

NYC Stormwater Management Program



2024 MS4 Annual Report - DRAFT



**Municipal Separate Storm
Sewer System of New York City
SPDES Number: NY-0287890**

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Jamaica Bay, Queens

Executive Summary

When precipitation (rain, snow) falls on impervious surfaces like rooftops, streets, and sidewalks, and the ground cannot absorb all the precipitation naturally, stormwater runoff results. This runoff flows over streets and sidewalks, potentially collecting pollutants such as oils, chemicals, sediment, debris and pathogens before entering the sewer system through catch basins. In municipal separate storm sewer system (MS4) areas, the runoff flows into local waterways without receiving treatment.

To reduce potential stormwater pollution in MS4 areas, the City developed the NYC Stormwater Management Program (SWMP) Plan. This Annual Report describes the activities the City performed throughout calendar year 2024 to implement the SWMP and to comply with its MS4 permit in an effort to manage urban sources of stormwater runoff, both to protect overall water quality and to improve water quality in impaired waters.

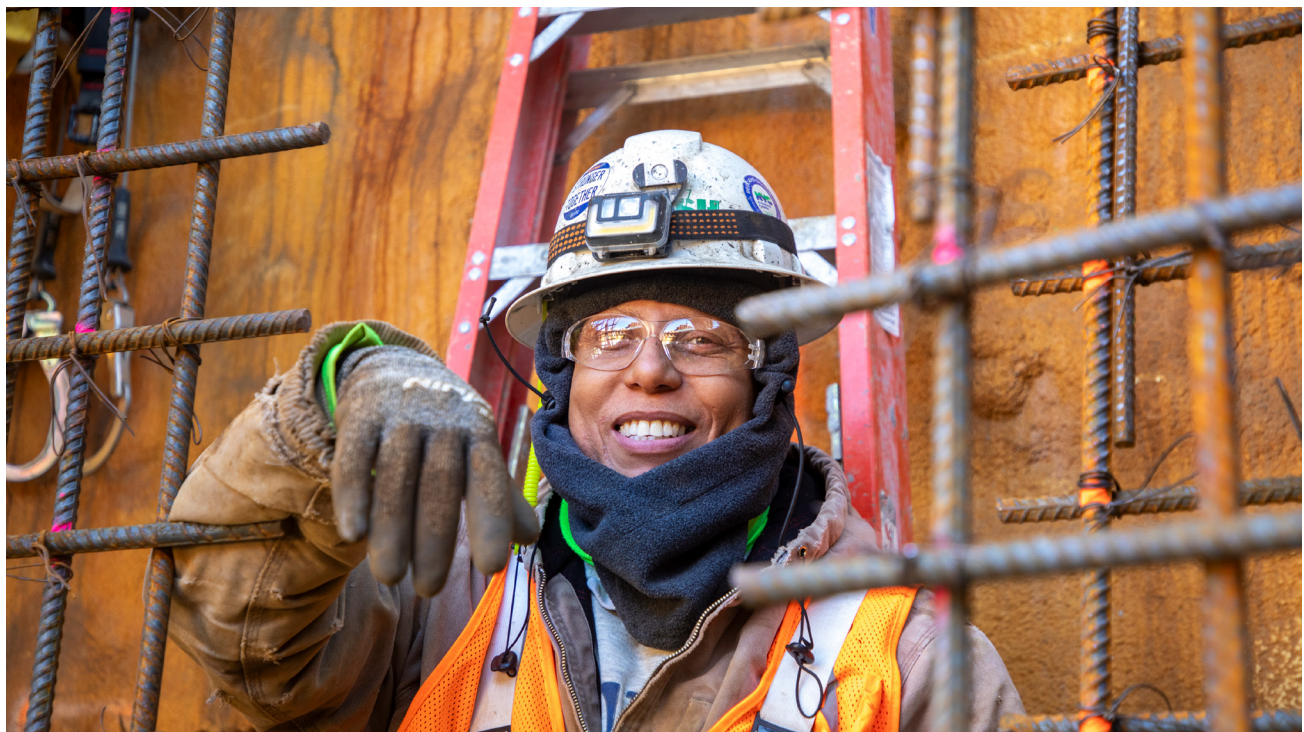
2024 Major Accomplishments

- Completed and timely submitted to the New York State Department of Environmental Conservation (NYSDEC) the MS4 Permit deliverables due in 2024, including the Harbor Survey Data Baseline Analysis - Baseline Conditions 2014-2018 and the Urban Stormwater Quality Model Development Interim Report.
- Reviewed 697 Stormwater Pollution Prevention Plans (SWPPPs) for new development and redevelopment projects citywide, ensuring they included proper practices for the control of stormwater runoff during construction activities and, where applicable, effective strategies for long-term runoff reduction and stormwater management post-construction.
- Took 7,685 enforcement actions against entities responsible for illicit discharges and abated 1,712 illicit discharges.
- Held/participated in 296 community cleanup events and 5 SAFE (Solvents, Automotive, Flammables, and Electronics) disposal events with more than 17,000 participants.
- Swept approximately 916,000 miles of streets and parking lots citywide, inspected more than 25,000 catch basins, and cleaned more than 8,000 catch basins.

2024 Program Updates

- **Public Education and Outreach (PEO).** This program includes initiatives to inform the public about the MS4.
 - » The City distributed approximately 10,000 coloring books on NYC’s “water story” to schools, partner organizations, and the public.
- **Public Involvement and Participation (PIP).** This program includes initiatives to get the public involved in MS4 related activities.
 - » The City participated in 554 Park Stewardship events that involved nearly 7,000 participants.
- **Mapping.** This program includes identifying and mapping the MS4 outfalls and drainage areas.
 - » The City provides an interactive, public map – view the map here nyc.gov/dep/ms4map
- **Illicit Discharge Detection and Elimination (IDDE).** This program includes finding, abating, and preventing illicit discharges.
 - » The City abated 1,712 illicit discharges.
- **Construction and Post-Construction (C/PC).** This program includes managing pollution risks from development and redevelopment projects in MS4 and combined sewer areas draining to the city-owned sewer system.
 - » The City reviewed 697 SWPPPS citywide with 326
- in the MS4 and 371 in the combined sewer system (CSS) and issued 184 Stormwater Construction Permits with 93 within MS4 and 91 in the CSS, bringing the total number of active Stormwater Construction Permits to 331 with 195 within the MS4.
- **Pollution Prevention/Good Housekeeping (PP/GH) for Municipal Operations and Facilities.** This program includes managing pollution risks at the City’s own facilities and during its operations conducted off-site, including in the right of way (ROW).
 - » The City assessed 108 City-owned facilities to evaluate their stormwater pollution potential and the stormwater controls associated with the facilities’ operations.
- **Industrial and Commercial (I/C) Stormwater Sources.** This program includes managing pollution risks from industrial and commercial facilities that engage in certain activities that may cause stormwater pollution.
 - » The City assessed 17 unpermitted facilities for potential permitting under the NYSDEC State Pollutant Discharge Elimination System (SPDES) program. Additionally, the City inspected 30 facilities permitted under the SPDES Multi-Sector General Permit (MSGP) to evaluate their implementation of stormwater controls.
- **Control of Floatable and Settleable Trash and Debris.** This program includes measures taken to reduce

Worker at Shaft Site 18B.



NYC's litter and keep trash and debris from reaching waterbodies.

- » The City continued its analysis of data from a study to determine the loading rate of trash and debris from the MS4 to floatables-impaired waterbodies.

- **Monitoring.** This program includes analyses that will facilitate development of Urban Stormwater Quality (USWQ) models and evaluation of long-term trends in water quality to demonstrate how water quality is being impacted by the City's structural and non-structural Best Management Practices (BMPs).
 - » The City completed the five-year Harbor Survey data analysis to establish a baseline for future evaluation of long-term trends in water quality.
 - » The "Urban Stormwater Quality Model Development Interim Report" was timely submitted to NYSDEC. The report details how USWQ models will further the City's goal of reducing the discharge of pollutants from stormwater
- **Special Conditions for Impaired Waters.** This program includes identifying any impaired waterbody with an approved Combined Sewer Overflow Long-Term Control Plan (CSO LTCP) that does not predict compliance with applicable water quality standards, where stormwater pollution from the MS4 is expected to contribute to the impairment.
 - » Upon NYSDEC's approval of the Jamaica Bay LTCP, the City determined that Bergen Basin and Thurston Basin have met this criteria. The City will create a plan for each waterbody to address the pollutants of concern (POCs).

Plans/ Goals for 2025

- **Public Education and Outreach (PEO).** Continue to implement programs including SAFE Disposal events and various environmental education initiatives.

- **Public Involvement and Participation (PIP).** Continue to engage with local stakeholder groups and to participate in community events.
- **Mapping.** Continue to update GIS datasets for the next MS4 map due August 1, 2027.
- **Illicit Discharge Detection and Elimination (IDDE).** Continue implementing the Shoreline Survey, Harbor Survey, Sentinel Monitoring, and Emergency Response Unit programs, including abatement of identified illicit discharges.
- **Construction and Post-Construction (C/PC).** Continue outreach efforts to the construction community, the review and approval of SWPPPs, and inspections of sites that have Stormwater Construction permits.
- **Pollution Prevention/Good Housekeeping (PP/GH) for Municipal Operations and Facilities.** Continue to self-assess facilities and off-site operations and provide appropriate training to staff; inspect and maintain municipally constructed green infrastructure (GI).
- **Industrial and Commercial (I/C) Stormwater Sources.** Continue the assessment of unpermitted facilities and inspection of permitted facilities and take necessary enforcement actions.
- **Control of Floatable and Settleable Trash and Debris.** Continue to analyze data obtained as part of the Floatables Loading Rate Study and continue floatables control programs, including PEO efforts, street sweeping, catch basin inspections and cleaning, and booming/netting.
- **Monitoring.** Report on progress in development of Urban Stormwater Quality (USWQ) Models.
- **Special Conditions for Impaired Waters.** For Bergen and Thurston Basins, determine source categories for POCs causing the impairments, customized non-structural BMPs and any opportunities for GI projects; for Coney Island Creek, continue to implement and refine enhanced BMPs.

Heavy rainfall in Queens.





A green roof garden at Corporate Commons Three in Staten Island.



Wildflowers at Staten Island Bluebelt.

Introduction

Pursuant to the New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) Municipal Separate Storm Sewer System (MS4) Permit (No. NY-0287890), first issued to the City of New York (City or NYC) in 2015 and renewed as of August 1, 2022, the City implements a Stormwater Management Program (SWMP) Plan¹, which sets forth the City's measures to reduce pollution in stormwater runoff discharging into and from the MS4.

The SWMP consists of the City's measures to reduce pollution in stormwater runoff discharging into and from the MS4. Through proper management and increased awareness, the City works to keep our streets and facilities well-maintained to reduce the risk of their contributing pollution to stormwater runoff. As most waterbodies in NYC receive stormwater from both the combined and separate sewer systems, the SWMP is an important component of the City's comprehensive integrated planning approach to protecting and improving our waterbodies.

New York City's iconic waterfront and beloved waterbodies are cleaner and healthier than they have

been since the 1860s. Whales and seals have returned to the harbor, wetland and mussel restoration projects are thriving, and New Yorkers are enjoying recreational activities on our local waterways. These improvements are in no small part a testament to the City's substantial investments in upgrading our wastewater infrastructure over the last five decades.

Building on these investments, fourteen City agencies implement the SWMP in the areas served by the City's MS4, which carries stormwater runoff directly to nearby waterbodies instead of to a wastewater resource recovery facility (WRRF) for treatment; water that flows on the streets and into catch basins or directly into waterbodies may carry pollutants such as pathogens and debris.

Each year, the City prepares an MS4 annual report, as required by Part IV.M of the MS4 Permit, to inform NYSDEC and the public of the City's progress in implementing the SWMP and the status of its compliance with the MS4 Permit. This MS4 Annual Report, covering January 1 through December 31, 2024, includes a brief description of the SWMP activities completed during the 2024 reporting year, measurable goals, and specific reporting requirements included in the MS4 Permit. This report also includes activities planned for the 2025 calendar year and any proposed changes to the SWMP, if applicable.

¹ <https://www1.nyc.gov/assets/dep/downloads/pdf/water/stormwater/ms4/nyc-swmp-plan-full.pdf>

The diagram illustrates a combined sewer system. On the left, a house is shown with orange pipes leading from its interior to a manhole. A blue pipe runs parallel to the orange pipes. The system consists of a series of manholes connected by underground pipes. The final manhole leads to a catch basin, which is a larger structure designed to trap debris. A blue arrow indicates rain falling into the catch basin. An orange arrow labeled 'Combined Sewer System' points to the main line of pipes. Another orange arrow labeled 'Combined Sewer Overflow' points to a pipe that discharges excess flow into a river. A blue arrow labeled 'To Wastewater Treatment Plant' points to a pipe that carries the treated effluent. The river is shown on the right side of the diagram.

The diagram illustrates a separate storm sewer system. On the left, a house is shown with orange pipes for wastewater that lead to a manhole. An arrow points from this manhole to a box labeled "To Wastewater Treatment Plant". A blue pipe for stormwater runs parallel to the ground, passing through another manhole and then through a catch basin. The catch basin contains debris. An arrow points from the catch basin to an "Outfall Pipe" that discharges into a "River". Rain is shown falling on the ground, and the entire system is labeled "Separate Storm Sewer System".

Each component of the SWMP Plan includes best management practices (BMPs) and associated measurable goals, which the City reports on annually. The City periodically refines the measurable goals based on lessons learned from implementation of the programs, as well as on input from interagency working groups and the public. Continuing to refine and update the measurable goals allows the City to better quantify and more accurately represent the effectiveness of the SWMP. The City bases its assessment of the effectiveness of the SWMP on the achievement of the stated measurable goals for each program.

Administration of the SWMP

The New York City Department of Environmental Protection (DEP) coordinates the implementation of the SWMP with the assistance of and contributions from the Stormwater Controls Working Group (aka Interagency Team). The Stormwater Controls Working Group is a team of representatives from the following New York City agencies that collaborate on MS4 programs (as noted below, a subset of these agencies has obligations under the MS4 Permit):

Agencies with MS4 Permit Obligations

Department of Citywide Administrative Services (DCAS)
 Department of City Planning (DCP)
 Department of Design and Construction (DDC)
 Department of Environmental Protection (DEP)
 Department of Buildings (DOB)
 Department of Correction (DOC)
 Department of Education (DOE)
 Department of Health and Mental Hygiene (DOHMH)
 Department of Transportation (DOT)
 Department of Parks and Recreation (Parks)
 Department of Sanitation (DSNY)
 Fire Department (FDNY)
 Police Department (NYPD)
 Small Business Services (SBS)

Collaborating Agencies

NYC Law Department (LAW)
 Economic Development Corporation (EDC)
 Mayor's Office of Management and Budget (OMB)
 Mayor's Office of Climate and Environmental Justice (MOCEJ)

MS4 Annual Reports

Each year, the City reports on SWMP implementation and MS4 Permit compliance. Reporting years are full calendar years (January 1 to December 31). The MS4 annual reports reflect the structure of the City's MS4 Permit and the SWMP Plan, both of which are organized by program. For each program, these MS4 annual reports include the following sections:

- **Introduction.** This section includes an overview of the program and context for the activities completed within a reporting year. For more information on the programs, refer to the SWMP Plan.
- **Program assessment.** This section includes information on activities completed during the reporting year. Tables that present the measurable goals and measures of a program for the reporting year are complemented by a narrative that highlights and explains important activities.
- **Goals for the next reporting cycle.** This section includes the City's objectives for the ongoing implementation of applicable programs during the next reporting cycle.
- **Program updates.** This section includes information on SWMP updates that the City is proposing as part of refining and adapting its program. The Program Updates section does not appear if no substantive changes are required for a program. The City updates the SWMP Plan text annually but implements as soon as practicable any necessary changes identified during the reporting year.

Every spring, the City publishes a draft MS4 annual report online for public comment and holds a public meeting during the comment period. Following the public review of the draft MS4 annual report, the City revises the report, as needed, and includes responses to public comments. The final version of the report is due September 30 of each year to NYSDEC. The MS4 annual reports are available on the DEP website.²

² <https://www1.nyc.gov/site/dep/water/municipal-separate-storm-sewer-system.page>



A DEP environmental educator leads a group of students at Hunters Point in Queens.

Public Education and Outreach

The City implements a public education and outreach program (PEO Program) as part of its MS4 Permit obligations.³ The PEO Program has many education and outreach initiatives that inform a broad range of stakeholders and the public about stormwater, the sources of pollutants associated with stormwater, and stormwater's potential impacts on water quality.

2024 Program Assessment

As part of the PEO Program, the City implemented 13 programs that included more than 2,500 events, reached approximately 82,000 individuals, and distributed more than 2,000,000 materials. These metrics are drawn from activities conducted citywide.

Program Highlights

Environmental Education. DEP distributed approximately 10,000 copies of *Drippy's Water Adventure*, a popular

and engaging coloring book with activities, vocabulary and concepts highlighting NYC's extensive water and wastewater infrastructure. The coloring book illustrates water use, the City's wastewater treatment system, stormwater management and green infrastructure (GI), harbor protection and stewardship opportunities. This successful project was designed in 2023, in partnership with the Fashion Institute of Technology through the NYC Department of Design and Construction's Town+Gown Program.

DEP hosted and participated in multiple professional learning opportunities, engaging over 700 classroom teachers and non-formal educators. DEP partnered with numerous organizations to highlight educational programs and resources about NYC's sewer systems, stormwater resiliency, and environmental stewardship; these organizations included South Street Seaport Museum, New York Aquarium, NY Sea Grant, SUNY Maritime, NY State Parks, NYC Department of Sanitation and NYC Public Schools.

DEP continued to enhance, distribute, and workshop the following three educational resources, which were shared with thousands of educators citywide.

³ <https://www.nyc.gov/site/dep/environment/education-programs.page>



Operation P.O.O.P. pet owner outreach.



Participants at a NYC Parks Urban Park Rangers event.

- [Understanding NYC's Water Story: A Curriculum Guide for the Classroom](#): This comprehensive guide for K-8 teachers explores various content related to our shared water resources. The guide includes six units and features a variety of lessons and activities to enhance teaching styles and learning about the New York City water cycle. These lessons and activities are centered on science, technology, engineering, and math (STEM) concepts, and humanities subjects, and are designed to support an interdisciplinary, hands-on approach to teaching.
- [NYC Water Virtual Tours](#): Designed using ArcGIS StoryMaps, these virtual tours offer a collection of historical imagery, in-the-field footage, interactive maps, and staff interviews for a fun and easy way to discover the New York City drinking water supply, sewer system, wastewater treatment system, and harbor protection.
- [Jamaica Bay Education Resource Directory](#): This guide provides an important teaching tool for educators and features partner organizations and educational opportunities, such as resources and program opportunities in and around the Jamaica Bay watershed. In 2024, the guide was updated and reprinted to include new organizations and opportunities throughout the watershed.

Harbor Protectors. This stewardship program recruits volunteers from schools and community groups to participate in activities such as clearing off catch basin gratings, stenciling educational/informational messages on the sidewalks near catch basins, caring for rain gardens and participating in shoreline cleanups. In addition to beautifying communities and keeping pollution out of NYC's waterways, these stewardship actions also aid DEP in its critical mission to protect and improve water

quality across the five boroughs. The Harbor Protectors program hosted an event with 41 students and educators from I.S. 285 in Brooklyn.

SAFE Disposal Events. SAFE Disposal events provide a designated location for New Yorkers to dispose of waste, including harmful household products. These events help the City reduce the risk of pollution in stormwater runoff through trash management and illegal dumping prevention. The City distributed more than 2 million mailers to residents and held 5 events covering all NYC boroughs with more than 17,000 participants.

Urban Park Rangers. NYC Parks Urban Park Rangers offered to more than 22,000 participants, through several programs, more than 1,200 events focused on ecology, stormwater, and waterbodies. These programs include The Natural Classroom: People, Place and Parks for school groups; Custom Adventures for summer camp and youth groups; and free Weekend Adventures and Pop-Up Adventures for the public.

Each park in New York City is unique and is shaped by its natural features, the plants and animals that live there, and the communities it serves. Through these programs students enjoy exploring these unique urban spaces in active and engaging on-site learning experiences that highlight real-world examples of concepts, ideas, and content learned in the classroom.

During the educational tours, students investigate the diversity of parks and green spaces in the City, how these spaces improve the daily lives of New Yorkers, and how Parks maintains the parks and recreational spaces. Over the years, these types of immersive, on-site outdoor environmental programs have been shown to advance

academic achievement, build character, promote wellness and good health, cultivate environmental stewardship, and foster community and ecological resilience.

Environmental Compliance Outreach (ECO) to

Business Community. DEP has continued to work with its primary partners including local business groups, trade associations and city agencies to conduct business outreach reaching over **200 businesses citywide**. DEP has attended business resource fairs organized by local Business Improvement Districts (BIDs) and partners like the Queens, Bronx, & Brooklyn Chambers of Commerce where direct one-on-one engagement with businessowners and prospective businessowners was conducted around BMPs and local environmental regulations on safe disposal. Local partners have promoted DEP's resources in newsletters and other public facing materials throughout the year including DEP's "Trash It. Don't Flush It." PSA campaign.

DEP also continued its environmental compliance education program in spring and summer 2024, titled "Mercury Free NYC," which aims to mitigate mercury contamination and pollution in the environment from business industries that work with mercury-containing materials. Additionally, DEP attended the annual convention of 2024 Greater NY Dental Meeting and engaged practitioners and dental educators on safe disposal regulations. The conference was attended by over 13,000 participants.

Southeast Queens Outreach. DEP conducted door-to-door residential environmental education outreach to reduce sewer backups, targeting areas where field operations investigated disposal problems. The program has reached an estimated 29,000+ people.

Operation P.O.O.P. – Pet Owners Outreach Program.

DEP launched Operation P.O.O.P. to raise awareness among pet owners about the harmful environmental effects of improper pet waste disposal. In collaboration with the Mayor's Office and various non-profit organizations, DEP participated in 22 events, distributing disposal bags and other pet-related products to attendees. These events collectively drew 2,000 participants, fostering greater community engagement and promoting responsible pet ownership.

Table 1 lists measurable goals, measures, and the status of the City's implementation of each Public Education and Outreach BMP.

Goals for 2025

The City will continue to implement the programs listed as "planned" in **Table 1**, including SAFE Disposal events and environmental education programming. DEP will continue to collaborate with other agencies on outreach and MS4-related materials. The City will also continue to develop educational materials and will increase our efforts to collaborate with stakeholders.

Hunters Point Community Middle School students at an educational event.



Table 1: Public Education and Outreach – 2024 Status of Implementation

BMP	Measurable Goals	Measures	Status
Provide an ongoing public education and awareness program.	Develop, implement, and assess an ongoing public education and outreach program.	List of education and outreach programs/ events and relevant metric(s) for each (e.g., number of participants, events, or materials distributed)	<ul style="list-style-type: none"> • Adopt-a-Highway (81 materials distributed) • Community Clean-ups (296 events) • DEP Annual Art and Poetry Contest (3 events; 2,175 participants) • DEP Environmental Education (139 events; 22,738 participants; 35,125 materials distributed) • Forgot Your Bag? (231 canine waste dispensers in the MS4 area) • Harbor Protectors (1 event; 41 participants) • Operation P.O.O.P. (22 events; 2,000 participants) • Parks Environmental Education (25 events; 2,581 participants) • Park Stewardship (554 events; 6,859 participants) • SAFE Disposal Events (5 events; 17,433 participants; 2,278,115 materials distributed) • "Trash It, Don't Flush It" Outreach (23 events; 5,950 households contacted) • Urban Park Rangers Natural Classroom (582 events; 13,091 participants) • Visitor Center at Newtown Creek (198 events; 5,549 participants) • Weekend, Pop-up, and Custom Adventures (672 events; 9,612 participants)
		List of planned educational and outreach programs/ activities to be undertaken in the next reporting cycle	<ul style="list-style-type: none"> • Automotive Associations Outreach • Community Clean-ups • DEP Annual Art and Poetry Contest • DEP Environmental Education • Forgot Your Bag? • Operation P.O.O.P. • Parks Environmental Education • Park Stewardship • "Trash It, Don't Flush It" Outreach • Urban Park Rangers Natural Classroom • Visitor Center at Newtown Creek • Weekend, Pop-up and Custom Adventures
	Develop and implement educational and informational activities related to illicit discharges for businesses and the public.	List of education & outreach programs/ events and relevant metric(s) for each (e.g., number of participants, events, or materials distributed)	<ul style="list-style-type: none"> • DEP Annual Art and Poetry Contest (3 events; 2,175 participants) • Community Clean-ups (296 events) • DEP Environmental Education (139 events; 22,738 participants; 35,125 materials distributed) • Forgot Your Bag? (231 canine waste dispensers in the MS4 area) • Harbor Protectors (1 event; 41 participants) • Operation P.O.O.P. (22 events; 2,000 participants) • Parks Environmental Education (17 events; 2,213 participants) • Park Stewardship (554 events; 6,859 participants) • SAFE Disposal Events (5 events; 17,433 participants; 2,278,115 materials distributed) • "Trash It, Don't Flush It" Outreach (23 events; 5,950 households contacted) • Urban Park Rangers Natural Classroom (582 events; 13,091 participants) • Visitor Center at Newtown Creek (198 events; 5,549 participants) • Weekend, Pop-up, and Custom Adventures (672 events; 9,612 participants)
		List of planned educational and outreach programs/ activities to be undertaken in the next reporting cycle	<ul style="list-style-type: none"> • Automotive Associations Outreach • Community Clean-ups • DEP Annual Art and Poetry Contest • DEP Environmental Education • Forgot Your Bag? • Operation P.O.O.P. • Parks Environmental Education • Park Stewardship • "Trash It, Don't Flush It" Outreach • Urban Park Rangers Natural Classroom • Visitor Center at Newtown Creek • Weekend, Pop-up and Custom Adventures
Facilitate public reporting of illicit discharges	Promote, publicize, and facilitate public reporting of illicit discharges and potential water quality impacts.	Summary of public reports received by 311	The City received 95,568 service requests for the 311 complaint types listed in this report as relevant to stormwater pollution.

311 is New York City's main source of government information and non-emergency services.

It provides the public with quick, easy access to all New York City government services and information. The public may connect with 311 24 hours a day, 7 days a week, 365 days a year by:

- Visiting 311 online at nyc.gov/311;
- Calling 311 or (212) NEW-YORK, (212) 639-9675, from outside New York City;
- Texting 311-692;
- Downloading the NYC 311 mobile app for Apple or Android devices; or
- Tweeting to @nyc311

311 is accessible to non-English speakers, available online in over 50 languages and by phone in over 170 languages.

311 facilitates transparency and accountability. Service requests and agency responses are available to public as open data online.

Currently, the public can use 311 to access information on many topics relevant to stormwater pollution and water quality. The public is also encouraged to use 311 to report information relevant to stormwater pollution:

- **Waterway Complaint.** Report floatables, trash, oil, gasoline, sewage, or an unusual color in a waterway; report a potential illicit discharge from an MS4 outfall.
- **Dry Weather Sewage Discharge Complaint.** Report water flowing through a sewer outfall pipe during dry weather.
- **Dumping in Catch Basin or Sewer.** Report grease, gasoline, natural gas, cement, oil, sewage, chemicals, or other substances going into a sewer or catch basin.
- **Oil Spill.** Report an oil spill.
- **Illegal Dumping Complaint.** Report the dumping of large amounts of trash.
- **Catch Basin Complaint.** Report a storm drain that is missing its cover, clogged, sunken, raised, damaged, or defective.





Volunteers at a Parks Stewardship clean-up event.

Public Involvement and Participation

Involving the public in the implementation of the SWMP is a fundamental requirement of the City's MS4 Permit. Whether it is NYC residents who enjoy recreation in local waterbodies, real-estate developers who build in the MS4 area, groups who organize waterbody cleanups, or environmentalists who advocate for a healthier harbor, there is a wide range of stakeholders who participate in the City's efforts to improve water quality.

2024 Program Assessment

The City continued to engage the public using virtual platforms, including on SWMP implementation. DEP published the draft 2023 MS4 Annual Report on the DEP website and hosted the 2023 MS4 Annual Report meeting as a hybrid event (in-person at Coney Island and virtual) in June 2024. The public was encouraged to provide comments on the draft MS4 Annual Report. These comments were addressed in Appendix 1 of the final 2023 MS4 Annual Report submitted to NYSDEC on September 30, 2024 and published on the DEP website.

The City published this draft MS4 Annual Report on the DEP website on June 2, 2025. This report covers SWMP implementation for the 2024 calendar year. The City will host the MS4 Annual Report meeting at 4:00 pm on June 16, 2025. The public is encouraged to submit comments from June 2, 2025, through July 11, 2025, by email to MS4@dep.nyc.gov.

Table 2 lists measurable goals, measures, and the status of the City's implementation of Public Involvement and Participation BMPs.

Goals for 2025

The City plans to continue engaging with local stakeholder groups and participating in community events. In compliance with MS4 Permit requirements, the City also plans to publish and respond to comments on this Annual Report.

Table 2: Public Involvement and Participation – 2024 Status of Implementation

BMP	Measurable Goals	Measures	Status
Provide and promote the opportunity to report and receive stormwater information.	Identify mechanism for public to report and request stormwater-related information including contact process to receive and respond to requests.	Summary of public reports and requests received by MS4@dep.nyc.gov	The City responded to inquiries on various SWMP activities including C/PC permitting, potential construction projects, USWR and general stormwater discharge inquiries.
Provide public opportunity to participate in SWMP implementation.	Seek public input on SWMP implementation and provide public access to Annual Reports.	Date and location of draft Annual Report posted for public review and comment period	On May 22, 2024, the City posted on the DEP website the draft 2023 MS4 Annual Report, which was available for public comment through July 2, 2024.
		Date and time of draft annual report stakeholder meeting and number of participants	June 10, 2024, at 4:00 pm; 54 individuals participated (online and in person)
		Summary of comments received on draft Annual Report and City responses	See Appendix 1 of 2023 MS4 Annual Report
		List of involvement and participation activities (e.g., programs, events, key stakeholder meetings)	<ul style="list-style-type: none"> • 2023 MS4 Annual Report Public Meeting (1 event, 54 participants) • Community Clean-ups (296 events) • Coney Island Community Workshop (1 event, 86 participants) • Green Roof Design for NYC Stormwater Permitting WS (1 event, 371 participants) • Guidance on Geotechnical Investigations for SMP (1 event, 194 participants) • NYC SWPPP Training for DDC Public Buildings (1 event, 48 participants) • NYC SWPPP Workshop (1 event, 70 participants) • Park Stewardship (554 events; 6,859 participants) • Qualified Inspector Guidance for Compliance with NYC SWP (1 event, 153 participants) • Workshop for DDC staff and stakeholders (3 events, 485 participants)
		Status and location of final Annual Report and the SWMP Plan	The SWMP Plan and final MS4 Annual Reports are available at www.nyc.gov/dep/ms4 .
		List of planned participation and involvement programs/ activities to be undertaken in next reporting cycle	<ul style="list-style-type: none"> • Community Clean-ups • Park Stewardship • Presentation of this 2024 MS4 Annual Report

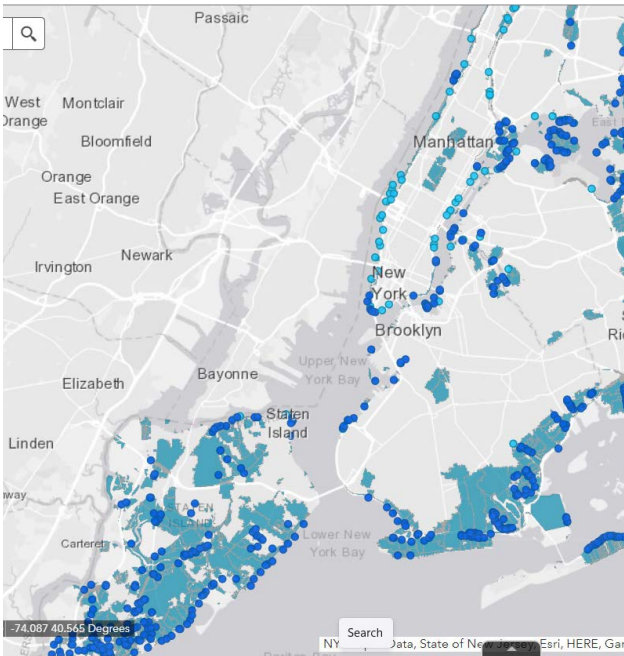
Mapping

The City maintains a GIS-based map of the urbanized area and its MS4 outfalls. The map, together with supportive documentation, satisfies each of the requirements listed in the MS4 Permit (see IV. Stormwater Management Program Requirements (C)(2)(a-h)). The City has several programs that document and map important information about NYC, including all its outfalls and drainage areas. Much of the information gathered by these programs is available to the public through NYC Open Data at opendata.cityofnewyork.us.

As required by the 2015 MS4 Permit, the City submitted with the SWMP Plan the Preliminary MS4 Map, which showed the MS4 drainage areas and outfalls known as of August 1, 2018. The 2015 MS4 Permit further required the City to update and submit, along with supplemental information relevant to stormwater management, the final MS4 map of the permit cycle on August 1, 2020. The next update of the MS4 map is due August 1, 2027, five years from the effective date of the current MS4 Permit.

2024 Program Assessment

The current MS4 Map (as submitted to NYSDEC on August 1, 2020) is available to the public in an interactive format at nyc.gov/dep/ms4map. The MS4 Map includes 764 outfalls, more specifically 693 MS4 outfalls and 71 CSO outfalls with MS4 connections. As stated in the SWMP Plan, GIS datasets are dynamic and change over time as updates are received and processed. As a result, the MS4 Map may be periodically



The MS4 Map is available at nyc.gov/dep/ms4map.

updated as new information becomes available.

Table 3 lists measurable goals and measures with the implementation status of the City’s Mapping BMPs.

Goals for 2025

The City will continue to update GIS datasets for the next map due August 1, 2027.

Table 3: Mapping Program – 2024 Status of Implementation

BMP	Measurable Goals	Measures	Status
Map the MS4 area.	Final Map required by 2015 MS4 Permit submitted August 1, 2020.	Status and location of the MS4 Map	The MS4 Map is online and available to the public at nyc.gov/dep/ms4map
		Number of known MS4 outfalls mapped	764 outfalls mapped
	Update MS4 Map 5 years from effective date of permit (EDP).	Date of latest updated MS4 Map	Current map dated August 1, 2020; updated map due August 1, 2027



Discharge entering a storm drain.

Illicit Discharge Detection and Elimination (IDDE)

Illicit discharges are non-stormwater, unauthorized discharges into and from the MS4. Examples include sanitary pipes illegally connected to storm sewers and substances like oils dumped into catch basins. The City has longstanding, effective programs for detecting, identifying, and eliminating illicit discharges citywide. These include the Shoreline Survey, Sentinel Monitoring Program, Harbor Survey Program, and Emergency Response Units. City agencies also detect and abate illicit discharges discovered and confirmed to be originating from their properties.

The City has PEO programs for the public, businesses, and City employees on the hazards of improper disposal of materials and actions to take to reduce the risk of an illicit discharge. City employees working off-site, and the public are encouraged to call 311 if they see a potential illicit discharge.

Typically, once the City identifies a potential illicit

discharge, it initiates a trackdown to find the source and then takes steps to abate the discharge, if confirmed to be illicit. The trackdown process may include a series of complex steps both in the office and in the field. Each trackdown investigation is unique; some can take a few hours, while others can take days or months depending on the location, the number of sources, the logistics and the complexity of the drainage area.

2024 Program Assessment

During this reporting period, the City continued to implement its citywide IDDE Program: characterizing outfalls, sampling receiving waterbodies, source tracking, and eliminating illicit discharges. The City detected illicit discharges and eliminated them citywide through the DEP Response and Compliance Units; Sentinel Monitoring and Shoreline Survey programs; and agency actions at their municipal facilities in the MS4 area. The City is working to investigate the illicit discharges that are within the City's jurisdiction that were detected in 2024 but not eliminated within the calendar year. Some illicit discharges reported as detected will not have an accompanying abatement record because of circumstances such as an investigation's resulting in the determination that the discharge was not illicit or that the matter should be turned over to NYSDEC.

Under the Shoreline Survey Program, the City conducts an outfall reconnaissance inventory (ORI), surveying 100

percent of shoreline outfalls every 10 years. MS4 outfalls are not evenly distributed throughout the shoreline; therefore, the number of outfalls the City inventories each year depends on the area of shoreline inventoried. In 2024, the City surveyed 246 outfalls; an updated outfall list that includes all MS4 outfalls is included as Appendix 2 to this Annual Report.

Established as an enhancement to the Shoreline Survey, the DEP Sentinel Monitoring Program entails the regular monitoring and sampling of waterbodies throughout NYC. The purpose of the program is to detect continuous, intermittent, and/or transitory illicit discharges. Using a set list of Global Positioning System (GPS) coordinates, DEP goes to sentinel stations quarterly, collects water for samples, and analyzes the samples for pathogens. DEP may also use Harbor Survey data for this effort. The results of the mini-shoreline investigations and sampling are included in the Integrated Sentinel Monitoring Reports.

Table 4 lists measurable goals and measures with the status of the City's implementation of IDDE BMPs and represents citywide metrics.

Goals for 2025

The City will continue its IDDE program, including the Shoreline Survey, Harbor Survey, Sentinel Monitoring, Emergency Response Units, and responding to issues discovered on-site at municipally owned facilities.

Non-stormwater discharges (e.g., water line flushing potable water, AC unit condensate, water from crawl spaces, dechlorinated swimming pool discharges) into the MS4 are generally considered illicit. However, some non-stormwater discharges are allowed, including those from firefighting activities and discharges determined by DEP not to be significant contributors of pollutants. DEP makes the determination on a case-by-case basis. To obtain DEP approval to discharge non-stormwater into the MS4, email DEP at MS4@dep.nyc.gov with the subject line "Non-stormwater Discharge Inquiry."

DEP conducts dye test to track down illicit discharge.



Table 4: IDDE Program – 2024 Status of Implementation

BMP	Measurable Goals	Measures	Status
Detect and eliminate illicit discharges.	Detect and eliminate illicit discharges including illegal dumping.	Number of illicit discharges detected	238*
		Number of illicit discharges abated	229*
		Number of and type of enforcement actions	DEP issued 9 summonses and 59 Commissioner's Orders; DSNY issued 1,212 summonses†
	Conduct an outfall reconnaissance inventory with 100% completed every 10 years.	Updated outfall spreadsheet submitted to NYSDEC	Appendix 2 – SPDES Outfall Listing
		Number of MS4 outfalls for which an outfall reconnaissance inventory (ORI) was performed	246
Prepare reports.	Prepare a Special Report for waterbodies with fecal coliform above 200 colonies/100 ml and for unauthorized non-stormwater discharges within 3 years of August 1, 2015 and annually thereafter.	Status and location of Integrated Sentinel Monitoring Report submitted to NYSDEC	Available on the DEP website under the header Sentinel Monitoring Program: https://www1.nyc.gov/site/dep/water/harbor-water-quality.page
Provide an ongoing public education and awareness program.	Implement a public education program on potential hazards of illicit discharges.	List of education activities for public employees	Pollution Prevention/Good Housekeeping agency staff training
		List of education and outreach programs/events for the general public and businesses, and relevant metric(s) for each (e.g., number of participants, event, or materials distributed)	<ul style="list-style-type: none"> Community Clean-ups (296 events) DEP Annual Art and Poetry Contest (3 events; 2,175 participants) DEP Environmental Education (139 events; 22,738 participants; 35,125 materials distributed) Forgot Your Bag? (231 canine waste dispensers in the MS4 area) Harbor Protectors (1 event; 41 participants) Operation P.O.O.P. (22 events; 2,000 participants) Parks Environmental Education (17 events; 2,213 participants) Park Stewardship (554 events; 6,859 participants) SAFE Disposal Events (5 events; 17,433 participants; 2,278,115 materials distributed) "Trash It, Don't Flush It" Outreach (23 events; 5,950 households contacted) Urban Park Rangers Natural Classroom (582 events; 13,091 participants) Visitor Center at Newtown Creek (198 events; 5,549 participants) Weekend, Pop-up, and Custom Adventures (672 events; 9,612 participants)
		List of planned educational and outreach programs to be undertaken in next reporting cycle	<ul style="list-style-type: none"> Automotive Associations Outreach Community Clean-ups DEP Annual Art and Poetry Contest DEP Environmental Education Forgot Your Bag? Operation P.O.O.P. Parks Environmental Education Park Stewardship "Trash It, Don't Flush It" Outreach Urban Park Rangers Natural Classroom Visitor Center at Newtown Creek Weekend, Pop-up and Custom Adventures
Provide training for staff.	Implement a staff training program on IDDE.	Number of staff training opportunities/ events	14 events
		Number of DEP staff trained on IDDE	99 participants total‡

* Number includes illicit discharges detected/abated by DEP within the MS4 area and illicit discharges detected/abated by City agencies on-site at municipal facilities in the PP/GH Inventory. The total number of illicit discharges detected may not be counted by the City as abated if the resolution action includes transferring a case to DEC.

† Number includes enforcement actions taken by DEP within the MS4 area and excludes cases DEP referred to NYSDEC; DSNY summons are for vehicle spillage and the extrusion of noxious liquids.

‡ Participant total includes those who attended multiple training events.



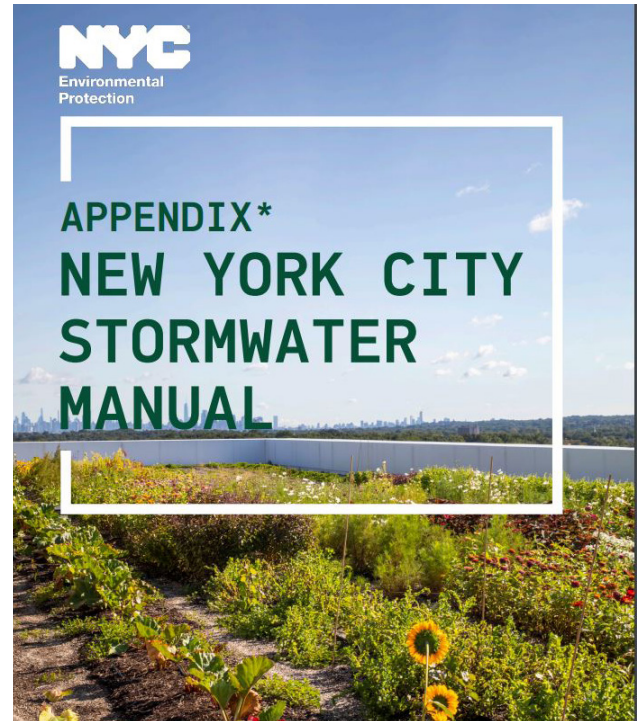
Installation of porous pavement and subsurface storage at T. Mina Supply, Inc. in Queens.

Construction and Post-Construction

The Construction and Post-Construction programs required by the MS4 Permit continue to be implemented through DEP's Stormwater Permitting program. NYSDEC requires development and redevelopment projects in the NYC MS4 areas that disturb one acre or more of soil to obtain coverage for stormwater discharges under the SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-020-001) (CGP).⁴ The Stormwater Permitting Program complements the NYSDEC CGP program in the NYC MS4 area⁵ through the review and approval of stormwater pollution prevention plans (SWPPPs) and inspection of construction sites both for stormwater impacts and for operation of post-construction stormwater management practices (SMPs).

As part of the Stormwater Permitting program, DEP issues two types of stormwater permits for covered development projects: the Stormwater Construction Permit and the Stormwater Maintenance Permit. Rules governing this permitting first went into effect on June 1, 2019, and were amended in February 2022 to meet the reduced threshold identified in the Lot Size Soil Disturbance Threshold Study required by the 2015 MS4 Permit. The 2022 Unified Stormwater Rule (USWR)⁶ aligned and streamlined stormwater-related requirements throughout NYC. It expanded the Stormwater Permitting Program to include combined sewer system areas, lowered the soil disturbance threshold that triggers the program from one acre to 20,000 square feet, and included as an additional trigger for construction permitting the creation of 5,000 square feet or more of new impervious surface.

While projects are under construction, erosion and sediment controls may be required. Erosion and sediment controls (ESC) are designed to minimize the discharge of pollutants during development. ESC activities include structural ESC practices, construction sequencing to minimize exposed soils, soil stabilization, dewatering control measures, and other pollution prevention and good housekeeping practices (PPGH) appropriate for construction sites. Many of the SMPs that will be built under the Stormwater Permitting Program are still under construction. More than half of the vegetated SMPs being



Updated New York City Stormwater Manual following adoption of Unified Stormwater Rule

constructed are in the MS4 area; the majority of these SMPs will provide retention capabilities because the USWR prioritizes vegetation and retention, as reflected in the SMP Hierarchy included in the NYC Stormwater Manual.

In MS4 areas, if a project disturbs 20,000 square feet or more, discharges to an impaired waterbody, and increases the impervious area on site, then it must also meet no net increase (NNI) requirements. An impaired waterbody is one that does not meet water quality standards for one or more POCs including pathogens, nutrients, and floatables. NNI requirements can be met by implementing both SMPs and BMPs, such as inspecting and cleaning onsite catch basins. In the MS4, about half of the area managed by SMPs will also require implementation of BMPs per NNI requirements. The waterbodies receiving the most benefit from NNI requirements include Jamaica Bay Eastern and its tributaries, Flushing Creek/Bay, and Bergen Basin.

Figure 1 illustrates the breakdown of active, permitted projects that are anticipated to have SMPs or GI in combined sewer and/or MS4 areas. Since the implementation of the DEP online Stormwater Permitting and Tracking system (SWPTS) in 2019, more than 590 project applications that do or likely will require SMPs in either combined sewer or MS4 areas have been submitted.

4 In August 2024, NYSDEC proposed changes to its Construction General Permit that reflect for NYC the permitting triggers included in the NYC Stormwater Construction permitting program, i.e., 20,000 square feet or more of soil disturbance and creation of 5,000 square feet or more of impervious surface. The final permit (GP-0-025-001) with these provisions became effective as of 1/29/25.

5 The City program was extended to the combined sewer area by Local Law 91 of 2020, effective March 26, 2021.

6 <https://www1.nyc.gov/site/dep/water/unified-stormwater-rule.page>

DEP will continue to update information on the Stormwater Permits webpage⁷, which includes a high-level process flow diagram and templates for documents needed for the permitting process. DEP also hosts monthly workshop webinars to explain eligibility requirements and guide users through the stormwater permitting process. Registration opens a month in advance for each workshop. The previous presentations — *Guidance on Construction Close-out Process*, *Guidance on Geotechnical Investigations for SMP Selection and Design*, *Qualified Inspector Guidance*, and *Green Roof Design for NYC Stormwater Permitting* — can all be accessed on the Stormwater Permits webpage. DEP is also requesting input from developers and those going through the permitting process. Those interested in having DEP host a webinar on a specific topic should fill out the online survey at <https://dep.wufoo.com/forms/zr8ip61112p87z>.

2024 Program Assessment

The City reviewed 697 SWPPPs citywide (290 of which are in the MS4 and 36 are connected to both the MS4 and the CSS), and issued 184 Stormwater Construction Permits (with 93 within the MS4 and 91 in the CSS). The total number of active Stormwater Construction Permits citywide was 321 (with 195 within the MS4). A list of active Stormwater Construction Permits is available through SWPTS at <https://deppermits.microsoftcrmportal.com/>. SWPTS is also the site for applicants to submit and

then track the review and approval of their SWPPPs and issuance of their permits.

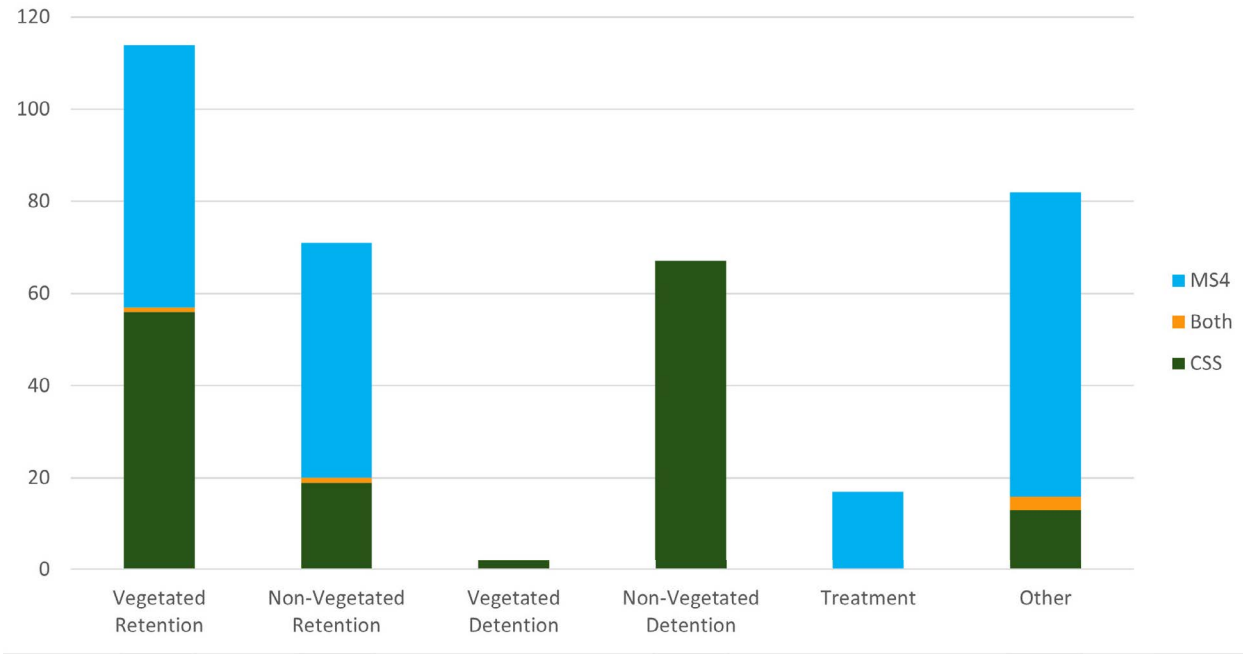
The City inspected 49% of active construction sites citywide at least once in 2024 for a total of 161 inspections.⁸ The City issued 80 summonses citywide (34 in the MS4 and 46 in the CSS). The City also issued nine Commissioner's Orders citywide (four in the MS4 and five in the CSS). Of the 326 new projects received by the City, 120 met the criteria for the NNI requirement. NNI is a requirement in the Special Conditions section of the MS4 Permit (II.B.1), under which projects that discharge to waters that are impaired but do not have a TMDL allocation, must implement SMPs that preclude any potential increase in pollutant loading.

Table 5 lists measurable goals and measures with the status of the City's implementation of C/PC Program BMPs.

Goals for 2025

DEP's Stormwater Permitting Group plans to continue outreach efforts to the construction community, to review and approve SWPPPs, and to inspect sites that have construction permits. Additionally, City staff will continue to respond to inquiries and provide applicants with information and training, as needed or requested.

Figure 1. Summary of active stormwater construction permit post-construction SMPs in combined sewer and MS4 areas.



⁷ <https://www.nyc.gov/site/dep/water/stormwater-permits.page>

⁸ As the inspection program is administered on a citywide basis, data is currently difficult to parse by sewer type. Citywide numbers are provided for this metric.

Table 5: C/PC Program – 2024 Status of Implementation

BMP	Measurable Goals	Measures	Status
Construction Site Stormwater Runoff Control	Review and approve SWPPPs.	Number of SWPPPs reviewed	697 citywide* (290 MS4 only; 335 CSS only; 36 both MS4/CSS)
	Inspect construction sites and enforce Stormwater Construction Permits.	Number of active construction sites	321 citywide* (156 MS4 only; 134 CSS only; 31 both MS4/CSS)
		The percentage of active Stormwater Construction Permit sites inspected once	49% citywide
		The percentage of active Stormwater Construction Permit sites inspected more than once	<1% citywide
		Number and type of enforcement actions	Issued: <ul style="list-style-type: none"> Commissioner's Orders: 9 citywide (4 MS4, 5 CSS) Summonses: 80 citywide (34 in the MS4, 46 in the CSS)
		Number of construction site stormwater control trainings planned or completed	<ul style="list-style-type: none"> Completed: 10 Planned: 1
Post-Construction Stormwater Management	Inspect post-construction sites and enforce Stormwater Maintenance Permits.	Number and type of enforcement actions	<ul style="list-style-type: none"> Stopwork order: 0 Summonses: 0 Commissioner's Order: 0 Notice of Non-Compliance: 0 Penalties: 0
		Number of post-construction stormwater management practices (P-C SMPs), including the type of practice and the contributing impervious area managed by each practice within the MS4 areas	13 P-C SMPs - MS4 12.24 acres - MS4
		Number and type of P-C SMPs inspected	0
		Number and type of P-C SMPs properly maintained, as determined by inspections	0
		Number of individuals trained in inspection of long-term operation and maintenance of P-C SMPs	14

* Sites are classified as being connected to the MS4 only, the CSS only, or both the MS4 and CSS.

Porous paving installation at T. Mina Supply, Inc. in Queens.



Pollution Prevention/ Good Housekeeping (PP/GH) for Municipal Operations and Facilities

The City has an extensive network of municipal facilities and operations that serve New Yorkers and keep vital infrastructure functioning properly. To help reduce the potential for these facilities and operations to pollute stormwater, the City implements a comprehensive PP/GH Program, which:

- Maintains an inventory of municipal facilities and operations, prioritizes them for their potential to contribute pollution to stormwater runoff and assesses them on 2, 5 and 7-year cycles for high, medium and low priority, respectively;
- Provides guidance on stormwater control measures (SCMs) to reduce stormwater pollution from municipal facilities and operations;
- Evaluates runoff reduction techniques including GI in planned municipal upgrades (PMUs); and
- Trains City staff on PP/GH practices.

The City also updates the facility inventory and priority ratings, as they are not static and can change from year to year based on new information.

2024 Program Assessment

Inventory

The facility inventory is dynamic in nature: facilities can be consolidated or separated, newly occupied or vacated, or confirmed served by the MS4 or combined sewers. The City updates the inventory annually. At the end of 2024, there were 529 facilities in the inventory: 34 high priority, 262 medium priority, and 233 low priority.

Facility and Off-site Assessments

Facility assessments evaluate stormwater controls associated with a facility's operations and assess stormwater pollution potential. Based on pollution potential, a facility may be categorized as a high, medium,

or low priority site. The City assessed 108 facilities including sites owned or operated by DSNY, DOE, Parks, NYPD, FDNY, DOT, and DOC.

The City also assessed off-site operations. Off-site operations are municipal activities, many of which are performed in locations such as Bluebelts, parks, and playgrounds, and in the right of way (ROW); these operations include activities such as pavement cleaning, road repairs, and catch basin cleaning. The off-site operations are assessed against the potential risk of impacts to stormwater runoff due to activities associated specifically with the operations. Typically, this assessment includes evaluation of waste-generating activities and their management, as well as stormwater controls.

Stormwater Control Measures

City agencies continued to implement stormwater control measures (SCMs) such as cleaning catch basins, sweeping pavement, landscaping and practicing proper storage of materials. In 2024, DEP worked with DSNY to conduct demonstrations using multiple types of equipment from various vendors for a roadway porous pavement cleaning pilot. The agencies identified a modified street sweeper, which can be used to pick-up large-scale debris, such as leaves and litter, and includes a deep-cleaning head attachment designed to deep clean the porous pavement by simultaneously applying high pressure water and vacuuming. DEP is currently considering utilizing this equipment to clean the ROW porous pavement as a short-term solution.

Pollution Prevention Training

The City continued to administer PP/GH training in both classroom (in-person and virtual), and computer-based environments. More than 9,900 municipal employees received PP/GH training through DEP virtual, classroom-based sessions and through their agencies.

Table 6 lists measurable goals and measures with the status of the City's implementation of PP/GH Program BMPs.

Goals for 2025

The City will continue to assess municipal facilities and off-site operations based on their priority status; refine the facility and off-site operation inventory; inspect and maintain municipally constructed GI; and administer staff trainings.

Table 6. PP/GH Program 2024 Implementation Status

BMP	Measurable Goals	Measures	Status
Provide program for PP/GH for municipal operations and facilities	Maintain an inventory of municipal operations and facilities.	Number of facilities, by priority	High – 34 Med – 262 Low – 233
		Number of off-site operations, by priority	Med - 16 Low - 3
	Implement the PP/GH Program.	Acres of parking lots swept	9,131.5*
		Miles of street swept	906,892.9*
		Number of catch basins inspected	25,626†
		Number of catch basins cleaned	8,387†
		Number of catch basins maintained	545‡
		Miles of storm sewers inspected	437‡
		Miles of storm sewers cleaned	437‡
		Number of self-assessments conducted – high priority facilities	8
		Number of self-assessments conducted – medium priority	91
		Number of self-assessments conducted – low priority	9
Provide staff awareness training	Implement a PP/GH Training Program.	Number of staff trained in-person	9,327
		Number of staff trained computer-based	591
Consider runoff reduction and GI	Consider runoff reduction techniques and GI in PMUs.	Number of municipal upgrade projects where GI or runoff reduction techniques were incorporated	0
Provide training to responsible staff	Implement a GI inspection and maintenance training program.	Number of staff trained in inspection and maintenance of municipally constructed GI assets and post-construction SMPs	0
Inspect and maintain GI assets	Implement a GI inspection and maintenance program.	Number of municipally constructed GI assets and post-construction SMPs inspected	12
		Number of municipally constructed GI assets and post-construction SMPs maintained	12

* Based on citywide numbers for ROW, arterial highways, bridge roadways, tunnels, and underpasses, and work done by agencies at their facilities listed in the inventory.

† Data include the DEP ROW catch basin program based on the 2020 MS4 map and work done by agencies at their facilities listed in the inventory.

‡ Based on work done by DEP for all sewers citywide and work done by agencies at their facilities listed in the inventory.



DEP crew at a site in the Jewel Streets Neighborhood.

Industrial and Commercial Stormwater Sources

NYSDEC requires certain industrial facilities to obtain coverage for stormwater discharges under the State Pollution Discharge Elimination System (SPDES) Multi-Sector General Permit for Stormwater Discharge from Industrial Activities (GP-0-23-001) (MSGP). While NYSDEC issues the MSGP, DEP is responsible for the associated inspections and enforcement of the MSGP at privately owned MSGP-covered facilities in the MS4 area. The DEP Industrial/Commercial (I/C) program group also assesses unpermitted industrial and commercial facilities in the City's MS4 area and sends its observations to NYSDEC to facilitate NYSDEC's determination of the facilities' potential need for SPDES permit coverage. DEP maintains a list of these permitted and unpermitted facilities, referred to as the I/C Facility Inventory.

2024 Program Assessment Unpermitted Facility Assessments

DEP continued assessing for SPDES applicability the remaining unpermitted facilities from its original inventory, while also supplementing its inventory with newly identified unpermitted facilities. During the 2024 reporting period, DEP assessed 17 unpermitted facilities for SPDES permit applicability. Of the 17 facilities assessed, DEP identified nine facilities for referral to NYSDEC for potential MSGP, MSGP no-exposure, or other SPDES permitting. The remaining eight facilities did not meet the criteria for referral and have been classified as requiring no further action.

Since the start of the I/C Program, DEP has assessed 1,451 unpermitted facilities; there are 21 unpermitted sites in the inventory (including new unpermitted facilities) that require assessment. All other facilities in the inventory have been identified as 1) referrals to NYSDEC for SPDES coverage, or 2) "no further action." Assessments of "no further action" are made for a variety of reasons: facilities do not meet the criteria for SPDES referral; facilities have been abandoned; buildings have been demolished, replaced, or occupied by a new

Table 7. Unpermitted Assessment Summary

Assessment Results	Number of Facilities in Reporting Period (2024)	Cumulative Number of Facilities to Date (2019-2024)
Unpermitted facilities with no further action needed*	8	1280
Unpermitted facilities identified for referral to NYSDEC for SPDES Permit Determination†	9	171
Total	17	1451

* Includes inventory listings deemed inactive or where no industrial activity was observed; and inventory listings that did not meet criteria for SPDES permitting referral.

† Includes facilities that may be eligible for MSGP coverage, may qualify for no exposure waiver, or may need an individual SPDES permit.

business unrelated to the previous enterprise or industrial sector; facilities have been determined to be outside the MS4 area and, therefore, not subject to the I/C program; or facilities had already obtained SPDES MSGP coverage or applied for permit coverage, making assessment to determine SPDES permit applicability unnecessary.

Table 7 summarizes the results of unpermitted assessments performed. Additionally, DEP finalized classification of 14 facilities as potential significant contributors of POCs, and these have been referred to NYSDEC for SPDES permit applicability.

Permitted Facility Inspections

The City inspected 30 MSGP-permitted facilities. **Table 8** summarizes the MSGP-permitted site inspections completed during this reporting period. These inspections and their findings are memorialized in inspection reports and associated enforcement (e.g., corrective action letters). Inspection frequencies dictated by the MS4 Permit were met during this reporting period.

Complaint-Driven Inspections

By calling 311, the public may make a variety of complaints related to industrial activity. DEP received and evaluated 32 complaints received via 311 tickets for potential applicability to the I/C Program. All 32 tickets were referred to other DEP response programs with the requisite enforcement authority for appropriate action.

Enforcement

DEP issued seven Commissioner's Orders (COs) to facilities in the I/C inventory. A CO, under this program, is an order issued by DEP to enforce its rules for the use

of and discharges to the MS4; the Order explains the nature of the violation and provides a deadline for taking corrective action. Three of the seven COs were issued to unpermitted facilities and the remaining four COs to permitted facilities. There were several categories of COs issued: most, considered "precautionary" COs, prohibited non-stormwater discharge to the street and sidewalk; one required a recipient to submit photographic proof of its corrective action; and several were related to MSGP compliance deficiencies. DEP also issued summonses to two facilities for failure to adhere to previously issued Commissioner's Orders regarding prohibited non-stormwater discharges.

DEP sent 22 formal corrective action letters to MSGP-permitted facilities. These letters directed facilities to make improvements to SWPPPs and/or housekeeping practices. An additional eight corrective action letters stemming from inspections conducted in 2024 will be completed in 2025.

Table 8 lists measurable goals and measures with the status of the City's implementation of the I/C Program BMPs.

Goals for 2025

DEP plans to continue the assessment of unpermitted facilities, update the I/C inventory with newly identified unpermitted facilities and perform inspection of permitted facilities. In addition, DEP plans to finalize SPDES assessment report referrals from the prior year and take any necessary enforcement actions stemming from assessments and inspections done in 2024.

Table 8: I/C Program – 2024 Implementation Status

BMP	Measurable	Measures	Status
Provide an industrial and commercial pollution control program.	Implement an inspection and assessment program for unpermitted industrial and commercial sources.	Status of the inspection program and stormwater controls for unpermitted industrial and commercial facilities	<p>DEP performed 17 assessments of unpermitted facilities in 2024. DEP identified 9 of these facilities for referral to NYSDEC for potential SPDES coverage.</p> <p>DEP issued 3 Commissioner's Orders to unpermitted facilities.</p>
	Implement an inspection program for MSGP Permit holders based on priority and evaluate stormwater controls.	Number of SPDES MSGP facilities inspected – high priority	7
		Number of SPDES MSGP facilities inspected – medium priority	21
		Number of SPDES MSGP facilities inspected, low priority	2
		Number of non-compliant SPDES MSGP facilities	17
		Number of repeat non-compliant SPDES MSGP facilities	13
		Number and type of enforcement actions completed and penalties issued	<p>DEP issued 31 letters to permittees identifying deficiencies and associated corrective actions. A portion of these were tied to inspections completed during the prior reporting period.</p> <p>DEP issued 4 Commissioner's Orders and 1 summons to permitted facilities.</p>
	Track significant contributors of POCs.	Number of facilities identified as significant contributors of POCs	14

Completed sub-surface storage and porous paving project at T. Mina Supply, Inc. in Queens.



Control of Floatable and Settleable Trash and Debris

Stormwater runoff can transport trash and debris from streets and sidewalks into local waterbodies. Once waterborne, these materials are referred to as floatables. The SWMP relies on many existing programs to control trash and debris stemming from the MS4 area. The key programs to control trash and debris and to intercept materials that could potentially discharge via storm sewer through outfalls include street sweeping and catch basin inspection and maintenance. The City also implements end-of-pipe/in-water floatable containment controls such as booming, netting, and skimming to collect floatables in waterbodies. Public education, outreach, involvement, and participation are also important parts of the City's holistic efforts to control floatables. A variety of programs encourage the public to help manage trash and debris, including a suite of stewardship programs (e.g., Parks Community Cleanups) and calls to 311, which enables New Yorkers to report to the City dirty conditions they observe.

2024 Program Assessment

During this reporting period, the City implemented the floatables control programs described in the SWMP Plan. These programs included sweeping 906,892.9 miles of streets citywide, inspecting 25,626 catch basins and cleaning 8,387 catch basins. DEP maintained 18 active booms and nets and operated three specialized skimmer vessels. DEP is working closely with DSNY to share and review street sweeping information, as an important floatables control measure.

Loading Rate Study

The City developed and conducted a Floatables Loading Rate (FLR) Study to determine the loading rate of trash and debris from the MS4 to floatable-impaired waterbodies. The primary goal of this study was to use data collection and analysis to quantify a loading rate at monitored catch basins and to use statistical modeling to predict the floatables loads at MS4 catch basins and outfalls discharging to floatables-impaired waterbodies



Debris on a storm drain.

throughout the City.

DEP began conducting data analysis in December 2021. The monitoring data will be analyzed to compute loading rates at the monitored catch basins and investigate the relationships among the loading rates, factors affecting loads (street litter level, street sweeping frequency, catch basin hood status, drainage area and curb length), and additional predictors or variables such as demographics and land use. These relationships will be used in a statistical analysis to predict the corresponding floatables loads at unmonitored catch basin locations within the MS4.

Table 9 lists measurable goals and measures with the status of the City's implementation of the Control of Floatable and Settleable Trash and Debris program BMPs.

Goals for 2025

The City plans to continue its key floatables control programs, including public education and outreach, street sweeping, catch basin inspections and cleaning, and DEP's boom and netting program.

The FLR Study will be completed by August 1, 2025, as required by the MS4 Permit. The information will be applied to the Urban Stormwater Quality (USWQ) modeling effort currently being piloted to assess the effectiveness of different stormwater BMPs including floatables controls (see the Monitoring section for more information on USWQ modeling).⁹ DEP will initiate the study on the methodology for selecting, sizing, and siting BMPs and controls to reduce floatable and settleable trash and debris, following the completion of the FLR Study.

⁹ DEP will use information from the FLR Study and USWQ models to propose, before the end of the MS4 permit term in 2027, a methodology for selecting, sizing, and siting floatables controls to reduce trash and debris that discharges to the City's waterbodies.

Table 9: Control of Floatable and Settleable Trash and Debris – 2024 Status of Implementation

BMP	Measurable Goals	Measures	Status
Provide a floatable and settleable trash and debris management program.	Determine loading rate of floatable trash and debris discharged from MS4 to waterbodies impaired for floatables.	Status of Loading Rate Study	Floatables Loading Rate (FLR) Study analysis in progress (on target for timely submission)
	Continue DEP's catch basin inspection, cleaning, and hood replacement program.	Number of catch basins inspected and cleaned.	25,626 catch basins inspected; 8,387 catch basins cleaned
		Number of catch basin hoods repaired, installed, or replaced	0 catch basin hoods repaired; 761 catch basin hoods installed
	Continue DEP's boom and netting program.	Status and location of Combined Sewer Overflows Best Management Practices Annual Report with Floatables Control Program results	The most recent CSO BMP Annual Report is online and available to the public at https://www.nyc.gov/site/dep/water/combined-sewer-overflows.page
	Implement a public education program on floatables.	List of education & outreach programs/events and relevant metric(s) for each (e.g., number of participants, events, or materials distributed)	<ul style="list-style-type: none"> • Adopt-a-Highway (81 materials distributed) • Community Clean-ups (296 events) • Forgot Your Bag? (231 canine waste dispensers in the MS4 area) • Harbor Protectors (1 event; 41 participants) • Parks Environmental Education (10 events; 1863 participants) • Park Stewardship (554 events; 6,859 participants) • SAFE Disposal Events (5 events; 17,433 participants; 2,278,115 materials distributed) • "Trash it, Don't Flush It" Outreach (23 events; 5950 households contacted)

Conducting the Harbor Quality survey.



Monitoring

The MS4 Monitoring Program includes the implementation of an outfall monitoring program,¹⁰ analysis of Harbor Survey data to establish baseline conditions prior to SWMP implementation in order to facilitate analyzing long-term water quality trends, and the development of urban stormwater quality (USWQ) models.

2024 Program Assessment

Harbor Survey Trend Analysis

The City implemented the Harbor Survey Trends Analysis toward its goal of evaluating long-term water quality trends, using data from the Harbor Survey, which measures a variety of water quality parameters that generally describe the overall condition of water quality in NYC's receiving waterbodies. Per MS4 Permit requirements, the City timely provided on August 1, 2024, an initial data analysis for the five-year period prior to the implementation of the SWMP (i.e., 2014 through 2018) to establish baseline water quality conditions.

USWQ Model Development

The City will build USWQ models to demonstrate how water quality is being impacted by the City's structural and non-structural BMPs, and to evaluate alternative BMP

implementation strategies. Models will be developed for MS4 areas in seven NYC sewersheds: Tallman Island, Hunts Point, Port Richmond, Jamaica, 26th Ward, Coney Island and Rockaway. A report titled "Urban Stormwater Quality Model Development Interim Report" was timely submitted to DEC in accordance with the MS4 permit requirements. The report describes in detail how USWQ models will further the City's goal of reducing the discharge of pollutants. It is also noted that the first USWQ model is being developed for MS4 drainage areas in NYC's Tallman Island (TI) sewershed as a pilot study. The hydraulic and hydrologic components of the TI model are nearing completion. Also, literature reviews have begun that will facilitate parameterizing water quality models for each pollutant of concern.

Table 10 lists measurable goals and measures with the status of the City's implementation of the Monitoring Program BMPs.

Goals for 2025

DEP intends to finalize calibration and validation of the hydraulic and hydrologic components of the TI USWQ model. Also, DEP expects to make inroads on parameterizing the water quality models for pollutants of concern. Finally, the second interim report will be submitted by August 2025, as required by the MS4 Permit.

Table 10: MS4 Monitoring Program 2024 Implementation Status

BMP	Measurable Goals	Measures	Status
Monitoring and Assessment Program	Conduct wet weather sampling from outfalls/manholes.	Analyze monitoring data collected.	Complete
	Evaluate long-term trends in receiving water quality.	Analyze 5 years of Harbor Survey data to establish baseline conditions prior to SWMP implementation (2014-2018).	Five years of Harbor Survey data was analyzed, and a Harbor Survey Baseline Report was timely submitted to NYSDEC.
	Develop urban stormwater quality models.	Report on progress.	First interim report submitted to NYSDEC; second interim report due August 1, 2025

¹⁰ To assess the quality of stormwater runoff from the MS4, the City developed and implemented an MS4 Outfall Monitoring Program that combined data collected from existing monitoring programs with additional water quality and flow data collected between 2019 and 2022, in manholes upstream of select outfalls. The NYC MS4 Outfall Monitoring Program Report, outlining the study, was completed and timely submitted to NYSDEC in June 2023. There were limited statistically significant concentration differences across the monitored outfall locations representing major land uses in NYC's MS4.

Special Conditions for Impaired Waters

In addition to the City-administered programs and practices to reduce or remove pollutants in stormwater runoff throughout the MS4 area, there are special conditions for certain impaired waterbodies:

- Impaired waters without TMDLs
- Impaired waters with NYSDEC-approved CSO LTCPs that have identified stormwater as a significant contributor to the impairment.

Information on impaired waters without TMDLs is included in the Construction and Post-Construction section of this report. For impaired waters with approved CSO LTCPs that do not predict compliance with applicable water quality standards, and where stormwater contributions from the MS4 are expected to be a significant contributor to the impairment, the MS4 permit requires the City to implement enhanced BMPs. Coney Island Creek was the only waterbody to meet these criteria until January 2023, when DEC approved the Jamaica Bay and Tributaries LTCP.

Two Jamaica Bay tributaries, Thurston Basin and Bergen Basin, now meet the criteria, requiring the City to determine, for those waterbodies, the priority source categories for the POCs causing the impairments; what additional or customized non-structural BMPs should be implemented and on what schedule; and any opportunities for implementing cost effective and feasible GI projects and other structural retrofits. Future annual reports will include information on the City's progress in implementing the program in these additional waterbodies.

Table 11: POC Source categories and control measures for Coney Island Creek (CIC)

Pollutant of Concern	Targeted MS4 Source Categories	Control Measures and Projects for CIC
Floatables	Highly impervious area (littering)	<ul style="list-style-type: none"> • Catch basin marking • Public education and outreach • Source control
Pathogens	<ul style="list-style-type: none"> • Illicit discharges • Pet waste 	<ul style="list-style-type: none"> • Catch basin marking • Public education and outreach • Sentinel Monitoring • Source tracking and control

For Coney Island Creek, the MS4 Permit lists pathogens (fecal coliform) and floatables (garbage and refuse) as the POCs causing impairments. **Table 11** shows a summary of the source categories of the POCs and the City's control measures for Coney Island Creek.

2024 Program Assessment

The City continued to implement enhanced BMPs in the Coney Island Creek watershed. **Table 12** provides status updates on the enhanced BMPs the City included in the SWMP Plan.

Goals for 2025

The City will develop a plan and schedule for implementing customized, enhanced BMPs in the Thurston Basin and Bergen Basin areas.

Professional learning opportunity for educators in Coney Island Creek community.



Table 12: Special Conditions Program Status Updates

Program	Description	Update
Pet waste management	Maintain pet waste bag dispensers and signage as part of Parks' "Forgot Your Bag?" program, to minimize the presence of exposed pet waste.	Parks continued to maintain the pet waste bag dispensers and signage in Calvert, Vaux and Kaiser Parks.
Catch basin marking	Include a "no dumping" message on the iron curb piece on new and replaced catch basins in the MS4 area. Provide catch basin stenciling opportunities for local organizations.	The City continued to include a "no dumping" message on newly installed catch basin curb pieces throughout the city.
Source Tracking/ IDDE	Source tracking efforts in Coney Island Creek	DEP Compliance Monitoring Section (CMS) performed multiple investigations near Coney Island Creek and resolved several cases, including broken sanitary sewer line and illicit discharge via overland flow from NYCHA Gravesend property to catch basins connected to the storm sewer.
Public education and outreach	Conduct education and outreach in the Coney Island Creek Community on pollution source controls.	In February 2024, DEP's Education Office partnered with the New York Aquarium in Coney Island to host a special tour and professional learning opportunity for 29 educators. Participants learned about the New York Harbor and citywide efforts to improve water quality, including stormwater management, GI, ecological restoration, and stewardship.
Green infrastructure	Identify potential GI opportunities in Coney Island Creek MS4 areas by prioritizing City-owned sites based on their potential to capture runoff.	<p>DEP continued or completed GI at identified 5 schools suitable for SMP projects:</p> <ul style="list-style-type: none"> • K095: Gravesend – subsurface retention practice – currently under construction • K238: Anne Sullivan – bioretention practice and subsurface retention practice – construction complete • K234: W. A. Cunningham – subsurface stormwater chamber – construction complete • K212 Lady Deborah Moody – synthetic turf practice with subsurface stone storage has been included in a separate construction contract with other synthetic turf projects, and is set to start construction Summer/Fall 2025

Completed bioretention practice at K238: Anne Sullivan.





Stormwater during a heavy rain event.

Recordkeeping and Reporting

Each year, the City prepares an MS4 Annual Report documenting the status of compliance activities related to the MS4 Permit. The City submits the MS4 Annual Report to NYSDEC by September 30 following each reporting year. The public can also request information related to the SWMP by emailing MS4@dep.nyc.gov.

This report documents activities related to MS4 Permit compliance for the 2024 reporting period. The City

assesses effectiveness of its SWMP programs through its achievement of the measurable goals included in the BMP tables. In addition, the annual report includes a narrative highlighting and explaining important activities conducted during the reporting year. The City also periodically refines its measurable goals with information gained from program planning and implementation, interagency working groups, and public input. Continuing to refine and update the measurable goals allows the City to better assess its programs.

Table 13 shows the 2024 recordkeeping and reporting implementation status.

Table 13. Recordkeeping and Reporting 2024 Implementation Status

BMP	Measurable Goals	Measures	Status
Provide annual reports to document compliance with the MS4 permit.	Develop an annual report due September 30 following each reporting year.	Summary of annual effectiveness assessment	See effectiveness assessment of each program under pertinent sub-sections of this report.
		Municipal Compliance Certification submission	Appendix 3 – Municipal Compliance Certification

Related Initiatives

Southeast Queens

Southeast Queens has already seen flooding events caused by extreme rain, and we anticipate that flooding may worsen with climate change. Flooding has been a chronic issue for more than 70 years and has been exacerbated by increasing rainfall, loss of permeable surfaces, and reduced groundwater. DEP's 10-Year Capital Budget allocates \$2.6 billion to plan and initiate sewer build-out and to provide short-term relief wherever possible. Together with our partners at DDC and DOT, DEP has started design or construction of several projects and has completed projects including adding storm sewers to the area and repaving streets with permeable pavement. DEP has targeted opportunities to install GI, such as rain gardens, subsurface detention facilities, and green roofs. GI can naturally divert stormwater from the sewer system. Much of the MS4 GI constructed to date is in Southeast Queens.

NYC Green Infrastructure Program

DEP has been strategically constructing GI in MS4 areas, as required per permit and local law obligations, as well as through DEP's financial incentives and partnerships,

and median projects. Going forward, as part of the NYC GI Program's regulatory goal under the 2023 Modification to the CSO Order, DEP can consider the multiple benefits of GI for neighborhoods, such as flood management and water quality improvements in addition to CSO volume reduction. For more information on the NYC Green Infrastructure Program, visit the DEP website at nyc.gov/site/dep/water/green-infrastructure.page.

Impaired Waterbodies

Under the NYC MS4 permit, DEP and other agencies must conduct GI opportunity analyses for waterbodies that will not meet water quality standards through LTCP projects alone and where MS4 stormwater is determined to be a significant pollutant contributor. The requirements under this NYC MS4 Permit apply to three waterbodies:

- Coney Island Creek (CIC): impaired for fecal coliform and floatables
- Thurston Basin: impaired for fecal coliform and floatables
- Bergen Basin: impaired for fecal coliform, floatables, and nitrogen

In Coney Island, as detailed in the Special Conditions for Impaired Waters section of this report, DEP has constructed and is constructing GI practices at several schools in the CIC MS4 drainage area. DEP had identified these locations by conducting a desktop analysis at agency partner sites, including schools,

Green infrastructure parking lot work at Greenwood Cemetery, Brooklyn.





Corporate Commons Three a green roof retrofit in Staten Island.



Completed green streets median project in Queens Village on Hillside Avenue.

parks, and New York City Housing Authority (NYCHA) developments. Typical GI desktop opportunity analyses include assessing sites for conflicts like mature trees or equipment, reviewing site topography and historical soil and groundwater data, evaluating imperviousness within tributary drainage areas, and coordinating with agencies on recent or upcoming capital work, and then conducting follow-up site visits and soil testing.

With the approval of the Jamaica Bay CSO LTCP, Bergen and Thurston Basin, like Coney Island Creek, are now considered to be waterbodies where the stormwater pollution contributions from the City-owned MS4 require the city to do more to manage the quality of the stormwater, including conducting an opportunity analysis for GI. In Bergen Basin, DEP identified at a desktop level potential opportunities for parkland GI. In Thurston Basin, DEP identified a potential cloudburst management opportunity in Montbellier.

Right of Way and Public Onsite

DEP constructed ROW GI practices in partnership with the Governor's Office of Storm Recovery (GOSR) New York Rising (NYR) initiative, including in MS4 areas.

DEP has been working with key public agency partners, like Parks and DOE, since 2011 through its public onsite program to implement GI retrofits on publicly owned properties. To date, DEP has constructed over 50 GI assets in MS4 areas, including rain gardens, green roofs, permeable pavers, subsurface storage, and synthetic turf fields. These assets have been constructed under various initiatives, including investing in Southeast Queens under Local Law 56 (2017) and piloting projects to manage stormwater quality draining to Jamaica Bay and Newtown Creek.

In-house Design and Medians

DEP's in-house GI design team focuses on siting and designing large-volume stormwater capture opportunities, typically within public medians. To date, DEP has constructed two green streets median projects in the MS4 area: the Beach 67 median in the Rockaways and the Hillside Avenue median in Queens Village. DEP has an upcoming median project located in the MS4 area of Queens on Springfield Blvd between Lucas Street and Merrick Blvd that is expected to begin construction in 2025.

The Gateway to Greenpoint project is in Brooklyn, in an area served by the MS4, just outside the Newtown Creek WRRF between Kingsland and Greenpoint Avenues. The purpose of this project to replace the existing open space with a new landscape design that complements the built environment, softens the appearance of hard surfaces, enhances aesthetic qualities, and provides a neighborhood amenity. DEP's in-house design team incorporated GI into the project to capture almost 1 million gallons of stormwater a year with the installation of underground storage chambers, curbside inlets, large planting beds of native species, and tree plantings. DEP anticipates that this project will begin construction in 2025.

Private Property Incentives

The NYC Green Infrastructure Program currently offers two financial incentive programs for private property owners in combined and separately sewered areas of NYC. The Green Infrastructure Grant Program¹¹ funds the design and construction of green roof retrofits on private property, and Resilient NYC Partners¹² funds the design and construction of site-level GI practices on private properties with large areas of impervious surface. The rooftop farm installed at Corporate Commons Three in

¹¹ <https://www.nyc.gov/site/dep/water/green-infrastructure-grant-program.page>

¹² <https://www.nyc.gov/site/dep/whats-new/resilient-nyc-partners.page>

Staten Island covers 23,375 square feet of rooftop and manages over 3 million gallons of stormwater annually in the MS4. In 2024, DEP made several updates to Green Infrastructure Grant Program requirements to help increase program participation, including properties in the MS4. The first update included increasing reimbursement rates to reflect rising construction costs and removing the program stipulation that reduced the reimbursement rate to 50 percent of rate shown after a project exceeded 20,000 square feet of vegetated area. Additionally, DEP decreased the minimum required green roof vegetated area from 5,000 square feet to 3,500 square feet to allow smaller properties to take advantage of the incentive program. The updated reimbursement schedule can be found on the Green Infrastructure Grant Program website.

To date, three projects at two properties in the MS4 have been completed under the Resilient NYC Partners program. These projects include two subsurface storage systems and porous pavement installed at T. Mina Supply in Queens, and a subsurface storage system retrofit at Holy Rosary School in Staten Island. In total, these projects will manage 2.14 million gallons of stormwater annually. As the Resilient NYC Partners program continues to expand, additional properties in MS4 priority areas are being evaluated for eligibility.

Stormwater Regulations

Stormwater regulations are a core part of DEP's work

to improve water quality citywide. As mentioned in the Construction and Post-Construction section of this report, the Unified Stormwater Rule¹³, through the NYC Stormwater Manual¹⁴ as technical guidance, emphasizes a retention-first, green infrastructure approach to stormwater management practice selection and design, applying lessons learned from more than ten years of implementing the NYC Green Infrastructure Program. Green infrastructure practices, also known as and referred to as stormwater management practices (SMPs), are designed to protect, restore, or mimic the natural water cycle within built environments by retaining, detaining, and/or treating stormwater runoff. SMPs generally include practices such as rain gardens, green or blue roofs, porous pavement, subsurface stormwater storage systems, and stormwater reuse systems. These practices are important and demonstrably effective tools for stormwater management in NYC, allowing stormwater to be managed where it falls and reducing, filtering and/or slowing the amount of stormwater entering the City's sewer system.

Cloudburst Management

A cloudburst, as seen in 2021 during Hurricane Ida, is a sudden, heavy downpour that occurs in a short amount of time and may lead to flooding, property damage, disruptions to critical infrastructure, and pollution of NYC's waterways. Cloudburst management¹⁵ implements a combination of methods that absorb, store, and transfer

DEP staff providing Cloudburst information during a community outreach event.



¹³ In 2022, DEP promulgated the Unified Stormwater Rule, which included amendments to Chapters 31 and 19.1 of Title 15 of the Rules of the City of New York to update DEP's site and house connection requirements and the Stormwater Construction and Maintenance Permitting Program (i.e., Stormwater Permitting). Under the Unified Stormwater Rule, stormwater regulations for citywide sewer operations and water quality objectives have been integrated and enhanced. Some projects are covered by both requirements.

¹⁴ <https://www.nyc.gov/site/dep/water/unified-stormwater-rule.page>

¹⁵ <https://www.nyc.gov/site/dep/environment/cloudburst.page>

stormwater to reduce flooding. Using gray infrastructure (e.g., drainage pipes and underground storage tanks) and GI (e.g., rain gardens and porous pavement), cloudburst management can minimize damage by reducing the strain on the municipal sewer system. DEP is designing cloudburst projects capable of capturing greater quantities of stormwater than traditional GI projects. In addition to managing localized flooding, these cloudburst projects will also help DEP meet its stormwater management water quality goals to reduce CSOs in CSS areas and to reduce the risk of polluted stormwater discharging to local waterways in MS4 areas.

In MS4 areas, DEP and NYCHA have collaborated on a pilot project to manage cloudburst events onsite at the NYCHA South Jamaica Houses development in Southeast Queens. The South Jamaica Houses project broke ground in 2024. Additionally, DEP is working with Parks on two cloudburst projects for Southeast Queens that are currently in procurement for construction: Archie Spigner Park, in the St. Albans neighborhood, and Rufus King Park. These projects are designed to improve drainage conditions in the park and on select adjacent streets, where possible. DEP expects construction at these parks will begin in late 2025. Additionally, in the St. Albans neighborhood, DDC and DOT have partnered with DEP on a roadway improvement project to address frequent flooding issues near the intersection of 177th Street and 112th Ave. The proposed cloudburst design for this project involves a combination of GI in the ROW and roadway changes that will also improve roadway safety for pedestrians and vehicles.

Cloudburst hubs are identified at the sub-catchment scale, which are hydraulically connected areas based on the sewer network. Cloudburst hubs feature a network of stormwater management tools that work together to alleviate flooding and help to make neighborhoods more resilient during intense rainstorms. The four initial Cloudburst Hubs: Corona and Kissena Park, Queens, Parkchester/Morris Park, Bronx, and East New York, Brooklyn are in areas served by the combined sewer. DEP has identified a potential cloudburst hub in an MS4 area in Montbellier that drains to Thurston Basin.

Adaptive Management

The NYC Green Infrastructure Program includes a research and development effort, which reviews GI performance over time, ensures performance-based maintenance and operations, and conducts cost-benefit analyses of various GI designs. The data analysis supports the City's water quality-related compliance programs and

fills data gaps that DEP has identified through previous monitoring activities. This work is critical to the success of GI implementation in both combined and separate sewer areas of NYC.

Coney Island Resiliency Study

The Department of City Planning is leading a Coney Island resiliency study with a Community Development Block Grant for Disaster Recovery funded by the U.S. Department of Housing and Urban Development. DCP will catalog current conditions in Coney Island, past/present/future climate change initiatives, and the remaining climate change risks. The purpose of the study is to help city agencies understand the possibilities for and the limits of resiliency efforts in Coney Island and to guide strategies for addressing flooding, stormwater runoff, urban heat, as well as public realm and mobility strategies. In summary, this study seeks to achieve the following goals:

- Snapshot of existing conditions: Research and analyze socioeconomic conditions, zoning and land use conditions, urban design and public realm conditions, transportation and mobility conditions, and climate risk conditions.
- Catalog of past, current, and future initiatives and identification of remaining gaps: Investigate area-specific precedent and projected public research and planning, investments, and regulations and identify remaining resiliency gaps.
- Proposal of near-term recommendations. Identify built and social environment alterations, and quality of life and hazard mitigation improvements to reduce negative impacts from future flooding and urban heat.
- Early development of a potential long-term land-use, zoning, and planning outlook. Guide new development and public realm upgrades to maximize community resilience and reduce climate change risks.

As part of the study, DCP will develop an existing conditions analysis as well as near-term recommendations and potential long-term planning outlooks based on public agency input, outreach, and engagement with local stakeholders (including residents, business owners, community organizations, and area workers, local elected officials), and stormwater management best practices.



Rooftop retrofit at Corporate Commons Three in Staten Island.

Definitions

Annual Report: The City publishes, by September 30 of each calendar year, a report on SWMP implementation. The report summarizes activities performed throughout the reporting period (January 1 to December 31) by all agencies with obligations under the MS4 Permit; and reports on BMPs, measurable goals and their measures, as detailed in each chapter of the Plan and in Part IV.M of the MS4 Permit.

Applicant: The term “applicant” means the person filing the online application for Stormwater Permitting. This person may be the owner, developer, qualified professional, or other registered user in the online application system.

Best Management Practice (BMP): Schedules, activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements (if determined necessary by DEP), operating procedures, and practices to control runoff, spillage, and leaks; sludge or waste disposal; or drainage from areas that could contribute pollutants to stormwater discharges. BMPs are referred to in EPA fact sheets and other materials. BMPs are also referred to as “activities” or “management practices” throughout the MS4 Permit.

Combined Sewer Overflow (CSO): Sometimes, during heavy rain and snowstorms, a combined sewer system receives higher than normal flows. WRRFs are unable to handle flows that are greater than twice their design capacity, and, when such a flow occurs, a mix of excess stormwater and untreated wastewater discharges directly into the City’s waterway at certain outfalls to prevent upstream flooding. This discharge is called a combined sewer overflow (CSO).

Combined Sewer System: A sewer system used to convey both wastewater and stormwater in a single pipe to the WRRF. During times of heavy precipitation, the combined sewer system may discharge into surface waters. See also Combined Sewer Overflow.

Covered development project: The term “covered development project” means development activity, private or public, that involves or results in an amount of soil disturbance greater than or equal to 20,000 square feet; or creation of 5,000 square feet or more of impervious surface; or is a covered maintenance activity (roadway maintenance that involves 20,000 square feet or more). Such term includes development activity that is part of a

larger common plan of development or sale involving or resulting in soil disturbance area greater than or equal to 20,000 square feet; or creation of 5,000 square feet or more of impervious surface. Such term includes all development activity that requires a SWPPP pursuant to the New York State Department of Environmental Conservation (NYSDEC) construction general permit.

CSO Outfall: The physical point where a municipally owned or operated combined sewer discharges to surface waters of the state.

CSO Regulator: A flow control structure in a combined sewer system that diverts a controlled portion of flow from the collection system to an intercepting sewer and allows the remaining flow to discharge to nearby waters as a combined sewer overflow.

Floatables: Manmade materials, such as plastics, papers, or other products which, when disposed of onto streets or into catch basins, can ultimately find their way to waterbodies and may create nuisance conditions affecting aesthetics, recreation, navigation, and waterbody ecology.

Green Infrastructure (GI): Green infrastructure infiltrates, evapotranspires, or reuses stormwater, with significant use of soils and vegetation rather than traditional hardscape collection, conveyance, and storage structures. Common green infrastructure approaches include green roofs, trees and tree boxes, rain gardens, vegetated swales, pocket wetlands, infiltration planters, vegetated median strips, reforestation, and protection and enhancement of riparian buffers and floodplains.

Historical MS4 Map: Created prior to issuance of the first NYC MS4 Permit in 2015, the Historical MS4 Map was unrefined and contained some inaccuracies but represented the City’s best understanding of the MS4 area at that time. In developing the SWMP, the City relied upon the Historical MS4 Map to define the MS4 area. The Historical MS4 Map also served as a starting point for the process of mapping the City’s MS4 drainage areas and MS4 outfalls, as required by the MS4 Permit. The Historical MS4 Map is no longer in use.

Illicit Discharge: Illicit discharge is any discharge to an MS4 that is not composed entirely of stormwater, except allowable discharges pursuant to a SPDES permit and/or to DEP rules. Examples of illicit discharges are unauthorized sanitary sewage, garage drain effluent, and waste motor oil. However, an illicit discharge could be any other unauthorized discharge, which the City or NYSDEC has determined to be a significant contributor of pollutants to the MS4.

Impaired Waters: A water is impaired if it does not meet its designated use(s), as defined by NYSDEC, generally determined by violations of state water quality standards. For purposes of this permit, “impaired” refers to waters for which Total Maximum Daily Loads (TMDLs) have been established, for which existing controls such as permits are expected to resolve the impairment, or for which a TMDL is needed. Impaired water compilations are also sometimes referred to as 303(d) lists; 303(d) lists generally include only waters for which TMDLs have not yet been developed.

Long-Term Control Plan (LTCP): An LTCP identifies appropriate CSO controls to achieve applicable water quality standards consistent with the Federal CSO Policy and Clean Water Act.

Measurable Goals: One or more statements characterizing the goals of the SWMP that reflect the needs and characteristics of NYC and the areas served by its MS4. The City identified its goals, both qualitative and quantitative, using an integrated approach that addresses the requirements and intent of the provisions of the MS4 Permit.

Multi-Sector General Permit (MSGP): The Clean Water Act provides that stormwater discharges associated with industrial activity to waters of the United States (including discharges through a municipal separate storm sewer system) are unlawful, unless authorized by a National Pollutant Discharge Elimination System (NPDES) permit. In New York, the EPA-approved State Pollutant Discharge Elimination System (SPDES) program provides that industrial facilities engaged in activities defined in 40 CFR 122.26(b) (14)(i-ix) and (xi) must obtain permit coverage for stormwater discharges to waters of the United States through the SPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP), unless the facilities are individually SPDES-permitted or subject to No Exposure Exclusion (that industrial activities are not exposed to stormwater).

Municipal Operations and Facilities: Any operation or facility serving a New York City governmental purpose and over which New York City has operational control.

Municipal Separate Storm Sewer System (MS4): A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

- Owned or operated by a state, city, town, village, borough, county, parish, district, association, or other public body (created by or pursuant to state law)

having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, floatables control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of the CWA, that discharges to surface waters of the state;

- Designed or used for collecting or conveying stormwater;
- Which is not a combined sewer; and
- Which is not part of a Publicly Owned Treatment Works as defined at 40 CFR 122.2

MS4 Area: The term “MS4 area” means those portions of the City of New York served by separate storm sewers and separate stormwater outfalls owned or operated by the City of New York or areas served by separate storm sewers owned or operated by the City of New York that connect to combined sewer overflow pipes downstream of the regulator owned or operated by the City of New York, and areas in which municipal operations and facilities drain by overland flow to waters of the state, as determined by DEP and described on maps of the MS4 area set forth in DEP’s rules and available on DEP’s website.

MS4 Outfall: Defined as any point where a municipally owned or operated separate storm sewer system discharges to either surface waters of the state or to another MS4 (an MS4 owned or operated by another regulated entity). Outfalls include discharges from pipes, ditches, swales, and other points of concentrated flow. However, areas of non- concentrated (sheet) flow which drain to surface waters of the state or to another MS4 (owned or operated by another regulated entity) are not considered outfalls.

MS4 Permit: The New York State Pollutant Discharge Elimination System (SPDES) permit, issued to the City of New York, effective date August 1, 2022, that defined the requirements to discharge stormwater from the City’s MS4.

Pollutants: Dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, and agricultural waste discharged into water which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 New York Code of Rules and Regulations (NYCRR) Part 750-1.2a.



Pollutant of Concern (POC): A pollutant causing the impairment of an impaired water segment listed in Appendix 2 of MS4 Permit, including nitrogen, phosphorus, pathogens, and floatables.

Settleables: Manmade materials that may sink depending on the ambient conditions to which they are subject. Floatables include settleable materials.

Standard Operating Procedure (SOP): A set of instructions for carrying out routine operations to achieve a specific outcome.

Stormwater Construction Permit: The term “stormwater construction permit” means a permit issued by DEP which authorizes development activity on land on which there is a covered development project with an approved SWPPP.

Stormwater Controls Working Group: An interagency group, aka Interagency Team, formed in 2013 in accordance with the Mayor’s Executive Order Number 429. This group meets quarterly or as needed to discuss all updates involving the MS4 Permit and SWMP implementation.

Stormwater Management Practices or SMPs: Measures to prevent flood damage or to prevent or reduce point source or nonpoint source pollution inputs to stormwater runoff and water bodies; includes erosion and sediment controls, post-construction stormwater management facilities, and practices to manage stormwater runoff from industrial activities.

Total Maximum Daily Load (TMDL): A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. It is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant’s sources. A TMDL stipulates waste load allocations for point source discharges, load allocations for nonpoint sources, and a margin of safety.

Acronyms

BMP Best Management Practice

CGP Construction General Permit

C/PC Construction and Post-Construction

CSO Combined Sewer Overflow

CSS Combined Sewer System

CWA Clean Water Act

GI Green Infrastructure

GIS Geographic Information System

I/C Industrial/Commercial

IDDE Illicit Discharge Detection and Elimination

LTCP Long-Term Control Plan

MS4 Municipal Separate Storm Sewer System

MSGP Multi-Sector General Permit

NNI No Net Increase

NOI Notice of Intent

NYC New York City

NYS New York State

NYSDEC New York State Department of Environmental Conservation

PMU Planned Municipal Upgrade

POC Pollutants of Concern

PP/GH Pollution Prevention/Good Housekeeping

ROW Right-of-Way

SAFE Solvents, Automotive, Flammables, and Electronics

SCM Stormwater Control Measure

SMP Stormwater Management Practice

SPDES State Pollutant Discharge Elimination System

SWMP Stormwater Management Program

SWPPP Stormwater Pollution Prevention Plan

SWPTS Stormwater Permitting and Tracking System

TMDL Total Maximum Daily Load

USWR Unified Stormwater Rule

WRRF Wastewater Resource Recovery Facility

NYC Departments and Agencies

DCAS Department of Citywide Administrative Services

DCP Department of City Planning

DDC Department of Design and Construction

DEP Department of Environmental Protection

DOB Department of Buildings

DOC Department of Correction

DOE Department of Education

DOHMH Department of Health and Mental Hygiene

DOITT Department of Information Technology and Telecommunications

DOT Department of Transportation

DPR Department of Parks and Recreation

DSNY Department of Sanitation

EDC Economic Development Corporation

FDNY Fire Department

LAW NYC Law Department

MOCEJ Mayor's Office of Climate and Environmental Justice (formerly Mayor's Office of Recovery and Resiliency or ORR)

MOO Mayor's Office of Operations

NYPD Police Department

OMB Mayor's Office of Management and Budget

SBS Small Business Services

