

# Executive Summary

**Municipal Separate Storm  
Sewer Systems of New York City**

**SPDES Number: NY-0287890  
Revised September 30, 2020**





Coney Island beach and swimmers (1922)

**New York City is shaped by water.** The waters of the New York City Harbor set boundaries for the City's boroughs and define our history. Hundreds of years ago, freshwater wetlands, salt marshes, streams, and rivers supported communities, commerce, and wildlife. By the industrial age, the rivers became a means for supporting the manufacturing and maritime industries. Wetlands and marshes were filled in and the resulting manmade tributaries became some of the nation's busiest commercial waterways. As one of the world's great waterfront cities, the development and rapid urbanization of NYC is intrinsically linked to the waters around it.

This growth eventually adversely impacted the environment and quality of life. As New York's population grew, open trenches and early sewers conveyed increasing quantities of waste directly to the nearest waterbody. Over a century and a half of industrial pollution and sewage degraded the once-flourishing environment. These water quality and ecosystem degradations were exacerbated by the physical alterations to many waterways surrounding NYC and the legacy industrial pollution. As a result, wildlife disappeared, waterborne diseases spread, and communities of people moved away from the waters' edge. New York City officials responded with investments in the first wastewater treatment plants at Coney Island (1886), 26th Ward (1894), and Jamaica (1903).

**New York City loves the water.** The City's early investments in sewers and wastewater treatment ushered in a century of innovation in engineering, research, monitoring, marine science, urban planning, and design and construction. The first water quality studies began in the early 1900s and by 1909 the City established its Harbor

Survey Program. This program helped identify the need for new infrastructure projects.

By the time the United States Congress passed the Clean Water Act in 1972, the City was on its way to reversing the effects of neglect. The Clean Water Act delegated much of the responsibility for setting water quality standards to the states, making the New York State Department of Environmental Conservation a critical partner involved in the City's efforts to reduce pollution and introduce a new generation of New Yorkers to the Harbor. Since 2002 the City has completed \$12 billion in capital projects such as wastewater treatment plant upgrades, sewer separation and sewer system upgrades, combined sewer overflow abatement, nitrogen reduction from wastewater, green infrastructure, and marshland restoration. In recent years the City has committed \$4.1 billion in both grey and green infrastructure projects to reduce combined sewer overflows. Thanks to these investments, water quality related to municipal sewage and waste is significantly better than it was in 1909 and the waters surrounding NYC are recovering and making a dramatic comeback. Whales are returning to the harbor, wetland and oyster restoration projects are thriving, and New Yorkers are able to enjoy recreational activities in their local waterways. This NYC Stormwater Management Program Plan continues the legacy of innovation while reflecting a new era of critical thinking and planning. With this Plan, the City will continue to identify sources of stormwater pollution and develop a range of policies and strategies to reduce it, all with the goal of improving and protecting the waters for the generations of New Yorkers to come.

# New York City (NYC)

**Land Area.** The total area of NYC is approximately 305 square miles organized into five boroughs: Manhattan, the Bronx, Queens, Brooklyn, and Staten Island.

**Population.** According to the Census Bureau, the July 1, 2017 estimated population of NYC is 8,622,698. NYC is expected to reach about 9 million people by 2040.

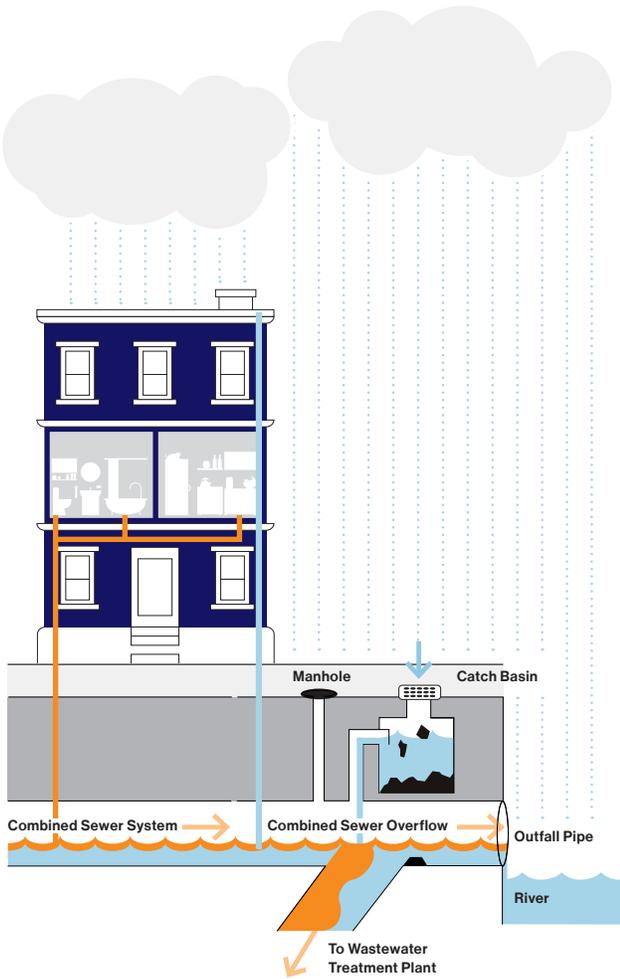
**Sewer System.** About 60 percent of NYC uses a combined sewer system to convey stormwater runoff. The rest of NYC uses either the municipal separate storm sewer system, a private sewer system, or no sewer system at all (often referred to as direct drainage or overland flow).

**Impervious Area.** Impervious surfaces cover approximately 72% of NYC's land area and generate a significant amount of stormwater runoff.

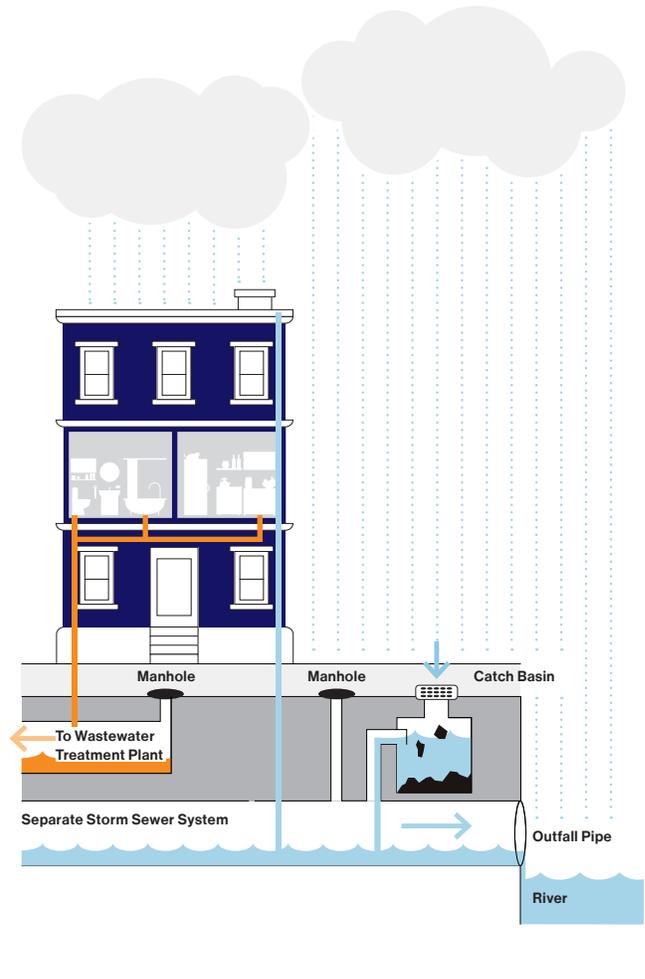


Brooklyn Bridge

## Combined Sewer System



## Municipal Separate Storm Sewer System



## How do sewer systems handle stormwater?

The City has two types of sewer systems that keep stormwater from flooding streets and homes: a combined sewer system and a separate sewer system. While these systems look the same at the street level, there are some important differences.

In a **Combined Sewer System**, both wastewater and stormwater are carried by a single pipe to a wastewater treatment plant (WWTP). During times of heavy precipitation, the combined sewer system may be overwhelmed and discharge into waterbodies. This discharge is known as a combined sewer overflow (CSO).

In a **Separate Storm Sewer System**, wastewater and stormwater are carried by separate pipes. Wastewater is conveyed to a WWTP where it is treated, while untreated stormwater is discharged into a waterbody.

A **Municipal Separate Storm Sewer System (MS4)** is a separate storm sewer system that is owned by a municipality, in this case the City of New York.

## Background

When it rains in New York City, stormwater flows over impervious surfaces such as streets, sidewalks, rooftops, and parking lots before reaching a sewer. Along the way, stormwater can come in contact with pollutants such as oils, pathogens, and sediments. In areas with a separate storm sewer system, this pollution is carried into nearby waterbodies. This is harmful to water quality and can negatively impact the local ecology or limit recreational uses like boating.

The Clean Water Act, which Congress passed to help protect and restore the health of waterbodies across the country, regulates pollution from stormwater as well as other sources. To reduce stormwater pollution, the Clean Water Act requires cities with a municipal separate storm sewer system (MS4) to obtain permits to discharge stormwater into local waterbodies.

### The City of New York MS4 Permit

On August 1, 2015, the City of New York (the City) received a State Pollutant Discharge Elimination System (SPDES) Permit from the New York State Department of Environmental Conservation (NYSDEC) for the City's MS4. This permit requires the City to implement measures to reduce pollution in stormwater runoff. While this is the City's first comprehensive MS4 Permit, the City has been implementing stormwater management activities and projects for many years under the SPDES Permits for its 14 Wastewater Treatment Plants (WWTPs).

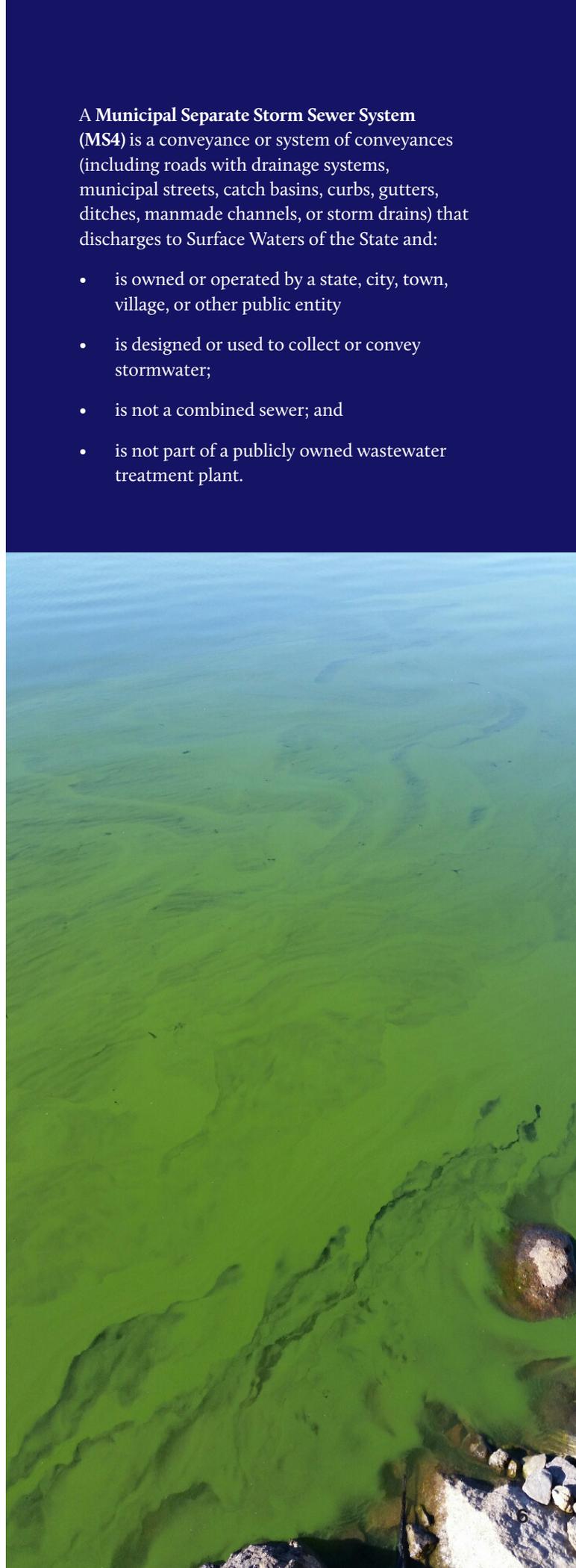
The MS4 Permit identifies certain bodies of water in the NYC area as impaired. A waterbody is considered impaired when it fails to meet its NYSDEC-designated use (e.g., swimming, fishing, or recreational boating). In Appendix 2 of the MS4 Permit, NYSDEC identifies impaired waters as well as the relevant pollutants of concern for each waterbody listed. Pollutants of concern (POCs) are pollutants that might reasonably be expected to be present in stormwater runoff in quantities that can cause or contribute to a violation of water quality standards. The POCs that have been identified for waterbodies in NYC are:

- **Pathogens**—Pathogens are disease-producing agents such as bacteria, viruses, or other microorganisms.
- **Floatables**—Floatables are manmade materials such as plastics, papers, or other products, which have made their way to a waterbody.
- **Nutrients**—Nutrients, including phosphorus and nitrogen, can lead to algae blooms that deplete oxygen in the water, which kills aquatic life.

### A Municipal Separate Storm Sewer System

(MS4) is a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) that discharges to Surface Waters of the State and:

- is owned or operated by a state, city, town, village, or other public entity
- is designed or used to collect or convey stormwater;
- is not a combined sewer; and
- is not part of a publicly owned wastewater treatment plant.



## Waterbodies Impaired for Pathogens

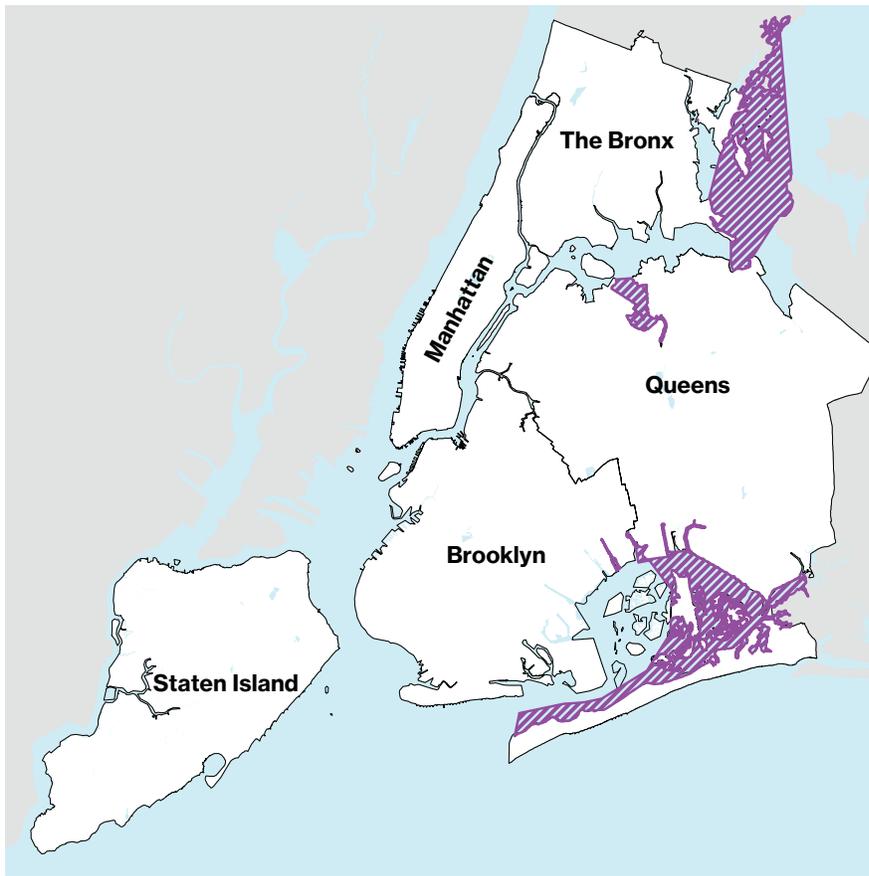
 Pathogens-Impaired Waterbodies



## Waterbodies Impaired for Floatables

 Floatables-Impaired Waterbodies





## Waterbodies Impaired for Nitrogen

 Nitrogen-Impaired Waterbodies



## Waterbodies Impaired for Phosphorus

 Phosphorus-Impaired Waterbodies

The MS4 Permit regulates drainage areas (collectively called the MS4 area) where one or more of the following statements apply:

- Stormwater drains to separate storm sewers owned or operated by the City that discharge to Surface Waters of the State through MS4 outfalls, or that connect to combined sewer overflow outfalls downstream of a CSO regulator (a device used in NYC's combined sewers to control the diversion of sewage flow to the treatment plants during dry and wet weather);
- Stormwater drains to high-level storm sewers and Bluebelts that ultimately discharge to Surface Waters of the State through MS4 outfalls; or
- Stormwater drains by overland flow from a City operation or facility directly to Surface Waters of the State.

### Existing Stormwater Management Efforts

New York City has long been at the forefront of innovative stormwater management, including construction of the award-winning Staten Island Bluebelts and a \$1.5 billion commitment to construct green infrastructure that naturally collects stormwater across the urban landscape. Ongoing programs to manage stormwater runoff include:

- Jamaica Bay Watershed Protection Plan
- Sustainable Stormwater Management Plan
- Bluebelt Initiatives
- NYC Green Infrastructure Program
- CSO Mitigation Program and Long-Term Control Plans

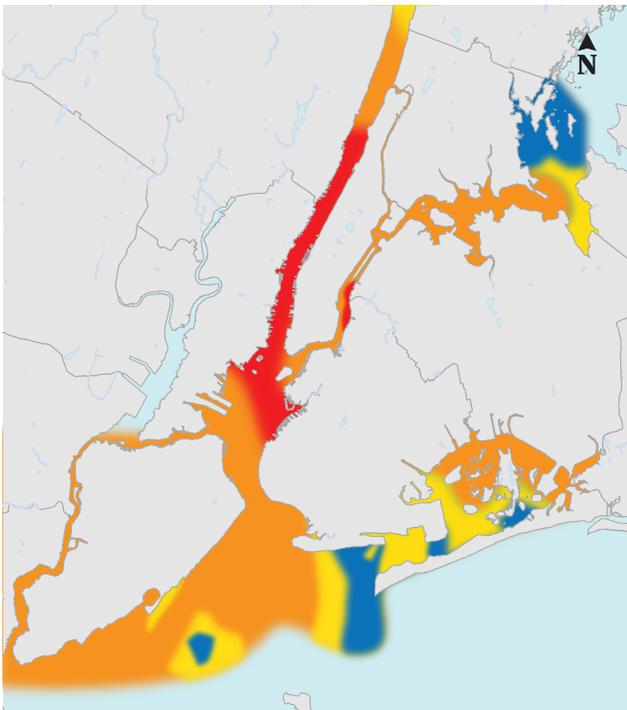
As a testament to the City's substantial investments over the last four decades, NYC's waterbodies are healthier than they have been in more than 100 years of testing.

### Water Quality Improvements in NYC

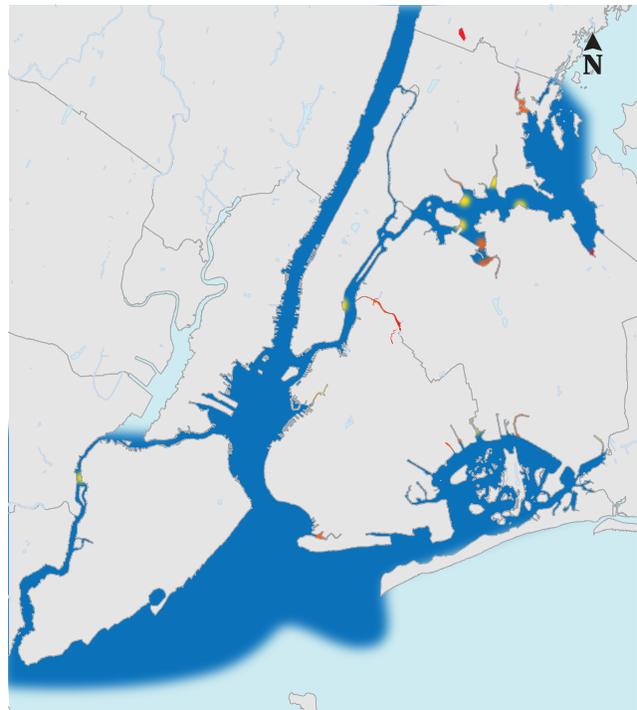
Scale (# col/100 mL)



1985



2016



## The Stormwater Management Program Plan

The MS4 Permit requires the City to develop a Stormwater Management Program (SWMP), which includes numerous programs designed to reduce pollution in stormwater runoff. The Plan describes the ways in which the City will satisfy the requirements of the MS4 Permit by managing stormwater discharges into and from the City's separate storm sewers. The Plan details the major components of the SWMP and their associated best management practices (BMPs) to reduce the discharge of pollutants from the MS4. The components described in this Plan satisfy the MS4 Permit requirements to meet the maximum extent practicable (MEP) standard.

Most chapters of this Plan include a description of any relevant existing City programs; new initiatives and/or program enhancements; and measurable goals for future assessment of the program. This Plan also refers at times to Appendices, which include documents that the MS4 Permit requires or provide additional information. The City submitted the Plan to NYSDEC on August 1, 2018, and NYSDEC approved the Plan on March 14, 2019.

Flushing Bay



## Chapters in this Plan:

- 1 Legal Authority and Program Administration
- 2 Public Education and Outreach
- 3 Public Involvement and Participation
- 4 Mapping
- 5 Illicit Discharge Detection and Elimination
- 6 Construction and Post-Construction
- 7 Pollution Prevention/Good Housekeeping for Municipal Operations and Facilities
- 8 Industrial and Commercial Stormwater Sources
- 9 Control of Floatable and Settleable Trash and Debris
- 10 Monitoring and Assessment of Controls
- 11 Special Conditions for Impaired Waters
- 12 Recordkeeping and Reporting

## Maximum Extent Practicable (MEP) Standard

Because of the unique nature of stormwater (an MS4 has limited control of its inputs and cannot treat them as a wastewater treatment plant can treat its influent before discharging it to a waterbody), the Clean Water Act<sup>1</sup> established the MEP standard as the appropriate compliance standard for the MS4s. The New York State Environmental Conservation Law also establishes the same standard.<sup>2</sup> Rather than requiring strict compliance with water quality standards through traditional end-of-pipe control techniques or numeric effluent limits, the MEP standard requires that the City implement all technically-feasible and cost-effective best management practices (BMPs) that will reduce the discharge of pollutants to the MS4.

<sup>1</sup> 33 U.S.C. § 1342(p)(3)(B)(iii)

<sup>2</sup> ECL § 17-0808(3)(c)

# 1.0 Legal Authority and Program Administration

## Administration of the SWMP

The New York City Department of Environmental Protection (DEP) has led the development of the SWMP with contributions and assistance from the Stormwater Controls Working Group, a team of representatives from the following New York City agencies that collaborate on MS4 programs. A subset of these agencies have 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 Corrections (DOC)
- Department of Education (DOE)
- Department of Health and Mental Hygiene (DOHMH)
- Department of Transportation (DOT)
- Department of Parks and Recreation (DPR)
- Department of Sanitation (DSNY)
- Fire Department (FDNY)
- Police Department (NYPD)
- Small Business Services (SBS)

### Collaborators

- NYC Law Department (LAW)
- Economic Development Corporation (EDC)
- Mayor’s Office of Management and Budget (OMB)
- Mayor’s Office of Recovery and Resiliency (ORR)

Interagency collaboration is a critical component for successful implementation of the SWMP. The MS4 Permit requires an interdisciplinary approach and diverse technical skill sets to address a broad range of water quality issues. Furthermore, strong communication between agencies enables a comprehensive set of practices to manage stormwater which helps protect local waterbodies.

To enhance interagency coordination, agency representatives participate in sub-teams that focus on certain program elements of the SWMP. Some sub-teams consist only of DEP staff—Industrial and Commercial, Illicit Discharge Detection and Elimination (IDDE), and Monitoring; others include staff from other agencies—Public Outreach and Participation, Mapping, Pollution

Prevention/Good Housekeeping, Construction and Post Construction, and Floatables.

The agencies that have contributed to the SWMP will continue to work together to implement all of its programs and initiatives.

## Legal Authority

The MS4 Permit requires that the City have adequate legal authority to implement and enforce the SWMP. A review by the City conducted in 2016 concluded that the New York City Charter provides adequate legal authority to the Mayor and mayoral agencies to manage their operations and facilities, and to ensure coordination and information sharing for the City’s compliance with the MS4 Permit. The review also identified three programs that required supplemental legislation to achieve the full legal authority necessary to implement the MS4 Permit: IDDE; Construction and Post-Construction; and Industrial and Commercial.

Accordingly, the City Council approved comprehensive legislation that consolidated, clarified, and supplemented the City’s existing legal authority. The Mayor signed the legislation on May 30, 2017, making it Local Law 97 of 2017, or the NYC Stormwater Law. This law enables the City to promulgate rules necessary to address each of the three areas identified as requiring additional authority. A rule is a type of law that is proposed and adopted by a City agency following a process that provides New Yorkers with the opportunity to review and comment on the drafts. The City has already begun the process to adopt these rules:

Regulatory Program	Proposed Rules Published	Final Rules Published
<b>IDDE</b>	September 26, 2017	February 28, 2018
<b>Construction and Post-Construction</b>	July 30, 2018	Anticipated within 30 days from Plan Approval
<b>Industrial and Commercial</b>	July 30, 2018	Anticipated December 2018

## Enforcement Response Plan

The City has developed an Enforcement Response Plan (ERP), which establishes methods and procedures for responses to potential violations of the IDDE, Construction and Post-Construction, and Industrial and Commercial Programs. The ERP is a protocol for investigating and documenting violations of the regulatory requirements of these three programs and, where appropriate, enforcing against the violators.

Possible enforcement responses include a range of techniques to address various levels of non-compliance, such as verbal warnings, written notices of violation (NOVs), citations with civil and administrative penalties, criminal penalties, stop work orders, cease and desist orders, and withholding plan approvals or permits. When issuing an enforcement response, the City will consider the violator's history, and the violation's severity and type. For persistent non-compliance, repeat, or escalating violations, the City will issue progressively stricter responses.

## Reliance on Third Parties

Third-party entities (i.e., contractors) sometimes perform work on behalf of the City. In cases where a third-party entity works on developing or implementing any portion of the SWMP, that entity must comply with applicable MS4 Permit requirements.

Each City agency contracting with a third party is responsible for providing the third party with a copy of the MS4 Permit and confirming that the third party complies with applicable MS4 Permit requirements.

## Notification of Entities Regulated Under the MS4 Permit

Many of the new or enhanced programs that will be initiated as part of the SWMP will affect specific stakeholders. In order to ensure that these stakeholders are well informed of their new requirements, the City will send out formal notifications to the following entities:

- Industrial and Commercial Facilities that are currently covered by the NYSDEC Industrial Activities Multi-Sector General Permit
- Industrial and Commercial Facilities that do not currently have coverage under the Multi-Sector General Permit but may require coverage
- Construction Sites currently covered by the NYSDEC Construction Activities General Permit

Dragon Boat Practice in Flushing Bay



## 2.0 Public Education and Outreach

The City has many existing education and outreach initiatives that inform a broad range of stakeholders about stormwater, the sources of pollutants associated with stormwater, and their potential impacts on water quality. Collectively, these programs lay the foundation for the Public Education and Outreach Program for the SWMP. Key programs include the Water Resources Annual Art and Poetry Contest, NYC Park Stewardship, Community Clean-ups, Cease the Grease, Adopt-a-Highway/Greenway, 311, and many more.

The Public Education and Outreach Program educates New Yorkers on the proper management and disposal of used oil and grease, toxic materials, pharmaceuticals, household cleaners, pet wastes, pathogens, floatables, and nutrients. The target audiences for this program include but are not limited to students, educators, residents, business community, community groups, and environmental advocates. The City uses several strategies to educate the public:

- Information and reporting hotline
- City MS4 website, agency websites, and social media
- Public signage
- Cooperative efforts with local organizations and environmental advocates
- Curriculum development and other resources for teachers
- Electronic communication
- Informational materials
- Public access to waterbodies
- Paid media
- Special programming
- Stewardship and volunteerism
- Workshops, trainings, presentations and other events

In addition to educating New Yorkers on proper management and disposal practices, the City encourages the public to report the presence of illicit discharges or water quality impacts associated with discharges from the MS4 using the 311 service. 311 is accessible in many languages and through several platforms. The public can report or seek information related to catch basins, illegal dumping, dirty conditions, dry weather discharges, and other issues.

**The City will assess ongoing programs and continue to develop and implement new strategies. The key measures to be reported on and evaluated include number of events, participants, and materials distributed.**



NYC students participate in a DEP education program



Wolfe's Pond Bluebelt Cleanup, Staten Island

## 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](https://nyc.gov/311) online at [nyc.gov/311](https://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 is able to 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. Through 311, the public can report:

- 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 liquids 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.

## 3.0 Public Involvement and Participation

Involving the public in the development of this Plan and implementation of its programs is a fundamental requirement in the City's MS4 Permit. Whether it's NYC residents who recreate in local waterbodies, real-estate developers who build in MS4 areas, groups who organize waterbody cleanups, or environmentalists who advocate for a healthier harbor, there are a variety of stakeholders who participate in the City's efforts to improve water quality.

The City identified key stakeholders through their demonstrated interest in the MS4 Permit, participation in other water quality programs, and/or their potential to be affected by SWMP implementation. These stakeholders fall into several categories:

- Students and educators
- General public and residents
- Environmental stakeholders
- Neighborhood associations and other community-based groups
- Governmental entities (e.g., New York City Housing Authority, Metropolitan Transit Authority, School Construction Authority)
- Elected officials and Community Boards
- Industrial and commercial business community
- Design, construction, and development community

The City created a robust engagement strategy with support and input from the key stakeholders. This strategy included:

- Identifying communication methods to reach stakeholders such as emails, press releases, mailed letters, flyers, media campaigns, website updates, and social media;
- Holding stakeholder meetings to keep stakeholders informed and to solicit feedback;
- Listening, acknowledging, and responding to public input;
- Creating informational and educational materials;
- Working with stakeholders to create public programs and events;
- Providing draft documents to obtain public feedback before final submission to NYSDEC;
- Leveraging other water quality related engagement efforts to reach a broader audience; and

- Reducing potential conflicts among stakeholders by seeking to build consensus around issues.

At the request of the public, the City formed a Stormwater Advisory Group (SAG). The SAG was open to the general public and enabled participants to provide substantive feedback throughout the drafting of this Plan. At SAG meetings, the City provided the following for each provision of the SWMP:

- Progress on the development of the City's legal authority to administer all permit requirements;
- Summary of ongoing stakeholder engagement; and
- Detailed review of specific SWMP programs as they were developed.

These focused meetings created a space for participants to engage with the latest planning and analysis completed by the City. The City evaluated and responded to comments and suggestions received during these meetings.

The City will continue to engage the public as it implements the SWMP. In addition to administering the programs listed in Chapter 2: Public Education and Outreach, the City will also conduct outreach and accept public input throughout the rulemaking process as described in Chapter 1: Legal Authority and Program Administration, and continue to facilitate public reporting on stormwater related concerns through 311. Each year the City will publish and publicly present a draft Annual Report for public review and comment. Additional information about the SWMP is available on the DEP website; the public is also encouraged to email [MS4@dep.nyc.gov](mailto:MS4@dep.nyc.gov) for more information.

**Key measures to be reported include a summary of comments received on the draft Annual Reports and SWMP implementation, and a list of involvement and participation programs and activities.**



East River

## 4.0 Mapping

The City has many programs to document and map important information about NYC. Much of the information gathered by these programs is available to the public through NYC Open Data at [opendata.cityofnewyork.us](https://opendata.cityofnewyork.us). As part of the SWMP, the City is mapping MS4 outfalls and drainage areas.

Over the past decade, DEP developed a Sewer Network Geodatabase, which digitally captures important information about DEP's water and sewer network in a Geographic Information System (GIS). DEP has also conducted extensive analysis and modeling of the City's combined sewer system as part of an effort to reduce CSOs. As a result, DEP has a good understanding of the areas draining to combined sewer outfalls.

When the MS4 Permit was issued in 2015, the City used these existing DEP data sets to create the Historical MS4 Map. This map represented the City's best understanding of the MS4 area and outfalls at that time and has been used throughout the development of the SWMP. However, the Historical MS4 Map is unrefined, may contain some inaccuracies, and does not incorporate sewer infrastructure of other City agencies. The City is therefore in the process of updating the MS4 Map by refining and identifying the MS4 drainage area and outfalls.

The Preliminary MS4 Map showing the known MS4 drainage area and outfalls as of August 1, 2018 is available to

the public at [www.nyc.gov/dep/ms4map](https://www.nyc.gov/dep/ms4map). The Preliminary MS4 Map contains supplemental information that may be relevant to stormwater management. The City aims to complete the MS4 mapping effort by August 1, 2020, after which point the map will be updated once every five years.

**The success of the MS4 Mapping Program will be measured by the percent and number of MS4 outfalls mapped and the submission of the Final MS4 Map.**

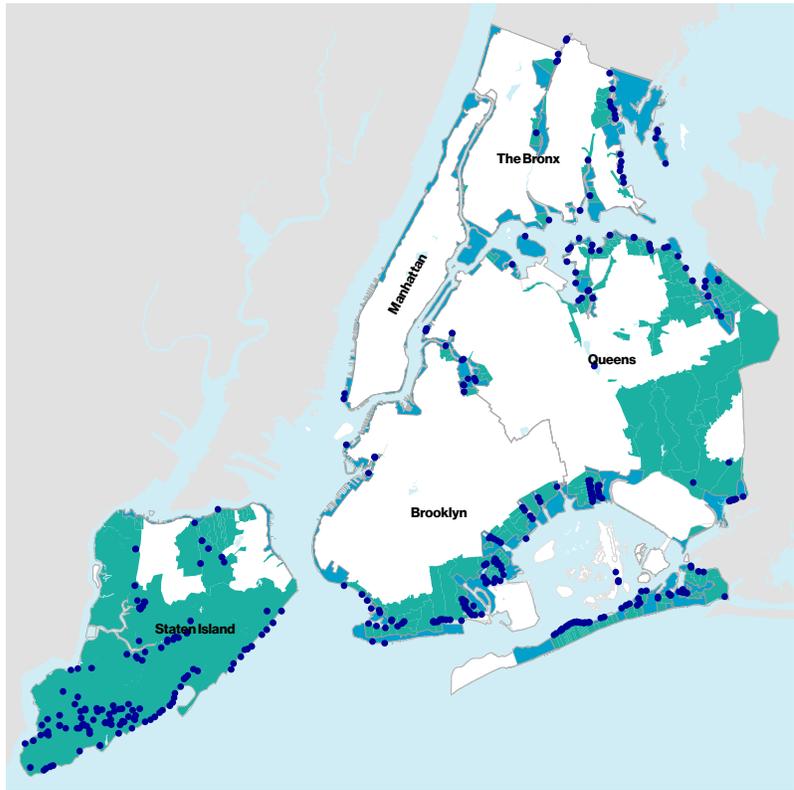
### What is an MS4 outfall?

An **MS4 outfall** is any point where a separate storm sewer system owned or operated by the City of New York discharges either to Surface Waters of New York 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 an MS4 owned or operated by an entity other than the City are not considered MS4 outfalls.

## Historical MS4 Map

-  MS4 Outfalls
-  Waterbody
-  Direct Drainage Area
-  MS4 Drainage Area

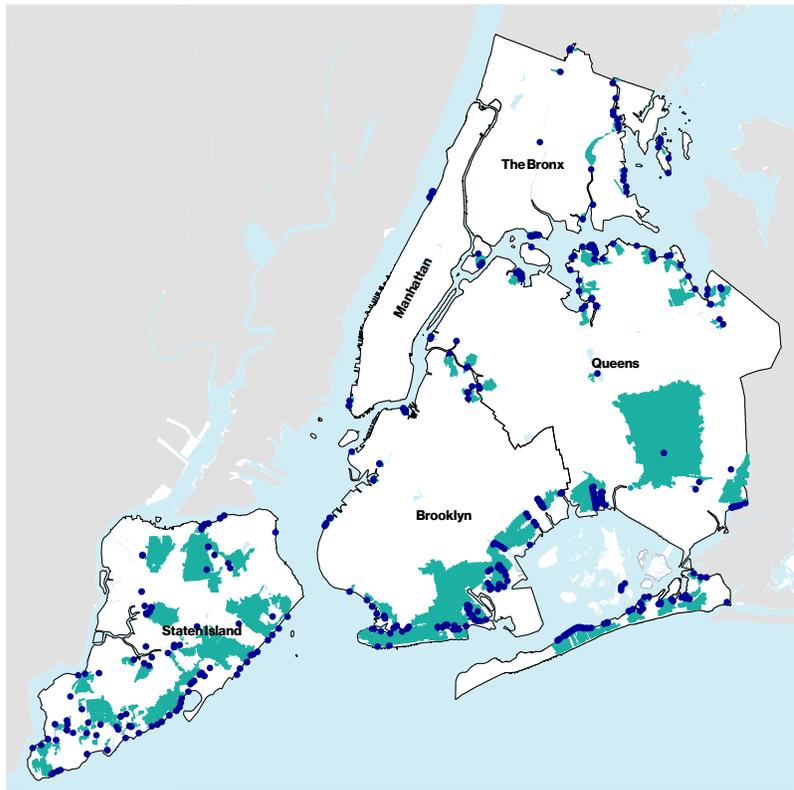
The information shown on this map was the best available as of August 1, 2015. This information was used for planning purposes during SWMP development and has been superseded by the Preliminary MS4 Map as of August 1, 2018.



## Preliminary MS4 Drainage Areas and Outfalls

-  MS4 Outfalls
-  CSO Outfalls with MS4 connections
-  MS4 Drainage Area
-  Waterbody

The information shown on this map is the best available information as of the date of publication, August 1, 2018.



## 5.0 Illicit Discharge Detection and Elimination (IDDE)

An illicit discharge is an unauthorized non-stormwater discharge to the storm sewer system. Examples of illicit discharges include sanitary connections to storm sewers, illegal dumping, and spills that enter the sewer. These discharges can include POCs such as pathogens and oil that can degrade water quality.

The City has several long-standing programs that together comprise our efforts to detect, identify, and eliminate illicit discharges:

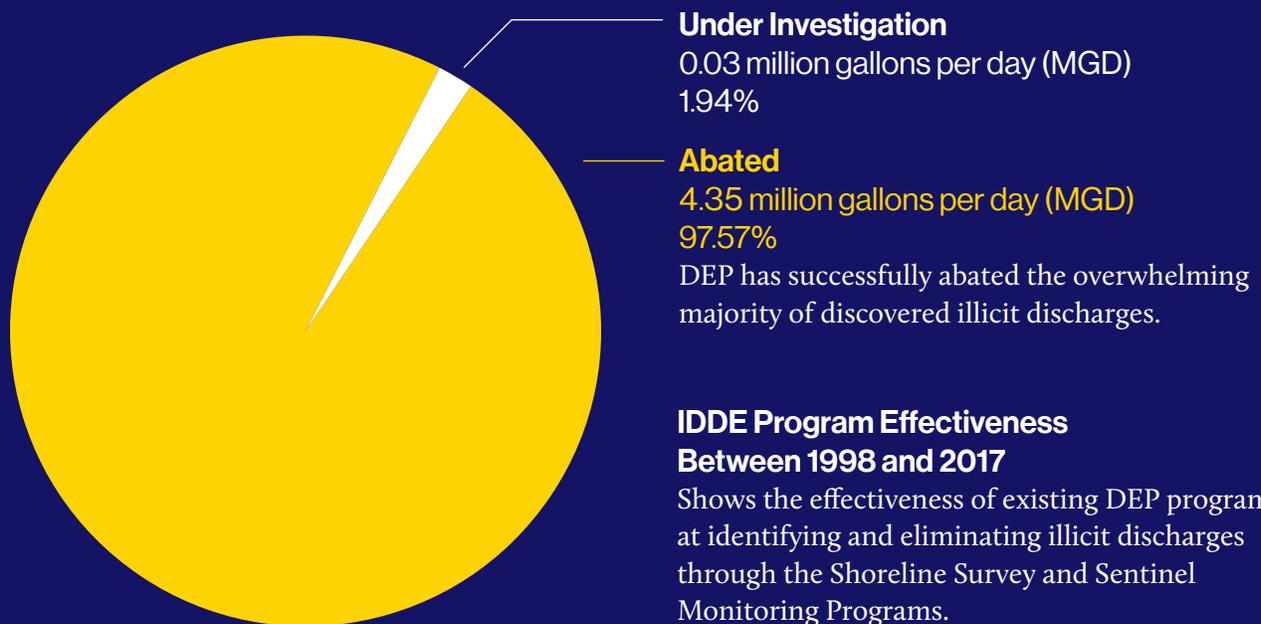
The **Shoreline Survey Program** is an outfall reconnaissance inventory that identifies and characterizes shoreline outfalls in NYC. Under this program, DEP surveys 100 percent of the shoreline every ten years, with progress made each year. If DEP observes a dry weather discharge, which could be an illicit discharge, it conducts an investigation to track down the source and takes steps to abate the problem.

The **Sentinel Monitoring Program** monitors waterbodies throughout NYC for pathogens. Under this program, DEP collects samples at 80 monitoring stations on a quarterly basis. DEP compares sampling results to a NYSDEC-established water quality baseline. If sampling results are above the baseline, DEP investigates the adjacent shoreline through a mini-shoreline survey to determine whether there is a contaminated dry weather discharge that would require source trackdown and abatement actions.

The **Harbor Survey Program** samples ambient waterbody stations to assess the health of waterbodies throughout NYC. DEP coordinates the review and analysis of this data among the various monitoring programs and it may be used to initiate a mini-shoreline survey.

**311** provides a mechanism for the public to report illicit discharges to the City. Waterway complaints, illegal dumping, and oil spills are examples of reports the public can make through 311. The City responds to 311 reports based on the type of complaint. Typically, a City employee will go to the location of a complaint, look for evidence, and try to identify the source.

The **Emergency Spill Response** Units in DEP and FDNY respond to spills citywide. DEP responds to spills that enter the sewer system 24 hours a day/7 days a week. Throughout NYC, the FDNY Hazmat Unit and the DEP Division of Emergency Response and Technical Assessment respond to hazardous materials spills. DSNY may assist in spill response when requested to do so by emergency response personnel.



## Illicit Discharge Trackdown and Elimination

Once a potential illicit discharge is identified, DEP initiates a trackdown to find the source and takes steps to eliminate it. The trackdown process is a series of complex steps both in the office and in the field. DEP identifies areas that drain to the suspected outfall using sewer maps; pulls manholes in the streets to look for flow; samples discharges present in storm sewers to test for pollutants; and conducts dye tests.

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, and the logistics and complexity of the drainage area.

If the source of an illicit discharge is found, DEP issues a Commissioner's Order requiring the responsible party to take corrective action. DEP works with the responsible party, which can range from homeowners to industrial facilities, to ensure corrective action is taken as quickly as possible. DEP also revisits the site to ensure compliance.

DEP reports to NYSDEC when an illicit discharge is detected and again when the source is confirmed. DEP also notifies Community Boards, elected officials, and community groups when illicit discharges are confirmed. The public can also be notified through the NYSDEC NY-Alert System and community leaders.

The Integrated Sentinel Monitoring Report, which DEP publishes annually on its website, includes water quality data; field investigation status and results; and an annual summary of spills and illegal dumping into the sewer system.

## IDDE Education, Outreach, and Training

The City conducts outreach to inform the general public, businesses, and City employees about illicit discharges and how to properly dispose of waste.

*General public:* The City provides information on illicit discharges through the DEP website. [DSNY SAFE](#) disposal events and Special Waste Drop-off Sites are a resource for the public to properly dispose of waste and ensure it does not enter the MS4.

- *Industry and businesses:* The City conducts targeted outreach on illicit discharges through meetings, door-to-door visits, workshops, mailers, and on-site visits to educate the business community on proper waste disposal.
- *City employees:* The City trains operational staff on preventing and identifying illicit discharges during routine work activities through the Pollution Prevention and Good Housekeeping (PP/GH) Program.

The City also trains employees implementing the IDDE Program on illicit discharge identification, proper procedures for reporting and responding, and applicable health and safety guidelines.

**Annual key measures of the IDDE Program include number of MS4 outfalls inventoried; number of illicit discharges detected and number eliminated; number of outreach programs and activities; and number of staff trained.**

Wildlife in Bowery Bay



## 6.0 Construction and Post-Construction

Construction is part of the fabric that supports the growth and change of NYC. Development of new sites and redevelopment of old sites redefine the City every day.

To reduce the impact that construction and development may have on stormwater runoff, NYSDEC administers the State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002) (NYSDEC CGP). The MS4 Permit requires the City to develop and administer an enhanced regulatory program based on the existing NYSDEC CGP program. The City has developed the Construction and Post-Construction Program (C/PC Program) which is applicable in the MS4 area.

### SWPPP Review and Approval

A stormwater pollution prevention plan, or SWPPP, is a plan prepared by a developer to manage stormwater runoff from a construction site. SWPPPs include elements that prevent pollution both during construction and after a project is completed. The NYSDEC CGP requires developers to prepare SWPPPs; the MS4 Permit requires the City to review and approve these SWPPPs.

### Stormwater Permits

To ensure developers follow their approved SWPPPs, the City will issue Stormwater Construction Permits and Stormwater Maintenance Permits. The Stormwater Construction Permit requires that the people who work on the project manage the construction site according to the SWPPP so that eroded soil and other construction wastes do not become a source of stormwater pollution. During construction, DEP may inspect a site to verify compliance with the SWPPP.

For many projects, in addition to practices that control stormwater during the construction process, the SWPPP also includes stormwater management practices (SMPs) that will be implemented to reduce the pollutants being washed from the site after construction is complete. When construction is complete, the owner must apply for and maintain a Stormwater Maintenance Permit, which requires long-term operation and maintenance of the SMP(s) that have been constructed. DEP may periodically inspect sites to verify that SMPs are properly maintained and functioning.

### Threshold Study

The MS4 Permit required the City complete a Lot Size Soil Disturbance Threshold Study for Construction and Post-Construction Stormwater Management (Threshold Study) to determine the appropriate size of soil disturbance that should trigger the need for review, approval, and permitting under the C/PC Program in the MS4 area. The City has completed the Threshold Study and recommends adoption of a 20,000 square foot soil disturbance threshold for both construction and post-construction requirements for public and private development and redevelopment projects on tax lots within the MS4 area.

The City anticipates the implementation of the program at the reduced threshold once NYSDEC has approved the proposal and DEP has gained at least a full year of experience running the program at the 1-acre threshold. The City anticipates rulemaking for the reduced threshold to take place between 2020 and 2025. Through the rulemaking process, DEP will update the definition of a covered development project to reflect the approved reduced threshold. During the remainder of the current permit term, and as the program is implemented at the 1-acre threshold, DEP will seek feedback from the community and fine-tune the program based on that feedback.

**Key measures to be annually reported for the C/PC Program include number of SWPPPs reviewed and approved; number and type of permits issued; and number and type of enforcement actions.**



Woodrow Bluebelt, Staten Island

## 7.0 Pollution Prevention/Good Housekeeping 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. Most City agencies with municipal facilities and operations already have existing practices that help prevent stormwater pollution. Building off these existing practices, the City has developed a comprehensive Pollution Prevention/Good Housekeeping (PP/GH) Program that:

- Maintains an inventory of municipal facilities and assesses these facilities and operations for the potential to contribute pollution to stormwater runoff
- Provides guidance on stormwater control measures (SCMs) to reduce stormwater pollution from municipal facilities and operations
- Trains key staff on pollution prevention and good housekeeping practices
- Considers the feasibility of incorporating runoff reduction techniques and green infrastructure in planned municipal upgrades

This program is standardized for consistency across facilities and operations, both on-site and off-site, and equips City staff with the necessary information and tools for each agency to implement the program.

### Self-Assessments of Municipal Facilities and Operations

As part of the PP/GH Program, the City will assess municipal operations and facilities in the MS4 area with the potential to contribute pollutants to stormwater runoff. The City prepared an initial inventory of 736 municipal facilities based on the Historical MS4 Map. The City categorized these facilities and operations using a standardized prioritization protocol that evaluates their potential to contribute to stormwater pollution, referred to as pollution potential. Facilities and operations were given priority ratings of high, medium, or low, which determine the frequency of self-assessments: high priority site assessments happen every two years, medium every five years, and low every seven years.

A facility or operation may increase or decrease in priority with each assessment based on the pollution potential at that time, and will then be subject to the applicable timeline for the next self-assessment based on the revised priority. The standardized self-assessment protocol aids agencies in determining sources of POCs potentially generated by their facilities and operations; evaluating the adequacy of their current PP/GH practices; and identifying management practices, policies, and procedures that may be implemented.

### Initial Inventory and Pre-Assessment Priority Rating of Municipal Facilities to date

Agency	Number of Facilities			Number of Sites
	Low Priority	Medium Priority	High Priority	
DCAS	2	3	-	5
DEP	2	53	-	55
DOC	-	-	2	2
DOE	14	146	-	160
DOT	50	23	3	76
DPR	172	92	-	264
DSNY	12	30	3	45
FDNY	35	40	1	76
NYPD	18	33	2	53
<b>Total</b>	<b>305</b>	<b>423</b>	<b>11</b>	<b>736</b>

The difference in the number of facilities reported in the draft Plan published in April and in the final Plan reflects updated information concerning whether certain facilities are managed jointly or independently or new facility data revealed they are covered under other SPDES permits.

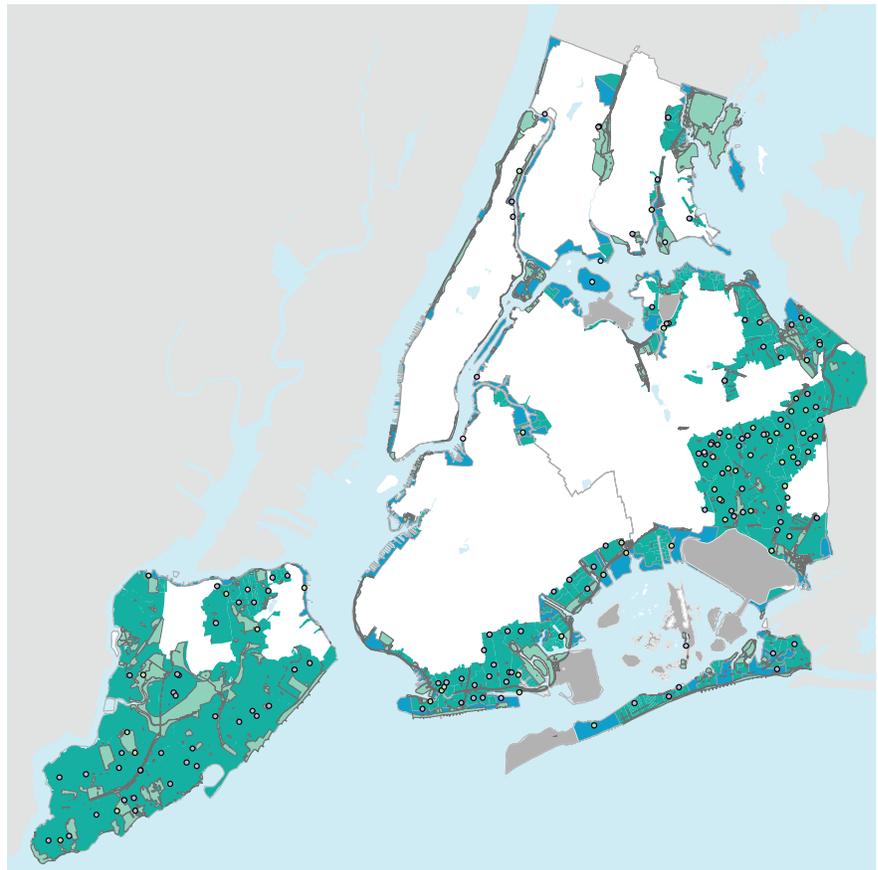
## Map of Municipal Facilities in the PP/GH inventory to date

### Agency

- DCAS
- DEP
- DOC
- DOE
- DOT
- DPR
- DSNY
- FDNY
- NYPD
- DPR Parks

### Drainage Area Type

- Direct Drainage
- Municipal Separate Storm Sewer System



The City developed guidance on additional PP/GH practices, referred to as stormwater control measures (SCMs). Agencies can select appropriate actions from this suite of SCMs for implementation at their facilities and operations. SCMs include options with a range of solutions and effectiveness, which may involve both structural and non-structural controls. Structural controls include oil and water separators, grit chambers, or other devices that remove pollutants. Non-structural controls include operational practices, signage, staff education, and other procedures. The appropriate controls are subject to agency decision making, which will consider potential effects on agency operations and individual circumstances at each facility. The list of the SCMs, which incorporated interagency and public feedback will be available at [www.nyc.gov/dep](http://www.nyc.gov/dep).

### City Staff Training

The City developed PP/GH training for agency staff that addresses ways to reduce the discharge of pollutants from municipal facilities and operations. The City will deliver training to agency-identified staff responsible for the implementation of SCMs in day-to-day municipal operations; agency trainers responsible for providing in-person trainings on pollution prevention; and agency site assessors responsible for conducting the self-assessments.

### Green Infrastructure Feasibility for Planned Municipal Upgrades

Each individual agency will consider and, if feasible and cost-effective, incorporate runoff reduction techniques and green infrastructure (GI) during planned municipal upgrades, including within municipal rights-of-way. Examples of GI include bioswales, green streets, grass swales, rain gardens, curb cuts to reroute flow to below-grade infiltration areas, or other low-cost improvements that provide runoff treatment or reduction. Consideration of feasibility includes physical site conditions, hydrogeological and environmental analyses, costs, and expected life cycles of available technologies. The City has developed criteria for agencies to use during municipal upgrade planning as a consistent method for assessing feasibility of GI implementation.

**Key measures of the PP/GH Program include training of agency staff, completion of self-assessments, and implementation of SCMs and green infrastructure projects.**

## 8.0 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-0-17-004) (MSGP). While NYSDEC will continue to administer the MSGP program, DEP will implement an Industrial and Commercial (I/C) Program in the MS4 area through the following actions:

- Maintain a facility inventory
- Assess unpermitted facilities for contributions of POCs to impaired waters
- Inspect both publicly and privately owned facilities with MSGP coverage and take enforcement actions, if appropriate
- Develop a database tracking system
- Train inspection staff

### Industrial and Commercial Facility Inventory

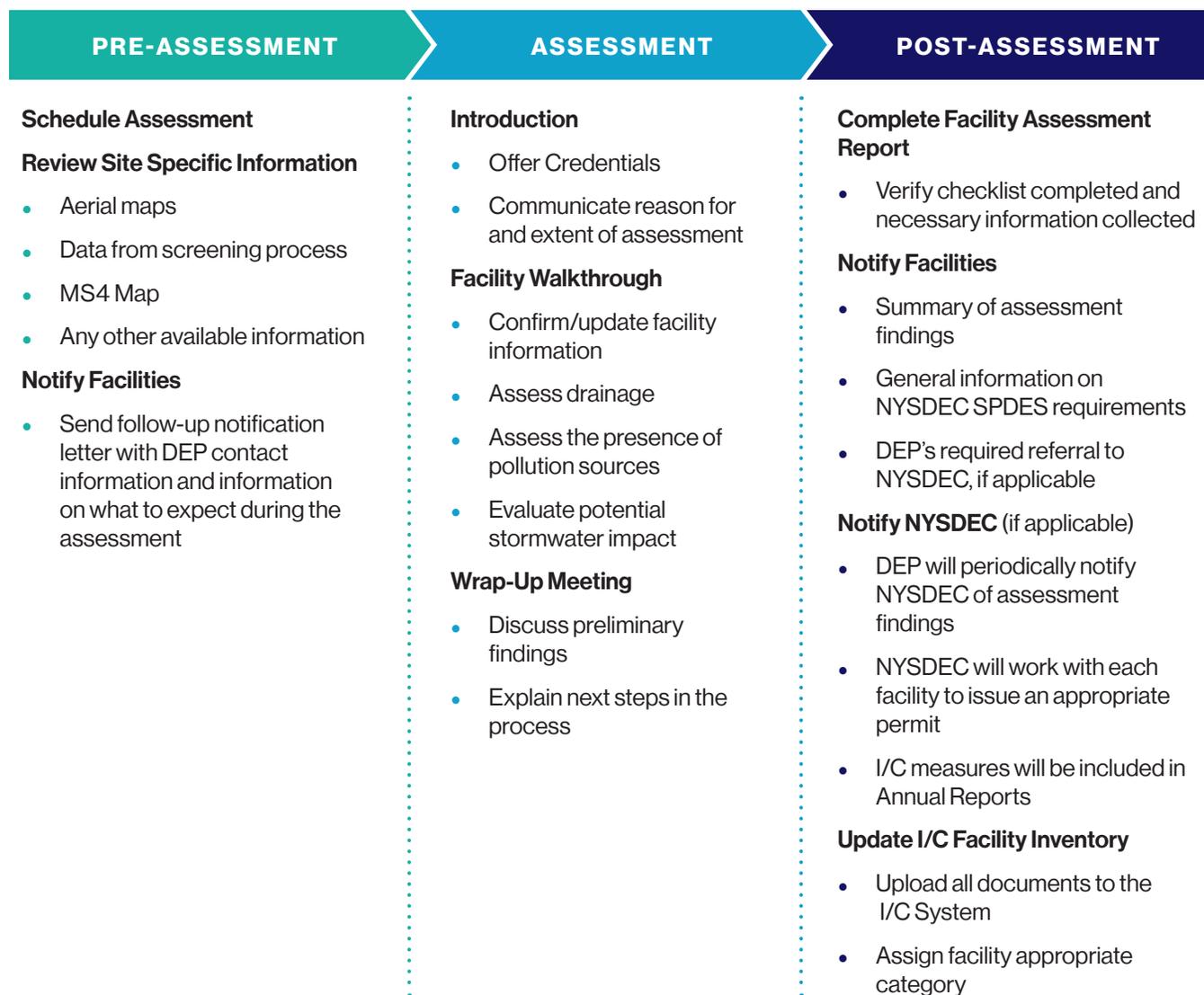
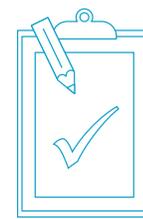
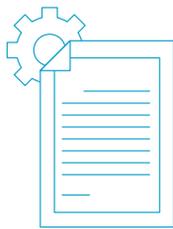
Using the Historical MS4 Map, various databases, and information from NYSDEC, DEP created an Industrial and Commercial Facility Inventory (I/C Facility Inventory). The I/C Facility Inventory includes all publicly and privately owned industrial and commercial sites that may conduct activities within the industrial sectors covered by the MSGP permit, and other industrial/commercial facilities that might generate a significant amount of POCs. DEP screened the facilities in the I/C Facility Inventory, and categorized the facilities for DEP action. The inventory serves as the basis for the I/C Program, and will be updated every five years.

### I/C Facility Inventory Categories

Category	Facility Characteristics
<b>Category 1: No Further Action</b>	Not subject to MSGP; not draining to the MS4; covered under individual SPDES permit; or filed a Notice of Termination (NOT) with NYSDEC
<b>Category 2: Facilities with NYSDEC No Exposure Certification</b>	NYSDEC No Exposure Certification
<b>Category 3: On-Site Assessment for Potential Referral to NYSDEC</b>	Meets the criteria set forth in Part IV.H.1.a.iii of the MS4 Permit; discharges stormwater to the MS4; not covered under an existing MSGP or individual SPDES permit; and aerial photos show evidence of industrial and commercial activity
<b>Category 4: Ongoing MSGP Inspections Based on Priority Rating</b>	NYSDEC MSGP coverage

## Unpermitted Facility Assessments

DEP will assess the approximately 1,300 unpermitted facilities in the I/C Facility Inventory (Category 3). DEP expects to begin facility assessments in early 2019; however, the exact start date of the assessments is dependent on NYSDEC approval of this Plan.

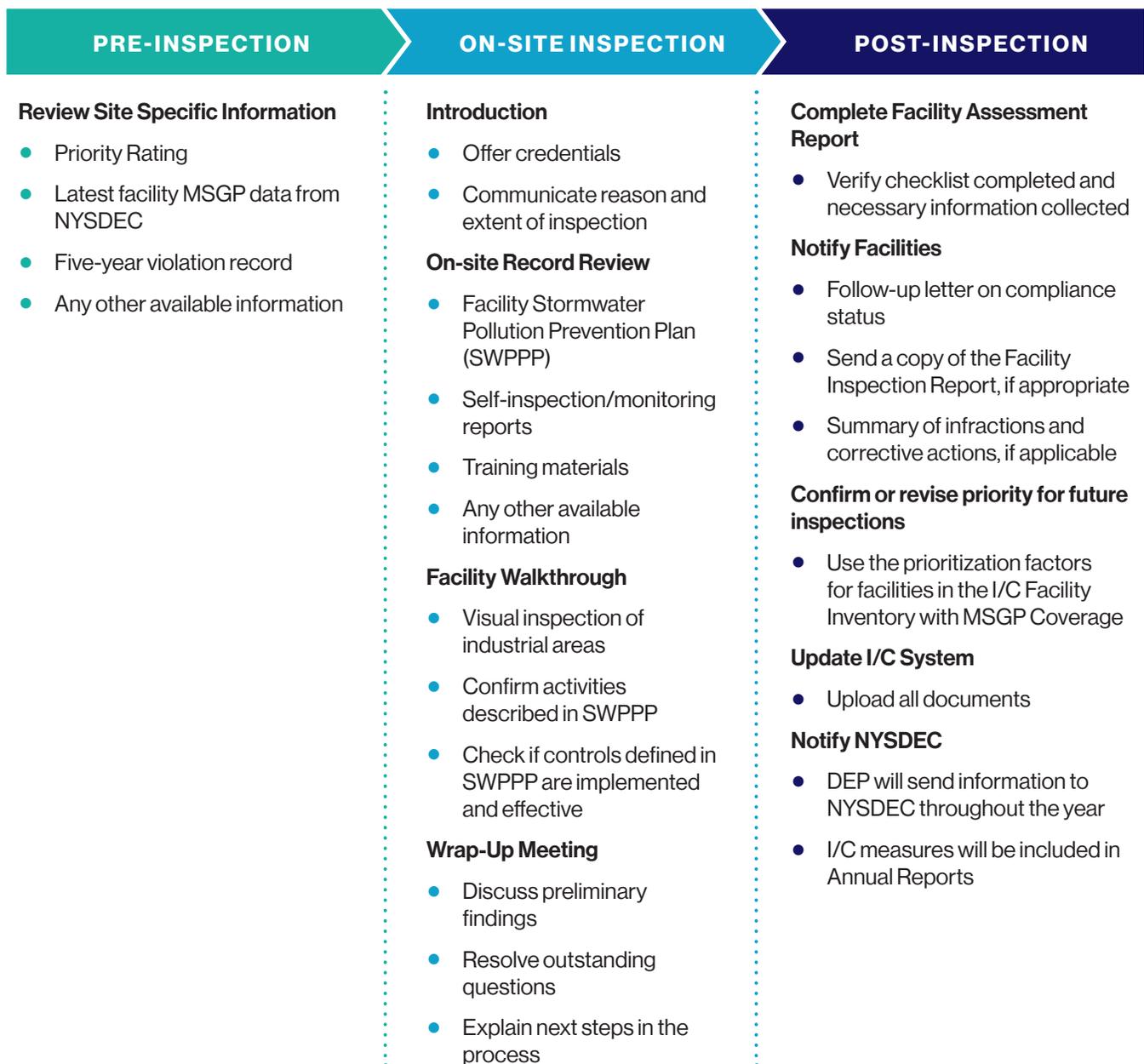


## Permitted MSGP Facility Inspections

DEP will inspect publicly and privately owned facilities with MSGP coverage in the I/C Facility Inventory based on information and prioritization provided by NYSDEC (Category 4). For each facility, DEP will use findings from the initial inspection, and other available information, to determine potential water quality impacts and to prioritize the facility for future inspections. DEP will inspect high priority facilities every year; medium priority facilities every three years; and low priority facilities every five years.

DEP will review on-site SWPPPs and related records as part of the inspection. If DEP determines that a facility is not in compliance with the MSGP, DEP could take enforcement action.

Key measures of the I/C program include number of MSGP facilities inspected by priority, status of unpermitted assessment program, and number and type of enforcement actions completed.





DEP skimmer boat collects trash and debris

## 9.0 Control of Floatable and Settleable Trash and Debris

Trash and debris from urban areas can be transported by stormwater runoff into local waterbodies. Once waterborne, this trash and debris is often referred to as floatables. The SWMP relies on many existing programs to control trash and debris stemming from the MS4. Key programs to manage trash and debris include street sweeping, catch basin hoods and maintenance, and booms and nets that catch materials that come out of outfalls. The City-Wide CSO Floatables Plan of 1997<sup>1</sup> reported an estimated 96% capture rate of street litter citywide through these programs and treatment of combined sewage. The City has developed a work plan to determine the loading rate of trash and debris discharged from the MS4. Additionally, City facilities and operations within the MS4 will control trash and debris as part of their PP/GH practices.

The City also administers a variety of public participation programs that encourage the public to help manage trash and debris. This includes a suite of stewardship programs (e.g., Adopt-a-Bluebelt, Adopt-a-Highway/Greenway, and Adopt-a-Basket) and 311, which enables New Yorkers to report dirty conditions to the City. The City also implemented several public awareness campaigns in connection with the SWMP:

- **B.Y.O. Campaign.** Shorthand for “bring your own,” the B.Y.O. Campaign encourages New Yorkers to live a less disposable lifestyle by using reusable bags, mugs, and bottles. By encouraging New Yorkers to use reusable items, the campaign helps reduce the initial generation of waste that may end up as floatable debris in the City’s waterways.



More and more New Yorkers are carrying reusable bags. Join in! Remember to Bring Your Own bag when shopping.

 **SMALL STEPS, BIG STRIDES.**    : Birdie\_NYC, #BYONYC  
nyc.gov/greenyc

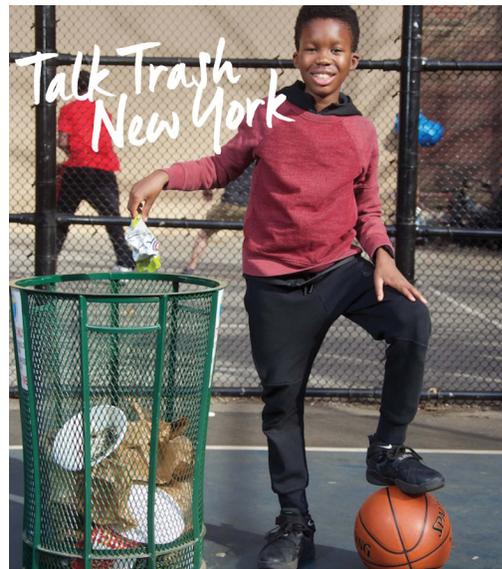


More and more New Yorkers are carrying reusable bottles. Join in! Bring Your Own bottle and fill it with top quality NYC tap water.

 **SMALL STEPS, BIG STRIDES.**    : Birdie\_NYC, #BYONYC  
nyc.gov/greenyc

1. HydroQual, Inc. 1997. City-Wide CSO Floatables Plan, prepared for the City of New York, Department of Environmental Protection, Bureau of Environmental Engineering, June 1997

- **#TalkTrashNewYork.** The City developed a basketball-themed message that reminds New Yorkers that keeping NYC clean is a team effort. DSNY partnered with DPR and the New York Knicks for #TalkTrashNewYork, an anti-litter campaign promoting clean streets, sidewalks, beaches, and parks across the City.
- **Don't Trash Our Waters.** Seeking to raise public awareness of the connection between trash, litter, and water quality, the City developed the campaign message, "Don't Trash Our Waters." This campaign featured a series of charismatic underwater characters, designed to remind New Yorkers that trash on the street ends up in our harbor and hurts local wildlife such as dolphins, seals, whales, turtles, and oysters. In addition to raising awareness, the campaign also aimed to change littering behavior by imploring New Yorkers to "put it in the can."



## Loading Rate Study

The City has developed a work plan to determine the loading rate of trash and debris discharged from the MS4 to waterbodies impaired by floatables. The work plan combines field measurements with model analysis to determine loading rates for specific waterbodies as well as the whole MS4. The City will measure trash and debris discharged from sample catch basins representing 21 site categories that are likely to have different trash loading rates. To enhance the field measurements, the City will use an existing model to check the results of the field monitoring and to account for downstream in-water controls such as booms. These data and model results will then be used to estimate a loading rate for the whole MS4. The work plan is included as Appendix 9.1.

## Identifying and Selecting Additional Controls

As part of the SWMP, the City has also identified controls and technologies used by other municipalities. DEP surveyed eight municipalities to identify available types of technologies used for floatables control and assess which may be applicable in the MS4 area. The City is currently implementing or has previously evaluated nearly all of the controls used by other municipalities.

Following the results of the loading rate study, the City will propose a method to site, select, and size additional controls to reduce floatables from the MS4. This method will identify and prioritize areas for additional controls and may consider factors such as waterway characteristics, neighborhood characteristics, and existing controls.

**Key measures of the Floatables Control Program** are the number of catch basins inspected and cleaned, the number of catch basin hoods installed/replaced, and the results of the boom and netting program. The status of the loading rate study will also be reported.

## 10.0 Monitoring and Assessment of Controls

To assess the quality of stormwater runoff from the MS4, the City has developed an MS4 Monitoring Program that combines data collected from existing monitoring programs with additional MS4 outfall or manhole water quality and flow data. This program is designed to enable an adaptive management approach toward monitoring and assessing water quality in impaired waters.

The City's routine ambient water monitoring programs described below provided useful data for the development of the MS4 Monitoring Program. These monitoring programs will continue and the City will use the data to complement the MS4 Monitoring Program.

- **Harbor Survey Program.** DEP and predecessor City agencies began monitoring water quality in New York Harbor waters in 1909. Today, the Harbor Survey Program assesses changes in water quality in New York Harbor over long periods to measure the effectiveness of the City's various water pollution control programs. This program routinely measures dissolved oxygen (DO), fecal coliform, enterococci, secchi depth (transparency), chlorophyll "A," total suspended solids (TSS), and total nitrogen (TN).
- **Sentinel Monitoring Program.** DEP monitors waterbodies throughout NYC for pathogens in accordance with DEP's 14 WWTPs SPDES Permits. Under this program, initiated in 1998, DEP collects samples at 80 monitoring stations on a quarterly basis. DEP compares sampling results to the NYSDEC-established water quality baseline. If sampling results are above baseline criteria, DEP investigates the adjacent shoreline through a mini-shoreline survey to determine whether there is a contaminated dry weather discharge that would require source trackdown and abatement actions.
- **Shoreline Survey.** DEP identifies and characterizes shoreline outfalls in NYC. Under this program, DEP surveys 100 percent of the shoreline every ten years, with progress made each year. If DEP observes a dry weather discharge, it conducts an investigation, which may include sampling, to track the source and take steps to abate the problem.
- **Field Sampling Analysis Program (FSAP) Sampling Program.** The FSAP is a citywide synoptic sampling program with the objective of evaluating the water quality of CSO-impacted waterbodies. This program is a temporary sampling program for DEP's CSO Long Term Control Plan (LTCP) program that targets wet weather events and takes simultaneous water quality samples at multiple locations in a short period. Each impacted waterbody is governed by a plan that addresses waterbody-specific considerations. The FSAP focuses on target bacteria (i.e., fecal coliform and enterococci), TSS, biochemical oxygen demand (BOD), temperature, conductivity/salinity, and DO associated with CSO and stormwater discharges.
- **Beach Sampling.** City bathing beaches are regulated, monitored, and permitted by the City and State. Under Article 167 of the City Health Code and Section 6-2.19 of the City Sanitary Code, DOHMH is responsible for beach surveillance and monitoring for all permitted City beaches. This monitoring includes routine enterococci measurements at beaches for compliance with water quality standards. DOHMH compiles the results of routine water quality monitoring and compliance inspections in an Annual Surveillance and Monitoring Beach Report.
- **Community-Led Monitoring.** Many schools, universities, citizen scientists, recreational water users, and environmental organizations conduct their own water quality testing in NYC waters. The City considers established community-led monitoring data in evaluations of long-term trends of water quality and comparisons. For example, during the development of several CSO LTCP's, organizations such as Riverkeeper, Bronx River Alliance, and the New York City Water Trail Association's Citizens Water Quality Testing Program conducted sampling and submitted data and analysis to the City. The City reviewed this information in relation to its own analyses, noted comparisons and differences, and in some cases used it for modeling calibration processes. DEP compared stakeholder data with City data and provided a summary of the comparison during public meetings, on the DEP website, and in the final CSO LTCP that DEP submitted to NYSDEC. Organizations besides those listed above that collect long-term water quality data are encouraged to notify the MS4 team with information on their monitoring program at [MS4@dep.nyc.gov](mailto:MS4@dep.nyc.gov).

## MS4 Monitoring Program

The MS4 Monitoring Program relies on a phased approach to assess the pollutant contribution from the MS4 area and its influence on New York Harbor water quality. In Phase 1, DEP will meter and sample at a set of MS4 outfalls during wet weather to assess the influence of land use on stormwater discharge and pollutant concentrations. In NYC, tidal flows influence the majority of outfalls with tidal waters sometimes reaching miles upstream. This influx of harbor water impedes stormwater discharges from outfalls and therefore, presents challenges for measuring stormwater impacts on receiving waterbodies. In order to avoid tidal influence in the sewer, DEP will collect some samples from manholes upstream of the representative MS4 outfalls. The Phase 1 monitoring strategy and work plan focuses on eight outfalls representative of six land use types within NYC: mixed; high-density residential; low-density residential; industrial; open space; and highway. Sampling will start by August 2020.

Using the data from Phase 1, the City will develop a monitoring strategy for Phase 2. In Phase 2, DEP will target a second set of outfalls to determine which have the greatest pollutant loadings and evaluate long-term trends. Phase 2 will compare results from outfall monitoring stations with receiving water quality data collected at the Harbor Survey and/or Sentinel Monitoring stations nearest to the Phase 2 outfalls. For more detail on Phase 1 and 2 monitoring, refer to Appendix 10.1.

**To track the implementation of the MS4 Monitoring Program, the City will report on the status of program development and implementation, as well as an assessment of the program results and recommended adjustments.**

## Summary of MS4 Monitoring Program Phases

Phase	Goal	Sampling Sites	Frequency	Monitoring Parameters	Anticipated Start
Phase 1	Assess the effect of land use on stormwater discharge and pollutant concentrations	MS4 outfalls representative of 6 land use types (mixed, high-density residential, low-density residential, industrial, open space, and highway)	Quarterly	<ul style="list-style-type: none"> <li>Residue</li> <li>Pathogens</li> <li>Nutrients</li> <li>Metals</li> <li>Oil and grease</li> <li>Field in-situ</li> <li>Flow</li> </ul>	By August 2020
Phase 2	Evaluate long-term trends	<ul style="list-style-type: none"> <li>MS4 outfalls to be determined based on Phase 1 results</li> <li>Nearest existing corresponding Harbor Survey and/or Sentinel Monitoring Stations</li> </ul>	To be determined based on Phase 1 results	<ul style="list-style-type: none"> <li>Pathogen(s)</li> <li>Nutrient(s)</li> <li>Other parameters based on Phase 1 results</li> </ul>	After analysis of Phase 1 data

# 11.0 Special Conditions for Impaired Waters

The City will administer the SWMP to reduce or remove pollutants in stormwater runoff from the MS4 area draining to Surface Waters of the State, including impaired waters. The MS4 Permit identifies special conditions for specific impaired waterbodies:

- **Impaired waters without Total Maximum Daily Loads (TMDLs)**

The City will ensure no net increase of the pollutant of concern (POC) causing the impairment from non-negligible land use changes or changes to stormwater management practices within the MS4 area draining to the impaired waters. This will be achieved through SWMP implementation and the City’s Stormwater Pollution Prevention Plan (SWPPP) review process as part of the C/PC Program.

- **Impaired waters with NYSDEC approved Combined Sewer Overflow Long Term Control Plans (CSO LTCPs)**

Impaired waters with NYSDEC 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, are Priority MS4 Waterbodies. The City will develop Priority MS4 Waterbody Plans (PWP) for each of the qualifying waterbodies.

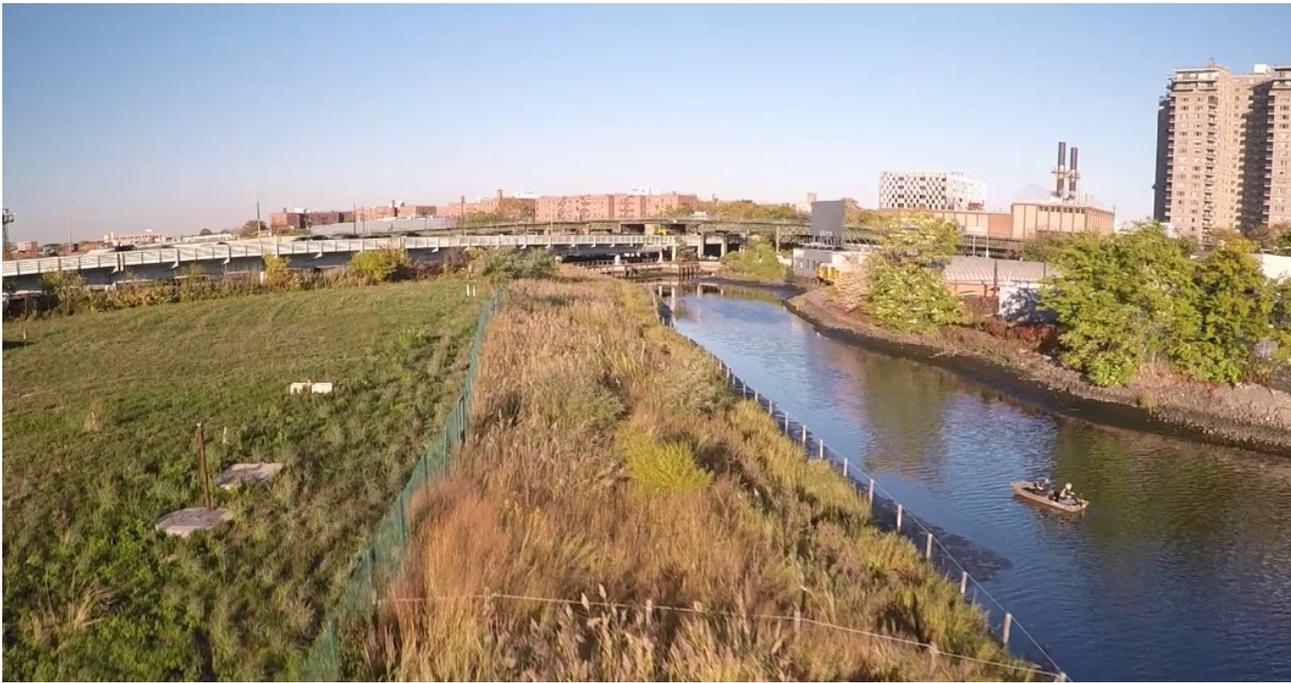
NYSDEC approved the Coney Island Creek CSO LTCP on April 4, 2018 and based on the City’s recommendation in the LTCP, directed the City to designate Coney Island Creek as a priority MS4 waterbody under its MS4 program. The PWP for Coney Island Creek, summarized below, includes the source categories for POCs causing impairment, additional or customized best management practices, and opportunities for GI pilots. Currently, no other Priority MS4 Waterbodies have been identified. If other Priority MS4 Waterbodies are identified in the future, additional waterbody-specific PWP will be developed and summarized in Annual Reports.

### Coney Island Creek PWP

The two POCs causing impairments for Coney Island Creek are floatables and pathogens. The table below shows the targeted sources of these POCs in relation to the MS4 area draining to Coney Island Creek, and proposed control measures. In addition, DEP has identified potential GI opportunities in Coney Island Creek MS4 areas, and is collaborating with other agencies (e.g., DPR, NYCHA, DOE) to evaluate the feasibility of adding GI pilot projects at these sites.

## Summary of POC Source Categories and Control Measures for Coney Island Creek

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



Coney Island Creek aerial view

## 12.0 Recordkeeping and Reporting

Each agency will maintain their own records generated while implementing the SWMP. To consolidate information for MS4 reporting and information requests, the City developed a Consolidated Information Tracking System. This system will allow each agency to input data and supporting documentation about SWMP activities. The public can request SWMP-related records by emailing [MS4@dep.nyc.gov](mailto:MS4@dep.nyc.gov).

Each year, the City will prepare an Annual Report to document the SWMP activities for the prior reporting year. DEP will publish a draft of the Annual Report on the DEP website and present it to the public by July 1 of every year. The draft Annual Report will generally include a brief description of the SWMP activities completed during the reporting year, measurable goals, and specific reporting requirements included in the MS4 Permit. The draft Annual Report will also include activities planned for the next year, and, if applicable, any proposed changes to this Plan. Once the City addresses the public comments and edits the draft report, the City will submit the final Annual Report to NYSDEC and publish it on the DEP website.

The City will include an Annual Effectiveness Assessment in each Annual Report. This assessment will evaluate the effectiveness of the overall SWMP and progress towards reducing stormwater pollution from the MS4. The City will review effectiveness of the SWMP through achievement of its measurable goals.

## Conclusion

The SWMP builds upon coordination between City agencies to leverage existing programs and develop new initiatives for stormwater management. The SWMP was created in collaboration with the general public who are encouraged to continue supporting the City's efforts in implementing the SWMP. As one of the world's great waterfront cities, NYC is continuing to lead the way in innovative programs to protect and improve water quality in the twenty-first century and beyond. To read the full Stormwater Management Program Plan visit [www.nyc.gov/dep/ms4](http://www.nyc.gov/dep/ms4).



Jack's Pond Bluebelt, Staten Island