Environmental Protection

NYC

Municipal Separate Storm Sewer System (MS4)

2016 Progress Report

June 22, 2016

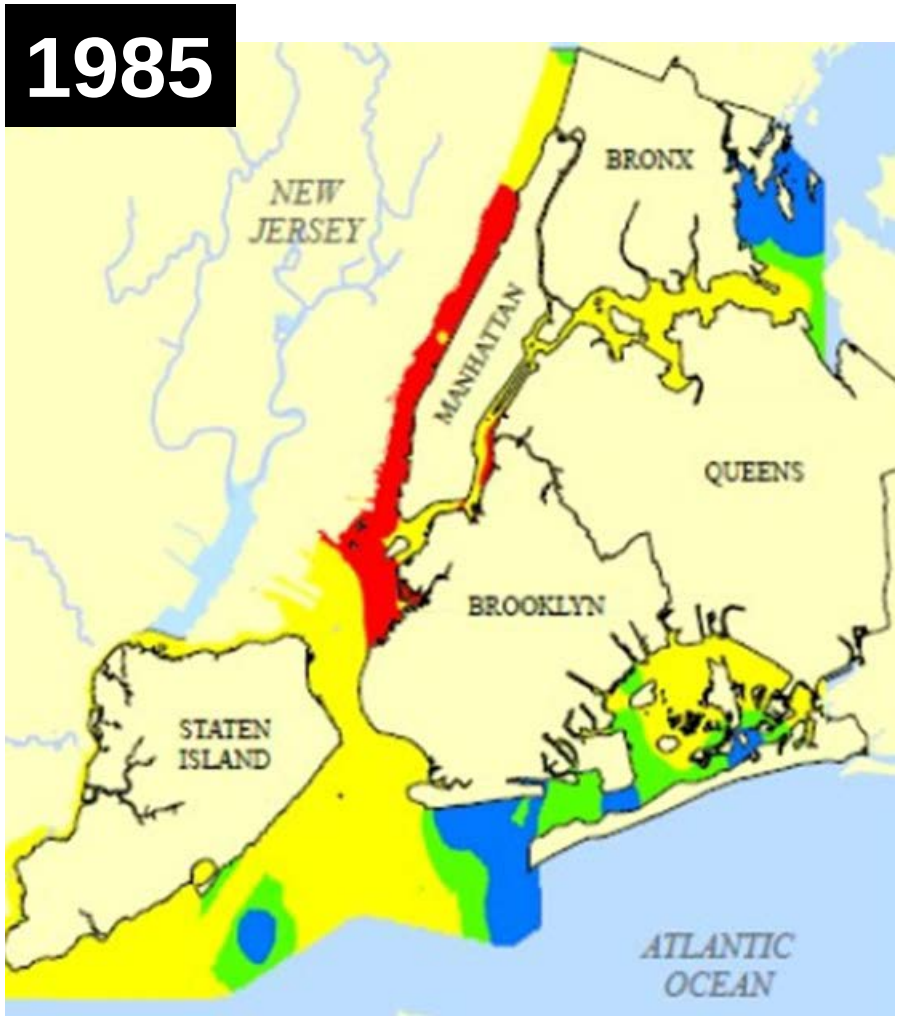
Amended July 15, 2016

Agenda

- Water Quality in New York City
- MS4 Permit and Stormwater Management Program
- Integration between Municipal Separate Storm Sewer System (MS4) Program and Combined Sewer System Overflow (CSO) Long Term Control Plans (LTCPs)
- Breakout Sessions
- Final Questions and Answers

NYC Water Quality Improvement Program

The City has invested billions of dollars to improve water quality. Over $10B has been spent since the early 2000s. Today, water quality is the best it has been in over 100 years of testing.



Fecal Coliform Bacteria: < 100 cfu/100 mL | 100 – 200 | 201 – 2,000 | >2,000

Data from Harbor Survey Program

Stormwater – Brief Background

- The Clean Water Act (CWA) regulates stormwater as well as wastewater discharges into the navigable waters of the United States.

- Most major cities have been covered by a MS4 permit for a number of years.

- Starting in the early 1990s, requirements related to separate storm sewers were included in the permits for the City's 14 individual wastewater treatment plants.

- On August 1, 2015, the New York State Department of Environmental Conservation (DEC) issued a final comprehensive MS4 permit to the City of New York, including more robust requirements similar to those imposed on smaller municipalities in the state under a statewide general permit.

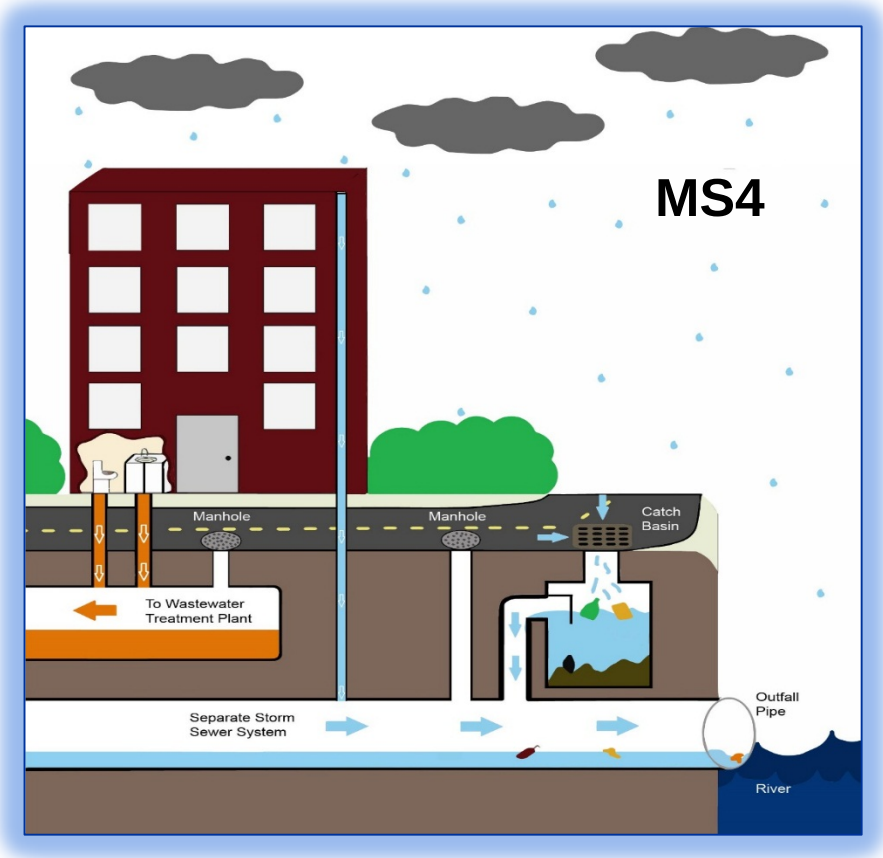
- The new MS4 permit significantly expands the City of New York's obligations to reduce pollutants that discharge to the MS4 system.

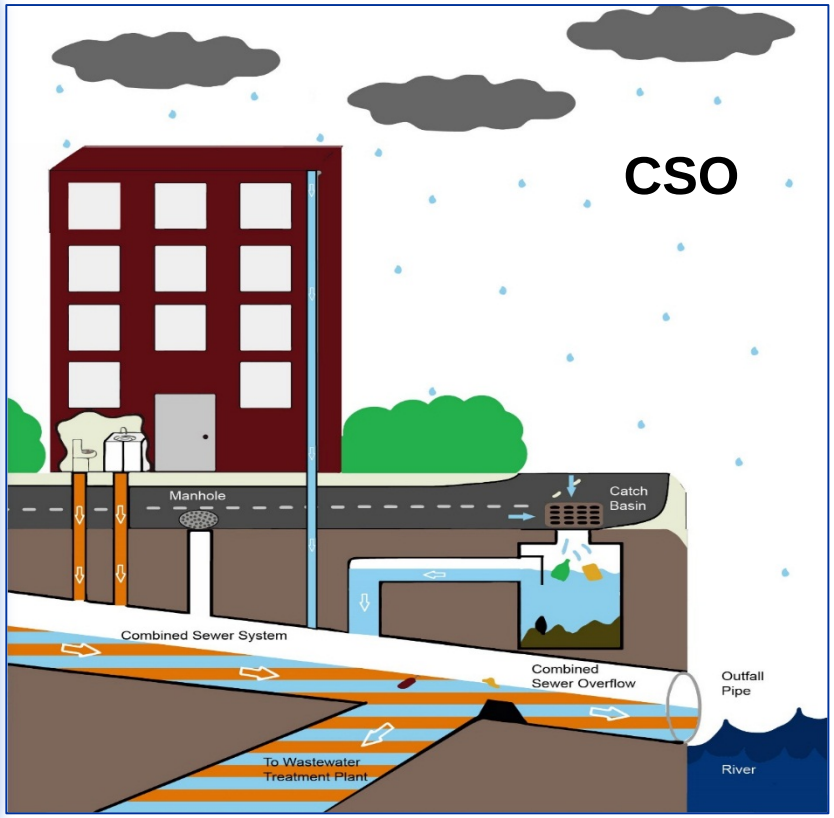
Municipal Separate Storm Sewer System (MS4)

NYC Environmental Protection

What is an MS4?

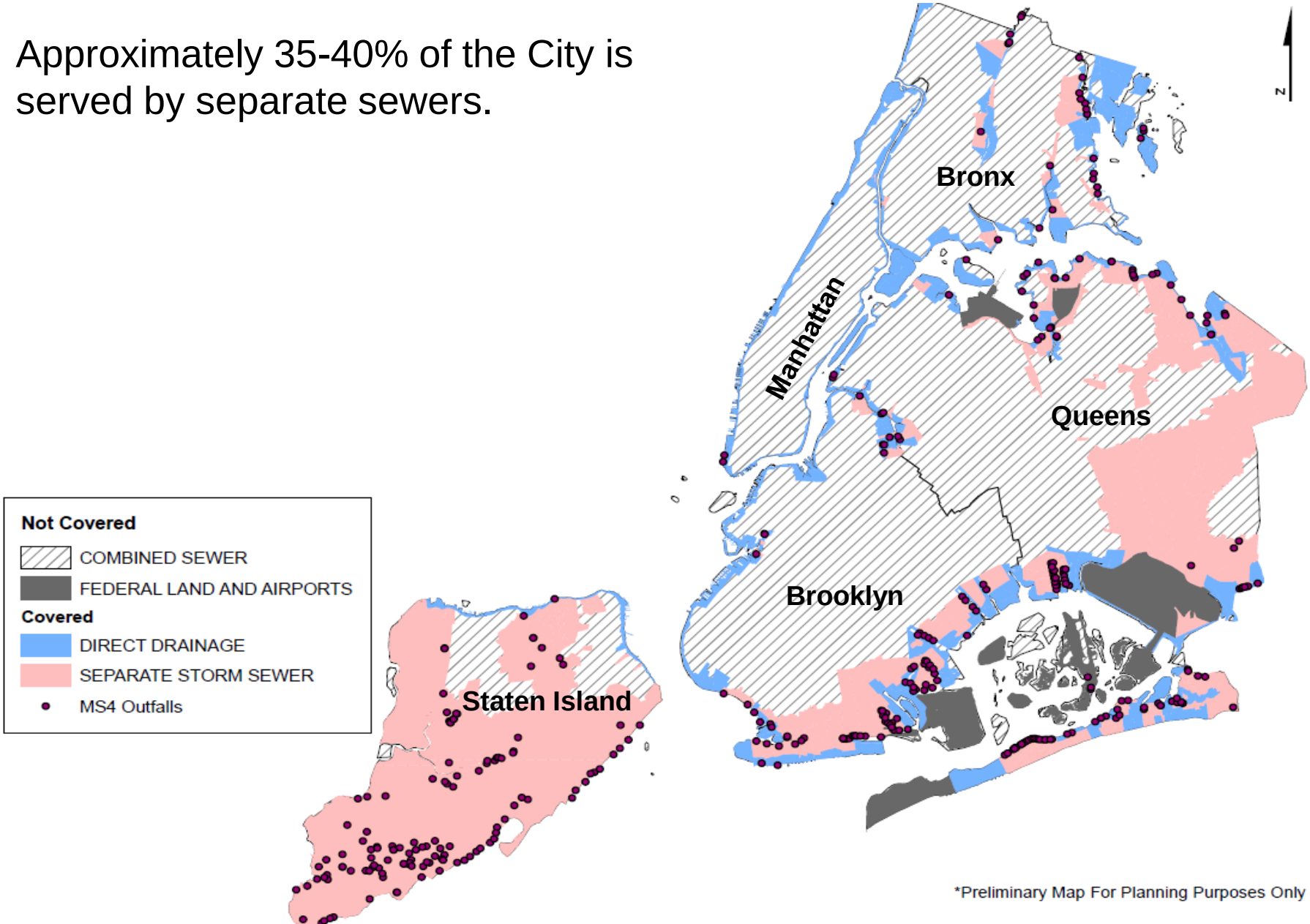
- A conveyance or system of conveyances;
- Owned by a state, city, town, village, or other public entity that discharges to waters of the US;
- Designed or used to collect or convey stormwater (including storm drains, pipes, ditches, etc.);
- Not a combined sewer; and
- Not part of a Publicly Owned Treatment Works (sewage treatment plant).





MS4 Program

Approximately 35-40% of the City is served by separate sewers.



*Preliminary Map For Planning Purposes Only

Contributing Agencies

The MS4 Permit is a Citywide Permit

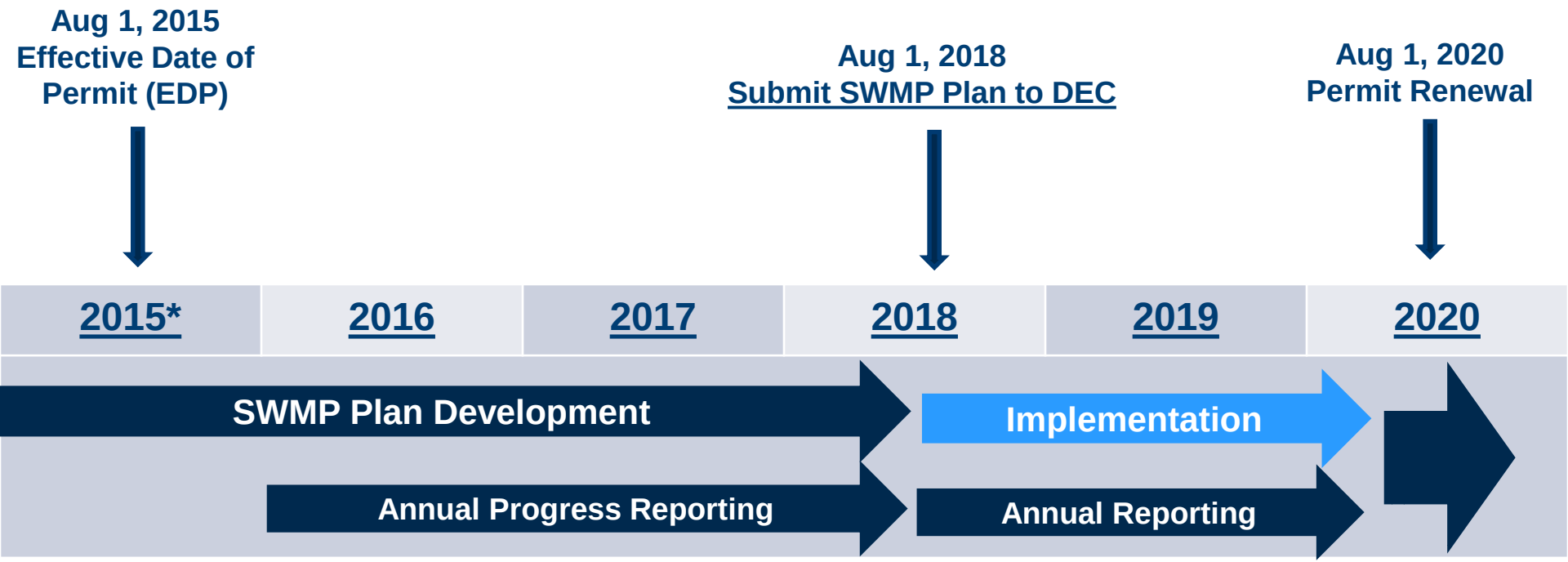
- Coordination delegated to DEP by Executive Order No. 429 of 2013
- Charter agencies and DOE are obligated to implement and comply

Stormwater Management Program (SWMP)

Stormwater Management Program (SWMP): is a comprehensive plan that describes how the City will address pollution in stormwater discharges through Best Management Practices (BMPs) and other controls.

1. Public Education and Outreach
2. Public Involvement/Participation
3. Mapping
4. Illicit Discharge Detection and Elimination
5. Construction Site Stormwater Runoff Control
6. Post-Construction Stormwater Management
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. Reliance on Third Parties
12. Recordkeeping
13. Annual Reporting
14. Annual Report Certification

MS4 Permit Timeline



*** - *Calendar years***

NOTE: Draft Annual reports will be presented to the public by July 1st of each year. A summary of public comments and City responses will be included in the Final Annual Reports. Final Annual Reports will be submitted to DEC by September 30th of each year and made available to the public.

Public Education and Outreach

Public education and outreach activities will be promoted and publicized in order to facilitate public awareness of water quality impacts associated with discharges from the MS4.

Current Tasks and Next Steps

- Create partnerships internally and externally for current & future programs and events
- Incorporate MS4 topics into existing messaging
- Develop a prioritization schedule and timeline for providing MS4 content
- Register and attend various programs and community events

Environmental Education Day

Public Involvement/Participation

The City will continue to develop the Public Involvement/Participation Program by involving, consulting and collaborating with the public in various ways, and in the decision-making process to ensure public concerns and aspirations are understood and considered consistently.

Current Tasks and Next Steps

- Keep stakeholders informed and updated on the SWMP development
- Work with stakeholders to develop public programs and events
- Seek feedback on relevant drafts and proposals
- Work to formulate solutions that incorporate stakeholder advice and recommendations to the maximum extent possible

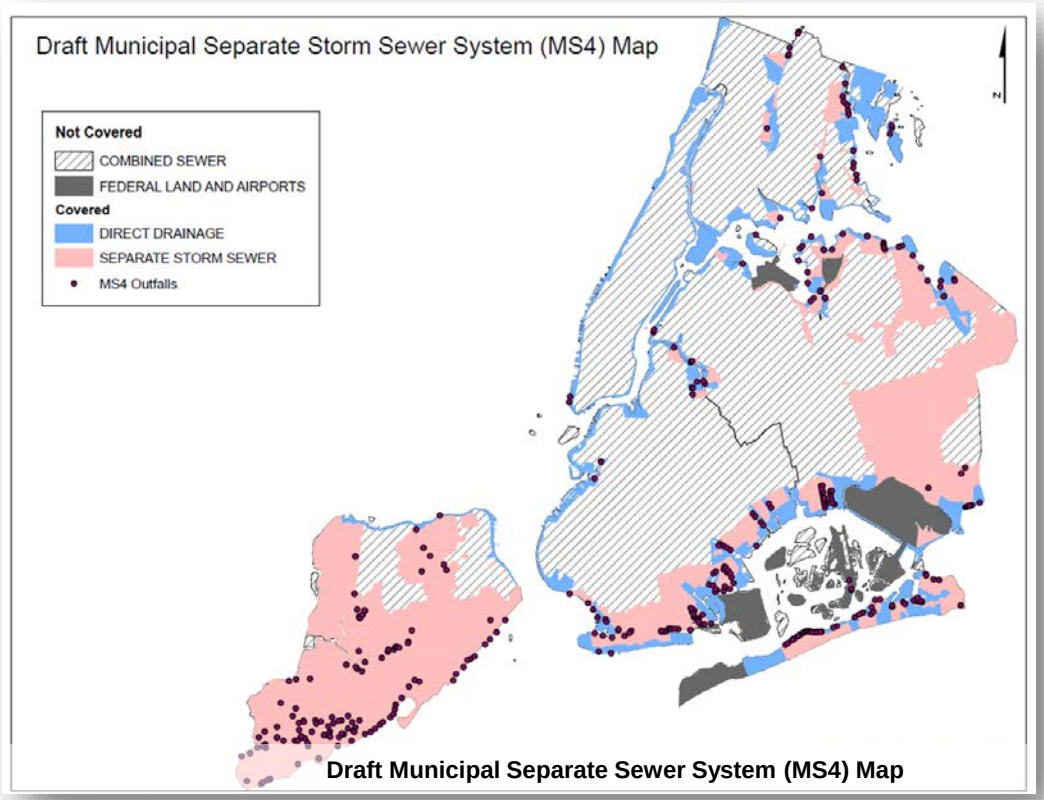
Public Meeting

Mapping

A Geographic Information System (GIS) based map will depict all MS4 outfalls and contributing drainage areas.

Current Tasks and Next Steps

- Delineate MS4 drainage boundaries based on DEP sewer network
- Identify connections downstream of regulators
- Compile information to identify MS4 drainage areas and outfalls on City properties



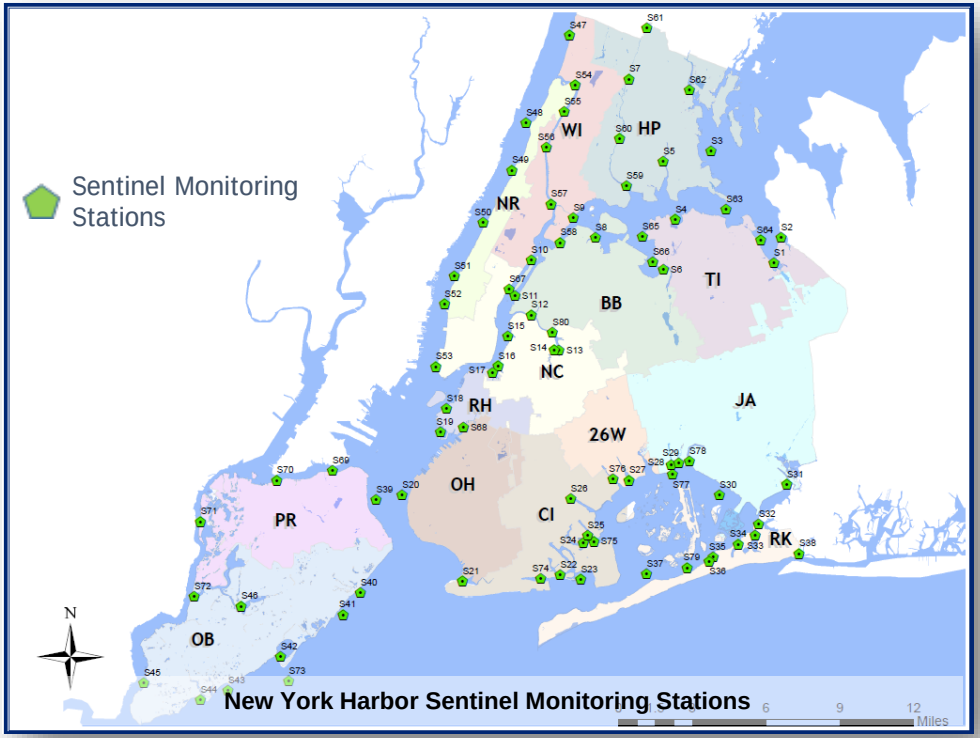
Draft Municipal Separate Sewer System (MS4) Map

Illicit Discharge Detection and Elimination (IDDE)

The IDDE Program is an existing program that detects and eliminates non-stormwater discharges into the MS4.

Current Tasks and Next Steps

- Identify prioritization strategies to enhance current IDDE program
- Coordinate citywide to address illicit discharges connections



Construction and Post-Construction

Both **Construction Site Stormwater Runoff Control** and **Post-Construction Stormwater Management** requirements apply to site development and redevelopment activities that result in a land disturbance of ≥1 acre. This threshold may be reduced following a study.

Current Tasks and Next Steps

- Finalize scope and complete the Lot Size Soil Disturbance Threshold Study
- Develop SWPPP review process for Construction/Post-Construction Stormwater Management requirements
- Schedule construction site visits to assess potential for implementation of stormwater management practices
- Hire an MS4 Permitting Director (position is currently posted at NYC jobs)

Example of Construction Site Stormwater Runoff Controls (U.S. EPA)

Permit Requirements

Stormwater Pollution Prevention Plan Reviews (SWPPP)

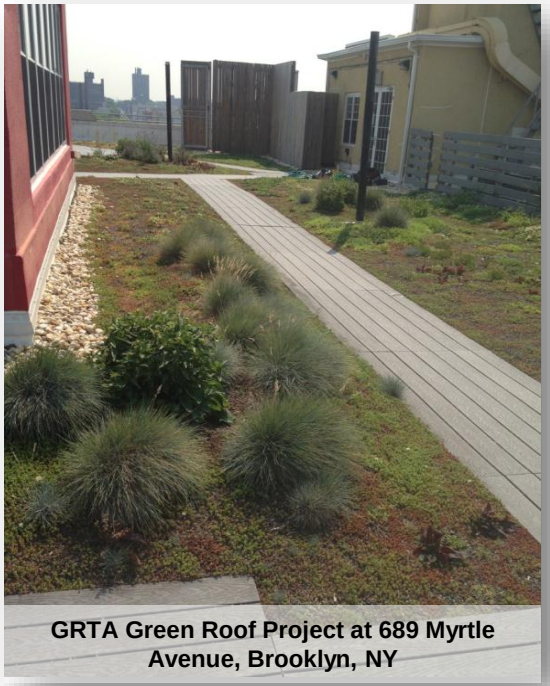
- Incorporate controls for erosion and sediment control requirements during construction
- Incorporate structural stormwater controls for expected water quality improvements and to meet the stormwater management design manual

Inspection and Enforcement

- Maintain an inventory of active construction sites and post-construction stormwater management practices
- Inspect and enforce control measures

Training and Education

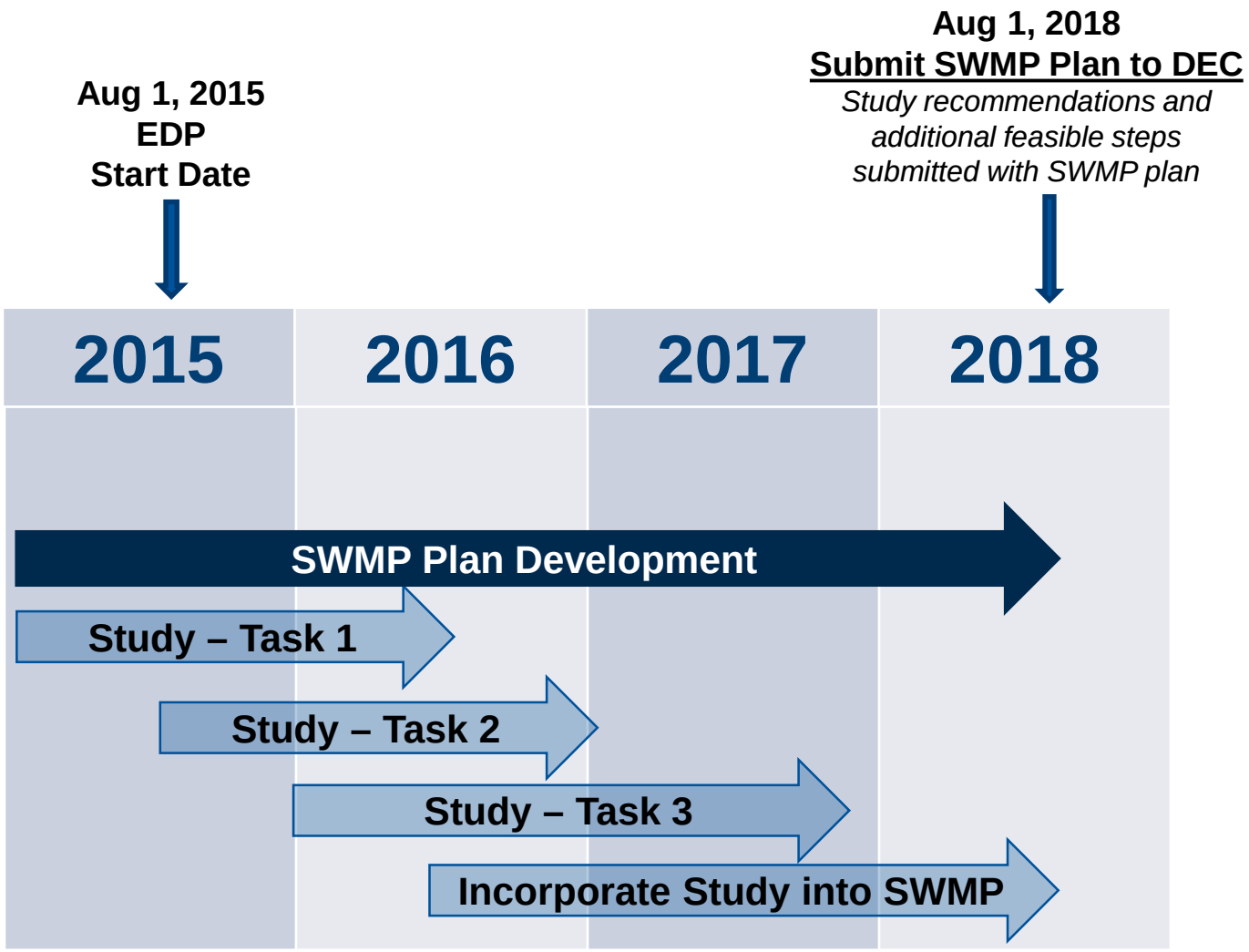
- Require training for individuals performing SWPPP reviews/inspections as well as construction managers/site operators



GRTA Green Roof Project at 689 Myrtle Avenue, Brooklyn, NY

Lot Size Soil Disturbance Threshold Timeline

Task 1: Literature Survey
Task 2: Threshold Size Analysis
Task 3: Cost-Benefit/Water Quality Analysis



Pollution Prevention/Good Housekeeping

The Pollution Prevention/Good Housekeeping for Municipal Operations and Facilities Program will address, at sites where the City has operational control, municipal operations that contribute or can potentially contribute pollutants of concern to the MS4.

Current Tasks and Next Steps

- Develop list of Stormwater Control Measures (SCMs) applicable to municipal operations and facilities
- Create a protocol to assess municipal facilities and operations
- Meet to discuss and develop protocols to implement SCMs, Standard Operating Procedures (SOPs), facility assessments and staff training

Paerdegat Basin Upgrade

Industrial and Commercial Stormwater

The Industrial and Commercial Stormwater Sources Program, which addresses the discharge of pollutants of concern (POCs) to the MS4 from industrial and commercial sites/sources, includes maintenance of a facility inventory and an inspection and enforcement program.

Current Tasks and Next Steps

- Conduct web-based analysis to refine facility inventory for initial and ongoing inspections
- Establish prioritization parameters
- Identify sites in separate sewer and overland flow areas
- Develop procedure by August 1, 2018 to inspect Multi-Sector General Permit (MSGP) permitted facilities and unpermitted facilities

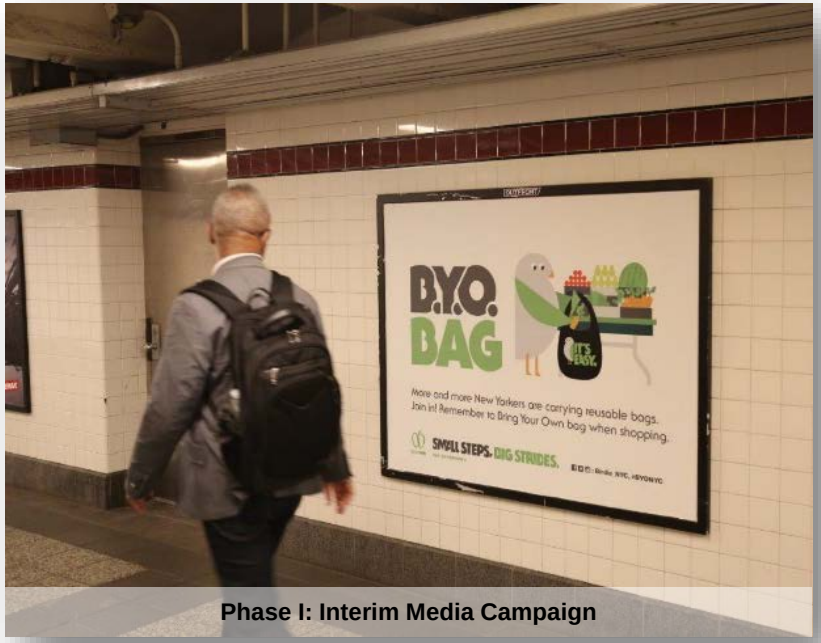
Scrap Metal Processor at Newtown Creek - Brooklyn, NY

Control of Floatable and Settleable Trash and Debris

The Control of Floatable and Settleable Trash and Debris Program reduces floatable and settleable trash and debris entering the waterways through the MS4.

Current Tasks and Next Steps

- Continue to implement interim media campaign and existing controls to reduce floatables
- Plan for Phase II of Interim Media Campaign
- Coordinate with other organizations and volunteers to conduct summer surveys and other efforts
- Collaborate with various organizations on community events and programs



Phase I: Interim Media Campaign

Collaborative Data Collection Project

The City in partnership with Columbia University, and the New York/New Jersey Harbor & Estuary Program (HEP), collaboratively developed a street litter survey that can be used by volunteers to identify the types and sources of litter. This information will be used to inform the SWMP.

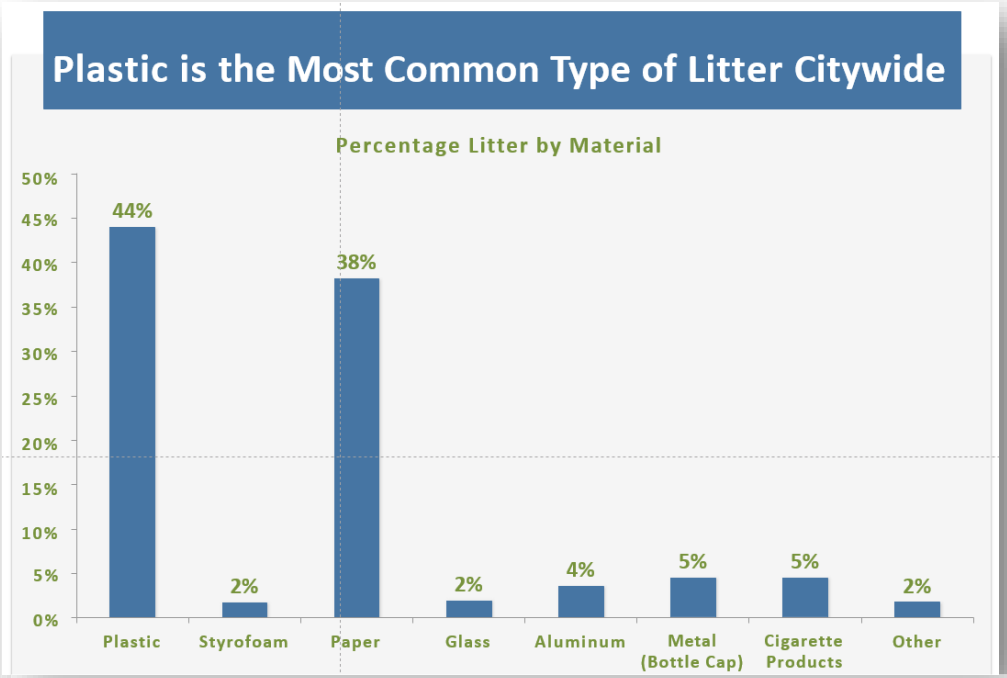
An overflowing dumpster clogs a storm drain in lower Manhattan. | AP Photo/Mary Altaffer

Columbia researchers to survey city litter for DEP

By **CONOR SKELDING** | 06/14/16 05:19 AM EDT

Share on Facebook | Share on Twitter

Researchers at Columbia University will spend the next three months surveying what other people toss away. The research into litter will contribute to a Department of Environmental Protection study of how trash travels from the city's streets to its waterways.



Pilot Data Collection Summary

Monitoring and Assessment of Controls

The Monitoring and Assessment of Controls Program describes the location of outfalls or field screening points to be sampled, its rationale, frequency of sampling, parameters to be sampled and sampling equipment used.

In addition, a Consolidated Information Tracking System Framework will be developed to collect all information required in the permit and the information to be reported on annually, as required by the permit.

Current Tasks and Next Steps

- Conduct data analysis for selecting representative outfalls
- Establish prioritization parameters
- Identify POCs for sampling
- Develop draft monitoring plan report
- Develop framework for web-based reporting by all agencies

Harbor Water Quality Sampling

Annual Reporting

The SWMP Plan is due **August 1, 2018.** The annual reporting period ends December 31st of each year after the submission of the SWMP Plan. This report will cover the SWMP requirements and status of compliance with permit conditions.

Current Tasks and Next Steps

- Solicit, review and address comments on Progress Report
- Submit Progress Report to DEC

Integration with CSO Program

Requirements for Impaired Waters with Approved LTCPs

- Identify MS4 Priority Waterbodies
  - Waterbodies where an approved LTCP does not predict compliance with Water Quality (WQ) standards and stormwater contributions from MS4 are expected to be a significant contributor
- Categorize sources of pollutants discharging to the MS4 Priority Waterbodies
- Identify additional or customized non-structural BMPs and a schedule to commence implementation
- Describe opportunities for implementing green infrastructure pilot projects and other structural retrofits

CSO Infrastructure Improvements/Upgrades

1995 – 2015 (Completed):

- Newtown Creek Wastewater Treatment Plant MSP (620 Million Gallons Per Day (MGD) to 700 MGD)
- Four CSO Storage Tanks (118 Million Gallons)
- Pumping Station Expansions (Gowanus Canal & Ave V Pump Station)
- Floatables Control (Bronx & Gowanus)
- NYC Green Infrastructure (GI) Program Initiated
- Wet Weather Maximization (Tallman Island)
- Dredging (Paerdegat Basin & Hendrix Creek)
- Gowanus Canal Flushing Tunnel Expansion

Paerdegat Basin CSO Retention Facility

2016 – 2030 (Underway):

- Dredging (Flushing Bay)
- Aeration (Newtown Creek)
- Regulator Modifications and Floatables Control (Westchester Creek, Newtown Creek, Jamaica Tributaries)
- Sewer Work (Pugsley Creek, Fresh Creek High Level Sewer Separation, Belt Pkwy Crossing, and Flushing Bay Low Lying Sewers)
- 26th Ward Plant Wet Weather Stabilization
- Ongoing GI Program will manage 1” of rain on 4% of impervious surfaces in combined sewer area by 2020, and 10% by 2030

Flushing Bay CSO Retention Facility

Total Costs (Completed and Ongoing):

- Grey Infrastructure: $2.7 Billion
- Green Infrastructure: $1.5 Billion

$4.2 Billion

Long Term Control Plan Status

Completed LTCPs Under DEC Review:

- Alley Creek
- Westchester Creek
- Hutchinson River
- Flushing Creek
- Bronx River
- Gowanus Canal

LTCPs Under Development:

- Flushing Bay
- Coney Island Creek
- Jamaica Bay & CSO Tributaries
- Newtown Creek
- Citywide

The Basics: Green Infrastructure

Strategy:

Using GI, intercept as much stormwater as possible before it gets to the storm sewer system.

Process Overview:

1. Identify potential public properties on which to site GI
2. Evaluate feasibility/soil conditions
3. Design and build green infrastructure
4. Collect data to evaluate system performance

Parties Involved:

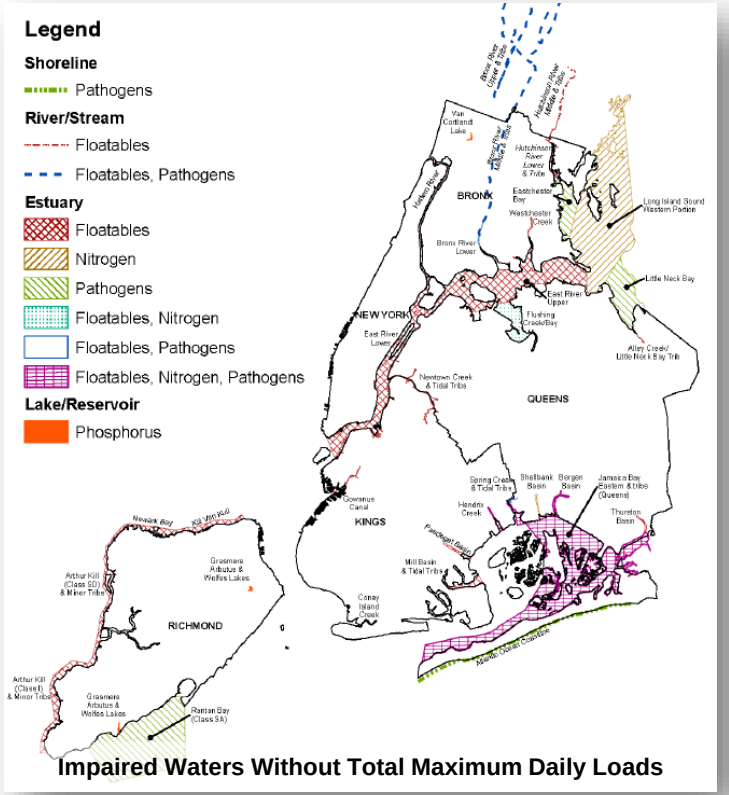
Anticipated MS4 Priority Waterbodies

For impaired waterways without an assigned Total Maximum Daily Load (TMDL), the City must ensure that there is no net increase in the POC from non-negligible changes in land use or stormwater management practices.

Impaired waterways with approved CSO LTCPs, which show that the waterway may not meet water quality standards because discharges from the MS4 are a significant contributor to the impairment, will be designated as "Priority MS4 Waterbodies" in the SWMP.

Based on LTCP work to date, The City expects to designate Bronx River and Coney Island Creek.

- Bronx River – **LTCP Submitted**
- Coney Island Creek – **LTCP In Progress**

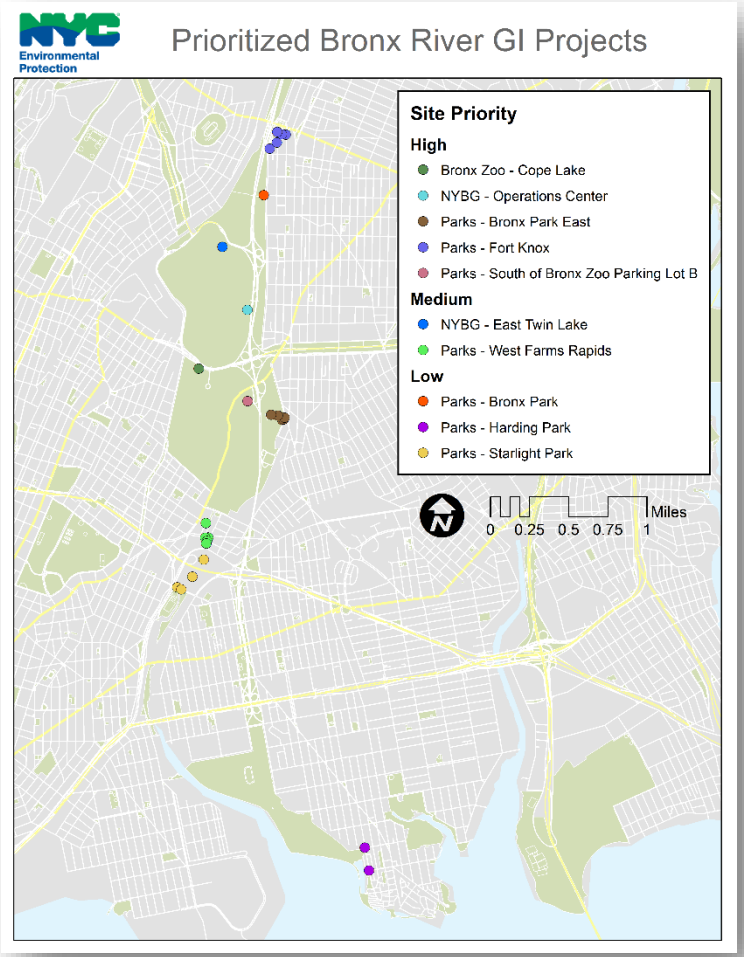


Impaired Waters Without Total Maximum Daily Loads

Anticipated Site Locations and Prioritization

Sites were selected and prioritized based on:

- ability to capture runoff from right of way (ROW)
- drainage to freshwater portions of the Bronx River
- monitoring information available from the LTCP



Breakout Sessions

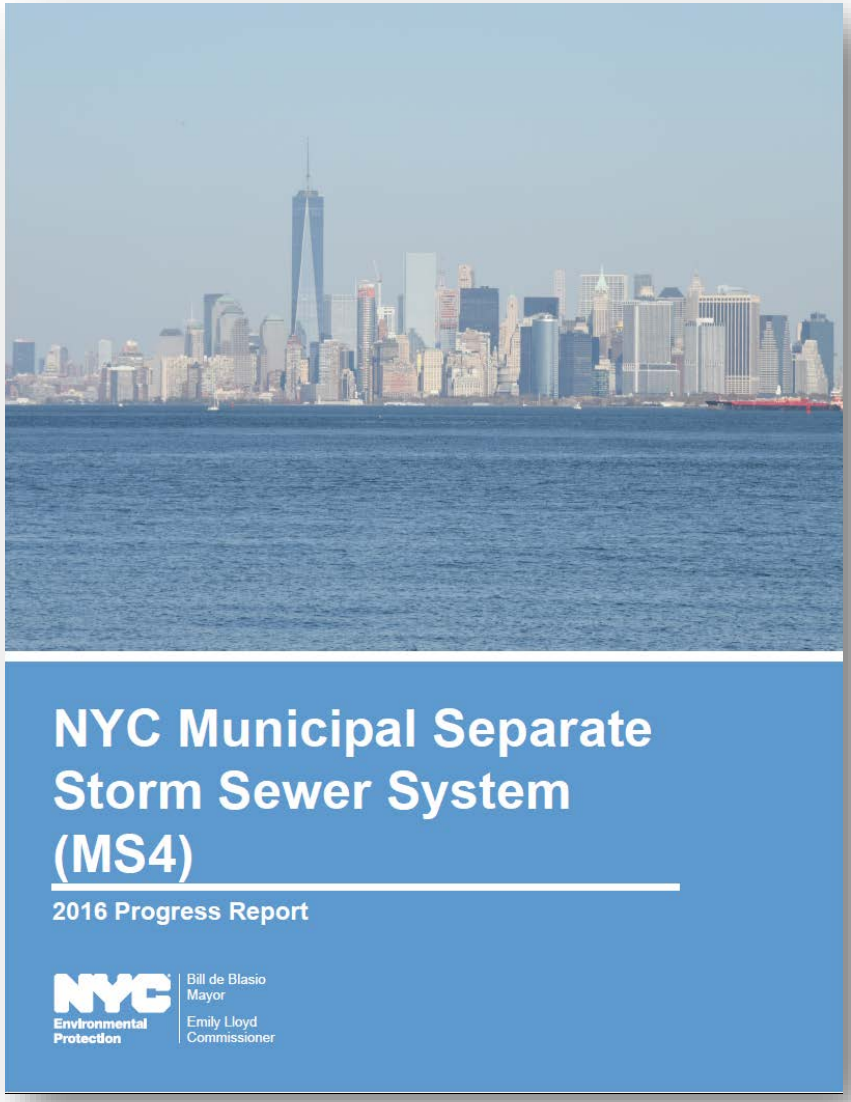
Topic	DEP Staff
Mapping	Lily and Lauren
Construction/Post-Construction	Krish
Industrial/Commercial	Pinar
Floatables	Sara
Pollution Prevention/Good Housekeeping	Manny

Next Steps

The 2016 Progress Report will be available online at nyc.gov/dep/ms4

We will include a deadline for comments in the Report. Comments can be submitted by email to ms4@dep.nyc.gov

The 2016 Progress Report, Summary of Public Comments and City Responses, and MSGP Inspection Program Development Report - 2016 will be submitted to DEC on August 01, 2016.



Questions

Visit: www.nyc.gov/dep/ms4
Email: MS4@dep.nyc.gov