

# NYC Stormwater Management Program

## 2020 MS4 Annual Report

**NYC**  
Environmental  
Protection

Bill de Blasio  
Mayor

Vincent Sapienza, P.E.  
Commissioner

Municipal Separate Storm  
Sewer Systems of New York City

SPDES Number: NY-028789

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NYC sewer manhole on a rainy day

**New York City's iconic waterfront and beloved waterbodies are cleaner and healthier than they have been since the Civil War. Whales and seals are returning to the harbor, wetland and mussel restoration projects are thriving, and New Yorkers are enjoying recreational activities in our local waterways. This is in no small part a testament to the City of New York's (City) substantial investments in infrastructure upgrades over the last four decades.**

Complementing these investments, fourteen City agencies now implement the NYC Stormwater Management Program (SWMP) in the areas served by the municipal separate storm sewer system (MS4). Approximately 40% of NYC is served by the MS4, including much of Staten Island, south Brooklyn, southeast Queens, and many City-owned parks. Managing stormwater in these areas is important because the MS4 carries stormwater runoff directly to nearby waterbodies instead of to a wastewater resource recovery facility for treatment. Therefore, water that flows on the streets and into catch basins or directly into waterbodies may carry pollutants such as pathogens and debris.

The NYC SWMP consists of the City's measures to reduce pollution in stormwater runoff discharging into and from the MS4. Through proper management and increased awareness, the City works to keep our streets and facilities maintained to reduce the risk of contributing pollution to stormwater runoff.

The City developed and now implements the SWMP in compliance with its MS4 Permit, which was issued by the New York State Department of Environmental Conservation (NYSDEC) in 2015. As most waterbodies in NYC receive stormwater from both the combined and separate sewer systems, the SWMP is an important component of the City's

comprehensive integrated planning approach to protecting and improving our waterbodies.

Each year, the City prepares an MS4 annual report to inform NYSDEC and the public of the City's progress in implementing the SWMP and the status of compliance with the MS4 Permit. This MS4 Annual Report, covering January 1 through December 31, 2020, includes a brief description of the SWMP activities completed during the 2020 reporting year, measurable goals, and specific reporting requirements included in the MS4 Permit. If applicable, this report also includes activities planned for the following year and any proposed changes to SWMP.

The City is updating the SWMP plan to reflect the current status of program implementation and compliance with the MS4 Permit. The updated SWMP Plan will be available on the MS4 web page, [www.nyc.gov/dep/ms4](http://www.nyc.gov/dep/ms4).

This year, noteworthy for the constraints imposed by the global pandemic, the report also indicates the instances in which COVID-19 impacted the City's ability to implement the SWMP. Although the City was able to continue much of its MS4 programming throughout the pandemic, it has had to face a new set of challenges with the potential to impact operations for years to come.

# Introduction

On August 1, 2015, the City received a State Pollutant Discharge Elimination System (SPDES) MS4 Permit (No. NY-0287890) from the New York State Department of Environmental Conservation (NYSDEC). This permit required the City to develop a SWMP, which includes numerous programs designed to reduce pollution potential in stormwater runoff. The SWMP Plan (Plan) describes the ways in which the City satisfies the requirements of the MS4 Permit by managing stormwater discharges into and from the City's separate storm sewers. The City submitted the Plan to NYSDEC on August 1, 2018, and NYSDEC approved the Plan on March 14, 2019.

The Plan includes measurable activities/efforts and goals for best management practices (BMPs), which the City reports on annually. The City periodically refines the measurable goals based on lessons learned from implementation of the programs, interagency working groups, and public input. Continuing to refine and update the measurable goals allows the City to better quantify and more accurately represent the effectiveness of the SWMP. The City bases its Annual Effectiveness Assessment on the achievement of the stated measurable goals for each program. The main sections of the SWMP Plan are as follows:

- 1 Public Education and Outreach (PEO)**
- 2 Public Involvement and Participation**
- 3 Mapping**
- 4 Illicit Discharge Detection and Elimination (IDDE)**
- 5 Construction and Post-Construction (C/PC)**
- 6 Pollution Prevention/Good Housekeeping for Municipal Operations and Facilities (PP/GH)**
- 7 Industrial and Commercial Stormwater Sources (I/C)**
- 8 Control of Floatable and Settleable Trash and Debris**
- 9 Monitoring and Assessment of Controls**
- 10 Special Conditions for Impaired Waters**
- 11 Recordkeeping and Reporting**

# Administration of the SWMP

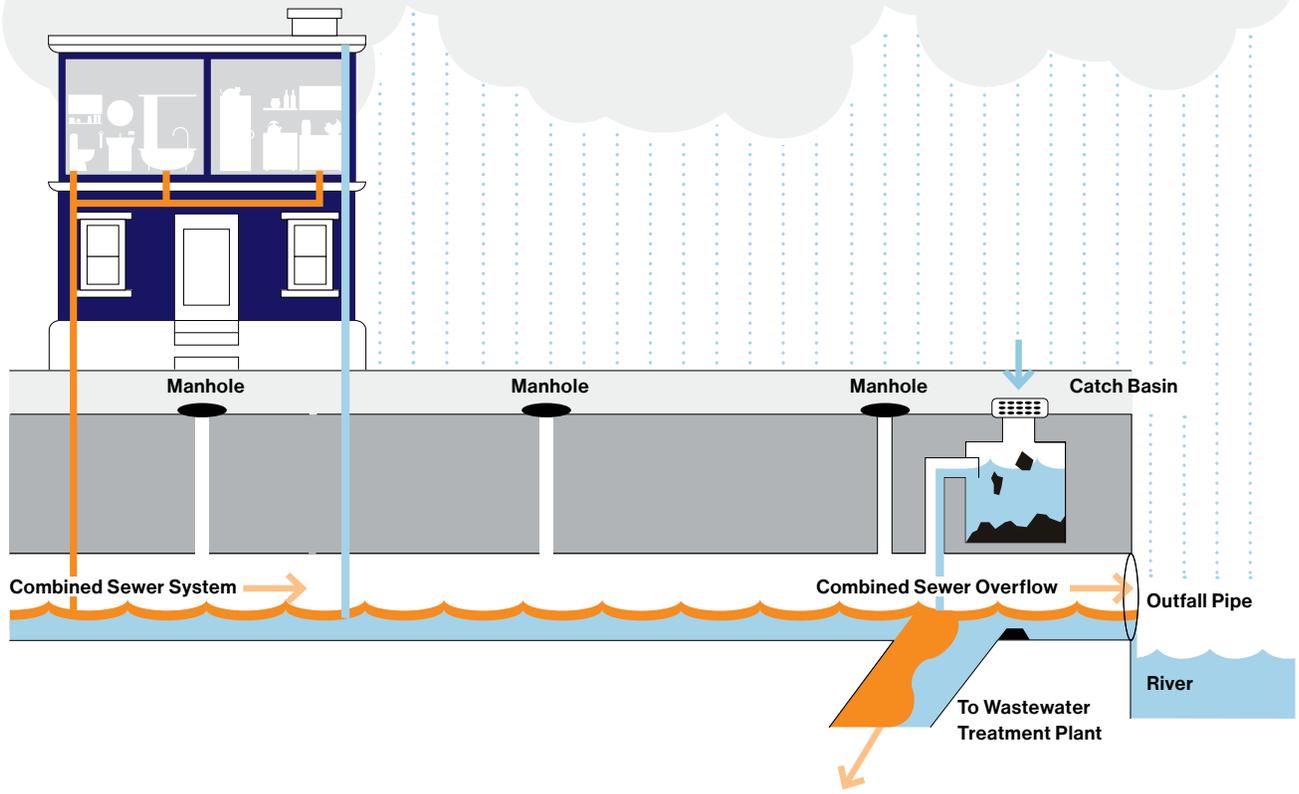
The individual designated to act as the liaison between the City and NYSDEC for the implementation of this permit is:

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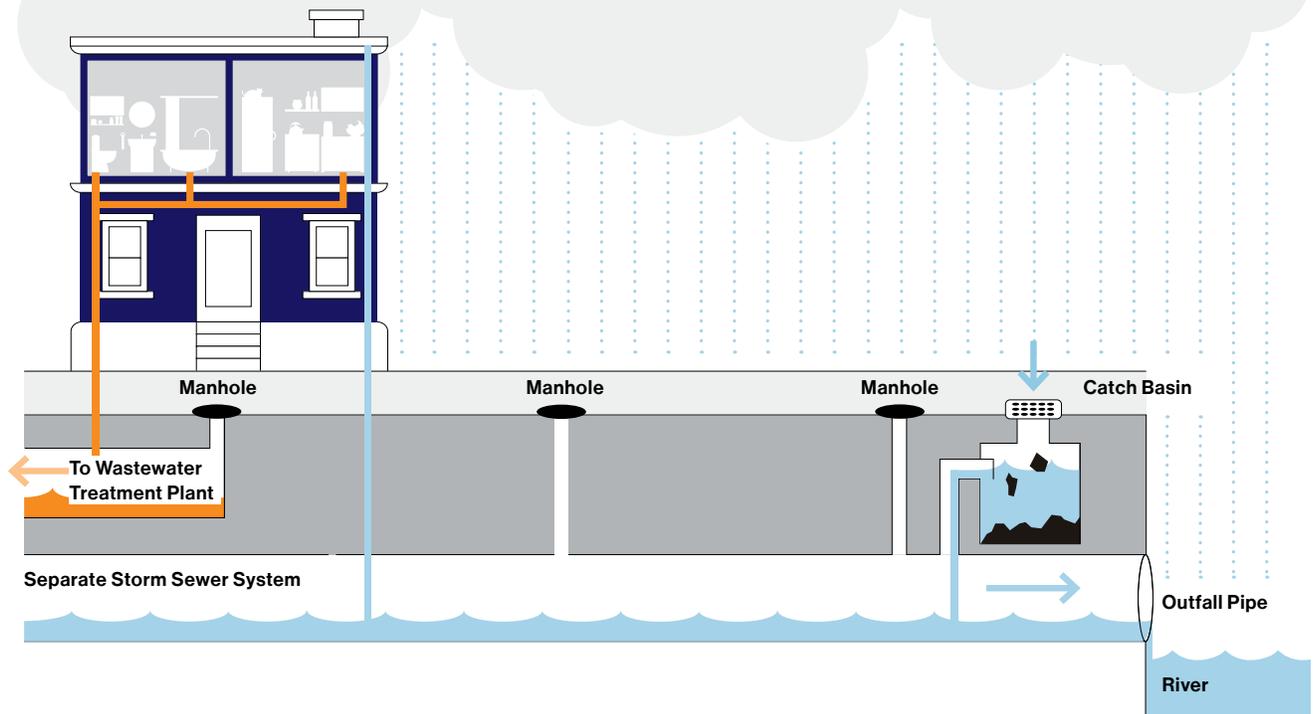
The New York City Department of Environmental Protection (DEP) coordinates the implementation of the SWMP with the assistance of and contributions from the Stormwater Controls Working Group. The Stormwater Controls Working Group is a team of representatives from the following New York City agencies that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

- |   |  |
|---|--|
| <b>Agencies with MS4 Permit Obligations</b> | <b>Department of Citywide Administrative Services (DCAS)</b> |
|   | <b>Department of City Planning (DCP)</b>                     |
|   | <b>Department of Design and Construction (DDC)</b>           |
|   | <b>Department of Environmental Protection (DEP)</b>          |
|   | <b>Department of Buildings (DOB)</b>                         |
|   | <b>Department of Correction (DOC)</b>                        |
|   | <b>Department of Education (DOE)</b>                         |
|   | <b>Department of Health and Mental Hygiene (DOHMH)</b>       |
|   | <b>Department of Transportation (DOT)</b>                    |
|   | <b>Department of Parks and Recreation (Parks)</b>            |
| <b>Department of Sanitation (DSNY)</b>      |  |
| <b>Fire Department (FDNY)</b>               |  |
| <b>Police Department (NYPD)</b>             |  |
| <b>Small Business Services (SBS)</b>        |  |
| <b>Collaborators</b>                        | <b>NYC Law Department (LAW)</b>                              |
|   | <b>Economic Development Corporation (EDC)</b>                |
|   | <b>Mayor's Office of Management and Budget (OMB)</b>         |
|   | <b>Mayor's Office of Recovery and Resiliency (ORR)</b>       |

## Combined Sewer System



## Municipal Separate Storm Sewer System



The COVID-19 pandemic has brought a wave of hardship and fiscal uncertainty to the City of New York. These complex challenges have forced the City to alter many existing programs and much planned work. The SWMP is no exception. On March 20, 2020, Governor Cuomo issued the “New York State on PAUSE” Executive Order, which included a directive enforcing the statewide closure of all non-essential businesses effective March 22, 2020. It also temporarily banned non-essential gatherings of individuals of any size, for any reason. While many of the activities required by the SWMP continued through a combination of telework and in-person activities that followed environmental health and safety guidance, several components have experienced delay or reduced activity. These impacts are noted throughout this MS4 Annual Report.

## MS4 Annual Reports

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

- **Introduction.** This section includes an overview of the program and context for the activities completed within a reporting year. For more information on the programs, refer to the SWMP Plan.
- **Program assessment.** This section includes information on activities completed during the reporting year. Tables that present the measurable goals and measures of a program for the reporting year are complemented by a narrative that highlights and explains important activities. To the extent that COVID-19 has impacted a program, the City has described such impact.
- **Goals for the next reporting cycle.** This section includes the City’s aspirations for applicable programs during the next reporting cycle. To the extent that the City has identified potential on-going impacts on its programs from COVID-19, such impacts are also noted in this section.
- **Program updates.** This section includes information on SWMP updates that the City is proposing as part of refining and adapting its program. The program updates section does not appear if no changes are required for a program. The City updates the SWMP Plan text annually but implements as soon as practicable any necessary changes identified during the reporting year.

The City publishes a draft MS4 annual report online in the spring of each year for public comment and holds a public meeting during the comment period. This year, because of the COVID-19 pandemic, the City held the public meeting on the draft 2020 MS4 Annual Report as a webinar. This alternative to the in-person meeting was allowed by the Governor’s Executive Order 202.102, which suspended requirements of the Open Meetings Law to allow attendance at meetings telephonically.

Following the public review of the draft MS4 Annual Report, the City responds to public comments and updates the MS4 Annual Report accordingly. The final version of the report is due to NYSDEC on September 30th of each year. The MS4 Annual Reports are available on the DEP website.<sup>1</sup>

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



DEP sampling at groundwater spring



Wastewater Resource Recovery in NYC Professional Learning Opportunity - 2020 (Taken Pre-COVID-19).

## Public Education and Outreach

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

### Program Assessment

During the 2020 reporting period, as part of the PEO Program, several programs and events were cancelled due to the pandemic. COVID-19 impacted the implementation of certain programs in 2020 including SAFE Disposal Events (Solvents, Automotive, Flammable, Electronics) which typically provide NYC residents with a one-stop method to get rid of harmful household products. However, overall, the City implemented 15 programs that included over 700 events (some held virtually due to COVID-19) with over 18,000 participants. These metrics include activities conducted citywide.

#### Program Highlights from 2020 Include:

##### Visitor Center at Newtown Creek – Sewer Exhibit.

The Newtown Creek Visitor Center exhibit features DEP employees who explain the City's water cycle, including supply, distribution, wastewater treatment, stormwater management, and harbor water quality. During 2020, DEP finalized the plans for the enhancement of the sewer exhibit, which will share essential information with visitors about the actions all New Yorkers can take to help optimize the City's sewer system and to protect water

quality, such as water conservation, litter reduction, and proper disposal of grease and other household waste. The exhibit will feature a three-dimensional, interactive design, centered within a large-scale, cut-away of a sewer pipe, and include informational discs that open to reveal images and text about stormwater pollution and actions New Yorkers can take to help protect our sewer system and the New York Harbor.

**Professional Learning Opportunities.** Each year, DEP's Education Office plans and hosts numerous professional learning opportunities (PLO) for hundreds of classroom teachers, sustainability coordinators, school administrators, college professors, and non-formal educators from city agencies, cultural and historical institutions, and environmental advocacy and community-based organizations. These PLOs offer an exciting opportunity to connect with educators across NYC and equip them with resources and teaching tools related to DEP's essential work, including water conservation, wastewater treatment, stormwater management, harbor water quality, and climate change resiliency. Some of our 2020 highlights include our popular Wastewater Resource Recovery in NYC PLO that we hosted for more than 50 educators at the Visitor Center at Newtown Creek, and our first-ever Climate Change Education Virtual Workshop Series that we hosted for more than 30 educators over three sessions. The first of the three climate change education sessions focused specifically on how NYC is managing stormwater and promoting stewardship initiatives to help address the impacts of climate change. This workshop series also highlighted our new Climate Change Education Module, a comprehensive set of lessons, activities, and resources, developed in collaboration with the Mayor's Offices of Resiliency and Sustainability.

**Winter Jam.** Winter Jam 2020 offered an array of activities open to New Yorkers of all ages, including a Lake Placid snow field with snowshoeing, curling, and ski instructors; live ice carving in an ice sculpture garden; Urban Park Rangers sachet making; and the Animal Planet Puppy Bowl Zone. At the event, Parks featured the EnviroScape, which is a portable, interactive education model intended for use in schools and the community to demonstrate the sources of wastewater and stormwater runoff, collection in the underground sewer system (e.g., sanitary and separate), and ways to protect New York City’s waterways. Parks also distributed MS4 educational materials, DSNY recycling guidelines and stickers, BYO programs pledge cards, and general information about the NYC Stormwater Management Program and parks.

**Training and Outreach Strategies.** The DOE Office of Sustainability provides a robust education and outreach strategy that builds on baseline annual trainings for Sustainability Coordinators, teachers and faculty, custodian engineers, and kitchen managers. Prior to COVID-19, DOE delivered the bulk of the trainings in person. The trainings focus on building an engagement model that includes specialized opportunities, technical skills, and youth engagement. During 2020, through DOE’s trainings and events, the Office of Sustainability reached 3,350 students and staff from 20 in-person and virtual trainings and events.

**Trash It, Don’t Flush It and Grease Outreach.** The Environmental Compliance and Outreach Unit within DEP’s Bureau of Public Affairs and Communications conducted grease management education and outreach, which included:

- presenting to Community Boards 12 and 13 in Queens and Community Boards 13 and 15 in Brooklyn and conducting residential door-to-door outreach in the beginning of 2020 (January – February).
- sending notices to food service establishments on maintaining grease interceptors, proper grease disposal, and recycling of cooking oil since restaurants were take-out only for months due to COVID-19.
- providing new educational material (e.g., door hangers) for residents on the City’s Trash It, Don’t Flush It Campaign.
- partnering with the NYC Ferry, operated by the Economic Development Corporation, to run a 15-second video on the Trash It, Don’t Flush It Campaign from June 15 to July 15, 2020. Each ferry has six screens that ran the video on a loop for passengers, about 100,000 per week during the pandemic.
- responding to 311 requests from residents, landlords and community groups for Trash It, Don’t Flush It posters; and answering questions on grease maintenance and the distribution list of grease haulers licensed by the City from the business hotline at 718-595-4436.



Winter Jam (Taken Pre-COVID-19)



Winter Jam – EnviroScape (Taken Pre-COVID-19)

### Goals for Next Reporting Cycle

During the 2021 reporting cycle, the City will continue implementing the programs listed as planned in Table 1, including SAFE Disposal Events. However, because of the constraints imposed by the City in response to COVID-19, there may be some decrease in the numbers of events, participants, and distributed materials during the 2021 reporting period. The City will also continue to develop education and collaboration efforts with stakeholders. Additionally, the City is launching a new stewardship program, “Harbor Protectors,” that includes events and training opportunities for interested individuals and organizations to participate in clearing off catch basin gratings, stenciling, educational messages, and conducting shoreline cleanups and/or rain garden care.

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

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

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

- Visiting **311** online at [nyc.gov/311](http://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.



**Table 1. Public Education and Outreach 2020 Status of Implementation**

| BMP   | Measurable Goals  | Measures  | Status  |
|---|---|---|---|
| <p><b>Provide an ongoing public education and awareness program</b></p> | <p>Develop, implement, and assess an ongoing public education and outreach program</p>  | <p>List of education &amp; outreach programs/ events and relevant metric(s) for each (e.g., number of participants, events, or materials distributed)</p> | <ul style="list-style-type: none"> <li>• Adopt-a-Highway/Greenway (0 events due to COVID-19; 69 materials distributed)*</li> <li>• Annual Art and Poetry Contest (1 virtual event due to COVID-19; 1,600 participants)*</li> <li>• Business/Resident Outreach (6 events; 1,000 participants; 1,112 businesses, restaurants, and households canvassed)</li> <li>• Cease the Grease (10 events)</li> <li>• Community Clean-ups (1 event; 10 participants)*</li> <li>• Community Right-to-Know Workshops (7 events, 175 participants)</li> <li>• DEP Environmental Education (42 events [of the total, 19 events were held virtually due to COVID-19]; 4,887 participants)*</li> <li>• Parks Environmental Education (6 events; 1,575 participants)*</li> <li>• Forgot Your Bag? (169 canine waste dispensers in the MS4 area)</li> <li>• Park Stewardship (274 events; materials distributed; 2,475 participants)*</li> <li>• SAFE Disposal Events (0 events due to COVID-19)</li> <li>• School Sustainability Coordinator Trainings (6 events [3 of which were held virtually due to COVID-19])</li> <li>• Urban Park Rangers Natural Classroom (103 events; 1,994 participants)*</li> <li>• Visitor Center at Newtown Creek (98 events [of the total, 48 events were held virtually due to COVID-19]; 3,041 participants)*</li> <li>• Weekend, Pop-up, and Custom Adventures (168 events; 1,931 participants)*</li> </ul> |
|   |   | <p>List of planned educational and outreach programs/activities to be undertaken in the next reporting cycle</p>  | <ul style="list-style-type: none"> <li>• Annual Art and Poetry Contest</li> <li>• Automotive Associations</li> <li>• Business/Resident Outreach</li> <li>• DEP Environmental Education</li> <li>• Harbor Protectors</li> <li>• Forgot Your Bag?</li> <li>• Park Stewardship</li> <li>• SAFE Disposal Events</li> <li>• Urban Park Rangers Natural Classroom</li> <li>• Visitor Center at Newtown Creek</li> <li>• Weekend, Pop-up and Custom Adventures</li> </ul>  |
|   | <p>Develop and implement educational and informational activities related to illicit discharges for businesses and the general public</p> | <p>List of education &amp; outreach programs/ events and relevant metric(s) for each (e.g., number of participants, events, or materials distributed)</p> | <ul style="list-style-type: none"> <li>• Annual Art and Poetry Contest (1 virtual event due to COVID-19; 1,600 participants)*</li> <li>• Business/Resident Outreach (6 events; 1,000 event participants; 1,112 businesses, restaurants, and households canvassed)</li> <li>• Cease the Grease (10 events)</li> <li>• Community Clean-ups (1 event; 10 participants)*</li> <li>• Community Right-to-Know Workshop (7 events, 175 participants)</li> <li>• DEP Environmental Education (42 events [of the total, 19 events were held virtually due to COVID-19]; 4,887 participants)*</li> <li>• Parks Environmental Education (2 events; 1,075 participants)*</li> <li>• Forgot Your Bag? (169 canine waste dispensers in the MS4 area)</li> <li>• Park Stewardship (274 events; 2,475 materials distributed; participants)*</li> <li>• SAFE Disposal Events (0 events due to COVID-19)</li> <li>• School Sustainability Coordinator Trainings (2 events [1 of which was held virtually due to COVID-19])*</li> <li>• Urban Park Rangers Natural Classroom (103 events; 1,994 participants)*</li> <li>• Visitor Center at Newtown Creek (98 events [of the total, 48 events were held virtually due to COVID-19]; 3,041 participants)*</li> <li>• Weekend, Pop-up, and Custom Adventures (168 events; 1,931 participants)*</li> </ul>  |
|   |   | <p>List of planned educational and outreach programs/activities to be undertaken in the next reporting cycle</p>  | <ul style="list-style-type: none"> <li>• Annual Art and Poetry Contest</li> <li>• Automotive Associations</li> <li>• Business/Resident Outreach</li> <li>• DEP Environmental Education</li> <li>• Harbor Protectors</li> <li>• Forgot Your Bag?</li> <li>• Park Stewardship</li> <li>• SAFE Disposal Events</li> <li>• Urban Park Rangers Natural Classroom</li> <li>• Visitor Center at Newtown Creek</li> <li>• Weekend, Pop-up, and Custom Adventures</li> </ul>   |
| <p><b>Facilitate public reporting of illicit discharges</b></p>         | <p>Promote, publicize, and facilitate public reporting of illicit discharges and potential water quality impacts</p>                      | <p>Summary of public reports received by 311</p>  | <p>The City responded to 100% of the 6,898 service requests it received for the 311 complaint types listed in this report as relevant to stormwater pollution.</p>  |

\* These metrics reflect activities conducted citywide.

# Public Involvement and Participation

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

## Program Assessment

Because of the constraints posed by COVID-19, and in accordance with City and State regulations, the City shifted much of its engagement to virtual platforms. During the 2020 reporting period, DEP hosted, in partnership with other City agencies, outreach meetings for the public and key stakeholders on the to-be-proposed Unified Stormwater Rule (USWR). In addition, there were multiple Community Right-to-Know workshops held citywide during the beginning of the year (i.e., January and February).

The City published the draft 2019 MS4 Annual Report on the DEP website on May 7, 2020 and hosted the 2019 MS4 Annual Report meeting as a webinar from 4:00 pm to 6:00 pm on Thursday, May 21, 2020. The public was encouraged to submit comments from May 7, 2020 through June 25, 2020 by email to [MS4@dep.nyc.gov](mailto:MS4@dep.nyc.gov). Appendix 1 of the final 2019 MS4 Annual Report includes the public comments received during that period and the City's responses.

## Goals for Next Reporting Cycle

During the 2021 reporting cycle, the City will continue engaging with local stakeholder groups and participating in community events in order to educate and involve the public with respect to stormwater management and water quality. The City held a virtual public meeting on the draft 2020 MS4 Annual Report on May 27, 2021. Public comments and responses are included in Appendix 1 of this final report. The City will continue to focus on expanding partnerships and providing educational information and webinars for construction and post-construction stormwater controls.



**The City published the draft 2020 MS4 Annual Report on the DEP website on May 21, 2021. The City hosted the 2020 MS4 Annual Report meeting as a webinar from 4 pm to 6 pm on Thursday, May 27, 2021. The public was encouraged to submit comments from May 21, 2021 through July 1, 2021 by email to [MS4@dep.nyc.gov](mailto:MS4@dep.nyc.gov).**



**Table 2. Public Involvement and Participation 2020 Status of Implementation**

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

| BMP  | Measurable Goals   | Measures  | Status   |
|--|--|---|--|
| <p><b>Provide and promote the opportunity to report and receive stormwater information</b></p> | <p>Identify mechanism for public to report and request stormwater related information including contact process to receive and respond to requests</p> | <p>Summary of public reports and requests received by MS4@dep.nyc.gov</p>   | <p>The City responded to inquiries on various SWMP activities including but not limited to construction/post-construction permitting, industrial/commercial permitting, PEO Program implementation, and general stormwater discharge inquiries.</p>  |
| <p><b>Provide public opportunity to participate in SWMP implementation</b></p>                 | <p>Seek public input on SWMP implementation and provide public access to Annual Reports</p>  | <p>Date and location of draft Annual Report posted for public review and comment period</p>                       | <p>On May 7, 2020, the City posted on the DEP website the draft 2019 MS4 Annual Report. It was available for public comment through June 25, 2020.</p>   |
|  |  | <p>Date and time of draft Annual Report stakeholder meeting and number of participants</p>                        | <p>May 21, 2020 at 4:00pm. Approximately 114 individuals participated.</p>   |
|  |  | <p>Summary of comments received on draft Annual Report and City responses</p>                                     | <p>Appendix 1 – Public Comments on the 2020 MS4 Annual Report</p>  |
|  |  | <p>List of involvement and participation activities (e.g., programs, events, key stakeholder meetings)</p>        | <ul style="list-style-type: none"> <li>• 2019 MS4 Annual Report Public Meeting (114 participants)</li> <li>• Staten Island Builder Association Construction/Post-Construction Workshop (25 participants)</li> <li>• Unified Stormwater Rule Outreach (4 virtual events, 265 participants)</li> </ul> |
|  |  | <p>Status and location of final Annual Report and the Plan</p>  | <p>The SWMP Plan and final MS4 annual reports are available at <a href="http://www.nyc.gov/dep/ms4">www.nyc.gov/dep/ms4</a></p>  |
|  |  | <p>List of planned participation and involvement programs/activities to be undertaken in next reporting cycle</p> | <p>2020 MS4 Annual Report Meeting</p>  |

# Mapping

The City has several programs that 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 has mapped MS4 outfalls and drainage areas. Before NYSDEC issued the MS4 Permit in 2015, DEP had developed the Historical MS4 Map, which represented the City’s best understanding of the MS4 area and outfalls at that time. The City used this map throughout the development of the SWMP. Pursuant to the MS4 Permit, the City then subsequently submitted with the SWMP the Preliminary MS4 Map, which showed the known MS4 drainage areas and outfalls as of August 1, 2018. The MS4 Permit required the City to update and submit the final MS4 map of the permit cycle on August 1, 2020.

## Program Assessment

During the 2020 reporting period, the City submitted to NYSDEC an updated MS4 map along with supplemental information relevant to stormwater management. An interactive version of this map is available to the public at [www.nyc.gov/dep/ms4map](https://www.nyc.gov/dep/ms4map). This 2020 MS4 Map includes 764 outfalls, specifically 693 MS4 outfalls and 71 CSO Outfalls with MS4 Connections.

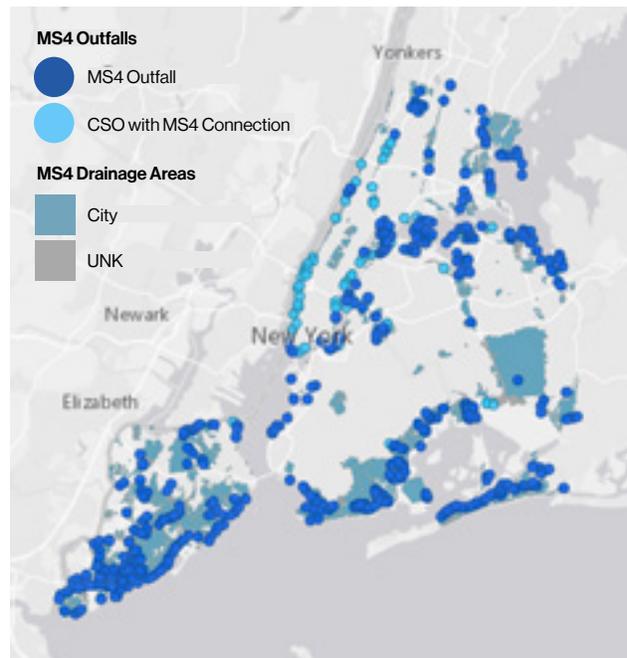
Based on the updated 2020 mapping of MS4 drainage areas and the most recent impervious surface data, the City estimates the MS4 area to be 49.5% impervious, 4.1% semi-pervious, and 45.0% pervious. The remaining 1.4% of the MS4 area is classified as open water. The City also updated land use estimates. The six most prevalent land use types in the MS4 area include open space and recreation

(30%), one- and two- family residential (27%), right-of-way (16%), public facilities and institutions (7%), vacant land (5%), and transportation/utilities (5%).

As stated in the SWMP Plan, GIS datasets are dynamic and change over time as updates are received and processed. As a result, the MS4 Map may be periodically updated as new information becomes available.

## 2020 MS4 Drainage Areas and Outfalls

The information shown on this map is the best available information as of August 1, 2020.



**Table 3. Mapping Program 2020 Status of Implementation**

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

| BMP              | Measurable Goals  | Measures                                  | Status   |
|------------------|---|---|--|
| Map the MS4 area | Map in GIS-format; MS4 outfalls, and drainage areas (Preliminary MS4 Map to be submitted by August 1, 2018 and "Final" Map to be submitted by August 1, 2020) | Status and location of the MS4 Map        | The MS4 Map is online and available to the public at <a href="https://nyc.gov/dep/ms4map">nyc.gov/dep/ms4map</a> |
|                  |   | Number and percent of MS4 outfalls mapped | 764 outfalls mapped; 99%   |
|                  | Update Final MS4 Map every 5 years  | Date of latest MS4 Map updated submittal  | August 1, 2020   |



DEP collecting water quality samples

## Illicit Discharge Detection and Elimination

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

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

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

## Program Assessment

During this reporting period, the City continued to implement its citywide IDDE Program: characterizing outfalls, sampling in receiving waterbodies, source tracking, and eliminating illicit discharges. The City detected illicit discharges and eliminated them citywide through the DEP Response and Compliance Units; Sentinel Monitoring and Shoreline Survey programs; and agencies' actions at their municipal facilities in the MS4 area. The City is working to investigate the illicit discharges that are within the City's jurisdiction that were detected in 2020, but not eliminated within the calendar year. Some illicit discharges reported as detected will not have an accompanying abatement record because of circumstances such as an investigation's resulting in the determination that the discharge was not illicit or that the matter should be turned over to NYSDEC. Because of COVID-19, there were notable reductions in IDDE education and outreach programs conducted by various agencies.

In 2020, the City integrated the Sentinel and Harbor Survey monitoring programs. The benefits of integrating and enhancing these monitoring programs include:

- targeting areas in need of additional monitoring with new monitoring sites
- reducing redundancies by managing resources more efficiently
- continuing comprehensive and consistent monitoring of the NY harbor

Under the Shoreline Survey Program, DEP conducts an outfall reconnaissance inventory (ORI), surveying 100 percent of shoreline outfalls every 10 years.<sup>2</sup> MS4 outfalls are not evenly distributed throughout the shoreline; therefore, the percentage of outfalls DEP inventories each year depends on the area of shoreline inventoried.<sup>3</sup> In 2020, DEP inventoried approximately 4% of MS4 outfalls included in the Shoreline Survey and sent an updated outfall list of the DEP-owned CSO and MS4 outfalls to NYSDEC. COVID-19 impacted the implementation of the Shoreline Survey during 2020. During the peak periods of the pandemic, DEP had to postpone abatement and investigation of potential illicit discharges because DEP was unable to safely gain access to buildings and homes.

<sup>2</sup> As required in the 14 WRRF SPDES permits, DEP conducts the Shoreline Survey Program by surveying 50 percent of the shoreline every five years so that 100 percent of shoreline is completed every 10 years. DEP may also re-visit target drainage areas due to anticipated or identified changes to outfalls.

<sup>3</sup> The most recent Shoreline Survey report, covering the 2013-2017 period (report submitted March 2018), included approximately 80% of the shoreline MS4 outfalls. The next Shoreline Survey reporting period from 2018 - 2022 (report due March 2023) includes the remaining shoreline MS4 outfalls to be surveyed (approximately 20% of the total). The 2013-2022 period represents the ten-year period during which 100% of MS4 outfalls are expected to be surveyed, as required by the MS4 permit.

## Drone Flyover Demo

The City continued the Alley Creek drone flyover pilot project, which was initiated in 2019. Alley Creek is a challenging waterbody for conducting source tracking shoreline investigations as there are accessibility issues created by the presence of wetlands, muddy conditions, and shallow waters at low tide. DEP has successfully eliminated sources of illicit discharges in the drainage area to Alley Creek in the past, but this new effort incorporates the use of drones to investigate areas that are difficult to access. By identifying areas with relative water temperature differences, a drone survey can help guide DEP to areas that potentially require further investigation. Illicit discharges are typically warmer than the receiving waterbody, and this temperature difference is captured by thermal sensors installed on the drone.

Early in 2020, DEP conducted a drone survey in the evening after sundown both to remove light interference as a factor and to capture a time period during which people use their kitchens and bathrooms. Because of weather conditions, and then because of COVID-19, only a portion of the waterbody and park area was surveyed in 2020. DEP did identify during the partial flyover a temperature anomaly that indicated presence of flowing water. Through a follow-up investigation that included sample analysis, DEP determined that the anomaly was likely a flowing groundwater discharge. DEP is planning to complete the Alley Creek drone flyover project in 2021.



Alley Creek drone flyover



DEP and the USGS collecting MST samples

### Microbial Source Tracking Demo

Analyzing water samples for microbial source tracking (MST) markers using the quantitative polymerase chain reaction (qPCR) method can help to characterize the various sources of fecal contamination including humans, waterfowl, and canines. DEP partnered with the US Geological Survey (USGS) on an MST study to identify the source(s) and relative host contributions of bacterial contamination in Alley Creek by using a combination of *Bacteroides* and physicochemical analyses. The study is designed to evaluate fecal contamination sources to Alley Creek seasonally and spatially,

during both wet and dry weather conditions, and based on tidal influence. Additional microbiological and chemical constituents associated with human sewage are also included in the study. Sampling began in August 2020 and is expected to conclude in 2021. Surface water, groundwater, and sediment samples were collected in 2020.

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

**Table 4. IDDE Program 2020 Status of Implementation**

| BMP  | Measurable Goals  | Measures  | Status   |
|--|---|---|--|
| <b>Detect and eliminate illicit discharges</b>                   | Detect and eliminate illicit discharges including illegal dumping   | Number of illicit discharges detected   | 646*   |
|  |   | Number of illicit discharges abated   | 631*   |
|  |   | Number of and type of enforcement actions and penalties issued  | DEP issued 54 summons (\$32,520 in penalties) and 3 Commissioner's Orders; DSNY issued 554 summons†  |
|  | Conduct an outfall reconnaissance inventory with 100% completed every 10 years  | Updated outfall spreadsheet submitted to NYSDEC   | Appendix 2 – SPDES outfall listing‡  |
|  |   | Percent of MS4 outfalls for which an outfall reconnaissance inventory (ORI) has been performed  | 4%   |
| <b>Prepare reports</b>   | Prepare a Special Report for waterbodies with fecal coliform above 200 colonies/100 ml and for unauthorized non-stormwater discharges within 3 years of August 1, 2015 and annually thereafter. | Status and location of Integrated Sentinel Monitoring Report submitted to NYSDEC  | Available on the DEP website under the header Sentinel Monitoring Program: <a href="https://www1.nyc.gov/site/dep/water/harbor-water-quality.page">https://www1.nyc.gov/site/dep/water/harbor-water-quality.page</a>   |
| <b>Provide an ongoing public education and awareness program</b> | Implement a public education program on potential hazards of illicit discharges   | List of education activities for public employees   | PP/GH agency staff training  |
|  |   | List of education and outreach programs/events for the general public and businesses, and relevant metric(s) for each (e.g., number of participants, event, or materials distributed) | <ul style="list-style-type: none"> <li>• Annual Art and Poetry Contest (1 virtual event due to COVID-19; 1,600 participants) ¶</li> <li>• Business/Resident Outreach (6 events; 1,000 event participants; 1,112 businesses, restaurants, and households canvassed) ¶</li> <li>• Cease the Grease (10 events) ¶</li> <li>• Community Clean-ups (1 event; 10 participants) ¶</li> <li>• DEP Environmental Education (42 events [of the total, 19 events were held virtually due to COVID-19]; 4,887 participants) ¶</li> <li>• Community Right-to-Know Workshops (7 events; 175 participants) ¶</li> <li>• Parks Environmental Education (2 events; 1,075 participants) ¶</li> <li>• Forgot Your Bag? (169 canine waste dispensers in the MS4 area)</li> <li>• Park Stewardship (274 events; 2,475 participants) ¶</li> <li>• SAFE Disposal Events (0 events due to COVID-19) ¶</li> <li>• School Sustainability Coordinator Trainings (2 events [1 of which was held virtually due to COVID-19]) ¶</li> <li>• Urban Park Rangers Natural Classroom (103 events; 1,994 participants) ¶</li> <li>• Visitor Center at Newtown Creek 98 events [of the total, 48 events were held virtually due to COVID-19]; 3,041 participants) ¶</li> <li>• Weekend, Pop-up, and Custom Adventures (168 events; 1,931 participants) ¶</li> </ul> |
|  |   | List of planned educational and outreach programs to be undertaken in next reporting cycle  | <ul style="list-style-type: none"> <li>• Annual Art and Poetry Contest</li> <li>• Automotive Associations</li> <li>• Business/Resident Outreach</li> <li>• DEP Environmental Education</li> <li>• Forgot Your Bag?</li> <li>• Harbor Protectors</li> <li>• Park Stewardship</li> <li>• SAFE Disposal Events</li> <li>• Urban Park Rangers Natural Classroom</li> <li>• Visitor Center at Newtown Creek</li> <li>• Weekend, Pop-up and Custom Adventures</li> </ul>   |
| <b>Provide training for staff</b>                                | Implement a staff training program on IDDE  | Number of staff training opportunities/events   | 10 events  |
|  |   | Number of DEP staff trained on IDDE   | 73 participants total§   |

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

† Excludes cases DEP referred to NYSDEC; DSNY summons are for vehicle spillage and the extrusion of noxious liquids.

‡ The spreadsheet is a full listing of CSO and DEP-MS4 outfalls.

¶ These metrics reflect activities conducted citywide.

§ Participants total includes those who attended multiple training events.



Image of Alley Creek taken with drone

### Goals for Next Reporting Cycle

For the 2021 reporting cycle, the City will continue its IDDE program, which includes the Shoreline Survey, Harbor Survey, Sentinel Monitoring, Emergency Response Units, and responding to issues discovered on-site at municipally-owned facilities. As a result of COVID-19 constraints, the City anticipates a continued reduction in some IDDE metrics, such as the percentage of MS4 outfalls for which an outfall reconnaissance inventory (ORI) has been performed and the number of education and outreach events.

For Alley Creek, the City is planning to conclude the drone pilot project in 2021. The City also expects to conclude MST sampling with the USGS in 2021.

### Program Updates

In this and future MS4 annual reports, the City will report on the percent of MS4 outfalls for which an ORI has been performed. The City updated the BMP table accordingly in this annual report and will update the SWMP plan.



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



# Construction and Post-Construction

NYSDEC requires development or redevelopment projects disturbing an acre or more of soil to obtain coverage for stormwater discharges under the State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-020-001) (NYSDEC CGP).

The City's Construction and Post-Construction (C/PC) Program complements the NYSDEC CGP program in the NYC MS4 area by reviewing and approving stormwater pollution prevention plans (SWPPPs) and inspecting construction sites both for stormwater impacts and for operation of post-construction stormwater management practices (SMPs). The C/PC Program also requires developers to install adequate controls to ensure no net increase (NNI) of a pollutant of concern causing the impairment of an impaired water without a total maximum daily load (TMDL). As part of the C/PC Program, DEP issues two types of stormwater permits for covered development projects: the Stormwater Construction Permit and the Stormwater Maintenance Permit.

Rules governing the C/PC Program went into effect on June 1, 2019, enabling the City to administer the program by reviewing SWPPPs; issuing stormwater construction and maintenance permits; inspecting and enforcing during and after construction; and responding to public complaints. Similarly, DEP's online application system for developers, the Stormwater Permitting and Tracking System (SWPTS), came online on June 1, 2019. SWPTS includes access to a list of issued construction permits as well as a list of projects with post-construction practices approved under the NYSDEC CGP. SWPTS is also the site for applicants to submit and track the review and approval of their SWPPPs and to track permit progress. The site is accessible at <https://deppermits.microsoftportals.com/>.

## Program Assessment

During the 2020 reporting period, the City reviewed 96 SWPPPs and issued 38 approvals. The City also issued 16 Stormwater Construction Permits, 14 of which were active during 2020. A list of active Stormwater Construction Permits is available at <https://deppermits.microsoftportals.com/>. The City inspected all of the active construction sites during 2020, issuing four stop work orders and two notices of non-compliance.

Of the 42 new projects received by the City in 2020, 12 projects met the criteria for the NNI requirement. NNI is a requirement in the Special Conditions section of the MS4 Permit (II.B.1), under which projects that discharge to waters that are impaired but do not have a TMDL allocation, must implement SMPs that negate any potential increase in pollutant loading.

<https://www1.nyc.gov/site/dep/water/construction-post-construction-program-ms4.page>



Covered stockpile on construction site.



Stormwater construction inspectors look at temporary stabilization in ROW.

The City has not yet issued any Stormwater Maintenance Permits, as no projects with MS4 Construction Permits have reached a stage that would require maintenance of SMPs.

In 2020, the City worked towards expanding the C/PC program to cover both MS4 and CSO drainage areas and to include projects that disturb 20,000 square feet or more of soil. The City plans to incorporate this threshold reduction (from 1 acre to 20,000 square feet) in the to-be-proposed Unified Stormwater Rule (USWR), which seeks to align and streamline stormwater-related requirements throughout NYC. The City held a public workshop on the USWR in November 2020. For more information on the USWR, visit <https://www1.nyc.gov/site/dep/water/unified-stormwater-rule.page>.

## Goals for Next Reporting Cycle

During the 2021 reporting cycle, DEP's MS4 Construction Permitting Group plans to continue outreach efforts to the construction community, to review and approve SWPPPs, and to inspect sites that have construction permits. Additionally, City staff will continue to respond to inquiries and provide applicants with information and training, as needed or requested. The City also plans to

publish a draft of the USWR for public review through the City Administrative Procedure Act (CAPA) rulemaking process. For municipal Right of Way (ROW) projects, the one-acre threshold under the CGP will continue to apply, but the City, pending NYSDEC review and approval, plans to exempt ROW projects from constructing

post-construction SMPs under the 20,000 square foot soil disturbance requirement.

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

**Table 5. C/PC Program 2020 Status of Implementation**

| BMP  | Measurable Goals   | Measures   | Status   |
|--|--|--|--|
| <b>Construction Site Stormwater Runoff Control</b> | Review and Approve SWPPPs  | Number of SWPPPs reviewed  | 96   |
|  |  | Number of SWPPPs approved with post- construction stormwater management facilities                           | 16   |
|  |  | Number of SWPPPs approved without post- construction stormwater management facilities                        | 22   |
|  |  | Number of Stormwater Construction Permits issued   | 16   |
|  | Inspect construction sites and enforce Stormwater Construction Permits     | Number of active construction sites  | 14   |
|  |  | The percentage of active Stormwater Construction Permit sites inspected once                                 | 100  |
|  |  | The percentage of active Stormwater Construction Permit sites inspected more than once                       | 69   |
|  |  | Number and type of enforcement actions and penalties issued  | <ul style="list-style-type: none"> <li>• Stop Work Orders (3 issued; 2 resolved; 0 penalties)</li> <li>• Notice of non-compliance (2 issued; 2 resolved; 0 penalties)</li> <li>• Summons (0 issued)</li> </ul> |
|  |  | Number of construction site stormwater control trainings planned or completed                                | 4 completed, 0 planned   |
|  |  |  |  |
| <b>Post-Construction Stormwater Management</b>     | Inspect post-construction sites and enforce Stormwater Maintenance Permits | Number of Stormwater Maintenance Permits issued  | 0†   |
|  |  | Number of Flood Management Projects and existing structural flood control devices evaluated                  | 0†   |
|  |  | Number and type of enforcement actions and penalties issued  | 0†   |
|  |  | Number of post-construction SMPs, including type of practice and contributing impervious area                | 0†   |
|  |  | Number and type of SMPs inspected  | 0†   |
|  |  | Number and type of SMPs properly maintained as determined by inspections                                     | 0†   |
|  |  | Number of individuals trained in inspection of long-term operation and maintenance of post-construction SMPs | 0‡   |

† No projects with MS4 construction permits have reached a stage that would require maintenance of SMPs.

‡ Because of COVID-19, on-the-job training in 2020 focused on construction inspections.

# 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. To help reduce the potential for these facilities and operations to pollute stormwater, the City implements a comprehensive Pollution Prevention/Good Housekeeping (PP/GH) Program. The PP/GH Program maintains an inventory of municipal facilities and operations; prioritizes these facilities and operations for their potential to contribute pollution to stormwater runoff and assesses them on 2, 5 and 7-year cycles for high, medium and low priority, respectively; provides guidance on stormwater control measures to reduce stormwater pollution from municipal facilities and operations; evaluates runoff reduction techniques including green infrastructure in planned municipal upgrades; and trains City staff on PP/GH practices. The City also updates the facility inventory and priority ratings, as they are not static and can change from year to year based on new information.

## Program Assessment Inventory

The facility inventory is dynamic in nature; facilities can be consolidated or separated, newly occupied or vacated, or confirmed served by the MS4 or combined sewers. The City updates the inventory each year. As such, the facility inventory decreased from 567 in 2019 to 483 in 2020, due mostly to facilities' being located outside of re-defined MS4 boundaries. One site was added. The prioritization or the pollution potential associated with the sites in the inventory is also dynamic; agencies might add or remove materials that could be the source of pollutants or operational areas could have more or less exposure. At the end of 2020, there were 34 high priority facilities, 261 medium priority facilities, and 188 low priority facilities in the inventory.

## Facility and Off-site Assessments

Facility assessments evaluate stormwater controls associated with a facility's operations and assess stormwater pollution potential. Based on pollution potential, a facility may be categorized as a high, medium, or low priority site. For the 2020 reporting period, the City assessed 69 facilities. Six of the facilities required a change in their prioritization to high. Overall, 8 facilities upgraded their priority designations, 19 downgraded, and 42 remained the same.

The site assessments were conducted at DEP, DOC, DOE, DSNY, and NYPD facilities. Sites assessed included: schools, playgrounds, and athletic fields; equipment maintenance shops, waste transfer/processing areas, and material storage yards; pumping stations, chlorination stations, repair yards, water and sewer maintenance yards; correctional facilities, police precincts, and tow pounds.

The operations assessed at these facilities included:

- material stockpile management,
- vehicle fueling and storage,
- vehicle and equipment cleaning,
- drum storage management,
- spill prevention and response,
- waste management and disposal,
- catch basin inlet cleaning and repair, and
- aboveground fuel storage.

The City also began assessing off-site operations. Off-site operations are municipal activities generally performed in the ROW, including, but not limited to, pavement cleaning, road repairs, and catch basin cleaning. The off-site operations are assessed against the potential risk of impacts to stormwater runoff due to activities associated specifically with the operations. Typically, this assessment includes evaluation of waste-generating activities and their management, as well as stormwater controls. In 2020, the City completed the assessment of DSNY's winter pavement maintenance and will complete the remaining assessments of off-site operations in 2021.

During the COVID-19 pandemic, facility and off-site assessments continued with assessors observing safety protocols such as wearing masks, maintaining social distancing, and conducting virtual interviews when possible. The City was able to meet the high priority 2-year reassessment cycle requirement for applicable high priority facilities; the City is on track to meet the 5-year and 7-year timeframes for the medium and low priority facilities.

### Stormwater Control Practices

City agencies continued to implement stormwater control practices such as cleaning catch basins, sweeping pavement and practicing proper storage of materials. Because of COVID-19, however, there were reductions in street sweeping conducted by DSNY.

Agencies also continued to look for ways to improve stormwater control practices. For example, NYPD installed filter fabrics in some catch basins at one of its facilities. Inserts are an effective method for removing sediment from stormwater runoff as it enters the catch basin and are most cost effective and efficient when applied on-site.

NYPD also looked for innovative ways to reduce the workload associated with implementing stormwater controls. Lifting catch basin grates can be a difficult task that typically involves two or more people. NYPD now uses a simple but practical device that allows one person to lift the catch basin grate to allow for proper inspection and maintenance.

### Green Infrastructure

Agencies are required to consider, and if feasible and cost effective, incorporate run-off reduction techniques and green infrastructure (GI) during planned municipal upgrades. In 2020, the City evaluated 54 planned municipal upgrade projects for potential GI opportunities. Also, during this reporting period two on-site GI projects at parks locations were implemented; these include a rain garden and a porous pavement project.

### Pollution Prevention Training

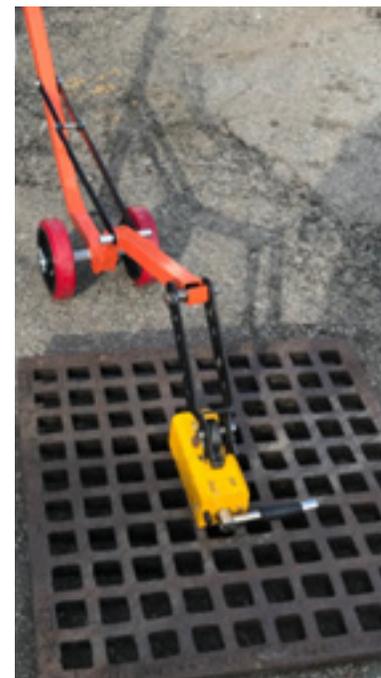
The City continued to administer the PP/GH Training in both classroom (held in person and virtually), and computer-based environments. During the 2020 reporting period, over 6,000 municipal employees received PP/GH training. Most received training directly through their agencies. Because of COVID-19, DEP also offered classroom-based training sessions to City employees in a virtual format.

### Goals for Next Reporting Cycle

For the 2021 reporting cycle, the City will continue to assess high, medium and low priority sites; assess off-site operations; refine the facility and off-site operation inventory; and administer staff trainings. Because of COVID-19, the City anticipates there may be some continued reductions in some PP/GH metrics, such as miles of street swept.



NYPD cleaning stormwater assets and installing filter fabric to prevent catch basin sediment accumulation.



Catch Basin Insert Installation



Rain garden at Russel Pavilion in Conference House Park-Staten Island

**Table 6. PP/GH Program 2020 Implementation Status**

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

| BMP   | Measurable Goals  | Measures   | Status                              |
|---|---|--|-------------------------------------|
| <b>Provide program for pollution prevention and good housekeeping for municipal operations and facilities</b> | Maintain an inventory of municipal operations and facilities  | Number of facilities, by priority  | High – 34<br>Med – 261<br>Low - 188 |
|   |   | Number of off-site operations, by priority   | Med - 1<br>Low - 9                  |
|   | Implement the PP/GH Program                                   | Acres of parking lots swept  | 138,218                             |
|   |   | Miles of street swept  | 269,150*                            |
|   |   | Number of catch basins inspected   | 12,377†                             |
|   |   | Number of catch basins cleaned   | 6,758‡                              |
|   |   | Number of catch basins maintained  | 1,362†                              |
|   |   | Miles of storm sewers inspected  | 601.9‡                              |
|   |   | Miles of storm sewers cleaned  | 601.7‡                              |
|   |   | Number of self-assessments completed of facilities in the inventory, high priority   | 1                                   |
|   |   | Number of self-assessments completed of facilities in the inventory, medium priority | 62                                  |
|   |   | Number of self-assessments completed of facilities in the inventory, low priority    | 6                                   |
| Number of facilities electing MS4 coverage that would otherwise be subject to MSGP                            | 0   |  |                                     |
| <b>Provide for staff training</b>   | Implement a PP/GH Training Program                            | Number of staff trained in-person  | 6,351                               |
|   |   | Number of staff trained computer-based   | 508                                 |
| <b>Consider runoff reduction and green infrastructure</b>   | Consider runoff reduction techniques and green infrastructure | Number of runoff reduction/green infrastructure opportunities evaluated              | 54                                  |
|   |   | Number of runoff reduction/green infrastructure opportunities implemented            | 2                                   |

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

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

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

# 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 issues the MSGP, DEP is responsible for the associated inspections and enforcement of the MSGP at privately owned MSGP-covered facilities in the MS4 area. DEP is also assessing unpermitted industrial and commercial facilities in the MS4 area and sending observations to NYSDEC to facilitate NYSDEC's determination of the facilities' potential need for SPDES permit coverage. DEP maintains a list of these permitted and unpermitted facilities, referred to as the I/C Facility Inventory.

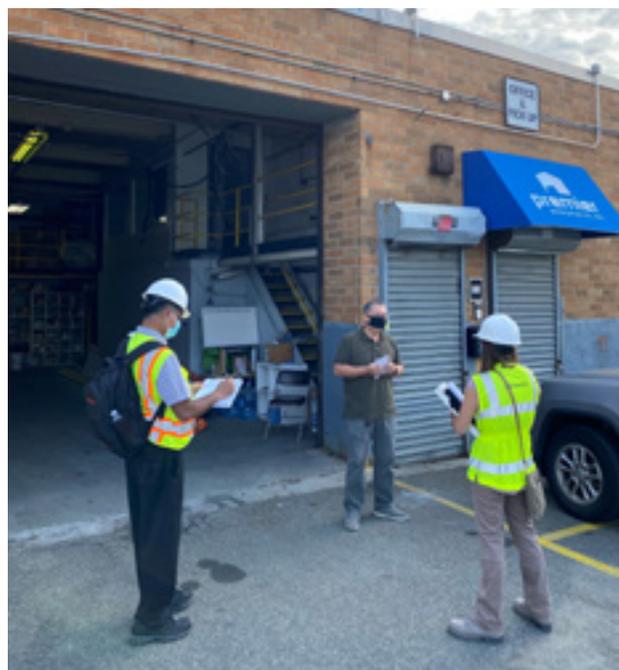
## Program Assessment

Because of COVID-19, field activities associated with this program were temporarily paused so that new safety protocols could be assessed and implemented. Despite this pause during the 2020 reporting cycle, DEP was able to assess 872 unpermitted facilities and to inspect 5 MSGP-permitted facilities.

## Unpermitted Facility Assessments

DEP continued to see high turnover in the unpermitted facility inventory, which is consistent with findings from the last reporting period. Many of the inventory listings dating back to when the original inventory database was compiled are no longer active in the targeted locations. In some cases, original facilities have been abandoned, some buildings have been demolished and/or replaced, or some buildings are now occupied by a new type of business which could be related or not to the previous enterprise or industrial sector.

During the 2020 reporting period, 872 facilities were visited in the field via drive-through or onsite. DEP



Inspectors assessing unpermitted site observing COVID-19 protocols.

determined that 528 businesses listed in the original inventory were inactive (i.e., out of business), and DEP fully assessed 344 active businesses for SPDES permit applicability. Of the 344 facilities, DEP will refer 88 to NYSDEC for potential MSGP no-exposure, full MSGP or other SPDES permitting. The remaining 256 facilities did not meet the criteria for referral. Additionally, inspectors found that several facilities in the unpermitted facility inventory have obtained SPDES MSGP coverage or have already applied for permit coverage. Overall, there remain 117 unpermitted sites from the original inventory that DEP anticipates will require field assessment.

Updates to the inventory included the addition of 218 new facilities DEP identified while performing the assessment of unpermitted facilities in the initial inventory.

Table 7 summarizes the results of unpermitted assessments performed during this reporting period.

**Table 7. Unpermitted Assessment Summary**

| Assessment Results  | Number of Facilities in Reporting Period (2020) | Cumulative Number of Facilities to Date (2019-2020) |
|---|---|---|
| Unpermitted facilities with no further action needed                            | 784*  | 858   |
| Unpermitted facilities to be referred to NYSDEC for SPDES Permit Determination† | 88  | 91  |
| Total   | 872   | 949   |

\* "No Further Action Needed" includes 528 inventory listings deemed inactive or where no industrial activity was observed; and 256 that did not meet criteria for SPDES permitting referral.

† "To be referred to NYSDEC for SPDES Permit Determination" includes facilities that may be eligible for MSGP coverage, may qualify for no exposure waiver or may need an individual SPDES permit.

### Permitted Facility Inspections

During 2020, the City inspected five MSGP-permitted facilities. Table 8 summarizes the MSGP-permitted site inspections completed during this reporting period. These findings will be memorialized in inspection reports and associated enforcement (corrective action letters) to be completed after the reporting period. Inspection frequencies dictated by the MS4 permit were met during this reporting period.

### Complaint-Driven Inspections

By calling 311, the public may make a variety of complaints related to industrial activity. DEP received and evaluated six complaints for potential applicability to the I/C program. These evaluations resulted in the I/C program's inspecting two complaint-related locations; these inspections did not result in enforcement actions. The remaining four sites were referred to other DEP response programs.

### Enforcement

Overall, facility managers and operators have shown good faith in complying with applicable regulations at the permitted facilities. However, there were instances in which DEP issued enforcement actions during the reporting period.

Enforcement actions included formal corrective action letters requiring improvements to SWPPPs and/or housekeeping practices. Four corrective action letters issued in 2020 were generated from inspections conducted in 2019. As of the end of 2020, five other still-pending corrective action letters were being finalized from inspections conducted towards the end of 2020. Thus far, no cases of escalating enforcement have been required.

DEP did not observe any active, unauthorized non-stormwater discharges to the MS4 while performing MSGP compliance inspections or unpermitted facility assessments. Therefore, in 2020, the City issued no enforcement actions with penalties (e.g., summons) in regard to observed, active, illicit discharges. However, as a precautionary measure, the City issued two Commissioner's Orders to one facility to minimize the risk of that facility's releasing spills to the MS4.

### Goals for Next Reporting Cycle

During the 2021 reporting cycle, DEP plans to continue the assessment of unpermitted facilities and inspection of permitted facilities. In addition, we will finalize SPDES assessment report referrals in early 2021. Any observations that may require enforcement actions during the following reporting period (CY 2021) will be reported on accordingly.

**Table 8. I/C Program 2020 Implementation Status**

| BMP   | Measurable Goals   | Measures  | Status   |
|---|--|---|--|
| <b>Provide an industrial and commercial pollution control program</b> | Implement an inspection and assessment program for unpermitted industrial and commercial sources | Status of the inspection program and stormwater controls for unpermitted industrial and commercial facilities | DEP performed 344 unpermitted facility assessments. 88 of these facilities will be referred to NYSDEC for SPDES coverage.  |
|   | Implement an inspection program for MSGP Permit holders based on priority                        | Number of SPDES MSGP facilities inspected, high priority  | 1  |
|   |  | Number of SPDES MSGP facilities inspected, medium priority  | 3  |
|   |  | Number of SPDES MSGP facilities inspected, low priority   | 1  |
|   |  | Number of non-compliant SPDES MSGP facilities   | 5  |
|   |  | Number of repeat non-compliant SPDES MSGP facilities  | 1  |
|   |  | Number and type of enforcement actions completed and penalties issued   | Four (4) completed formal letters to permittees identifying deficiencies and associated corrective actions for 2019 inspections. Five (5) formal letters were in progress to permittees identifying deficiencies and associated corrective actions for 2020 inspections. |



Loading Rate Study - Monitoring equipment



Loading Rate Study - Monitoring equipment installation

## Control of Floatable and Settleable Trash and Debris

Stormwater runoff can transport trash and debris from urban areas into local waterbodies. Once waterborne, these materials are referred to as floatables. The SWMP relies on many existing programs to control trash and debris stemming from the MS4 area. Key programs to control trash and debris include street sweeping, catch basin hooding and maintenance, catch basin inspection and cleaning, and booming and netting to catch materials that could potentially discharge via the outfalls. Public education, outreach, involvement, and participation are also important parts of the City's efforts to control floatables. A variety of programs encourage the public to help manage trash and debris, including a suite of stewardship programs (e.g., Parks Community Cleanups) and 311, which enables New Yorkers to report to the City dirty conditions they observe.

In addition to these programs, the City developed a work plan to determine the loading rate of trash and debris from the MS4 to floatable-impaired waterbodies. This work plan, included as Appendix 9.1 of the SWMP Plan, has an overview of other municipalities' loading rate study methodologies and details of the City's planned study.

The City's loading rate study is a hybrid approach that combines field monitoring with model analysis. The City proposed to measure trash and debris discharging from 63 catch basins representing different categories. Each category will likely have a different loading rate as each represents a different combination of representative catch basin attributes and catchment characteristics or unique land use types. To determine these categories, the

City considered data representing street litter level, street sweeping frequency, and catch basin hood status.

### Program Assessment

During this reporting period, the City implemented the floatables control programs described in the Plan. These programs included sweeping more than 250,000 miles of street citywide, inspecting more than 12,000 catch basins and cleaning more than 6,000 catch basins. DEP maintained 23 in-water floatable containment facilities. Because of COVID-19, however, there were notable reductions in street sweeping conducted by DSNY as well as in education and outreach programs conducted by various agencies.

### Plastic Bag Ban

In 2019, New York State passed the Bag Waste Reduction Law making New York State one of eight states in the country to implement a plastic bag ban. The New York City Council subsequently approved a five-cent paper bag fee to complement the ban. In 2020, though delayed by COVID-19, the NYS plastic bag ban went into effect and NYC began collecting the five-cent paper bag fee. Three cents of this fee go to the State Environmental Protection Fund and the other two cents go toward the production of reusable bags. The fee and ban encourage New Yorkers to use reusable bags, reducing the number of single use bags that might end up in the environment. The New York State ban follows the City's 2016 NYC Carryout Bag Law, which sought to impose a fee of at least five cents on all carryout merchandise bags.

### Street Cleaning

Additionally, the City increased fines for alternate side parking (ASP) violations in 2020. This action is expected to increase compliance with ASP rules, which in turn increases efficacy of the street sweeping program and reduces the amount of trash on the street that could end up in our waterbodies. However, because of COVID-19, as

of June 29, 2020, ASP requirements have been reduced. On days when ASP is in effect, residential "side streets" without meters will not be cleaned more than once a week on each side. If one side of a street has an ASP sign showing multiple days, street cleaning regulations will be in effect on that side of the street only on the latest day posted on the sign.

For example, if the ASP sign says the side of the street is cleaned on Mondays and Thursdays, you only have to move your car from that side of the street on Thursday. There are no changes to:

- Streets that have just one day of ASP regulations on each side
- Commercial streets or metered areas

These new ASP reform rules will continue when ASP is in effect until further notice. The City will continue to assess cleanliness conditions to decide whether to extend or modify the new rules.

### Loading Rate Study

In August 2020, the City initiated activities in preparation for commencement of the Loading Rate Study by selecting monitoring locations, fabricating monitoring equipment, and installing hooks to hold the monitoring equipment in the selected locations. Between August and December, the City visited over 700 potential monitoring locations,

ultimately selecting and fabricating equipment for 38 of the 63 monitoring locations.

Work on the study has been a collaborative effort between DEP and DSNY. Catch basin characteristics such as hood status are important factors in the selection of monitoring locations, but street sweeping frequency is also a major factor. As such, DEP and DSNY have worked closely to share information to help verify data being used in the study.

### Goals for Next Reporting Cycle

During the 2021 reporting cycle, the City plans to continue its key floatables control programs, including public education and outreach, street sweeping, catch basin inspections and cleaning, and DEP's boom and netting program. However, because of the continued constraints imposed by COVID-19, the City anticipates that reductions in some floatables metrics, such as education and outreach events and miles of street swept will likewise continue.

In the next reporting period, the City plans to continue selecting and fabricating equipment for the remaining monitoring locations and to begin collecting data.

Table 9 lists measurable goals and measures with the status of the City's implementation of the Floatables Program BMPs.

**Table 9. Control of Floatable and Settleable Trash and Debris 2020 Status of Implementation**

| BMP  | Measurable Goals  | Measures   | Status   |
|--|---|--|--|
| <b>Provide a Floatables and Settleable Trash and Debris Management Program</b> | Determine Loading Rate of Floatable Trash and Debris discharged from MS4 to waterbodies impaired for floatables                               | Status of Loading Rate Study   | In August 2020, the City initiated activities in preparation for commencement of the Loading Rate Study by selecting monitoring locations, fabricating monitoring equipment, and installing hooks to hold the monitoring equipment in the selected locations. Between August and December, the City visited over 700 potential monitoring locations, ultimately selecting and fabricating equipment for 38 of the 63 monitoring locations. |
|  | Continue DEP's Catch Basin Inspection, Cleaning, and Hood Replacement Program   | Number of catch basins inspected, cleaned, and retrofitted   | 12,377* catch basins inspected, 6,758* catch basins cleaned, and 0 catch basins retrofitted  |
|  |   | Number of catch basin hoods repaired, installed, or replaced   | 525*   |
|  | Continue DEP's boom and netting program   | Status and location of Combined Sewer Overflows Best Management Practices Annual Report with Floatables Control Program results  | The most recent Combined Sewer Overflows Best Management Practices Annual Report is online and available to the public at <a href="https://www1.nyc.gov/site/dep/water/combined-sewer-overflows.page">https://www1.nyc.gov/site/dep/water/combined-sewer-overflows.page</a>  |
| Implement a public education program on floatables                             | List of education & outreach programs/events and relevant metric(s) for each (e.g., number of participants, events, or materials distributed) | <ul style="list-style-type: none"> <li>• Adopt-a-Highway/Greenway (0 events due to COVID-19; 69 materials distributed) †</li> <li>• Business/Resident Outreach (5 events; 1,000 participants)</li> <li>• Community Clean-ups (1 event, 10 participants)</li> <li>• School Sustainability Coordinator Trainings (5 events)</li> </ul> |  |

\*Data include the DEP ROW catch basin program based on the MS4 map and work done by agencies at their facilities listed in the PP/GH inventory.

† These metrics reflect activities conducted citywide.





MS4 outfall in Staten Island

## Monitoring and Assessment of Controls

To assess the quality of stormwater runoff from the MS4, the City developed and is implementing an MS4 Monitoring Program that combines data collected from existing monitoring programs with additional MS4 outfall or manhole water quality and flow data collected specifically for the MS4 program.

As part of the MS4 Monitoring Program, the City is collecting flow and water quality data during wet weather to assess the influence of land use on stormwater discharge and pollutant concentrations at MS4 outfalls and manholes. The MS4 outfall sampling locations are representative of six land use types within NYC: mixed; high-density residential; low-density residential; industrial; open space; and highway. The wet weather events during which the City does sampling must meet the definition of a “qualifying rain event.” Qualifying rain events are storms that meet the following criteria:

- no storm equal to or greater than 0.1 inch occurred in the outfall catchment area within 48 hours preceding the rain event;
- weather forecasts at least a day in advance predict rain with 80 percent probability of occurrence; and
- the event is predicted to result in equal to or greater than 0.2 inches of rain.

## Program Assessment

The MS4 Monitoring Program began in 2019 and continued through 2020. The City initially planned to conclude the program in February 2021 after a two-year period, but due to various factors, including the weather, the City determined in 2020 that it would extend the program. As samples can only be collected during a qualifying rain event, the MS4 Monitoring Program is inherently dependent upon the weather. The unpredictable and “uncooperative” nature of the weather in 2019 and 2020, including periods of heavy storms and dry spells, along with other factors such as construction in targeted areas, impacted the City’s ability to collect water quality samples.

During the 2019 annual reporting period, the City collected a total of 22 samples.<sup>4</sup> COVID-19 did not compel the City to pause sampling in 2020; rather implementation of COVID-19 health and safety policies and procedures allowed the City to continue sampling safely and without incident. During the 2020 reporting cycle, the City collected a total of 18 samples. Table 10 shows the number of samples collected from each sampling location during the 2019 and 2020 sampling periods.

<sup>4</sup> The 2019 MS4 Annual Report stated that the City collected 23 samples during the 2019 reporting period. However, a sampling event that occurred in early 2020 was mistakenly counted toward the total for 2019.

**Table 10. Number of samples collected from sampling locations**

| Outfall | Borough       | Land Use                 | Total Samples 2019 | Total Samples 2020 | Flow Meter Data |
|---------|---------------|--------------------------|--------------------|--------------------|-----------------|
| HP-640  | Bronx         | Mixed                    | 3                  | 3                  | Yes             |
| HP-627  | Bronx         | Open Space               | 3                  | 2                  | Yes             |
| TI-604  | Queens        | Highway                  | 3                  | 2                  | Yes             |
| TI-633  | Queens        | High-Density Residential | 3                  | 3                  | Yes             |
| TI-658  | Queens        | Low-Density Residential  | 3                  | 3                  | Yes             |
| NCQ-632 | Queens        | Industrial               | 3                  | 3                  | Yes             |
| OH-607  | Brooklyn      | Industrial               | 1                  | 0*                 | No†             |
| OB-722  | Staten Island | Low-Density Residential  | 3                  | 2                  | Yes             |

\* See text explanation

† OH-607 is no longer an active monitoring location and the City will not collect flow data from this site.

The monitoring location for outfall OH-607, which discharges to the Gowanus Canal, was under construction during most of 2019 as part of a sewer upgrade project. The ongoing construction made monitoring at the site infeasible during 2019; therefore, the City was only able to sample once from the site prior to the beginning of construction and could not collect flow meter data. In 2020, after the construction ended, the City inspected the monitoring location for suitability as a sampling site. The City confirmed that the monitoring location for OH-607 was no longer suitable for the program due to the new sewer layout as part of the sewer upgrade project. As a result, no samples were collected at this location in 2020 and no samples will be collected in the future. OH-607 was one of two monitoring locations representing industrial land use; the NCQ-632 monitoring location that discharges to Newtown Creek will continue to represent this land use type.

### Goals for Next Reporting Cycle

For the 2021 reporting cycle, DEP will continue tracking the weather to identify qualifying storm events. As conditions permit, DEP will continue collecting samples for the MS4 Monitoring Program.

### Program Updates

The 2018 SWMP Plan stated that the City would sample during qualifying rain events once per quarter, for two years at 8 MS4 outfalls representative of 6 land use types, for a total of 64 samples. In the 2019 MS4 Annual Report, the City reported that because unpredictability of the weather, unforeseen construction projects and IDDE issues, the pace of sample collection made it unlikely that the City could collect 64 samples within two years. In 2020, the City determined that it would extend sampling beyond two years.

Because no additional data can be collected from the monitoring location at OH-607 (as a result of construction), there are now seven monitoring locations representing six land use types (as noted, the industrial land use type represented by OH-607 will continue to be represented in the program by the NCQ-632 monitoring location). The City will continue to sample when feasible in order to collect the number of samples required for reliable data analysis. The City will update the SWMP plan accordingly.

Table 11 lists measurable goals and measures with the status of the City's implementation of the Monitoring Program BMPs.

**Table 11. MS4 Monitoring Program 2020 Implementation Status**

| BMP                                      | Measurable Goals                                    | Measures  | Status  |
|--|---|---|---|
| <b>Monitoring and Assessment Program</b> | Conduct wet weather sampling from outfalls/manholes | Results of monitoring data collected and analyzed | Outfall monitoring continued through 2020 with DEP being able to collect 18 samples total for the year. |



# Special Conditions for Impaired Waters

In addition to the programs and practices to reduce or remove pollutants in stormwater runoff that the City administers throughout the MS4 area, there are 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) that have identified stormwater as a significant contributor

Information on impaired waters without TMDLs is included in the Construction and Post-Construction section of this report. 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, require the City to implement enhanced BMPs. In 2020, Coney Island Creek was the only waterbody to meet these criteria. If DEC approves additional CSO LTCPs for waterbodies that meet these criteria, the City will develop waterbody-specific plans and summarize them in an MS4 annual report.

In Coney Island Creek, the MS4 Permit lists pathogens and floatables as the pollutants of concern (POCs) causing impairments. Table 12 shows a summary of the source categories of the POCs and the City’s proposed control measures for Coney Island Creek.

## Program Assessment

The City is implementing enhanced stormwater control measures in Coney Island. Table 13 includes status updates on the stormwater control measures the City proposed in the SWMP Plan.

**Table 12. Source categories of POCs proposed control measures for Coney Island Creek**

| Pollutant of Concern | Targeted MS4 Source Categories     | Proposed Control Measures and Projects for CIC  |
|----------------------|------------------------------------|---|
| Floatables           | Highly impervious area (littering) | Catch basin marking   |
|                      |                                    | Source control<br><br>Public education and outreach   |
| Pathogens            | Illicit discharges<br>Pet waste    | Catch basin marking   |
|                      |                                    | Source control  |
|                      |                                    | Sentinel Monitoring<br><br>Source tracking and control<br><br>Public education and outreach |

**Table 13. Special Conditions Program Status Updates**

| Program                                      | Description   | Update   |
|--|---|--|
| <p><b>Pet waste management</b></p>           | <p>Maintain pet waste bag dispensers and signage as part of Parks’ “Forgot Your Bag?” Program, to minimize the presence of exposed pet waste.</p>   | <p>Pet waste bag dispensers and signage were maintained in both Calvert Vaux and Kaiser Park.</p>  |
| <p><b>Catch basin marking</b></p>            | <p>Include a “no dumping” message stamped in the iron curb piece on new and replacement catch basins in the MS4 area. Provide catch basin stenciling opportunities for local organizations.</p> | <p>The City continued to include a “no dumping” message on newly installed catch basin curb pieces throughout the City. DEP also continued to internally explore the feasibility of a volunteer catch basin stenciling program. DEP planned to provide stenciling materials and guidance to local communities in 2020. However, this effort was delayed due to COVID-19.</p>   |
| <p><b>Monitoring and Source Tracking</b></p> | <p>Explore modifications to existing sampling programs to allow the City to refine its source crackdown efforts in Coney Island Creek.</p>  | <p>DEC has approved a modified Sentinel Monitoring Program which included the substitution of 18 stations of the previous 80 Sentinel stations with 9 Harbor Survey stations and the addition of three new Sentinel stations (Coney Island Creek, Sheephead Bay and Fresh Creek). DEP began implementation of the modified program in April 2020. The City also determined that an enhanced source tracking pilot would not be efficacious in Coney Island as the existing source tracking program is appropriate for the waterbody. The City will update the SWMP plan to reflect that determination.</p>   |
| <p><b>Public education and outreach</b></p>  | <p>Conduct education and outreach in the Coney Island Creek Community on pollution source controls.</p>   | <p>In early 2020, DEP conducted outreach in the Coney Island Creek area on the Trash It, Don’t Flush It and Cease the Grease campaigns. DEP canvassed 25 commercial food service establishments on Neptune Avenue, and 75 households and businesses in the area from Neptune Avenue bordering on the south, and West 33rd Street on the east continuing up to the Creek and to the west border of Seagate. DEP also conducted outreach at the NYCHA Gravesend development by going door-to-door handing out educational materials at over 600 apartments.</p> <p>Much of the public engagement typically conducted in Coney Island Creek was impacted by COVID-19.</p> |
| <p><b>Green infrastructure</b></p>           | <p>Identify potential GI opportunities in Coney Island Creek MS4 areas by prioritizing City-owned sites based on their potential to capture runoff.</p>   | <p>In 2020, the City completed the design of the following GI practices:</p> <ul style="list-style-type: none"> <li>• K095 – Gravesend – subsurface retention practice</li> <li>• K212 – Lady Deborah Moody - synthetic turf practice with subsurface stone storage</li> <li>• K238 – Anne Sullivan – bioretention practice and subsurface retention practice</li> <li>• K234 – W. A. Cunningham – subsurface stormwater chamber</li> </ul>  |



Jamaica Bay Wildlife Refuge Queens, NY

## Recordkeeping and Reporting

Each year, the City prepares an MS4 annual report documenting the status of compliance activities related to the MS4 Permit. The City submits these MS4 annual reports to NYSDEC by September 30 following each reporting year. The public can request information related to the City’s stormwater management plan by emailing MS4@dep.nyc.gov.

## Program Assessment

The City released this report to publicly document activities related to MS4 Permit compliance for the 2020 reporting period. The program assessment included in each section of this report serves as the Annual Effectiveness Assessment. The assessment of each program includes a summary of the program activities during the reporting period, stated BMPs and the status of the measurable goals for each BMP. The City assesses the effectiveness of the program through the achievement of the measurable goals included in the BMP tables. Refinements to the BMPs, measurable goals, or measures are included in the program updates sections of this report. Table 14 shows the 2020 recordkeeping and reporting implementation status.

**Table 14. Recordkeeping and Reporting 2020 Implementation Status**

| BMP  | Measurable Goals  | Measures                                      | Status   |
|--|---|---|--|
| <b>Provide annual reports to document compliance with the MS4 permit</b> | Develop Annual Reports after submission of the Plan due September 30 following each reporting year. | Summary of annual effectiveness assessment    | See effectiveness assessment of each program under pertinent subsections of this report. |
|  |   | Municipal Compliance Certification submission | Appendix 3 – Municipal Compliance Certification  |



Corporate Commons Three Green Roof Construction, Staten Island  
©Brooklyn Grange Rooftop Farm

## Related Initiatives

### NYC Green Infrastructure Program

Building upon the successes and lessons of earlier efforts, in 2010, the City established the NYC Green Infrastructure Program (GI Program) in areas of the City served by the combined sewer system. GI practices such as green roofs and rain gardens collect, treat, and infiltrate stormwater runoff. The goal of the GI Program is to reduce CSOs into the waterbodies of NYC by using GI technologies to manage stormwater from impervious surfaces. DEP works with partner agencies to design, construct, and maintain GI on City streets and sidewalks, and on other public property.

The GI Program also offers grants to private property owners to install green roof retrofits citywide (including in separately sewered areas of NYC). In 2018, the Green Infrastructure Grant Program awarded its first grant for a project located in a separately-sewered area of the city. The Nicotra Group's 32,874 SF rooftop farm atop their Corporate Commons Three building in Staten Island is Staten Island's largest green roof as of the date of this report. Construction began in October 2020 and will be

completed in spring 2021. The project includes a 23,375 sf green roof and a 9,499 sf vegetated walkway that manage in excess of one million gallons of stormwater every year. Green infrastructure technologies such as green roofs have citywide benefits and, in separately-sewered areas, help to manage stormwater runoff where it falls and reduce the amount of polluted stormwater runoff into NYC's waterbodies.

The GI program includes a research and development effort, which reviews GI performance over time, ensures performance-based maintenance and operations, and conducts cost-benefit analyses of various GI designs. The data analysis supports the City's water-quality related compliance programs and fills data gaps that DEP has identified through previous monitoring activities. This work is critical to the success of GI implementation in both combined and separate sewer areas of NYC. For more information on the NYC Green Infrastructure Program visit the DEP website <https://www1.nyc.gov/site/dep/water/green-infrastructure.page> or check out the 2020 GI annual report <https://www1.nyc.gov/assets/dep/downloads/pdf/water/stormwater/green-infrastructure/gi-annual-report-2020.pdf>

## Rockaway Median Project (Beach-67th Street Project)

The Rockaway Median Project, also referred to as the Beach-67th Street Project, is designed to construct GI/ Low Impact Development (LID) best management practices to minimize major street and local area flooding using the existing assets (i.e., medians) along the length of Beach 67th Street (between Thursby Avenue and Almeda Avenue) in Far Rockaway, Queens, New York. Some of the key construction elements of this project include:

- Rehabilitation of the existing three Street medians between Thursby and Almeda Avenues and incorporation of GI/LID elements such as bioswale and detention structures.
- Reconstruction and extension of street median along the intersection of Beach 67th Street and Almeda Avenue.
- Pavement resurfacing along Beach 67th Street (between Thursby and Almeda Avenues).
- Pedestrian ramp improvements for ADA compliance at the intersections of Beach 67th Street and Almeda Avenue and Beach 67th Street and Thursby Avenue.
- Landscape work along Beach 67th Street (between Thursby and Almeda Avenues).

The tentative project schedule includes procurement in 2021, start of construction in the summer of 2022, and completion of construction by 2023.



Rendering of Rockaway Median Project

## Southeast Queens and Cloudburst Pilot Projects

New York City has already seen flooding events caused by extreme rain and is anticipating that flooding may become worse with climate change. In the neighborhood of Southeast Queens, flooding has been a chronic issue for over 70 years and has been exacerbated by increasing rainfall, loss of permeable surfaces, and reduced groundwater. Over the past ten years, Queens Community Boards 12 and 13 have had

more flooding complaints than any other area of New York City. In OneNYC, Mayor de Blasio identified alleviation of flooding in Southeast Queens as a priority initiative. DEP's 10-Year Capital Budget allocates \$1.5 billion to plan and begin full sewer build-out and to provide short-term relief wherever possible. Full build-out requires approximately 450 miles of new storm sewers, upgrades to 260 miles of sanitary sewers, and 30 miles of combined sewers to be completed over many years. To supplement ongoing sewer buildouts, DEP is partnering with other City agencies to implement green infrastructure in the ROW and on public properties as another tool to reduce localized flooding. Additionally, DEP has been actively engaging with other cities that have experienced extreme rain events to exchange knowledge and develop innovative approaches for stormwater management and addressing climate change.

To complement storm sewer and green infrastructure work in Southeast Queens, DEP is also implementing pilot projects identified as part of a study to assess risks, prioritize responses, develop neighborhood-based solutions, and assess costs and benefits for managing extreme rain events, or "cloudbursts." The Cloudburst Resiliency Planning Study adapted an approach developed in Copenhagen to manage large volumes of stormwater using streets and open space and has created a unique learning exchange between Copenhagen and New York City. By modeling the flow of floodwater over the local topography, the study determines opportunities to slow and safely convey water to minimize damages and maximize co-benefits to the community.

As a result of the Cloudburst Resiliency Planning Study, two pilot projects were identified in the neighborhood of Southeast Queens to help demonstrate the feasibility of implementing the cloudburst approach. These projects aim to supplement ongoing sewer buildouts and act as a buffer for storms that are not captured by sewers due to the size of the storm or the lack of fully built-out storm sewer infrastructure. This effort would reduce flooding in areas where grey infrastructure takes longer to implement and would alleviate chronic flooding of upstream areas.

DEP is currently in design phases for two cloudburst pilot projects in Southeast Queens. One of these projects, in the neighborhood of St. Albans, seeks to design and construct a stormwater management system in the ROW using green infrastructure and cloudburst streets to mitigate flooding. A second project will be located at the South Jamaica Houses, a NYCHA campus, which includes eight city blocks in South Jamaica, Queens and is home to approximately 2,600 residents. South Jamaica Houses were chosen to provide relief upstream in order to allow for more flow to enter the sewer system downstream to reduce flooding. This project will maximize stormwater capture for up to 2.3 inches of rainfall per hour for climate resiliency. Aside from flood mitigation, another focus of this pilot is to show how cloudburst infrastructure can go beyond just managing stormwater and offer many co-benefits by reimagining the urban fabric of communities. DEP anticipates starting construction at the South Jamaica Houses in 2022.

# Definitions

**Annual Report:** After submission of the Plan, DEP will publish a report by September 30 of each calendar year on SWMP implementation. The report will summarize activities performed throughout the reporting period (January 1 to December 31) by all agencies with obligations under the MS4 Permit; and will report on best management practices, measurable goals, and their measures stated in each chapter of the Plan, as well as Part IV.M of the MS4 Permit

**Best Management Practice (BMP):** Schedules, activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements (if determined necessary by DEP), operating procedures, and practices to control runoff, spillage, and leaks; sludge or waste disposal; or drainage from areas that could contribute pollutants to stormwater discharges. BMPs are referred to in EPA fact sheets and other materials. BMPs are also referred to as “activities” or “management practices” throughout the MS4 requirements under this SPDES individual permit. As such, BMPs are a sub-element of the SWMP Plan that describe the specifications that will be taken to achieve the requirements of one or more sub-paragraphs of the SWMP Plan Element (e.g., the BMP “Identify Target Audiences for the pollutants of concern to each waterbody/sewershed of concern” would address the requirements of paragraph IV.A.1 of the SPDES MS4 Permit).

**Covered development project:** The term “covered development project” means development activity, private or public, that involves or results in an amount of soil disturbance within the MS4 area greater than or equal to one acre. Such term includes development activity that is part of a larger common plan of development or sale involving or resulting in soil disturbance within the MS4 area greater than or equal to one acre. Such term shall include all development activity within the MS4 area that requires a SWPPP pursuant to the New York State Department of Environmental Conservation (NYSDEC) construction general permit (CGP).

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

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

**Historical MS4 Map:** DEP created the Historical MS4 Map prior to permit issuance in 2015. While the Historical MS4 Map is unrefined and contains some inaccuracies, it represented the City’s best understanding of the MS4 area at that time. In developing the SWMP, the City has relied upon the Historical MS4 Map to define the MS4 area. The Historical MS4 Map has also served as a starting point for the process of mapping the City’s MS4 drainage areas and MS4 outfalls as required by the MS4 Permit.

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

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

**Long-Term Control Plan (LTCP):** Prepared in response to a consent agreement with the US Environmental Protection Agency (EPA), and developed using the EPA CSO Control Policy, an LTCP identifies and selects appropriate CSO controls to achieve applicable NYSDEC water quality standards consistent with the Federal CSO Policy and Clean Water Act.

**Measurable Goal:** One or more statements characterizing the goals of the SWMP that reflect the needs and characteristics of the City and the areas served by its MS4. Furthermore, the goals were chosen using an integrated approach that addresses the requirements and intent of the provisions of the MS4 Permit. Goals may be qualitative or quantitative.

**Multi-Sector General Permit (MSGP):** The Clean Water Act provides that stormwater discharges associated with industrial activity to waters of the United States (including discharges through a municipal separate storm sewer system) are unlawful, unless authorized by a National Pollutant Discharge Elimination System (NPDES) permit. In New York, the EPA-approved State Pollutant Discharge Elimination System (SPDES) program provides that industrial facilities engaged in activities defined in 40 CFR 122.26(b) (14)(i-ix) and (xi) must obtain permit coverage for stormwater discharges to waters

of the United States through the SPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP), unless the facilities are individually SPDES-permitted or subject to No Exposure Exclusion (that industrial activities are not exposed to stormwater).

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

- Owned or operated by a state, city, town, village, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, floatables control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of the CWA, that discharges to surface waters of the state;
- Designed or used for collecting or conveying stormwater;
- Which is not a combined sewer; and
- Which is not part of a Publicly Owned Treatment Works as defined at 40 CFR 122.2

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

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

**MS4 Permit:** The New York State Pollutant Discharge Elimination System (SPDES) permit, issued to the City of New York on August 1, 2015, that defined the requirements to discharge stormwater from the City’s MS4.

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

**Pollutant of Concern (POC):** A pollutant that might reasonably be expected to be present in stormwater in quantities that may cause or contribute to a water quality violation in waters of the State. These pollutants include but are not limited to nitrogen, phosphorus, silt and sediment, pathogens, floatables, petroleum hydrocarbons, heavy metals, and polycyclic aromatic hydrocarbons (PAHs).

**Priority MS4 Waterbodies:** Those waterbodies for which an approved CSO LTCP does not predict compliance with applicable water quality standards and where stormwater contributions from the City’s MS4 are expected to be a significant contributor to the impairment identified in the CSO LTCP.

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

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

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

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

**Stormwater Maintenance Permit:** The term “stormwater maintenance permit” means a permit issued by the DEP where maintenance is required of post-construction stormwater management facilities by owners of real property benefited by such facilities.

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

# Acronyms

**ASP** Alternate Side Parking

**BMP** Best Management Practice

**CGP** Construction General Permit

**C/PC** Construction and Post-Construction

**CSO** Combined Sewer Overflow

**CWA** Clean Water Act

**GI** Green Infrastructure

**GIS** Geographic Information System

**I/C** Industrial/Commercial

**IDDE** Illicit Discharge Detection and Elimination

**LTCP** Long-Term Control Plan

**MS4** Municipal Separate Storm Sewer System

**MSGP** Multi-Sector General Permit

**NNI** No Net Increase

**NOI** Notice of Intent

**NYC** New York City

**NYS** New York State

**NYSDEC** New York State Department of Environmental Conservation

**POC** Pollutants of Concern

**PP/GH** Pollution Prevention/Good Housekeeping

**ROW** Right-of-Way

**SAFE** Solvents, Automotive, Flammables, and Electronics

**SMP** Stormwater Management Practice

**SPDES** State Pollutant Discharge Elimination System

**SWMP** Stormwater Management Program

**SWPPP** Stormwater Pollution Prevention Plan

**SWPTS** Stormwater Permitting and Tracking System

**TMDL** Total Maximum Daily Load

**USWR** Unified Stormwater Rule

**WRRF** Wastewater Resource Recovery Facility



# Appendix 1 – Public Comments on the 2020 Annual Report

| Comment/Question                                |   | Response  |
|---|---|---|
| General   |   |   |
| 1.  | Is there a legal reason why the MS4s at the superfund sites are not being monitored?  | <p>Monitoring at certain MS4 locations has been performed under EPA oversight of the Superfund program. That monitoring is unrelated to the MS4 program.</p> <p>The City continues to implement the approved MS4 monitoring program, developed in accordance with MS4 permit requirements, including public input. Please refer to the SWMP at Download Chapter 10: Monitoring and Assessment of Controls.</p>  |
| 2.  | Does the City have a count of the total annual volume of stormwater runoff from the MS4 system and volume by waterbody?   | High level estimates (not drainage area-specific) are included in Appendix A of LTCPs (Long-Term Control Plans).  |
| 3.  | Has DEP decreased spending on SWMP implementation in the 2020 fiscal year, and/or does it expect decreased spending in the 2021 or 2022 fiscal years?   | DEP did not and does not expect to decrease spending during the cited fiscal years. However, in some cases, ongoing activities performed under the contracts have been delayed due to City-mandated shutdowns (see answer to question 4).   |
| 4.  | How has DEP adapted its SWMP plan in 2020 and how does it expect to further adapt the plan in 2021 given the COVID-19 crisis?   | <p>DEP continued to implement its SWMP plan (as approved by DEC in March 2019), though certain activities decreased after March 2020 due to the “New York State on Pause” Executive Order, which, among other things, banned non-essential gatherings of any size for any reason.</p> <p>For example, field operations such as inspections of industrial and commercial facilities were suspended during the City’s shutdown; however, those inspections resumed at the end of 2020, and, as the City was ahead of schedule, the shutdown did not affect the overall schedule of the program.</p> <p>DEP will revise its SWMP plan, as needed, once the new permit is issued by the State (anticipated in 2021).</p>            |
| 5.  | We would like to know more details on the impact of the pandemic on the outcomes of the Stormwater Management Program. To that end, we recommend the DEP provide us with analyses of expected (meaning, in a non-pandemic year) and actual outcomes for measures of implementation.   | The Annual Report provides a summary of activities required by the SWMP. The 2020 report provides full details on how the city implemented activities under conditions imposed by the pandemic and notes any delays or modifications caused by those conditions.  |
| 6.  | <p>Are the results of COVID-19 testing coordinated with the CSO testing to the extent that there is a composite report of the extent of COVID-19 in the waterways? Is the record of the monitoring kept on a chronological basis so that changes in the pollution can be seen?</p> <p>Do you know if the startup City program to determine levels of COVID-19 in the CSO’s also include what might be found in the MS4 outlets?</p> | <p>DEP does not do testing of SARS-CoV-2 in the waterways or at the outfalls.</p> <p>Twice per week, DEP’s Bureau of Wastewater Treatment collects samples from the influent to all 14 Wastewater Resource Recovery Facilities (WRRFs). The testing covers every neighborhood in the City. The samples are analyzed at the Newtown Creek Microbiological Laboratory. The analysis is complete three days after the sample is taken.</p> <p>The testing quantifies the volume of RNA present and tracks trends in concentrations. Data are sent to DOHMH on a daily basis. DOHMH examines the data and determines how the information can help identify virus patterns and inform actions to fight COVID-19 around the City.</p> |
| Part II. Special Conditions for Impaired Waters |   |   |
| 7.  | In NYC the only waterbody with a TMDL is the East River for N, right?   | <p>The East River does not have a TMDL for Nitrogen. No NYC waterbody has a TMDL.</p> <p>From the NYS 303(d) List: “Because the CSO Order/Nitrogen Judgment and LTCPs are expected to result in attainment of relevant water quality standards within those waterbodies [including East River], TMDLs will not provide additional value and are, therefore, deferred while the required construction and improvement projects are planned and completed. The TMDL need and priority will be re-evaluated once post-construction monitoring is completed and NYSDEC has performed a thorough analysis of the data generated.”</p> <p>Appendix 2 in the MS4 permit shows East River is impaired for floatables.</p>               |

| Comment/Question  |   | Response   |
|---|---|--|
| Part IV. A and B. Public Education and Outreach/Involvement and Participation |   |  |
| 8.  | The 2020 report indicates that most existing and some new programming will return during the 2021 year, but that "there may be some decrease in the numbers of events, participants, and distributed materials during the 2021 reporting period" (pg. 7). How has the reduction of educational activities in 2020 impacted DEP's measurable goals and targets for compliance with the MS4 permit? Is the potential decrease in events, participants, and distributed materials expected relative to 2019 activities, or to both 2019 and 2020 activities?   | The decrease in 2021 is expected relative to pre-pandemic numbers because of the restrictions imposed in NYC through the first half of 2021.   |
| 9.  | Are there estimated targets and metrics for 2021 Public Outreach and Education, which could be included in the 2020 Plan, on Table 1 (pg. 9)?<br><br>Are any of the planned educational programs/ events pushed back to 2021 because of the pandemic?   | Given the ever-changing city, state and federal requirements as they relate to public outreach, the City has not set estimated metrics for 2021. The City will continue to offer PEO programming, as opportunities arise.<br><br>Most programming has continued, but shifted to a virtual platform. Many agencies have partnered with other organizations for outreach collaborations (e.g., DOE Sparks Program) to better educate students and the general public about the City's SWMP.  |
| 10.   | In 2020, some MS4 SWMP public education and outreach programming was migrated to virtual platforms, potentially broadening the reach of educational activities to different audiences. Has DEP had the opportunity to assess the success of programs that moved to virtual formats - in raw attendance, reach and audience diversification, and in improved responses from target audiences? Are there plans to continue to provide virtual and hybrid versions of certain programs, even as DEP returns to in-person activities over the coming year(s)?<br><br>In the 2020 Status of Implementation table (page 16), under the measure: list of education and outreach programs/events, numbers of events and participants are presented. The numbers for both events and participants are impressive and it appears this measure was a success despite the pandemic (except for the SAFE Disposal Events which could not be held). How has the transition to virtual events enhanced or hindered the outreach programs/events? | DEP has not conducted a detailed analysis of meeting attendance and target audiences pre-pandemic versus during the pandemic. Generally speaking, we had good attendance at virtual public meetings in 2020 and believe we may have broadened our audience to include individuals who cannot or will not travel to an in-person, public meeting or event.<br><br>For example, Parks programs such as Urban Park Rangers and Stewardship have continued in virtual format. Parks held two talking tours of Prospect Park through the MS4 lens for classroom lessons.<br><br>We anticipate offering a blend of in-person and virtual events in the future. |
| 11.   | The following programs are listed in Table 1 under activities completed in 2020, but are not listed in Planned 2021 activities: Cease the Grease, Community Clean-ups, Community Right-to-Know Workshops, and School Sustainability Coordinator Trainings. Will these be discontinued in 2021? If so, what is the rationale for their discontinuation? If not, what are the current plans for their continuation?   | These programs continued during 2021 (because of uncertainty due to COVID, they were not reported as planned when the annual report was initially drafted).  |
| 12.   | SWIM supports the proposed Harbor Protectors Program. We must note that to the extent that individuals or organizations are expending significant money, time or effort maintaining green infrastructure, catch basins, or other DEP assets, they should be fairly compensated for their work. Through such public-private partnerships, such initiatives can create jobs and spur local economies, in addition to protecting these important assets.   | Thank you; we are also excited about the Harbor Protectors initiative and have received a lot of feedback since its launch in Coney Island on Earth Day this year. In addition, the City recently launched the City Cleanup Corps (CCC), which is projected to create 10,000 jobs and make NYC the cleanest, greenest city in the US. We have planned to extend and utilize this effort for stenciling, rain garden care and other cleanups as well.   |
| 13.   | There are no specific metrics listed for completed 2020 MS4 SWMP public inquiries and comments, whether written into the narrative (p. 10) or listed on Table 2 (p. 11). How many stakeholders provided input, how many distinct comments were received, how many stakeholder meetings were held, and with participants from which sectors?   | As the Table on page 11 does list the stakeholder meetings held during 2020 (including the numbers of participants), we are unsure of what you are asking.<br><br>As required by the MS4 permit (section IV.B.3.b), the public was afforded the opportunity, in May 2020, to provide comments on the Annual Report for the 2019 calendar year in a public meeting that was virtual because of the pandemic. Responses to all comments received at that meeting and other comments received in writing were provided in an Appendix to the 2019 Annual Report.  |
| 14.   | The only planned 2021 cycle Public Involvement and Participation activity listed in Table 2 (p. 11) is the 2020 MS4 Annual Report Meeting. Are there other planned outreach activities for 2021? Has the pandemic impacted DEP's ability to provide responses to and integrate public comment and input on actions impacting the MS4 SWMP?  | The pandemic has not impacted DEP's ability to provide responses to and integrate public comment and input on actions impacting the MS4 SWMP. In addition, as noted on the City's MS4 website, the public can always contact the DEP MS4 team with any questions or concerns.  |

| Comment/Question          |  | Response   |
|---------------------------|--|--|
| <b>Part IV.C. Mapping</b> |  |  |
| 15.                       | The map shown on the report is very small and difficult to read, although the linked interactive map's graphic clarity and interactive functions have improved from the 2019 iteration.  | The print version of the map is just an image we use to depict what is available online, which is accessible, interactive and clear.   |
| 16.                       | While we applaud the DEP's intention behind the interactive map, we believe the inclusion of other relevant data sets that DEP uses in analysis such as impervious area or land use would help increase transparency and readability for the average user.   | The focus of the map is on the MS4 drainage areas, and the map includes all information required by the MS4 permit.  |
| <b>Part IV.D. IDDE</b>    |  |  |
| 17.                       | Currently, direct drainage areas under City ownership are shown on the MS4 map, as required per the MS4 Permit. However, all direct drainage sites for each receiving waterbody are considered together as one data point, as are water body impairment factors. Does DEP plan on separating these sites, to show more localized impairment and water quality impacts, on future maps? Privately-owned direct drainage sites are unaccounted for in the MS4 map. Where will DEP include and account for privately-owned direct drainage areas on its maps? | <p>The direct drainage areas and waterbody impairment factors reflect the information in MS4 Permit Appendix 2 (waterbody pollutants of concern).</p> <p>Privately-owned facilities/lands draining to surface waters of state by overland flow are not covered by the MS4 permit and will not be included in the map.</p>  |
| 18.                       | What temperature differential indicates a potential discharge? And, how well does it work in the warmer months?  | <p>The thermal sensors did not collect absolute temperature data, but rather relative temperature data, so we do not have information on the actual temperature differential.</p> <p>Discharges into a surface waterbody may appear warm as compared to the surface water, and winter conditions better allow for identification of those temperature differentials. The conditions in the winter also help reduce the potential for vegetation to interfere with data collection.</p> <p>It should also be noted, however, that a warmer discharge coming into the waterbody is not necessarily evidence of an illicit discharge (e.g., flowing groundwater may also register a higher temperature). DEP will then follow up with water quality sampling, where appropriate, to determine whether the temperature differential identified by the thermal sensor is due to an illicit discharge.</p> |
| 19.                       | Is there a receiving water temperature above which the drone measurements are not effective?   | As noted above, the thermal sensors did not collect absolute temperature data, but rather relative temperature data, so we do not have that information (based on the 2019 and 2020 flyovers, relative temperature data was found to be more reliable than absolute temperature data). The temperature range encountered at Alley Creek was within the limits of the thermal sensors utilized for this study.  |
| 20.                       | Is there a downward trend in illicit discharges detected over the last several years?  | Because data collection did not begin until the middle of 2018 (after SWMP approval), and the COVID-19 pandemic impacted reporting in 2020, it is not yet possible to see any trends in detected illicit discharges.   |
| 21.                       | Of the number of illicit discharges abated (630 in Table 4 on page 16), how many were identified in 2020? How many were identified in 2019 or earlier?   | All 630 non-stormwater discharges, including oil, gasoline, chemicals, concrete washout, etc., were identified in 2020. The City reports on multiple types of illicit discharges, including illegal connections, illegal dumping, spills, and those related to 311 complaints.   |
| 22.                       | Which shoreline(s) was/were surveyed for the Outfall Reconnaissance Inventory?   | For the 2020 ORI, DEP surveyed shorelines (including inland shorelines) encompassing the areas around Bowery Bay, Wards Island, Red Hook, Jamaica, Tallman Island, Newtown Creek, and North River. There were 249 outfalls surveyed (21 DEP MS4 outfalls around Bowery Bay, Jamaica, Newtown Creek and Tallman Island).  |
| 23.                       | When will the 2020 Integrated Sentinel Monitoring Report be available? As of June 24th, the most recent report available on the website is from 2018.  | <p>Download the 2020 Integrated Sentinel Monitoring Report</p> <p>To view our Integrated Sentinel Monitoring Reports from previous years, visit our Publications Database and search for "Sentinel."</p>   |

| Comment/Question                             |   | Response  |
|--|---|---|
| Part IV.D. IDDE (Cont.)                      |   |   |
| 24.  | <p>The report mentions the challenges of some of the activities because of the pandemic. We would like to understand better the impact of the pandemic on the activities. Please clarify:</p> <p>a. What was the reduction in the percentage of shoreline surveyed for Outfall Reconnaissance Inventory? You accomplished 4%. What would have been the percentage if there were no pandemic related challenges?</p>   | <p>The challenges to our activities were the same challenges everyone experienced throughout the pandemic – concerns for the safety of both City staff and the public. For example, activities had to be designed to allow for social distancing and to ensure that participants had no risk of exposure. These concerns led to Parks’ providing virtual training to encourage the public and community groups to take ownership of maintaining their local parks.</p> <p>Under its SPDES permits, DEP is required to survey 50% of the shoreline every 5 years, or approximately 10% per year. If there were no pandemic that required a suspension of activities, DEP likely would have completed 10%.</p>  |
| 25.  | <p>We would appreciate some descriptions and explanations for Appendix 2. What does “telemetry” mean? Are the outfalls included in the Appendix 2 only DEP-owned outfalls (page 14)? Are outfalls owned by other City agencies inventoried in a database somewhere and submitted to DEC?</p>  | <p>Telemetry is the automatic recording and transmission of data from remote sources to an IT system; DEP uses telemetry at a number of its outfalls for monitoring and analysis of CSOs.</p> <p>The outfalls included in Appendix 2 are DEP-owned outfalls.</p> <p>Outfalls owned by other City agencies are inventoried in a database and submitted to DEC as part of the 5-year Shoreline Survey Report.</p>   |
| Part IV.E, F. Construction/Post-Construction |   |   |
| 26.  | <p>In 2019, eighteen SWPPPs were reviewed. In 2020, despite the pandemic 4 this number climbed to 96. Did DEP have a projected number of SWPPPs for review before March 2020? If so, how does that compare with the actual number reviewed? Does DEP have a projected number of SWPPPs for review in 2021 as well as the projected number of reviews for when the threshold is lowered to 20,000 square feet?</p> <p>SWIM is aware that this particular program will require increased staffing to succeed and would like to work with DEP to ensure that resources are allocated to adequately staff this program.</p> | <p>DEP’s Stormwater Construction/Post-Construction permitting program did not commence until the rule’s effective date of June 1, 2019 (Title 15, Chapter 19.1 of the Rules of the City of New York).</p> <p>DEP had projected that it would review 60 SWPPPs per year in the MS4 area when the threshold was 1 acre. DEP anticipates reviewing approximately 200 citywide (90 in the MS4 area) when the threshold is lowered to 20,000 sf.</p> <p>DEP has already reviewed 69 SWPPPs during 2021.</p> <p>DEP has allocated resources and hired staff, as appropriate for administration of this program.</p>   |
| Part IV.G. PPGH                              |   |   |
| 27.  | <p>While we are in full support of the inclusion of measurable goals (p. 26), we recommend</p>  | <p>As the Table on page 11 does list the stakeholder meetings held during 2020 (including the numbers of participants), we are unsure of what you are asking.</p> <p>As required by the MS4 permit (section IV.B.3.b), the public was afforded the opportunity, in May 2020, to provide comments on the Annual Report for the 2019 calendar year in a public meeting that was virtual because of the pandemic. Responses to all comments received at that meeting and other comments received in writing were provided in an Appendix to the 2019 Annual Report.</p>  |
| 28.  | <p>What can DEP and community members do to prevent “toxic flooding” from fugitive</p>  | <p>Local Law 143 of 2013 required DEP to promulgate rules “for the proper siting and storage of hazardous substances, taking into consideration all safety issues...” In response, after consulting with other emergency response agencies, as well as the Law Department, the Mayor’s Office of Operations, and the New York State Department of Environmental Conservation, DEP amended its existing Community Right-to-Know Regulations (Title 15, Chapter 41 of the Rules of the City of New York) to add section 41-14, which requires spillage prevention measures for all portable containers of hazardous substances in order to prevent releases of hazardous substances in case of an extreme weather event. The rule further imposes spillage prevention requirements for facilities located in a Special Flood Hazard Area and authorizes DEP to perform inspections at facilities and to issue summonses for violations of the rule.</p> <p>Community members should call 311 to report any inappropriate storage or actual spills they observe.</p> |

| Comment/Question                        | Response   |
|---|--|
| <b>Part IV.H. Industrial/Commercial</b> |  |
| 29.                                     | <p>We applaud that DEP has assessed 873 unpermitted facilities, up from 79 the prior year, and that of the 373 facilities still in operation, 88 were referred to the state Department of Environmental Conservation for further assessment. Have the criteria for such a referral been made public? Is there a procedure by which DEC will review the 88 facilities that DEP</p>  |
|   | <p>Per the MS4 permit, DEP assesses the industrial activities at the facility for exposure to stormwater and determines whether the facility, in the course of conducting activities included under a sector covered by the MSGP permit, may generate significant contributions of POCs to impaired waters.</p> <p>If DEP determines that a facility is performing activities covered under one or more of the MSGP sectors, DEP will refer the facility to NYSDEC. NYSDEC then uses DEP's observations along with any inspection of its own to determine whether SPDES permit coverage is required.</p>   |
| <b>Part IV.I Floatables</b>             |  |
| 30.                                     | <p>How are the floatables in catch basins tracked? Do you record result, who inspected, when inspected and do you keep a suspense chart as to when an inspection should be re-inspected? How often are the catch basins re-inspected? Can the public access the inspection records?</p>  |
| 31.                                     | <p>How is the trash from outdoor dining being enforced?</p>  |
|   | <p>DSNY street cleaning has continued at pre-pandemic levels on metered streets.</p> <p>Under the DSNY Enforcement Routing Program, enforcement agents patrol all commercial and industrial blocks at specified times focusing on violations for dirty sidewalks and failure to clean 18 inches into the street. During 2 specified daily, one-hour enforcement routing time periods, when enforcement agents observe a dirty sidewalk or an 18-inch violation in front of/adjacent to a commercial or industrial premise, they will issue a summons. Although enforcement agents will issue summonses for dirty sidewalk or failure to clean 18 inches into the street violations only during the enforcement routing hours, they may issue summonses for all other violations at any time.</p> |



# Appendix 2 – SPDES Outfall Listing

| 26th Ward  |                             |          |     |     |           |     |     |                  |                   |                    |      |     |                         |
|------------|-----------------------------|----------|-----|-----|-----------|-----|-----|------------------|-------------------|--------------------|------|-----|-------------------------|
| Outfall ID | Outfall Location            | Latitude |     |     | Longitude |     |     | Outfall Size     | Receiving Water   | Contributors       | Boom | Net | Telemetry               |
|            |                             | DEG      | MIN | SEC | DEG       | MIN | SEC |                  |                   |                    |      |     |                         |
| 26W-001    | 26TH WARD WRRF OUTFALL      | 40       | 39  | 3   | 73        | 53  | 37  | 10' X 6'         | HENDRIX CREEK     |                    |      |     |                         |
| 26W-003    | WILLIAMS AVE (REG #2)       | 40       | 38  | 57  | 73        | 53  | 26  | 180" X 120"      | FRESH CREEK BASIN | REG #2             |      | YES | YES                     |
| 26W-004    | HENDRIX CREEK & HENDRIX ST  | 40       | 39  | 17  | 73        | 52  | 49  | 4BL 11' X 7'6"   | HENDRIX CREEK     | REG #1             | YES  |     | YES                     |
| 26W-005    | SPRING CREEK AUXILIARY WPCP | 40       | 39  | 26  | 73        | 52  | 43  | 72BL 7'6" X 2'5" | OLD MILL CREEK    | REG #3, JAM REG #2 |      |     | YES (ON 3 & JAM REG #2) |

| Outfall ID | Outfall Location                     | Latitude |     |     | Longitude |     |     | Outfall Size | Receiving Water              |
|------------|--------------------------------------|----------|-----|-----|-----------|-----|-----|--------------|------------------------------|
|            |                                      | DEG      | MIN | SEC | DEG       | MIN | SEC |              |                              |
| 26W-601    | HENDRIX CREEK & 575' S/O FOUNTAIN ST | 40       | 38  | 57  | 73        | 52  | 31  | 42" DIA      | HENDRIX CREEK                |
| 26W-602    | 375' S/O FOUNTAIN ST                 | 40       | 39  | 5   | 73        | 53  | 36  | 66" DIA      | HENDRIX CREEK                |
| 26W-603    | FOUNTAIN ST                          | 40       | 39  | 27  | 73        | 52  | 47  | 78" DIA      | OLD MILL CREEK               |
| 26W-604    | BORDER AVE                           | 40       | 38  | 27  | 74        | 7   | 12  | 8' X 4'      | FRESH CREEK BASIN            |
| 26W-605    | 800' E/O SITE DRIVE (GATEWAY MALL)   | 40       | 38  | 60  | 74        | 7   | 48  | 42" DIA      | Belt Parkway/ Shore Parkway  |
| 26W-606    | E/O SITE DRIVE (GATEWAY MALL)        | 40       | 39  | 2   | 74        | 7   | 52  | 36" DIA      | Belt Parkway/ Shore Parkway  |
| 26W-607    | W/O SITE DRIVE (GATEWAY MALL)        | 40       | 39  | 5   | 73        | 52  | 3   | 30" DIA      | BELT PARKWAY / SHORE PARKWAY |

**Bowery Bay**

| Outfall ID | Outfall Location                                       | Latitude |     |     | Longitude |     |     | Outfall Size       | Receiving Water | Contributors                      | Boom | Net | Telemetry      |
|------------|--|----------|-----|-----|-----------|-----|-----|--------------------|-----------------|-----------------------------------|------|-----|----------------|
|            |  | DEG      | MIN | SEC | DEG       | MIN | SEC |                    |                 |                                   |      |     |                |
| BB-001     | BOWERY BAY WRRF OUTFALL                                | 40       | 46  | 51  | 73        | 54  | 31  | 90" DIA            | EAST RIVER      |                                   |      |     |                |
| BB-002     | 45TH ST (REG #2)                                       | 40       | 46  | 46  | 73        | 54  | 33  | 9' X 9' FT         | BOWERY BAY      | REG #2                            |      |     |                |
| BB-003     | HAZEN ST (REG #13)                                     | 40       | 46  | 35  | 73        | 53  | 29  | 10' 6" X 5' 9" FT  | BOWERY BAY      | REG #3                            |      |     | YES            |
| BB-004     | BORDEN AVE   | 40       | 44  | 21  | 73        | 57  | 31  | 6' 6" X 3' 3"      | DUTCH KILLS     | REG #L-3, L-41                    |      |     |                |
| BB-005     | E/O 81ST ST (REG #14)                                  | 40       | 46  | 25  | 73        | 53  | 21  | 14' 7" X 8' FT     | BOWERY BAY      | REG #4                            | YES  |     |                |
| BB-006     | 114TH ST (REG #10, 12 & 13)                            | 40       | 45  | 37  | 73        | 51  | 17  | 4BL 10' 6" X 9' 2" | EAST RIVER      | REG #10, 12, 13                   | YES  |     |                |
| BB-007     | E/O 27TH AVE (REG #5)                                  | 40       | 45  | 59  | 73        | 52  | 45  | 11' X 7'           | EAST RIVER      | REG #5                            |      |     |                |
| BB-008     | 31ST DRIVE (REG #6, 7, 8, 9)                           | 40       | 45  | 45  | 73        | 52  | 32  | DBL 13' 9" X 8'    | EAST RIVER      | REG #6, 7, 8, 9                   | YES  |     | YES (ON 6 & 9) |
| BB-009     | HUNTERS POINT AVE (REG # L-3B, L-37, L-38, L-41, L-3A) | 40       | 44  | 27  | 73        | 56  | 25  | 11' X 4' 6"        | DUTCH KILLS     | REG #L-3B, L-37, L-38, L-41, L-3A |      |     |                |
| BB-010     | QUEENS-MIDTOWN EXPRESSWAY (REG # L-3C)                 | 40       | 44  | 22  | 73        | 56  | 29  | 30" DIA            | DUTCH KILLS     | REG #L-3C                         |      |     |                |
| BB-011     | GREENPOINT AVE BRIDGE (REG # L-1)                      | 40       | 44  | 1   | 73        | 56  | 24  | 24" DIA            | NEWTOWN CREEK   | REG #L-1                          |      |     |                |
| BB-012     | 35TH ST (REG # L-2)                                    | 40       | 44  | 4   | 73        | 56  | 25  | 24" DIA            | NEWTOWN CREEK   | REG #L-2                          |      |     |                |
| BB-013     | 11TH ST (REG # L-8)                                    | 40       | 44  | 23  | 73        | 57  | 10  | 72" DIA            | NEWTOWN CREEK   | REG #L-8                          |      |     |                |
| BB-014     | VERNON BOULEVARD (REG # L-9)                           | 40       | 44  | 23  | 73        | 57  | 18  | 22" DIA            | NEWTOWN CREEK   | REG #L-9                          |      |     |                |
| BB-015     | 5TH ST (REG # L-10)                                    | 40       | 44  | 22  | 73        | 57  | 28  | 15" DIA            | NEWTOWN CREEK   | REG #L-10                         |      |     |                |
| BB-017     | 50TH AVE (REG # L-12)                                  | 40       | 44  | 38  | 73        | 58  | 35  | 15" DIA            | EAST RIVER      | REG #L-12                         |      |     |                |
| BB-018     | 49TH AVE (REG # L-12A)                                 | 40       | 44  | 40  | 73        | 58  | 32  | 16" DIA            | EAST RIVER      | REG #L-12A                        |      |     |                |

**Bowery Bay (Cont.)**

| Outfall ID | Outfall Location                                   | Latitude |     |     | Longitude |     |     | Outfall Size        | Receiving Water | Contributors               | Boom | Net | Telemetry    |
|------------|--|----------|-----|-----|-----------|-----|-----|---------------------|-----------------|----------------------------|------|-----|--------------|
|            |  | DEG      | MIN | SEC | DEG       | MIN | SEC |                     |                 |                            |      |     |              |
| BB-021     | 47TH AVE (REG # L-15)                              | 40       | 44  | 47  | 73        | 58  | 32  | 48" DIA             | EAST RIVER      | REG #L-15                  |      |     |              |
| BB-022     | 5TH ST (REG # L-16)                                | 40       | 44  | 53  | 73        | 57  | 17  | 18" DIA             | EAST CHANNEL    | REG #L-16                  |      |     |              |
| BB-023     | 44TH DRIVE (REG # L-17)                            | 40       | 44  | 59  | 73        | 57  | 20  | 66" DIA             | EAST CHANNEL    | REG #L-17                  |      |     |              |
| BB-024     | 43RD AVE (REG # L-18)                              | 40       | 45  | 13  | 73        | 57  | 8   | 7'8" X 7'7" ARCH    | EAST CHANNEL    | REG #L-18                  |      |     |              |
| BB-025     | 41ST AVE (REG # L-19)                              | 40       | 45  | 26  | 73        | 57  | 57  | 57" DIA             | EAST CHANNEL    | REG #L-19                  |      |     |              |
| BB-026     | BETWEEN 28TH & 29TH ST. (REG # L- (4, 39, 40 & 42) | 40       | 44  | 35  | 73        | 56  | 21  | 9' X 4' 6"          | DUTCH KILLS     | REG #L-4, L-39, L-40, L-42 |      |     | YES (ON L-4) |
| BB-027     | 38TH AVE (REG # L-20)                              | 40       | 45  | 36  | 73        | 57  | 49  | 72" DIA             | EAST CHANNEL    | REG #L-20                  |      |     |              |
| BB-028     | 37TH AVE (REG # L-21)                              | 40       | 45  | 41  | 73        | 57  | 45  | DBL 12' X 8' 2"     | EAST CHANNEL    | REG #L-21                  |      |     | YES          |
| BB-029     | BROADWAY (REG # L-22)                              | 40       | 46  | 7   | 73        | 56  | 16  | 14' 6" X 8' 10" FT  | EAST CHANNEL    | REG #L-22                  |      |     | YES          |
| BB-030     | 30TH ROAD (REG # L-23)                             | 40       | 46  | 16  | 73        | 56  | 6   | DBL 9' 6" X 6"      | EAST CHANNEL    | REG #L-23                  |      |     | YES          |
| BB-032     | MAIN AVE (REG # L-29 A, # MH-15)                   | 40       | 46  | 28  | 73        | 56  | 16  | 48" DIA             | EAST RIVER      | REG #L-29, L-29A, MH-15    |      |     |              |
| BB-033     | 27TH AVE (REG # L-27)                              | 40       | 46  | 33  | 73        | 56  | 13  | 15" DIA             | EAST RIVER      | REG #L-27                  |      |     |              |
| BB-034     | HOYT AVE (REG # L-30)                              | 40       | 46  | 37  | 73        | 56  | 42  | 10' 8" X 7' 4" ARCH | EAST RIVER      | REG #L-30                  |      |     | YES          |
| BB-035     | DITMARS BLVD (REG # L-31)                          | 40       | 46  | 58  | 73        | 55  | 12  | 18" DIA             | EAST RIVER      | REG #L-31                  |      |     |              |
| BB-036     | 21ST AVE (REG # L-32)                              | 40       | 47  | 3   | 73        | 55  | 2   | 24" DIA             | EAST RIVER      | REG #L-32                  |      |     |              |
| BB-037     | 20TH AVE   | 40       | 47  | 10  | 73        | 55  | 56  | 48" DIA             | EAST RIVER      | REG #L-33                  |      |     |              |
| BB-040     | 49TH AVE (REG # L-5)                               | 40       | 44  | 27  | 73        | 56  | 27  | 24" DIA             | DUTCH KILLS     | REG #L-5                   |      |     |              |
| BB-041     | 19TH AVE (REG # 1)                                 | 40       | 46  | 49  | 73        | 54  | 8   | 66" DIA             | LUYSTER CREEK   | REG #1                     |      |     |              |

**Bowery Bay (Cont.)**

| Outfall ID | Outfall Location                        | Latitude |     |     | Longitude |     |     | Outfall Size | Receiving Water | Contributors       | Boom | Net | Telemetry |
|------------|---|----------|-----|-----|-----------|-----|-----|--------------|-----------------|--------------------|------|-----|-----------|
|            |   | DEG      | MIN | SEC | DEG       | MIN | SEC |              |                 |                    |      |     |           |
| BB-042     | W/O 27TH ST (REG # L-6)                 | 40       | 44  | 20  | 73        | 57  | 35  | 12" DIA      | DUTCH KILLS     | REG #L-6           |      |     |           |
| BB-043     | 11TH ST (REG # L-7)                     | 40       | 44  | 22  | 73        | 57  | 8   | 54" DIA      | NEWTOWN CREEK   | REG #L-7           |      |     |           |
| BB-045     | 9TH ST (REG # L-25)                     | 40       | 46  | 34  | 73        | 56  | 47  | 18" DIA      | EAST RIVER      | REG #L-25          |      |     |           |
| BB-053     | SHORE BLVD AND 20 AVE                   | 40       | 47  | 10  | 73        | 55  | 56  | 48"          | EAST RIVER      | N/A                |      |     |           |
| BB-054     | ROOSEVELT ISLAND NORTH PUMPING STATION  | 40       | 46  | 7   | 73        | 57  | 32  | 18" DIA      | EAST CHANNEL    | ROOSEVELT ISL. PS. |      |     |           |
| BB-055     | ROOSEVELT ISLAND MIDDLE PUMPING STATION | 40       | 45  | 57  | 73        | 57  | 42  | 30" DIA      | EAST CHANNEL    | ROOSEVELT ISL. PS. |      |     |           |
| BB-056     | ROOSEVELT ISLAND SOUTH PUMPING STATION  | 40       | 45  | 10  | 73        | 57  | 26  | 24" DIA      | EAST CHANNEL    | ROOSEVELT ISL. PS. |      |     |           |
| BB-057     | BORDEN AVE (REG #L-11)                  | 40       | 44  | 33  | 73        | 57  | 40  | 48" DIA      | EAST RIVER      | REG #L-11          |      |     |           |

| Outfall ID | Outfall Location         | Latitude |     |     | Longitude |     |     | Outfall Size  | Receiving Water |
|------------|--------------------------|----------|-----|-----|-----------|-----|-----|---------------|-----------------|
|            |                          | DEG      | MIN | SEC | DEG       | MIN | SEC |               |                 |
| BB-601     | 127TH ST                 | 40       | 45  | 46  | 73        | 51  | 41  | 60" DIA       | EAST RIVER      |
| BB-602     | 126TH ST                 | 40       | 45  | 41  | 73        | 51  | 49  | 60" DIA       | EAST RIVER      |
| BB-603     | STEINWAY ST              | 40       | 46  | 54  | 73        | 54  | 43  | 7' X 6' 6" FT | EAST RIVER      |
| BB-606     | 49TH AVE                 | 40       | 44  | 40  | 73        | 58  | 32  | 60" DIA       | EAST RIVER      |
| BB-607     | 47TH ROAD                | 40       | 44  | 45  | 73        | 58  | 30  | 36" DIA       | EAST RIVER      |
| BB-608     | 70TH ROAD                | 40       | 43  | 30  | 73        | 50  | 8   | 60" X 24"     | MEADOW LAKE     |
| BB-609     | S/O 28TH STS             | 40       | 44  | 35  | 73        | 56  | 23  | 48" DIA       | DUTCH KILLS     |
| BB-610     | BETWEEN 28TH & 29TH STS  | 40       | 44  | 35  | 73        | 56  | 23  | 48" DIA       | DUTCH KILLS     |
| BB-611     | CENTER BLVD & BORDEN AVE | 40       | 44  | 33  | 73        | 57  | 40  | 42" DIA       | EAST RIVER      |
| BB-612     | CENTER BLVD & 54 AVE     | 40       | 44  | 28  | 73        | 57  | 40  | 42" DIA       | EAST RIVER      |

Coney Island

| Outfall ID | Outfall Location                           | Latitude |     |     | Longitude |     |     | Outfall Size        | Receiving Water | Contributors                   | Boom | Net | Telemetry     |  |
|------------|--|----------|-----|-----|-----------|-----|-----|---------------------|-----------------|--------------------------------|------|-----|---------------|--|
|            |  | DEG      | MIN | SEC | DEG       | MIN | SEC |                     |                 |                                |      |     |               |  |
| CI-001     | CONEY ISLAND WRRF OUTFALL                  | 40       | 33  | 58  | 73        | 56  | 51  | 96" DIA             | ROCKAWAY INLET  |                                |      |     |               |  |
| CI-002     | CONEY ISLAND WRRF OUTFALL                  | 40       | 33  | 58  | 73        | 56  | 51  | 72" DIA             | ROCKAWAY INLET  |                                |      |     |               |  |
| CI-004     | FLATLANDS AVE (REG #5, TG #5)              | 40       | 37  | 54  | 73        | 55  | 3   | DBL 10' X 9'        | PAERDEGAT BASIN | TG #5                          | YES  |     | YES (ON TG-5) |  |
| CI-005     | FLATLANDS AVE (REG #1-4)                   | 40       | 37  | 55  | 73        | 55  | 1   | 5BL 12'0" X 9'0"    | PAERDEGAT BASIN | REG #1,2,3,4                   | YES  |     | YES (ON 4)    |  |
| CI-006     | RALPH AVE (REG # 6)                        | 40       | 37  | 52  | 73        | 55  | 2   | DBL 84" DIA         | PAERDEGAT BASIN | REG #6                         | YES  |     | YES           |  |
| CI-008A    | RALPH AVE (PAERDEGAT BASIN CSORF OVERFLOW) | 40       | 37  | 48  | 73        | 54  | 57  | 3BL 10' x 6'        | PAERDEGAT BASIN | PAERDEGAT BASIN CSORF OVERFLOW |      |     |               |  |
| CI-008B    | RALPH AVE (PAERDEGAT BASIN CSORF OVERFLOW) | 40       | 37  | 48  | 73        | 54  | 57  | 3BL 10' x 6'        | PAERDEGAT BASIN | PAERDEGAT BASIN CSORF OVERFLOW |      |     |               |  |
| CI-008C    | RALPH AVE (PAERDEGAT BASIN CSORF OVERFLOW) | 40       | 37  | 48  | 73        | 54  | 57  | 3BL 10' x 6'        | PAERDEGAT BASIN | PAERDEGAT BASIN CSORF OVERFLOW |      |     |               |  |
| CI-008D    | RALPH AVE (PAERDEGAT BASIN CSORF OVERFLOW) | 40       | 37  | 48  | 73        | 54  | 57  | 3BL 10' x 6'        | PAERDEGAT BASIN | PAERDEGAT BASIN CSORF OVERFLOW |      |     |               |  |
| BB-030     | 30TH ROAD (REG # L-23)                     | 40       | 46  | 16  | 73        | 56  | 6   | DBL 9'6" X 6'       | EAST CHANNEL    | REG #L-23                      |      |     | YES           |  |
| BB-032     | MAIN AVE (REG # L-29 A, # MH-15)           | 40       | 46  | 28  | 73        | 56  | 16  | 48" DIA             | EAST RIVER      | REG #L-29, L-29A, MH-15        |      |     |               |  |
| BB-033     | 27TH AVE (REG # L-27)                      | 40       | 46  | 33  | 73        | 56  | 13  | 15" DIA             | EAST RIVER      | REG #L-27                      |      |     |               |  |
| BB-034     | HOYT AVE (REG # L-30)                      | 40       | 46  | 37  | 73        | 56  | 42  | 10' 8" X 7' 4" ARCH | EAST RIVER      | REG #L-30                      |      |     | YES           |  |
| BB-035     | DITMARS BLVD (REG # L-31)                  | 40       | 46  | 58  | 73        | 55  | 12  | 18" DIA             | EAST RIVER      | REG #L-31                      |      |     |               |  |
| BB-036     | 21ST AVE (REG # L-32)                      | 40       | 47  | 3   | 73        | 55  | 2   | 24" DIA             | EAST RIVER      | REG #L-32                      |      |     |               |  |
| BB-037     | 20TH AVE                                   | 40       | 47  | 10  | 73        | 55  | 56  | 48" DIA             | EAST RIVER      | REG #L-33                      |      |     |               |  |
| BB-040     | 49TH AVE (REG # L-5)                       | 40       | 44  | 27  | 73        | 56  | 27  | 24" DIA             | DUTCH KILLS     | REG #L-5                       |      |     |               |  |
| BB-041     | 19TH AVE (REG # 1)                         | 40       | 46  | 49  | 73        | 54  | 8   | 66" DIA             | LUYSTER CREEK   | REG #1                         |      |     |               |  |

| Outfall ID | Outfall Location                       | Latitude |     |     | Longitude |     |     | Outfall Size    | Receiving Water    |
|------------|--|----------|-----|-----|-----------|-----|-----|-----------------|--------------------|
|            |  | DEG      | MIN | SEC | DEG       | MIN | SEC |                 |                    |
| CI-601     | W28THST                                | 40       | 34  | 48  | 73        | 60  | 44  | 5' X 4'         | CONEY ISLAND CREEK |
| CI-602     | W33RDST                                | 40       | 34  | 53  | 74        | 0   | 3   | 6' 6" X 4'      | CONEY ISLAND CREEK |
| CI-603     | DOVERST                                | 40       | 34  | 56  | 73        | 57  | 0   | 72" DIA         | SHEEPSHEAD BAY     |
| CI-605     | SHOREBLVD (140' N/O WEST END AVE PIER) | 40       | 34  | 57  | 73        | 57  | 12  | 14' X 7'        | SHEEPSHEAD BAY     |
| CI-607     | E 21ST ST (UNDER PIER 1)               | 40       | 35  | 1   | 73        | 57  | 51  | 12" DIA         | SHEEPSHEAD BAY     |
| CI-608     | E 22ND ST (10' W/O PIER 3)             | 40       | 35  | 1   | 73        | 57  | 47  | 12" DIA         | SHEEPSHEAD BAY     |
| CI-610     | E 27TH ST                              | 40       | 35  | 0   | 73        | 56  | 29  | DBL 13' X 7' 6" | SHEEPSHEAD BAY     |
| CI-611     | DEVON AVE                              | 40       | 35  | 30  | 73        | 56  | 50  | 36" DIA         | SHELL BANK CREEK   |
| CI-612     | EVERETT AVE                            | 40       | 35  | 24  | 73        | 56  | 49  | 36" DIA         | SHELL BANK CREEK   |
| CI-613     | FLATBUSH AVE                           | 40       | 36  | 13  | 73        | 55  | 54  | DBL 10' 6" X 8" | MILL BASIN         |
| CI-614     | E/OE 58TH ST                           | 40       | 36  | 49  | 73        | 55  | 59  | 60" DIA         | MILL BASIN         |
| CI-615     | E 61ST ST                              | 40       | 36  | 53  | 73        | 55  | 53  | 8' X 8' FT      | MILL BASIN         |
| CI-616     | STRICKLAND AVE                         | 40       | 36  | 26  | 73        | 55  | 60  | 4' X 4' FT      | MILL BASIN         |
| CI-617     | E 64TH ST                              | 40       | 36  | 19  | 73        | 55  | 54  | 48" DIA         | MILL BASIN         |
| CI-618     | DAKOTA PLACE                           | 40       | 36  | 23  | 73        | 54  | 30  | 42" DIA         | MILL BASIN         |
| CI-619     | INDIANA PLACE                          | 40       | 36  | 18  | 73        | 54  | 17  | 30" DIA         | MILL BASIN         |
| CI-620     | BASSET AVE                             | 40       | 36  | 30  | 73        | 54  | 7   | 4' X 4' FT      | EAST MILL BASIN    |
| CI-621     | UTAH WALK                              | 40       | 36  | 41  | 73        | 54  | 13  | 3' X 3' FT      | EAST MILL BASIN    |
| CI-622     | OHIO WALK                              | 40       | 36  | 51  | 73        | 54  | 24  | 4' X 4'         | EAST MILL BASIN    |
| CI-623     | STRICKLAND AVE                         | 40       | 36  | 57  | 73        | 55  | 32  | 4' X 4' FT      | EAST MILL BASIN    |
| CI-624     | E 68TH ST                              | 40       | 37  | 2   | 73        | 55  | 31  | 7' X 7'         | EAST MILL BASIN    |
| CI-625     | AVE V                                  | 40       | 37  | 1   | 73        | 54  | 28  | 5' X 5' FT      | EAST MILL BASIN    |
| CI-626     | AVE W                                  | 40       | 36  | 55  | 73        | 54  | 22  | 4' X 4' FT      | EAST MILL BASIN    |

| Outfall ID | Outfall Location                         | Latitude |     |     | Longitude |     |     | Outfall Size     | Receiving Water    |
|------------|--|----------|-----|-----|-----------|-----|-----|------------------|--------------------|
|            |  | DEG      | MIN | SEC | DEG       | MIN | SEC |                  |                    |
| CI-627     | AVE X                                    | 40       | 36  | 49  | 73        | 54  | 15  | 4' X 4' FT       | EAST MILL BASIN    |
| CI-628     | AVEL                                     | 40       | 37  | 44  | 73        | 55  | 45  | 66" DIA          | PAERDEGAT BASIN    |
| CI-629     | PAERDEGAT 4TH ST                         | 40       | 37  | 47  | 73        | 55  | 42  | 6' 6" X 6' 6"    | PAERDEGAT BASIN    |
| CI-630     | PAERDEGAT 7TH ST                         | 40       | 37  | 43  | 73        | 55  | 33  | 6' 6" X 6' 6"    | PAERDEGAT BASIN    |
| CI-631     | PAERDEGAT 10TH ST                        | 40       | 37  | 39  | 73        | 54  | 24  | 5' X 5' FT       | PAERDEGAT BASIN    |
| CI-632     | PAERDEGAT 13TH ST                        | 40       | 37  | 35  | 73        | 54  | 15  | 6' 6" X 6' 6"    | PAERDEGAT BASIN    |
| CI-633     | CANARSIE ROAD                            | 40       | 37  | 43  | 73        | 53  | 8   | 9' 6" X 7'       | JAMAICA BAY        |
| CI-634     | AVEN                                     | 40       | 38  | 29  | 73        | 53  | 57  | 6' 6" X 6' 6"    | FRESH CREEK BASIN  |
| CI-636     | AVEL                                     | 40       | 38  | 40  | 73        | 53  | 11  | 6' 6" X 6' 6"    | FRESH CREEK BASIN  |
| CI-637     | AVE K                                    | 40       | 38  | 46  | 73        | 53  | 18  | 6' X 6'          | FRESH CREEK BASIN  |
| CI-639     | W 12TH ST                                | 40       | 34  | 47  | 73        | 59  | 47  | 108"             | CONEY ISLAND CREEK |
| CI-641     | 25' S/O SHORE PARKWAY (HEAD OF CREEK)    | 40       | 34  | 57  | 73        | 58  | 29  | 12' X 5' 6"      | CONEY ISLAND CREEK |
| CI-653     | W 8TH ST                                 | 40       | 34  | 53  | 73        | 59  | 34  | 7' 6" X 6'       | CONEY ISLAND CREEK |
| CI-654     | BRAGG COURT                              | 40       | 34  | 59  | 73        | 56  | 58  | 84" DIA          | SHEEPSHEAD BAY     |
| CI-655     | AVE Y                                    | 40       | 35  | 33  | 73        | 56  | 54  | 10' X 8'         | SHELL BANK CREEK   |
| CI-656     | GERRITSEN AVE (HEAD OF SHELL BANK CANAL) | 40       | 35  | 28  | 73        | 55  | 27  | 15" DIA          | SHELL BANK CREEK   |
| CI-657     | GARLAND COURT                            | 40       | 35  | 41  | 73        | 56  | 55  | 18" DIA          | SHELL BANK CREEK   |
| CI-659     | SHORE BLVD                               | 40       | 34  | 57  | 73        | 57  | 12  | 9' 6" X 7'       | SHEEPSHEAD BAY     |
| CI-660     | E 66TH ST                                | 40       | 36  | 15  | 73        | 55  | 50  | 2' 6" X 2' 6" FT | MILL BASIN         |
| CI-661     | SEAVIEW AVE                              | 40       | 38  | 23  | 73        | 53  | 51  | 66" DIA          | FRESH CREEK BASIN  |
| CI-662     | W 32ND ST                                | 40       | 34  | 17  | 73        | 60  | 52  | 42" DIA          | ATLANTIC OCEAN     |
| CI-663     | W 23RD ST                                | 40       | 34  | 19  | 73        | 59  | 21  | 42" DIA          | ATLANTIC OCEAN     |

| Outfall ID | Outfall Location      | Latitude |     |     | Longitude |     |     | Outfall Size   | Receiving Water    |
|------------|-----------------------|----------|-----|-----|-----------|-----|-----|----------------|--------------------|
|            |                       | DEG      | MIN | SEC | DEG       | MIN | SEC |                |                    |
| CI-665     | W.21ST ST             | 40       | 34  | 44  | 73        | 59  | 18  | 13'3" X 7'6"   | CONEY ISLAND CREEK |
| CI-666     | N/O WEST END AVE PIER | 40       | 34  | 56  | 73        | 57  | 12  | 72" DIA        | SHEEPSHEAD BAY     |
| CI-668     | CHANNEL AVE           | 40       | 35  | 37  | 73        | 56  | 48  | 3'6" X 3'6" FT | SHELL BANK CREEK   |
| CI-669     | FLORENCE AVE          | 40       | 35  | 21  | 73        | 56  | 44  | 36" DIA        | SHELL BANK CREEK   |
| CI-670     | BARTLETT PLACE        | 40       | 35  | 18  | 73        | 56  | 39  | 3' X 3' FT     | SHELL BANK CREEK   |
| CI-671     | CYRUS AVE             | 40       | 35  | 14  | 73        | 56  | 36  | 3' X 3' FT     | SHELL BANK CREEK   |
| CI-672     | SEBA AVE              | 40       | 35  | 10  | 73        | 56  | 32  | 3' X 3' FT     | SHELL BANK CREEK   |
| CI-673     | LOIS AVE              | 40       | 35  | 9   | 73        | 55  | 22  | 2'6" X 2'6" FT | PLUM BEACH CHANNEL |
| CI-674     | GERRITSEN AVE         | 40       | 35  | 12  | 73        | 55  | 5   | 3'6" X 3'6" FT | PLUM BEACH CHANNEL |
| CI-676     | 56TH DRIVE            | 40       | 36  | 14  | 73        | 55  | 33  | 24" DIA        | MILL BASIN         |
| CI-677     | OCEAN AVE             | 40       | 35  | 1   | 73        | 57  | 54  | DBL 8'7" X 8'  | SHEEPSHEAD BAY     |
| CI-678     | W 35TH ST             | 40       | 34  | 53  | 74        | 0   | 7   | 60" DIA        | GRAVESEND BAY      |
| CI-679     | OXFORD ST             | 40       | 34  | 52  | 73        | 56  | 17  | 36" DIA        | SHEEPSHEAD BAY     |
| CI-680     | MACKENZIE ST          | 40       | 34  | 52  | 73        | 56  | 25  | 48" DIA        | SHEEPSHEAD BAY     |
| CI-681     | KENSINGTON ST         | 40       | 34  | 52  | 73        | 57  | 32  | 24" DIA        | SHEEPSHEAD BAY     |
| CI-682     | BIJOU AVE             | 40       | 35  | 40  | 73        | 56  | 51  | 3' X 3'        | SHELL BANK CREEK   |
| CI-683     | HASTINGS STREET       | 40       | 34  | 53  | 74        | 3   | 18  | 60" DIA        | SHEEPSHEAD BAY     |
| CI-684     | FALMOUTH STREET       | 40       | 34  | 54  | 74        | 3   | 11  | 24" DIA        | SHEEPSHEAD BAY     |
| CI-684     | FALMOUTH STREET       | 40       | 34  | 54  | 74        | 3   | 11  | 24" DIA        | SHEEPSHEAD BAY     |

| Outfall ID | Outfall Location         | Latitude |     |     | Longitude |     |     | Outfall Size | Receiving Water    |
|------------|--------------------------|----------|-----|-----|-----------|-----|-----|--------------|--------------------|
|            |                          | DEG      | MIN | SEC | DEG       | MIN | SEC |              |                    |
| CI-685     | SHEEPSHEAD BAY SHORELINE | 40       | 34  | 56  | 74        | 2   | 53  | 24" DIA      | SHEEPSHEAD BAY     |
| CI-686     | Dooley Street            | 40       | 35  | 1   | 74        | 3   | 18  | 12" DIA      | SHEEPSHEAD BAY     |
| CI-688     | CYRUS AVENUE             | 40       | 35  | 14  | 74        | 4   | 23  | 10" DIA      | SHELL BANK CREEK   |
| CI-687     | E 23RD STREET            | 40       | 35  | 0   | 74        | 3   | 22  | 12" DIA      | SHEEPSHEAD BAY     |
| CI-689     | LANDIS PLACE             | 40       | 35  | 16  | 74        | 4   | 22  | 18" DIA      | SHELL BANK CREEK   |
| CI-690     | MERIT COURT              | 40       | 35  | 15  | 74        | 4   | 22  | 18" DIA      | SHELL BANK CREEK   |
| CI-691     | KEEN COURT               | 40       | 35  | 14  | 74        | 4   | 24  | 18" DIA      | SHELL BANK CREEK   |
| CI-692     | LESTER COURT             | 40       | 35  | 13  | 74        | 4   | 25  | 18" DIA      | SHELL BANK CREEK   |
| CI-693     | MELBA COURT              | 40       | 35  | 12  | 74        | 4   | 26  | 18" DIA      | SHELL BANK CREEK   |
| CI-694     | Nova Court               | 40       | 35  | 11  | 74        | 4   | 27  | 18" DIA      | SHELL BANK CREEK   |
| CI-695     | Seba Avenue              | 40       | 35  | 10  | 74        | 4   | 28  | 18" DIA      | SHELL BANK CREEK   |
| CI-696     | s/o Post Court           | 40       | 35  | 8   | 74        | 4   | 31  | 18" DIA      | PLUM BEACH CHANNEL |
| CI-697     | MADOC AVENUE             | 40       | 35  | 10  | 74        | 4   | 33  | 18" DIA      | PLUM BEACH CHANNEL |
| CI-698     | Frank Court              | 40       | 35  | 10  | 74        | 4   | 45  | 18" DIA      | PLUM BEACH CHANNEL |
| CI-699     | Canton Court             | 40       | 35  | 10  | 74        | 4   | 47  | 18" DIA      | PLUM BEACH CHANNEL |
| CI-700     | BEACON COURT             | 40       | 35  | 10  | 74        | 4   | 52  | 18" DIA      | PLUM BEACH CHANNEL |
| CI-701     | ABBNEY COURT             | 40       | 35  | 11  | 74        | 35  | 53  | 18" DIA      | PLUM BEACH CHANNEL |

| Hunts Point |                                     |          |     |     |           |     |     |                     |                   |                                 |      |     |                |
|-------------|-------------------------------------|----------|-----|-----|-----------|-----|-----|---------------------|-------------------|---------------------------------|------|-----|----------------|
| Outfall ID  | Outfall Location                    | Latitude |     |     | Longitude |     |     | Outfall Size        | Receiving Water   | Contributors                    | Boom | Net | Telemetry      |
|             |                                     | DEG      | MIN | SEC | DEG       | MIN | SEC |                     |                   |                                 |      |     |                |
| HP-001      | HUNTS POINT WRRF OUTFALL            | 40       | 48  | 8   | 73        | 53  | 57  | 84" DIA             | EAST RIVER        |                                 |      |     |                |
| HP-002      | TIFFANY ST (REG #9,9A)              | 40       | 48  | 19  | 73        | 53  | 23  | DBL 5' 6" X 9'      | EAST RIVER        | REG #9, 9A                      |      |     | YES (ON 9)     |
| HP-003      | FARRAGUT ST (REG #10)               | 40       | 48  | 5   | 73        | 52  | 29  | DBL 12' X 9' 5-3/4" | EAST RIVER        | REG #10                         | YES  |     | YES            |
| HP-004      | WEST FARM ROAD                      | 40       | 50  | 18  | 73        | 53  | 46  | 8' X 8'             | BRONX RIVER       | CSO-28, 28A                     | YES  |     |                |
| HP-005      | HOLLARS AVE (PUMP STATION)          | 40       | 53  | 13  | 73        | 49  | 13  | 12" DIA             | EASTCHESTER BAY   | HOLLERS AVE PS.                 |      |     |                |
| HP-006      | BARTOW AVE (CO-OP CITY SOUTH PS)    | 40       | 52  | 8   | 73        | 49  | 18  | 15' 0" X 8' 6"      | EASTCHESTER BAY   | CO-OP CITY SOUTH PS, ELY AVE PS |      |     |                |
| HP-007      | E 177TH ST (CSO-27,27A)             | 40       | 50  | 20  | 73        | 53  | 43  | DBL 11' 6" X 6' 6"  | BRONX RIVER       | CSO-27, 27A                     | YES  |     |                |
| HP-008      | LAFAYETTE AVE & COLGATE AVE         | 40       | 49  | 8   | 73        | 53  | 53  | 54" DIA             | BRONX RIVER       | CSO-26                          |      |     |                |
| HP-009      | RANDALL AVE & METCALF AVE (REG #13) | 40       | 48  | 52  | 73        | 52  | 15  | 14' X 8'            | BRONX RIVER       | REG #13                         |      |     | YES            |
| HP-010      | LACOMBE AVE                         | 40       | 48  | 48  | 73        | 52  | 11  | 9' X 6'             | BRONX RIVER       | CSO-25                          |      |     |                |
| HP-011      | WHITE PLAINS ROAD (REG #5)          | 40       | 48  | 16  | 73        | 51  | 15  | DBL 13' X 9'        | EAST RIVER        | REG #5, 6, 7                    | YES  |     | YES (ON 5 & 6) |
| HP-012      | LAFAYETTE AVE (CSO-23A)             | 40       | 49  | 27  | 73        | 50  | 27  | 12' X 8'            | WESTCHESTER CREEK | CSO-23A                         |      |     |                |
| HP-013      | NEWMAN AVE (CSO-24)                 | 40       | 48  | 52  | 73        | 51  | 19  | 12' X 8'            | PUGSLEY'S CREEK   | CSO-24                          |      |     |                |
| HP-014      | E TREMONT AVE (CSO-29, 29A)         | 40       | 50  | 22  | 73        | 50  | 24  | DBL 14' X 8' 6"     | WESTCHESTER CREEK | CSO-29, 29A                     |      |     |                |
| HP-015      | LATTING ST (CSO-22)                 | 40       | 50  | 15  | 73        | 50  | 22  | 4' 9" X 4'          | WESTCHESTER CREEK | CSO-22                          |      |     |                |
| HP-016      | BRUCKNER EXPRESSWAY (REG #4)        | 40       | 49  | 42  | 73        | 51  | 32  | 10' X 8' 6"         | WESTCHESTER CREEK | REG #4                          |      |     | YES            |
| HP-017      | EMERSON AVE (REG #11)               | 40       | 48  | 41  | 73        | 50  | 35  | 14' X 8'            | EAST RIVER        | REG #11                         |      |     | YES            |
| HP-018      | ROBINSON AVE (REG #12)              | 40       | 48  | 43  | 73        | 49  | 28  | 6' 4" X 4'          | EAST RIVER        | REG #12                         |      |     | YES            |

Hunts Point (Cont.)

| Outfall ID | Outfall Location                            | Latitude |     |     | Longitude |     |     | Outfall Size   | Receiving Water   | Contributors               | Boom | Net | Telemetry |
|------------|---|----------|-----|-----|-----------|-----|-----|----------------|-------------------|----------------------------|------|-----|-----------|
|            |   | DEG      | MIN | SEC | DEG       | MIN | SEC |                |                   |                            |      |     |           |
| HP-019     | CALHOUN AVE (REG #3)                        | 40       | 48  | 49  | 73        | 49  | 1   | 7' X 5' 6"     | EAST RIVER        | REG #3                     |      |     | YES       |
| HP-020     | THROGS NECK BOULEVARD (REG #2A)             | 40       | 48  | 46  | 73        | 49  | 39  | 8' X 6' 6"     | EAST RIVER        | REG #2A                    |      |     |           |
| HP-021     | PENNYFIELD AVE (REG #2)                     | 40       | 48  | 31  | 73        | 48  | 14  | 6' 3" X 6' 6"  | EAST RIVER        | REG #2                     |      |     | YES       |
| HP-022     | E 177TH ST (REG #1)                         | 40       | 48  | 56  | 73        | 48  | 52  | 8' X 8'        | LONG ISLAND SOUND | REG #1                     |      |     | YES       |
| HP-023     | CONNOR ST (REG #15)                         | 40       | 52  | 50  | 73        | 49  | 17  | 12' 0" X 6' 6" | EASTCHESTER BAY   | REG #15, CONNOR ST.PS      |      |     |           |
| HP-024     | E. 233RD ST (REG #15A)                      | 40       | 53  | 16  | 73        | 49  | 27  | 12' 6" X 10'   | EASTCHESTER BAY   | REG #15A                   |      |     |           |
| HP-025     | TRUXTON ST (REG # 8)                        | 40       | 48  | 23  | 73        | 54  | 32  | 11' 6" X 7' 3" | EAST RIVER        | REG #8                     |      |     | YES       |
| HP-026     | ELLESWORTH AVE (REG #14)                    | 40       | 49  | 27  | 73        | 49  | 50  | 9' X 8'        | LONG ISLAND SOUND | REG #14                    |      |     | YES       |
| HP-028     | OUTLOOK AVE (CSO #20)                       | 40       | 50  | 35  | 73        | 49  | 52  | 12" DIA        | EASTCHESTER BAY   | CSO-20                     |      |     |           |
| HP-029     | WATT AVE (CSO #21)                          | 40       | 50  | 55  | 73        | 49  | 55  | 15" DIA        | EASTCHESTER BAY   | CSO-21                     |      |     |           |
| HP-031     | BELLAMY LOOP (NORTH)                        | 40       | 52  | 26  | 73        | 49  | 25  | 72" DIA        | EASTCHESTER BAY   | CSO-32, CO-OP CITY N. P.S. |      |     |           |
| HP-032     | RIKERS ISLAND NORTH PUMPING STATION         | 40       | 47  | 51  | 73        | 53  | 10  | 14" DIA        | EAST RIVER        | RIKER'S ISLAND N. P.S.     |      |     |           |
| HP-033     | S/O BRUCKNER BLVD & E/O ZEREGA AVE (CSO-23) | 40       | 49  | 41  | 73        | 51  | 34  | DBL 16' X 5'   | WESTCHESTER CREEK | CSO-23                     |      |     |           |
| HP-034     | NEWBOLD AVE (COMMERCE ST PS)                | 40       | 50  | 6   | 73        | 50  | 23  | 60" DIA        | WESTCHESTER CREEK | COMMERCE AVE.PS.           |      |     |           |
| HP-037     | ORCHARD BEACH PUMPING STATION               | 40       | 52  | 1   | 73        | 48  | 5   | 15" DIA        | LAGOON            | ORCHARD BEACH P.S.         |      |     |           |
| HP-039     | N/O HUNTS POINT                             | 40       | 48  | 15  | 73        | 52  | 11  | 72" DIA        | EAST RIVER        | HUNT'S PONT MARKET P.S.    |      |     |           |

| Outfall ID | Outfall Location                   | Latitude |     |     | Longitude |     |     | Outfall Size | Receiving Water   |
|------------|------------------------------------|----------|-----|-----|-----------|-----|-----|--------------|-------------------|
|            |                                    | DEG      | MIN | SEC | DEG       | MIN | SEC |              |                   |
| HP-602     | LAFAYETTE AVE                      | 40       | 50  | 0   | 73        | 49  | 59  | 36" DIA      | LONG ISLAND SOUND |
| HP-608     | S/O.E. FORDHAM RD (BOTANICAL GDNS) | 40       | 51  | 18  | 73        | 53  | 40  | 18" DIA      | BRONX RIVER (W)   |
| HP-626     | 242NDST                            | 40       | 54  | 26  | 73        | 51  | 18  | 36" DIA      | BRONX RIVER       |
| HP-627     | S/O 233RD ST                       | 40       | 53  | 40  | 73        | 52  | 46  | 36" DIA      | BRONX RIVER       |
| HP-631     | RANDALL AVE                        | 40       | 49  | 48  | 73        | 49  | 51  | 48" DIA      | LONG ISLAND SOUND |
| HP-632     | BEACH ST (CITY ISLAND)             | 40       | 51  | 6   | 73        | 47  | 25  | 15" DIA      | LONG ISLAND SOUND |
| HP-634     | E. TREMONT AVE                     | 40       | 50  | 22  | 73        | 50  | 23  | 3' X 7' 4"   | WESTCHESTER CREEK |
| HP-635     | RANDALL AVE                        | 40       | 49  | 11  | 73        | 50  | 20  | 30" DIA      | WESTCHESTER CREEK |
| HP-636     | UNDER BOSTON ROAD BRIDGE           | 40       | 53  | 17  | 73        | 49  | 26  | 48" DIA      | EASTCHESTER BAY   |
| HP-637     | PEARTREE AVE                       | 40       | 52  | 46  | 73        | 49  | 18  | 72" DIA      | EASTCHESTER BAY   |
| HP-638     | BELLAMY LOOP (SOUTH)               | 40       | 52  | 20  | 73        | 49  | 25  | 36" DIA      | EASTCHESTER BAY   |
| HP-639     | N/O BARTOW AVE                     | 40       | 52  | 12  | 73        | 49  | 25  | 66" DIA      | EASTCHESTER BAY   |
| HP-640     | EINSTEIN LOOP NORTH                | 40       | 51  | 54  | 73        | 49  | 12  | 48" DIA      | EASTCHESTER BAY   |
| HP-641     | ERSKINE PLACE                      | 40       | 51  | 46  | 73        | 49  | 10  | 42" DIA      | EASTCHESTER BAY   |
| HP-648     | LAYTON AVE                         | 40       | 50  | 10  | 73        | 49  | 57  | 16" X 6"     | LONG ISLAND SOUND |
| HP-650     | ABBOTT ST (BRADELEY ST)            | 40       | 54  | 23  | 73        | 51  | 20  | 30" DIA      | BRONX RIVER       |
| HP-651     | 50' E/O CASTLE HILL AVE            | 40       | 48  | 42  | 73        | 51  | 46  | 24" DIA      | WESTCHESTER CREEK |
| HP-652     | ERSKINE PLACE                      | 40       | 51  | 46  | 73        | 49  | 10  | 30" DIA      | EASTCHESTER BAY   |

| Outfall ID | Outfall Location                  | Latitude |     |     | Longitude |     |     | Outfall Size | Receiving Water   |
|------------|-----------------------------------|----------|-----|-----|-----------|-----|-----|--------------|-------------------|
|            |                                   | DEG      | MIN | SEC | DEG       | MIN | SEC |              |                   |
| HP-653     | SUTHERLAND ST (CITY ISLAND)       | 40       | 51  | 23  | 73        | 47  | 19  | 2'6" X 1'7"  | LONG ISLAND SOUND |
| HP-655     | WILCOX AVE                        | 40       | 49  | 37  | 73        | 49  | 50  | 30" DIA      | LONG ISLAND SOUND |
| HP-656     | SE/O HUTCHINSON RIVER PARKWAY (E) | 40       | 52  | 3   | 73        | 49  | 14  | 30" DIA      | EASTCHESTER BAY   |
| HP-657     | KILROE ST                         | 40       | 51  | 18  | 73        | 47  | 19  | 18" DIA      | LONG ISLAND SOUND |
| HP-658     | AGAR PLACE                        | 40       | 50  | 20  | 73        | 49  | 55  | 42" DIA      | LONG ISLAND SOUND |
| HP-659     | CITY ISLAND AVE                   | 40       | 50  | 15  | 73        | 47  | 58  | 18" DIA      | LONG ISLAND SOUND |
| HP-660     | SCHOFIELD ST AND LANDING WAY      | 40       | 50  | 45  | 73        | 47  | 57  | 60"          | LONG ISLAND SOUND |
| HP-661     | BUTLER PL & FERRIS PL             | 40       | 50  | 18  | 73        | 50  | 24  | 24" DIA      | WESTCHESTER CREEK |
| HP-662     | BEACH ST & KING AVE               | 40       | 51  | 9   | 73        | 47  | 12  | 30" DIA      | LONG ISLAND SOUND |
| HP-663     | ZEREGA AVE & LACOMBE AVE          | 40       | 49  | 3   | 73        | 50  | 32  | 5' X 3' 2"   | WESTCHESTER CREEK |

| Jamaica    |   |          |     |     |           |     |     |                 |                   |   |      |     |                 |
|------------|---|----------|-----|-----|-----------|-----|-----|-----------------|-------------------|---|------|-----|-----------------|
| Outfall ID | Outfall Location                                    | Latitude |     |     | Longitude |     |     | Outfall Size    | Receiving Water   | Contributors                            | Boom | Net | Telemetry       |
|            |   | DEG      | MIN | SEC | DEG       | MIN | SEC |                 |                   |   |      |     |                 |
| JAM-001    | JAMAICA WRRF OUTFALL                                | 40       | 37  | 52  | 73        | 48  | 54  | 84" DIA         | GRASSY BAY        |   |      |     |                 |
| JAM-003    | 123RD ST (REG #3)                                   | 40       | 39  | 44  | 73        | 49  | 7   | DBL 8' X 9'     | BERGEN BASIN      | REG #3                                  | YES  |     | YES             |
| JAM-003A   | 123RD ST (REG #14)                                  | 40       | 39  | 44  | 73        | 49  | 7   | DBL 13' 6" X 9' | BERGEN BASIN      | REG #14                                 | YES  |     | YES             |
| JAM-005    | 230TH ST (REG #6, 7, 8 & 9)                         | 40       | 38  | 52  | 73        | 45  | 18  | 4BL 16" X 8"    | THURSTON BASIN    | REG #6, 7, 8, 9                         | YES  |     | YES (ON 9)      |
| JAM-006    | 155TH AVE (JAMAICA WRRF SECONDARY OUTFALL & REG #1) | 40       | 39  | 38  | 73        | 49  | 40  | 3BL 19' X 9'    | BERGEN BASIN      | REG #1, 4, 10, SECONDARY PLANT EFFLUENT | YES  |     | YES (ON 1 & 10) |
| JAM-007    | HEAD OF THURSTON BASIN (REG #6, 7, 8 & 9)           | 40       | 38  | 52  | 73        | 45  | 17  | 4BL 17" X 6"    | THURSTON BASIN    | REG #6, 7, 8, 9                         | YES  |     | YES (ON 9)      |
| HP-025     | TRUXTON ST (REG #8)                                 | 40       | 48  | 23  | 73        | 54  | 32  | 11' 6" X 7' 3"  | EAST RIVER        | REG #8                                  |      |     | YES             |
| HP-026     | ELLESWORTH AVE (REG #14)                            | 40       | 49  | 27  | 73        | 49  | 50  | 9' X 8'         | LONG ISLAND SOUND | REG #14                                 |      |     | YES             |

| Outfall ID | Outfall Location | Latitude |     |     | Longitude |     |     | Outfall Size  | Receiving Water |
|------------|------------------|----------|-----|-----|-----------|-----|-----|---------------|-----------------|
|            |                  | DEG      | MIN | SEC | DEG       | MIN | SEC |               |                 |
| JAM-601    | 165TH AVE        | 40       | 38  | 57  | 73        | 50  | 13  | 36" DIA       | SHELLBANK BASIN |
| JAM-602    | 164TH AVE        | 40       | 39  | 3   | 73        | 50  | 14  | 30" DIA       | SHELLBANK BASIN |
| JAM-603    | 163RD AVE        | 40       | 39  | 9   | 73        | 50  | 15  | 84" DIA       | SHELLBANK BASIN |
| JAM-604    | 162ND AVE        | 40       | 39  | 15  | 73        | 50  | 17  | 33" DIA       | SHELLBANK BASIN |
| JAM-605    | 161ST AVE        | 40       | 39  | 21  | 73        | 50  | 18  | 36" DIA       | SHELLBANK BASIN |
| JAM-606    | 160TH AVE        | 40       | 39  | 27  | 73        | 50  | 20  | 8' X 5' 6"    | SHELLBANK BASIN |
| JAM-607    | 158TH AVE        | 40       | 39  | 39  | 73        | 50  | 23  | 10' X 5' 6"   | SHELLBANK BASIN |
| JAM-609    | 158TH AVE        | 40       | 39  | 40  | 73        | 50  | 19  | 6' 6" X 6' FT | SHELLBANK BASIN |

| Outfall ID | Outfall Location  | Latitude |     |     | Longitude |     |     | Outfall Size   | Receiving Water          |
|------------|---|----------|-----|-----|-----------|-----|-----|----------------|--------------------------|
|            |   | DEG      | MIN | SEC | DEG       | MIN | SEC |                |                          |
| JAM-629    | 164TH AVE   | 40       | 39  | 6   | 73        | 50  | 54  | 12" DIA        | HAWTREE BASIN            |
| JAM-630    | 159TH AVE ( REG # TG-12)  | 40       | 39  | 33  | 73        | 50  | 21  | 42" DIA        | SHELLBANK BASIN          |
| JAM-631    | 160TH AVE   | 40       | 39  | 28  | 73        | 50  | 17  | 12" DIA        | SHELLBANK BASIN          |
| JAM-632    | 162ND AVE   | 40       | 39  | 16  | 73        | 50  | 14  | 12" DIA        | SHELLBANK BASIN          |
| JAM-633    | 163RD AVE   | 40       | 39  | 10  | 73        | 50  | 12  | 12" DIA        | SHELLBANK BASIN          |
| JAM-634    | 164TH AVE   | 40       | 39  | 4   | 73        | 50  | 11  | 12" DIA        | SHELLBANK BASIN          |
| JAM-635    | 100TH ST  | 40       | 39  | 29  | 73        | 50  | 58  | 18" DIA        | HAWTREE BASIN            |
| JAM-636    | 161ST AVE   | 40       | 39  | 24  | 73        | 50  | 59  | 12" DIA        | HAWTREE BASIN            |
| JAM-637    | 162ND AVE   | 40       | 39  | 18  | 73        | 50  | 57  | 12" DIA        | HAWTREE BASIN            |
| JAM-638    | 164TH DRIVE   | 40       | 39  | 3   | 73        | 50  | 48  | 18" DIA        | HAWTREE BASIN            |
| JAM-640    | 147TH AVE & 184TH ST  | 40       | 39  | 35  | 73        | 46  | 48  | 24" DIA        | SPRINGFIELD PARK         |
| JAM-648    | S/O 137TH AVE   | 40       | 40  | 15  | 73        | 44  | 14  | 15" DIA        | LAURELTON                |
| JAM-649    | HUXLEY ST   | 40       | 38  | 57  | 73        | 44  | 13  | 13' 6" X 7' 0" | HOOK CREEK               |
| JAM-652    | WELLER LANE   | 40       | 38  | 60  | 73        | 44  | 2   | 30" DIA        | HOOK CREEK               |
| JAM-653    | 256TH ST  | 40       | 39  | 0   | 73        | 44  | 59  | 36" DIA        | HOOK CREEK               |
| JAM-654    | 257TH ST  | 40       | 39  | 1   | 73        | 44  | 56  | 12" DIA        | HOOK CREEK               |
| JAM-655    | HOOK CREEK BLVD   | 40       | 39  | 6   | 73        | 44  | 37  | 54" DIA        | HOOK CREEK               |
| JAM-656    | 101ST ST  | 40       | 39  | 30  | 73        | 50  | 55  | 18" DIA        | HAWTREE BASIN            |
| JAM-657    | 163RD AVE & PEDESTRIAN BRIDGE                                   | 40       | 39  | 12  | 73        | 50  | 56  | 24" DIA        | HAWTREE BASIN            |
| JAM-659    | OPPOSITE OF 65TH AVE  | 40       | 45  | 8   | 73        | 45  | 33  | 36" DIA        | ALLEY CREEK              |
| JAM-660    | 125' N/O LONG ISLAND WB EXIT 31S RAMP NEAR CROSS ISLAND PARKWAY | 40       | 45  | 18  | 73        | 45  | 43  | 30" DIA        | ALLEY CREEK              |
| JAM-661    | 259TH ST  | 40       | 39  | 2   | 73        | 44  | 49  | 54" DIA        | HOOK CREEK               |
| JAM-662    | 119TH AVE   | 40       | 40  | 48  | 73        | 47  | 13  | 24" DIA        | BAISLEY POND             |
| JAM-663    | ARTHUR ST   | 40       | 39  | 50  | 73        | 46  | 38  | 54" DIA        | BAY/OCEAN                |
| JAM-664    | ROCKAWAY BLVD AND 183RD ST                                      | 40       | 39  | 16  | 73        | 45  | 49  | 16'6" x 5'0"   | Stream wider than 8 feet |

| Newtown Creek |                                      |          |     |     |           |     |     |                     |                   |                  |      |     |             |
|---------------|--------------------------------------|----------|-----|-----|-----------|-----|-----|---------------------|-------------------|------------------|------|-----|-------------|
| Outfall ID    | Outfall Location                     | Latitude |     |     | Longitude |     |     | Outfall Size        | Receiving Water   | Contributors     | Boom | Net | Telemetry   |
|               |                                      | DEG      | MIN | SEC | DEG       | MIN | SEC |                     |                   |                  |      |     |             |
| NCB-001       | NEWTOWN CREEK WRRF OUTFALL           | 40       | 43  | 54  | 73        | 58  | 56  | 144" DIA            | EAST RIVER        |                  |      |     |             |
| NCB-002       | NEWTOWN CREEK WRRF SECONDARY OUTFALL | 40       | 44  | 4   | 73        | 57  | 48  | 3BL 7' X 8'         | WHALE CREEK       | WRRF OVERFLOW    |      |     |             |
| NCB-003       | GREENPOINT AVE (REG # B-11)          | 40       | 43  | 46  | 73        | 58  | 40  | 24" DIA             | EAST RIVER        | REG #B-11        |      |     |             |
| NCB-004       | QUAY ST (REG # B-10)                 | 40       | 43  | 33  | 73        | 58  | 42  | 66" DIA             | EAST RIVER        | REG #B-10        |      |     |             |
| NCB-006       | NORTH 12TH ST (REG # B-9)            | 40       | 43  | 31  | 73        | 58  | 43  | 13' X 13'           | EAST RIVER        | REG #B-9         |      | YES | YES         |
| NCB-007       | NORTH 5TH ST (REG # B-8)             | 40       | 43  | 12  | 73        | 58  | 52  | 36" DIA             | EAST RIVER        | REG #B-8         |      |     |             |
| NCB-008       | METROPOLITAN AVE (REG # B-7)         | 40       | 43  | 6   | 73        | 58  | 58  | 60" DIA             | EAST RIVER        | REG #B-7         |      |     |             |
| NCB-010       | GRAND ST (REG # B-6A)                | 40       | 42  | 59  | 73        | 58  | 2   | 12" DIA             | EAST RIVER        | REG #B-6A        |      |     |             |
| NCB-012       | SOUTH 5TH ST (REG # B-6)             | 40       | 42  | 46  | 73        | 58  | 6   | 144" DIA            | EAST RIVER        | REG #B-6         |      |     | YES         |
| NCB-013       | DIVISION AVE (REG # B-5)             | 40       | 42  | 25  | 73        | 58  | 9   | 10' X 8'            | WALLABOUT CHANNEL | REG #B-5         | YES  |     | YES         |
| NCB-014       | KENT AVE (REG # B-4)                 | 40       | 42  | 22  | 73        | 58  | 9   | DBL 13' 6" X 11' 6" | WALLABOUT CHANNEL | REG #B-3, B-4    | YES  |     | YES (ONB-4) |
| NCB-015       | JOHNSON AVE (REG # B-1)              | 40       | 42  | 31  | 73        | 56  | 49  | 16' X 10'           | ENGLISH KILLS     | REG #B-1         | YES  |     | YES         |
| NCB-019       | METROPOLITAN AVE (REG B-2)           | 40       | 42  | 51  | 73        | 55  | 26  | 36" DIA             | NEWTOWN CREEK     | REG #B-2         | YES  |     |             |
| NCB-021       | MCGUINNESS BOULEVARD                 | 40       | 44  | 20  | 73        | 57  | 10  | 36" DIA             | NEWTOWN CREEK     | CSO NEXT TO B-17 |      |     |             |
| NCB-022       | MCGUINNESS BOULEVARD (REG # B-17)    | 40       | 44  | 20  | 73        | 57  | 11  | 6' 3" X 4' 6"       | NEWTOWN CREEK     | REG #B-17        |      |     |             |
| NCB-024       | DUPONT ST (REG # B-15)               | 40       | 44  | 8   | 73        | 58  | 40  | 18" DIA             | EAST RIVER        | REG #B-15        |      |     |             |
| NCB-025       | FREEMAN ST (REG # B-14)              | 40       | 44  | 2   | 73        | 58  | 44  | 24" DIA             | EAST RIVER        | REG #B-14        |      |     |             |
| NCB-026       | GREEN ST (REG # B-13)                | 40       | 43  | 59  | 73        | 58  | 44  | 2' X 2' 6"          | EAST RIVER        | REG #B-13        |      |     |             |

Newtown Creek (Cont.)

| Outfall ID | Outfall Location             | Latitude |     |     | Longitude |     |     | Outfall Size   | Receiving Water   | Contributors      | Boom | Net | Telemetry |
|------------|------------------------------|----------|-----|-----|-----------|-----|-----|----------------|-------------------|-------------------|------|-----|-----------|
|            |                              | DEG      | MIN | SEC | DEG       | MIN | SEC |                |                   |                   |      |     |           |
| NCB-027    | HURON ST (REG # B-12)        | 40       | 43  | 57  | 73        | 58  | 43  | 84" DIA        | EAST RIVER        | REG #B-12         |      |     |           |
| NCB-082    | SOUTH 8TH ST (REG # B-6)     | 40       | 42  | 36  | 73        | 58  | 11  | 36" DIA        | WALLABOUT CHANNEL | REG #B-5A         |      |     |           |
| NCB-083    | METROPOLITAN AVE / SCOTT AVE | 40       | 42  | 51  | 73        | 55  | 27  | 11' X 10'      | NEWTOWN CREEK     | DBOC              |      |     |           |
| NCB-084    | COMMERCIAL ST (REG # B-16)   | 40       | 44  | 13  | 73        | 57  | 35  | 24" DIA        | NEWTOWN CREEK     | REG #B-16         |      |     |           |
| NCM-005    | N/O E 63RD ST (REG # M-51)   | 40       | 45  | 40  | 73        | 57  | 21  | 24" DIA        | EAST RIVER        | REG #M-51         |      |     |           |
| NCM-011    | E 48TH ST (REG # M-47A)      | 40       | 45  | 6   | 73        | 58  | 53  | 4' X 2' 8" EGG | EAST RIVER        | REG #M-47A        |      |     |           |
| NCM-016    | E 46TH ST (REG # M-46)       | 40       | 45  | 1   | 73        | 58  | 57  | 4' X 4' FT     | EAST RIVER        | REG #M-46         |      |     |           |
| NCM-017    | E 42ND ST (REG # M-45A)      | 40       | 44  | 53  | 73        | 58  | 4   | 4' X 2' 8"     | EAST RIVER        | REG #M-45A        |      |     |           |
| NCM-018    | E 41ST ST (REG # M-45)       | 40       | 44  | 50  | 73        | 58  | 6   | 4' X 2' 8" FT  | EAST RIVER        | REG #M-45         |      |     |           |
| NCM-020    | E HOUSTON ST (REG # M-31)    | 40       | 43  | 7   | 73        | 58  | 25  | 6' X 4' 6" FT  | EAST RIVER        | REG #M-31         |      |     |           |
| NCM-028    | DELANCY ST (REG # M-28)      | 40       | 42  | 54  | 73        | 59  | 30  | 4' X 4' FT     | EAST RIVER        | REG #M-28         |      |     |           |
| NCM-030    | E 71ST ST (REG # M-51C)      | 40       | 45  | 55  | 73        | 57  | 6   | 3' X 2' EGG    | EAST RIVER        | REG #M-51C        |      |     |           |
| NCM-031    | E 70TH ST (REG # M-51B)      | 40       | 45  | 52  | 73        | 57  | 8   | 3' X 2' EGG    | EAST RIVER        | REG #M-51A, M-15B |      |     |           |
| NCM-032    | E 61ST ST (REG # M-50)       | 40       | 45  | 34  | 73        | 57  | 27  | DBL 6' 6" X 5' | EAST RIVER        | REG #M-50         |      |     | YES       |
| NCM-033    | E 57TH ST (REG # M-49)       | 40       | 45  | 25  | 73        | 58  | 35  | 4' X 2' 4" FT  | EAST RIVER        | REG #M-49         |      |     |           |
| NCM-034    | E 54TH ST (REG # M-48)       | 40       | 45  | 18  | 73        | 58  | 41  | 5' X 4' FT     | EAST RIVER        | REG #M-48         |      |     |           |
| NCM-035    | E 53RD ST (REG # M-48A)      | 40       | 45  | 17  | 73        | 58  | 44  | 4' X 2' 4" FT  | EAST RIVER        | REG #M-48A        |      |     |           |
| NCM-036    | E 49TH ST (REG # M-47)       | 40       | 45  | 8   | 73        | 58  | 51  | 54" DIA        | EAST RIVER        | REG #M-47         |      |     | YES       |

Newtown Creek (Cont.)

| Outfall ID | Outfall Location              | Latitude |     |     | Longitude |     |     | Outfall Size     | Receiving Water | Contributors     | Boom | Net | Telemetry |
|------------|-------------------------------|----------|-----|-----|-----------|-----|-----|------------------|-----------------|------------------|------|-----|-----------|
|            |                               | DEG      | MIN | SEC | DEG       | MIN | SEC |                  |                 |                  |      |     |           |
| NCM-037    | E 41ST ST (REG # M-44)        | 40       | 44  | 50  | 73        | 58  | 6   | 9' X 7' FT       | EAST RIVER      | REG #M-44        |      |     | YES       |
| NCM-038    | E 38TH ST (REG # M-43B)       | 40       | 44  | 44  | 73        | 58  | 12  | 5' X 4' FT       | EAST RIVER      | REG #M-43B       |      |     |           |
| NCM-038A   | E 38TH ST (REG # M-43B)       | 40       | 44  | 44  | 73        | 58  | 12  | 5' X 4' FT       | EAST RIVER      | REG #M-43B       |      |     |           |
| NCM-039    | E 37TH ST (REG # M-43A)       | 40       | 44  | 42  | 73        | 58  | 13  | 5' 6" X 2' 8" FT | EAST RIVER      | REG #M-43A       |      |     |           |
| NCM-040    | E 36TH ST (REG # M-43)        | 40       | 44  | 40  | 73        | 58  | 15  | 5' 6" X 2' 8" FT | EAST RIVER      | REG #M-43        |      |     |           |
| NCM-041    | E 33RD ST (REG # M-42)        | 40       | 44  | 33  | 73        | 58  | 18  | DBL 8' X 6'      | EAST RIVER      | REG #M-42        |      |     | YES       |
| NCM-042    | BROOME ST (REG # M-27)        | 40       | 42  | 49  | 73        | 59  | 32  | 4' X 4' FT       | EAST RIVER      | REG #M-27        |      |     |           |
| NCM-043    | E 30TH ST (REG # M-41)        | 40       | 44  | 24  | 73        | 58  | 20  | 4' X 2' 4" FT    | EAST RIVER      | REG #M-41        |      |     |           |
| NCM-044    | E 29TH ST (REG # M-41A)       | 40       | 44  | 22  | 73        | 58  | 21  | 5' 6" X 4' FT    | EAST RIVER      | REG #M-41A       |      |     |           |
| NCM-045    | E 26TH ST (REG # M-40)        | 40       | 44  | 13  | 73        | 58  | 21  | DBL 6' 6" X 6"   | EAST RIVER      | REG #M-40        |      |     | YES       |
| NCM-046    | E 24TH ST (REG # M-39)        | 40       | 44  | 7   | 73        | 58  | 22  | 48" DIA          | EAST RIVER      | REG #M-39, M-39A |      |     |           |
| NCM-047    | E 23RD ST (REG # M-38B)       | 40       | 44  | 7   | 73        | 58  | 28  | 5' X 4' FT       | EAST RIVER      | REG #M-38B       |      |     |           |
| NCM-048    | E 21ST ST (REG # M-38)        | 40       | 43  | 59  | 73        | 58  | 25  | 54" DIA          | EAST RIVER      | REG #M-38        |      |     |           |
| NCM-049    | E 18TH ST (REG # M-37)        | 40       | 43  | 53  | 73        | 58  | 25  | 6' X 8' FT       | EAST RIVER      | REG #M-37        |      |     | YES       |
| NCM-051    | OLD SLIP (REG # M-12)         | 40       | 42  | 11  | 74        | 0   | 28  | 48" DIA          | EAST RIVER      | REG #M-12        |      |     |           |
| NCM-052    | E 14TH ST (REG # M-36)        | 40       | 43  | 36  | 73        | 58  | 18  | DBL 6' X 7'      | EAST RIVER      | REG #M-36        |      |     | YES       |
| NCM-053    | E 11TH ST (REG # M-35)        | 40       | 43  | 28  | 73        | 58  | 20  | 5' X 8' 9" FT    | EAST RIVER      | REG #M-35        |      |     |           |
| NCM-054    | E 8TH ST (REG # M-34)         | 40       | 43  | 21  | 73        | 58  | 21  | 6' 6" X 5' FT    | EAST RIVER      | REG #M-34        |      |     |           |
| NCM-055    | E 6TH ST (REG # M-33)         | 40       | 43  | 17  | 73        | 58  | 22  | 5' 6" X 4' FT    | EAST RIVER      | REG #M-33        |      |     |           |
| NCM-056    | E 3RD ST (REG # M-32)         | 40       | 43  | 8   | 73        | 58  | 25  | 6' 6" X 6' FT    | EAST RIVER      | REG #M-32        |      |     |           |
| NCM-057    | STANTON ST (REG # M-30)       | 40       | 43  | 2   | 73        | 58  | 27  | 5' 6" X 5' FT    | EAST RIVER      | REG #M-30        |      |     |           |
| NCM-058    | IRVINGTON ST (REG # M-29)     | 40       | 42  | 57  | 73        | 58  | 28  | 5' 6" X 5' FT    | EAST RIVER      | REG #M-29        |      |     |           |
| NCM-059    | 50' S/O GRAND ST (REG # M-26) | 40       | 42  | 45  | 73        | 59  | 34  | 6' X 3' FT       | EAST RIVER      | REG #M-26        |      |     |           |

Newtown Creek (Cont.)

| Outfall ID | Outfall Location                         | Latitude |     |     | Longitude |     |     | Outfall Size   | Receiving Water | Contributors  | Boom | Net | Telemetry |
|------------|--|----------|-----|-----|-----------|-----|-----|----------------|-----------------|---------------|------|-----|-----------|
|            |  | DEG      | MIN | SEC | DEG       | MIN | SEC |                |                 |               |      |     |           |
| NCM-060    | S/O CORLEARS HOOK PARK (REG # M-25)      | 40       | 42  | 38  | 73        | 59  | 41  | 5' X 4' FT     | EAST RIVER      | REG #M-25     |      |     |           |
| NCM-060    | S/O CORLEARS HOOK PARK (REG # M-25)      | 40       | 42  | 38  | 73        | 59  | 41  | 5' X 4' FT     | EAST RIVER      | REG #M-25     |      |     |           |
| NCM-061    | JACKSON ST (REG # M-23)                  | 40       | 42  | 37  | 73        | 59  | 50  | 4' X 3' EGG    | EAST RIVER      | REG #M-23     |      |     |           |
| NCM-062    | GOVERNEUR SLIP E (REG # M-22)            | 40       | 42  | 35  | 73        | 59  | 59  | 48" DIA        | EAST RIVER      | REG #M-22     |      |     |           |
| NCM-063    | JEFFERSON ST (NORTH SIDE) (REG # M-21)   | 40       | 42  | 33  | 73        | 59  | 18  | 48" DIA        | EAST RIVER      | REG #M-21     |      |     | YES       |
| NCM-064    | MARKET SLIP (REG # M-20)                 | 40       | 42  | 33  | 73        | 60  | 38  | 54" DIA        | EAST RIVER      | REG #M-20     |      |     |           |
| NCM-065    | S/O CATHERINE ST (REG # M-18)            | 40       | 42  | 32  | 73        | 60  | 47  | 4' 6" X 4' FT  | EAST RIVER      | REG #M-18     |      |     |           |
| NCM-066    | ROBERT F WAGNER PLACE (REG # M-17)       | 40       | 42  | 29  | 73        | 60  | 56  | 48" DIA        | EAST RIVER      | REG #M-17     |      |     |           |
| NCM-067    | MAIDEN LANE (REG # M-13A)                | 40       | 42  | 18  | 74        | 0   | 16  | 6' X 6' FT     | EAST RIVER      | REG #M-13     |      |     |           |
| NCM-068    | COENTIES SLIP (REG # M-11)               | 40       | 42  | 7   | 74        | 1   | 34  | 4' 6" X 3' 8"  | EAST RIVER      | REG #M-11     |      |     |           |
| NCM-069    | BROAD ST (REG # M-10)                    | 40       | 42  | 5   | 74        | 1   | 40  | 5' X 4' FT     | EAST RIVER      | REG #M-10     |      |     | YES       |
| NCM-070    | BATTERY PLACE (S/O PIER - A) (REG # M-9) | 40       | 42  | 15  | 74        | 1   | 3   | 84" DIA        | HUDSON RIVER    | REG #M-9      |      |     |           |
| NCM-071    | RECTOR ST (REG # M-6, M-7)               | 40       | 42  | 35  | 74        | 1   | 6   | 96" DIA        | HUDSON RIVER    | REG #M-6, M-7 |      |     |           |
| NCM-072    | VESEY ST (REG # M-5)                     | 40       | 42  | 54  | 74        | 1   | 3   | 96" DIA        | HUDSON RIVER    | REG #M-5      |      |     |           |
| NCM-073    | DUANE ST (REG # M-4)                     | 40       | 43  | 7   | 74        | 1   | 0   | 54" DIA        | HUDSON RIVER    | REG #M-4      |      |     |           |
| NCM-074    | VESTRY ST (REG # M-3)                    | 40       | 43  | 23  | 74        | 1   | 44  | 5' X 3' 8"     | HUDSON RIVER    | REG #M-3      |      |     |           |
| NCM-075    | N/O WATTS ST (REG # M-2)                 | 40       | 43  | 29  | 74        | 1   | 43  | 66" DIA        | HUDSON RIVER    | REG #M-2      |      |     | YES       |
| NCM-076    | CLARKSON ST (REG # 1)                    | 40       | 43  | 48  | 74        | 1   | 51  | 12' X 6' 3" FT | HUDSON RIVER    | REG #M-1      |      |     | YES       |
| NCM-078    | N/O DOVER ST (REG # M-16)                | 40       | 42  | 28  | 73        | 60  | 58  | 12' X 6'       | EAST RIVER      | REG #M-16     |      |     | YES       |
| NCM-080    | N/O VANDAM ST (REG # TG-2)               | 40       | 43  | 38  | 74        | 1   | 41  | 48" DIA        | HUDSON RIVER    | REG #TG-2     |      |     |           |
| NCM-081    | S/O CHARLES ST (REG # TG-1)              | 40       | 44  | 0   | 74        | 1   | 39  | 5' X 4'        | HUDSON RIVER    | REG #TG-1     |      |     |           |

**Newtown Creek (Cont.)**

| Outfall ID | Outfall Location        | Latitude |     |     | Longitude |     |     | Outfall Size  | Receiving Water | Contributors | Boom | Net | Telemetry |
|------------|-------------------------|----------|-----|-----|-----------|-----|-----|---------------|-----------------|--------------|------|-----|-----------|
|            |                         | DEG      | MIN | SEC | DEG       | MIN | SEC |               |                 |              |      |     |           |
| NCM-067    | E 22ND ST (REG # M-38A) | 40       | 44  | 4   | 73        | 58  | 27  | 5' X 3' 6" FT | EAST RIVER      | REG #M-38A   |      |     |           |
| NCQ-029    | 43RD ST (REG # Q-2)     | 40       | 43  | 36  | 73        | 56  | 38  | 66" DIA       | NEWTOWN CREEK   | REG #Q-2     |      |     |           |
| NCQ-077    | 49TH ST (REG # Q-1)     | 40       | 43  | 25  | 73        | 55  | 13  | DBL 11" X 7"  | MASPETH CREEK   | REG #Q-1     | YES  |     |           |

| Outfall ID | Outfall Location              | Latitude |     |     | Longitude |     |     | Outfall Size | Receiving Water |
|------------|-------------------------------|----------|-----|-----|-----------|-----|-----|--------------|-----------------|
|            |                               | DEG      | MIN | SEC | DEG       | MIN | SEC |              |                 |
| NCB-629    | SCHOLES ST                    | 40       | 42  | 38  | 73        | 56  | 52  | 60" DIA      | ENGLISH KILLS   |
| NCB-630    | MEEKER ST & GARDNER AVE       | 40       | 43  | 41  | 73        | 56  | 57  | DBL 16" DIA  | NEWTOWN CREEK   |
| NCB-631    | N/O HENRY ST                  | 40       | 44  | 10  | 73        | 57  | 39  | 90" DIA      | NEWTOWN CREEK   |
| NCB-635    | 10' S/O GRAND ST BRIDGE       | 40       | 42  | 51  | 73        | 56  | 51  | 42" DIA      | ENGLISH KILLS   |
| NCB-636    | 5' N/O GRAND ST BRIDGE        | 40       | 42  | 52  | 73        | 56  | 54  | 60" DIA      | ENGLISH KILLS   |
| NCB-638    | GARDNER AVE                   | 40       | 43  | 4   | 73        | 56  | 41  | 54" DIA      | ENGLISH KILLS   |
| NCB-639    | MASPETH AVE & NEWTOWN CREEK   | 40       | 43  | 11  | 73        | 55  | 29  | 22"          | NEWTOWN CREEK   |
| NCM-628    | RECTOR PLACE                  | 40       | 42  | 35  | 74        | 1   | 6   | 54" DIA      | HUDSON RIVER    |
| NCM-634    | FIRST PLACE                   | 40       | 42  | 24  | 74        | 1   | 9   | 54" DIA      | HUDSON RIVER    |
| NCM-640    | E 15TH STREET (CO ED-NORTH)   | 40       | 43  | 40  | 73        | 58  | 18  | 42" DIA      | EAST RIVER      |
| NCM-641    | E 16TH STREET                 | 40       | 43  | 42  | 73        | 58  | 17  | 5' 6" X 4'   | EAST RIVER      |
| NCQ-632    | GRAND AVE                     | 40       | 42  | 60  | 73        | 55  | 20  | 54" DIA      | NEWTOWN CREEK   |
| NCQ-633    | 300' N/O GRAND AVE BRIDGE     | 40       | 43  | 5   | 73        | 55  | 24  | 60" DIA      | NEWTOWN CREEK   |
| NCQ-637    | LAUREL HILL BLVD & REVIEW AVE | 40       | 43  | 43  | 73        | 56  | 53  | 72" DIA      | NEWTOWN CREEK   |

| North River |                                       |          |     |     |           |     |     |                   |                      |                               |      |     |           |
|-------------|---------------------------------------|----------|-----|-----|-----------|-----|-----|-------------------|----------------------|-------------------------------|------|-----|-----------|
| Outfall ID  | Outfall Location                      | Latitude |     |     | Longitude |     |     | Outfall Size      | Receiving Water      | Contributors                  | Boom | Net | Telemetry |
|             |                                       | DEG      | MIN | SEC | DEG       | MIN | SEC |                   |                      |                               |      |     |           |
| NR-001      | NORTH RIVER WRRF OUTFALL              | 40       | 49  | 31  | 73        | 58  | 30  | 96" DIA           | HUDSON RIVER         |                               |      |     |           |
| NR-002      | W 152ND ST (REG # N-20, 21, 21A, 21B) | 40       | 49  | 57  | 73        | 57  | 4   | 60" DIA           | HUDSON RIVER         | REG #N-20, N-21, N-21A, N-21B |      |     |           |
| NR-003      | W 158TH ST (REG # N-19)               | 40       | 50  | 12  | 73        | 57  | 57  | 48" DIA           | HUDSON RIVER         | REG #N-19                     |      |     |           |
| NR-004      | W 171ST ST (REG # N-18)               | 40       | 50  | 45  | 73        | 57  | 47  | 6' X 10' 6" FT    | HUDSON RIVER         | REG #N-18                     |      |     | YES       |
| NR-005      | W 190TH ST (REG # N-17)               | 40       | 51  | 28  | 73        | 56  | 22  | 18" DIA           | HUDSON RIVER         | REG #N-17                     |      |     |           |
| NR-006      | DYCKMAN ST (REG # N-16)               | 40       | 52  | 9   | 73        | 56  | 56  | DBL 7' 0" X 5' 0" | HUDSON RIVER         | REG #N-16                     |      |     | YES       |
| NR-007      | W 218TH ST (REG # N-15)               | 40       | 52  | 29  | 73        | 55  | 9   | 4' 0" X 2' 4" FT  | SPUYTEN DUYVIL CREEK | REG #N-15                     |      |     |           |
| NR-008      | W 216TH ST (REG # N-14)               | 40       | 52  | 8   | 73        | 55  | 41  | 5' X 4' EGG       | HARLEM RIVER         | REG #N-14                     |      |     |           |
| NR-009      | W 215TH ST (REG # N-13)               | 40       | 52  | 5   | 73        | 55  | 42  | 3' 6" X 2' 4" EGG | HARLEM RIVER         | REG #N-13                     |      |     |           |
| NR-010      | W 211TH ST (REG # N-10, N-11, N-12)   | 40       | 51  | 56  | 73        | 55  | 48  | 54" DIA           | HARLEM RIVER         | REG #N-10, N-11, N-12         |      |     |           |
| NR-011      | W 209TH ST (REG # N-9)                | 40       | 51  | 52  | 73        | 55  | 54  | 24" DIA           | HARLEM RIVER         | REG #N-9                      |      |     |           |
| NR-012      | W 207TH ST (SOUTH SIDE) (REG # N-7)   | 40       | 51  | 47  | 73        | 55  | 56  | 36" DIA           | HARLEM RIVER         | REG #N-7                      |      |     |           |
| NR-013      | W 206TH ST (REG # N-6)                | 40       | 51  | 45  | 73        | 55  | 58  | 3' 6" X 2' 4" EGG | HARLEM RIVER         | REG #N-6                      |      |     |           |
| NR-014      | W 205TH ST (REG # N-5)                | 40       | 51  | 43  | 73        | 55  | 1   | 48" DIA           | HARLEM RIVER         | REG #N-5                      |      |     |           |
| NR-016      | W 203RD ST (REG # N-4)                | 40       | 51  | 39  | 73        | 55  | 5   | 3' 6" X 2' 4" EGG | HARLEM RIVER         | REG #N-4                      |      |     |           |
| NR-017      | W 201ST ST (REG # N-3)                | 40       | 51  | 34  | 73        | 55  | 8   | 6' X 4' FT        | HARLEM RIVER         | REG #N-3                      |      |     | YES       |
| NR-018      | HIGHBRIDGE PARK (REG # N-1)           | 40       | 51  | 26  | 73        | 55  | 18  | 48" DIA           | HARLEM RIVER         | REG #N-1                      |      |     |           |
| NR-019      | BANK ST (REG # N-56)                  | 40       | 44  | 11  | 74        | 1   | 38  | 48" DIA           | HUDSON RIVER         | REG #N-56                     |      |     |           |
| NR-020      | JANE ST (REG # N-55)                  | 40       | 44  | 18  | 74        | 1   | 40  | 48" DIA           | HUDSON RIVER         | REG #N-55                     |      |     |           |
| NR-021      | GANSEVOORT ST (REG # N-54)            | 40       | 44  | 21  | 74        | 1   | 41  | 48" DIA           | HUDSON RIVER         | REG #N-54                     |      |     |           |

| North River (Cont.) |                                  |          |     |     |           |     |     |                   |                 |                  |      |     |               |
|---------------------|----------------------------------|----------|-----|-----|-----------|-----|-----|-------------------|-----------------|------------------|------|-----|---------------|
| Outfall ID          | Outfall Location                 | Latitude |     |     | Longitude |     |     | Outfall Size      | Receiving Water | Contributors     | Boom | Net | Telemetry     |
|                     |                                  | DEG      | MIN | SEC | DEG       | MIN | SEC |                   |                 |                  |      |     |               |
| NR-022              | S/O W 17TH ST (REG # N-51)       | 40       | 44  | 40  | 74        | 1   | 32  | 54" DIA           | HUDSON RIVER    | REG # N-51       |      |     |               |
| NR-023              | W 18TH ST (REG # 50)             | 40       | 44  | 45  | 74        | 1   | 41  | 5' 0" X 4' 6"     | HUDSON RIVER    | REG # N-50       |      |     | YES           |
| NR-024              | W 21ST ST (REG # N-48, N-49)     | 40       | 44  | 52  | 74        | 1   | 41  | 48" DIA           | HUDSON RIVER    | REG # N-48, N-49 |      |     |               |
| NR-025              | W 24TH ST (REG # N-47)           | 40       | 45  | 3   | 74        | 1   | 39  | 42" DIA           | HUDSON RIVER    | REG # N-47       |      |     |               |
| NR-026              | W 26TH ST (REG # N-46)           | 40       | 45  | 9   | 74        | 1   | 34  | DBL 4' X 3'       | HUDSON RIVER    | REG # N-46       |      |     |               |
| NR-027              | W 30TH ST (REG # N-45)           | 40       | 45  | 17  | 74        | 0   | 26  | 11' X 6'          | HUDSON RIVER    | REG # N-45       |      |     | YES           |
| NR-028              | W 36TH ST (REG # N-43)           | 40       | 45  | 34  | 74        | 0   | 24  | 48" DIA           | HUDSON RIVER    | REG # N-43       |      |     |               |
| NR-029              | W 40TH ST (REG # N-42)           | 40       | 45  | 40  | 74        | 0   | 10  | 30" DIA           | HUDSON RIVER    | REG # N-42       |      |     |               |
| NR-030              | W 43RD ST (REG # N-39 & N-40)    | 40       | 45  | 49  | 74        | 0   | 13  | 54" DIA           | HUDSON RIVER    | REG # N-39, N-40 |      |     |               |
| NR-031              | W 44TH ST (REG # N-38)           | 40       | 45  | 50  | 74        | 0   | 3   | 54" DIA           | HUDSON RIVER    | REG # N-38       |      |     |               |
| NR-032              | W 46TH ST (REG # N-36)           | 40       | 45  | 57  | 74        | 0   | 8   | 48" DIA           | HUDSON RIVER    | REG # N-36, N-37 |      |     |               |
| NR-033              | N/O W 48TH ST (REG # N-34, N-33) | 40       | 45  | 58  | 73        | 60  | 53  | 4' X 2' 8" FT     | HUDSON RIVER    | REG # N-33, N-34 |      |     | YES (ON N-33) |
| NR-034              | W 50TH ST (REG # N-32)           | 40       | 46  | 7   | 74        | 0   | 5   | 4' X 4' FT        | HUDSON RIVER    | REG # N-32       |      |     |               |
| NR-035              | W 56TH ST (REG # N-31)           | 40       | 46  | 16  | 73        | 60  | 43  | 6' X 4' 6" FT     | HUDSON RIVER    | REG # N-31       |      |     |               |
| NR-036              | W 59TH ST (REG # N-30)           | 40       | 46  | 26  | 73        | 60  | 46  | 48" DIA           | HUDSON RIVER    | REG # N-30       |      |     |               |
| NR-037              | N/O W 72ND ST (REG # N-29)       | 40       | 46  | 54  | 73        | 59  | 17  | 60" DIA           | HUDSON RIVER    | REG # N-29       |      |     |               |
| NR-038              | W 80TH ST (REG # N-28)           | 40       | 47  | 12  | 73        | 59  | 5   | 10' 6" X 6' 0" FT | HUDSON RIVER    | REG # N-28       |      |     | YES           |
| NR-039              | W 91ST ST (REG # N-27)           | 40       | 47  | 37  | 73        | 59  | 47  | 48" DIA           | HUDSON RIVER    | REG # N-27       |      |     |               |

| North River (Cont.) |                                     |          |     |     |           |     |     |                    |                 |                  |      |     |               |
|---------------------|-------------------------------------|----------|-----|-----|-----------|-----|-----|--------------------|-----------------|------------------|------|-----|---------------|
| Outfall ID          | Outfall Location                    | Latitude |     |     | Longitude |     |     | Outfall Size       | Receiving Water | Contributors     | Boom | Net | Telemetry     |
|                     |                                     | DEG      | MIN | SEC | DEG       | MIN | SEC |                    |                 |                  |      |     |               |
| NR-040              | W 96TH ST (REG # N-26, 26A)         | 40       | 47  | 49  | 73        | 59  | 38  | 10' X 6' FT        | HUDSON RIVER    | REG #N-26, N-26A |      |     | YES (ON N-26) |
| NR-041              | W 108TH ST (REG # N-25)             | 40       | 48  | 17  | 73        | 58  | 19  | 4' 0" X 4' 0"      | HUDSON RIVER    | REG #N-25        |      |     |               |
| NR-042              | W 115TH ST (REG # N-24)             | 40       | 48  | 33  | 73        | 58  | 7   | 4' 6" X 4' 0"      | HUDSON RIVER    | REG #N-24        |      |     |               |
| NR-043              | SAINT CLAIRS PLACE (REG # N-23)     | 40       | 49  | 5   | 73        | 58  | 43  | DBL 8' 8" X 7"     | HUDSON RIVER    | REG #N-23        |      |     | YES           |
| NR-044              | W 138TH ST (REG # N-22)             | 40       | 49  | 25  | 73        | 58  | 34  | 42" DIA            | HUDSON RIVER    | REG #N-22        |      |     |               |
| NR-045              | ACADEMY ST (REG # N-2)              | 40       | 51  | 36  | 73        | 55  | 16  | DBL 6' X 7"        | HARLEM RIVER    | REG #N-2         |      |     |               |
| NR-046              | W 66TH ST (REG # N-29A)             | 40       | 46  | 39  | 73        | 59  | 27  | 10' 8" X 6' 10"    | HUDSON RIVER    | REG #N-29A       |      |     | YES           |
| NR-047              | W 47TH ST                           | 40       | 45  | 54  | 73        | 60  | 55  | 4' X 2' 8" FT      | HUDSON RIVER    | REG #N-35        |      |     |               |
| NR-048              | W 42ND ST (REG # N-40 & N-41)       | 40       | 45  | 44  | 74        | 0   | 7   | DBL 8' 0" X 2' 0"  | HUDSON RIVER    | REG #N-40, N-41  |      |     |               |
| NR-049              | W 14TH ST (REG # N-52)              | 40       | 44  | 33  | 74        | 1   | 33  | 6' X 4' FT         | HUDSON RIVER    | REG #N-52        |      |     |               |
| NR-050              | BLOOMFIELD ST (REG # N-53)          | 40       | 44  | 27  | 74        | 1   | 40  | 3' 6" X 2' 4" EGG  | HUDSON RIVER    | REG #N-53        |      |     |               |
| NR-051              | W 49TH ST (CSO)                     | 40       | 45  | 59  | 73        | 60  | 51  | DBL 12' 0" X 6' 0" | HUDSON RIVER    | N/A              |      |     |               |
| NR-052              | N/O W 33RD ST (REG # N-44)          | 40       | 45  | 24  | 74        | 0   | 21  | 4' 9" X 4' 6" FT   | HUDSON RIVER    | REG #N-44        |      |     |               |
| NR-055              | W 207TH ST (NORTH SIDE) (REG # N-8) | 40       | 51  | 47  | 73        | 55  | 56  | 36" DIA            | HARLEM RIVER    | REG #N-7, N-8    |      |     |               |
| NR-056              | W 142ND ST (REG # N-22A)            | 40       | 49  | 33  | 73        | 57  | 18  | 5' X 4'            | HUDSON RIVER    | REG #N-22A       |      |     |               |

| Oakwood Beach |                                 |          |     |     |           |     |     |              |                    |              |      |     |           |
|---------------|---------------------------------|----------|-----|-----|-----------|-----|-----|--------------|--------------------|--------------|------|-----|-----------|
| Outfall ID    | Outfall Location                | Latitude |     |     | Longitude |     |     | Outfall Size | Receiving Water    | Contributors | Boom | Net | Telemetry |
|               |                                 | DEG      | MIN | SEC | DEG       | MIN | SEC |              |                    |              |      |     |           |
| OB-001        | OAKWOOD BEACH WRRF OUTFALL      | 40       | 32  | 51  | 74        | 7   | 45  | 96" DIA      | LOWER NEW YORK BAY |              |      |     |           |
| OB-001A       | OAKWOOD BEACH WRRF PLANT BYPASS | 40       | 32  | 57  | 74        | 7   | 53  | 60" DIA      | LOWER NEW YORK BAY | PLANT BYPASS |      |     |           |

| Outfall ID | Outfall Location                          | Latitude |     |     | Longitude |     |     | Outfall Size  | Receiving Water    |
|------------|---|----------|-----|-----|-----------|-----|-----|---------------|--------------------|
|            |   | DEG      | MIN | SEC | DEG       | MIN | SEC |               |                    |
| OB-605     | 450' N/O RICHMOND ROAD BRIDGE             | 40       | 34  | 20  | 74        | 9   | 52  | 5' X 3' 2"    | RICHMOND CREEK     |
| OB-607     | SEAVIEW AVE                               | 40       | 34  | 41  | 74        | 5   | 31  | DBL 15' X 6"  | LOWER NEW YORK BAY |
| OB-609     | EBBITTS ST                                | 40       | 33  | 32  | 74        | 6   | 58  | 10' X 5'      | LOWER NEW YORK BAY |
| OB-610     | TYSENSLANE                                | 40       | 33  | 20  | 74        | 6   | 5   | 11' X 8'      | LOWER NEW YORK BAY |
| OB-612     | 200' S/O FAIRLAWN AVE                     | 40       | 32  | 45  | 74        | 8   | 14  | 42" DIA       | GREAT KILLS HARBOR |
| OB-613     | S/O WIMAN AVE                             | 40       | 32  | 14  | 74        | 9   | 38  | 60" DIA       | RARITAN BAY        |
| OB-614     | ARMSTRONG AVE                             | 40       | 32  | 7   | 74        | 9   | 46  | 9' X 4' 6"    | RARITAN BAY        |
| OB-615     | WOODS OF ARDEN ROAD                       | 40       | 31  | 45  | 74        | 9   | 25  | 48" DIA       | RARITAN BAY        |
| OB-618     | S/O ELMTREE AVE                           | 40       | 33  | 59  | 74        | 5   | 29  | 3' X 27"      | LOWER NEW YORK BAY |
| OB-619     | N/O NEW DORP LANE                         | 40       | 33  | 46  | 74        | 6   | 39  | 13' X 5' 6"   | LOWER NEW YORK BAY |
| OB-622     | HOLDRIDGE PLACE                           | 40       | 31  | 35  | 74        | 10  | 50  | 48" DIA       | RARITAN BAY        |
| OB-623     | 150' N/O ARBUTUS AVE                      | 40       | 31  | 35  | 74        | 11  | 45  | 6' 6" X 6'    | RARITAN BAY        |
| OB-625     | HUGUENOT AVE                              | 40       | 31  | 12  | 74        | 11  | 60  | 42" DIA       | RARITAN BAY        |
| OB-627     | BEDELL AVE                                | 40       | 30  | 7   | 74        | 14  | 52  | 36" DIA       | RARITAN BAY        |
| OB-628     | S. GOFF & STATEN ISLAND RAILROAD          | 40       | 31  | 21  | 74        | 13  | 43  | 18" DIA       | LEMON CREEK        |
| OB-629     | STATEN ISLAND RAILROAD & W/O SHARROTT AVE | 40       | 31  | 22  | 74        | 13  | 49  | 5' 8" X 3' 7" | LEMON CREEK        |
| OB-630     | STATEN ISLAND RAILROAD & W/O WOODVALE AVE | 40       | 31  | 27  | 74        | 13  | 36  | 4' X 2' FT    | LEMON CREEK        |
| OB-633     | EAST DRUMGOOLE ROAD & ADDISON AVE         | 40       | 31  | 59  | 74        | 12  | 57  | 66" DIA       | LEMON CREEK        |
| OB-635     | MAGUIRE AVE & FONDA PLACE                 | 40       | 31  | 43  | 74        | 13  | 39  | 50" DIA       | LEMON CREEK        |
| OB-636     | PAGE AVE & STATEN ISLAND RAILROAD         | 40       | 31  | 7   | 74        | 14  | 4   | 42" DIA       | MILL CREEK         |

| Outfall ID | Outfall Location                         | Latitude |     |     | Longitude |     |     | Outfall Size   | Receiving Water    |
|------------|--|----------|-----|-----|-----------|-----|-----|----------------|--------------------|
|            |  | DEG      | MIN | SEC | DEG       | MIN | SEC |                |                    |
| OB-637     | PAGE AVE & RICHMOND VALLEY ROAD          | 40       | 31  | 14  | 74        | 14  | 5   | 42" DIA        | MARSH              |
| OB-638     | BOSCOMBE AVE & E/O WEST SHORE EXPRESSWAY | 40       | 31  | 28  | 74        | 14  | 36  | 42" DIA        | MILL CREEK         |
| OB-639     | BOSCOMBE AVE & E/O WEST SHORE EXPRESSWAY | 40       | 31  | 28  | 74        | 14  | 36  | 18" DIA        | MILL CREEK         |
| OB-641     | ARTHUR KILL ROAD & PARK DRIVE SOUTH      | 40       | 33  | 51  | 74        | 11  | 39  | 48" DIA        | RICHMOND CREEK     |
| OB-642     | RICHMOND AVE & N/O ARTHUR KILL ROAD      | 40       | 33  | 43  | 74        | 10  | 10  | 72" DIA        | RICHMOND CREEK     |
| OB-643     | RICHMOND AVE & N/O ARTHUR KILL ROAD      | 40       | 33  | 43  | 74        | 10  | 10  | 8' X 7'        | RICHMOND CREEK     |
| OB-644     | ARTHUR KILL ROAD & E/O RIDGEWOOD AVE     | 40       | 33  | 38  | 74        | 10  | 59  | 3'9" X 2'5"    | RICHMOND CREEK     |
| OB-645     | ABINGDON AVE & N/O ARTHUR KILL ROAD      | 40       | 33  | 55  | 74        | 10  | 51  | 3BL 16" X 6'6" | RICHMOND CREEK     |
| OB-646     | ARTHUR KILL ROAD & S/O TANGLEWOOD DRIVE  | 40       | 34  | 4   | 74        | 9   | 8   | 6'6" X 3'      | RICHMOND CREEK     |
| OB-647     | RICHMOND AVE & RICHMOND HILL ROAD        | 40       | 35  | 24  | 74        | 10  | 6   | 16' X 6'       | SPRINGVILLE CREEK  |
| OB-648     | RICHMOND AVE & RICHMOND HILL ROAD        | 40       | 35  | 21  | 74        | 10  | 4   | 42" DIA        | SPRINGVILLE CREEK  |
| OB-649     | RICHMOND AVE & RICHMOND HILL ROAD        | 40       | 35  | 21  | 74        | 10  | 4   | 5' X 3'2"      | SPRINGVILLE CREEK  |
| OB-650     | RICHMOND AVE & W/O RICHMOND HILL ROAD    | 40       | 35  | 22  | 74        | 10  | 5   | 30" DIA        | SPRINGVILLE CREEK  |
| OB-652     | RICHMOND AVE & NOME AVE                  | 40       | 35  | 27  | 74        | 10  | 58  | 6'11" X 4'5"   | SPRINGVILLE CREEK  |
| OB-653     | TRAVIS AVE & DRAPER AVE                  | 40       | 35  | 36  | 74        | 10  | 51  | 8'10" X 5'8"   | SPRINGVILLE CREEK  |
| OB-654     | TRAVIS AVE & FREEDOM AVE                 | 40       | 35  | 36  | 74        | 10  | 53  | 36" DIA        | SPRINGVILLE CREEK  |
| OB-655     | TRAVIS AVE & W/O MULBERRY AVE            | 40       | 35  | 39  | 74        | 10  | 9   | 42" DIA        | MARSH              |
| OB-656     | CLEVELAND AVE                            | 40       | 32  | 32  | 74        | 9   | 32  | 9' X 5'6"      | GREAT KILLS HARBOR |

| Outfall ID | Outfall Location                        | Latitude |     |     | Longitude |     |     | Outfall Size   | Receiving Water    |
|------------|---|----------|-----|-----|-----------|-----|-----|----------------|--------------------|
|            |   | DEG      | MIN | SEC | DEG       | MIN | SEC |                |                    |
| OB-657     | POILLON AVE                             | 40       | 31  | 22  | 74        | 10  | 25  | 36" DIA        | RARITAN BAY        |
| OB-660     | ROSSVILLE AVE                           | 40       | 33  | 21  | 74        | 13  | 47  | 4' 8" X 2'     | ARTHUR KILL        |
| OB-661     | ARTHUR KILL ROAD & HERVEY ST            | 40       | 33  | 18  | 74        | 13  | 5   | 9' 6" X 6"     | ARTHUR KILL        |
| OB-662     | HUGUENOT AVE                            | 40       | 33  | 23  | 74        | 12  | 11  | DBL 8'10" X 6" | ARTHUR KILL        |
| OB-663     | SHARON LANE & W/O HELENE COURT          | 40       | 32  | 10  | 74        | 13  | 55  | 36" DIA        | LEMON CREEK        |
| OB-664     | INDEPENDENCE AVE & N/O FOREST HILL ROAD | 40       | 34  | 17  | 74        | 10  | 6   | 78" DIA        | RICHMOND CREEK     |
| OB-666     | LUTEN AVE & EYLANDT ST & JANSEN ST      | 40       | 31  | 33  | 74        | 11  | 26  | 48" DIA        | LEMON CREEK        |
| OB-668     | CINDRA AVE                              | 40       | 32  | 23  | 74        | 9   | 34  | 4' X 1' 6"     | GREAT KILLS HARBOR |
| OB-669     | RICHMOND AVE                            | 40       | 31  | 58  | 74        | 9   | 5   | 4' X 3'        | RARITAN BAY        |
| OB-670     | ARDEN AVE                               | 40       | 31  | 39  | 74        | 10  | 36  | 48" DIA        | RARITAN BAY        |
| OB-671     | ARBUTUS AVE                             | 40       | 31  | 36  | 74        | 11  | 50  | 60" DIA        | RARITAN BAY        |
| OB-672     | W/O SHARROTT AVE                        | 40       | 30  | 39  | 74        | 13  | 42  | 4' X 3' 6" EGG | MARSH              |
| OB-673     | JOLINE AVE                              | 40       | 30  | 4   | 74        | 14  | 59  | 5' X 3'        | RARITAN BAY        |
| OB-674     | SPRAGUE AVE                             | 40       | 30  | 1   | 74        | 14  | 11  | 36" DIA        | RARITAN BAY        |
| OB-675     | LORETTO AVE                             | 40       | 29  | 58  | 74        | 14  | 16  | 13' 6" X 5'    | RARITAN BAY        |
| OB-676     | TRACY AVE                               | 40       | 30  | 57  | 74        | 15  | 44  | 4' X 3'        | ARTHUR KILL        |
| OB-677     | NASSAU PLACE                            | 40       | 31  | 9   | 74        | 14  | 26  | 36" DIA        | ARTHUR KILL        |
| OB-678     | SAND LANE                               | 40       | 35  | 18  | 74        | 4   | 52  | 10' X 6'       | LOWER NEW YORK BAY |

| Outfall ID | Outfall Location                     | Latitude |     |     | Longitude |     |     | Outfall Size    | Receiving Water             |
|------------|--------------------------------------|----------|-----|-----|-----------|-----|-----|-----------------|-----------------------------|
|            |                                      | DEG      | MIN | SEC | DEG       | MIN | SEC |                 |                             |
| OB-679     | ATLANTIC AVE                         | 40       | 34  | 54  | 74        | 4   | 14  | DBL 10' X 6' 6" | LOWER NEW YORK BAY          |
| OB-680     | GREELEY AVE                          | 40       | 34  | 2   | 74        | 5   | 21  | DBL 15' X 6' 3" | LOWER NEW YORK BAY          |
| OB-682     | SEGUINE AVE                          | 40       | 30  | 47  | 74        | 12  | 48  | 36" DIA         | LEMON CREEK                 |
| OB-685     | 850' E/O ARTHUR KILL ROAD & PAGE AVE | 40       | 31  | 47  | 74        | 14  | 35  | 48" DIA         | MILL CREEK                  |
| OB-686     | MAIN ST                              | 40       | 30  | 51  | 74        | 15  | 6   | 30" DIA         | ARTHUR KILL                 |
| OB-687     | QUINTARD ST                          | 40       | 35  | 18  | 74        | 4   | 30  | 10' X 6'        | MARSH                       |
| OB-688     | NAUGHTON AVE                         | 40       | 34  | 30  | 74        | 5   | 43  | DBL 10' X 6' 6" | LOWER NEW YORK BAY          |
| OB-688A    | NAUGHTON AVE                         | 40       | 35  | 8   | 74        | 5   | 51  | 42" DIA         | LAST CHANCE POND PARK MARSH |
| OB-689     | MIDLAND AVE                          | 40       | 34  | 7   | 74        | 5   | 10  | 8' 6" X 5'      | LOWER NEW YORK BAY          |
| OB-690     | ARTHUR KILL & PAGE AVE               | 40       | 31  | 39  | 74        | 14  | 7   | 24" DIA         | ARTHUR KILL                 |
| OB-691     | MILL POND                            | 40       | 34  | 20  | 74        | 9   | 37  | 3' X 2' 6"      | RICHMOND CREEK              |
| OB-691A    | RICHMOND HILL RD & MACE ST           | 40       | 34  | 21  | 74        | 8   | 40  | 6'0" x 2'6"     | RICHMOND CREEK              |
| OB-692     | ST. ANDREWS ROAD                     | 40       | 34  | 25  | 74        | 9   | 33  | 4' X 2'         | RICHMOND CREEK              |
| OB-693     | LIGHTHOUSE AVE                       | 40       | 34  | 25  | 74        | 8   | 29  | 18" DIA         | RICHMOND CREEK              |
| OB-694     | MACE ST & LIGHTHOUSE AVE             | 40       | 34  | 24  | 74        | 8   | 23  | 24" DIA         | RICHMOND CREEK              |
| OB-695     | ST. GEORGES ROAD                     | 40       | 34  | 33  | 74        | 8   | 1   | 4' X 2'         | RICHMOND CREEK              |
| OB-696     | BOYLE PLACE / NUGENT ST              | 40       | 34  | 35  | 74        | 8   | 60  | 5' X 3'         | RICHMOND CREEK              |
| OB-697     | MEISNER AVE & LIGHTHOUSE AVE         | 40       | 34  | 58  | 74        | 8   | 51  | 36" DIA         | RICHMOND CREEK              |

| Outfall ID | Outfall Location | Latitude |     |     | Longitude |     |     | Outfall Size | Receiving Water |
|------------|------------------|----------|-----|-----|-----------|-----|-----|--------------|-----------------|
|            |                  | DEG      | MIN | SEC | DEG       | MIN | SEC |              |                 |
| OB-698     | BOOTH AVE        | 40       | 32  | 10  | 74        | 11  | 34  | 5' X 3'2"    | BLUE HERON      |
| OB-699     | EYLANDT ST       | 40       | 31  | 58  | 74        | 10  | 24  | 5'8" X 3'7"  | BLUE HERON      |
| OB-700     | KOCH POND        | 40       | 32  | 2   | 74        | 10  | 5   | 3'9" X 2'5"  | BLUE HERON      |
| OB-701     | SHIRLEY AVE      | 40       | 31  | 48  | 74        | 10  | 15  | 4'5" X 2'10" | BLUE HERON      |
| OB-702     | NEWTON ST        | 40       | 31  | 41  | 74        | 10  | 20  | 3'9" X 2'5"  | BLUE HERON      |
| OB-703     | DOLE ST          | 40       | 31  | 39  | 74        | 10  | 18  | 18" DIA      | BLUE HERON      |
| OB-704     | POILLON AVE      | 40       | 31  | 46  | 74        | 11  | 34  | 30" DIA      | BLUE HERON      |
| OB-705     | BENNETT POND     | 40       | 32  | 8   | 74        | 11  | 15  | 3'9" X 2'6"  | ARBUTUS CREEK   |
| OB-706     | PHILIP AVE       | 40       | 32  | 1   | 74        | 11  | 51  | 3'9" X 2'5"  | ARBUTUS CREEK   |
| OB-707     | HUGUENOT POND    | 40       | 31  | 50  | 74        | 11  | 24  | 3'9" X 2'5"  | ARBUTUS CREEK   |
| OB-708     | ANDROVETTE POND  | 40       | 31  | 34  | 74        | 11  | 23  | 4' X 2'8"    | ARBUTUS CREEK   |
| OB-709     | LUTEN POND       | 40       | 31  | 29  | 74        | 11  | 19  | 6'4" X 4"    | MARSH           |
| OB-710     | SALA COURT       | 40       | 31  | 56  | 74        | 11  | 11  | 3'2" X 2'    | ARBUTUS CREEK   |
| OB-711     | RUGGLES ST       | 40       | 32  | 0   | 74        | 11  | 59  | 18" DIA      | MARSH           |
| OB-712     | CONVENT AVE      | 40       | 32  | 25  | 74        | 13  | 48  | 6'11" X 4'5" | LEMON CREEK     |
| OB-713     | EDGE GROVE AVE   | 40       | 32  | 1   | 74        | 12  | 28  | 4' X 2'      | LEMON CREEK     |
| OB-714     | DARLINGTON AVE   | 40       | 31  | 58  | 74        | 12  | 27  | 3'2" X 2'    | LEMON CREEK     |
| OB-715     | MAGUIRE AVE      | 40       | 31  | 56  | 74        | 13  | 40  | 4' X 2'      | LEMON CREEK     |
| OB-716     | FOSTER ROAD      | 40       | 31  | 39  | 74        | 12  | 6   | 5' X 3'2"    | LEMON CREEK     |

| Outfall ID | Outfall Location                     | Latitude |     |     | Longitude |     |     | Outfall Size     | Receiving Water          |
|------------|--------------------------------------|----------|-----|-----|-----------|-----|-----|------------------|--------------------------|
|            |                                      | DEG      | MIN | SEC | DEG       | MIN | SEC |                  |                          |
| OB-717     | AMBOY ROAD                           | 40       | 31  | 31  | 74        | 13  | 33  | 4'5" X 2'10"     | LEMON CREEK              |
| OB-718     | BAYVIEW AVE                          | 40       | 31  | 11  | 74        | 12  | 16  | 5' X 2'6"        | LEMON CREEK              |
| OB-719     | BAYVIEW AVE                          | 40       | 31  | 17  | 74        | 12  | 17  | 4' X 4'          | LEMON CREEK              |
| OB-720     | KOREAN WAR VETERANS MEMORIAL PARKWAY | 40       | 32  | 2   | 74        | 12  | 57  | 60" DIA          | WOLFE'S POND             |
| OB-721     | CHISHOLM AVE                         | 40       | 31  | 33  | 74        | 12  | 35  | 8'10" X 5'8" EGG | WOLFE'S POND             |
| OB-722     | CLERMONT AVE / FINLAY ST             | 40       | 30  | 3   | 74        | 15  | 52  | DBL 7'3" X 3'6"  | RARITAN BAY              |
| OB-723     | HOPKINS AVE                          | 40       | 33  | 21  | 74        | 8   | 43  | 36" DIA          | GREAT KILLS HARBOR       |
| OB-724     | BAY TERRACE                          | 40       | 33  | 8   | 74        | 8   | 58  | 66" DIA          | GREAT KILLS HARBOR       |
| OB-725     | CLARK AVE & ARTHUR KILL RD           | 40       | 34  | 16  | 74        | 9   | 52  | 7'3" X 3'6"      | MARSH                    |
| OB-726     | REDGRAVE AVE                         | 40       | 33  | 4   | 74        | 8   | 3   | 24" DIA          | GREAT KILLS              |
| OB-727     | NE/O AINSWORTH AVE                   | 40       | 33  | 1   | 74        | 8   | 8   | 36" DIA          | GREAT KILLS              |
| OB-728     | VETERANS RD W AND TYRELLAN AVE       | 40       | 31  | 39  | 74        | 14  | 34  | 15"              | MARSH                    |
| OB-729     | BILLIOUT AND STECHER ST              | 40       | 31  | 55  | 74        | 11  | 13  | 90" X 42"        | POND                     |
| OB-730     | ITHACA ST AND HYLAN BLVD             | 40       | 33  | 33  | 74        | 7   | 17  | 42"              | STREAM WIDER THAN 8 FEET |
| OB-731     | HYLAN BLVD AND BUFFALO ST            | 40       | 33  | 24  | 74        | 8   | 39  | 42"              | MARSH                    |
| OB-732     | STOBE AVE AND ZOE ST                 | 40       | 35  | 3   | 74        | 6   | 0   | 72" X 48"        | RIVER                    |
| OB-733     | MASON AV & BEDFORD AVE               | 40       | 34  | 33  | 75        | 34  | 13  | 10' X 3'         | Stream wider than 8 feet |
| OB-734     | N/O Patten Street                    | 40       | 30  | 37  | 75        | 30  | 48  | 12" DIA          | ARTHUR KILL              |

| Outfall ID | Outfall Location                | Latitude |     |     | Longitude |     |     | Outfall Size | Receiving Water           |
|------------|---------------------------------|----------|-----|-----|-----------|-----|-----|--------------|---------------------------|
|            |                                 | DEG      | MIN | SEC | DEG       | MIN | SEC |              |                           |
| OB-735     | SOUTH BRIDGE STREET             | 40       | 31  | 28  | 75        | 31  | 24  | 36" DIA      | ARTHUR KILL               |
| OB-736     | HYLAN BOULEVARD & BERMUDA PLACE | 40       | 34  | 56  | 75        | 34  | 12  | 24" DIA      | River Stream              |
| OB-737     | HYLAN BOULEVARD & BERMUDA PLACE | 40       | 34  | 57  | 75        | 34  | 10  | 24" DIA      | Pond                      |
| OB-738     | PURDY PLACE                     | 40       | 30  | 45  | 75        | 30  | 22  | 5' X 3'      | LEMON CREEK               |
| OB-739     | AMBOY ROAD                      | 40       | 31  | 10  | 75        | 31  | 17  | 12" DIA      | MARSH                     |
| OB-740     | HYLAN BLVD & BUFFALO STREET     | 40       | 31  | 12  | 75        | 52  | 22  | 20" DIA      | GREAT KILLS HARBOR        |
| OB-741     | AULTMAN AVE & ST GEORGE RD      | 40       | 34  | 31  | 74        | 8   | 13  | 18" DIA      | LIGHTHOUSE HILL STREAM    |
| OB-742     | SIGNS ROAD                      | 40       | 36  | 9   | 75        | 36  | 42  | 36" DIA      | MARSH                     |
| OB-743     | NUGENT STREET                   | 40       | 34  | 38  | 75        | 34  | 6   | 3.5' X 3'    | Stream wider than 8 feet  |
| OB-744     | LINCOLN AVENUE                  | 40       | 34  | 32  | 75        | 34  | 55  | 60" DIA      | Stream wider than 8 feet  |
| OB-745     | AMBOY ROAD                      | 40       | 31  | 16  | 75        | 31  | 56  | 24" DIA      | MARSH                     |
| OB-746     | OCEANIC AVENUE                  | 40       | 31  | 58  | 75        | 31  | 58  | 20" DIA      | RARITAN BAY               |
| OB-747     | GRANTWOOD AVENUE                | 40       | 33  | 18  | 75        | 33  | 2   | 48" DIA      | MARSH                     |
| OB-748     | HUGUENOT AVENUE                 | 40       | 31  | 30  | 75        | 31  | 47  | 15" DIA      | MARSH                     |
| OB-749     | IONIA AVENUE                    | 40       | 32  | 30  | 75        | 32  | 0   | 4.5' X 11'   | Stream wider than 8 feet  |
| OB-750     | KINGDOM AVENUE                  | 40       | 31  | 35  | 75        | 31  | 51  | 24" DIA      | MARSH                     |
| OB-751     | COLON STREET                    | 40       | 31  | 51  | 75        | 31  | 50  | 20" DIA      | Stream wider than 8 feet  |
| OB-752     | SHOTWELL AVE                    | 40       | 33  | 18  | 75        | 49  | 5   | 42" DIA      | ARDEN HEIGHTS WOODS MARSH |

| Outfall ID | Outfall Location                        | Latitude |     |     | Longitude |     |     | Outfall Size | Receiving Water          |
|------------|---|----------|-----|-----|-----------|-----|-----|--------------|--------------------------|
|            |   | DEG      | MIN | SEC | DEG       | MIN | SEC |              |                          |
| OB-753     | LIPSETT AVENUE                          | 40       | 32  | 4   | 75        | 32  | 33  | 30" DIA      | MARSH                    |
| OB-754     | EDGE GROVE AVENUE                       | 40       | 32  | 30  | 75        | 32  | 4'  | 4.5' X 11'   | Stream wider than 8 feet |
| OB-755     | CARLTON BOULEVARD & JEFFERSON BOULEVARD | 40       | 32  | 34  | 75        | 32  | 13  | 20" DIA      | Stream wider than 8 feet |
| OB-756     | WOODROW ROAD & SHOTWELL AVENUE          | 40       | 33  | 21  | 75        | 33  | 4   | 20" DIA      | MARSH                    |
| OB-757     | SHELDON AVENUE                          | 40       | 32  | 37  | 75        | 32  | 43  | 7.6' X 5.8'  | MARSH                    |
| OB-758     | FINGAL STREET                           | 40       | 32  | 11  | 75        | 32  | 39  | 20" DIA      | MARSH                    |
| OB-759     | ARDEN AVENUE & SNEDEN AVE               | 40       | 32  | 29  | 75        | 32  | 45  | 20" DIA      | Pond                     |
| OB-760     | ARDEN AVENUE & SNEDEN AVE               | 40       | 32  | 29  | 75        | 32  | 45  | 2.5' X 16'   | Pond                     |
| OB-761     | LACONIA AVENUE                          | 40       | 34  | 52  | 75        | 34  | 20  | 12" DIA      | River Stream             |
| OB-762     | MASON AVENUE                            | 40       | 34  | 48  | 75        | 34  | 26  | 42" DIA      | River Stream             |
| OB-764     | GRAHAM BOULEVARD                        | 40       | 34  | 31  | 75        | 34  | 51  | 45" DIA      | River Stream             |
| OB-765     | MILL CREEK                              | 40       | 31  | 15  | 74        | 13  | 19  | 5' x 3'      | MILL CREEK               |
| OB-766     | ARDEN AVE                               | 40       | 32  | 46  | 74        | 10  | 47  | 48" DIA      | ANNADALE STREAM          |
| OB-767     | ARDEN AVE                               | 40       | 32  | 46  | 74        | 10  | 47  | 48" DIA      | ANNADALE STREAM          |
| OB-768     | ARDEN AVE                               | 40       | 32  | 48  | 74        | 10  | 42  | 12" DIA      | ANNADALE STREAM          |
| OB-769     | GRANTWOOD AVE                           | 40       | 32  | 53  | 74        | 10  | 33  | 36" DIA      | ANNADALE STREAM          |
| OB-770     | GRANTWOOD AVE                           | 40       | 32  | 53  | 74        | 10  | 32  | 24" DIA      | ANNADALE STREAM          |
| OB-771     | ARTHUR KILL ROAD                        | 40       | 34  | 20  | 74        | 8   | 48  | 18" DIA      | LATOURETTE PARK RIVER    |
| OB-772     | SHADYSIDE AVE & WOODVALE AVE            | 40       | 31  | 17  | 74        | 12  | 29  | 10" DIA      | LEMON CREEK MARSH        |

| Outfall ID | Outfall Location               | Latitude |     |     | Longitude |     |     | Outfall Size | Receiving Water                          |
|------------|--------------------------------|----------|-----|-----|-----------|-----|-----|--------------|--|
|            |                                | DEG      | MIN | SEC | DEG       | MIN | SEC |              |  |
| OB-773     | BAYVIEW AVENUE                 | 40       | 31  | 18  | 74        | 12  | 17  | 4' X 4'      | LEMON CREEK                              |
| OB-774     | GOFF AVE                       | 40       | 31  | 40  | 74        | 12  | 46  | 38" x 24"    | MARSH                                    |
| OB-775     | BALSAM PL & GERVIL ST          | 40       | 32  | 54  | 74        | 12  | 45  | 48" DIA      | WOODBROOKE ESTATES COMMUNITY PARK STREAM |
| OB-776     | MAGUIRE AVE & MC BAIN AVE      | 40       | 32  | 35  | 74        | 12  | 42  | 6.3' x 2'    | ROSSVILLE POND                           |
| OB-777     | HUGUENOT AVE & ARTHUR KILL RD  | 40       | 33  | 20  | 74        | 12  | 10  | 6.3' x 4'    | ARTHUR KILL STREAM                       |
| OB-778     | LEMON CREEK PARK               | 40       | 31  | 6   | 74        | 11  | 57  | 42" x 2'     | LEMON CREEK MARSH                        |
| OB-779     | BMP LC-15 (Lemon Creek)        | 40       | 31  | 22  | 74        | 12  | 4   | 30" DIA      | LEMON CREEK MARSH                        |
| OB-780     | BMP LC-17 (Lemon Creek)        | 40       | 31  | 22  | 74        | 12  | 0   | 4' X 3'      | LEMON CREEK MARSH                        |
| OB-781     | BMP LC-18 (Lemon Creek)        | 40       | 31  | 12  | 74        | 12  | 0   | 42" x 2'     | LEMON CREEK MARSH                        |
| OB-782     | FOREST HILL RD & YUKON AVE     | 40       | 34  | 26  | 74        | 9   | 49  | 18" DIA      | LATOURETTE PARK STREAM                   |
| OB-783     | ROBERTS DRIVE                  | 40       | 33  | 32  | 74        | 6   | 41  | 30" DIA      | GREAT KILLS PARK MARSH                   |
| OB-784     | HYLAN BLVD                     | 40       | 31  | 25  | 74        | 11  | 15  | 15" DIA      | WOLFE'S POND PARK MARSH                  |
| OB-785     | LUTEN AVE                      | 40       | 31  | 26  | 74        | 11  | 21  | 3.75' x 2.4' | WOLFE'S POND PARK MARSH                  |
| OB-786     | BARCLAY AVE & SANDBORN ST      | 40       | 31  | 59  | 74        | 10  | 17  | 12" DIA      | BLUE HERON PARK POND                     |
| OB-787     | MERRICK AVE DEAD END           | 40       | 36  | 6   | 74        | 6   | 29  | 24" DIA      | Reed's Basket Willow Swamp Park          |
| OB-788     | RICHMOND RD & INDEPENDENCE AVE | 40       | 34  | 25  | 74        | 10  | 13  | 24" DIA      | MARSH                                    |
| OB-789     | RICHMOND RD & FOREST HILL RD   | 40       | 34  | 17  | 74        | 10  | 13  | 24" DIA      | MARSH                                    |
| OB-790     | ROSSVILLE AVE                  | 40       | 32  | 35  | 74        | 12  | 31  | 8" DIA       | MARSH                                    |
| OB-772     | SHADYSIDE AVE & WOODVALE AVE   | 40       | 31  | 17  | 74        | 12  | 29  | 10" DIA      | LEMON CREEK MARSH                        |

| Owls Head  |                                 |          |     |     |           |     |     |                    |                    |                       |      |     |                  |
|------------|---------------------------------|----------|-----|-----|-----------|-----|-----|--------------------|--------------------|-----------------------|------|-----|------------------|
| Outfall ID | Outfall Location                | Latitude |     |     | Longitude |     |     | Outfall Size       | Receiving Water    | Contributors          | Boom | Net | Telemetry        |
|            |                                 | DEG      | MIN | SEC | DEG       | MIN | SEC |                    |                    |                       |      |     |                  |
| OH-001     | OWLSHEAD WRRF OUTFALL           | 40       | 38  | 31  | 74        | 2   | 14  | 96" DIA            | UPPER NEW YORK BAY |                       |      |     |                  |
| OH-002     | 64TH ST (REG #6A,B,C)           | 40       | 38  | 42  | 74        | 2   | 51  | 3BL 7' 6" X 8' 10" | UPPER NEW YORK BAY | REG #6A, 6B, 6C       |      |     | YES (ON 6C)      |
| OH-003     | 49TH ST (REG #7A,B,C)           | 40       | 39  | 10  | 74        | 1   | 17  | 11' X 8' FT        | UPPER NEW YORK BAY | REG #7A, 7B, 7C       |      |     | YES (ON 7A)      |
| OH-004     | 43RD ST (REG #7D)               | 40       | 39  | 20  | 74        | 1   | 1   | 6' X 4'            | UPPER NEW YORK BAY | REG #7D, 19TH ST, PS  |      |     | YES              |
| OH-005     | CARROLL ST BRIDGE               | 40       | 40  | 41  | 73        | 59  | 20  | 42" DIA            | GOWANUS CANAL      | 3RD AVE SEWER RELIEF  |      |     |                  |
| OH-006     | 19TH ST (NORTH SIDE)            | 40       | 40  | 3   | 74        | 0   | 2   | 36" DIA            | GOWANUS CANAL      | 3RD AVE SEWER RELIEF  |      |     |                  |
| OH-007     | 2ND AVE                         | 40       | 40  | 32  | 73        | 59  | 27  | 78" DIA            | GOWANUS CANAL      | 2ND AVE PS.           |      |     |                  |
| OH-015     | 17TH AVE (REG #9A, B, C)        | 40       | 36  | 5   | 74        | 1   | 44  | 4BL 14' 6" X 10'   | GRAVESEND BAY      | REG #9A, 9B, 9C       |      |     | YES (ON 9A & 9B) |
| OH-017     | 92ND ST (REG #1)                | 40       | 37  | 14  | 74        | 2   | 30  | 3BL 7' 4" X 7' 4"  | UPPER NEW YORK BAY | REG #1                |      |     | YES              |
| OH-018     | 79TH ST (REG #3)                | 40       | 37  | 54  | 74        | 2   | 25  | 12' X 7'           | UPPER NEW YORK BAY | REG #2, 3             |      |     | YES (ON 3)       |
| OH-019     | 71ST ST (REG #4)                | 40       | 38  | 13  | 74        | 2   | 16  | 48" DIA            | UPPER NEW YORK BAY | REG #4                |      |     | YES              |
| OH-020     | BAY RIDGE AVE (REG #5)          | 40       | 38  | 21  | 74        | 2   | 12  | 3' X 3' FT         | UPPER NEW YORK BAY | REG #5                |      |     |                  |
| OH-021     | W 15TH ST                       | 40       | 34  | 60  | 73        | 59  | 2   | 3BL 15' X 9' 9"    | CONEY ISLAND CREEK | REG #10, 11, AVEV PS. | YES  |     | YES (ON 10 & 11) |
| OH-022     | 32ND ST (BUSH TERMINAL COMPLEX) | 40       | 39  | 36  | 74        | 0   | 29  | 11' X 6' FT        | GOWANUS BAY        | 2ND AVE SEWER RELIEF  |      |     |                  |
| OH-024     | 23RD ST                         | 40       | 39  | 49  | 74        | 0   | 1   | 3' 6" X 2' 3"      | GOWANUS BAY        | 3RD AVE SEWER RELIEF  |      |     |                  |
| OH-025     | 29TH ST (BUSH TERMINAL COMPLEX) | 40       | 39  | 43  | 74        | 0   | 23  | 66" DIA            | GOWANUS BAY        | BUSH TERMINAL PS      |      |     |                  |
| OH-026     | 22ND ST                         | 40       | 39  | 51  | 73        | 60  | 59  | 36" DIA            | GOWANUS BAY        | 3RD AVE SEWER RELIEF  |      |     |                  |

| Outfall ID | Outfall Location | Latitude |     |     | Longitude |     |     | Outfall Size     | Receiving Water    |
|------------|------------------|----------|-----|-----|-----------|-----|-----|------------------|--------------------|
|            |                  | DEG      | MIN | SEC | DEG       | MIN | SEC |                  |                    |
| OH-606     | W 15TH ST        | 40       | 35  | 0   | 73        | 59  | 2   | 5' X 5'          | CONEY ISLAND CREEK |
| OH-607     | E/O 9TH ST       | 40       | 40  | 27  | 73        | 60  | 47  | 12" DIA          | GOWANUS CANAL      |
| OH-610     | 20TH AVE         | 40       | 35  | 51  | 74        | 0   | 20  | 3' 6" X 3' 6" FT | GRAVESEND BAY      |
| OH-611     | BAY PARKWAY      | 40       | 35  | 39  | 74        | 0   | 7   | 60" DIA          | GRAVESEND BAY      |
| OH-612     | 25TH AVE         | 40       | 35  | 24  | 73        | 60  | 55  | 8' X 8'          | GRAVESEND BAY      |

| Outfall ID | Outfall Location               | Latitude |     |     | Longitude |     |     | Outfall Size  | Receiving Water    |
|------------|--------------------------------|----------|-----|-----|-----------|-----|-----|---------------|--------------------|
|            |                                | DEG      | MIN | SEC | DEG       | MIN | SEC |               |                    |
| OH-613     | 15TH AVE                       | 40       | 36  | 9   | 74        | 1   | 7   | 24" DIA       | GRAVESEND BAY      |
| OH-614     | 27TH AVE (S/O BELT PARKWAY)    | 40       | 35  | 14  | 73        | 60  | 33  | 54" DIA       | GRAVESEND BAY      |
| OH-615     | BAY 43RD ST (S/O BELT PARKWAY) | 40       | 35  | 20  | 73        | 60  | 35  | 5' 6" X 5' 6" | GRAVESEND BAY      |
| OH-616     | 21ST ST                        | 40       | 39  | 55  | 74        | 0   | 3   | 24" DIA       | GOWANUS BAY        |
| OH-619     | 39TH ST                        | 40       | 39  | 27  | 74        | 0   | 52  | 48" DIA       | UPPER NEW YORK BAY |

| Port Richmond |                                    |          |     |     |           |     |     |                   |                    |              |      |     |           |
|---------------|------------------------------------|----------|-----|-----|-----------|-----|-----|-------------------|--------------------|--------------|------|-----|-----------|
| Outfall ID    | Outfall Location                   | Latitude |     |     | Longitude |     |     | Outfall Size      | Receiving Water    | Contributors | Boom | Net | Telemetry |
|               |                                    | DEG      | MIN | SEC | DEG       | MIN | SEC |                   |                    |              |      |     |           |
| PR-001        | PORT RICHMOND WRRF OUTFALL         | 40       | 38  | 29  | 74        | 7   | 29  | 96" DIA           | KILL VAN KULL      |              |      |     |           |
| PR-002        | E/O TAYLOR ST                      | 40       | 38  | 24  | 74        | 7   | 27  | 20" DIA           | KILL VAN KULL      | REG #R-34    |      |     |           |
| PR-003        | BROADWAY                           | 40       | 38  | 30  | 74        | 7   | 7   | 15" DIA           | KILL VAN KULL      | REG #R-33    |      |     |           |
| PR-004        | BARDAVE                            | 40       | 38  | 44  | 74        | 7   | 32  | 18" DIA           | KILL VAN KULL      | REG #R-29    |      |     |           |
| PR-005        | 30' N/O KISSEL AVE                 | 40       | 38  | 44  | 74        | 6   | 24  | 20" DIA           | KILL VAN KULL      | REG #R-28    |      |     |           |
| PR-006        | CLINTON AVE                        | 40       | 38  | 43  | 74        | 6   | 54  | 36" DIA           | KILL VAN KULL      | REG #R-23    |      |     |           |
| PR-007        | SAILORS NUG HARBOR (BRENTWOOD AVE) | 40       | 38  | 44  | 74        | 6   | 7   | 15" DIA           | KILL VAN KULL      | REG #R-27    |      |     |           |
| PR-008        | FRANKLIN AVE                       | 40       | 38  | 46  | 74        | 6   | 35  | 15" DIA           | KILL VAN KULL      | REG #R-21    |      |     |           |
| PR-009        | JERSEY ST                          | 40       | 38  | 50  | 74        | 5   | 22  | 6' X 4' 6"        | KILL VAN KULL      | REG #R-20    |      |     |           |
| PR-010        | ST. PETERS PLACE                   | 40       | 38  | 55  | 74        | 5   | 3   | 30" DIA           | UPPER NEW YORK BAY | REG #R-19    |      |     |           |
| PR-011        | HAMILTON AVE                       | 40       | 38  | 49  | 74        | 5   | 36  | 30" DIA           | UPPER NEW YORK BAY | REG #R-18    |      |     |           |
| PR-013        | VICTORY BOULEVARD                  | 40       | 38  | 17  | 74        | 4   | 21  | 7' 1" X 4' 1"     | UPPER NEW YORK BAY | REG #R-17    |      |     |           |
| PR-014        | BALTIC ST                          | 40       | 37  | 51  | 74        | 4   | 23  | DBL 6' 2" X 3' 6" | UPPER NEW YORK BAY | REG #R-15    |      |     |           |
| PR-015        | S/O DOCK ST                        | 40       | 37  | 33  | 74        | 4   | 21  | 3' 6" X 2' 4"     | UPPER NEW YORK BAY | REG #R-11    |      |     |           |
| PR-016        | MARINE HOSPITAL                    | 40       | 37  | 28  | 74        | 4   | 20  | 20" DIA           | UPPER NEW YORK BAY | REG #R-10    |      |     |           |
| PR-017        | NORWOOD AVE                        | 40       | 37  | 21  | 74        | 4   | 14  | 48" DIA           | UPPER NEW YORK BAY | REG #R-9     |      |     |           |

Port Richmond (Cont.)

| Outfall ID | Outfall Location  | Latitude |     |     | Longitude |     |     | Outfall Size          | Receiving Water    | Contributors | Boom | Net | Telemetry |
|------------|-------------------|----------|-----|-----|-----------|-----|-----|-----------------------|--------------------|--------------|------|-----|-----------|
|            |                   | DEG      | MIN | SEC | DEG       | MIN | SEC |                       |                    |              |      |     |           |
| PR-018     | N/O CAMDEN ST     | 40       | 37  | 15  | 74        | 4   | 9   | 36" DIA               | UPPER NEW YORK BAY | REG #R-8     |      |     |           |
| PR-019     | LYNHURST AVE      | 40       | 37  | 10  | 74        | 4   | 2   | 13' X 6' FT           | UPPER NEW YORK BAY | REG #R-7     |      |     | YES       |
| PR-020     | N/O SYLVA LANE    | 40       | 37  | 2   | 74        | 4   | 53  | 15" DIA               | UPPER NEW YORK BAY | REG #R-5     |      |     |           |
| PR-021     | HYLAN BOULEVARD   | 40       | 36  | 56  | 74        | 4   | 47  | 10" DIA               | UPPER NEW YORK BAY | REG #R-4     |      |     |           |
| PR-023     | NAUTILUS ST       | 40       | 36  | 43  | 74        | 4   | 35  | 6'6" X 5'11"          | UPPER NEW YORK BAY | REG #R-3     |      |     |           |
| PR-023A    | NAUTILUS ST       | 40       | 36  | 43  | 74        | 4   | 36  | 20" DIA               | UPPER NEW YORK BAY | REG #R-2     |      |     |           |
| PR-023B    | NAUTILUS ST       | 40       | 36  | 43  | 74        | 4   | 36  | 20" DIA               | UPPER NEW YORK BAY | REG #R-1     |      |     |           |
| PR-024     | W/O HOLLAND AVE   | 40       | 38  | 41  | 74        | 10  | 18  | 16" DIA               | KILL VAN KULL      | REG #R-1W    |      |     |           |
| PR-025     | SOUTH AVE         | 40       | 38  | 28  | 74        | 10  | 57  | 10" DIA               | KILL VAN KULL      | REG #R-2W    |      |     |           |
| PR-026     | HARBOR ROAD       | 40       | 38  | 18  | 74        | 10  | 37  | 52" DIA               | KILL VAN KULL      | REG #R-3W    |      |     |           |
| PR-027     | UNION AVE         | 40       | 38  | 17  | 74        | 9   | 28  | 12" DIA               | KILL VAN KULL      | REG #R-4W    |      |     |           |
| PR-028     | HOUSEMAN AVE      | 40       | 38  | 15  | 74        | 9   | 55  | DBL 5' 11-1/2" X 2'9" | KILL VAN KULL      | REG #R-5W    |      |     |           |
| PR-029     | NICHOLAS ST       | 40       | 38  | 27  | 74        | 8   | 21  | DBL 8' 6" X 6"        | KILL VAN KULL      | REG #R-6W    |      |     | YES       |
| PR-030     | SYLVATON TERRANCE | 40       | 37  | 5   | 74        | 4   | 55  | 16" DIA               | UPPER NEW YORK BAY | REG #R-6     |      |     |           |
| PR-031     | CANAL ST          | 40       | 37  | 37  | 74        | 4   | 22  | DBL 3'1" X 3'6"       | UPPER NEW YORK BAY | REG #13      |      |     | YES       |
| PR-032     | VICTORY BOULEVARD | 40       | 38  | 14  | 74        | 4   | 14  | 24" DIA               | UPPER NEW YORK BAY | REG #16      |      |     |           |
| PR-033     | ELIZABETH AVE     | 40       | 38  | 38  | 74        | 7   | 47  | 12" DIA               | KILL VAN KULL      | REG #R-31    |      |     |           |
| PR-034     | BEMENT AVE        | 40       | 38  | 37  | 74        | 7   | 50  | 12" DIA               | KILL VAN KULL      | REG #R-32    |      |     |           |
| PR-035     | BODINE ST         | 40       | 38  | 25  | 74        | 8   | 34  | 18" DIA               | KILL VAN KULL      | REG #R-35    |      |     | YES       |
| PR-036     | RECTOR ST         | 40       | 38  | 15  | 74        | 8   | 40  | 9' X 4'               | KILL VAN KULL      | REG #R-36    |      |     |           |
| PR-037     | PORT RICHMOND AVE | 40       | 38  | 28  | 74        | 8   | 52  | 5' X 3'               | KILL VAN KULL      | REG #R-37    |      |     |           |

| Outfall ID | Outfall Location                              | Latitude |     |     | Longitude |     |     | Outfall Size           | Receiving Water             |
|------------|---|----------|-----|-----|-----------|-----|-----|------------------------|-----------------------------|
|            |   | DEG      | MIN | SEC | DEG       | MIN | SEC |                        |                             |
| PR-603     | DAVIS AVE                                     | 40       | 38  | 42  | 74        | 7   | 39  | 84" DIA                | KILL VAN KULL               |
| PR-612     | SIGNS ROAD<br>(100' W/O<br>DINSMORE ST)       | 40       | 36  | 8   | 74        | 10  | 18  | DBL 12" X<br>5' 6"     | MAIN CREEK                  |
| PR-613     | RECTOR ST                                     | 40       | 38  | 15  | 74        | 8   | 40  | DBL 13' 10"<br>X 5' 4" | KILL VAN KULL               |
| PR-614     | CLOVE ROAD                                    | 40       | 37  | 6   | 74        | 6   | 29  | 7' X 4' 8"             | CLOVE LAKE                  |
| PR-615     | LOGAN AVE                                     | 40       | 36  | 56  | 74        | 6   | 23  | 8' 10" X<br>5' 8"      | CLOVE LAKE                  |
| PR-616     | MANOR ROAD                                    | 40       | 36  | 53  | 74        | 7   | 26  | 36" DIA                | CLOVE LAKE                  |
| PR-617     | CLOVE ROAD                                    | 40       | 37  | 23  | 74        | 7   | 5   | 42" DIA                | MARTLING LAKE               |
| PR-618     | FOREST AVE                                    | 40       | 37  | 39  | 74        | 7   | 21  | 36" DIA                | BROOKS LAKE                 |
| PR-619     | FOREST AVE                                    | 40       | 37  | 39  | 74        | 7   | 22  | 12' X 5' 6"            | BROOKS LAKE                 |
| PR-621     | GARRICK ST                                    | 40       | 37  | 21  | 74        | 10  | 16  | DBL 16" X<br>6' 6"     | OLD PLACE<br>CREEK          |
| PR-622     | END OF<br>SWAN ST<br>AND MURRAY<br>HULBERT AV | 40       | 38  | 6   | 74        | 4   | 23  | 21" DIA                | KILL VAN KULL               |
| PR-623     | RICHMOND TER<br>AND TOMPKINS<br>CT            | 40       | 38  | 26  | 74        | 7   | 21  | 96" X 60"              | KILL VAN KULL               |
| PR-624     | BEMENT AVE<br>AND RICHMOND<br>TER             | 40       | 38  | 37  | 74        | 7   | 50  | 48"                    | KILL VAN KULL               |
| PR-625     | RICHMOND<br>TERRACE &<br>BROADWAY             | 40       | 38  | 26  | 75        | 38  | 54  | 10' X 4.5'             | KILL VAN KULL               |
| PR-626     | KILL VAN KULL<br>SHORELINE                    | 40       | 38  | 43  | 75        | 54  | 5   | 12" DIA                | KILL VAN KULL               |
| PR-627     | LAFAYETTE<br>AVENUE                           | 40       | 38  | 43  | 75        | 38  | 14  | 54" DIA                | Stream wider than<br>8 feet |
| PR-628     | FOREST HILL<br>ROAD                           | 40       | 35  | 58  | 75        | 35  | 35  | 18" DIA                | Pond                        |
| PR-629     | HIRSCH LANE                                   | 40       | 36  | 53  | 75        | 36  | 53  | 12" DIA                | MARSH                       |
| PR-630     | GRAHAM<br>AVENUE                              | 40       | 36  | 50  | 75        | 36  | 51  | 12" DIA                | MARSH                       |
| PR-631     | MEREDITH<br>AVENUE                            | 40       | 35  | 55  | 75        | 35  | 28  | 18" DIA                | MARSH                       |
| PR-632     | FOREST HILL RD<br>& FIELD ST                  | 40       | 35  | 38  | 74        | 8   | 36  | 3.75' x 2.4'           | WILLOW/BROK<br>WETLAND      |

Red Hook

| Outfall ID | Outfall Location            | Latitude |     |     | Longitude |     |     | Outfall Size  | Receiving Water    | Contributors | Boom               | Net | Telemetry |
|------------|-----------------------------|----------|-----|-----|-----------|-----|-----|---------------|--------------------|--------------|--------------------|-----|-----------|
|            |                             | DEG      | MIN | SEC | DEG       | MIN | SEC |               |                    |              |                    |     |           |
| RH-001     | RED HOOK WRRF OUTFALL       | 40       | 42  | 15  | 73        | 59  | 38  | 96" DIA       | NAVY YARD BASIN    |              |                    |     |           |
| RH-002     | HUDSON AVE ( REG # R-21A)   | 40       | 42  | 21  | 73        | 59  | 52  | 15" DIA       | EAST RIVER         | REG #R-21A   |                    |     | YES       |
| RH-003     | HUDSON AVE ( REG # R-21)    | 40       | 42  | 21  | 73        | 59  | 52  | 4' 6" X 7' 3" | EAST RIVER         | REG #R-21    |                    |     |           |
| RH-005     | GOLD ST ( REG # R-20A)      | 40       | 42  | 20  | 73        | 59  | 57  | 168" DIA      | EAST RIVER         | REG #R-20A   |                    |     | YES       |
| RH-006     | PEARL ST (REG # R-19A)      | 40       | 42  | 19  | 73        | 59  | 15  | 36" DIA       | EAST RIVER         | REG #R-19A   |                    |     |           |
| RH-007     | ADAMS ST (REG # R-19)       | 40       | 42  | 16  | 73        | 59  | 18  | 15" DIA       | EAST RIVER         | REG #R-19    |                    |     |           |
| RH-008     | WASHINGTON ST (REG # R-18A) | 40       | 42  | 18  | 73        | 59  | 23  | 60" DIA       | EAST RIVER         | REG #R-18A   |                    |     |           |
| RH-009     | MAIN ST ( REG # R-18)       | 40       | 42  | 16  | 73        | 59  | 26  | 2' X 2'       | EAST RIVER         | REG #R-18    |                    |     |           |
| RH-010     | ORANGEST (REG # R-16)       | 40       | 42  | 0   | 73        | 60  | 50  | 18" DIA       | EAST RIVER         | REG #R-16    |                    |     |           |
| RH-011     | MONTAGUE ST ( REG # R-15)   | 40       | 41  | 46  | 73        | 60  | 59  | 4' 0" X 4' 0" | EAST RIVER         | REG #R-15    |                    |     |           |
| RH-012     | CADMAN PLAZA (REG # R-17)   | 40       | 42  | 11  | 73        | 60  | 42  | 6' X 6' FT    | EAST RIVER         | REG #R-17    |                    |     |           |
| RH-013     | JORALEMON ST ( REG # R-14)  | 40       | 41  | 39  | 74        | 0   | 4   | 18" DIA       | EAST RIVER         | REG #R-14    |                    |     |           |
| RH-014     | ATLANTIC AVE ( REG # R-13)  | 40       | 41  | 29  | 74        | 0   | 3   | 24" DIA       | BUTTERMILK CHANNEL | REG #R-13    |                    |     |           |
| RH-016     | AMITY ST (REG # R-12)       | 40       | 41  | 26  | 74        | 0   | 3   | 8' 6" X 8' 6" | BUTTERMILK CHANNEL | REG #R-12    |                    |     |           |
| RH-018     | KANE ST (REG # R-11)        | 40       | 41  | 20  | 74        | 0   | 15  | 5' 7" X 3' 9" | BUTTERMILK CHANNEL | REG #R-11    |                    |     |           |
| RH-019     | HAMILTON AVE ( REG # R-9)   | 40       | 41  | 11  | 74        | 0   | 29  | 72" DIA       | BUTTERMILK CHANNEL | REG #R-9     | (HAMILTON AVEPS??) |     |           |
| RH-020     | DEGRAW ST ( REG # R-10)     | 40       | 41  | 12  | 74        | 0   | 20  | 18" DIA       | BUTTERMILK CHANNEL | REG #R-10    |                    |     |           |
| RH-021     | SACKETT ST ( REG # R-9A)    | 40       | 41  | 13  | 74        | 0   | 27  | 48" DIA       | BUTTERMILK CHANNEL | REG #R-9A    |                    |     |           |
| RH-022     | S/O BOWNE ST ( REG # R-8)   | 40       | 40  | 60  | 74        | 1   | 35  | 24" DIA       | BUTTERMILK CHANNEL | REG #R-8     |                    |     |           |
| RH-023     | COMMERCE ST ( REG # R-7)    | 40       | 40  | 57  | 74        | 1   | 38  | 24" DIA       | BUTTERMILK CHANNEL | REG #R-7     |                    |     |           |
| RH-024     | VERONA ST ( REG # R-6)      | 40       | 40  | 53  | 74        | 1   | 43  | 24" DIA       | BUTTERMILK CHANNEL | REG #R-6     |                    |     |           |
| RH-025     | PIONEER ST (REG # R-5)      | 40       | 40  | 50  | 74        | 1   | 47  | 30" DIA       | BUTTERMILK CHANNEL | REG #R-5     |                    |     |           |
| RH-028     | WOLCOTT ST ( REG # R-2)     | 40       | 40  | 50  | 74        | 1   | 4   | 72" DIA       | BUTTERMILK CHANNEL | REG #R-2     |                    |     | YES       |

**Red Hook (Cont.)**

| Outfall ID | Outfall Location                                   | Latitude |     |     | Longitude |     |     | Outfall Size       | Receiving Water    | Contributors                   | Boom | Net | Telemetry |
|------------|--|----------|-----|-----|-----------|-----|-----|--------------------|--------------------|--------------------------------|------|-----|-----------|
|            |  | DEG      | MIN | SEC | DEG       | MIN | SEC |                    |                    |                                |      |     |           |
| RH-029     | VAN BRUNT ST<br>(REG # R-1)                        | 40       | 40  | 25  | 74        | 1   | 2   | 24" DIA            | UPPER NEW YORK BAY | REG #R-1,VAN BLANT ST.PS       |      |     |           |
| RH-030     | HICKS ST   | 40       | 40  | 7   | 74        | 0   | 26  | 54" DIA            | GOWANUS BAY        | CSO-2                          |      |     |           |
| RH-030A    | W/O HENRY ST                                       | 40       | 40  | 7   | 74        | 0   | 25  | 54" DIA            | GOWANUS BAY        | CSO-2                          |      |     |           |
| RH-031     | CREAMER ST   | 40       | 40  | 17  | 73        | 60  | 56  | 72" DIA            | GOWANUS CANAL      | BOND-LORRAINE SWR RELIEF       |      |     |           |
| RH-033     | DOUGLASS ST<br>(REG # R-25)                        | 40       | 40  | 53  | 73        | 59  | 13  | 42" DIA            | GOWANUS CANAL      | REG #R-25                      | YES  |     |           |
| RH-034     | HEAD OF GOWANUS CANAL<br>(GOWANUS PUMPING STATION) | 40       | 40  | 54  | 73        | 59  | 13  | 4BL 10' X 10'      | GOWANUS CANAL      | GOWANUS PS                     | YES  |     |           |
| RH-035     | BOND ST  | 40       | 40  | 34  | 73        | 60  | 33  | DBL 24" DIA        | GOWANUS CANAL      | CSO-3,BOND-LORRAINE SWR RELIEF |      |     |           |
| RH-036     | PRESIDENT ST<br>(REG # R-23)                       | 40       | 40  | 44  | 73        | 59  | 19  | 18" DIA            | GOWANUS CANAL      | REG #R-22                      |      |     |           |
| RH-037     | SACKETT ST<br>(REG # R-23)                         | 40       | 40  | 48  | 73        | 59  | 16  | 18" DIA            | GOWANUS CANAL      | REG #R-23                      |      |     |           |
| RH-038     | DEGRAW ST<br>(REG # R-24)                          | 40       | 40  | 51  | 73        | 59  | 14  | 12' 0" X 5' 2-1/2" | GOWANUS CANAL      | REG #R-24                      |      |     |           |
| RH-040     | EAST RIVER & NAVY YARD                             | 40       | 42  | 12  | 73        | 59  | 39  | 72" DIA            | NAVY YARD BASIN    | REG #R-26                      |      |     |           |

| Outfall ID | Outfall Location         | Latitude |     |     | Longitude |     |     | Outfall Size | Receiving Water    |
|------------|--------------------------|----------|-----|-----|-----------|-----|-----|--------------|--------------------|
|            |                          | DEG      | MIN | SEC | DEG       | MIN | SEC |              |                    |
| RH-601     | GOWANUS CANAL & W 9TH ST | 40       | 40  | 28  | 73        | 60  | 47  | 12" DIA      | GOWANUS CANAL      |
| RH-602     | SULLIVAN ST              | 40       | 40  | 51  | 74        | 1   | 1   | 15" DIA      | BUTTERMILK CHANNEL |

| Rockaway   |  |          |     |     |           |     |     |              |                      |                                  |      |     |                |
|------------|--|----------|-----|-----|-----------|-----|-----|--------------|----------------------|----------------------------------|------|-----|----------------|
| Outfall ID | Outfall Location                         | Latitude |     |     | Longitude |     |     | Outfall Size | Receiving Water      | Contributors                     | Boom | Net | Telemetry      |
|            |  | DEG      | MIN | SEC | DEG       | MIN | SEC |              |                      |                                  |      |     |                |
| ROC-001    | ROCKAWAY WRRF OUTFALL                    | 40       | 35  | 4   | 73        | 50  | 47  | 72" DIA      | GRASS HASOCK CHANNEL |                                  |      |     |                |
| ROC-001A   | ROCKAWAY WRRF DISINFECTION SYSTEM BYPASS | 40       | 35  | 5   | 73        | 50  | 44  | 72" DIA      | GRASS HASOCK CHANNEL | PLANT DISINFECTION SYSTEM BYPASS |      |     |                |
| ROC-001B   | BEACH 106TH ST                           | 40       | 35  | 5   | 73        | 50  | 43  | 72" DIA      | GRASS HASOCK CHANNEL | REG # D-1.2 EMERGENCY BYPASS     |      |     | YES (ON 1 & 2) |

| Outfall ID | Outfall Location | Latitude |     |     | Longitude |     |     | Outfall Size   | Receiving Water      |
|------------|------------------|----------|-----|-----|-----------|-----|-----|----------------|----------------------|
|            |                  | DEG      | MIN | SEC | DEG       | MIN | SEC |                |                      |
| ROC-601    | BEACH 5TH ST     | 40       | 35  | 46  | 73        | 44  | 26  | 42" DIA        | HEMPSTEAD BAY        |
| ROC-611    | BEACH 147TH ST   | 40       | 34  | 29  | 73        | 52  | 55  | 48" DIA        | ROCKAWAY INLET       |
| ROC-614    | BEACH 145TH ST   | 40       | 34  | 32  | 73        | 52  | 49  | 48" DIA        | ROCKAWAY INLET       |
| ROC-617    | BEACH 141ST ST   | 40       | 34  | 38  | 73        | 52  | 38  | 48" DIA        | ROCKAWAY INLET       |
| ROC-618    | BEACH 140TH ST   | 40       | 34  | 40  | 73        | 52  | 35  | 20" DIA        | ROCKAWAY INLET       |
| ROC-619    | BEACH 139TH ST   | 40       | 34  | 41  | 73        | 52  | 33  | 48" DIA        | ROCKAWAY INLET       |
| ROC-624    | BEACH 136TH ST   | 40       | 34  | 45  | 73        | 51  | 24  | 60" DIA        | ROCKAWAY INLET       |
| ROC-625    | BEACH 130TH ST   | 40       | 34  | 54  | 73        | 51  | 8   | 7' 7" X 4' 10" | ROCKAWAY INLET       |
| ROC-627    | BEACH 126TH ST   | 40       | 34  | 56  | 73        | 51  | 54  | 54" DIA        | ROCKAWAY INLET       |
| ROC-629    | BEACH 121ST ST   | 40       | 34  | 54  | 73        | 51  | 35  | 5' X 3' 2"     | ROCKAWAY INLET       |
| ROC-630    | BEACH 118TH ST   | 40       | 34  | 54  | 73        | 50  | 25  | 8' X 6' 6"     | ROCKAWAY INLET       |
| ROC-631    | BEACH 106TH ST   | 40       | 35  | 5   | 73        | 50  | 43  | 60" DIA        | GRASS HASOCK CHANNEL |
| ROC-633    | BEACH 74TH ST    | 40       | 35  | 33  | 73        | 48  | 9   | 12' 6" X 4' FT | VERNAM BASIN         |
| ROC-634    | ELIZABETH AVE    | 40       | 35  | 43  | 73        | 48  | 13  | 24" DIA        | VERNAM BASIN         |
| ROC-635    | ELIZABETH AVE    | 40       | 35  | 46  | 73        | 47  | 21  | 42" DIA        | SOMMERVILLE BASIN    |

| Outfall ID | Outfall Location        | Latitude |     |     | Longitude |     |     | Outfall Size    | Receiving Water      |
|------------|-------------------------|----------|-----|-----|-----------|-----|-----|-----------------|----------------------|
|            |                         | DEG      | MIN | SEC | DEG       | MIN | SEC |                 |                      |
| ROC-636    | THURSBY AVE             | 40       | 35  | 43  | 73        | 47  | 21  | DBL 7' X 4'     | SOMMERVILLE BASIN    |
| ROC-637    | BEACH 40TH ST           | 40       | 35  | 56  | 73        | 46  | 26  | 7' X 5'         | GRASS HASOCK CHANNEL |
| ROC-638    | BEACH 38TH ST           | 40       | 35  | 54  | 73        | 46  | 16  | 54" DIA         | GRASS HASOCK CHANNEL |
| ROC-641    | EGMONT PLACE            | 40       | 36  | 44  | 73        | 46  | 54  | 54" DIA         | NEGRO BAR CHANNEL    |
| ROC-648    | BEACH 49TH ST           | 40       | 35  | 49  | 73        | 47  | 48  | 8' 6" X 5' FT   | CONCH BASIN          |
| ROC-649    | ALAMEDA AVE             | 40       | 35  | 52  | 73        | 47  | 53  | 66" DIA         | CONCH BASIN          |
| ROC-651    | FAR ROCKAWAY BOULEVARED | 40       | 35  | 53  | 73        | 46  | 5   | DBL 12' 9" X 6' | GRASS HASOCK CHANNEL |
| ROC-652    | DICKENS ST              | 40       | 36  | 37  | 73        | 46  | 35  | 24" DIA         | NEGRO BAR CHANNEL    |
| ROC-653    | BEACH 77TH ST           | 40       | 35  | 29  | 73        | 48  | 16  | 7' 6" X 4' 6"   | BARBADOES BASIN      |
| ROC-656    | BEACH 87TH ST           | 40       | 35  | 29  | 73        | 49  | 46  | 18" DIA         | GRASS HASOCK CHANNEL |
| ROC-657    | BEACH 84TH ST           | 40       | 35  | 32  | 73        | 49  | 35  | 11' X 4' 6"     | GRASS HASOCK CHANNEL |
| ROC-658    | BEACH 72ND ST           | 40       | 35  | 57  | 73        | 48  | 5   | 12" DIA         | GRASS HASOCK CHANNEL |
| ROC-659    | BEACH 68TH ST           | 40       | 35  | 58  | 73        | 48  | 52  | 16" DIA         | GRASS HASOCK CHANNEL |
| ROC-666    | CHURCH ROAD             | 40       | 36  | 16  | 73        | 49  | 5   | 18" DIA         | BROAD CHANNEL        |
| ROC-667    | CHURCH ROAD             | 40       | 36  | 19  | 73        | 49  | 5   | 24" DIA         | BROAD CHANNEL        |
| ROC-670    | FALCON AVE              | 40       | 35  | 54  | 73        | 46  | 7   | 9' X 4' FT      | GRASS HASOCK CHANNEL |
| ROC-637    | BEACH 40TH ST           | 40       | 35  | 56  | 73        | 46  | 26  | 7' X 5'         | GRASS HASOCK CHANNEL |
| ROC-638    | BEACH 38TH ST           | 40       | 35  | 54  | 73        | 46  | 16  | 54" DIA         | GRASS HASOCK CHANNEL |
| ROC-641    | EGMONT PLACE            | 40       | 36  | 44  | 73        | 46  | 54  | 54" DIA         | NEGRO BAR CHANNEL    |
| ROC-648    | BEACH 49TH ST           | 40       | 35  | 49  | 73        | 47  | 48  | 8' 6" X 5' FT   | CONCH BASIN          |
| ROC-649    | ALAMEDA AVE             | 40       | 35  | 52  | 73        | 47  | 53  | 66" DIA         | CONCH BASIN          |
| ROC-651    | FAR ROCKAWAY BOULEVARED | 40       | 35  | 53  | 73        | 46  | 5   | DBL 12' 9" X 6' | GRASS HASOCK CHANNEL |
| ROC-652    | DICKENS ST              | 40       | 36  | 37  | 73        | 46  | 35  | 24" DIA         | NEGRO BAR CHANNEL    |

| Outfall ID | Outfall Location                  | Latitude |     |     | Longitude |     |     | Outfall Size  | Receiving Water      |
|------------|-----------------------------------|----------|-----|-----|-----------|-----|-----|---------------|----------------------|
|            |                                   | DEG      | MIN | SEC | DEG       | MIN | SEC |               |                      |
| ROC-653    | BEACH 77TH ST                     | 40       | 35  | 29  | 73        | 48  | 16  | 7' 6" X 4' 6" | BARBADOES BASIN      |
| ROC-656    | BEACH 87TH ST                     | 40       | 35  | 29  | 73        | 49  | 46  | 18" DIA       | GRASS HASOCK CHANNEL |
| ROC-657    | BEACH 84TH ST                     | 40       | 35  | 32  | 73        | 49  | 35  | 11' X 4' 6"   | GRASS HASOCK CHANNEL |
| ROC-658    | BEACH 72ND ST                     | 40       | 35  | 57  | 73        | 48  | 5   | 12" DIA       | GRASS HASOCK CHANNEL |
| ROC-659    | BEACH 68TH ST                     | 40       | 35  | 58  | 73        | 48  | 52  | 16" DIA       | GRASS HASOCK CHANNEL |
| ROC-666    | CHURCH ROAD                       | 40       | 36  | 16  | 73        | 49  | 5   | 18" DIA       | BROAD CHANNEL        |
| ROC-667    | CHURCH ROAD                       | 40       | 36  | 19  | 73        | 49  | 5   | 24" DIA       | BROAD CHANNEL        |
| ROC-670    | FALCON AVE                        | 40       | 35  | 54  | 73        | 46  | 7   | 9' X 4' FT    | GRASS HASOCK CHANNEL |
| ROC-671    | BEACH 127TH ST                    | 40       | 34  | 56  | 73        | 51  | 57  | 5' 8" X 3' 7" | ROCKAWAY INLET       |
| ROC-672    | BEACH 125TH ST                    | 40       | 34  | 55  | 73        | 51  | 50  | 5' X 3' 2"    | ROCKAWAY INLET       |
| ROC-674    | BEACH 136TH ST                    | 40       | 34  | 47  | 73        | 51  | 22  | 5' X 3' 2"    | ROCKAWAY INLET       |
| ROC-675    | BEACH 134TH ST                    | 40       | 34  | 48  | 73        | 51  | 19  | 5' X 3' 2"    | ROCKAWAY INLET       |
| ROC-676    | BEACH 132ND ST                    | 40       | 34  | 51  | 73        | 51  | 13  | 54" DIA       | ROCKAWAY INLET       |
| ROC-677    | BEACH 128TH ST (REG # D-20)       | 40       | 34  | 56  | 73        | 51  | 1   | 18" DIA       | ROCKAWAY INLET       |
| ROC-678    | BEACH 124TH ST                    | 40       | 34  | 54  | 73        | 51  | 46  | 5' X 3' 2"    | ROCKAWAY INLET       |
| ROC-678    | BEACH 124TH ST                    | 40       | 34  | 54  | 73        | 51  | 46  | 5' X 3' 2"    | ROCKAWAY INLET       |
| ROC-679    | BEACH 122ND ST (REG # D-18)       | 40       | 34  | 54  | 73        | 51  | 39  | 5' X 3' 2"    | ROCKAWAY INLET       |
| ROC-680    | BEACH 108TH ST (REG # D-14)       | 40       | 35  | 3   | 73        | 50  | 52  | 6' X 4' FT    | GRASS HASOCK CHANNEL |
| ROC-684    | BEACH 137 ST AND BEACH CHANNEL DR | 40       | 34  | 44  | 73        | 51  | 27  | 60" X 38"     | ROCKAWAY INLET       |
| ROC-685    | BURCHELL AVE AND BARBADOES DR     | 40       | 35  | 45  | 73        | 48  | 15  | 12"           | VERNAM BASIN         |
| ROC-686    | CHANNEL RD AND E 14 RD            | 40       | 36  | 10  | 73        | 49  | 7   | 18"           | BROAD CHANNEL        |
| ROC-688    | THURSBY AVE                       | 40       | 35  | 43  | 73        | 47  | 27  | 13' X 5' FTRC | SOMMERVILLE BASIN    |
| ROC-689    | BEACH CHANNEL DR AND BEACH 138 ST | 40       | 34  | 42  | 73        | 52  | 30  | 53" X 34"     | ROCKAWAY INLET       |

| Outfall ID | Outfall Location  | Latitude |     |     | Longitude |     |     | Outfall Size    | Receiving Water              |
|------------|---|----------|-----|-----|-----------|-----|-----|-----------------|------------------------------|
|            |   | DEG      | MIN | SEC | DEG       | MIN | SEC |                 |                              |
| ROC-690    | E 9 RD AND LANARK RD  | 40       | 36  | 25  | 73        | 49  | 56  | 30" X 19"       | BROAD CHANNEL                |
| ROC-691    | BEACH CHANNEL SHORELINE   | 40       | 35  | 16  | 74        | 10  | 49  | 12" DIA         | GRASS HASOCK CHANNEL         |
| ROC-692    | BEACH CHANNEL SHORELINE   | 40       | 35  | 14  | 74        | 10  | 46  | 12" DIA         | GRASS HASOCK CHANNEL         |
| ROC-693    | BEACH 88th STREET   | 40       | 35  | 26  | 73        | 48  | 52  | 8'2" x 5'3"     | GRASS HASOCK CHANNEL         |
| ROC-694    | Dwight Ave - Norton Basin Shoreline   | 40       | 36  | 0   | 73        | 46  | 16  | 24" DIA         | GRASS HASOCK CHANNEL         |
| ROC-695    | Mott Basin Shoreline - North of Battery Rd and Chandler Street intersection (NAMEOKE PS EMERGENCY BYPASS) | 40       | 36  | 37  | 73        | 45  | 20  | DBL 9.5' x 4.5' | NEGRO BAR CHANNEL            |
| ROC-696    | BEACH 106TH STREET  | 40       | 35  | 5   | 73        | 49  | 42  | 36" DIA         | GRASS HASOCK CHANNEL         |
| ROC-697    | BEACH 98TH ST (REG # D-7,D-8,D-9,D-10,D-11)   | 40       | 35  | 12  | 73        | 49  | 16  | 36" DIA         | GRASS HASOCK CHANNEL         |
| ROC-698    | BEACH 98TH ST (REG # D-6)   | 40       | 35  | 13  | 73        | 49  | 16  | 24" DIA         | GRASS HASOCK CHANNEL         |
| ROC-699    | MOTT AVE  | 40       | 36  | 46  | 73        | 46  | 17  | 4" DIA          | GRASS HASOCK CHANNEL WETLAND |
| ROC-700    | MOTT AVE  | 40       | 36  | 27  | 73        | 45  | 45  | 12" DIA         | NEGRO BAR CHANNEL WETLAND    |
| ROC-701    | BEACH CHANNEL DR & ROCKAWAY FREEWAY   | 40       | 34  | 59  | 73        | 50  | 5   | 18" DIA         | GRASS HASOCK CHANNEL         |
| ROC-702    | 512 CROSS BAY BLVD  | 40       | 36  | 40  | 73        | 49  | 7   | 18" DIA         | MARSH                        |
| ROC-703    | ARDEN AVE   | 40       | 36  | 39  | 73        | 49  | 10  | 15" DIA         | BROAD CHANNEL                |
| ROC-704    | 525 CROSS BAY BLVD  | 40       | 36  | 39  | 73        | 49  | 10  | 15" DIA         | BROAD CHANNEL                |
| ROC-705    | 526 CROSS BAY BLVD  | 40       | 36  | 39  | 73        | 49  | 6   | 15" DIA         | MARSH                        |
| ROC-706    | BAYSWATER AVE (BAYSWATER PS EMERGENCY BYPASS)   | 40       | 36  | 26  | 73        | 46  | 12  | 60" DIA         | GRASS HASOCK CHANNEL         |
| ROC-707    | BEACH 3RD STREET (SEAGIRT PS EMERGENCY BYPASS)  | 40       | 35  | 51  | 73        | 44  | 19  | DBL 13' 6" X 5' | HEMPSTEAD BAY                |

Tallman Island

| Outfall ID | Outfall Location                     | Latitude |     |     | Longitude |     |     | Outfall Size       | Receiving Water | Contributors                     | Boom | Net | Telemetry             |
|------------|--------------------------------------|----------|-----|-----|-----------|-----|-----|--------------------|-----------------|----------------------------------|------|-----|-----------------------|
|            |                                      | DEG      | MIN | SEC | DEG       | MIN | SEC |                    |                 |                                  |      |     |                       |
| TI-001     | TALLMAN ISLAND WRRF OUTFALL          | 40       | 47  | 52  | 73        | 50  | 25  | 60" DIA            | EAST RIVER      |                                  |      |     |                       |
| TI-003     | N/O 7TH AVE (REG # 10A)              | 40       | 47  | 35  | 73        | 50  | 45  | 11" X 7"           | EAST RIVER      | REG #10A, 10B                    |      |     | YES (ON 10B)          |
| TI-004     | 151ST ST (REG # 11)                  | 40       | 47  | 50  | 73        | 49  | 47  | 42" DIA EGG        | EAST RIVER      | REG #11                          |      |     |                       |
| TI-005     | 154TH ST (REG # 12)                  | 40       | 47  | 47  | 73        | 48  | 24  | 24" DIA            | EAST RIVER      | REG #12                          |      |     |                       |
| TI-006     | 24TH AVE                             | 40       | 46  | 56  | 73        | 46  | 15  | 10' X 7' 6"        | LITTLE NECK BAY | 24 AVE P.S.                      |      |     |                       |
| TI-007     | NORTHERN BLVD                        | 40       | 45  | 47  | 73        | 45  | 7   | 18" DIA            | ALLEY CREEK     | OLD DOUG P.S.                    |      |     |                       |
| TI-008     | 46TH AVE (REG # 46, 47, 48, 49)      | 40       | 45  | 42  | 73        | 45  | 4   | 10' X 7' 6"        | ALLEY CREEK     | REG #46, 47, 48, 49              |      |     | YES (ON 46, 47, & 49) |
| TI-010     | ROOSEVELT AVE (REG # 30, 31, 40, 44) | 40       | 45  | 20  | 73        | 50  | 19  | 3BL 18' 6" X 10"   | FLUSHING CREEK  | REG #30, 31, 40, 44              | YES  |     | YES (ON 30 & 40)      |
| TI-011     | 32ND AVE (REG # 51 - 54)             | 40       | 45  | 57  | 73        | 50  | 21  | DB 96" DIA         | FLUSHING CREEK  | REG #9, 51, 52, 53, 54           |      | YES | YES (ON 9)            |
| TI-012     | 29TH AVE (REG # 9)                   | 40       | 46  | 19  | 73        | 51  | 59  | 10" DIA            | EAST RIVER      | 122ND ST P.S.                    |      |     |                       |
| TI-014     | 23RD AVE (REG # 7)                   | 40       | 46  | 43  | 73        | 51  | 58  | 12" DIA            | EAST RIVER      | REG #7                           |      |     |                       |
| TI-015     | 22ND AVE (REG # 6)                   | 40       | 46  | 49  | 73        | 51  | 1   | 12" DIA            | EAST RIVER      | REG #6                           |      |     |                       |
| TI-016     | 20TH AVE (REG # 5)                   | 40       | 46  | 54  | 73        | 51  | 57  | 60" DIA            | EAST RIVER      | REG #5                           |      |     |                       |
| TI-017     | 15TH AVE (REG # 4)                   | 40       | 47  | 1   | 73        | 51  | 29  | 12" DIA            | EAST RIVER      | REG #4                           |      |     |                       |
| TI-018     | 14TH AVE (REG # 3)                   | 40       | 47  | 8   | 73        | 52  | 32  | 7' 7" X 4' 10" EGG | EAST RIVER      | REG #3                           |      |     |                       |
| TI-019     | 9TH AVE (REG # 2)                    | 40       | 47  | 21  | 73        | 51  | 16  | 15" DIA            | EAST RIVER      | REG #2                           |      |     |                       |
| TI-022     | 40TH ROAD (REG # 55 - 58)            | 40       | 45  | 22  | 73        | 50  | 19  | 8' 6" X 6"         | FLUSHING CREEK  | REG #55, 56, 57, 58              | YES  |     |                       |
| TI-023     | CRYDERS LANE (REG # 13)              | 40       | 47  | 21  | 73        | 48  | 37  | 13' 6" X 8"        | EAST RIVER      | REG #13, CLEARVIEW P.S.          |      |     | YES (ON 13)           |
| TI-024     | 61ST AVE                             | 40       | 45  | 24  | 73        | 45  | 41  | DB 6' X 6"         | ALLEY CREEK     | NEW DOUG P.S.                    |      |     |                       |
| TI-025     | 400' SOUTH OF LIRR BRIDGE            | 40       | 45  | 51  | 73        | 45  | 10  | 52' 6" X 9' 0"     | ALLEY CREEK     | ALLEY CREEK CSO STORAGE FACILITY |      |     |                       |
| TI-026     | W/O 154TH STREET                     | 40       | 47  | 47  | 73        | 48  | 23  | 48" DIA            | EAST RIVER      | REG #                            |      |     |                       |

| Outfall ID | Outfall Location                | Latitude |     |     | Longitude |     |     | Outfall Size      | Receiving Water |
|------------|---------------------------------|----------|-----|-----|-----------|-----|-----|-------------------|-----------------|
|            |                                 | DEG      | MIN | SEC | DEG       | MIN | SEC |                   |                 |
| TI-601     | NORTHERN BOULEVARD (SOUTH SIDE) | 40       | 45  | 45  | 73        | 50  | 11  | 30" DIA           | FLUSHING CREEK  |
| TI-603     | NORTHERN BOULEVARD (NORTH SIDE) | 40       | 45  | 47  | 73        | 50  | 11  | 30" DIA           | FLUSHING CREEK  |
| TI-605     | 300' W/O WHITESTONE EXPRESSWAY  | 40       | 45  | 60  | 73        | 50  | 25  | DB 6' 9" X 4' 11" | FLUSHING CREEK  |
| TI-609     | 121ST ST                        | 40       | 47  | 46  | 73        | 51  | 47  | 36" DIA           | EAST RIVER      |
| TI-610     | 147TH ST                        | 40       | 47  | 52  | 73        | 49  | 26  | 48" DIA           | EAST RIVER      |
| TI-615     | 9TH AVE                         | 40       | 47  | 34  | 73        | 48  | 41  | 54" DIA           | EAST RIVER      |
| TI-616     | 12TH AVE                        | 40       | 47  | 30  | 73        | 48  | 42  | 24" DIA           | EAST RIVER      |
| TI-617     | 12TH ROAD                       | 40       | 47  | 26  | 73        | 48  | 40  | 18" DIA           | EAST RIVER      |
| TI-618     | 14TH AVE                        | 40       | 47  | 23  | 73        | 48  | 39  | 18" DIA           | EAST RIVER      |
| TI-619     | CRYDERS LANE                    | 40       | 47  | 21  | 73        | 48  | 38  | 18" DIA           | EAST RIVER      |
| TI-623     | 28TH AVE                        | 40       | 46  | 46  | 73        | 46  | 5   | 24" DIA           | LITTLE NECK BAY |
| TI-624     | 35TH AVE                        | 40       | 46  | 20  | 73        | 46  | 48  | 10' X 4'          | LITTLE NECK BAY |
| TI-631     | 31ST ROAD                       | 40       | 46  | 1   | 73        | 50  | 22  | 48" DIA           | FLUSHING CREEK  |
| TI-633     | 250' S/O 17TH AVE               | 40       | 47  | 9   | 73        | 46  | 26  | 54" DIA           | LITTLE NECK BAY |
| TI-634     | FORT TOTTEN SOUTH JETTY         | 40       | 47  | 28  | 73        | 47  | 54  | 24" DIA           | EAST RIVER      |
| TI-653     | SANDHILL ROAD                   | 40       | 46  | 19  | 73        | 45  | 39  | 48" DIA           | UDALL'S COVE    |
| TI-654     | 20' N/O NORTHERN BOULEVARD      | 40       | 45  | 49  | 73        | 45  | 6   | 54" DIA           | ALLEY CREEK     |
| TI-655     | 223RD ST & NORTHERN BOULEVARD   | 40       | 45  | 49  | 73        | 45  | 7   | 18" DIA           | ALLEY CREEK     |
| TI-656     | 39TH AVE                        | 40       | 46  | 8   | 73        | 45  | 16  | 60" DIA           | LITTLE NECK BAY |
| TI-658     | 233RD PLACE                     | 40       | 46  | 20  | 73        | 45  | 14  | 39" DIA           | LITTLE NECK BAY |
| TI-660     | 39TH AVE & 248TH ST             | 40       | 46  | 23  | 73        | 45  | 40  | 12" DIA           | AURORA POND (E) |
| TI-661     | 208TH ST                        | 40       | 47  | 26  | 73        | 47  | 2   | 30" DIA           | EAST RIVER      |
| TI-666     | 9TH AVE                         | 40       | 47  | 21  | 73        | 50  | 53  | 48" DIA           | EAST RIVER      |
| TI-670     | 100' N/O NORTH SHORE M.T.S.     | 40       | 46  | 16  | 73        | 51  | 56  | 83" X 53" EGG     | EAST RIVER      |
| TI-671     | W/O 8TH AVE                     | 40       | 47  | 23  | 73        | 51  | 16  | 36" DIA           | EAST RIVER      |
| TI-673     | FLUSHING BAY & 25TH AVE         | 40       | 46  | 37  | 73        | 51  | 57  | 48" DIA           | EAST RIVER      |

| Outfall ID | Outfall Location              | Latitude |     |     | Longitude |     |     | Outfall Size       | Receiving Water       |
|------------|-------------------------------|----------|-----|-----|-----------|-----|-----|--------------------|-----------------------|
|            |                               | DEG      | MIN | SEC | DEG       | MIN | SEC |                    |                       |
| TI-674     | 9TH AVE                       | 40       | 47  | 21  | 73        | 50  | 15  | 18" DIA            | EAST RIVER            |
| TI-675     | 131ST ST                      | 40       | 47  | 20  | 73        | 50  | 14  | 72" DIA            | EAST RIVER            |
| TI-676     | POWELLS COVE BLVD             | 40       | 47  | 32  | 73        | 50  | 12  | 4' 5" X 2' 10" EGG | EAST RIVER            |
| TI-677     | SANDHILL RD                   | 40       | 46  | 21  | 73        | 44  | 40  | 72" DIA            | UDALLS COVE PARK POND |
| TI-678     | 40 AVE & 247 ST               | 40       | 46  | 20  | 73        | 44  | 37  | 30" DIA            | UDALLS COVE PARK POND |
| TI-679     | BROOKSIDE ST & 34 AVE         | 40       | 46  | 35  | 73        | 44  | 40  | 5.5' x 2'          | UDALLS COVE PARK POND |
| TI-680     | POPPENHUSEN AV AND 115TH ST   | 40       | 47  | 28  | 73        | 51  | 10  | 5'6" x 3'0"        | EAST RIVER            |
| TI-681     | POPPENHUSEN AV AND COLLEGE PL | 40       | 47  | 36  | 73        | 50  | 55  | 4'6" x 3'6"        | EAST RIVER            |
| TI-682     | 20TH AVE                      | 40       | 46  | 53  | 73        | 49  | 52  | 48" DIA            | MARSH                 |
| TI-683     | 20TH AVE                      | 40       | 46  | 53  | 73        | 50  | 8   | 24" DIA            | MARSH                 |

Wards Island

| Outfall ID | Outfall Location                         | Latitude |     |     | Longitude |     |     | Outfall Size      | Receiving Water | Contributors | Boom | Net | Telemetry   |
|------------|--|----------|-----|-----|-----------|-----|-----|-------------------|-----------------|--------------|------|-----|-------------|
|            |  | DEG      | MIN | SEC | DEG       | MIN | SEC |                   |                 |              |      |     |             |
| WIB-053    | W 255TH ST (REG # R-3)                   | 40       | 54  | 18  | 73        | 55  | 50  | 7' X 4'           | HUDSON RIVER    | REG #R-3     |      |     |             |
| WIB-054    | W 248TH ST (REG # R-2)                   | 40       | 53  | 51  | 73        | 55  | 0   | 8' X 6'           | HUDSON RIVER    | REG #R-2     |      |     |             |
| WIB-055    | W 236TH ST (REG # R-1)                   | 40       | 53  | 18  | 73        | 55  | 12  | 6' X 4' 6"        | HUDSON RIVER    | REG #R-1     |      |     |             |
| WIB-056    | W 192ND ST (REG # 67)                    | 40       | 52  | 13  | 73        | 55  | 33  | DBL 15' X 9' 2"   | HARLEM RIVER    | REG #67      |      |     | YES         |
| WIB-057    | LANDING ROAD (REG # 66)                  | 40       | 51  | 47  | 73        | 55  | 46  | 66" DIA           | HARLEM RIVER    | REG #66      |      |     | YES         |
| WIB-058    | W 178TH ST (REG # 65)                    | 40       | 51  | 21  | 73        | 55  | 13  | 57" DIA           | HARLEM RIVER    | REG #65      |      |     |             |
| WIB-059    | W 176TH ST (REG # 64)                    | 40       | 51  | 2   | 73        | 55  | 27  | 72" DIA           | HARLEM RIVER    | REG #64      |      |     |             |
| WIB-060    | 200' N/O HIGH BRIDGE (REG # 62)          | 40       | 50  | 34  | 73        | 56  | 45  | DB 12' X 7' 4"    | HARLEM RIVER    | REG #62      |      |     |             |
| WIB-061    | WEST 167TH ST (REG # 61)                 | 40       | 50  | 25  | 73        | 56  | 50  | 42" DIA           | HARLEM RIVER    | REG #61      |      |     |             |
| WIB-062    | JEROME AVE (REG # 60)                    | 40       | 49  | 42  | 73        | 56  | 59  | 10' X 7'          | HARLEM RIVER    | REG #60, 60A |      |     | YES         |
| WIB-063    | S/O MCCOMBS DAM BRIDGE (REG # 72)        | 40       | 49  | 40  | 73        | 56  | 59  | 48" DIA           | HARLEM RIVER    | REG #72      |      |     |             |
| WIB-064    | E 149TH ST (REG # 59)                    | 40       | 49  | 11  | 73        | 56  | 56  | 7' X 7'           | HARLEM RIVER    | REG #59      |      |     |             |
| WIB-065    | PARK AVE (REG # 57)                      | 40       | 48  | 39  | 73        | 56  | 58  | 36" DIA           | HARLEM RIVER    | REG #57      |      |     |             |
| WIB-066    | THIRD AVE BRIDGE (NORTH SIDE) (REG # 56) | 40       | 48  | 29  | 73        | 56  | 54  | 4' X 2' 8" EGG    | HARLEM RIVER    | REG #56      |      |     |             |
| WIB-067    | LINCOLN AVE (REG # 55)                   | 40       | 48  | 23  | 73        | 56  | 50  | 60" DIA           | HARLEM RIVER    | REG #55      |      |     |             |
| WIB-068    | BROOK AVE (REG # 53, 54)                 | 40       | 48  | 9   | 73        | 55  | 23  | 12' X 9' 10"      | BRONX KILL      | REG #53, 54  |      |     | YES (ON 53) |
| WIB-069    | CYPRESS AVE (REG # 71)                   | 40       | 47  | 57  | 73        | 55  | 10  | 2' 2" X 3'        | BRONX KILL      | REG #71      |      |     |             |
| WIB-070    | E 134TH ST (REG # 70)                    | 40       | 47  | 56  | 73        | 54  | 30  | 4' 2" X 3' 2" EGG | EAST RIVER      | REG #70      |      |     |             |
| WIB-071    | E 138TH ST (REG # 69)                    | 40       | 48  | 5   | 73        | 54  | 22  | 60" DIA           | EAST RIVER      | REG #69      |      |     |             |
| WIB-072    | E 149TH ST (REG # 68)                    | 40       | 48  | 18  | 73        | 54  | 8   | 9' X 6' 6"        | EAST RIVER      | REG #68      |      |     | YES         |
| WIB-073    | SAINT ANN'S AVE (REG # 73)               | 40       | 48  | 6   | 73        | 55  | 18  | DBL 144" DIA      | BRONX KILL      | REG #73      |      |     |             |

Wards Island (Cont.)

| Outfall ID | Outfall Location                          | Latitude |     |     | Longitude |     |     | Outfall Size      | Receiving Water      | Contributors | Boom | Net | Telemetry   |
|------------|---|----------|-----|-----|-----------|-----|-----|-------------------|----------------------|--------------|------|-----|-------------|
|            |   | DEG      | MIN | SEC | DEG       | MIN | SEC |                   |                      |              |      |     |             |
| WIB-075    | E 138TH ST (REG # 58)                     | 40       | 48  | 50  | 73        | 56  | 56  | 12' X 6' 3"       | HARLEM RIVER         | REG #58      |      |     | YES         |
| WIB-076    | W/O BRADLEY TERRACE (REG # MH-1)          | 40       | 52  | 43  | 73        | 55  | 21  | 54" DIA           | SPUYTEN DUYVIL CREEK | REG #MH-1    |      |     |             |
| WIB-077    | TEUNISSEN PLACE (REG # MH-2)              | 40       | 52  | 32  | 73        | 55  | 58  | 8' 6" X 7'        | SPUYTEN DUYVIL CREEK | REG #MH-2    |      |     |             |
| WIB-078    | BROADWAY BRIDGE (NORTH SIDE) (REG # MH-3) | 40       | 52  | 27  | 73        | 55  | 39  | 5' X 4' 6"        | SPUYTEN DUYVIL CREEK | REG #MH-3    |      |     |             |
| WIB-079    | 750' N/O W 261ST ST (REG # R-4)           | 40       | 54  | 54  | 73        | 55  | 38  | 18" DIA           | HUDSON RIVER         | REG #R-4     |      |     |             |
| WIM-001    | WARDS ISLAND WRRF OUTFALL                 | 40       | 47  | 11  | 73        | 55  | 15  | 144" DIA          | EAST RIVER           |              |      |     |             |
| WIM-002    | E 73RD ST (REG # 1)                       | 40       | 45  | 59  | 73        | 57  | 2   | 3' 6" X 2' 0" EGG | EAST RIVER           | REG #1       |      |     |             |
| WIM-003    | E 74TH ST (REG # 2A, 2B)                  | 40       | 46  | 1   | 73        | 57  | 0   | 72" DIA           | EAST RIVER           | REG #2A, 2B  |      |     | YES (ON 2A) |
| WIM-004    | E 75TH ST (REG # 3)                       | 40       | 46  | 3   | 73        | 57  | 58  | 3' 6" X 2' 0" EGG | EAST RIVER           | REG #3       |      |     |             |
| WIM-005    | E 76TH ST (REG # 4)                       | 40       | 46  | 6   | 73        | 57  | 57  | 3' 6" X 2' 0" EGG | EAST RIVER           | REG #4       |      |     |             |
| WIM-006    | E 77TH ST (REG # 5)                       | 40       | 46  | 8   | 73        | 57  | 55  | 3' 6" X 3' 0" EGG | EAST RIVER           | REG #5       |      |     |             |
| WIM-007    | E 78TH ST (REG # 6)                       | 40       | 46  | 10  | 73        | 57  | 53  | 3' X 2' EGG       | EAST RIVER           | REG #6       |      |     |             |
| WIM-008    | E 79TH ST (REG # 7)                       | 40       | 46  | 13  | 73        | 57  | 51  | 60" DIA           | EAST RIVER           | REG #7       |      |     | YES         |
| WIM-009    | E 83RD ST (REG # 8)                       | 40       | 46  | 21  | 73        | 57  | 42  | 16" DIA           | EAST RIVER           | REG #8       |      |     |             |
| WIM-010    | E 84TH ST (REG # 9)                       | 40       | 46  | 23  | 73        | 57  | 40  | 16" DIA           | EAST RIVER           | REG #9       |      |     |             |
| WIM-011    | E 86TH ST (REG # 10)                      | 40       | 46  | 27  | 73        | 57  | 36  | 5' X 5'           | EAST RIVER           | REG #10      |      |     |             |
| WIM-012    | E 89TH ST (REG # 11)                      | 40       | 46  | 35  | 73        | 57  | 31  | 60" DIA           | EAST RIVER           | REG #11      |      |     |             |
| WIM-013    | E 90TH ST (REG # 12)                      | 40       | 46  | 40  | 73        | 57  | 33  | 4' X 2' 4" EGG    | EAST RIVER           | REG #12      |      |     |             |
| WIM-014    | E 91ST ST (REG # 13)                      | 40       | 46  | 42  | 73        | 57  | 34  | 15" DIA           | EAST RIVER           | REG #13      |      |     |             |
| WIM-015    | E 92ND ST (REG # 14)                      | 40       | 46  | 47  | 73        | 57  | 36  | 48" DIA           | EAST RIVER           | REG #14      |      |     |             |
| WIM-016    | E 95TH ST (REG # 15)                      | 40       | 46  | 55  | 73        | 57  | 38  | 48" DIA           | EAST RIVER           | REG #15      |      |     |             |

Wards Island (Cont.)

| Outfall ID | Outfall Location      | Latitude |     |     | Longitude |     |     | Outfall Size      | Receiving Water | Contributors | Boom | Net | Telemetry |
|------------|-----------------------|----------|-----|-----|-----------|-----|-----|-------------------|-----------------|--------------|------|-----|-----------|
|            |                       | DEG      | MIN | SEC | DEG       | MIN | SEC |                   |                 |              |      |     |           |
| WIM-017    | E 96TH ST (REG # 16)  | 40       | 46  | 58  | 73        | 57  | 37  | 42" DIA           | EAST RIVER      | REG #16      |      |     |           |
| WIM-018    | E 100TH ST (REG # 17) | 40       | 47  | 6   | 73        | 56  | 26  | 3' 6" X 2' 4" EGG | EAST RIVER      | REG #17      |      |     |           |
| WIM-019    | E 101ST ST (REG # 18) | 40       | 47  | 7   | 73        | 56  | 23  | 4' X 2' 4" EGG    | EAST RIVER      | REG #18      |      |     |           |
| WIM-020    | E 103RD ST (REG # 20) | 40       | 47  | 11  | 73        | 56  | 20  | 4' X 2' 4" EGG    | EAST RIVER      | REG #20      |      |     |           |
| WIM-021    | E 104TH ST (REG # 21) | 40       | 47  | 14  | 73        | 56  | 17  | 3' 6" X 2' 4" EGG | EAST RIVER      | REG #21      |      |     |           |
| WIM-022    | E 105TH ST (REG # 22) | 40       | 47  | 16  | 73        | 56  | 16  | 4' X 2' 4" EGG    | EAST RIVER      | REG #22      |      |     |           |
| WIM-023    | E 106TH ST (REG # 23) | 40       | 47  | 19  | 73        | 56  | 15  | DBL 6' X 7' 6"    | EAST RIVER      | REG #23      |      |     | YES       |
| WIM-024    | E 110TH ST (REG # 24) | 40       | 47  | 28  | 73        | 56  | 9   | DBL 8' 6" X 7' 6" | EAST RIVER      | REG #24      |      |     | YES       |
| WIM-025    | E 114TH ST (REG # 25) | 40       | 47  | 35  | 73        | 56  | 58  | 5' 3" X 8'        | EAST RIVER      | REG #25      |      |     |           |
| WIM-026    | E 115TH ST (REG # 26) | 40       | 47  | 37  | 73        | 56  | 55  | 15" DIA           | EAST RIVER      | REG #26      |      |     |           |
| WIM-027    | E 116TH ST (REG # 27) | 40       | 47  | 39  | 73        | 56  | 52  | 15" DIA           | EAST RIVER      | REG #27      |      |     |           |
| WIM-030    | E 119TH ST (REG # 30) | 40       | 47  | 46  | 73        | 56  | 45  | 4' 6" X 2' 4" FT  | EAST RIVER      | REG #30      |      |     |           |
| WIM-031    | E 120TH ST (REG # 31) | 40       | 47  | 48  | 73        | 56  | 45  | 5' X 4' 6" FT     | EAST RIVER      | REG #31      |      |     |           |
| WIM-032    | E 121ST ST (REG # 32) | 40       | 47  | 52  | 73        | 56  | 44  | 4' X 2' 4" FT     | EAST RIVER      | REG #32      |      |     |           |
| WIM-033    | E 122ND ST (REG # 33) | 40       | 47  | 54  | 73        | 56  | 44  | 4' 9" X 4' FT     | BRONX KILL      | REG #33      |      |     |           |
| WIM-034    | E 124TH ST (REG # 34) | 40       | 47  | 59  | 73        | 56  | 44  | 3' 6" X 2' 4"     | BRONX KILL      | REG #34      |      |     |           |
| WIM-035    | E 125TH ST (REG # 35) | 40       | 48  | 4   | 73        | 56  | 45  | 4' X 2' 8" EGG    | BRONX KILL      | REG #35      |      |     |           |
| WIM-036    | E 129TH ST (REG # 36) | 40       | 48  | 20  | 73        | 56  | 54  | 42" DIA           | HARLEM RIVER    | REG #36      |      |     |           |
| WIM-037    | E 130TH ST (REG # 37) | 40       | 48  | 25  | 73        | 56  | 59  | 4' X 2' 8"        | HARLEM RIVER    | REG #37      |      |     |           |
| WIM-038    | E 135TH ST (REG # 38) | 40       | 48  | 41  | 73        | 56  | 3   | 6' X 8' 6" FT     | HARLEM RIVER    | REG #38      |      |     | YES       |
| WIM-039    | W 140TH ST (REG # 39) | 40       | 48  | 57  | 73        | 56  | 2   | 4' X 2' 8" EGG    | HARLEM RIVER    | REG #39      |      |     |           |
| WIM-040    | W 141ST ST (REG # 40) | 40       | 48  | 58  | 73        | 56  | 2   | 5' X 2' 4" FT     | HARLEM RIVER    | REG #40      |      |     |           |
| WIM-041    | W 142ND ST (REG # 41) | 40       | 49  | 1   | 73        | 56  | 2   | 6' X 4" FT        | HARLEM RIVER    | REG #41      |      |     |           |

Wards Island (Cont.)

| Outfall ID | Outfall Location      | Latitude |     |     | Longitude |     |     | Outfall Size   | Receiving Water | Contributors | Boom | Net | Telemetry |
|------------|-----------------------|----------|-----|-----|-----------|-----|-----|----------------|-----------------|--------------|------|-----|-----------|
|            |                       | DEG      | MIN | SEC | DEG       | MIN | SEC |                |                 |              |      |     |           |
| WIM-042    | W 143RD ST (REG # 42) | 40       | 49  | 4   | 73        | 56  | 2   | 3' 6" X 2' EGG | HARLEM RIVER    | REG #42      |      |     |           |
| WIM-043    | E 102ND ST (REG # 19) | 40       | 47  | 9   | 73        | 56  | 21  | 42" DIA        | EAST RIVER      | REG #19      |      |     |           |
| WIM-044    | W 145TH ST (REG # 44) | 40       | 49  | 10  | 73        | 56  | 2   | 6' X 2' 8" FT  | HARLEM RIVER    | REG #44      |      |     |           |
| WIM-045    | W 149TH ST (REG # 45) | 40       | 49  | 22  | 73        | 56  | 3   | 6' X 5' 6"     | HARLEM RIVER    | REG #45      |      |     | YES       |
| WIM-046    | W 151ST ST (REG # 46) | 40       | 49  | 29  | 73        | 56  | 4   | 8' 6" X 8'     | HARLEM RIVER    | REG #46      |      |     | YES       |
| WIM-047    | W 154TH ST (REG # 47) | 40       | 49  | 39  | 73        | 56  | 4   | 6' X 4' FT     | HARLEM RIVER    | REG #47      |      |     |           |
| WIM-048    | W 155TH ST (REG # 48) | 40       | 49  | 42  | 73        | 56  | 5   | 4' X 2' 4" FT  | HARLEM RIVER    | REG #48      |      |     |           |
| WIM-050    | W 156TH ST (REG # 50) | 40       | 49  | 44  | 73        | 56  | 5   | 15" DIA        | HARLEM RIVER    | REG #50      |      |     |           |
| WIM-051    | W 167TH ST (REG # 51) | 40       | 50  | 14  | 73        | 56  | 2   | 48" DIA        | HARLEM RIVER    | REG #51      |      |     | YES       |
| WIM-052    | W 176TH ST (REG # 52) | 40       | 50  | 36  | 73        | 56  | 50  | 5' X 5'        | HARLEM RIVER    | REG #52      |      |     | YES       |















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