NPDES PII SMALL MS4 GENERAL PERMIT ANNUAL REPORT

Lowell Regional Wastewater Utility

NPDES Permit Number: MA0100633
Report Date: April 30, 2025

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MS4 ANNUAL REPORT

CERTIFICATION STATEMENT

I certify under penalty of perjury 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, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

4/30/2025

Aaron Fox

Executive Director

Lowell Regional Wastewater Utility

Date

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PART I. GENERAL INFORMATION

Municipality/Organization: City of Lowell, Massachusetts / Lowell Regional Wastewater Utility

EPA NPDES Permit Number: MA0100633

MADEP Transmittal Number: W-040991

Annual Report Number: No. 22

Annual Reporting Period: April 2024 – March 2025

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PART II. SELF-ASSESSMENT

Past Program Overview:

In 2003, the Lowell Regional Wastewater Utility (LRWWU) contracted field inspections of stormwater outfalls within the City. City maps provided initial locations for field crews to complete visual inspections of outfalls along the City's municipal waterways and wetlands. An outfall data sheet was completed for each outfall located in the field, and the location of the outfall was added to a master outfall map. If an outfall had observed dry weather flow at the time of inspection, the outfall was identified for later follow-up sampling and water quality analysis. In total 193 total outfalls were inspected, with nineteen (19) outfalls showing signs of dry weather flow, or evidence of potential illicit connections.

In 2010, the City of Lowell initiated a new drainage outfall identification project. After a decade of implementing this program, approximately 400 drainage outfalls were identified in the field, characterized in an inventory report, and captured in the City's Geographical Information System (GIS). During this time, eighty-two (82) drainage outfalls were recorded to have dry-weather flow. In 2019, these 82 outfalls were inspected and assessed; if dry-weather flow was still present, and if water levels in the receiving streams were below the invert of the outfall, a sample was collected for analysis. These samples were analyzed for pH, conductivity, dissolved oxygen, turbidity, temperature, E. coli, and fluoride; physical and olfactory conditions of the samples were also recorded. Eighteen (18) of the 82 samples resulted in E. coli levels over 235 E. coli colonies per 100 mL. In October 2021, an additional sampling effort was made to inspect these 18 outfalls where a combination of significant dry weather flow and high E.coli levels were previously observed. This led to seventeen (17) outfall inspections; samples were collected once again where dry weather flow was present. Results obtained from this round of sampling were used to prioritize future catchment mapping and tracing efforts.

In 2022, Lowell Wastewater engineering staff consolidated existing data from multiple sources, and used both desktop analysis and field verification to improve the accuracy of the existing GIS mapping data. Recorded outfalls were queried based on parcel ownership; outfalls that fell on a non-municipally owned parcel and without municipal connections were deemed private and were omitted from the total count of Lowell's municipal outfalls.

Until recently, the City was operating solely under the 2003 Small MS4 General Permit. In 2023, the regulatory agencies, along with the U.S. Department of Justice and the Commonwealth of Massachusetts Department of Justice, and the City and the Utility completed negotiations to develop a new Consent Decree (CD) with remedial measures to address violation findings (NPDES permit, Section 301(a) of the Clean Water Act and provisions of the 2003 Small MS4 General Permit). The CD was fully executed and filed with the US District Court on May 17, 2024 (Case: 1:24-cv-1290-DJC, Document 13) In accordance with the CD, the City shall remain under the 2003 MS4 permit with additional requirements stipulated per the CD.

Requirements of the CD include:

- The development of an Illicit Discharge Detection Elimination (IDDE) Program,
- Additional stormwater mapping requirements,
- Utilization of Best Management Practices in stormwater management design,
- Updates to ordinances to address pre- and post-construction stormwater controls, and
- Updates to this Stormwater Management Program (initially issued in 2003) to update the Minimum Control Measures (MCM) and Best Management Practices (BMPs) to minimize the impact of phosphorus, including a Phosphorus Source Identification Report and development of an BMP demonstration project on a municipal property.

A proactive effort to ensure compliance with the CD requirements was made throughout the active negotiation period. This effort included restructured employee training to address the additional stormwater mapping requirements, the development and submittal of an updated Illicit Discharge Detection Elimination Program and Stormwater Management Program: both plans submitted on December 31, 2023; and updates to the City's stormwater ordinance to address pre- and post-construction stormwater controls: adopted January 2, 2024.

Permit Year Twenty-Two Efforts:

In preparation for tentative re-permitting issuance by the regulatory agencies, the Utility made substantial efforts towards upgrading its stormwater program to meet the expected requirements of an individual stormwater permit. Major activities are summarized below:

- Lowell wastewater engineering staff continued sampling municipal drainage outfalls for the updated parameters outlined in the consent decree. These parameters include ammonia, chlorine, conductivity, salinity, surfactants, temperature and turbidity. As a result of this sampling effort, thirty-one (31) outfall inspections took place during Permit Year Twenty-Two. Of these inspections, seventeen (14) were conducted during wet-weather conditions, and seventeen (17) were conducted during dry-weather conditions.
- Over the course of the reporting year, the Utility interviewed, procured and onboarded private engineering services to provide support towards the City's stormwater program and to assist in compliance with Consent Decree requirements.
- In Spring 2024, the Utility completed its upgrade to the ArcGIS Enterprise platform, improving field data collection capabilities and providing a more robust data structure. As part of this effort, the Utility completed an initial delineation of drainage catchments throughout the City by overlaying existing mapped drainage systems with topographic data.

- In July 2024, the Utility participated in the annual Lowell Folk Festival. Members of the Utility's engineering and maintenance departments worked at a promotional Lowell Wastewater booth, through which they educated the public on Lowell's MS4 and stormwater management program.
- In Fall 2024, in collaboration with newly onboarded engineering services, the Utility completed a virtual assessment of its municipal outfalls with respect to ownership and system interconnectivity. As part of this effort, it was determined that the City's MS4 contains Three hundred nineteen (319) municipally owned discharge points. Thirty-one (31) of these discharge points are at interconnections with other privately owned MS4s and drainage systems.
- In October 2024, as part of the IDDE plan development process and onboarding of new private engineering services, an assessment and ranking of Lowell's municipally owned outfalls was performed to prioritize future investigatory activities.
- In December 2024, the Utility's Engineering Department expanded its total number of personnel to include two (2) newly created field technician positions to assist in the successful implementation of the SWMP and IDDE Plan.

Lowell Regional Wastewater Utility (LRWWU) has formalized its approach for mapping drainage systems throughout the City of Lowell. A drainage system is first mapped in its entirety, starting at the outfall and working upstream. Mapping staff are equipped with the necessary tools, including an iPad with access to the City's GIS network through Esri's collection of field worker applications. LRWWU obtains GPS coordinates for all the catch basins, drain manholes, and outfalls using a Leica GG04+ receiver and edits/records data using ArcGIS Collector software. This allows LRWWU to obtain high-accuracy location information on each asset and will support better understanding of the dynamics of stormwater flow through the drainage system as system mapping progresses. A detailed overview of this mapping process can be found in the Utility's Illicit Discharge Detection and Elimination (IDDE) Program overview document hosted on the City's website.

Three (3) illicit discharges were discovered during the Permit Year.

The first illicit discharge was discovered in April 2024 by a DPW field crew when a broken grinder pump in a private sewer service caused sewage to overflow into a nearby municipal catch basin. The receiving catch basin outfall was submerged under standing water and no signs of sewage were present at the outlet – the illicit discharge was contained to the catch basin. The impacted catch basin was cleaned, and sandbags and wood mulch were spread around the area of impact to contain and prevent additional surcharge from entering the MS4 while the homeowner repaired the grinder pump. A new grinder pump was installed and put into operation shortly after discovery.

The second illicit discharge occurred in July 2024 and was brought on by a blockage in a commercial restaurant's sewer service, which caused the connecting grease trap to overflow used frying oils and grease into a private catch basin. Investigation revealed that this catch basin was connected to local waterbody: MassDEP was promptly notified of environmental impact. As a result, the impacted infrastructure was thoroughly cleaned. Lowell maintenance personnel equipped with municipal Vac-Con were sent to clean the impacted infrastructure, while private cleaning services were brought in for environmental remedial cleaning.

The third illicit discharge was initially found at the end of January 2025 during CCTV inspection of a municipal drainage system; signs of sewage were found downstream of a lateral connection. In March

2025, this later connection was confirmed via dye testing to be a residential sewer service. This illicit is scheduled to be removed early in the next Permit Year.

Green Infrastructure/Low Impact Development (GI/LID) features were considered but not implemented as a potential solutions due to the nature of these illicit discharges.

The City of Lowell approves construction plans that conform to City policies for erosion control and site stormwater management. Private property development projects are reviewed by several city departments for adherence to Massachusetts Stormwater Regulations when applicable. The stormwater management of areas outside of MS4 jurisdiction are regulated by Lowell standards and specifications that are being actively developed.

The City of Lowell has continued with its long standing street sweeping and catch basin cleaning programs to reduce the migration of solids in the City's drainage system. After catch basins are cleaned, the City of Lowell labels the basins, as needed, and collects vital information such as physical characteristics, GPS locations, and all elevations of these catch basins. The Utility hires a contractor to clean drainage system catch basins and coordinates this work with the contractor using an iPad and ArcGIS Workforce software. The contractor collects a digital survey for each catch basin cleaned, measures a pre- and post-clean sump depth, records photographs of the basin after cleaning, and documents any potential illicit connections entering the catch basin. In-house collections systems staff support the contracted catch basin cleaning services in this effort. During Permit Year Twenty-Two approximately one thousand, seven hundred thirty-one (1,731) drainage system catch basins were cleaned by contracted and in-house staff.

The City of Lowell has completed the required self-assessment and has determined that the municipality is in compliance with its MS4 permit conditions.

PART III. SUMMARY OF MINIMUM CONTROL MEASURES

TABLE 1: MCM 1, PUBLIC EDUCATION AND OUTREACH PROGRAM

BMP #	BMP Media/Category	BMP Description	BMP Purpose	Targeted Audience	Responsible Department/Parties	Measurable/Deliverable Goal – Permit Year Twenty-Two (2024)
1-1	Community Events	Participate in various community events held throughout the year. Utilize various messaging tools (i.e. visual displays, posters, or kiosks) to convey general stormwater overview and information regarding how residents can help mitigate the impacts of stormwater runoff.	To educate the public on Lowell's MS4 system and the impacts of stormwater runoff.	Residents; Business	Utility	Public events that were attended by Utility personnel during the Permit Year include: • Centralville Neighborhood Action Group Meeting – 4/1/2024; • City Council Meeting – 6/4/2024 • Lowell Folk Festival – 7/27/2024; • Lowell Folk Festival – 7/28/2024; • Neighborhood Subcommittee Meeting – 9/24/2024 • Conservation Commission Meeting – 9/25/2024 • Centralville Neighborhood Action Group Meeting – 11/4/2024; • Belvidere Neighborhood Meeting – 11/13/2024 • Lowell Conservation Commission Meeting – 2/26/2025.
1-2	School Program/Curricula	Distribute educational materials on the MS4 and impacts of stormwater runoff to local schools. Teach children what residents can help prevent stormwater pollution.	To educate students on Lowell's MS4 system and the impacts of stormwater runoff.	Residents	Utility, Lowell Public Schools	The Utility did not visit local schools in their classrooms during the Permit Year. The Utility conducted tours of Duck Island for various schools, including Minuteman High School, Essex North Shore Agricultural and Technical School, and the University of Massachusetts, Lowell. The Utility procured an Enviroscape Watershed model as an interactive means to showcase the effects of non-point source pollution on a watershed. The Utility plans to visit two (2) classrooms during the following Permit Year as this program is further expanded and developed.
1-3	Online Messaging	Post flyer/pdf/fact sheet(s) on the City's website. Include educational messages on best practices for: preventing illegal discharges, automotive maintenance & washing, fertilizer management, swimming pool water disposal, grass clipping disposal, & pet waste disposal. Post on social media about the following message topics at the appropriate times and link to the posted material: Grass clipping disposal (Spring), Fertilizer management (Spring), Pet Waste Disposal (Summer)	To educate the public on the effects and impacts of non-allowable stormwater discharges. More information as to how this BMP is part of the Utility's plan to minimize phosphorus in stormwater can be found in Section 6.1.1.	Residents; Business, Institutions, and Commercial	Utility	Four (4) posts were made to the City website and social media pages during the reporting term.

BMP #	BMP Media/Category	BMP Description	BMP Purpose	Targeted Audience	Responsible Department/Parties	Measurable/Deliverable Goal – Permit Year Twenty-Two (2024)
1-4	Erosion Control/LID/GI messaging	Attach educational flyer on Erosion Controls, Low Impact Design (LID), and Green Infrastructure technologies to Stormwater Permit applications.	To promote proper stormwater control practices to properties undergoing redevelopment	Residential, commercial, and industrial properties undergoing redevelopment	Utility, DPD	Stormwater Permits were issued to eighteen (18) projects over the course of the Permit Year.
1-5	Pet Waste Management	Insert Flyer/Brochure into Dog Licenses at the time of dog license issuance/renewal. Educate and encourage pet owners to pick up after their pets. Work with Parks Department to post signs in public parks reminding pet owners to pick up after their pets.	Phosphorus and Bacteria Impairments	Residential Pet Owners	Utility, City Clerk, DPW	Dog licenses are issued to all dogs aged three (3) months or older on an annual basis. During Calendar Year 2024, eight hundred fifty-two (852) dog licenses were issued by the City. No signs were (re)placed during the reporting term.

TABLE 2: MCM 2, PUBLIC INVOLVEMENT AND PARTICIPATION PROGRAM

BMP #	BMP Media/Category	BMP Description	BMP Purpose	Targeted Audience	Responsible Department/Parties	Measurable/Deliverable Goal – Permit Year Twenty-Two (2024)
2-1	State Public Notification Compliance	The SWMP, all documents submitted to the EPA for TMDL/Impairment Requirements, and all annual reports will be made available online for the public to view.	To increase public awareness of the City's SWMP.	Residents; Business, Institutions, and Commercial	Utility	The Utility makes all reporting available to the public through the Reports and Plans page on its website: Reports and Plans | Lowell, MA.
2-2	Hold Tours of the Duck Island Wastewater Treatment Utility	Hold tours of the Duck Island Wastewater Treatment Utility for the public. Showcase the various forms of green infrastructure BMPs present at the Utility.	To educate the public on Lowell's MS4 system, GI/LID, and the impacts of stormwater runoff.	Residents	Utility	The Utility held tours of the Duck Island Wastewater Treatment Utility for various groups and stakeholders during the reporting period. Tours of the Utility were held on the following dates, for the following groups: • 4/10 – University of Massachusetts, Lowell • 4/10 – Minuteman High School • 4/18 – University of Massachusetts, Lowell • 4/30 – State Senators Ed Kennedy and Bruce Tarr and Legislation • 6/6 – Lowell City Council • 6/25 – Northern Middlesex Coalition of Government • 1/25 – Essex North Shore Agricultural and Technical School
2-3	Sponsor Local Cleanup Events	Sponsor local cleanup events throughout Lowell that see to the cleaning of local wetlands, streets, waterbodies and other areas with the potential to impact the local MS4.	To increase public awareness and involvement of the City's SWMP. To provide the public an opportunity to actively participate in the execution of the SWMP.	Residents	Utility, DPW	The Utility sponsored forty (40) local cleanup events through ongoing partnership with the Lowell Litter Krewe during the reporting term. An average of five (5) cleanup events occurred every month between April through November, with an average of seventeen (17) volunteers participating in each event.
2-4	Hold Monthly/Semi-Annual Household Hazardous Waste Collection Days	Hold monthly hazardous waste collection days for public to safely dispose of hazardous wastes. Hold semi-annual hazardous waste collection days for public to safely dispose of a larger assortment of hazardous wastes.	To prevent the spread of hazardous materials from entering the local MS4. To provide the public an opportunity to actively participate in the execution of the SWMP.	Residents	Utility, DPW	The Department of Public Works held a Household Hazardous Waste Collection Day on 8/31/2024. This was one of two events to be held during the calendar year, however, it was the only event to fall during the Permit Year. The Utility held monthly Household Hazardous Waste Collection Days, dubbed "Material Saturdays", on the last Saturday of every month. During the Permit Year, these events occurred on 4/27, 5/25, 6/29, 7/27, 8/31, 9/28, 10/26, 11/30, 12/28, 1/5, 2/22, and 3/29. More information regarding these events can be found on the City's website: Disposal Events | Lowell, MA.

BMP #	BMP Media/Category	BMP Description	BMP Purpose	Targeted Audience	Responsible Department/Parties	Measurable/Deliverable Goal – Permit Year Twenty-Two (2024)
2-5	Continue Involvement with Local Advocacy Groups	Foster and maintain involvement with local advocacy groups throughout the Merrimack River Valley.	To increase public awareness and involvement of the City's SWMP.	Institutions	Utility	The Utility partnered with the following advocacy groups during the Permit Year: • Northern Middlesex Council of Governments (NMCOG); • Merrimack River Watershed Council (MRWC); • Merrick Vally Planning Commission (MVPC); • MA Statewide Municipal Stormwater Coalition (MSMSC); • MA Coalition for Water Resources Sterwardship (MCWRS); • Lowell Litter Krewe (LLK); • OARS; • Mosaic Lowell.

TABLE 3: MCM 3, ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

BMP #	BMP Media/Category	BMP Description	BMP Purpose	Targeted Audience	Responsible Department/Parties	Measurable/Deliverable Goal - Permit Year Twenty-Two (2024)
3-1	Ordinance Update	Develop and make effective an IDDE ordinance or other regulatory mechanism to effectively prohibit non-stormwater discharges to the MS4 and implement appropriate enforcement actions.	To afford the Utility the authority needed to execute the IDDE Program.	Residents, Business, and Commercial	Utility	Chapter 272 Part 6 of City Ordinance updated with respect to IDDE control: City of Lowell, MA Management of Stormwater. The Utility shall continue proper enforcement of the IDDE ordinance and will continue to implement and enforce corrective measures to fully resolve any known illicit discharges impacting Lowell's MS4.
3-2	IDDE Program Plan Updates	Update IDDE Program documentation as necessary to reflect progress and changes based on results obtained over the course of plan implementation.	To ensure that a progressive and successful IDDE Program is in effect.	Residents, Business, Institutions, and Commercial	Utility	Lowell's IDDE Plan was not updated during the Permit Year. An up-to-date copy of the IDDE Plan can be found on the Utility's website: Reports and Plans | Lowell, MA.
3-3	Sanitary Sewer Overflow (SSO) Inventory	Maintain updated list and documentation of SSOs in Lowell.	To develop a better understanding of SSOs in Lowell, their impact to the local MS4, and to better prioritize solution-oriented efforts to resolve underlying causes of SSOs.	Residents, Business, Institutions, and Commercial	Utility	The Utility actively maintains a Sanitary Sewer Overflow (SSO) Inventory list that is updated and shared on a semi-annual basis as part of compliance reporting requirements, as well as in IDDE Plan submittal updates. A total of twelve (12) SSO's occurred during the Permit Year: • One (1) SSO occurred on 4/10/2024; • One (1) SSO occurred on 4/11/2024; • Four (4) SSO's occurred on 8/15/2024; • Three (3) SSO's occurred on 8/19/2024; • One (1) SSO occurred on 10/20/2024; • One (1) SSO occurred on 11/8/2024; • One (1) SSO occurred on 3/27/2025.
3-4	Dry/Wet Weather Outfall Screening and Sampling	Screen and sample all known municipal outfalls during both dry and wet weather conditions. Sample and analyze all observed flows to be leaving municipal outfalls during these screenings. Prioritize follow-up catchment investigations based on the results of these screenings.	To identify Potential Illicit Discharges impacting Lowell's MS4 To better understand the state of the municipal drainage system.	Residents, Business, Institutions, and Commercial	Utility	Seventeen (17) outfalls were inspected during dry-weather, and fourteen (14) outfalls were inspected during wet-weather during the Permit Year. Screening and sampling results are shared on a semi-annual basis as part of compliance reporting requirements, as well as in IDDE Plan submittal updates.
3-5	Catchment Investigations/Mapping	Investigate catchments with observed Potential Illicit Discharges based in priority order to locate source following protocol described in IDDE Plan. Map key municipal drainage structures as part of this process.	To locate the source of Potential Illicit Discharges uncovered during outfall screening/sampling. To better understand the state of the municipal drainage system.	Residents, Business, Institutions, and Commercial	Utility	Twenty (20) catchments were investigated during the reporting term. This was performed through a combination of field investigations and desktop exercise. Fifty-five (55) key drainage structures were mapped as part of this effort, of which twelve (12) were newly identified. Results obtained through this effort will be shared as part IDDE Plan submittal updates.

BMP #	BMP Media/Category	BMP Description	BMP Purpose	Targeted Audience	Responsible Department/Parties	Measurable/Deliverable Goal - Permit Year Twenty-Two (2024)
3-6	Illicit Discharge Elimination and Removal	Eliminate confirmed Illicit Discharges located during catchment investigations following protocol described in IDDE Plan.	To eliminate verified Illicit Discharges located in the municipal drainage system.	Residents, Business, Institutions, and Commercial	Utility	Three (3) illicit discharges were discovered during the Permit Year. The first illicit discharge was brought on by a broken grinder pump in a private sewer service causing sewage to overflow into a nearby municipal catch basin. A new grinder pump was installed and put into operation shortly after discovery. The second illicit discharge was brought on by a blockage in a commercial restaurant's sewer service, which caused the connecting grease trap to overflow used frying oils and grease into a private catch basin. Lowell maintenance personnel equipped with municipal Vac-Con were sent to clean the impacted infrastructure, while private cleaning services were brought in for environmental remedial cleaning. The third illicit discharge was identified during CCTV inspection of a municipal drainage system; signs of sewage were found downstream of a lateral connection, which was confirmed via dye testing to be a residential sewer service. This illicit is scheduled to be removed early in the next Permit Year. GI/LID features were not considered or implemented as potential solutions to resolve these illicit discharges, given the nature of the illicit sources. More information about these Illicit Discharges can be found and shared as part of IDDE Plan submittal updates and Semi-Annual Compliance reports.
3-7	IDDE Training	Train municipal staff members on the Utility's IDDE protocols outlined in the IDDE Plan.	To improve municipal understanding of the IDDE Program.	Utility	Utility	IDDE training events pertaining to proper sampling methodologies, catchment mapping procedures, and good housekeeping practices were held on April 16, 2024 and May 30, 2024. Three (3) municipal employees participated in these training events. Two (2) municipal employees completed Stormwater Permit Inspector training recertification offered by the National Stormwater Center on December 19, 2024. Three (3) municipal employees completed Stormwater Permit Inspector training certification offered by the National Stormwater Center on February 20 and February 21, 2025.

TABLE 4: MCM 4, CONSTRUCTION SITE STORMWATER RUNOFF CONTROL PROGRAM

BMP #	BMP Media/Category	BMP Description	BMP Purpose	Targeted Audience	Responsible Department/Parties	Measurable/Deliverable Goal - Permit Year Twenty-Two (2024)
4-1	Ordinance Update	Develop and make effective an ordinance to require sediment and erosion control at construction sites.	To afford the Utility the authority needed to implement construction site stormwater runoff control measures.	Residents, Business, and Commercial	Utility	Chapter 272 Part 6 of City Ordinance updated with respect to sediment and erosion control: City of Lowell, MA Management of Stormwater. The Utility shall continue proper enforcement of the sediment and erosion control ordinance and will continue to implement and enforce corrective measures as necessary.
4-2	Sediment and Erosion Control Application – Stormwater Permit Issuance	Continue to apply Standard 8 of MA Stormwater Policy, in line with Lowell's updated construction site stormwater runoff control ordinance.	To reduce pollutants in stormwater runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre, or where the disturbance is less than one acre, but is part of a larger common plan of development or sale.	Residents, Business, and Commercial	Utility, Conservation Commission	Forty-eight (48) projects went before Lowell's Conservation Commission during the reporting term. Of these projects, ten (10) were subject to MA Stormwater Standards.
4-3	Construction Site Inspections	Inspect sites subject to sediment and erosion control measures during construction to ensure proper function. Enforce ordinance and corrective measures, as necessary.	To reduce pollutants in stormwater runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre, or where the disturbance is less than one acre, but is part of a larger common plan of development or sale.	Residents, Business, and Commercial	Utility, City Engineering	Sites subject to sediment and erosion control measures during construction were inspected to ensure proper function. One (1) site was found to be in violation of its erosion control plan, having failed to install proper control measures. The project owner and engineer were informed of this non-compliance, and appropriate control measures were installed.

TABLE 5: MCM 5, POST CONSTRUCTION STORMWATER MANAGEMENT FOR NEW DEVELOPMENT AND REDEVELOPMENT PROGRAM

BMP #	BMP Media/Category	BMP Description	BMP Purpose	Targeted Audience	Responsible Department/Parties	Measurable/Deliverable Goal - Permit Year Twenty-Two (2024)
5-1	Ordinance Update	Develop and make effective an ordinance to address post-construction runoff from new development and redevelopment.	To afford the Utility the authority needed to implement post-construction runoff stormwater runoff control measures for qualifying new development and redevelopment projects. More information as to how this BMP is part of the Utility's plan to minimize phosphorus in stormwater can be found in Section 6.1.1.	Residents, Business, and Commercial	Utility	Chapter 272 Part 6 of City Ordinance updated with respect to post-construction stormwater runoff control: City of Lowell, MA Management of Stormwater. The Utility shall continue proper enforcement of the post-construction stormwater runoff control ordinance and will continue to implement and enforce corrective measures as necessary.
5-2	Post-Construction Stormwater Runoff Control Application	Apply post-construction stormwater runoff control measures to construction activities that result in a land disturbance of greater than or equal to one acre, or where the disturbance is less than one acre, but is part of a larger common plan of development or sale.	To reduce pollutants in stormwater runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre, or where the disturbance is less than one acre, but is part of a larger common plan of development or sale.	Residents, Business, and Commercial	Utility	Sixteen (16) projects were subject to post-construction stormwater runoff control measures during the reporting term. Sixteen (16) stormwater permits were issued for projects subject to post-construction stormwater runoff control measures during the reporting term
5-3	Post-Construction Stormwater Runoff Control As-built Plans	Require as-built records to be submitted within six months of construction.	To reduce pollutants in stormwater runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre, or where the disturbance is less than one acre, but is part of a larger common plan of development or sale.	Residents, Business, and Commercial	Utility, DPD	Zero (0) as-built records were received during the Permit Year.
5-4	Post-Construction Stormwater Runoff Control Site Inspections	Inspect sites subject to post-construction stormwater runoff control measures, as needed, to ensure proper function. Enforce ordinance and corrective measures, as necessary.	To reduce pollutants in stormwater runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre, or where the disturbance is less than one acre, but is part of a larger common plan of development or sale.	Residents, Business, and Commercial	Utility, City Engineering	Sixteen (16) sites were inspected during the reporting term. Zero (0) ordination violations were observed as a result of these inspections.

TABLE 6: MCM 6, POLLUTION PREVENTION / GOOD HOUSEKEEPING PROGRAM

BMP #	BMP Media/Category	BMP Description	BMP Purpose	Targeted Audience	Responsible Department/Parties	Measurable/Deliverable Goal - Permit Year Twenty-Two (2024)
6-1	Catch Basin Cleaning Program	Conduct ongoing catch basin cleaning.	To ensure that catch basins are free of debris and can effectively collect and convey stormwater runoff. To mitigate pollutants impacting the MS4.	Municipality, Residents, Business, and Commercial	Utility, DPW	One thousand, seven hundred thirty-one (1,731) drainage catch basins were cleaned during the reporting term. This accounts for 51.6% of all mapped drainage catch basins.
6-2	Street Sweeping Program	Conduct street sweeping of all municipal owned streets and parking lots at a minimum frequency of twice per year.	To reduce pollutants in stormwater runoff to the MS4 from municipal roadways and parking lots. More information as to how this BMP is part of the Utility's plan to minimize phosphorus in stormwater can be found in Section 6.1.1.	Municipality, Residents, Business, and Commercial	DPW, Utility	The DPW deploys two (2) municipal street sweepers throughout the year, weather permitting. Each street sweeper sweeps approximately 100 miles of roadway in an average month. During the Permit Year, approximately 2,000 miles of roadway were swept.
6-3	Salting and Snow Removal Practices	Continue existing programs for salt storage/use and management, especially in sensitive areas.	To reduce pollutants in stormwater runoff to the MS4 from municipal paved areas.	Municipality, Residents, Business, and Commercial	DPW, Utility	Continue existing program.
6-4	Park and Landscape Maintenance	Minimize the application of herbicides, pesticides, and fertilizers on city-owned land. Establish practices for managing grass clippings and leaf litter on all City owned property.	To reduce pollutants in stormwater runoff to the MS4 from municipal parks and landscaped areas. More information as to how this BMP is part of the Utility's plan to minimize phosphorus in stormwater can be found in Section 6.1.1.	Municipality, Residents	DPW, Parks Department	Continue existing program.
6-5	Municipal Stormwater Pollution Prevention Plans (SWPPPs)	Develop and implement Stormwater Pollution Prevention Plans for qualifying municipal properties.	To reduce pollutants in stormwater runoff to the MS4 from qualifying municipal properties.	Municipality	Utility, DPW, Water Department	SWPPP inspections were completed for Duck Island, the DPW, the municipal landfill, and the Water Department. A summary of Duck Island's SWPPP inspections is submitted annually.
6-6	Employee Training	Train municipal staff members on topics relevant to stormwater quality	To improve municipal understanding of the SWMP.	Municipality	Utility	Training pertaining to the SWMP and municipal SWPPPs occurred on 6/28/2024. Six (6) municipal employees participated in this training event.