

Special Conditions for Impaired Waters

Municipal Separate Storm
Sewer Systems of New York City

SPDES Number: NY-0287890
Revised September 30, 2020



Coney Island Creek



Shoreline trash and debris

As described in previous chapters of this Plan, the City will administer existing and new programs and practices 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)
- Impaired waters with NYSDEC-approved Combined Sewer Overflow Long Term Control Plans (CSO LTCPs)

The waterbodies in these categories will receive targeted efforts. This chapter identifies impaired waters and pollutants of concern (POCs) in the NYC area, and details the City's policies and programming in addition to the SWMP that will be implemented for these waterbodies.

11.1 Impaired Waters and Pollutants of Concern

In Appendix 2 of the MS4 Permit, NYSDEC identified impaired waters as well as the relevant POCs for each waterbody listed. Waterbody impairments are based on the NYSDEC-designated use (e.g., swimming, fishing, or recreational boating). Table 11.1 summarizes the waterbodies and their associated impairments, as identified in Appendix 2 of the MS4 Permit. **Figure 11.1**, from Appendix 1 of the MS4 Permit, includes maps of the NYC impaired waterbodies.

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 MS4 Permit identifies impaired waters and the POCs for which they are impaired. The POCs that have been identified for waterbodies in NYC are:



Algal bloom in Silver Lake

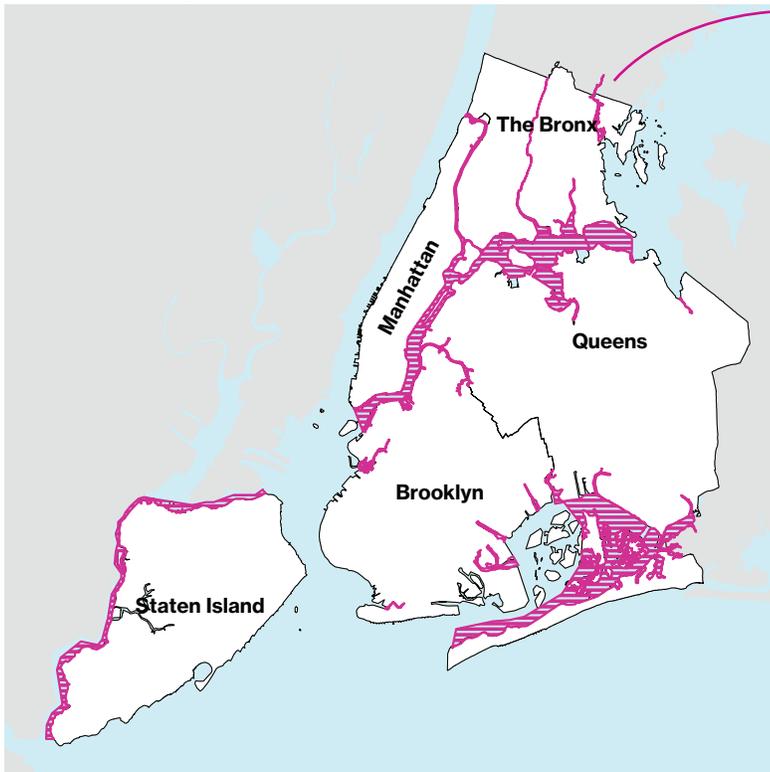
Figure 11.1

Waterbodies Impaired for Pathogens



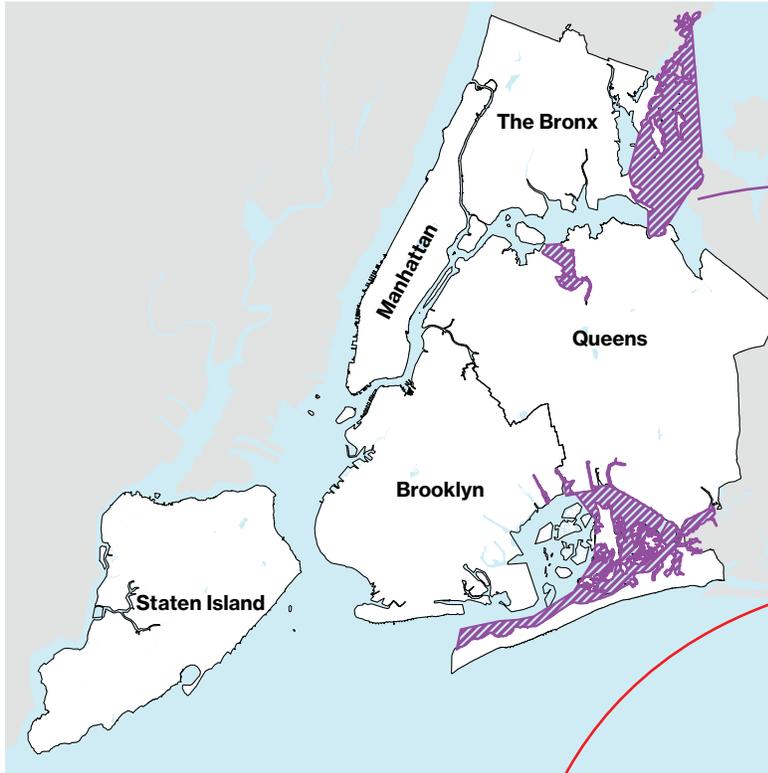
→ **Pathogens** are disease-producing agents such as bacteria, viruses, or other microorganisms. There are multiple potential sources of pathogenic bacteria in the City's recreational waters including and not limited to runoff from the MS4 area, runoff from surrounding jurisdictions, illegal sewer connections, and combined sewer overflows (CSOs). Pathogens can degrade water quality, and pose a risk for the local ecology and recreational users who may contract infectious diseases through water contact. The City has many longstanding programs to reduce pathogen pollution including a comprehensive CSO reduction program and robust illicit discharge detection and elimination efforts, as well as daily operations at 14 Wastewater Treatment Plants (WWTPs).

Waterbodies Impaired for Floatables



→ **Floatables** are manmade materials, such as plastics, papers, or other products which, when improperly disposed of onto streets or into catch basins, can ultimately find their way to local waterbodies. Floatables include materials that are settleable as well as those that may float on the water surface or are neutrally buoyant; such materials may float or sink depending on the ambient conditions to which they are subject. Floatables can originate from multiple sources such as stormwater runoff, CSOs, and direct disposal to the water. If washed onto beaches, floatables can pose human health risks and degrade the aesthetic value of the shoreline in and around NYC. Floatables not washed onto the shoreline also degrade the aesthetics of NYC waterbodies, and can form slicks that may be a navigational hazard. Additionally, floatables threaten the health and lives of marine species and habitats. The City currently has a variety of programs in place to reduce floatables in local waterways. These are detailed in Chapter 9: Control of Floatable and Settleable Trash and Debris.

Waterbodies Impaired for Nitrogen



Waterbodies Impaired for Phosphorus



Nutrients, including **nitrogen** and **phosphorus**, are natural parts of aquatic ecosystems that support the growth of algae and aquatic plants. Excess nutrients can cause nuisance algae blooms and aquatic weed growth, which reduce water clarity and dissolved oxygen (DO), and can harm aquatic life. Sources of nutrients include lawn/plant fertilizer, CSOs, WWTP effluent, illicit discharges of sanitary waste, pet and wildlife waste, and green waste such as leaves, branches, and yard clippings. The City has invested billions of dollars to reduce nitrogen in the Harbor through WWTP upgrades and CSO reduction strategies. For information on nutrient reduction at other municipal facilities and operations in MS4 areas see Chapter 7: Pollution Prevention/Good Housekeeping for Municipal Operations and Facilities.

Summary of waterbodies in NYC and their listed impairments in Appendix 2 of the MS4 Permit

Table 11.1

Waterbody	Impairment Pollutant of Concern			
	Floatables	Pathogens	Nitrogen	Phosphorus
Bronx River	X	X		
Eastchester Bay		X		
Hutchinson River	X			
Long Island Sound			X	
Van Cortlandt Lake				X
Westchester Creek	X			
Coney Island Creek	X	X		
Gowanus Canal	X			
Newtown Creek	X			
East River	X			
Harlem River	X			
Alley Creek	X			
Little Neck Bay		X		
Flushing Creek/Bay	X		X	
Jamaica Bay	X	X	X	
Hendrix Creek	X	X	X	
Mill Basin	X			
Paerdegat Basin	X			
Bergen Basin	X	X	X	
Shellbank Basin			X	
Spring Creek	X	X		
Thurston Basin	X			
Arthur Kill	X			
Grasmere, Arbutus, and Wolfes Lakes				X
Kill Van Kill	X			
Newark Bay	X			
Raritan Bay		X		
Atlantic Ocean Coastline		X		

11.2 Impaired Waters without Total Maximum Daily Loads

Under Part II.B.1 of the MS4 Permit, in addition to implementing Parts IV.A through IV.J of the MS4 Permit (Chapters 2 through 10 of this Plan), the City must ensure no net increase of the 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.

The City will implement the stormwater management practices as described in Chapters 2 through 10 of this Plan. Also, the City's Stormwater Pollution Prevention Plan (SWPPP) review process under the Construction and Post-Construction Program will require adequate controls to ensure no net increase of the POC causing impairment. Refer to Chapter 6: Construction and Post-Construction for more information. The City will provide updates on the applicability of no net increase requirements for Priority MS4 Waterbodies in the Construction and Post-Construction program section of each Annual Report.

11.3 Impaired Waters with NYSDEC Approved Combined Sewer Overflow Long Term Control Plans

Impaired waters with approved CSO LTCPs that do not predict compliance with applicable water quality standards, and where stormwater contributions from the MS4 are expected to be a significant contributor to the impairment, are Priority MS4 Waterbodies.

The City will develop and implement a Priority MS4 Waterbody Plan (PWP) for each waterbody that meets the definition of a Priority MS4 Waterbody. The PWP will include:

- A summary of the source categories for POCs causing impairment (e.g., fertilizer use, illicit discharges, leaf litter, pet waste, industrial areas, construction, highly impervious area);
- A list of additional or customized non-structural best management practices (BMPs) for each control measure in Part IV.A thru Part IV.I of the MS4 Permit (Chapters 2 through 9 of this Plan) and an implementation schedule; and
- Opportunities for implementing green infrastructure (GI) pilot projects.

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 Coney Island Creek PWP is included below as Section 11.4. The Jamaica Bay and Tributaries LTCP was submitted to NYSDEC July 2, 2018 for review. Pending NYSDEC approval, the information and analysis included in the LTCP indicates that the Thurston and Bergen tributaries of Jamaica Bay will

likely be designated Priority MS4 Waterbodies. If other Priority MS4 Waterbodies are identified in the future, the City will develop additional waterbody-specific PWP’s, and summarize them in Annual Reports and SWMP updates.

11.4 Coney Island Creek Priority MS4 Waterbody Plan

DEP is investing more than ever to improve water quality in New York Harbor. As of 2016, DEP committed nearly \$4.1B from the Waterbody/Watershed Facility Plans (\$2.6B) and the Green Infrastructure Program (\$1.5B) for water quality improvements throughout the City. Based on the data in the Coney Island Creek LTCP, DEP and NYSDEC agreed to designate Coney Island Creek a Priority MS4 Waterbody. Through the PWP, DEP will use an integrated watershed approach to build upon these investments. Table 11.2 summarizes the targeted POC source categories and the City’s intended control measures for Coney Island Creek. The watershed characterization, pollutant source characterization, intended stormwater control measures (SCMs) to address the BMP requirements, and GI pilot projects within the Coney Island Creek MS4 area are further described below.

Watershed Characterization

The Coney Island Creek watershed, within the Borough of Brooklyn, NY, is highly urbanized. It is comprised primarily of residential areas with some commercial, industrial, institutional, and open space/outdoor recreation areas. As a residential community within NYC that is also an iconic recreational area for NYC residents, the Coney Island Creek area also has several large and notable transportation corridors that cross the watershed to provide access between industrial, commercial and residential areas. Table 11.3 summarizes the land use characteristics of the entire Coney Island Creek watershed, of which approximately 65-75% is in the MS4 area.

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

Table 11.2

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

Existing Land Use within the Coney Island Creek Drainage Area

Table 11.3

Land Use Category	Percent of Drainage Area (%)
Commercial	5
Industrial	1
Open Space and Outdoor Recreation	10
Mixed Use and Other	5
Public Facilities	6
Residential	59
Transportation and Utility	7
Parking Facilities	2
Vacant Land	4
Unknown	1

Pollutant Source Characterization

Pollutant source characterization identifies possible sources of pollution from the MS4 area draining to Coney Island Creek. Appendix 2 of the MS4 Permit lists pathogens and floatables as the POCs causing impairment of Coney Island Creek. The City determined the source categories that potentially contribute these POCs using available information about land uses, and information from the LTCP and the 2013 Floatables Monitoring Report.

Pathogens include bacteria, viruses or other microorganisms that may be disease-producing. Bacteria found in feces is widespread in urban stormwater runoff and there are multiple sources within generalized land use groupings. The City identified the following as possible sources of pathogens in Coney Island Creek:

- Illicit connections from sanitary systems to storm drains or directly to the creek;
- Uncollected pet waste; and
- CSOs (these are addressed by the Coney Island Creek LTCP and are outside of the scope of this PWP).

Floatables, or trash and debris, have many possible sources within NYC. Trash and debris may carry toxins and pathogens that pose a risk to human and ecosystem health. Refer to Chapter 9: Control of Floatable and Settleable Trash and Debris for more information on floatables controls. The City identified the following as possible sources of floatables in Coney Island Creek:

- Street litter and debris (from pedestrians and vehicles) in stormwater runoff; and
- CSOs (these are addressed by the Coney Island Creek LTCP and are outside of the scope of this PWP).

Enhanced or Additional Stormwater Control Measures for Coney Island Creek

As described throughout this Plan, the City is implementing numerous SCMs to address floatables and pathogens. The City has identified ways to enhance these SCMs to target important pollutant sources, land uses, or drainage areas in the Coney Island Creek watershed. Pilot SCMs implemented as part of this Coney Island Creek PWP may be assessed for feasibility across the larger MS4 drainage area. The City will address the POCs for Coney Island Creek by implementing several programs and projects. Their descriptions and the actual or intended start dates are listed below:

- **Pet Waste Management:** DPR placed new pet waste bag dispensers and signage as part of its “Forgot Your Bag?” Program, to minimize the presence of exposed pet waste. DEP partnered with DPR on this project in Coney Island to educate the public about the potential impacts of pet waste on water quality. DPR installed dispensers and signage in Calvert Vaux Park in late 2017, and began installing them in Kaiser Park in summer 2018. DEP and DPR initiated planning for related public education and outreach efforts in early 2018.
- **Catch Basin Marking:** Images and text on catch basins help inform the public that the catch basins drain directly to local waterways and that nothing should be dumped into them. As discussed in Chapter 2: Public Education and Outreach, the City is gradually installing new and replacement catch basins in the MS4 area with a “no dumping” message stamped in the iron curb piece. To complement this program in the Coney Island Creek tributary area, DEP plans to partner with other City agencies and local organizations to stencil on or attach medallions to existing catch basins. DEP and partners will begin coordinating catch basin marking opportunities in the Coney Island Creek MS4 drainage area in fall 2018.



Pet waste dispenser



Coney Island Creek outfall signage

- **Signage Deployment:** DEP placed signage at key MS4 outfalls in Coney Island Creek with ID numbers and instructions on how to report dry weather discharges. This signage can help facilitate local community reporting of water quality concerns. Additionally, DEP partnered with DPR to install “No Swimming” signs at seven locations along the shoreline of Coney Island Creek. Brooklyn Community Board 13 helped identify the best locations for these signs. DEP installed the outfall signs in February 2018, and installed the “No Swimming” signs in summer 2017. The City evaluated the outfall sign pilot in 2019. Based on the low volume of 311 reports citywide for dry weather discharges and only one report submitted for Coney Island Creek during the two years the signs were installed, the City will discontinue with MS4 outfall signage.
- **Monitoring:** As described in Chapter 10: Monitoring and Assessment Program, existing and ongoing ambient water quality monitoring programs will be evaluated along with the MS4 monitoring program. Modifications to these sampling programs, which are focused on pathogens in Coney Island Creek, will increase the City’s ability to identify illicit sewage discharges. DEP anticipates adding a new station in Coney Island Creek as part of its Sentinel Monitoring Program revisions, which are expected to be reviewed by NYSDEC by end of 2018.
- **Source Tracking:** DEP is developing a pilot project to evaluate additional source tracking tools beyond those that are currently used in the citywide IDDE program, such as physical tracers, biological tracers, chemical tracers, confirmation techniques, or infrared heat detection methods. These investigation techniques can help discern sources of pathogens as human, bird or domestic pet waste. Alternative methods of detection and source tracking will supplement DEP’s existing programs in Coney Island Creek. DEP will identify and assess the feasibility of additional source tracking methods, and anticipates initiating the procurement process in 2018.
- **Public Education and Outreach:** The City has already prioritized Coney Island Creek for public education and outreach. DEP presented to community groups on MS4 issues and solicited input for potential projects or programs. DEP also launched the Don’t Trash Our Waters Campaign in Coney Island Creek in partnership with the New York Aquarium. The City will continue to conduct education and outreach in this community on pollution source controls, including pet waste management and trash management. DEP launched the Don’t Trash Our Waters Campaign in the Coney Island Creek MS4 area in May 2017.

The City will continue to engage partners such as local businesses, community groups, and other stakeholders to identify and assess the feasibility of additional opportunities to reduce POCs in stormwater runoff to Coney Island Creek. The City will also provide updates on the progress of each program and project in the Annual Reports.

Opportunities for Green Infrastructure Pilot Projects

DEP implements a successful Green Infrastructure Program in combined sewer areas through close coordination with other City agency partners. DEP identified potential GI opportunities in Coney Island Creek MS4 areas by prioritizing City-owned sites based on their potential to capture runoff. DEP is partnering with owner agencies and entities (e.g., DPR, NYCHA, DOE) to identify and evaluate the feasibility of adding GI pilot projects at these sites. GI pilot projects in the Coney Island Creek MS4 area will be designed to accommodate the 90th percentile storm (1.5" of rainfall). The City aims to implement GI pilot projects at select parks, schools, and NYCHA properties in the Coney Island Creek MS4 area, dependent on site conditions and feasibility. DEP initiated these efforts in 2017. The City will report on the progress of these GI pilot projects in each Annual Report.

"Don't Trash Our Waters" Coney Island Aquarium event



Coney Island Creek has been designated a Priority MS4 Waterbody. As such, the City has conducted targeted public engagement with the Coney Island Community, including the following efforts:

- The City partnered with the Coney Island Beautification Project, the SWIM Coalition, the Partnerships for Parks Catalyst Program, and the Wildlife Conservation Society's NY Aquarium for three community workshops on water quality in Coney Island Creek.
- The second workshop included a detailed presentation on Priority MS4 Waterbodies and the Illicit Discharge Detection and Elimination Program. Approximately 30 people from the Coney Island Community attended and participated in breakout sessions. The breakout sessions focused on: public notification of illicit discharges, education and outreach to prevent illicit discharges, community requests, and trash "hot spots" for floatables reduction. Each breakout group compiled a list of suggestions and requests for initiatives that DEP might implement in Coney Island Creek.
- Throughout the rest of 2017, DEP continued responding to the community's ideas and developing a series of strategies.
- The final workshop gave DEP an opportunity to share with the community the final results of its suggestions.

The City took the following actions after meeting with the public:

- Installed informational signage:
 - » DEP initiated a pilot program to install signs at eight DEP-MS4 outfalls in Coney Island Creek. These signs inform the public on how to identify and report dry weather discharges.
 - » In partnership with DPR, DEP installed "No Swimming" signs at seven locations near the Creek. These locations were selected in consultation with Brooklyn Community Board 13.
- Provided the public with more information about discharges:
 - » DEP began posting the Sentinel Monitoring Reports on its website.
 - » DEP added Coney Island Creek to the CSO wet-weather advisory notifications.
- Developed specific programs for Coney Island Creek:
 - » DEP launched the "Don't Trash Our Waters" Media Campaign in Coney Island.
 - » In partnership with DEP, DPR installed pet waste bag dispensers and strategically placed trash cans in Kaiser Park and Calvert Vaux Park.





Coney Island workshop (Photo Courtesy of Partnerships for Parks 2017)