 following additional information supports compliance with the permit:

- 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 continues to be 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 five SMRR violations for non-compliance and work completed without proper permitting and review. Stormwater projects are currently jointly permitted with wastewater projects. During this reporting period the City issued 24 stormwater permits.
- The City will review and update the Stormwater Management Plan (SWMP) in year 5 with emphasis on lessons learned, revised methods of meeting compliance with the MS4 permit and 2020 modifications to the 2016 MS4 permit. All revision meetings and reviews will be implemented in accordance with state public notice requirements (MGL Chapter 30A, Sections 18-25).
- The City developed a New Bedford Resilient website (<https://nbresilient.com/home>) in 2021 that provides informational documents on resiliency, encompassing the use of

nature-based solutions to address issues associated with climate change. It also contains City plans for stormwater related topics such as green infrastructure, natural resource protection and lowering the City's carbon footprint. The website is maintained and updated by the City, evolving with industry standards, scientific information available and City plans/initiatives.

COVID-19 Impacts

City offices were opened to the public in June 2021 following closure resulting from the Covid 19 pandemic. As noted in the Year 3 MS4 Annual Report, all paper outreach materials were made available again at various locations around the City.

Activities Planned for Next Reporting Period

Year 5 Activities

- Complete the Nitrogen Source Identification Report
- Complete revisions and finalize SWPPPs for the Central Garage Facility and the Brooklawn Garage
- Review and update the City's SWMP to comply with applicable permit requirements and changes in operational practices
- Continue implementing recommendations from the Sassaquin Pond Watershed Plan
- Complete updating and refining 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
- 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, including removal of illicit connections
- 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
- Review and revise SOPs
- Implement DPI Yard Facility SWPPP

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 5 MS4 reporting period (July 1, 2022 through June 30, 2023):

- Finalize IDDE investigation of the area tributary to DP 133, DP 122/201, Outfall 023, Outfall 024 and Outfall 016 tributary areas
- Finalize the report and data summary of the above IDDE investigations.
- Begin a second phase of IDDE investigations in areas tributary to Outfall 003, Outfall 026 and Outfall 027.

Section 5

Certification of Small MS4 Annual Report 2022

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: 9/28/2022

