



New York City's Municipal Separate Storm Sewer System (MS4):

Engaging the Public in the Development of New York City's Stormwater Management Program

EPA Region 6 Stormwater Conference

October 6, 2016

1. New York City Department of Environmental Protection (NYCDEP)
2. NYC MS4 Program
3. Stormwater Management Program
4. Questions

About the Department of Environmental Protection (DEP)

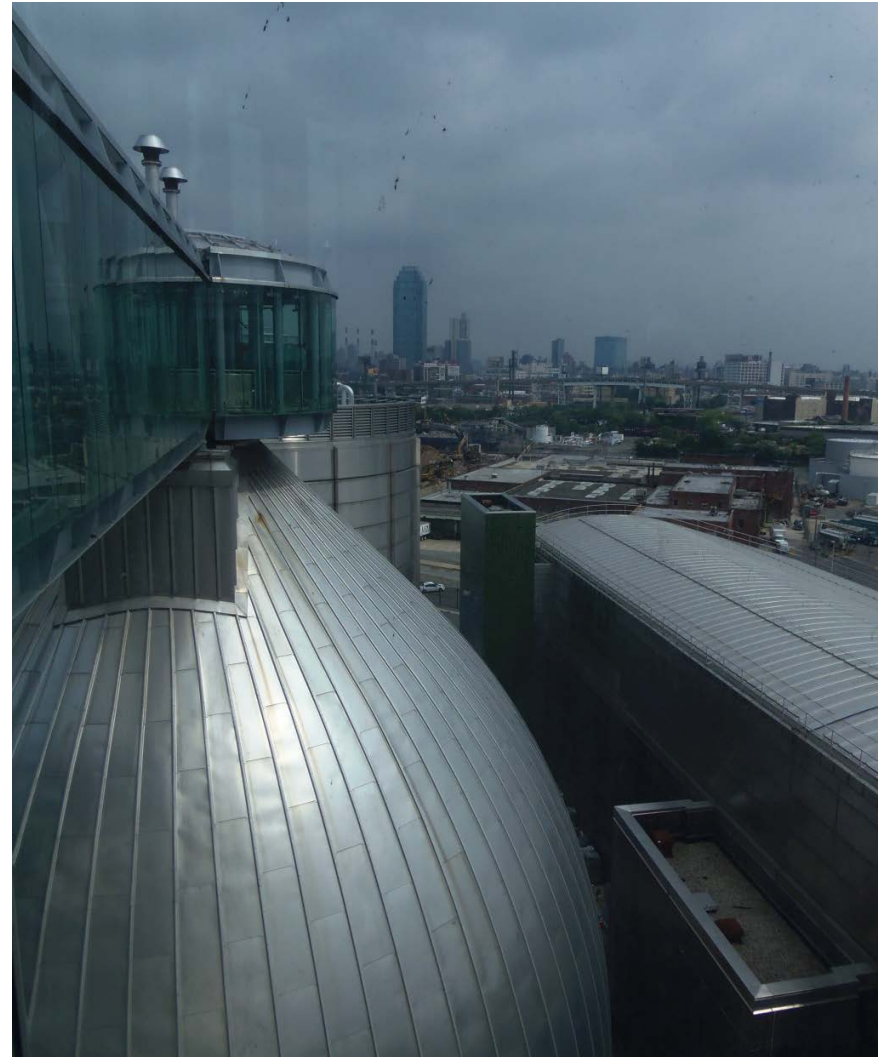
DEP protects public health and the environment by supplying clean drinking water, collecting and treating wastewater, and reducing air, noise, and hazardous materials pollution.

Quick facts about DEP:

- Distributes more than 1 billion gallons of clean drinking water each day
- Collects wastewater through a vast underground network of pipes, regulators, and pumping stations
- Treats 1.3 billion gallons of wastewater that New Yorkers produce each day

For more information, visit

www.nyc.gov/dep

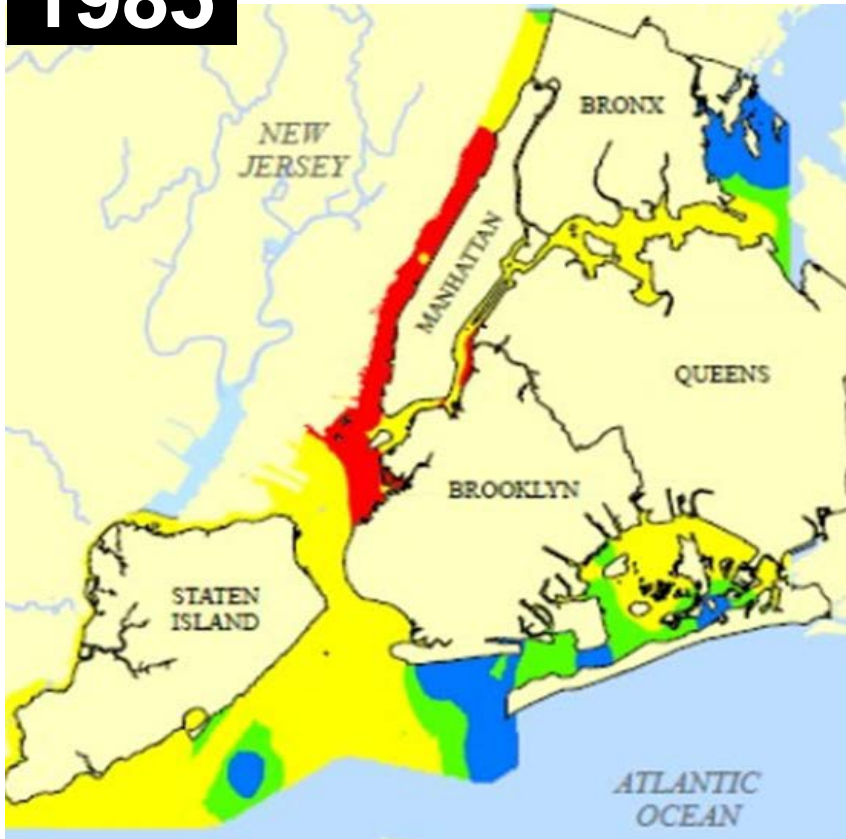


View from the top of the digester eggs at the Newtown Creek Wastewater Treatment Plant

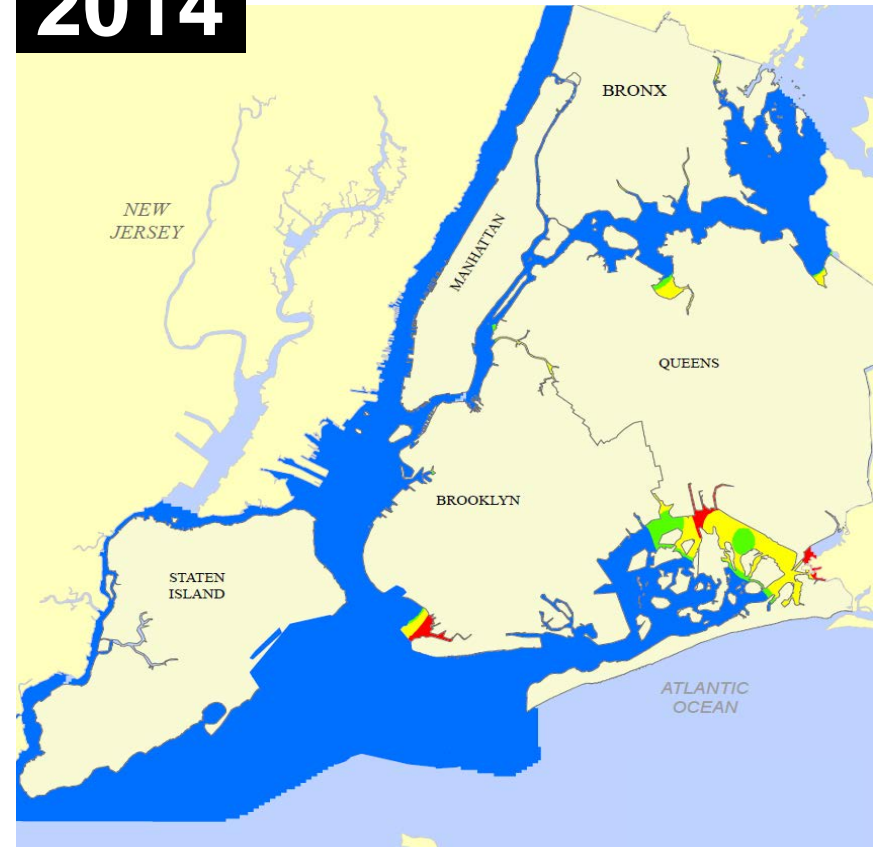
NYC Water Quality Improvement Program

The City has invested over \$10 billion since the early 2000s to improve water quality, and today water quality is the best it has been in over 100 years of testing!

1985



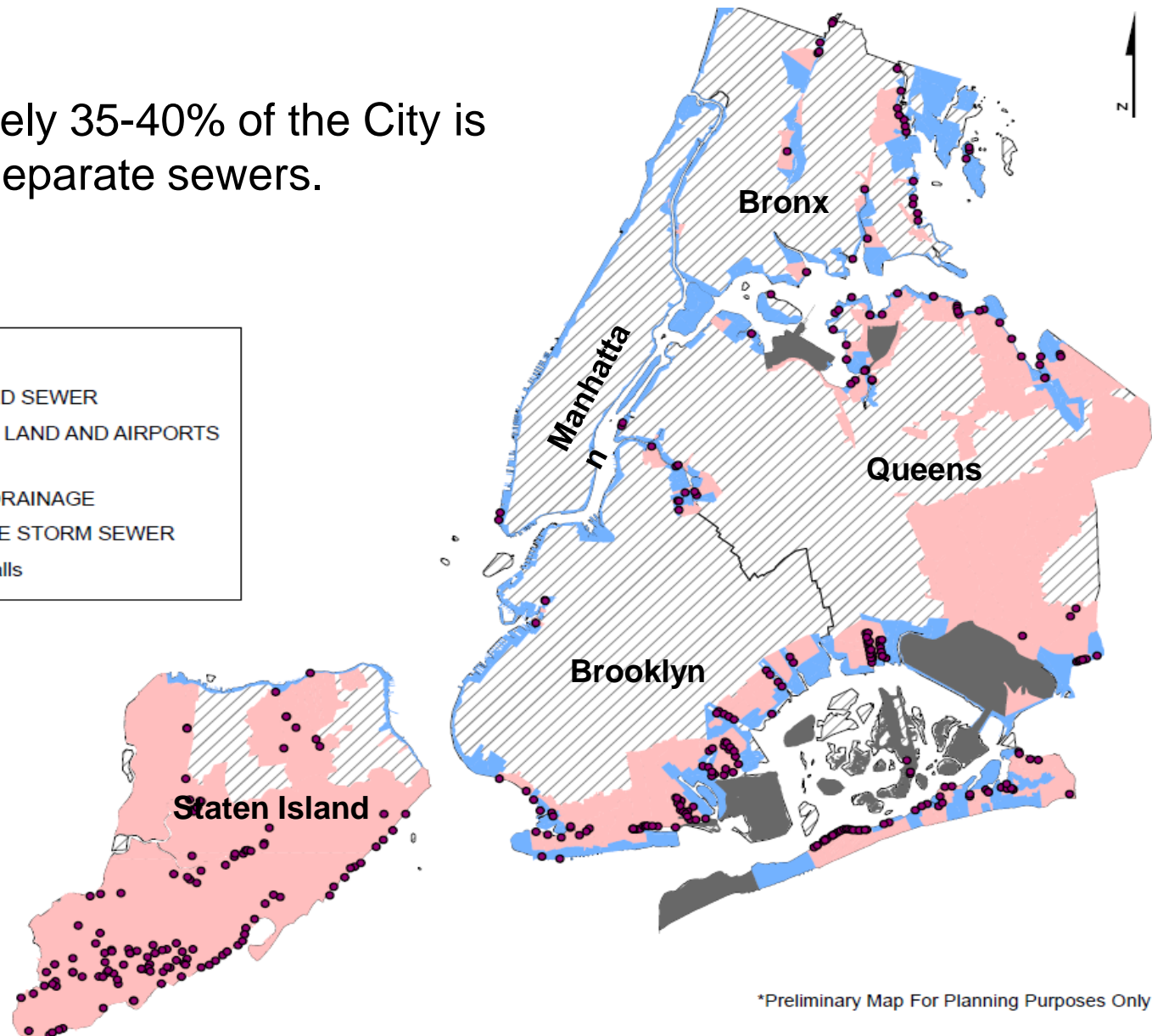
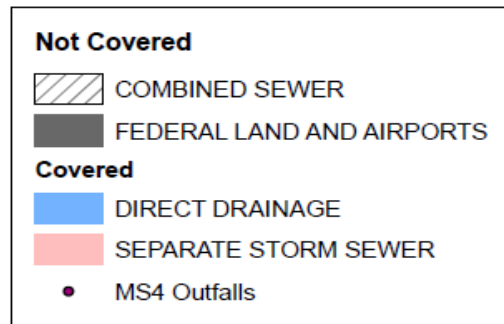
2014



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

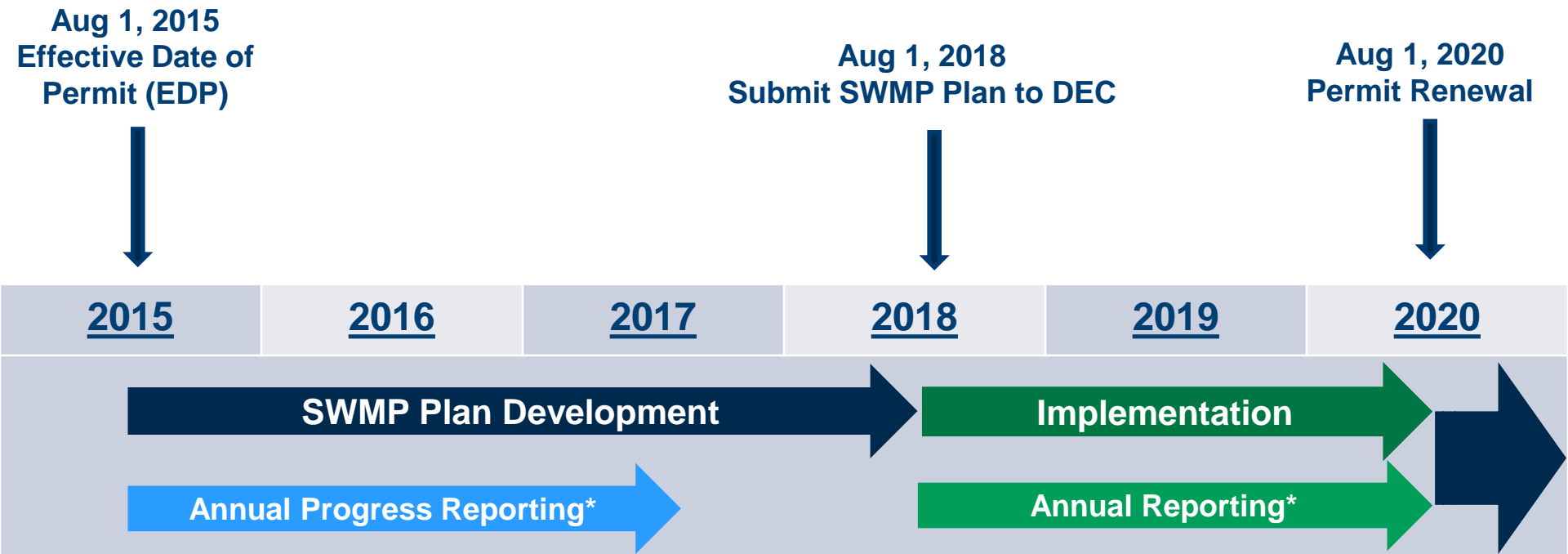
New York City MS4 Area

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



*Preliminary Map For Planning Purposes Only

MS4 Permit Timeline



*Public presentations occur each year prior to annual report submittal. Comments received from the public are addressed and incorporated into SWMP development.

Stormwater Management Program (SWMP): a comprehensive plan to describe how the City will reduce pollution in stormwater discharges through structural and non-structural Best Management Practices (BMPs).

Permit Part IV:

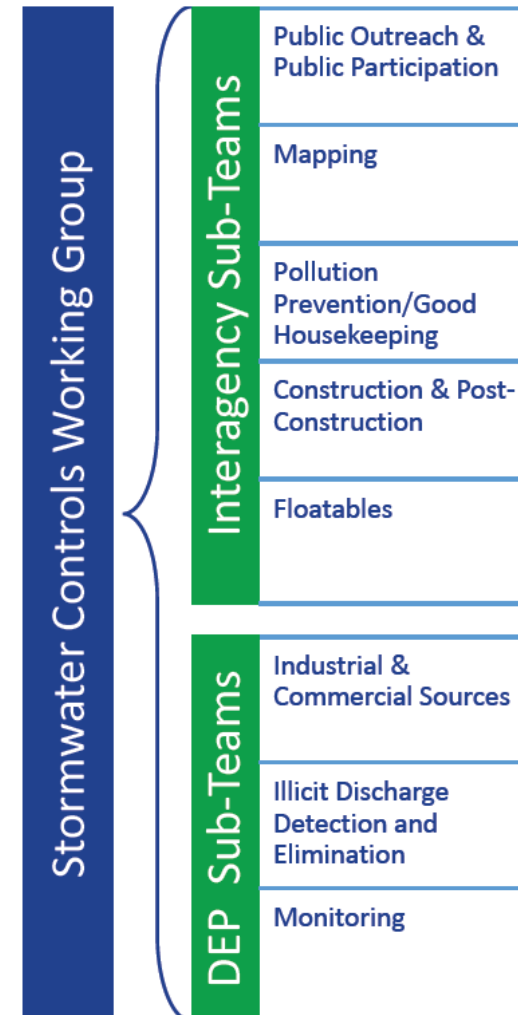
- A. **Public Education and Outreach**
- B. **Public Involvement/Participation**
- C. Mapping
- D. Illicit Discharge Detection and Elimination (IDDE)
- E. Construction Site Stormwater Runoff Control
- F. Post-Construction Stormwater Management
- G. Pollution Prevention/Good Housekeeping for Municipal Operations and Facilities
- H. Industrial and Commercial Stormwater Sources
- I. Control of Floatable and Settleable Trash and Debris
- J. Monitoring and Assessment of Controls
- M. Annual Reporting

Develop programs that:

- **Educate** on:
 - impacts of stormwater discharges on waterbodies
 - pollutants and pollutant sources
 - ways to reduce pollutants in stormwater runoff and non-stormwater discharges such as street wash water, lawn and landscape watering runoff, car washing
 - ways to reduce pollutants from hazards associated with illicit discharges and improper disposal of waste
- **Facilitate and educate** on proper management and disposal of used oil, toxic materials, pharmaceuticals, household cleaners, pet waste, and other potentially polluting waste
- **Facilitate and educate** how to report illicit discharges or water quality impacts
- **Facilitate** public involvement activities (cleanups, wetland restorations, water quality monitoring)

Stormwater Controls Working Group

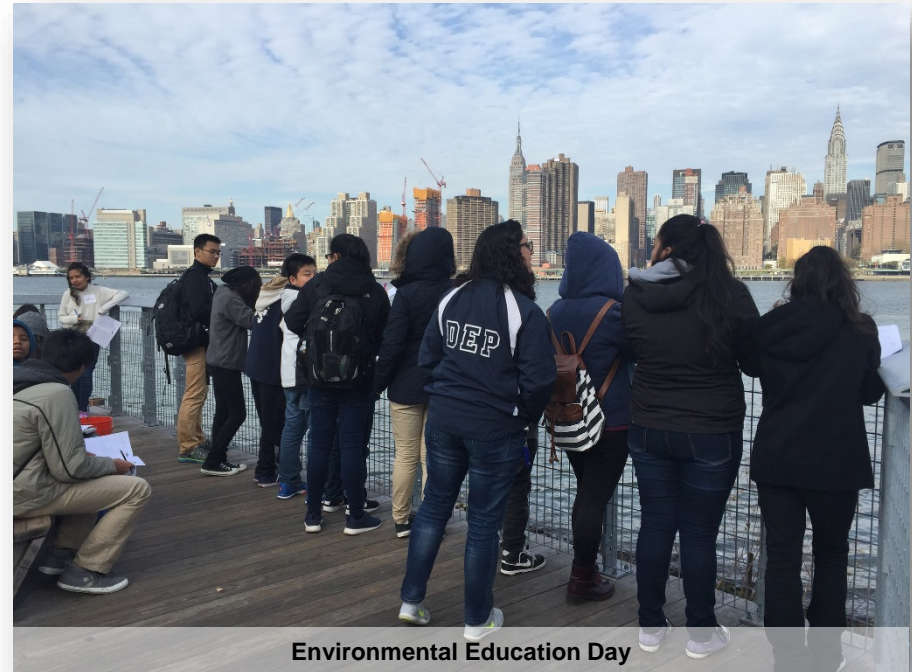
- Consists of individuals designated from each Agency to participate and convey relative information
- The Stormwater Controls Working Group meet every quarter (4 times a year)
- The Interagency Sub-teams and DEP Sub-teams meet frequently in accordance to permit deliverables for review and for planning purposes



Public education and outreach activities will promote public awareness of water quality impacts associated with MS4 discharges, and the steps they can take to reduce pollutant contribution.

Current Tasks and Next Steps

- Create partnerships internally and externally for current & future programs and events
- Incorporate MS4 topics into existing outreach mechanisms
- Develop a prioritization schedule and timeline for providing MS4 content
- Sponsor and attend related programs and community events



quick facts on... NYC Municipal Separate Storm Sewer System (MS4) Permit

January 2016

Background

The Clean Water Act was passed by Congress in 1972 to protect and restore the health of the waters of the United States. The Act regulates certain types of stormwater discharges as well as wastewater discharges to waterbodies across the country. Since 1990, medium and large cities have been required to obtain a permit to discharge stormwater through municipal separate storm sewer systems (MS4s). Since 1999, all urbanized areas have been required to obtain an MS4 permit.

Since the 1990s, the New York State Department of Environmental Conservation (DEC) has imposed certain stormwater related requirements on the New York City Department of Environmental Protection's (DEP) MS4. Until August 2015, those requirements were incorporated into the State Pollution Discharge Elimination System (SPDES) permits for DEP's 14 individual wastewater treatment plants.

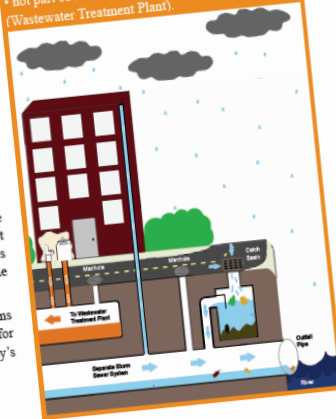
On August 1, 2015, DEC issued a new comprehensive MS4 permit for NYC. This permit includes robust requirements, which significantly expand the City's obligations to reduce pollutants discharging to the MS4.

There are 14 NYC agencies with significant obligations under the MS4 permit. DEP is responsible for coordinating the interagency efforts to meet the City's MS4 requirements.



What is an MS4?

- Conveyance or system of conveyances;
- owned by a state, city, town, village, or other public entity that discharges to waters of the United States;
- designed or used to collect or convey stormwater;
- not a combined sewer; and
- not part of a Publicly Owned Treatment Works (Wastewater Treatment Plant).



MS4 Permit Quick Facts

quick facts on... On Site Stormwater Runoff Control & Construction Stormwater Management

March 2016

The Environmental Conservation (DEC) currently requires a Stormwater appropriate stormwater controls for construction activities involving DEC administers this program through a State Pollution Discharge permit, affected projects are required to gain coverage under the SPDES (General Permit). The requirements of the General Permit include pollution prevention practices designed according to the Stormwater Management Practices that meet the Construction Stormwater Management Practices that meet the Construction Stormwater Management Design Manual.

Program (SWMP)

The Stormwater Management (MS4) Permit, the City is required to include elements to address Construction Stormwater Management for certain construction projects. The City is currently under development and will be submitted to DEC for approval. The City still administer SPDES permit coverage, the City's requirements, including:

SWMP Review

Review and accept SWMPs before project development or SPDES permit coverage.

Maintain an inventory of active construction stormwater management practices. Develop inspection/enforcement program to monitor implementation and long-term operation and maintenance.

Ensure that individuals performing SWMP construction management/site operation, a maintenance are adequately trained.

Additionally, for land disturbances that discharge stormwater into the adjacent waterways, the City will incorporate a procedure for

Form a study to recommend an appropriate construction stormwater management plan, 2018 SWMP plan. This study will include the following factors including:

- total area of development
- impervious area

MS4 Permit Quick Facts
(Construction and Post-Construction)

quick facts on... Industrial and Commercial Stormwater Sources

June 2016

Activities can be sources of stormwater. The Act therefore requires certain industrial and commercial activities to obtain coverage under the MS4 permit to obtain coverage.



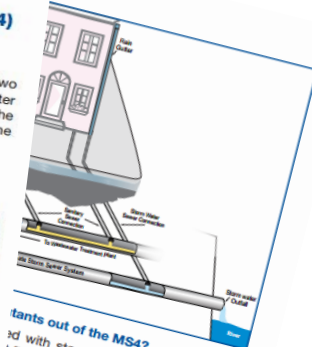
The New York City Municipal Separate Storm Sewer System (MS4)

About the MS4

Certain areas of New York City have a separate sewer system with two separate systems of pipes. The sanitary sewer system carries wastewater from buildings to treatment plants. The other system, known as the Municipal Separate Storm Sewer System (MS4), carries water from the streets to local waterways.

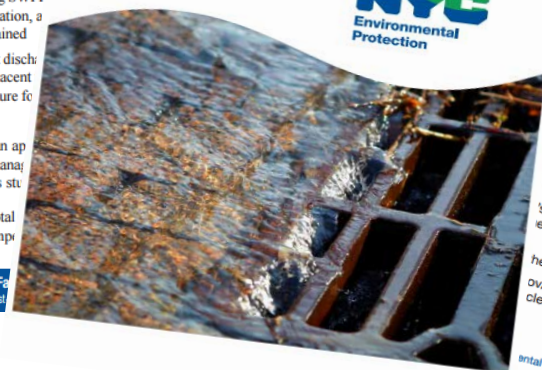
Environmental Impacts

When it rains or snows, stormwater runoff travels over streets, buildings, parking lots, construction sites and other impervious surfaces, sweeping up sediment, oil, grease, pet waste, and other pollutants. This polluted stormwater is then carried by MS4 pipes into local waterways. This can have many adverse effects on the plants, fish, animals, and people who use these waterways.



What are the pollutants out of the MS4?

Associated with stormwater, New York City is required to implement the Stormwater Management Program (SWMP).



Discharges to MS4 pipes from construction sites, construction sites, and from City operations facilities and from City operations sources of stormwater pollution into waterways are prohibited under the program.

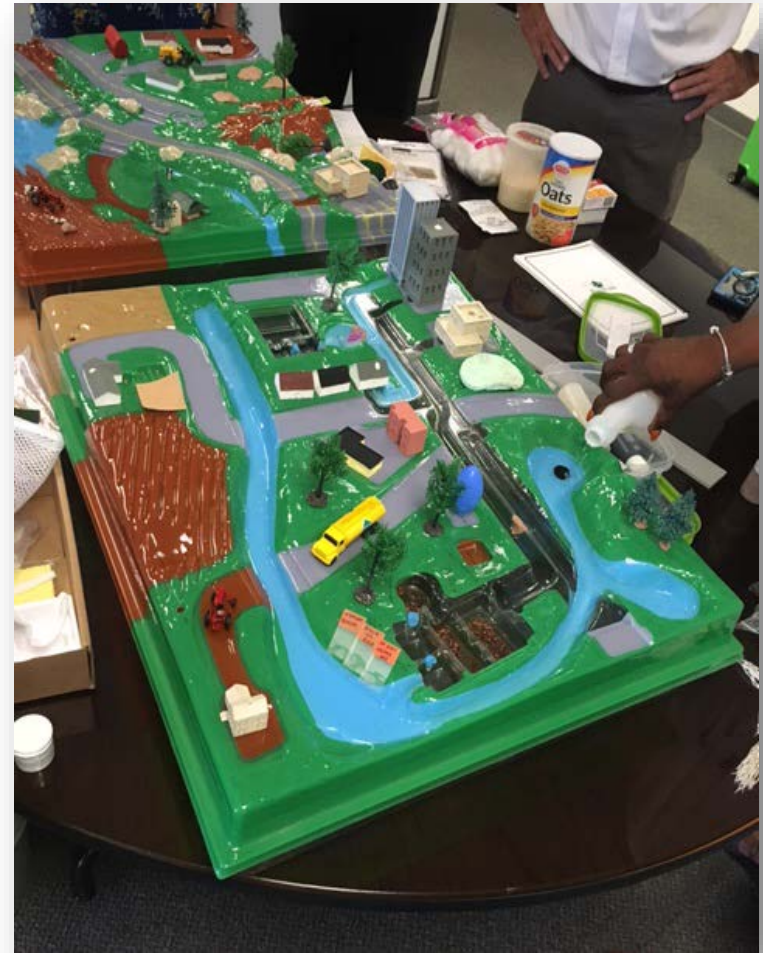
The first MS4 Permit, issued by the Environmental Conservation and effective January 1, 2016.

For more information about the MS4 Permit, visit nyc.gov/dep/ms4 to learn more about the permit. If you have any questions, contact the City's Stormwater Management Program.

Environmental Protection

All available online at: nyc.gov/dep/ms4

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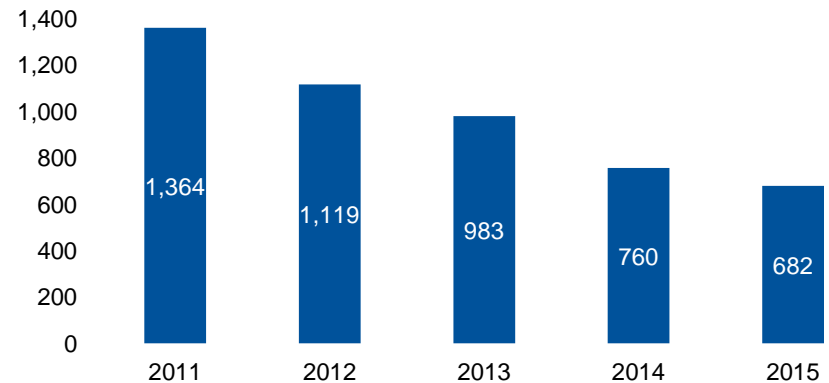


Two models:

- Drinking Water and Wastewater Treatment
 - Watershed/Non-point Source

- Grease is the primary cause of sewer backups in Southeast Queens
- DEP developed a two pronged approach to resolving the high number of SBU complaints in SEQ:
 - Operational improvements, including interceptor cleaning, programmatic degreasing, and sewer flushing
 - Community outreach and education on proper grease disposal methods

Confirmed SBUs CY2011 - CY2015
Community Boards 412 & 413, Queens



Example: Rain Barrel Giveaways

- DEP is coordinating with local elected officials to sponsor rain barrel giveaways
- In 2015, DEP distributed 5,250 rain barrels citywide, and aims to double that this year
- DEP is reaching out to schools and community gardens around the City to give out additional rain barrels



FOR IMMEDIATE RELEASE
April 4, 2016
Contact:
depressooffice@dep.nyc.gov, (718) 595-6600

Department of Environmental Protection Joins State Senator Jeffrey Klein and Assembly Member Mark Gjonaj to Distribute Rain Barrels to 200 Homeowners in the Bronx

Rain Barrels Collect Precipitation, Reduce Residential Water Bills and Help to Protect the Health of the Bronx River and Westchester Creek

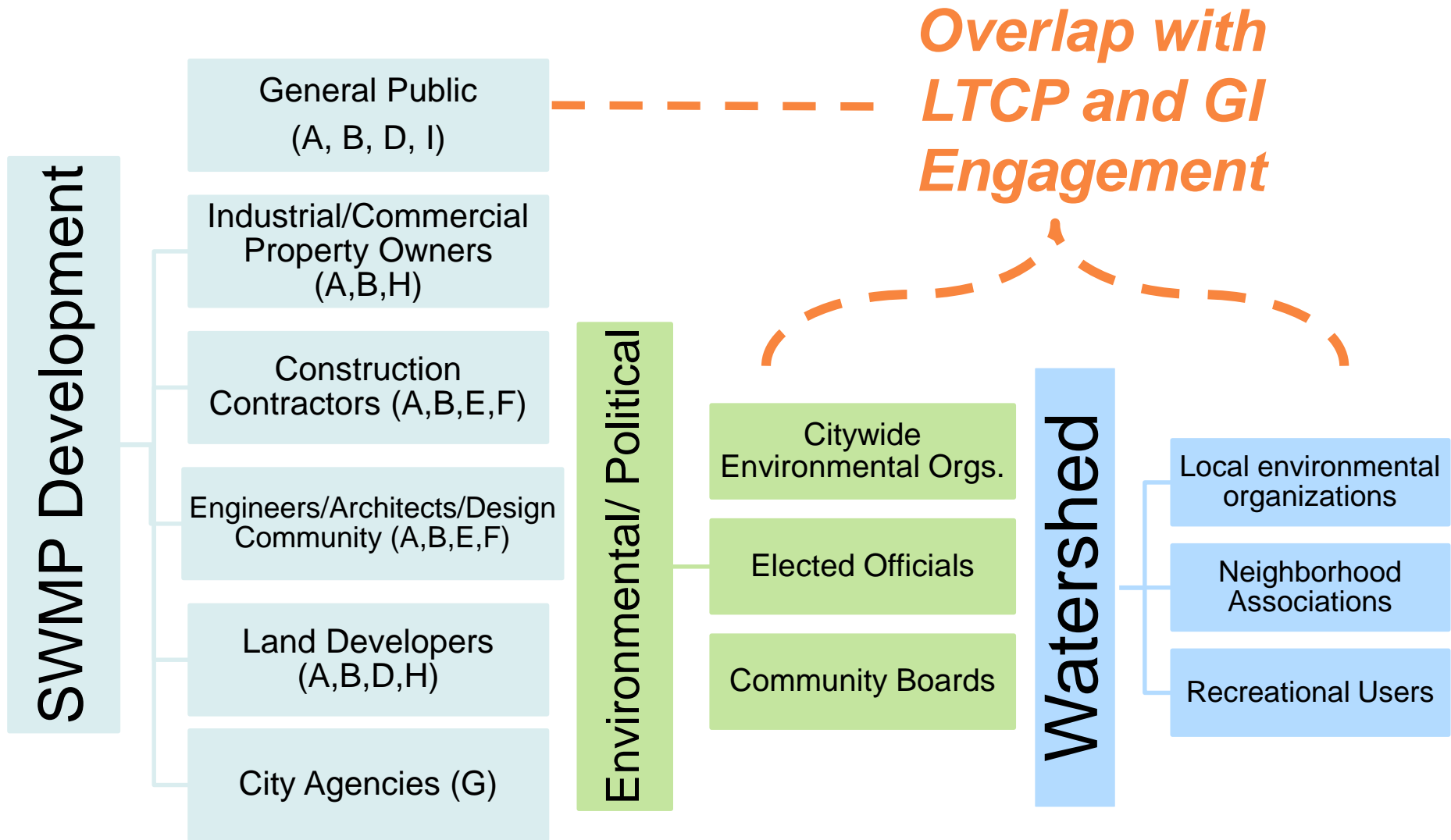


The City will involve, consult and collaborate with the public to ensure concerns and aspirations are understood, and will consider public input throughout SWMP development and implementation.

Current Tasks and Next Steps

- Inform and update stakeholders throughout SWMP development
- Work with stakeholders to develop public programs and events
- Seek feedback on relevant drafts and proposals
- Formulate solutions that incorporate stakeholder advice and recommendations to the maximum extent possible





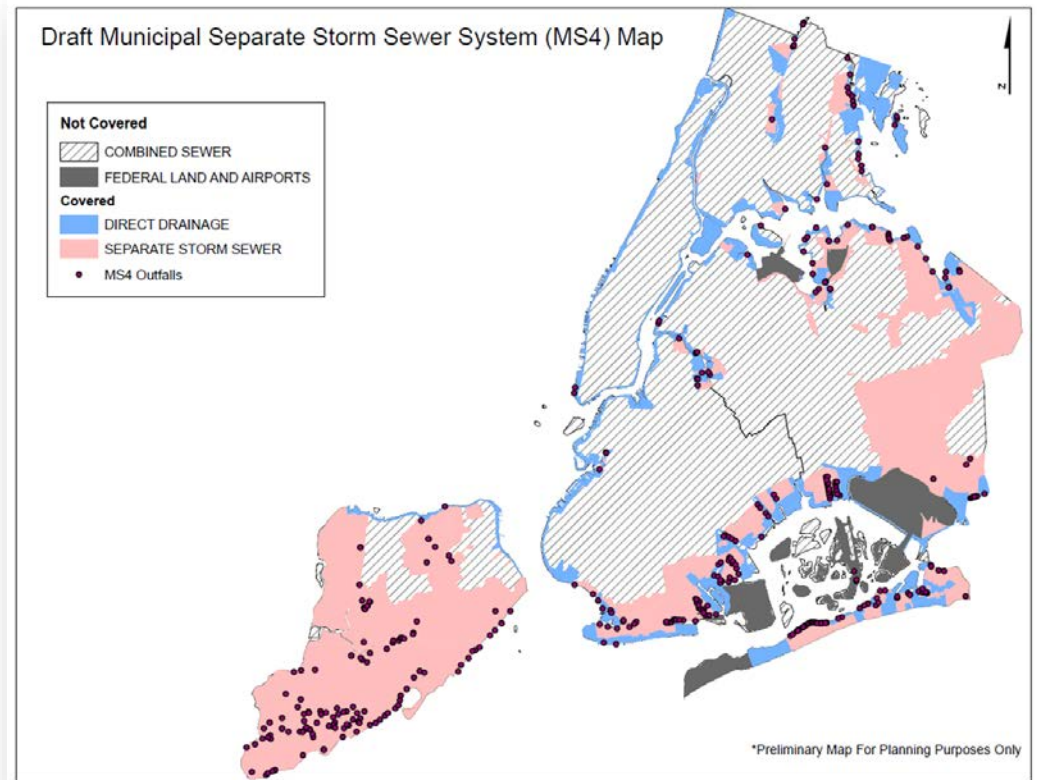
	Involve	Consult	Collaborate
Public Participation Goal	To obtain public feedback on analysis, alternatives and/or decisions. To partner on public programs, events, and the creation and distribution of public materials.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in various aspects of decision making such as the development of alternatives and the identification of preferred solutions.
Promise to the Relevant Stakeholders	The City will: <ul style="list-style-type: none"> • Keep stakeholders informed and updated on SWMP development. • Work with stakeholders to develop public programs and events. • Listen to and acknowledge concerns and aspirations and provide feedback on how public input influenced certain decisions. • Seek feedback on relevant drafts and proposals. • Work to formulate solutions that incorporate stakeholder advice and recommendations to the maximum extent possible. 		

**Adapted from International Association for Public Participation – Spectrum of Participation

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 storm sewer network
- Identify storm sewer connections downstream of regulators
- Identify City-owned outfalls and delineate MS4 drainage areas on City-owned property



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 that will be submitted along with the SWMP Plan.

Current Tasks and Next Steps

- Complete the Lot Size Soil Disturbance Threshold Study
- Develop SWPPP review, inspection, and enforcement processes and tracking system for site stormwater management requirements
- Develop pollutant load analysis procedures for discharges to impaired waters
- Hire MS4 Permitting Director (position is currently posted at NYC jobs)



Permit Requirements

Stormwater Pollution Prevention Plan (SWPPP) Reviews

- Incorporate required erosion and sediment controls and good housekeeping practices during construction
- Incorporate post-construction stormwater management practices to meet the NYS Stormwater Management Design Manual guidelines and address special conditions for impaired waters

Inspection and Enforcement

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

Training and Education

- Develop training program for individuals performing SWPPP reviews/inspections as well as require and verify training for construction managers/site operators



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

GOAL: Collaborate

Year One	Tasks:
Step One:	Refine and update Stakeholder List
Step Two:	Present Scope of Lot Size Threshold Study (March 30, 2016)
Step Three:	Follow up with Stakeholders and receive comments back on study April 29, 2016
Step Four:	Distribute Response Summary
Step Five:	Conduct Site Visits spring/summer 2016
Step Six:	Update stakeholders on progress of study in fall 2016

The **Pollution Prevention/Good Housekeeping for Municipal Operations and Facilities (PPGH)** 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 protocols to assess and prioritize municipal facilities and operations
- Develop protocols to implement SCMs, Standard Operating Procedures (SOPs), facility self-assessments and staff training



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

Current Tasks and Next Steps

- Complete 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



The “Floatables” Program reduces floatable and settleable trash and debris (e.g., litter) entering the waterways through the MS4.

Current Tasks and Next Steps

- Media campaigns to change New York City public behavior
- Implement controls such as
 - Catch-basin cleaning
 - Street sweeping
- Coordinate with other organizations and volunteers to conduct street litter surveys and other efforts
- Collaborate with various organizations on community events and programs
- Develop work plan to calculate loading rate



Phase I: Interim Media Campaign

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. Each annual report will cover the SWMP requirements and status of compliance with permit conditions, including the measurable goals we define in the SWMP.

Current Tasks and Next Steps

- Respond to comments on Progress Report (submitted and posted on our website August 1, 2016)
- Begin drafting SWMP chapters
- Continue to hold sub-team and stakeholder meetings for input throughout program development



For more information, visit our website:

nyc.gov/dep/ms4

If you have questions or feedback,
please contact the MS4 Team at:

ms4@dep.nyc.gov