



**14 WASTEWATER RESOURCE RECOVERY FACILITIES' SPDES
PERMITS
COMBINED SEWER OVERFLOWS
BEST MANAGEMENT PRACTICES
ANNUAL REPORT**

**FOR THE PERIOD
JANUARY 1, 2019 - DECEMBER 31, 2019**

**CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**BUREAU OF WASTEWATER TREATMENT
JULY 2020**

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EXECUTIVE SUMMARY

The waters surrounding New York City are cleaner and healthier than they have been in more than a century. Over the past decade, the New York City Department of Environmental Protection (DEP) has invested more than \$12 billion in projects such as sewer system and wastewater treatment plant upgrades to improve the health of these critical ecosystems. This investment has produced many ecological successes, ushering in the return of a variety of plant and animal species to our waters. It has also supported the redevelopment of vast swaths of our waterfront and numerous recreational opportunities for residents and visitors alike.

Although we continue to make great strides in improving the health of our waterbodies, we still face challenges. New York City, along with hundreds of other American communities, is largely served by a combined sewer system (CSS) where stormwater that falls on roofs, streets, and sidewalks, and wastewater from homes and businesses are carried together through a single sewer pipe to treatment plants. The City's 14 treatment plants can manage and treat to federal Clean Water Act standards all the wastewater created in New York City on a dry weather day, or about 1.3 billion gallons on average. On a rainy day, they have the capacity to partially treat and fully disinfect up to 3.7 billion gallons per day. However, during intense precipitation events, the stormwater that falls on the City's impervious surfaces can exceed that capacity and can cause overflows, otherwise known as combined sewer overflows (CSOs), to be discharged into local waterways.

According to the National Weather Service's annual measurements, 51.9 inches of precipitation soaked Central Park in 2019, above the normal level of 49.94 inches. DEP implements three distinct strategies aimed at creating additional capacity in our wastewater system to reduce the number of CSOs during wet weather: grey infrastructure, green infrastructure and CSO Best Management Practices (BMPs).

GREY INFRASTRUCTURE

DEP has spent approximately \$2.7 billion in baseline grey projects to date and has a forecasted cost of about \$5.3 billion to implement remaining baseline grey projects along with the recommended Combined Sewer Overflow Long Term Control Plan (CSO LTCP Projects). To reduce CSOs, DEP has utilized a variety of grey infrastructure controls such as improvements to the headworks of wastewater treatment plans, expanding the storm sewer system, separating storm sewers, sewer system and regulator optimization, and constructing large CSO retention tanks. The CSO LTCPs will expand upon past successes but are also recommending new projects such as CSO

storage tunnels, CSO disinfection facilities, and ecological improvements. To learn more about the CSO Program visit nyc.gov/dep/ltcp.

GREEN INFRASTRUCTURE

DEP has constructed thousands of green infrastructure assets around the City such as rain gardens, green roofs, and porous surfaces to absorb stormwater runoff where it lands, diverting it from the sewer system. In order to achieve this diversion, the Green Infrastructure Program has maintained critical partnerships with the Departments of Transportation (DOT), Parks and Recreation (DPR), Education (DOE), the New York City Housing Authority (NYCHA), and other city agencies to implement green infrastructure on city-owned property. We are also continuing to develop private incentives to encourage New Yorkers to join us in managing stormwater and improving water quality. To date, over 10,000 green infrastructure assets have been constructed or are in construction. See additional information in section 16.5.

CSO BEST MANAGEMENT PRACTICES

DEP has also continued implementation of CSO BMPs to optimize existing facilities to capture and convey more wet-weather flow to the City's WRRFs. The State Pollutant Discharge Elimination System (SPDES) permits for the City's treatment plants list fifteen different CSO BMPs, which amplify EPA's national CSO Control Policy. This 17th Annual Report describes DEP's ongoing program to advance those BMPs and provides statistics for calendar year 2019. The report is divided into seventeen sections covering each of the BMPs and the additional Special Conditions listed in the SPDES permits.

Notable CSO BMP achievements during 2019 include:

- DEP inspected 151,310 feet of intercepting sewers citywide and removed 7,542 cubic yards of sediment. An additional 3,387 cubic yards of sediment were removed from non-interceptor assets such as treatment plants, pumping stations, regulators, and other sewer appurtenances.
- DEP's in-house forces cleaned over 180.40 miles of sewer in response to 12,919 customer service requests, and 169.91 miles of sewer as a proactive measure to combat buildup from fats, oils, and grease (FOG).

MORE INFORMATION ABOUT WATER QUALITY

Beaches (see also Section 1.1): During the summer months, DEP works closely with the NYC Department of Health and Mental Hygiene (DOHMH), which oversees bathing water quality at City beaches. DOHMH has an extensive beach monitoring program and

posts wet-weather advisories if local waterways are affected by CSOs or faulty septic systems. DOHMH's 2019 Beach Surveillance and Monitoring report can be found online at:<https://www1.nyc.gov/assets/doh/downloads/pdf/beach/beach-report-2019.pdf> . For information on beaches, visit the NYC Beach Water Quality website at <https://maps.nyc.gov/beach/>

Other Waterbodies: DEP regularly posts additional monitoring data on our website, including non-beach waterbody advisories. This year, DEP launched an updated Waterbody Advisory System that the public can use when planning recreational activities in locations other than beaches; the advisories are based on water quality models and real-time rainfall data.

The new Waterbody Advisory System also:

- Expands the number of waterbodies that could receive an advisory from 28 to 45
- Utilizes and displays rainfall data from rain gauges at all 14 WRRFs
- Provides more detailed advisory durations based on measured rainfall
- Uses primary contact recreation standards*

New Yorkers can visit DEP's website for up-to-date information or register for daily alerts at NotifyNYC.

http://www.nyc.gov/html/dep/html/stormwater/combined_sewer_overflow.shtml

1 CSO MAINTENANCE AND INSPECTION PROGRAM

“The permittee shall develop and implement a written maintenance and inspection program for all CSOs listed beginning on page 3 of this permit. This program shall include all regulators tributary to these CSOs. This is to ensure that no discharge or leakage occurs during dry weather and that the maximum amount of wet weather flow is conveyed to the WWTP for treatment. This program shall consist of scheduled inspections with required repair, cleaning and maintenance performed as needed to prevent dry weather overflow and leakage and ensure maximum wet weather flow is conveyed in accordance with CSO BMP #4. Inspection reports shall contain a record of visual inspections, any observed flow, incidence of rain or snowmelt, condition of equipment and work required.”

DEP submitted the CSO Maintenance and Inspection Program to DEC on August 14, 2003. See Appendix 1.1, Exhibit 1.

A summary of preventive and corrective maintenance performed during 2019 on all regulators tributary to each treatment plant is attached as Attachment A, being submitted under separate cover. The table shows the regulator number, the date when preventive maintenance (PM) was performed at each site and whether any corrective actions were completed (designated on the table by an ‘x’).

PM of a regulator consists of a physical inspection of the regulator and diversion chambers as well as of the branch interceptors or drop pipes. It also includes exercising or lubrication of sluice gates and any other maintenance not considered corrective.

Corrective Maintenance (CM) of a regulator includes the clearing or cleaning of all blockages within the diversion chamber, regulator, branch interceptor or drop pipe. It also consists of any replacement of manhole rungs and the cleaning of all sensors within the chambers.

All inspections performed in 2019 are listed in Attachment A.

1.1 BEACH PROTECTION

During the Enhanced Beach Protection period from May 15 through September 30, DEP performed inspections of beach-sensitive regulators through telemetry twice per day. Shift engineers from the Bureau of Wastewater Treatment (BWT) Collection Facilities Operations (CFO) monitor these locations at the beginnings of their shifts and

at the ends of their shifts. If telemetry is inoperable, field crews perform site inspections until the telemetry is corrected. See Attachment A for locations DEP inspected when the telemetry was inoperable (designated by an 'x' in the column EBPP).

(b) For all plants except Rockaway: "The permittee shall include in the maintenance and inspection program a plan to maintain CSO tide gates to prevent infiltration of seawater into the collection system such that the WWTP influent concentration of chlorides does not exceed a twelve month rolling average of 400 mg/l. The maintenance and inspection program shall specify corrective actions to be taken within twelve months of the influent chloride exceedance of 400 mg/l."

Treatment plant and process personnel notify CFO if they measure elevated chloride levels and flow at their respective treatment plants. CFO personnel initiate a "chloride run" in response to the elevated chloride levels and extra flow. A "chloride run" is a visual inspection of the tide gates within the drainage area experiencing the high chlorides, followed by removal of debris, as needed, and closing of any gates found to be open. DEP performs chloride inspections in addition to the standard regulator maintenance and inspection of regulators. Please refer to Attachment A for the results of those inspections (table column designated CI).

Attachment A contains a summary of PM and CM performed during 2019 on all tide gates tributary to each treatment plant. The table sets forth the Regulator Numbers, the dates when the corresponding site performed PM (designated by an 'x' in the column TG PM) and whether any corrective actions were completed (designated on the table by an 'x' in the column TG CM).

PM of a tide gate consists of the physical inspection and exercising of the tide gate as well as any other maintenance not considered corrective.

CM of a tide gate includes removal of debris from the gate, cleaning of the rubber seals and rebuilding and refurbishing of all hardware as well as the flap itself (which includes stop planking, gate removal, hardware cleaning, tap and chase adjusting bolts and new seals if required). The following tide gates were replaced during 2019: TI-5 and HP-14

Chloride Levels decreased at the following facilities:

Wards Island, North River, Hunts Point, 26th Ward, Red Hook, Jamaica, Tallman Island, Oakwood Beach and Port Richmond.

Chloride Levels increased at the following facilities:

Coney Island, Owls Head, Newtown Creek, Bowery Bay and Rockway.

Analysis for calendar year 2019 shows that the following seven WRRFs exceeded the twelve-month rolling average of influent chlorides concentrations of 400 mg/l:

- Wards Island, 26th Ward, Coney Island, Newtown Creek, Red Hook, Hunts Point and Port Richmond.

For more information regarding chloride levels at all 14 WRRFs see Appendix 1, Table 1.

Comparative yearly analysis of CY 2018 and CY 2019 average tidal inflow (Appendix 1, Table 2) indicates:

A decrease in estimated tidal inflow occurred at nine plants:

- Wards Island, North River, Hunts Point, 26th Ward, Red Hook, Jamaica, Tallman Island, Oakwood Beach, Port Richmond

An increase in estimated tidal inflow occurred at five plants:

- Coney Island, Owls Head, Newtown Creek, Bowery Bay, Rockaway.

In calendar year 2019, Collections Operations field personnel responded to a total of 353 pump station and regulator-related alarms sent by the Supervisory Control and Data Acquisition (SCADA) Telemetry System. All alarms that resulted in call-outs were either false or resulted in elimination of a bypass event.

(b) For Rockaway only: "The permittee shall include in the maintenance and inspection program a plan to maintain CSO tide gates to prevent infiltration of seawater into the collection system such that the WWTP influent concentration of chlorides does not exceed a twelve month rolling average of 3,000 mg/l. Should the twelve-month rolling average be exceeded, the permittee shall conduct an inspection of the tide gates and submit a report to the Department within 3 months describing the inspection findings, remedies taken and, if necessary, a schedule for completing repairs that cannot be completed by the time of the report submission. If the elevated concentrations persist upon completion of the repairs, the permittee shall initiate a chloride source investigation Infiltration & Inflow (I&I) Study within 12 to 24 months of the chloride exceedance. The Permittee shall complete the I & I study and submit an approvable report within 36 months of determining that the elevated chloride concentrations persist, describing the findings of the I&I study and providing a schedule for collection system repairs."

As per the 2015 SPDES permit for Rockaway WRRF, the requirements included in CSO BMP No. 1(b) have changed as described above. Analysis for calendar year 2019 shows that Rockaway did not exceed the twelve-month rolling average of influent chlorides concentration of 3,000 mg/l.

(c) "The permittee shall include in the maintenance and inspection program a schedule for telemetering regulators and a plan to report the telemetering results. Within six months after completion of the telemetering of regulators required in the NYSDEC/NYCDEP Omnibus IV Consent Order Compliance Schedule (as noted in the outfall description page), the permittee shall record and report the

number and duration of events that cause a discharge at an outfall during dry weather conditions. ”

DEP completed the installation of the telemetering equipment at 102 regulators in May 2001 pursuant to the Compliance Schedule set forth in the Omnibus IV Consent Order, DEC Case # R2-0045-93-05. At present, DEP maintains the upgraded system at 100 regulators through a service contract. The contractor is responsible for all maintenance issues and for providing monthly reports detailing all significant events.

The successful implementation of the regulator telemetry system has had a significant impact on the reduction of raw sewage bypasses. The system has allowed CFO field personnel to respond to problems in a timely manner and to reduce or prevent dry weather bypassing.

In calendar year 2019, Collections Operations field personnel responded to a total of 353 pump station and regulator-related alarms sent by the SCADA Telemetry System. All alarms that resulted in call-outs were either false or resulted in elimination of a bypass event.

(d) “CSO maintenance and inspection program reports shall be available for DEC review no later than 9 AM on the day following the day the inspection was conducted and shall be available for DEC review at the associated WWTP no later than 30 days following the inspection.”

DEP keeps the CSO maintenance and inspection program reports, log sheets and inspection forms at each respective crew quarters, and the documents are available for DEC review upon request.

2 MAXIMUM USE OF COLLECTION SYSTEM FOR STORAGE

“The permittee shall optimize the collection system by operating and maintaining it to minimize the discharge of pollutants from CSOs. It is intended that the maximum amount of in-system storage capacity be used (without causing service backups) to minimize CSOs and convey the maximum amount of combined sewage to the treatment plant in accordance with BMP #4 below. This shall be accomplished by an evaluation of the hydraulic capacity of the system but should also include a program of flushing or cleaning to prevent deposition of solids and the adjustment of regulators and weirs to maximize storage.”

Interceptors that deliver wet weather flow to the WRRFs have the ability to provide in-line storage during wet weather. The following conditions induce this storage: when (a) the influent wet weather flow exceeds the WRRF capacity and the facility must throttle, (b) the WRRF wet well operates above the invert of the influent sewers, or (c) other site-specific circumstances occur. Generally, in these cases, in-line storage of a few hundred thousand to a few million gallons (MG) will be induced in the system.

The SPDES permits also contain management practices for maximizing use of the collection system to reduce CSOs. In May 2011, DEP initiated a pilot program in which the Stationary Electric Engineer (SEE) at the BWT Communication Center monitors approaching storms and notifies the plant Operations SEEs to begin reducing their wet-well elevations immediately, prior to the onset of rain. This action helps increase available capacity in the interceptor, which can reduce CSO volumes. Each plant has established low-well elevation set points for impending rain events and has documented them in its Wet Weather Operating Plan (WWOP).

In-line storage upstream of CSO Control Facilities induces storage within the barrels upstream from the CSO facilities when operated in accordance with their WWOPs, as described below.

- Paerdegat Basin CSO Retention Facility – DEP certified completion of construction of this facility in May 2011 in accordance with the CSO Order on Consent entered into by NYC and DEC on January 14, 2005, (DEC # CO2-2000107-8, as modified) (hereinafter, the “CSO Order”), and placed the facility into service at that time. The Paerdegat Basin CSO retention facility induces 20 MG of tank storage in conjunction with 10 MG of in-line storage in the influent sewers and another 20 MG in the upstream combined sewers.
- Flushing Bay CSO Retention Facility – DEP certified completion of construction of this facility in January 2011 in accordance with the CSO Order, and placed the facility into service at that time. The Flushing Bay CSO retention facility induces

28.7 MG of tank storage in conjunction with 15.1 MG of in-line storage in the upstream sewers.

- Spring Creek CSO Retention Facility – DEP certified completion of construction of this facility in July 2009 in accordance with the CSO Order, and placed the facility into service at that time. The Spring Creek CSO Retention Facility induces 13.8 MG of tank storage in conjunction with 6.2 MG of in-inline storage.
- Gowanus Canal CSO Facilities Upgrade – DEP certified completion of upgrades to this facility in February 2015 pursuant to the CSO Order. The RH-034 CSO outfall screens include a combination of fixed weirs and hydraulically operated outfall gates that direct flow through the CSO screens and induce inline storage within the combined sewers upstream of the outfall. DEP estimates, using InfoWorks models, that this inline storage may reduce CSOs by about 16 MG/yr.
- Newtown Creek Bending Weirs – DEP certified completion of the bending weirs and floatables control on November 22, 2017 and these modifications have resulted in about a 310 MGY reduction in CSO discharges. Flushing Bay High Level Interceptor Regulator Modifications – These modifications to the Flushing Bay regulators were certified complete on June 8, 2018 and resulted in approximately a 347 MGY reduction in CSO discharges.

2.1 SCADA/COLLECTION FACILITIES TELEMETRY SYSTEM PROJECT

BWT completed the upgrade work on the SCADA project in 2013. The overall project involved the upgrade of the SCADA software, communication hardware to dual wireless and installation of additional instrumentation for the computerized data collection system. On February 18, 2013, DEP declared the Citywide Collection Facilities SCADA System (CCFISS) upgrade contract REG-027 “substantially complete” at all Pump Stations, 101 regulators and CSO Overflow facilities.

During 2019, DEP serviced the system through a maintenance contract. The contractor is responsible for the maintenance of the monitoring hardware to ensure continuous operation of the telemetry system. As per the SPDES Permit Requirement, CSO BMP Special Conditions, Appendix B.5 (b) – Key Regulator(s) Monitoring Reporting, DEP submitted to DEC monthly reports of potential CSO discharges outside the period of critical wet weather events, using the data from the telemetry system at key regulators.

In November 2017, Verizon announced its plans to retire the 3G Service at the end of 2019. This change by Verizon required DEP to replace all Verizon 3G modems installed in the CCFISS panels with 4G modems. In 2019, DEP completed the change-out of all Verizon and AT&T modems to operate on the 4G network, consistently achieving greater than 99% communication uptime using the dual wireless networks.

The list of regulators under the SCADA project is in Appendix 2 (DEP BWT), Table 1.

2.2 TIDE GATES

A program is in place to repair defective tide gates in order to prevent tidal waters from entering the system. Below is an update of tide gate locations completed and those under reconstruction:

Regulator/Tide Gate Report Status

Reg. #	Status	Schedule	Scope	Comments
NR-34	Complete	August 2012	New Gate	Contract REG-025L
NC(M)-48	Complete	September 2011	New Gate	Contract REG-025L
NC(M)-21	Complete	September 2011	New Gate	Contract REG-025L
NC(M)-23	Complete	September 2011	New Gate	Contract REG-025L
NC(M)-33	Complete	September 2011	New Gate	Contract REG-025L
WI(M)-24	Complete	April 2013	New pull box	Contract REG-025L
Oakwood Beach Flume	Canceled			DEC instructed not to install this gate
BLL1,3,4,8,9,11,17,18,21,22,23,30, HL-2, L-2	Complete	December 2017	21 New Gates	JOC Contract
NCB-1,6,7,9,14	Complete	January 2013	15 New Gates	JOC Contract
RH-9,11,15	Complete	January 2013	4 New Gates	JOC Contract
PR-9E,11E,13E,16E,36	Complete	January 2013	8 New Gates	JOC Contract
WIM-14,15,16,50	Complete	3/14/2013	4 New Gates	JOC Contract
NCM-18,31,51A	Complete	2/26/2013	3 New Gates	JOC Contract
WIB-67	Complete	2/22/2013	4 New Gates	JOC Contract
JAM-14	Complete	9/5/2013	4 New	JOC Contract

			Gates	
26W- 01	Complete	6/7/2018	6 New Gates	JOC Contract
26W-02	In Construction	Estimated completion – 12/31/2020	16 New Gates	JOC Contract
WIB -68	Completed	March 14, 2018	2 New Gates	JOC Contract
TI-1	Completed	Done by CFN in 2017	Cover & Frame	CFN
TI-2	Completed	Tide gate is no longer needed.	1 gate	CFN
TI-4	Completed	May 11, 2017	1 New Gate	JOC Contract
TI- 5	Completed	June 7, 2019	1 New Gate	JOC Contract
HP-14	Completed	June 7, 2019	4 New Gate	JOC Contract
PR -4E, 8E, 17E, 29E, 31E, 34E, 37E, 6W	In Design	Estimated Completion – August 2021	12 New Gate	JOC Contract
NCM-1	In Design	Estimated Completion – June 2021	1	JOC Contract

2.3 INTERCEPTOR IMPROVEMENT PROGRAM

In 2019, BWT continued with its intercepting sewer inspection, cleaning, and rehabilitation program.

2.3.1 Scope of Work Completed in 2019

In 2019, citywide, DEP inspected 151,310 linear feet of intercepting sewers and removed from them 7,542 cubic yards of sediment. Table 1 below provides a breakdown, by drainage area, of the length inspected and the volume of sediment removed. DEP removed 3,387 cubic yards of sediment from non-interceptor assets, as detailed, by asset, in Appendix 2 (Table 2).

Table 1: Interceptor Inspected Pipe Summary and Sediments Removed by Drainage Area

Drainage Area	Inspected Length (ft)	Sediment Removed (cubic yards)
26th Ward	-	-
Bowery Bay	57,519.70	-
Coney Island	8,220.80	771.46
Hunts Point	-	-
Jamaica	-	274.68
Newtown Creek	-	-
North River	-	3.46
Oakwood Beach	-	-
Owls Head	14,014.30	-
Port Richmond	-	1,915.47
Red Hook	-	8.43
Rockaway	129.40	895.99
Tallman Island	71,426.10	-
Wards Island	-	3,672.88
Total	151,310.30	7,542.37

Using the Pipeline Assessment Certification Program (PACP) defect coding and condition scoring rating system developed by National Association of Sewer Service Companies (NASSCO) along with sound engineering judgment, DEP prioritized work

such as repairs and cleaning of intercepting sewers. As a screening tool, the PACP system allows for quantitative identification of differences in pipe condition between one CCTV/sonar (inspection) and subsequent inspections, and prioritization based on significance of the defects in the different pipe segments.

The PACP grades two categories of defects: 1) structural and 2) operation and maintenance (O&M). Each condition defect code is assigned a grade from 1 to 5 (with 5 being the worst condition), based on significance of the defect. For each category an overall pipe index/rating is calculated from a summation of all of the defects and the total number of defects. A rank from 1 to 5 (with a 1 being the highest priority) is then assigned to the pipe, depending on the severity of the defects over the entire pipe (manhole to manhole).

Pipes with priority ranking of 1 in the O&M category will be cleaned. Pipes with priority ranking of 1 in the structural category (those with the highest PACP grades) will be subject to a detailed engineering investigation to determine whether their rehabilitation and inclusion in the capital program are necessary. DEP will track the condition of pipes with lower ranks (and lower priority) over time to follow their structural degradation and impact on flow and storage capacity; closer attention will be given to those with a priority ranking of 2.

Other information important to note on Table 3 – names of specific pipe segments (Pipeline Segment ID) CCTV/sonar (inspected) in 2019. The 2019 Map of Intercepting Sewers inspected (CCTV/Sonar) and the locations cleaned are shown in Appendix 2.

2.4 SEWER CLEANING AND INSPECTION

2.4.1 Introduction:

DEP maintains its sewers through a program of inspections and cleaning. DEP does inspections either in person or via camera (CCTV, zoom camera, or push cams). Sewer cleaning methods include hydraulic (flushing), mechanical (e.g., dragging, rodding, vactoring) and chemical (degreasing) procedures. DEP personnel and various contractors perform this work. Table 2-1 summarizes cleaning activities performed in calendar year (CY) 2019. Maps of the cleaning activities, by Community Board, for the Collection Systems Investigation (CSI) Section (formerly the Capacity, Management, Operation, and Maintenance [CMOM] Section) and NYC Department of Design and Construction (DDC) are in Appendix 2.

2.4.2 Sewer Maintenance – Complaint-based Inspection and Response:

The Bureau of Water & Sewer Operations (BWSO), Division of Field Operations, has personnel including construction laborers, supervisors, and technical staff whose primary functions are operation, maintenance, and repair of the sewer collection and water distribution systems. For the sewer collection system, this Division performs investigations and responds to all sewer complaints received by the City's 311 call center, including sewer back-ups (SBUs), catch basin flooding, and street flooding. The Division also performs programmatic work involving sewer cleaning, and catch basin survey inspections and cleaning. The group works in conjunction with the BWT Industrial Waste section to investigate grease conditions, to perform programmatic degreasing to ensure proper operation, and to perform routine inspections with the engineering-based CSI section. Maintenance and repair yard facilities are located throughout the five boroughs of NYC; they are equipped with heavy duty and light duty construction vehicles, including truck-mounted crane vehicles (catch basin cleaning trucks), power jet flushing vehicles, power rodding auger trucks, and combined flusher/vacuum trucks.

During CY 2019, there were 11,609 customer service requests that resulted in sewer inspections. Of those requests, DEP determined that 9,445 were unrelated to the DEP infrastructure. In response to each request, the sewer maintenance division performs an initial inspection. This initial inspection includes inspecting the downstream and upstream manholes nearest the complaint location and collecting all data relevant to the incident. If the manhole inspection determines that the complaint was unconfirmed, meaning that the sewer was functioning as designed, crews are directed to perform hydraulic cleaning for at least two sections of sewer. If the sewer complaint is confirmed, meaning that there was evidence that the sewer was overtaxed, the crews are directed to initially perform hydraulic cleaning; if hydraulic cleaning does not alleviate the condition, crews perform mechanical cleaning to remove material obstructing flow in the sewer in order to resolve the condition.

In response to these complaints, DEP's in-house forces cleaned over 203.96 miles of sewer. This number either represents actual footage, or, when there was no report of an actual footage, represents an estimate of 150 linear feet between two manholes. As indicated, DEP performed the inspections and cleaning in response to service requests, and some of the footages may overlap with requests made at different times.

2.4.3 Sewer Maintenance – Proactive Inspection and Response

BWSO performs proactive sewer inspections and response through a program called the Sewer Operations and Analysis Program (SOAP), initiated by DEP in 2011.

Quarterly, areas of the City associated with recurring, confirmed SBU complaints are assigned to each of the sewer yards for inspection.

Using its Geospatial Information System (GIS), DEP has divided the City into more than 157,700 sewer segments. A sewer segment is defined as a city block, street center line to street center line. Analysis has shown that approximately 0.66% of our overall sewer segments experienced a confirmed SBU, while only 0.23% of our overall sewer segments experienced more than 1 SBU event. Locations with recurring service issues are the focal point of the SOAP program. Under the SOAP program, in-house staff inspects and investigates each street segment. The inspections may lead to cleaning, as warranted, spot repair, if necessary, or referral for capital replacement, as appropriate.

DEP manages FOG issues of varying severity to ensure effective resolution and future maintenance. DEP's Programmatic Degreasing List addresses recurring FOG conditions. DEP tracks and visits the locations on the List, and cleans them mechanically, hydraulically, or chemically according to an established programmatic schedule. During CY 2019, under this program, DEP proactively cleaned 143.74 miles of sewer. Some of these lengths may overlap depending on the frequency warranted by the FOG condition. See also Section 8.2 below for additional DEP initiatives to address FOG issues.

2.4.4 CSI Sewer Inspections

At times, field crews identify sewer conditions that require cleaning beyond the crews' capabilities. For example, the size and condition of the sewer or a record of recent, repeated cleanings may limit a crew's ability to take effective action. In these instances, DEP transfers the work to its CSI (formerly CMOM) Section. The CSI staff then delineates the specific needs and boundaries of the work via more robust field inspection. Once staff defines the scope, DEP can assign the work to DEP's citywide contractors for cleaning and debris removal. Appendix 2 lists the locations and the activities, mapped by Community Board, including details of the areas and associated dates of cleaning activities.

DEP's CSI Section is also responsible for performing internal, visual inspections of sewers. Field crew initial responders identify the majority of the areas that require inspection. Other agencies, such as the New York City Department of Transportation (NYCDOT) and DDC, identify the balance of the inspection work when it is required to support their capital planning work. DEP's CSI Section, through in-house personnel and citywide contracting, inspected 247,979 linear feet (or 46.97 miles) of sewers at 831 locations throughout the city during CY 2019. Some of this footage overlaps with areas addressed by field crews. As explained above and further below, this overlap occurs because the visual inspection is done prior to cleaning activities, as it is necessary to

determine the extent of cleaning needed. DEP also conducts post-cleaning inspections to verify that the contractor has completed the work in an acceptable manner.

2.4.5 Citywide Sewer Cleaning Contracts

As discussed above, after DEP inspects the sewers to determine the scope of cleaning required, it assigns the work to a contractor who performs the work for DEP at various locations citywide. The contractor has equipment capable of cleaning sewers with diameters up to and including 204.” Using the citywide sewer cleaning contractor resources, DEP cleaned 176,063 linear feet or approximately 33.35 miles of sewers in CY 2019. The cost of this work was \$3,172,957.

2.4.6 Sewer Cleaning for Lining and Guniting Activities

DEP also rehabilitates sewers with the use of lining and guniting methods. For both lining and guniting, the first step is to remove all debris, grease, and silt from within the sewer. Upon completion of the rehabilitation, the sewers are either TV-inspected or visually inspected. In CY 2019, DEP lined 62,645 linear feet (or 11.86 miles) of sewer at a cost of \$5,173,518. In CY 2019, DEP gunited 12,635 linear feet (or 2.39 miles) of sewers at a cost of \$7,580,437.

2.4.7 Sewer Cleaning and Inspection: Capital Project Design

DDC also performed sewer maintenance work associated with its capital project design program. Specifically, when DEP plans capital work for a specific location, DDC inspects the sewer infrastructure in the street via TV camera and then cleans as necessary. DDC inspected and cleaned 73,426 linear feet or 13.91 miles, as shown in detail in Appendix 2. (See Table 2-1)

Table 2-1: Summary of Sewers Inspected & Cleaned by DEP BWSO & DDC in CY 2019

METHOD	INSPECTED & CLEANED (miles)
In-House (Reactive)	203.96
In-House (Proactive)	403.21
CSI Unit Contract	46.97
Lining	11.86

Guniting	2.39
DDC Inspections & Cleaning	13.91
TOTALS:	682.30

3 MAXIMIZE FLOW TO POTW

“Factors cited in BMP #2 above, shall also be considered in maximizing flow to the WWTP. Maximum delivery to the WWTP is particularly critical in treatment of “first-flush” flows. For each wet weather event, the treatment plant shall be physically capable of: receiving and treating a minimum of (plant specific wet weather capacity) through the plant headworks; a minimum of (plant specific wet weather capacity) through the primary treatment works (and disinfection works if applicable); and a minimum of (plant specific secondary system wet weather capacity) through the secondary treatment works during wet weather. The actual process control set points may be established by the Wet Weather Operating Plan required in BMP #4. The sewer collection system and associated regulating devices shall be optimized to the extent practicable to minimize the release of combined sewer overflows. In satisfying this BMP, the Permittee shall also comply with the Additional CSO BMP Special Conditions section of this permit.”

DEP’s WRRFs and associated interceptor sewers have been designed and constructed to deliver and treat approximately two times dry weather flow during wet weather. In order to protect the WRRFs’ biological process to ensure effective treatment, as well as to guard against homes being flooded during wet weather events, conveyance structures called “regulators” were incorporated into the City’s combined sewer system to regulate the flows that reach the interceptors and the WRRFs. As the City’s sewer system was constructed since the early 1900s, almost five hundred regulators were installed to regulate the flow to 135 miles of interceptors and 14 WRRFs. Regulators allow all dry-weather sewage and some stormwater runoff to enter the interceptor. During times when the amount of flow due to wet weather exceeds the design capacity of the sewer system, combined sewage spills over a fixed weir inside the regulator, and into a local water body. These discharges, subject to certain conditions, are permitted under DEP’s SPDES permits.

Most of the regulators are located along waterways. The outfall pipes from the regulators are only a short distance from the waterbody, while the tributary WRRF may be miles away. Consequently, depending on the length and/or intensity of the wet weather event, and consistent with the design of the collection system, overflows from regulators during storms can occur at outfall pipes some distance from the WRRF and long before the wastewater in a regulator’s catchment area reaches the WRRF.

DEP has completed a number of CSO projects to convey more flow to the WRRFs as part of its CSO Program, and these projects include:

- Avenue V Pump Station – DEP certified completion in June 2012 of a project which increased the capacity of the pump station from 30 MGD to 80 MGD in

conjunction with constructing a wet weather force main to convey this additional flow;

- Gowanus Pump Station – DEP certified completion in February 2015 of a project which increased the capacity of the pump station from 20 MGD to 30 MGD and constructed a new force main to convey the additional flow directly into the Columbia Street interceptor;
- Jamaica Bay Bending Weirs – DEP certified completion in June 2016 of the construction of bending weirs that reduce CSO discharges into Thurston and Bergen Basins and convey additional wet weather flow to the Jamaica WRRF upon completion of the new Bergen Basin lateral sewer.
- Newtown Creek Bending Weirs – DEP certified completion of the Newtown Creek Bending Weirs in November 2017; these bending weirs will reduce CSO discharges into Newtown Creek and will convey additional wet weather flow to the Newtown Creek WRRF.
- Bergen Basin Parallel Interceptor – DEP certified completion of the new Bergen Basin Parallel Interceptor in December 2017; this interceptor in conjunction with previously certified Jamaica Bay Bending Weirs will reduce CSOs into the Bergen and Thurston Tributaries and convey additional wet weather flow to the Jamaica WRRF.
- Flushing Bay Weir Modifications – DEP certified completion of the weir modifications of the high level weirs in June 2018; these modifications will reduce CSO discharges into Flushing Bay and convey more wet weather flow to the Bowery Bay WRRF

Some other CSO Program projects, still under construction, that will further reduce CSO discharges and convey more flow to the WRRFs include:

- Reconstructing Westchester Creek weir structures;
- Constructing a new Pugsley Creek parallel relief sewer;
- Constructing a new Bergen Basin lateral sewer in the Jamaica WRRF drainage area;

3.1 KEY REGULATOR MONITORING

Pursuant to the 2014 CSO BMP Order and 2015 SPDES permits, DEP undertook the Key Regulator Monitoring Program. Beginning in June 2014, DEP began submitting monthly reports of all known or suspected CSO discharges from key regulators outside the period of a critical wet weather event. These monthly reports provide itemized lists of such CSO discharges, the approximate start time and end time for each discharge, the corresponding WRRF flow rate, and the start time and end time of the critical wet weather event. Table 3.1 summarizes the observations of Key Regulators during CY2019.

Appendix 3.1 includes the Key Regulators Monitoring Report CY2019 Summary, which includes the details reported in the monthly reports sorted by regulator. Additionally, quarterly engineering analysis report submittals were required for the first year after the effective date of the Order and then, for each calendar year, as part of the Annual CSO BMP Report (see Section 14).

On February 1, 2016, DEP submitted the deliverable “Regulator(s) with CSO Monitoring Equipment Identification Program Report” to DEC. To generate that report, DEP undertook a 12-month Regulator Monitoring Program, from August 2014 through July 2015, of all regulators with CSO monitoring equipment. This requirement appears in the DEP WRRF SPDES permits, Additional CSO BMP Special Conditions, Appendix B, Item 5.c.

Table 3-1: Key Regulators with Potential CSO Discharges outside the Period of a Critical Wet Weather Event, January through December 2019

Key Regulator	2019 Number of Occurrences													Total Duration (hr)	Analysis Category
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	To Date		
26W-01	1	0	0	0	0	0	0	0	0	0	0	0	1	1.50	A
26W-02	1	2	0	4	0	0	0	1	2	1	0	1	12	26.00	A
BBH-02	0	0	0	0	0	0	0	0	0	0	0	1	1	5.00	B
BBH-06	0	0	0	0	0	0	2	0	0	3	2	7	14	23.50	C
BBL-04	2	4	2	4	8	7	5	3	1	3	1	4	44	43.25	C
BBL-22	0	0	0	2	1	4	3	3	0	0	0	1	14	6.00	C
HP-05	2	2	2	2	3	1	4	4	0	3	0	0	23	45.25	A
HP-10	0	1	1	2	0	5	3	2	0	4	1	1	20	26.50	C
HP-13	4	1	3	5	6	6	5	3	0	6	2	4	45	108.25	C
JA-03	7	5	5	7	6	6	4	4	2	6	0	0	52	156.75	A
NCB-01	0	2	0	2	4	5	3	4	2	3	0	2	27	12.75	C
NCB-04	1	2	2	3	7	4	3	5	3	5	1	5	41	64.75	C
NCM-47	0	0	0	2	2	3	1	3	0	0	0	0	11	4.75	B
NR-16	1	0	0	2	2	3	3	4	0	2	0	0	17	11.00	C
NR-23	0	0	1	2	1	1	3	3	0	2	0	0	13	7.50	C
NR-33	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	B
OH-01	0	0	1	4	2	7	4	2	1	1	0	1	23	36.00	C
OH-06	0	0	0	0	0	3	1	0	0	0	0	0	4	8.00	B
PR-06W	6	2	4	3	8	10	4	3	2	0	0	5	47	92.75	C
PR-13E	6	5	4	5	7	8	6	4	2	5	0	6	58	141.25	C

RH-02	0	0	0	0	0	0	0	1	0	0	0	0	1	0.00	B
RH-20	0	0	0	0	0	1	0	1	0	0	0	0	2	1.50	B
TI-09	2	4	3	5	6	5	3	2	1	4	2	4	41	152.25	C
TI-10A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	B
WIB-53	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	A
WIB-67	2	1	3	3	6	0	4	4	0	2	0	1	26	69.25	A
WIM-23	0	0	0	1	1	2	0	3	0	2	0	0	9	8.25	A
Count**	12	12	12	18	16	18	18	20	9	16	6	14	24		

**Count of regulators with at least one event

Analysis Categories:

- Key Regulators that may be influenced by planned capital improvements (Projects are currently in design or construction that may result in CSO reductions and additional wet weather capture);
- Key Regulators averaging one or fewer potential discharge outside the period of a critical wet weather event per month
- All other Key Regulators with an average of more than one potential discharge outside the period of a critical wet weather event per month

3.2 CRITICAL WET WEATHER EVENTS

The 2014 CSO BMP Order and the 2015 SPDES permits define a critical wet weather event as “a wet weather event which causes or would cause the influent flow at the WRRF to exceed the wet weather flow identified in the associated SPDES permit.” Generally, the wet weather flow identified in the associated SPDES permit of the WRRF is two times the design dry weather flow (2xDDWF), but it may be less than 2xDDWF under certain operational limitations (e.g., when DEP reports critical equipment is out of service and submits a reduced capacity request to DEC). CSO discharges from key regulators that occurred outside of a critical wet weather event were determined based on inference from synoptic data collected from the city telemetry system, meteorological and tidal observations, and plant operational data. Using InfoWorks CS models of the city’s collection system, DEP performs analysis of mitigation strategies to reduce the occurrence of discharges outside the critical wet weather periods.

Included in Appendix 3.2 is the CY2019 Critical Wet Weather Event Summary for each plant (January to December.) The summary tables include details related to the critical wet weather events for each plant, including: the event-specific wet weather capacity, plant throttling information, and the start and end times of the critical event with its corresponding maximum and average flows.

Also included in the summary tables are references, where applicable, to Bypass Item Nos. or Wet Weather Item Nos. for additional information on these events. Prior to June 1, 2014, DEP assigned all wet weather throttling events that averaged less than 2xDDWF Wet Weather Item Nos. and included them in the Wet Weather Quarterly Report. Effective June 2014, the information provided in the Wet Weather Quarterly Report was based on the requirements set forth in Appendix B.2 (b) of the Order – Maximize Flow at WRRF and the 2015 SPDES permits: *for the entire duration of each critical wet weather event, the WWTPs shall be operated to receive and treat, through primary treatment and disinfection works, an average flow at least equal to the wet weather flow requirement in the applicable SPDES permit.*

Additionally, DEP continued reporting, within the required two-hour time frame, events in which the WRRF throttled but never achieved the applicable SPDES-permitted wet weather capacity at any point during the period the WRRF throttled, except in instances when the WRRF was at reduced capacity in accordance with the Wet Weather Operating Plan and with prior approval by the DEC. DEP reported these events with Bypass Item Nos.

3.3 CRITICAL EQUIPMENT NOTIFICATIONS

In accordance with the 2015 SPDES permits, DEP continued notifying DEC whenever critical equipment is anticipated to be, or is, out of service for necessary repair or maintenance for more than 48 hours or under a DEC-approved schedule. Upon receipt of such notice, and on a case-by-case basis, DEC may adjust the flow that must pass through the WRRF in consideration of the recommendations contained within an approved WWOP. DEP based all subsequent required reporting, including determination of critical wet weather events, on the reduced wet weather capacity levels submitted in these critical equipment notifications.

3.4 WRRF ENGINEERING ANALYSIS

As per the 2014 CSO BMP Order, on August 6, 2014, DEP submitted to DEC Engineering Analyses of WRRF influent flow throttling operations. These analyses provided specific recommendations for initiation and cessation of wet weather flow throttling operations designed to maximize flow through the WRRF. Based on comments received from DEC, on December 12, 2014, DEP submitted supplements to the WRRF Engineering Analyses. These supplements included a brief summary of throttling protocol set points and indicators used to determine how and when throttling occurs at each WRRF.

3.5 COMBINED SEWER OVERFLOWS ANNUAL REPORT CHECKLIST PART III – CSO BMP's

Checklist Part III, Section 4, Maximize Flow to WRRF, Question 3 asks whether a plan and schedule have been submitted to DEC for addressing any inability during the past year of the headworks, primary treatment works, secondary treatment works and disinfection works to pass the flows specified in the permit for all wet weather flows. In 2014, DEP submitted Engineering Analyses of WRRF influent flow throttling operations and updated WWOPs pursuant to Appendix B, sections 2 and 4 of the CSO BMP Order, which provide recommendations for maximizing flow through the WRRFs.

In addition, for Wards Island WRRF, a modification to the CSO Order, Revised Appendix A, Section XV, includes headworks wet weather improvement projects: specifically, reconstruction of the main sewage pumps and replacement of the bar screens at the Manhattan and Bronx Grit Chambers. DEP certified completion of the

replacement of the bar screens in January 2017 and certified completion of the reconstruction of the main sewage pumps in August 2019.

For 26th Ward, interim wet weather flow limits were approved to facilitate completion of work required under the CSO Order, Appendix A, Section XII.K which includes rehabilitation of the existing four primary settling tanks and construction of a new primary settling tank.

3.6 COMBINED SEWAGE AND FLOATABLES PERCENT CAPTURE AT NYC WRRFs

DEP uses a calibrated InfoWorks Hydraulic Model in conjunction with NOAA rain gauge data, and plant operating and rain gauge information to calculate the annual percent wet weather capture. A detailed report on Combined Sewage and Floatables Percent Capture at DEP WRRFs is included in Appendix 3.

4 WET WEATHER OPERATING PLAN

“The permittee shall maximize treatment during wet weather events. This shall be accomplished by having a WWOP containing procedures and guidance for operating unit processes, including any regional CSO treatment/retention facilities listed in this permit. The WWOP requirements are provided in the Additional CSO BMP Conditions section of this permit.”

“DEP shall maximize flow through the WWTP during wet weather events. This shall be accomplished by having a WWOP containing procedures and guidance for operating unit processes, including any regional CSO treatment/retention facilities listed in this permit. The goals of the WWOP are to provide operational guidance to WWTP staff for treating the maximum flows, while not appreciably diminishing effluent quality or destabilizing treatment upon return to dry weather operation. The WWOP will establish process control procedures and set points to maintain the stability and efficiency of the Biological Nitrogen Removal (BNR) process, if required, for the host WWTP. The WWOP shall be written in accordance with the DEC publication, Wet Weather Operating Practices for POTWs with Combined Sewers. DEP shall incorporate the throttling protocol and guidance developed during the CSO BMP Order, Pilot Study into the WWOP. The WWOP shall also include an update of the critical equipment lists for the WWTPs, which shall include screening facilities at pump station that deliver flow directly to the WWTP and at WWTP headworks. The updated WWOP shall be submitted to Region 2 for review and approval within 6 months. After approval by the Department, DEP shall implement and follow the terms of the approved WWOP, submitted on December 12, 2014.”

A Wet Weather Operating Plan (WWOP) is required for each WRRF and CSO retention facility. Appendix 4 summarizes the most recent submittal to DEC of the WWOP for each WRRF. In accordance with the SPDES permit and the 2014 CSO BMP Order on Consent, in December 2014, DEP submitted to DEC an updated WWOP for each WRRF (see Appendix 4). Additionally, in accordance with the CSO Order on Consent, DEP re-submitted the WWOP for 26th Ward WRRF in October 2015 and again in March 2016 in response to DEC comments. DEP re-submitted the WWOP for Bowery Bay in March 2016 in accordance with the then-draft Omni Order. There were no modifications to the WWOPs submitted in 2019.

4.1 COMBINED SEWER OVERFLOWS ANNUAL REPORT CHECKLIST

Question 2, Section 5 Wet Weather Operating Plan (WWOP)

“In the past year, did treatment of wet weather flows cause any effluent violations or destabilize treatment upon return to normal service?”

DEP answer: Yes, there have been instances when wet weather flows have caused effluent violations; however, there have been no instances when wet weather flows have destabilized treatment upon return to normal service. Specifically, in the past year, DEP has reported effluent violations for parameters such as daily maximum total suspended solids (TSS) concentration at various WRRFs. Elevated flows due to wet weather can result in solids washout from the final clarifiers which can contribute to elevated fecal coliform counts or effluent TSS concentrations. Please refer to the monthly Discharge Monitoring Report submittals for specific information.

Question 7, Section 5 Wet Weather Operating Plan (WWOP)

“Does the plant identify the maximum flows through preliminary, primary, secondary treatment, tertiary, and disinfection units?”

DEP answer: “No.” The WWOPs identify the minimum flow capacity rates through the treatment units, not the maximum flow capacity.

5 PROHIBITION OF DRY WEATHER OVERFLOW

“Dry weather overflows from the combined sewer system are prohibited. The occurrence of any dry weather overflow shall be promptly abated and reported to the NYSDEC Region 2 Office within 24 hours. A written report shall also be submitted within fourteen (14) days of the time the permittee becomes aware of the occurrence. Such reports shall contain the information listed in 6 NYCRR Part 750-2.7.”

Dry weather overflows from the combined sewer system are prohibited and DEP’s goal is to reduce and eliminate dry weather bypasses. As a result of DEP’s continuing efforts in this regard, in CY 2019, pump station and regulator bypasses continue to remain at low levels.

DEP promptly abates any dry weather overflow and reports it to DEC through the NY-Alert notification system within two hours of confirmation of the discharge. DEP also submits a written report to DEC within five (5) days of the confirmed time of occurrence.

A yearly comparison of regulators, pump stations and WRRFs’ dry weather bypassing is attached in Appendix 5.

Dry weather bypasses from the NYC collection system during the reporting period totaled 47 MG, as listed in Appendix 5. This total includes discharges from other locations including outfalls and street locations. Bypasses from pump stations and regulators was 0.0022% (10 MG) of the total 454 billion gallons (BG) of dry weather flow treated by NYC’s 14 WRRF’s in CY2019.

Pump station and regulator failures that resulted in dry weather bypassing during CY 2019 were categorized by cause and grouped by cause code. Major causes were further sub-coded and identified in more detail. These bypasses were analyzed for trends at particular locations and, as a result, DEP is studying specific locations for improvements or modifications to reduce future bypassing.

5.1 PUMP STATION DRY WEATHER BYPASSING AND ANALYSIS

On January 24, 2019, there was a raw sewage bypass at the Gowanus Pump Station during a wet weather event. The Gowanus Pump Station is currently undergoing an upgrade and is under the control of DEP’s Bureau of Engineering Design and Construction (BEDC). DEP’s Bureau of Wastewater Treatment (BWT) received a telemetry alarm of non-operational pumps at 11:25 am. Notification of the alarms was transmitted to BEDC and a representative from BEDC travelled to the pump station and

discovered that all four main sewage pumps (MSPs) were offline. The cause of the MSP failures was failure of the pressure transducer, which measures the elevation in the wet well. The incident caused a bypass of approximately 0.5 MG.

On April 19, 2019, there was a raw sewage bypass at the W235th Street Pump Station. During routine inspection and maintenance, a hole/leak was discovered in the force main pipe within the pump station dry well. The incident caused a bypass of approximately 1.1 MG.

On June 3, 2019, there was a raw sewage bypass at the Marble Hill Pump Station due to a pump failure. During corrective maintenance on Main Sewage Pump (MSP) No. 1, the access plate, used to clean-out the pump, separated from the pump casing causing sewage to flood the dry well for the three MSPs at the Pump Station. As a result, MSPs Nos 2 and 3 became grounded and went out of service resulting in an intermittent bypass that was influenced by the tide, from Regulator No. MH-2 through Outfall WIB-077. The incident caused a bypass of approximately 8.4 MG.

On August 15, 2019, there was a raw sewage bypass at the 235th Street Pumping Station caused by a ruptured hose in the pump-around system operating at the facility. The ruptured hose discharged sewage to a catch basin through Outfall No. WIB55, which discharges to the Hudson River. The incident caused a bypass of approximately 25 gallons.

5.2 REGULATOR DRY WEATHER BYPASSING AND ANALYSIS

On April 27, 2019, there was a raw sewage bypass at Regulator HP-05. Debris was found blocking the opening to the regulator from the diversion chamber, and the tide gate was stuck in the open position due to an obstruction. The incident caused a bypass of approximately 3470 gallons.

On July 11, 2019, there was a raw sewage bypass at Regulator No. NR-36. Debris was found blocking the opening to the regulator from the diversion chamber, and the tide gate was stuck in the open position due to an obstruction. The incident caused a bypass of approximately 5700 gallons.

On December 5, 2019, there was a raw sewage bypass at Regulator No. NCB-05A. Debris, a concrete slab, was found that caused a partial blockage of the regulator. The incident caused a bypass of approximately 100 gallons.

5.3 WRRF DRY WEATHER BYPASSING AND ANALYSIS

On December 18, 2019, New York City Department of Environmental Protection (DEP) operations personnel identified a tripped circuit breaker in one of its main power centers as the cause for a loss of control power to all of its main sewage pumps (MSPs). Influent flow prior to the throttling event was 100 MGD. While trying to restore power to these pumps, plant personnel throttled the influent gates to 20% open to minimize the potential for a raw sewage bypass. A review of available telemetry data indicated no evidence of bypass. However, telemetry data for Regulator No. JA-01 is not available as that system is offline due to power connection issues unrelated to the loss of power at Jamaica WRRF. Thus, although DEP cannot definitively state that no discharge occurred due to this dry weather throttling event, given the length of time of the throttling event, there may have been a dry weather discharge.

5.4 OTHER LOCATIONS DRY WEATHER BYPASSING AND ANALYSIS

On February 26, 2019, debris in a sanitary sewer pipe caused an overflow of sanitary sewage into a catch basin in Clove Lake Park. The catch basin is connected to a storm sewer with an outfall that discharges into Bodine Creek which flows to the Kill Van Kull. The incident caused a bypass of approximately 3750 gallons.

On March 11, 2019, debris in a sanitary sewer pipe caused a manhole overflow of sanitary sewage into Bodine Creek, which flows to the Kill Van Kull. The incident caused a bypass of approximately 37,500 gallons.

On March 16, 2019, there was a raw sewage bypass from a manhole upstream of the Cannon Avenue Pump Station due to a blockage in the influent pipe. The blockage was caused by a hardhat dropped by a DEP contractor performing sewer work in the neighborhood. This led to an overflow out of a manhole and untreated flow entered into Richmond Creek. The incident caused a bypass of approximately 900 gallons.

On November 30, 2019, DEP responded to reports of sewer backups in the vicinity of 133rd Avenue and Inwood Street in Queens, NY. DEP crews investigated the cause of the sewer backups, and it was believed the source was sanitary flow from a 42-inch sanitary sewer located at 150th Street and South Conduit Avenue. Excavation of the sewer would be necessary to confirm the cause. In order to prevent further public health hazards or severe property damage, several small pumps were deployed in the community to pump the flow away from private homes. The only available sewer to which to send the flow was a storm sewer that discharges to Jamaica Bay. The incident caused a bypass of approximately 36 MG.

On December 20, 2019, a pump failure in the pump-around system set up to respond to the repair of the 42-inch sanitary sewer located at 150th Street and South Conduit Avenue occurred such that the 16-inch pump that was pumping sanitary flow into a sanitary sewer needed to be replaced. In order to avoid public health hazards or severe property damage from this reduced capacity in the sanitary pump-around system, DEP responded to this pump failure by activating a pump that conveyed a portion of the sanitary flow into a storm sewer. The incident caused a bypass of approximately 0.59 MG

On December 21, 2019, DEP initiated replacement of a temporary 12-inch pump which had been installed on December 20, 2019 when sewer elevations rose beyond the capacity of the pump-around system in place to respond to the repair of the 42 inch sanitary sewer located at 150th Street and South Conduit Avenue. In order to complete the necessary replacement work, DEP activated a pump that conveyed sanitary flow into a storm sewer for the period of time necessary for DEP to install an 18-inch replacement pump. DEP installed an 18-inch pump to replace the 12-inch pump that had been installed on December 20, 2019. The incident caused a bypass of approximately 36,000 gallons.

Additional details on the events, yearly comparisons and Report of Non-Compliance Event are listed in Appendix 5

6 INDUSTRIAL PRETREATMENT

“The approved Industrial Pretreatment Program shall consider the impacts of discharges of toxic pollutants from unregulated, relocated, or new SIUs tributary to CSOs that were not identified in the report entitled, ‘CSO Abatement in the City of New York: Report on Meeting the Nine Minimum CSO Control Standards’. The approved Industrial Pretreatment Program shall consider CSOs in the calculation of local limits for indirect discharges. Discharge of persistent toxics upstream of CSOs will be in accordance with guidance under (NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.3.8, New Discharges to POTWs. For industrial operations characterized by use of batch discharge, consideration shall be given to the feasibility of a schedule of discharge during conditions of no CSO. For industrial discharges characterized by continuous discharge, consideration must be given to the collection system capacity to maximize delivery of waste to the treatment plant. Non-contact cooling water should be excluded from the combined system to the maximum extent practicable. Direct discharges of cooling water must apply for a SPDES permit. To the maximum extent practicable, consideration shall be given to maximize the capture of industrial waste containing toxic pollutants and this wastewater should be given priority over residential/commercial service areas for capture and treatment by the POTW. These factors shall be considered in the location and siting of new industrial users with preference to service by areas not tributary to CSOs or having sufficient capacity to deliver all industrial wastewater during all conditions to the POTW. These provisions apply to both new and existing industrial users”

This program continues as described in last year’s Report. During 2019, DEP performed 595 inspections of regulated industries, and issued 85 summonses.

Attached in Appendix 6, Exhibit 1 is a copy of the letter sent to industrial users (IU) informing them that their permits had been amended, and a graph of annual trends in discharges to NYC WRRFs that contain metals. The total amount of metal being discharged by regulated industries remains very low. In 2019, the average daily discharge containing metals by all regulated industries to the NYC WRRFs was 9.3 lb/day. This amount corresponds to a trend of declining IU discharges. If the same percentage of CSO bypass (1.5%) from the CSO report is applied to the 2019 data, then on average approximately 0.14 lb./day of total metal would be included in CSO dry weather overflows.

Between 1997 and 2019, the total amount of metal being discharged by regulated industries in the City has been reduced by more than two orders of magnitude, due primarily to the relocation to Asia of the electroplating industry. The total metals loadings for 1997–2009 and 2012 were calculated based on monthly metal sampling, and the

remaining years were calculated based on annual priority pollutant scans. For a complete description please see CY2009 CSO BMP Annual Report. A list of regulated industries, with average daily wastewater discharge flows and average pollutant loadings is summarized in the 2019 IPP Progress Report.

6.1 Requirement for Significant Industrial Users to Hold Their Process Wastewater and Non-contact Cooling Water to the Maximum Extent Practicable During Heavy Rains

As an alternative means to reduce the likelihood of CSOs during storm events, DEP requires regulated industries to hold their process wastewater and non-contact cooling water to the maximum extent practicable during heavy rains. In 2019, DEP continued to implement this requirement for Significant Industrial Users (SIUs). Please see the CY2009 CSO BMP Annual Report for more details about this program. Additional information may be found in Appendix 6.

7 CONTROL OF FLOATABLE AND SETTLEABLE SOLIDS

The discharge of floating solids, oil and grease, or solids which cause deposition in the receiving waters, is a violation of the NYS Narrative Water Quality Standards. The permittee shall implement the following best management practices in order to eliminate or minimize the discharge of these substances:

*7a. **Catch Basin Repair and Maintenance** - The permittee shall inspect each catch basin in the tributary collection system a minimum of once every 36 months in accordance with a schedule to be outlined in the first annual CSO BMP report. Catch basins will be cleaned as required based on these inspections and in accordance with the permittee's criteria for catch basin cleaning. The permittee shall replace missing or damaged catch basin hoods within 90 days after the date of inspection for basins known to be hooded upon completion of the catch basin hooding program. For all future basins found by inspection to require extensive repairs before a hood can be installed, the permittee shall repair and install a hood within 24 months.*

*7b. **Booming, Skimming and Netting** - "The permittee shall operate and maintain the floatable containment boom (or floatable containment netting) as applicable for the CSO outfalls listed in this permit. The in-water containment boom shall be inspected within 48 hours of a confirmed CSO event and, if necessary, cleared of floating debris. The permittee shall visually inspect floatable containment netting on a weekly basis and shall replace damaged or full netting bags as necessary."*

*7c. **Institutional, Regulatory, and Public Education** – The permittee shall continue to implement the City-Wide Floatables Plan.*

The permittee may submit an application to the Department for an alternative implementation schedule for Items 7. a and b. for combined sewer areas that are tributary to a permanent land based CSO abatement and treatment facility designed and permitted by the Department for control of floatables.

7.1 CATCH BASIN REPAIR AND MAINTENANCE

Catch basin maintenance and repair work is a major focus of DEP's daily activities. DEP devotes significant resources to these tasks both as part of its annual programmatic cycle and in response to complaints received from the public.

DEP now tracks catch basin maintenance and repair activities through Infor Public Sector (IPS, formerly Hansen), a complaint and work order management system. DEP performed 138,214 programmatic catch basin inspections in 2019. Table 7.1-1: “CY 2019 Catch Basin Inspection & Cleaning” presents a summary of catch basin cleaning as a result of the inspection program and other routine maintenance activities for each borough.

Catch basin hooding, one of EPA’s Nine Minimum Controls, is an important element of DEP’s CSO floatables control program and can significantly reduce the discharge of street litter to combined sewers, storm sewers and receiving waters. In 2019, DEP hooded 4,841 catch basins; 2,430 of those were found to require extensive repairs before a hood could be installed and the work took on average 123 days. The rest (2,411) were installed within an average of 92 days, with 56% being completed within the 90 days. Table 7.1-2: CY 2019 Catch Basin Hooding, summarizes catch basin hooding during 2019 for each WRRF drainage area. The status of these basins is monitored through DEP’s IPS system to ensure compliance within the allotted time period.

7.2 BOOMING, SKIMMING AND NETTING

BWT maintains 22 permanent floatable containment facilities and 1 temporary CSO boom at the Gowanus Canal for a total of 23, corresponding to stormwater and combined sewer drainage areas totaling approximately 60,000 acres. Floatable containment site locations and offloading facilities are depicted in Figure 7-2-A. The offloading facility for floatables at Whale Creek was out of service from January 21, 2019 to November 1, 2019 for construction.

The floatable materials contained by the boom and net sites are retrieved by four, City-owned skimmer vessels. Offloading currently occurs at three DEP WRRFs. The skimmer vessels are operated by BWT marine title personnel. The personnel also provide containment site inspections, maintenance and repair. Skimmer vessel maintenance and repair services are handled either by in-house personnel or, when necessary, via a marine services contract.

Skimmer vessels are dispatched to retrieve collected floatables from booms and nets based on inspections conducted with small vessels within 24 to 48 hours of significant rain events. The small, inspection vessels are also equipped with hand netting tools in order to retrieve small accumulations of floatables, so that the skimmer vessel use is more focused on containment sites with large amounts of floatables. In dry weather, boom and net inspections occur at least weekly and may occur more often for certain sites where specific tide and wind conditions may cause debris to accumulate outside of rain events.

In 2019, about 349.50 cubic yards of floatable material were retrieved from the 23 containment facilities and some minor open water skimming (see Table 7.2-C). Total floatable recovery per each year is provided in Figure 7.2-B and in Appendix 7.2.1, Table 7.2-A. Floatable recovery totals for 2019 per each of the boom and net sites are included in Appendix 7.2.2, Table 7.2-B.



Figure 7-4. DEP Skimmer Vessel "Shearwater"

DEP currently has two self-propelled skimmer vessels (Aquarius Systems Custom Model HSTH235 - High Speed Trash Hunter) and one old vintage skimmer vessel which must be towed. DEP relinquished 1 vessel in April 2019 and is currently procuring a new vessel.

Table 7.2-D reflects NYCDEP CSO Floatable Removal Program via Skimmer Vessels – Collection Summary (Cubic Yards).

7.3 INSTITUTIONAL, REGULATORY, AND PUBLIC EDUCATION CONTROLS

In 2019, DEP continued, in partnership with other City agencies, to implement a variety of institutional, regulatory, and public education controls. For a detailed description and history of the City's work to reduce trash and settleable debris on a citywide basis, please refer to prior CSO BMP Reports available at <https://www1.nyc.gov/site/dep/water/combined-sewer-overflows.page> and the NYC Stormwater Management Program available at www.nyc.gov/dep/ms4.

7.3.1 Public Engagement - 2019 Activities

In 2019, DEP continued to educate the public and raise awareness about the New York City wastewater treatment and water supply systems, stormwater management (including the MS4 permit, floatables reduction, litter reduction, the proper disposal of grease, and water conservation. DEP developed and implemented through its Bureau of Public Affair & Communication (BPAC) a comprehensive education and outreach program featuring:

- Public meetings for the East River/Open Waters Long Term Control Plan
- School programs (grades pre-K-college graduate)
- Education programs for professional organizations
- Visitor Center at Newtown Creek programs
- Professional learning opportunities for formal and non-formal educators
- Special education programs and events
- Public exhibitions
- Volunteer Programs
- Multi-media
- Publications
- Promotional items
- Website

In 2019, the City continued its annual “Clean Streets = Clean Beaches” campaign, which featured an informational poster with the slogan “Don’t Mess up Summer” for display at area beaches, on Department of Sanitation fleet vehicles” and on City agency social media.

Through coordination with other city agencies, including the New York City Departments of Sanitation and Parks & Recreation, the public engagement program not only increased the public’s awareness of the impact of littering, but also directly reduced litter through community cleanups and rainfall runoff through tree planting, all of which work to reduce CSOs and their impacts on New York Harbor

7.3.2 Development of BMPs for the Automotive Industries

DEP completed the automotive booklet in 2013. For a full description of this work, please see the CY 2012 CSO BMP Annual Report.

7.3.3 Control of Floatables in Bluebelts



Development of a New Creek, South Beach, and Oakwood Beach Bluebelt: In 2019, DEP continued construction of New Creek BMPs NC-11 and NC-12 at Last Chance Pond. BMP construction also took place at Jack's Pond (JP-1, JP-2, JP-3, and JP-4), Wood Duck Pond (WDP-1, WDP-2, WDP-3, and WDP-4), and at Mill Creek (MC-3).

Adopt-a-Bluebelt – This program continued in 2019. The total number of sites adopted and maintained by local community groups, companies, or individuals is 46, covering an area of 46,000 square feet.

Volunteer Cleanups – In 2019, volunteers from St. Clare's School, McCown School, and the NYSDEC citizen science eel monitoring program participated in Bluebelt community cleanups, contributing a total of 138 hours.

Catch Basin Outreach and Education – All existing and newly-installed catch basins that are tributary to Bluebelts are marked with the “No dumping – flows to Bluebelt” message.

Floatables Control – New dynamic detention weirs with trash capturing devices have been installed in the New Creek Bluebelt. These weirs have eliminated the need for floating booms.

Illegal Dumping Enforcement – DEP Bluebelt division continues to utilize and manage a debris removal contract for the purposes of removing illegal dumping and other debris found on existing and newly-acquired DEP-owned Bluebelt properties. During the reporting period, Bluebelt staff and contractors removed over 300 cubic yards of obstructive sediment and 290 cubic yards of debris within and adjacent to regulated wetlands.

7.3.4 School and Visitor Center Programs, Professional Development, Special Events and Exhibitions

DEP manages an extensive education and outreach program that targets NYC students, teachers, parents, school administrators, curriculum specialists, non-formal educators, residents, community organizations, businesses, and visitors and internet users. The program is supported through education programs at the Visitor Center at Newtown Creek and the Newtown Creek Nature Walk, education classes taught at schools and public events, digital resources and print material, multi-media public service campaigns, exhibitions, publications, promotional item distribution, and the DEP website.

BPAC's education programs and resources continued to reach thousands of young people and adults in 2019. Some specific examples of these programs that occurred in 2019 are presented below.

7.3.4.1 Other Education Programs and Resources

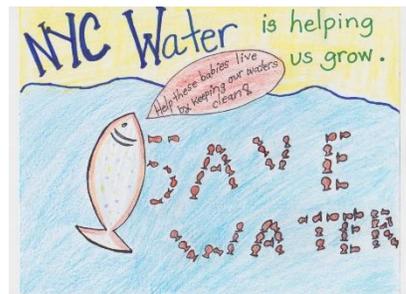


In 2019, DEP conducted hundreds of educational programs with young people and adults through ongoing school visits, field trips, Visitor Center at Newtown Creek presentations, teacher professional learning opportunities, and other educational programs and events. Educational materials, including information about NYC's wastewater treatment and water supply systems, harbor water quality, teacher lessons and student activities, and educational resource guides were also developed and distributed to thousands of recipients throughout NYC. Of particular interest to teachers was a new wall map (with a student map and comprehensive teacher guide) depicting New York City's water cycle, from mountaintop to tap. Detailed information about these programs is available from BPAC's Education Office and on DEP's website.

The Visitor Center at Newtown Creek, located at the Newtown Creek WRRF in Greenpoint, Brooklyn, provides an important venue for students, educators, professionals working in the field, and the general public to learn about NYC's

wastewater and water supply systems and stewardship opportunities. Exhibitions and programs focus on the city's vital, but hidden, infrastructure; green solutions to stormwater management, including bluebelts, rain gardens, green and blue roofs, and rain barrels; the NYC sewer system, including its MS4; harbor water monitoring, including the role of NYC's fleet of vessels and scientific monitoring; and ways to become more effective stewards of the environment by disposing of litter and grease properly and by conserving water. The Visitor Center provides the ideal setting for DEP educators to present hands-on, multi-disciplinary lessons for grades pre-K through college, aligning with New York State and City standards, and STEM and humanities initiatives. The Visitor Center (and the Newtown Creek Nature Walk), open year-round, is a popular destination for school field trips and teacher professional learning opportunities.

In May 2019, DEP conducted its 33rd annual Water Resources Art & Poetry award ceremony to recognize student's knowledge of the city's valuable water resources through their creative expression using art and poetry. Approximately 1,700 NYC and watershed students from 2nd through 12th grade attending public, charter, independent, and parochial schools, and home-schooled, participated in this special program; their poetry, photographs, digital art, paintings, and crafts were judged based on knowledge and creativity. Winning entries are featured on DEP's website. A celebration, hosted by DEP's Commissioner, was held at El Museo del Barrio in Manhattan to honor the outstanding efforts of all of the participating students, in the presence of their families, teachers and school administrators.



In 2019, DEP continued to collaborate with Trout Unlimited on the Trout in the Classroom (TIC) program, an upstate/downstate watershed environmental education initiative for elementary through high-school students. In October, more than 200 educators from NYC and NYC's watersheds east and west of the Hudson River attended the annual TIC teacher conference, where they participated in workshops presented by DEP professionals and veteran TIC teachers, and received trout eggs, distributed by the NYS Department of Environmental Conservation (DEC), to raise in their classrooms. Throughout the eight-month program, eggs hatched in classroom tanks and trout were raised by approximately 20,000 students in more than 150 schools in NYC and its watersheds. In the spring, more than 3,500 NYC students released their

trout into watershed streams and participated in hands-on activities focusing on the importance of forests in helping to protect water quality and in water stewardship.

DEP also participated with DEC during the annual statewide Citizen Science “A Day in the Life of the Hudson and Harbor” program. DEP hosted chemistry students from Vanguard High School in Manhattan and 7th graders from Hunter’s Point Community Middle School in Queens, who spent the day making environmental observations, collecting and analyzing water samples, and assessing water quality along the East River at Gantry Plaza State Park. Students used field techniques to track the river’s tides and currents, examined the water’s chemistry and identified macro-invertebrates attached to oysters in specially designed cages. On the following day, the Hunter’s Point students taught students from their own school about the ecology of the East River.

Throughout the year, DEP conducted professional learning opportunities for formal and non-formal educators. Topics included harbor water quality, watersheds, stormwater management, wastewater resource recovery, and the history of the New York City water supply system. Partners included the NYC Department of Education’s (DOE) Science and STEM units and the Office of Sustainability, New York City DPR, New York City Department of Sanitation (DSNY), Randall’s Island Park Alliance, the Watershed Agricultural Council, South Street Seaport Museum, Children’s Museum of Manhattan, Hudson River Sloop Clearwater, and many other cultural and environmental organizations. Participants learned about creative ways to incorporate teaching and learning about water into the curriculum. In 2019, DEP became a Continuing Teacher and Leader Education (CTLE) sponsor, as approved by the New York State Education Department, Office of Teaching Initiatives. New York State certified teachers now receive credit towards their required training hours by participating in our professional learning opportunities.

7.4 FLOATABLES MONITORING PROGRAM PROGRESS REPORT

DEP has been tasked through its SPDES permit requirements to implement and maintain a floatables control program as well as a monitoring program to provide a means to assess and measure the effectiveness of the programs. These control and monitoring programs are embodied in the City-Wide Comprehensive CSO Floatables Plan Modified Facility Planning Report (Floatables Plan, July 2005) inclusive of Addendum 1 – Pilot Floatables Monitoring Program Work plan (December 2005)

The Floatables Plan contains a conceptual framework for the monitoring of floatables conditions in the waters of New York Harbor. A pilot program was conducted over the course of 2006 and 2007 to develop and test the monitoring methodology envisioned in the framework, and the full program began in 2008. A progress report, presented in conjunction with the CSO BMP Annual Report under separate cover, describes the progress that DEP has made.

The floatables monitoring program is based on observations of the presence/absence of floatables from monitoring stations throughout the harbor and has developed into one of a number of methods to assess floatables control programs. These basic monitoring data have been used to prioritize and select sites for more comprehensive site-specific investigations focused on priority sites with persistent poor ratings. The site-specific investigations characterize floatables, identify sources of floatables, correlate rating trends to floatables control programs where applicable, and, in conjunction with CSO LTCP processes, provide the first steps for appropriate remediation planning where feasible.

Since 2006, the program has grown to monitoring most of NYC's regional waters and their near shores and shorelines. NYC DEP Harbor Water Quality Survey (HWQS) and Volunteer Survey Program monitoring stations increased from 25 sites in 2006 to 132 sites in 2019. Over the long term, variations in monitoring sites and locations will likely occur as public participation volunteer interest varies, shoreline cleanup sites change, and HWQS sites change; floatables monitoring at PCM sites will continue to be added as forthcoming LTCP element construction is completed.

As part of the Floatables Monitoring Program, site-specific investigations were conducted for the monitoring sites that had the most persistently poor floatables condition ratings based on monitoring data collected in 2018. Sites sampled in 2019 included BS61 Penny Beach in Staten Island, BS23 Crooke's Point also in Staten Island and BS106 World's Fair Marina (see Figure 14 in the Floatables Progress Report). The overarching goal of this year's site-specific investigations was to gain insight into the sources of floatables and other debris at the selected sites in order to inform planning within the framework of the City-wide CSO LTCP. The investigations were able to provide a step toward this goal.

In addition to the floatables controls listed in BMP 7a through 7d, the City engages in a street sweeping program to reduce floatables' entry into catch basins and the combined sewer system. The program is administered by DSNY and evaluated through systematic street litter monitoring, known as the "Scorecard Program," conducted by the Mayor's Office of Operations. According to the Scorecard Program, City-wide street litter levels have improved somewhat since 2003 with clear improvements in the percent acceptable and percent filthy ratings. Scorecard Program results for the past forty four years are summarized in Appendix 7 (DEP BWT) Figure 7-4.

8 COMBINED SEWER SYSTEM REPLACEMENT

“Replacement of combined sewers shall not be designed or constructed unless approved by NYS Department of Health and specified in the NYCDEP Master Plan for Sewers and Drainage. When replacement of a combined sewer is necessary it shall be replaced by separate sanitary and storm sewers to the greatest extent possible. These separate sanitary and storm sewers shall be designed and constructed simultaneously but without interconnections to maximum extent practicable. When combined sewers are replaced, the design should contain cross sections which provide sewage velocities which prevent deposition of organic solids during low flow conditions.”

Combined Sewer System Replacements are done in conformance with the Master Plan for Sewers and Drainage, NYCDEP, 1985 and approved by NYS Department of Health (DOH).

9 COMBINED SEWER/EXTENSION

“Combined sewer/extension, when allowed should be accomplished using separate sewers. These sanitary and storm sewer extensions shall be designed and constructed simultaneously but without interconnections. No new source of storm water shall be connected to any separate sanitary sewer in the collection system. If separate sewers are to be extended from combined sewers, the permittee shall demonstrate the ability of the sewerage system to convey, and the treatment plant to adequately treat, the increased dry-weather flows. Upon written notification by the Regional Water Engineer, the permittee shall assess the effects of the increased flow of sanitary sewage or industrial waste, on the frequency, flow and pollutant loading on the CSOs including the impacts on the receiving water quality and usage. This assessment should use techniques such as collection system and water quality modeling contained in the Water Environment Federation Manual of Practice FD-17 Combined Sewer Overflow Pollution Treatment.”

In 2019, two private combined sewer extensions within Queens and the Bronx were reviewed and approved and two previously approved private combined sewer extensions in the Bronx completed construction. Sewer extensions are reviewed and approved in accordance with the City drainage plan.

10 SEWER CONNECTION & EXTENSION PROHIBITIONS

“If, there are documented, recurrent instances of sewage backing up into house(s) or discharges of raw sewage onto the ground surface from surcharging manholes, the permittee shall, upon letter notification from DEC, prohibit further connections that would make the surcharging/back-up problems worse. Wastewater connections to the combined sewer system downstream of the last regulator or diversion chamber are prohibited.”

For the calendar year 2019, DEP received no letter notification from DEC concerning chronic sewer backups or manhole overflows that would prompt DEP to prohibit additional sewer connections or sewer extensions

11 SEPTAGE AND HAULED WASTE

“The discharge or release of septage or hauled waste upstream of a CSO is prohibited.”

The septage and hauled waste program continued unchanged since the 2018 Annual BMP

Report issued on May 1, 2019.

12 CONTROL OF RUN-OFF

“All sewer certifications for new development shall be consistent with NYCDEP rules and regulations and shall require on-site detention or retention to not exceed the capacity of the existing sewers fronting the property. Only allowable flow will be permitted to discharge into the combined or storm sewer system.”

Connecting to or repairing/relaying an existing connection to any combined, storm or sanitary sewer requires a permit from DEP. A new connection is conditioned upon the submission of a Certification of a Site Connection Proposal (SCP) or a House Connection Proposal (HCP). A NYC Licensed Master Plumber can apply for a sewer connection permit provided there is a certified HCP/SCP submitted by a NYS Licensed Professional Engineer or Registered Architect.

BWSO oversees the sewer permitting process and inspects and approves water and sewer connections performed by licensed plumbers and/or authorized contractors. This oversight and the review of certifications of SCPs and HCPs allow DEP to ascertain whether the volume of sewage entering the collection system conforms to the City's Drainage Plan and will be conveyed to WRRFs without causing sewage back-ups.

DEP administers this program pursuant to the Clean Water Act and State and local laws regulating the treatment and disposal of wastewater. The City's "Rules Governing House/Site Connections to the Sewer System" are set forth in the Rules of the City of New York, Title 15, Chapter 31.

Connections to any City sewer require DEP (BWSO) inspection, generating a "connection card" or "Certificate of Inspection." Such certification is a prerequisite to the property owner's receiving a Certificate of Occupancy from the NYC Department of Buildings (DOB). BWSO's Borough Water & Sewer Records Office maintains records of all connections.

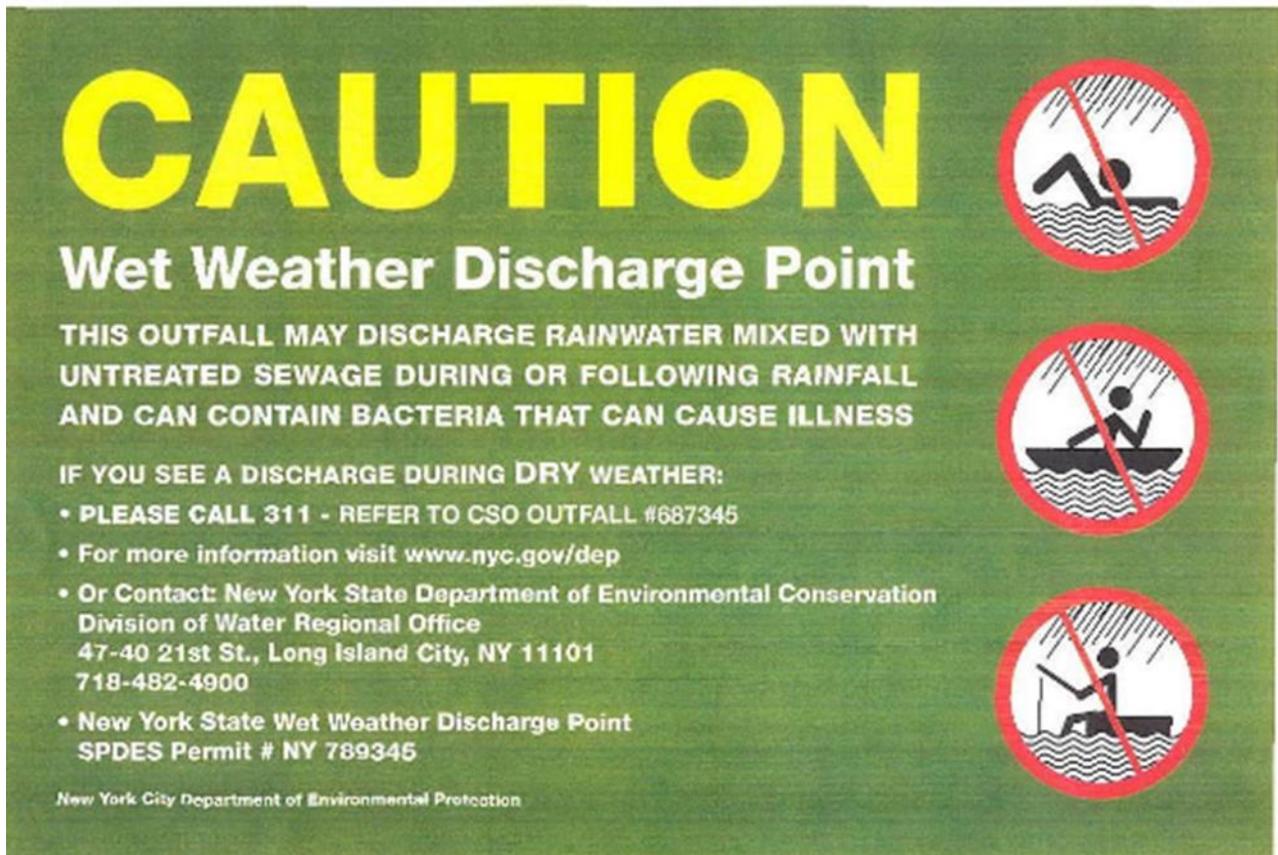
The Chapter 31 rule to "reduce the release rate of storm flow to combined sewers from new developments to 10% of the drainage plan allowable or 0.25 cfs, whichever is higher (for cases when the allowable storm flow is more than 0.25 cfs)," was promulgated on January 4, 2012, and has been in effect since July 4, 2012.

A copy of the Sewer Certification Form and Site Connection Proposal Form that must be filed for new development are attached in Appendix 8.

13 PUBLIC NOTIFICATION

a. *“ The permittee shall install and maintain identification signs at all CSO outfalls owned and operated by the permittee as listed on the Additional Combined Sewer Outfall page(s) of this permit. The permittee shall place the signs at or near the CSO outfalls and ensure that the signs are easily readable by the public. The signs shall have minimum dimensions, information and appearance as specified in the Discharge Notification Requirements page of this permit.”*

DEP installed signs at all CSO outfalls in 2003. Under the project "Signs Installation Plant-Wide," initiated in November 2005, DEP installed signs at all WRRF outfalls in 2007. The sign panels are 24" x 36" and the plaques are 6" x 9" with white letters on a green background. Each notification sign and plaque asks the public to contact DEP with the depicted Outfall number and SPDES number if they observe dry weather discharge from the outfall.



In 2010, DEP changed the design of the outfall signs at the recommendation of the Floatables Citizens Advisory Committee which requested that we include specific information about the water quality at these locations. The new design was approved by DEC, the Arts Commission and DPR, as well as Community Boards in the five boroughs. Recommendations were made to include warnings about recreational activities such as swimming, boating and fishing at the outfall locations. The new design emphasizes the word "Caution" in order to alert the public to the fact that the location is a point of release of wastewater into surface water during wet weather. The signs also provide graphics of non-recommended activities. The replacement of the signs was completed in May of 2011 with the newly designed CSO signs; see Appendix 10 for the list of installed CSO sign locations.

The signs also provide contact numbers people can call to report discharges during dry weather. The ID number can help a 311 operator or a DEP employee to recognize the location from which someone is reporting discharges and to take immediate action. DEP has received calls prompted by these signs. These calls are handled by a trained group of employees who are aware of related response actions. Calls are evaluated and forwarded to responsible staff who will take the appropriate action.

The knowledge of New York's citizens about their water environment is being expanded with posting of DEP's educational signs. The notice depicts a typical CSO sewer regulator, explains its purpose, and alerts the public to action to be taken in the event of a release of wastewater from an outfall into surface waters during dry weather. The sign also serves a secondary purpose: it involves the citizen in community environmental actions.

Communication with Community Boards was essential to inform them that DEP would be working in their areas in response to the "Fisherman's Right to Know" mandate. The purpose of the Act was explained and specific contact points within DEP were established.

Combined sewer outfalls along Shore Road walkway

At five sites along this walkway you will find small plaques in the ground. These plaques identify the locations of combined sewer outfalls. Combined sewer outfalls are part of the City's vast combined sewer collection system which collects all sanitary sewage (from toilets, tub drains, and kitchen and bathroom sink drains) and storm water (rainfall runoff from streets and catch basins). This is also known as combined sewage.

The combined sewers convey sewage to the city's 14 wastewater pollution control plants for treatment. During rainy weather these sewers also perform the function of preventing street and basement flooding by directing rainfall runoff into our surrounding waters through the combined sewer outfalls.

During dry weather, outfalls serve as a relief mechanism: when a failure occurs in the City's sewer collection system and the sewage flow cannot be conveyed to a treatment plant. There should be no discharge from these outfalls during dry weather.

Reporting dry weather discharges

The New York City Department of Environmental Protection, (DEP), is installing signs and plaques at all combined sewer outfalls around the City in order to comply with the New York State Discharge Notification Act or "Fisherman's Right to Know Act".

Each outfall has a unique Outfall Identification number (Outfall ID) which is displayed on the sign or plaque.

If you see a problem at an outfall (such as discharge of sewage during dry weather), please record the Outfall ID and call DEP's 24-Hour Help Center at 718-DEP-HELP (337-4357).

“Waterwalk” Educational Signage

b. “The permittee shall implement a public notification program to inform citizens of the location and occurrence of CSO events. As long as the Department of Health and Mental Hygiene provides a Your location public notification program, the permittee may submit a summary of the program in the annual BMP report, rather than developing their own program. The program shall include a mechanism (public media broadcast, standing beach advisories, newspaper notice etc.) to alert potential users of the receiving waters affected by CSOs and a system to determine the nature and duration of conditions that are potentially harmful to users of these receiving waters due to CSOs. ”

The DOHMH 2019 NYC Beach Surveillance and Monitoring Report can be accessed at:

<https://www1.nyc.gov/assets/doh/downloads/pdf/beach/beach-report-2019.pdf>

13.1 SUMMARY OF DOHMH REPORT:

13.1.1 Routine Monitoring and Surveillance Procedures

The routine beach monitoring and surveillance procedures consist of the following three major components:

- Routine beach water quality monitoring;
- Compliance inspections; and
- Regulatory surveillance.

DOHMH monitors and samples each beach weekly with the exception of the Rockaway and Breezy Point beaches, which are sampled biweekly. Additional samples may be collected when necessary. The determining factors for additional sampling may include:

- Proximity to suspected pollution sources;
- Extent of pollution;
- Beach use;
- Historical water quality data; and
- Other health risk factors.

Prior to sample collection, a visual inspection is performed to identify any existing and/or potential sources of pollution that are likely to affect beach water quality. During a sample event, three samples are collected at each beach. At larger beaches, such as Coney Island and Rockaway, additional samples are taken at multiple locations to ensure adequate representation and reliable data results. Water samples are collected at knee-depth (18 inches) in three feet of water, at the middle of a typical or most highly used area of the beach, or near a potential source of pollution. The collected samples are delivered to the DOHMH Office of Public Health Laboratories (PHL) for analysis. The analytical turnaround time for Enterococci is 24 hours.

13.1.2 Public Notification and Risk Communication

Upon evaluation and assessment of beach water quality as specified above, when beach status changes occur, DOHMH notifies the public via on-site postings and website postings, and through 311 (non-emergency government service hotline), Notify NYC, Twitter, RSS, e-mail, SMS and DOHMH press releases (when necessary). Beach operators are also notified by phone and/or email for onsite postings.

13.1.3 Water Quality and Illness Reporting

Routine water quality monitoring and sample collection were performed at all 25 permitted beaches. Over 1584 samples were collected and analyzed from these beaches between April and September 2019. The Department received two complaints in July regarding a potential illness caused by beach recreation activity at the Bronx private beach, Schuyler Hill Civic Association. These complaints were referred to the Bureau of Communicable Disease epidemiologists for follow-up investigation. After multiple attempts the respondents could not be contacted, and so the exposure and/or cause could not be verified.

In general, for private beaches, Douglaston Manor had the highest daily exceedance rate (25.8%), while Breezy Point 219, Breezy Point Reid, Sea Gate Beach Club, and

West Fordham had no exceedances. Among public beaches, Cedar Grove, Manhattan, and Midland had the highest daily exceedance rates (5.0%), while Orchard, Rockaway, and South Beaches had no exceedances.

13.1.4 Inspections

During the 2019 beach season, inspections of all 25 public and private beaches were successfully conducted by the Department. Four facilities were cited for violations at the time of inspection as detailed in Appendix 10.

DOHMH monitors wet weather conditions daily during the bathing season and notifies the public when rainfall intensities exceed the pre-emptive limit. The notification and communication policies and procedures to inform the public of the potential risks associated with CSOs as well as storm water runoff are as follows: onsite postings, announcements through the City Information Hotline 311, and website postings at www.nyc.gov/health/beach and <https://www1.nyc.gov/> (under NYC Right to Know Now).

Pre-emptive Wet Weather Advisory information is posted by the facility in an area visible and accessible to the public such as at beach entrances, on bulletin boards, or in the general vicinity of the common swimming areas during the entire swimming season. When the beach is under a Wet Weather Advisory, the facility is required to post the additional advisory sign indicating that the Wet Weather Advisory is currently in effect.

Routine water quality testing is carried out at least once a week, except at the Rockaways, where sampling is bi-weekly. Additional sampling may be conducted when routine samples exceed applicable standards, when there have been reported sewage spills and pollution events, and following a heavy rainfall event.

14 CHARACTERIZATION AND MONITORING

“The permittee shall characterize the combined sewer system, determine the frequency of overflows, and identify CSO impacts in accordance with Combined Sewer Overflows, Guidance for Nine Minimum Controls, EPA, 1995, Chapter 10. These are minimum requirements, more extensive characterization and monitoring efforts which may be required as part of the Long Term Control Plan.”

Because DEP maintains many regulator structures which have very complex geometry and are tidally influenced, it is not feasible to monitor all CSO outfalls. DEP does have a SCADA system that helps provide some information pertaining to water levels in the regulator structures and provides some indication of whether or not a CSO is occurring, but SCADA does not provide a direct flow measurement and is influenced by factors such as tidal elevations. DEP has also conducted some very comprehensive and intense interim flow monitoring using specialized vendors at a number of representative locations to calibrate and validate the InfoWork models. These calibrated InfoWork models are then used to estimate the CSO annual volume and frequency for all the CSO outfalls.

There are four (4) NOAA rain gauges at the area airports, and DEP maintains rain gauges at all fourteen (14) WRRFs.

For additional details, refer to the CY 2018 Projected CSO Discharges table in Appendix 11.

DEP also regularly posts additional monitoring data on its website, including waterbody advisories. Information on the City’s waterbody advisory application can be found here:

https://www1.nyc.gov/html/dep/html/harborwater/nyc_waterbody_advisory.shtml

15 ADDITIONAL CSO BMP SPECIAL CONDITIONS

5. b. *“Key Regulator(s) Monitoring Reporting: Following installation of the CSO monitoring equipment described in Subparagraph 3(a) above, within 45 days after the end of each month, DEP shall provide to DEC, a monthly report of all known or suspected CSO discharges from key regulators outside the period of a critical wet weather event. Such monthly report shall provide an itemized list of such CSO discharges, the approximate start time and end time for each discharge, the corresponding WWTP flow rate and the start time and end time of the critical wet weather event. Within 90 days after the end of each quarter (after the first year, reports shall be filed for each calendar year and shall be submitted with the Annual CSO BMP Report), DEP shall submit for DEC approval an engineering analysis of the cause(s) for each discharge and an analysis of options to reduce or eliminate similar future events. A schedule must be provided for all reasonable and cost effective options which can be completed within two years (exclusive of the time required for procurement) and DEP must complete those projects in accordance with a DEC approved schedule. All other options shall be considered as part of the Long Term Control Plan (“LTCP”) process towards achieving the water quality goals of the Clean Water Act, and built into the LTCP hydraulic model per Paragraph 6 below.*

First year quarterly reports have been submitted and annual reports to be submitted hereafter with the Annual CSO BMP Reports.”

DEP includes this section pursuant to Item 5.c. in Appendix B of Additional CSO BMP Special Conditions in the SPDES Permits. Item 5.b requires DEP to submit monthly reports of all known or suspected CSO discharges from key regulators outside the period of a critical wet weather event. For the first year after the effective date of the 2014 CSO BMP Order, Item 5.b also required DEP to quarterly “submit for DEC approval an engineering analysis of the cause(s) for each discharge and an analysis of options to reduce or eliminate similar future events.” DEP is to provide subsequent updates of the engineering analyses in the CSO BMP Annual Reports, and this section fulfills that requirement.

DEP’s SPDES permits define a critical wet weather event as “a wet weather event which causes or would cause the influent flow at the WWTP to exceed the wet weather flow identified in the associated SPDES permit.” Generally, the wet weather flow identified in the associated SPDES permit of the WRRF is two times the design dry weather flow (2xDDWF), but it may be less than 2xDDWF under certain operational limitations (e.g., when DEP has reported critical equipment to be out of service and has submitted a reduced capacity notice to DEC). CSO discharges from key

regulators that occurred outside of a critical wet weather event were determined based on inference from synoptic data collected from the city telemetry system, meteorological and tidal observations, and plant operational data. Analysis of mitigation strategies to reduce the occurrence of discharges outside the critical wet weather periods is being performed using InfoWorks CS models of the city's collection systems.

This submission evaluates observations from the January 2019 through December 2019 monthly reports of all known or suspected CSO discharges from key regulators outside the period of a critical wet weather event. A discussion of the methodology, calculations and analysis, and potential limitations to mitigation strategies can be found in the quarterly report submittals provided for the first year of analysis.

15.1 ENGINEERING ANALYSIS

The SPDES permit requires DEP to evaluate and report on Key Regulators, and stipulates that DEP shall “submit for DEC approval an engineering analysis of the cause(s) for each discharge and an analysis of options to reduce or eliminate similar future events.” It should be noted that DEP implemented an extensive Regulator Improvement Program in the 1990s, through which low-cost upgrades were made to dozens of regulators.

As discussed in previous report submittals, several strategies were identified that may alter the timing of regulator discharges so that such discharges occur less frequently. We considered the following strategies to have the greatest potential for success:

- **Capital Improvements Already in Development.** Capital projects in various stages of planning and development are expected to alter the timing of CSO discharges. These include not only projects directly at the regulator, but also other projects that may influence regulator performance, such as new force mains, the operation of a regional CSO facility, or downstream conveyance enhancements.
- **Removal of Existing Elbow in Drop Pipe.** In certain locations, vertical pipes convey flow from the regulator to the interceptor. As a result of the historical practice of installing elbows as a means of energy dissipation, vertical pipes are known to have chronic clogging that could contribute to early tipping.
- **Enhanced Operations & Maintenance.** Regulators can be influenced by the performance of the downstream interceptor, which may be influenced by, among other things, sedimentation or wet well operation at the WRRF.
- **Flow Transference.** The City sewers are divided into several mostly independent service areas. This division suggests there may be potential for diverting flow from an area of limited wet weather capacity to a nearby area with excess wet weather capacity.

- Continued Monitoring. Monitoring over a longer period of time is prescribed where regulator performance is not yet clearly understood, or where a regulator yields a small number of events compared to other Key Regulators. Limited sample sizes increase the risk of misinterpretation of data, and resultant ineffective mitigation strategy or inappropriate action taken at a regulator that is not actually significantly discharging early. A larger data set will allow for more accurate interpretation and better decision-making on future capital commitments.
- Citywide / Open Waters LTCP. As part of the Open Waters / Citywide LTCP all category A and B regulators discharging into the open waters were evaluated to assess alternatives to reduce hours of CSO discharges outside of the critical period. These alternatives included raising and lengthening of weir structures, opening of orifices, enlargement of branch interceptors, and in some locations expanding pump station capacities.

15.2 RESULTS

Potential mitigation strategies were not analyzed for those Key Regulators that are expected to be hydraulically influenced by capital projects already developed to reduce CSO discharges and increase flow to the WRRF, as required by enforceable milestones under the CSO Order. Examples of potential, cost-effective mitigation strategies that were evaluated include weir modifications, flow transference, enhanced operation and maintenance, and resizing branch interceptors. After consideration of the cause(s) of their discharging outside of a critical wet weather event, any possible system limitations and a number of approaches that might be expected to reduce the occurrence of such discharges, no reasonable options that could be completed within two years were evaluated. The results of the open waters regulator evaluations will be included in the Citywide / Open Waters LTCP that is scheduled to be submitted on September 30, 2020. See Appendix 12.2 for a summary of the status of all telemetered regulators.

Table 14.1 summarizes the observations of Key Regulators during the period of analysis, which includes data from January 2019 through December 2019. Of the locations where no capital improvements are currently planned, three (3) regulator had no occurrences and four (4) locations had an average of one or fewer occurrences per month.

Table 14.1 Key Regulators with Potential CSO Discharges outside the Period of a Critical Wet Weather Event, January through December 2019

Key Regulator	2018 Number of Occurrences													Total Duration (hr)	Analysis Category
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	To Date		
26W-01	0	2	1	0	1	0	3	5	2	0	1	0	15	13.25	A
26W-02	1	4	2	1	2	0	4	6	0	0	0	1	21	51.75	A
BBH-02	0	0	0	0	0	1	0	1	0	0	0	0	2	1.00	A
BBH-06	1	0	0	0	0	1	0	0	1	1	0	0	4	0.25	A
BBL-04	1	3	0	1	1	4	6	9	2	3	2	3	35	14.50	A
BBL-22	1	0	0	0	0	2	3	7	2	2	1	2	20	8.50	A
HP-05	0	3	1	2	3	0	0	4	3	3	4	2	25	53.50	A
HP-10	0	1	0	1	1	2	4	7	1	2	0	1	20	15.80	C
HP-13	1	5	3	3	5	3	7	7	5	4	6	4	53	101.00	C
JA-03	2	5	4	4	6	5	7	9	7	3	7	1	60	216.65	A
NCB-01	1	0	1	0	0	0	4	7	3	4	3	1	24	7.75	C
NCB-04	0	1	1	1	2	1	4	5	4	1	2	3	25	23.00	C
NCM-47	0	0	0	2	1	1	2	5	2	2	1	0	16	7.00	C
NR-16	1	3	0	1	2	2	5	5	3	2	2	0	27	17.80	C
NR-23	0	0	0	1	0	1	4	6	1	1	0	0	14	8.00	C
NR-33	0	0	0	0	0	0	1	1	2	0	0	0	4	1.50	B
OH-01	0	2	1	0	1	0	0	0	0	0	1	0	5	0.75	B
OH-06	1	1	1	0	0	0	0	1	0	0	0	0	4	1.25	B
PR-06W	1	5	3	3	8	1	7	6	4	3	6	4	51	150.50	C
PR-13E	2	9	5	5	10	4	8	9	6	3	10	5	76	275.00	C

OH-01	0	0	1	4	2	7	4	2	1	1	0	1	23	36.00	C
OH-06	0	0	0	0	0	3	1	0	0	0	0	0	4	8.00	B
PR-06W	6	2	4	3	8	10	4	3	2	0	0	5	47	92.75	C
PR-13E	6	5	4	5	7	8	6	4	2	5	0	6	58	141.25	C
RH-02	0	0	0	0	0	0	0	1	0	0	0	0	1	0.00	B
RH-20	0	0	0	0	0	1	0	1	0	0	0	0	2	1.50	B
TI-09	2	4	3	5	6	5	3	2	1	4	2	4	41	152.25	C
TI-10A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	B
WIB-53	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	A
WIB-67	2	1	3	3	6	0	4	4	0	2	0	1	26	69.25	A
WIM-23	0	0	0	1	1	2	0	3	0	2	0	0	9	8.25	A
Count**	12	12	12	18	16	18	18	20	9	16	6	14	24		

**Count of regulators with at least one event

Analysis Categories

- Key Regulators that may be influenced by planned capital improvements (Projects are currently in design or construction that may result in CSO reductions and additional wet weather capture);
Key Regulators averaging one or fewer potential discharge outside the period of a critical wet weather event per month
All other Key Regulators with an average of more than one potential discharge outside the period of a critical wet weather event per month.

15.2.1 Key Regulators that may be influenced by planned capital improvements (projects are currently in design or construction that may result in CSO reductions and additional wet weather capture)

26W-01

Regulator 26W-01 had one (1) potential discharge outside the period of a critical wet weather event; the total duration of this period was 1.5 hours. Note, 26th Ward WRRF operated at a reduced interim wet weather capacity for the duration of 2019. In addition, there are several planned capital improvements scheduled at the 26th Ward WRRF proceeding pursuant to the CSO Order that may influence the performance of regulator 26W-01:

Installation of a new primary settling tank under Contract 26W-20, currently in construction and scheduled to be completed in 2021, however a delay due to Force Majeure has been submitted

Once the new facilities are in service, DEP will commence a 12-month monitoring period, and provide an engineering analysis in the applicable CSO BMP Annual Report following that 12-month monitoring period.

26W-02

Regulator 26W-02 had twelve (12) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 26.00 hours. Note, 26th Ward WRRF operated at a reduced interim wet weather capacity for all of 2019 due to ongoing construction. There is a high-level storm sewer project underway in this drainage area pursuant to the CSO Order which is scheduled to be completed by December 2022, however a delay due to Force Majeure has been submitted. This work, in conjunction with construction of a fifth primary settling tank, may impact wet weather performance. Once the new facilities are in service, DEP will commence a 12-month monitoring period, and provide an engineering analysis in the applicable CSO BMP Annual Report following that 12-month monitoring period.

HP-05

Regulator HP-05 had twenty-three (23) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 45.25 hours. Regulator HP-05 had a planned capital improvement, the installation of the Pugsley Parallel Interceptor upstream of this regulator under Contract CS-ER-WCP, which was completed in February 2020. There is also additional work planned at regulator HP-09 and at regulator HP-05 under the approved Bronx River LTCP that will impact

performance and the current construction completion milestone is September 2026. Once the new facilities are in service, DEP will commence a 12-month monitoring period, and provide an engineering analysis in the applicable CSO BMP Annual Report following that 12-month monitoring period.

JA-03

Regulator JA-03 had fifty-two (52) potential discharges outside the period of a critical wet weather event. The total duration of these periods was 156.75 hours. There is a capital improvement scheduled that may influence the performance of regulator JA-03. Bending weirs were installed at Regulators JA-03 & JA-14 along with a parallel interceptor to convey additional flow to the plant. As of June 2020, a new lateral Bergen Basin sewer was constructed enabling the sluice gate at Regulator JA-14 to be fully opened to maximize wet weather flow to the Jamaica WRRF. DEP will commence a 12 month monitoring period starting next year to assess efficacy of these controls.

WIB-53

Regulator WIB-53 did not have any potential discharges outside the period of a critical wet weather event. Note, Wards Island WRRF operated at a reduced interim wet weather capacity for a portion of 2019. WIB-53 is about 1,000 feet from the Bronx Grit Chamber, where all four bar screens have been replaced. In addition, the main sewage pumps at the Wards Island WRRF were replaced with construction completion certified in August 2019. The bar screen replacement work was completed in January 2017. Now that the new facilities are in service, DEP has commenced a 12-month monitoring period, and will provide an engineering analysis in the next CSO BMP Annual Report.

WIB-67

Regulator WIB-67 had twenty-six (26) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 69.25 hours. Note, Wards Island WRRF operated at a reduced interim wet weather capacity for a portion of 2019. WIB-67 was influenced by the Bronx Grit Chamber and by the main sewage pump work at the Wards Island WRRF. Now that the new facilities are in service, DEP has commenced a 12-month monitoring period, and will provide an engineering analysis in the next CSO BMP Annual Report.

WIM-23

Regulator WIM-23 had nine (9) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 8.25 hours. Note, Wards Island

WRRF operated at a reduced interim wet weather capacity for a portion of 2019. Regulator WIM-23 was influenced by the Manhattan Grit Chamber and by the main sewage pump work at the Wards Island WRRF. Now that the new facilities are in service, DEP has commenced a 12-month monitoring period, and will provide an engineering analysis in the next CSO BMP Annual Report.

15.2.2 Key Regulators Averaging One Discharge or Fewer per Month

BBH-02

Upon completion of the High-Level collection system, main sewer pump and force main work, DEP finished its 12-month monitoring period in CY2019. Regulator BBH-02 had one (1) potential discharge outside the period of a critical wet weather event; the total duration of this period was 5.00 hours. Note, Bowery Bay WRRF operated at a reduced interim wet weather capacity for a portion of 2019 due to ongoing construction. Regulator BBH-02 had previously been in Category A as a regulator potentially influenced by planned capital improvements.

NCM-47

Regulator NCM-47 had eleven (11) potential discharges outside the period of a critical wet weather event; the total duration of these was 4.75 hours. Regulator NCM-47 had previously been in Category C in 2018, with one or more discharges per month, but moved back to Category B in 2019.

NR-33

Regulator NR-33 did not have any potential discharges outside the period of a critical wet weather event. However, DEP will continue to monitor it and report in accordance with DEP's SPDES permits.

OH-06

Regulator OH-06 had four (4) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 8 hours. . The evaluation for Regulator OH-06 was previously submitted to DEC in the Quarterly Key Regulator Monitoring Reports.

RH-02

Regulator RH-02 had one (1) potential discharge outside the period of a critical wet weather event; the total duration of this period was 0.00 hours. (Potential CSO discharge durations were less than the 15-minute reportable interval.) DEP will continue to monitor and report in accordance with DEP's SPDES permits.

RH-20

Regulator RH-20 had two (2) potential discharges outside the period of a critical wet weather event; the total duration of these periods was only 1.5 hours. DEP will continue to monitor and report in accordance with DEP's SPDES permits.

TI-10A

Regulator TI-10A had no potential discharges outside the period of a critical wet weather event. DEP will continue to monitor and report in accordance with DEP's SPDES permits.

15.2.3 Key Regulators Averaging More than One Discharge per Month**BBH-06**

Upon completion of the same planned capital improvements described for regulator BBH-02, DEP finished its 12-month monitoring period in CY2019. Regulator BBH-06 had fourteen (14) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 23.50 hours. Note, the Bowery Bay WRRF operated at a reduced interim wet weather capacity for a portion of 2019. Regulator BBH-06 had previously been in Category A, regulators potentially influenced by planned capital improvements. As part of the Flushing Bay LTCP, it was recommended to construct a CSO Storage Tunnel that would capture overflow from this regulator.

BBL-04

Upon completion of the same planned capital improvements as those for regulator BBH-02, DEP finished its 12-month monitoring period in CY2019. Regulator BBL-04 had forty-four (44) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 43.25 hours. Note, Bowery Bay WRRF operated at a reduced interim wet weather capacity for a portion of 2019. Regulator BBL-04 had previously been in Category A, regulators potentially influenced by planned capital

improvements. As part of the Newtown Creek LTCP, it was recommended to divert wet weather flow to the Borden Avenue Pump station and to increase capacity of this pump station.

BBL-22

Upon completion of the same planned capital improvements as those for regulator BBH-02, DEP finished its 12-month monitoring period in CY2019. Regulator BBL-22 had fourteen (14) potential discharges outside the period of a critical wet weather event; the total duration of these periods was only 6.00 hours. Note, Bowery Bay WRRF operated at a reduced interim wet weather capacity for a portion of 2019. Regulator BBL-22 had previously been in Category A, regulators potentially influenced by planned capital improvements. Regulator BBL-22 was further evaluated as part of the Citywide / Open Waters LTCP.

HP-10

Regulator HP-10 had twenty (20) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 26.50 hours. The evaluation for Regulator HP-10 was previously submitted to DEC in the Quarterly Key Regulator Monitoring Reports; it was identified as requiring further consideration as part of the LTCP process. Regulator HP-13 was further evaluated as part of the Citywide / Open Waters LTCP.

HP-13

Regulator HP-13 had forty-five (45) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 108.25hours. A review of the inclinometer data has been used to confirm the accuracy of the reported number of discharges. The Bronx River LTCP recommended regulator modifications and a parallel sewer at this regulator that is currently anticipated to be completed in 2026.

NCB-01

Regulator NCB-01 had twenty-seven (27) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 12.75 hours. Since its 12-month monitoring period was completed in CY 2018, it has had an average of more than one critical event per month. The Newtown Creek LTCP recommended a CSO Storage Tunnel that would capture overflow from this regulator.

NCB-04

Regulator NCB-04 had forty-one (41) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 64.75 hours. A review of the inclinometer data has been used to confirm the accuracy of the reported number of discharges. Regulator NCB-04 was further evaluated as part of the Citywide/Open Waters LTCP.

NR-16

Regulator NR-16 had seventeen (17) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 11.00 hours. Regulator NR-16 was further evaluated as part of the Citywide/Open Waters LTCP.

NR-23

Regulator NR-23 had thirteen (13) potential discharges outside the period of a critical wet weather event; the total duration of these events was 7.50 hours... Regulator NR-23 had previously been in Category B, with one or fewer discharges per month, but moved to Category C in 2018.

OH-01

Regulator OH-01 had twenty-three (23) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 36.00 hours. Regulator OH-01 was previously in Category B, but returned to Category C in 2019. The evaluation for Regulator OH-01 was previously submitted to DEC in the Quarterly Key Regulator Monitoring Reports and it was further evaluated as part of the Citywide/Open Waters LTCP.

PR-06W

Regulator PR-06W had forty-seven (47) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 92.75 hours. The evaluation for Regulator PR-06W was previously submitted to DEC in the Quarterly Key Regulator Monitoring Reports; it was further evaluated as part of the Citywide/Open Waters LTCP.

PR-13E

Regulator PR-13E had fifty-eight (58) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 141.25 hours. The evaluation for Regulator PR-13E was previously submitted to DEC in the Quarterly Key Regulator Monitoring Reports; it was further evaluated as part of the Citywide/Open Waters LTCP.

TI-09

Regulator TI-09 had forty-one (41) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 152.25 hours. The Flushing Creek LTCP recommended floatables control and disinfection at this regulator.

15.2.4 Non-Key Regulator(s) with CSO Monitoring Equipment Identification Program Reporting

In February 2016, in accordance with Item 5.c. in Appendix B of Additional CSO BMP Special Conditions in the SPDES Permits, DEP submitted the report on Regulator(s) with CSO Monitoring Equipment Identification Program. Item 5.c. required DEP to commence a 12-month data gathering period and to submit a report of all known or suspected CSO discharges outside the period of a critical wet weather event from all regulators with CSO monitoring equipment. The report presented findings from the 12-month data gathering period of August 2014 through July 2015. Several regulators were reported to be in Category A at that time, which had current or future capital improvements that would potentially render the data collected unrepresentative of future conditions. As stated in the report submittal, once the new facilities were in service, DEP would commence a 12-month monitoring period, and provide an engineering analysis in the applicable CSO BMP Annual Report following that 12-month monitoring period. Below are the results of the non-key regulators in which the capital improvement work has been completed and 12-months of monitoring data under normal operations are available. The 12-month time period is January 2019 – December 2019, see Appendix 12.1 for the CY2019 Non-Key Regulator Monitoring Reports

15.2.5 Category C: Regulators Averaging More than One Discharge per Month**BBH-03**

Regulator BBHL-03 had sixty-six (66) potential discharges outside the period of a critical wet weather event; the total duration of these was 89.00 hours. Regulator BBH-03 was further evaluated as part of the Citywide/Open Waters LTCP.

BBH-09

Regulator BBHL-09 had fifteen (15) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 39.50 hours. In the future, Regulator BBH-09 overflows will be diverted to a CSO Storage Tunnel.

BBL-21

Regulator BBL-21 had twenty-one (21) potential discharges outside the period of a critical wet weather event; the total duration of these events was 27.00 hours. Regulator BBL-21 was further evaluated as part of the Citywide/Open Waters LTCP.

BBL-23

Regulator BBL-23 had twenty-six (26) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 25.50 hours. Regulator BBL-23 was further evaluated as part of the Citywide/Open Waters LTCP.

BBL-30

Regulator BBL-30 had forty-seven (47) potential discharges outside the period of a critical wet weather event; the total duration of these periods was 43.00 hours. Regulator BBL-30 was further evaluated as part of the Citywide/Open Waters LTCP.

16 SUSTAINABILITY AND POLLUTION PREVENTION ACTIVITIES

16.1 WATER CONSERVATION

DEP values the role of water conservation and demand management in the responsible long-term management of New York City's water supply. As a result, actual water demand is down more than 30% since the 1990s, despite increasing population. However, DEP must consider the increasing uncertainty of climate change — predictions of warmer temperatures and greater precipitation variability — in its management of the City's water supply and the demand for this resource. Further, the leaking of the Delaware Aqueduct and its planned shutdown and repair in 2022 as part of DEP's Water for the Future Program is a near-term certain event that provides an imperative not only to proactively manage, but also to explicitly reduce, existing water demand to ensure adequate water supply through this period.

16.1.1 Program Description

DEP's water conservation efforts aim to reduce water use in New York City and upstate communities by 20 million gallons per day (MGD) by 2022. This goal is detailed in the 2018 Water Demand Management Plan, accessible here

<http://www.nyc.gov/html/dep/pdf/conservation/2018-water-demand-management-plan.pdf>. The plan sets forth six major strategies DEP continues to implement to reduce water use. Below are the plan's six strategies:

- Municipal Water Efficiency Program: Involves retrofits of city-owned properties.
- Residential Water Efficiency Program: Focuses primarily on the Toilet Replacement Program for multi-family buildings.
- Non-Residential Water Efficiency Program: Collaboration with private sector organizations including restaurants, hotels, hospitals, and universities.
- Water Distribution System Optimization: Entails system repairs and upgrades, managing water pressure, and refining water meter accuracy and leak detection.
- Water Supply Shortage Management: Encompasses the review and revision of plans to prepare for a drought and other water shortages.
- Wholesale Customers Water Demand Management Program: Targets demand management planning and implementation for wholesale customers north of the City.

The following is a summary of DEP's 2019 progress in implementing the above-listed strategies.

16.1.2 Municipal Water Efficiency Program

DEP has established partnerships and completed several projects with key municipal agencies and entities to support water efficiency measures in their facilities. Partners include DOE, DPR, the New York City Fire Department (FDNY), the City University of New York (CUNY), New York City Health and Hospitals Corporation (HHC), New York City Department of Citywide Administrative Services (DCAS), and New York City Department of Cultural Affairs - Cultural Institutions Group (CIG).

Through its ongoing partnership with DOE, DEP funded the replacement of over 34,600 toilets and urinals with high-efficiency models in 402 school facilities across all five boroughs through 2018. DEP received additional funding in 2019 to continue this important partnership and anticipates retrofitting up to an additional 200 school facilities in 2020.

In 2019, DEP continued its partnership with DPR and received funding for implementation of two projects. In Central Park, DEP is partnering with Central Park Conservancy (CPC) and DPR to connect the Harlem Meer outflow to the Jacqueline Kennedy Onassis Reservoir (Reservoir) to recirculate stormwater in the park's northern waterbodies. The project will allow for use of recirculated water rather than potable water to refill the Reservoir. This project is anticipated to result in a savings of 0.83 MGD. In Prospect Park, DEP is partnering with Prospect Park Alliance (PPA) and DPR to replace a valve on the make-up water line for the park's lake system. This project is anticipated to result in a savings of 0.80 MGD.

In December 2019, DEP launched a fifth Water Challenge to all 14 Wastewater Resource Recovery Facilities (WRRFs) to encourage water reduction in DEP's own facilities. All plants are encouraged to reduce demand by 10% over a two-year baseline average (calendar years 2018 and 2019). If all facilities achieve this goal, an estimated 2.7 MGD of savings could be achieved. All 14 WRRFs have participated in previous challenges. Additionally, DEP is currently working to replace inefficient water pumps and water hoses with high-efficiency models used to clean equipment at each WRRF and other equipment with high-efficiency models at our treatment facilities.

In November 2018, DEP performed water audits at the three largest WRRFs. Through the auditing process, engineers completed an extensive review of water use at each plant, and identified parts of the water treatment process that could be modified to reduce consumption. In 2019, DEP identified several projects that can reduce water consumption, including expanding the use of effluent in place of potable water, retrofitting seal pumps, and replacing hose nozzles used for tank spray downs. Findings

from the audits were compiled into a comprehensive report in 2019 that identifies cost-efficient water savings measures that DEP is currently considering for implementation.

In 2019, DEP continued its partnership with HHC and completed retrofits at Harlem Hospital. Retrofits at the hospital included more than 570 fixtures and ice machines, more than 900 faucets, and one industrial dishwasher, conserving 70,000 gallons of water per day. DEP will retrofit additional HHC hospitals through 2022. Overall, this partnership with HHC is expected to result in a savings of 1.22 MGD.

DCAS's portfolio includes approximately 50 public buildings throughout the city, including courts and City office buildings. Partnering with DEP, DCAS surveyed 10 buildings within its portfolio. In total, over 1,300 fixtures (toilets and urinals) are inefficient and eligible for retrofit. Retrofits began in 2019 and overall, this partnership with DCAS is expected to result in a savings of 0.24 MGD.

In 2015, DEP partnered with CIG and helped support funding for a pump system as part of a stream corridor restoration project to conserve water in Brooklyn Botanic Garden (BBG). Previously, BBG's stream system was fed by a combination of groundwater and City water inputs. The stream corridor restoration project was completed in April 2019 and reduces BBG's outdoor potable water consumption for its water features from 22 million gallons to less than one million gallons per year (a nearly 96% decrease), a reduction of 57,800 gallons per day.

16.1.3 Residential Water Efficiency Program

In June 2019, DEP concluded the Toilet Replacement Program, after five years of successful implementation. The program provided eligible residential building owners with \$125 vouchers to replace old, inefficient toilets with high-efficiency, WaterSense-certified models. DEP managed contracts with four toilet wholesale vendors to accept the vouchers and provide the toilets to consumers through the program's online application tool. Through the program, approximately 13,300 toilets were retrofitted citywide, for a savings of 0.63 MGD.

In addition to the Toilet Replacement Program, DEP directed its contractor, Honeywell, to provide building owners with complimentary household water conservation surveys. The surveys assist building owners with identifying opportunities for water savings and detecting leaks. In 2019, Honeywell conducted surveys in 4,244 individual apartments in 2,127 single-family apartment buildings. Honeywell also surveyed 209 multi-family buildings, and 4,212 individual units within these properties.

16.1.4 Non-Residential Water Efficiency Program

DEP successfully launched three Water Challenges to different commercial sectors: hotels, restaurants, and hospitals. Modeled after the Mayor's Carbon Challenge, the program encourages participants to reduce their annual water consumption by an average of 5% from their baseline year (measured as the 12-month period prior to the beginning of the Challenge). DEP prepares monthly reports to help participants track their consumption and their performance against the other participants. DEP also hosts quarterly workshops to help participants learn how to make their facilities more water efficient.

In 2018, DEP launched a Water Challenge to Universities:

<https://www1.nyc.gov/site/dep/water/nyc-water-challenges-for-non-residential-sectors.page>. New York City is home to more university students than any other city in the country and the Challenge builds upon ongoing campus sustainability initiatives at each participating university. The six participating universities are Fordham University, Long Island University, New School, Pace University, St. John's University, and Weill Cornell University. Like previous Water Challenges, the goal of this Challenge is for the six participants to achieve a 5% reduction in water consumption, which is 42,000 gallons per day. In 2019, Water Challenge participant consumption declined by 10%, or approximately 0.1 MGD, surpassing the 5% reduction goal.

16.1.5 Water Distribution System Optimization

Water distribution system optimization includes system repairs and upgrades, water pressure management, refining water meter accuracy, and leak detection. In 2019, DEP surveyed 1,099 miles of water mains.

In 2014, DEP implemented a strategic approach to leak detection. Borough-based teams are trained in leak detection to target specific areas served by older network mains more likely to need preventive and corrective maintenance. These teams can respond rapidly to problems compared to the slower response times when DEP relied on one consolidated resource center.

Leaking and/or vandalized fire hydrants can also result in significant water waste. An illegally opened fire hydrant can release more than 1,000 gallons per minute and cause a drop in water pressure. In 2019, DEP repaired 9,668 hydrants, replaced 1,328, and provided other maintenance services to 13,234 additional hydrants.

DEP's efforts to achieve universal metering of all DEP water and sewer accounts is motivated by the need to reduce non-revenue water and promote conservation among water users by providing accurate consumption information. The universal metering

initiative is also critical to measuring the success of many other demand management strategies. Accurate consumption data enables DEP to determine whether target consumer groups have achieved projected consumption reductions or how demand management strategies may be adapted to improve their effectiveness. DEP replaced 1,843 large meters in 2019 (i.e., those over 1.5 inches in diameter).

16.1.6 Water Supply Shortage Management

In December 2016, the Mayor's Office of Operations and the City Law Department certified DEP's revisions to the "Emergency Drought Rules." The proposed, revised title is "Water Shortage Rules," replacing the narrower focus of the previous title. The proposed revisions address water shortage emergencies due to circumstances other than natural conditions, such as planned and unplanned infrastructure outages and repairs that the City may face over the next several years. The proposed revisions also add, remove, and change certain water-use prohibitions during the different stages of water shortage emergencies to better reflect DEP's understanding of City water use. DEP anticipates formal adoption of the revised rules prior to the 2022 shutdown.

16.1.7 Upstate Wholesale Customers Demand Management Program

As of 2019, DEP offers assistance and is working with seven upstate wholesale customers (utility partners) in upstate watershed communities to develop demand management plans for their systems with a target 5% reduction in consumption.

In 2019, the Village of Ossining continued to implement its demand management plan. Additionally, the remaining six utility partners finalized and approved their demand management plans, and each will work to implement conservation measures identified in its plan. Individual intergovernmental agreements (IGAs) were also developed and reviewed by each utility partner in 2019, and are anticipated to be fully executed in 2020. Each IGA represents a contractual funding obligation from DEP and commitment from the utility partner to implement its demand management plan.

16.1.8 Drinking Water Supply and Quality Statement

In 2019, DEP continued efforts to notify the public of the availability of the 2018 Drinking Water Supply and Quality Statement. The agency sent bill inserts to approximately 835,000 bill-paying customers notifying them of the report's availability on the DEP website; another 81,500 customers were notified electronically, and 33,000 customers

were sent postcards. Additionally, DEP distributed approximately 10,000 hard copies to NYC libraries, teachers and non-formal educators, and watershed events. DEP also notified the public through a media campaign with the following assets

On March 4, 2019, DEP announced the publication of the Report on Twitter and Facebook. DEP currently has 17,800 Twitter followers, and 11,000 “NYC Water” Facebook followers.

- DEP created an advertisement that was used at bus shelters, throughout New York City as follows:
- DEP ran two bus shelter campaigns throughout New York City.
- 60 paid bus shelter ads were posted from May 20 to June 11, 2019.
- 25 free bus shelter ads were posted from June 3 to June 30, 2019.
- Through LinkNYC, a communications network replacing New York City pay phones with state-of-the-art kiosks called Links, a DEP campaign announcing the Report, was posted at kiosks throughout the City. Between June 1 and June 30, 2019, the DEP advertisement had over 1 million impressions (an impression is a countable unit of measure of how many times the advertisement was run) which ran at over 3,500 locations.

A Facebook ad campaign ran from April 22 to May 10, 2019 promoting the publication of the Report, and had over 289, 000 impressions.

16.1.9 Rain Barrel Program

DEP’s Rain Barrel Giveaway Program aims to capture storm water before it can ever enter the sewer system and thereby reducing runoff to overwhelmed combined or separate storm sewers. The rain barrel program also builds upon DEP’s efforts to conserve water. Our giveaway program began as a pilot program in 2008 with the distribution of 250 rain barrels to homeowners in the Jamaica Bay watershed. The program was expanded in 2009 due to the public’s overwhelmingly positive response. In 2019, over 7,500 rain barrels were given to NYC building and homeowners, schools, and community gardens in all five boroughs. DEP continues to partner with elected officials and city agencies to organize distribution events throughout the city.

16.2 GREASE OUTREACH

16.2.1 Development of an Expanded Grease Interceptor Program

DEP continues to develop the Expanded Grease Trap Program. The following summarizes activities during calendar year 2019:

- 324 initial inspections performed;
- 1,068 follow-ups/maintenance inspections performed;
- 945 Commissioner's Orders issued;
- 417 Notices of Violation issued;
- 1,315 new grease interceptor installations required.

The Bureau of Public Affairs & Communications' Environmental Compliance Outreach (ECO) Unit completed the following activities in 2019 relating to grease compliance and BMPs for the handling and disposal of grease and oils:

- conducted 12 workshops for property owners and/or tenants;
- published 2 articles representing approximately 11,500 housing units;
- distributed 37 mailings on grease education representing 28,502 housing units; and
- handled general inquiries from businesses (such as how to obtain a licensed, used cooling oil hauler by way of the NYC Business Integrity Commission).

See below also for specific activities regarding DEP's ongoing SE Queens (Community Boards 12 & 13) and South Brooklyn (community Boards 13 & 15) projects.

The above-mentioned mailings included "Cease the Grease" posters and flyers (in various languages); promotional products such as jar openers, sponges, grease recycling bags, and sink strainers, all of which contain proper grease management messages. ECO also attended 15 trade shows and 38 community outreach events where grease awareness literature was distributed.

Moreover, 58 businesses received consultative-type visits regarding commercial grease requirements (e.g., grease trap sizing, grease trap configuration, recycling of used cooking oil, etc.). As part of these consultative visits, DEP provided the establishment with one or more "grease logs," which can be used to track the cleaning of grease interceptors. The Grease Log was also distributed to 141 food service establishments (FSEs) citywide (see the Southeast Queens and South Brooklyn section below for additional information on consultative visits in Queens Community Boards 12 & 13 and Brooklyn Community Boards 14 & 15)

ECO also continued its "Cease the Grease" partnership with NYCHA and worked with several NYCHA developments with regard to mailings, on-site visits and workshops. ECO partnered again with the "Green City Force" (GCF) organization to distribute grease education materials. ECO continues to train GCF members on resident engagement concerning grease education. Part of the outreach to NYCHA was coordinated in conjunction with the Recovery and Resiliency program in the developments; DEP contacted 3,395 NYCHA apartments in South Brooklyn with a population of approximately 9,808.

16.2.2 Environmental Compliance Outreach to Business Community

In 2019, DEP's Environmental Compliance Outreach (ECO) Unit (Bureau of Public Affairs & Communications) continued its core programs in compliance, infrastructure assistance (e.g. proper grease management), business development (including green business), and financing incentives.

ECO continued to work with its primary partners including local business groups and trade associations, and provided assistance by way of answering inquiries, performing on-site visits, and providing dedicated mailings, workshops and trade shows. ECO also enhanced compliance with DEP's grease requirements through workshops, on-site visits (including to food-service establishments) and through outreach to NYC property owners. ECO also continued to play a major role in DEP's Southeast Queens Project primarily through door-to-door visits (including to businesses), mailings, workshops and community events in Queens Community Boards 12 and 13 (see section 16.2.3) and continued outreach efforts in South Brooklyn, Community Boards 13 and 15 (see section 16.2.4). ECO also continued to work with the NYC Small Business Services' "Small Business 1st" (SB1) program to streamline various NYC permit processes.

Table: The following table summarizes selected ECO’s outreach activities during 2019.

Outreach Type	Compliance Assistance / Infrastructure	Business Development (incl. Green Business) & Financing	Water Conservation / Water Bills / Other	“Consumer Confidence Report” (Water Quality)	Estimated Unique Contacts or Events
Tel./Email/Walk-in Inquiries (incl.4 in > 1 category)	206	21	14		250
On-Site Visits (Idling=410); see also below	354				354
Grease Consult/Logs (on-site visit/ tel. consult/logs)	46 consults + 143 grease logs sent (see additional consults in SE Que below)				189
Dedicated Mailings (households, businesses & bus. groups)	N/A	N/A		79,880	N/A
Articles (households, businesses & school coordinators)	11,500			269,752	262,263
Workshops	34		0		34
Trade Shows/Business Expo & Community Events (Trade Shows/Expo=14; Community Events=27); can be in all categories	41	41	41		41
Southeast Queens (households or	CB 12 & 13: distribution to 5163				5163

businesses)	households (mostly door-to-door)				
Brooklyn Community Boards 13 & 15 (total households)	Workshop = 3				8660
Grand Total					Unique Contacts: 266146*; Events:75

(1) Activities include some primarily non-water related outreach (air compliance, Right-to-Know, etc.)

Note: if provided to business group & distributed would result in higher totals than above; “grease logs” distributed can include those sent to businesses in the above categories; however most of the “grease log” total is from a list of “initial inspections” provided by BWT. The grease log is also typically distributed upon the grease consultative visits indicated above.

16.2.3 Southeast Queens Outreach

In 2019, ECO continued to play a major role in DEP's Southeast Queens Project (Community Boards 12 & 13) via the distribution of proper grease management materials as well as workshops. In particular, in 2019 ECO distributed materials to approximately 5163 households primarily through door-to-door delivery to multifamily buildings, community events, and workshops. ECO completed 14 consultative visits and 35 grease overview visits to Queens Community Board 12 & 13 FSEs (and also included the distribution of the aforementioned grease logs at these FSEs).

16.2.4 South Brooklyn Outreach

ECO continued outreach to Brooklyn Community Boards 13 & 15 in 2019. Similar to ECO's role in the Southeast Queens project above, ECO's contribution is part of a major DEP effort in these neighborhoods; households continue to be provided with proper grease management materials. In addition, three workshops were conducted on proper grease and oils management. 4011 apartments were canvassed in NYCHA, representing a population of approximately 8150. An additional 510 households were canvassed in the project area.

16.3 STORMWATER REGULATIONS AND ACTIVITIES

16.3.1 Stormwater Rule (see also Section 13 below)

DEP's stormwater performance standard ("Stormwater Rule"), enables the City to manage stormwater runoff more effectively and to maximize the capacity of the City's combined sewer systems to the maximum extent practicable. Promulgated in July 2012, the Stormwater Rule requires any new connections to the City's combined sewer system to comply with stricter stormwater release rates, effectively requiring greater on-site detention. The Stormwater Rule applies to new development and to alterations of existing development in the City's combined sewer area. For a new development, the stormwater release rate (RCNY Title 15, § 31-01(b)) cannot exceed 0.25 cubic feet per second (cfs) or 10% of the drainage plan allowable flow, whichever is greater (allowable flow is defined as the storm flow from developments that can be released into an existing storm or combined sewer based on existing sewer design criteria). If allowable flow is less than 0.25 cfs, the stormwater release rate cannot be greater than that flow. For alterations of existing development, the stormwater release rate for the altered area is directly proportional to the ratio of the altered area to the total site area, and no new points of discharge are permitted (RCNY Title 15, § 31-03(a)(2)).

In conjunction with the implementation of the Stormwater Rule, DEP published a companion document, Guidelines for the Design and Construction of Stormwater Management Systems, to assist NYC's development community and licensed

professionals in the selection, planning, design and construction of compliant on-site source controls.

DEP is currently developing a package of stormwater regulation revisions to update the 2012 Stormwater Rule requirements and provide alignment between the Stormwater Rule and the City's new Construction and Post-Construction Program (C/PC), which was launched in 2019. The City's C/PC Program complements the NYSDEC General Permit for Stormwater Discharges from Construction Activity (CGP) program in the NYC MS4 area by requiring DEP review and approval of stormwater pollution prevention plans (SWPPPs), and DEP inspection of construction sites both for stormwater impacts and for operation of post-construction stormwater management practices (SMPs). Legislation was introduced in January 2020 to expand the C/PC Program citywide to CSO areas to further advance water quality objectives. The legislation is currently pending a hearing date in August, rescheduled due to the COVID-19 pandemic.

DEP provides regular updates on the 2012 Stormwater Rule and forthcoming rule changes as part of its Green Infrastructure Annual Reports available on its website here <https://www1.nyc.gov/site/dep/water/green-infrastructure.page>.

16.3.2 Green Roof Tax Abatement

In 2019, the New York State legislature renewed the Green Roof Property Tax Abatement available to property owners installing green roofs. It reauthorized the reimbursement of \$5.23 per square foot of installed green roof, and allowed the City to designate up to five community districts that would receive an enhanced abatement of \$15 per square foot.

16.3.3 Local Laws 92 and 94 of 2019

As part of the New York City Climate Mobilization Act passed in 2019, New York City Council passed Local Laws 92 and 94, which require new and substantially renovated or enlarged rooftops to incorporate sustainable roofing on all available roof space. Owners can choose to install solar photovoltaics or green roofs to reduce energy costs and the urban heat island effect. The City anticipates that these laws will help buildings manage up to 1 million additional gallons of stormwater per year, and help manage water quality and urban flooding.

16.3.4 Parking Lot Stormwater Pilot Program

First initiated in 2011, DEP's Parking Lot Stormwater Pilot Program generates revenue for operation and maintenance of the City's wastewater system. The program applies a stormwater discharge fee to stand-alone parking lots that contribute runoff to the City's wastewater system, but do not receive (or pay for) City water service. Effective July 1, 2019, DEP's stormwater discharge fee is currently \$0.0678 per square foot. On July 1,

2019, DEP billed 501 accounts for \$315,253.15. Parking lot owners who implement green infrastructure practices are exempt from the stormwater discharge fee. To date, no parking lot owners have implemented green infrastructure practices to become exempt from the stormwater discharge fee.

16.4 ONENYC INITIATIVES

The Mayor's Offices of Sustainability (MOS) and Resiliency (MOR) lead the City's sustainability planning efforts, leveraging and expanding upon many DEP programs. In 2019, the Mayor's Office issued OneNYC 2050, a plan which outlines 30 strategic initiatives for the City's future to address critical challenges such as climate change and increasing unaffordability. OneNYC 2050 pledges to protect and preserve the City from the risks of aging infrastructure, and the impacts of climate change. Initiatives include committing to carbon neutrality by 2050 and strengthening communities, buildings, infrastructure, and the waterfront to be more resilient. DEP is implementing these initiatives in conjunction with its goals of reducing greenhouse gas emissions, eliminating solid waste sent to landfills, realizing the best air quality of all large cities in the U.S., mitigating neighborhood flooding, and creating useful, accessible, and beautiful open spaces. The 2019 OneNYC 2050 Report included several DEP highlights, many of which are further described in this Report: expansion of green infrastructure implementation, drainage improvements in Southeast Queens, implementation of water recirculation projects, and reducing floatables in waterways.

16.5 NYC GREEN INFRASTRUCTURE PROGRAM

Released in September 2010, the NYC Green Infrastructure Plan sets forth a comprehensive strategy to use green infrastructure, together with water conservation, and cost-effective grey infrastructure to improve the quality of the City's waterways. In March 2012, DEC and DEP modified the CSO Order to incorporate green infrastructure into the regulatory framework. The resulting Green Infrastructure Program includes a citywide goal of managing one inch of stormwater runoff within combined sewer areas by 2030. The Program primarily implements green infrastructure in three areas – within the City's streets and sidewalks through right-of-way (ROW) retrofits, within parks, schools and housing properties through public on-site retrofits, and on private property through stormwater incentives and regulations. To date the Program is tracking over 10,000 green infrastructure assets constructed or currently in construction, managing over 1,200 greened acres¹.

2019 was the biggest construction year yet for the Program, with 23 area-wide ROW construction contracts bid across the Westchester Creek, Bronx River, Newtown Creek,

¹ A greened acre is the equivalent of one inch of stormwater runoff over one impervious acre

Flushing Creek, and Jamaica Bay watersheds. Much of this construction work will continue through 2020. Additionally, DEP is nearing design completion for green infrastructure retrofits on over 70 public properties and selected a winning proposal for its \$53 million Private Property Retrofit Incentive Program contract.

More information on these initiatives and other updates on the Green Infrastructure Program can be found in the Green Infrastructure Annual Reports published on the DEP website every year on April 30 <https://www1.nyc.gov/site/dep/water/green-infrastructure.page>.²

16.6 CLIMATE CHANGE RESILIENCY PLANNING

DEP continues to study climate change and to prepare for its impacts by modeling the potential effect of various climate scenarios on the City's water supply system through the Climate Change Integrated Modeling Project; protecting wastewater treatment plants from storm surge as part of the Wastewater Resiliency Program; and reducing urban flooding through cost-effective investments in grey and green infrastructure. Nine projects from DEP's Wastewater Resiliency Plan have been initiated as part of a \$161M portfolio of strategies to flood-proof critical equipment at treatment facilities. These projects will harden the infrastructure at the Bowery Bay, Hunts Point, Red Hook, Newtown Creek, Owl's Head, Port Richmond, Tallman Island, and Wards Island wastewater treatment plants. These investments enhance resiliency against future storms and include a buffer for sea level rise.

Based on the initial success of its "Cloudburst Resiliency Planning Study" in Southeast Queens, which leveraged a partnership with the City of Copenhagen, DEP has also been working with partners at the Department of Transportation (DOT), Department of Design and Construction (DDC), and New York City Housing Authority (NYCHA) to initiate design of two pilot projects. These "cloudburst" projects will help manage extreme rainfall events in St Albans and the South Jamaica Houses, both in Southeast Queens, by capturing rainfall of up to 2.3 inches per hour—a storm with a 10% chance of occurring in any given year by the middle of the century. In addition to providing a proof-of-concept for using green infrastructure to mitigate the effects of cloudbursts, the pilot projects will help reduce nuisance flooding in Southeast Queens and enhance the local landscape. As DEP continues to better understand future flood risk from extreme rain events, the Department will coordinate with its partner agencies to expand upon these initial cloudburst projects.

² The 2019 Green Infrastructure Annual Report was published on June 29, 2020

17 ANNUAL REPORT

“The permittee shall submit an annual report summarizing implementation of the above BMPs. The report shall list existing documentation of implementation of the BMPs and shall be submitted by May 1st of each year to the offices listed on the Recording, Reporting and Additional Monitoring page of this permit. Examples of recommended documentation of the BMP’s are found in Combined Sewer Overflows, Guidance for Nine Minimum Controls, EPA, 1995. The permittee may obtain an electronic copy of the NMC guidance at <http://www.epa.gov/npdes/pubs/owm0030.pdf>. For guidance on developing the annual report, a BMP checklist is available from DEC on-line at http://www.dec.ny.gov/docs/water_pdf/csobmp.pdf. The permittee must submit a completed copy of this checklist along with the annual report. The actual documentation shall be stored at a central location and be made available to DEC upon request.”

This report is the 17th annual report summarizing the implementation of the BMPs performed by DEP in calendar year 2019.

Field inspection logs, maintenance and repair schedules, summaries and analysis of performance are stored at DEP’s Lefrak City office and respective crew quarters and are available to DEC upon request.

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Appendix 1:

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- Exhibit 2 – Rockaway Sanitary and Storm Sewer Projects
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Appendix 1.1: EXHIBIT 1 - CSO MAINTENANCE PROGRAM

August 14, 2003

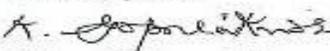
Mr. Robert Elburn
Regional Water Engineer
New York State Department of
Environmental Conservation, Region 2
Division of Water
47-40 21st Street - 2nd Floor
Long Island City, New York 11101

Re: NY0026131 NY0026115
NY0026191 NY0026239
NY0026204 NY0026158
NY0026182 NY0026221
NY0026166 NY0026107
NY0026212 NY0026247
NY0027073

Dear Mr. Elburn:

The attached CSO Maintenance and Inspection Program is submitted in compliance with the CSO Best Management Practice #1 contained in the SPDES permits for the following New York City WPCPs: Bowery Bay (Section XV(e)), Coney Island (Section XV(d)), Tallman Island (Section XV(e)), Jamaica (Section XIV(d)), Newtown Creek (Section XIV(e)), 26th Ward (Section XIV(e)), Hunts Point (Section XIV(e)), Rockaway (Section XIV(e)), Owls Head (Section XIII(e)), Port Richmond (Section XIII(c)), Red Hook (Section XIII(e)), Wards Island (Section XIII(c)) and North River (Section XII(e)).

Sincerely yours,


for Alfonso R. Lopez, P.E.
Deputy Commissioner

SR/fk

xc: Quint/Sapienza/Rozelman/Volgende/Eckels/Hammerman/Kulcsar

CSO MAINTENANCE & INSPECTION PROGRAM BEST MANAGEMENT PRACTICE #1 SPDES PERMIT

Section VIII (26W, HP, JA, NC, RK);

Section IX (BB, CI, TI);

Section VI (NR);

Section VII (OH, PR, RH, WI)

- (a) *The permittee shall develop and implement a written maintenance and inspection program for all CSO's listed beginning on page 3 of this permit. This program shall include all regulators tributary to these CSOs. This is to insure that no discharge or leakage occurs during dry weather and that the maximum amount of wet weather flow is conveyed to the WPCP for treatment. This program shall consist of scheduled inspections with required repair, cleaning and maintenance performed as needed to prevent dry weather overflow and leakage and ensure maximum wet weather flow is conveyed in accordance with CSO BMP#4. Inspection reports shall contain a record of visual inspections, any observed flow, incidence of rain or snowmelt, condition of equipment and work required.*

Regulator / Tide Gate Maintenance Inspection Schedule

High priority regulators shall be inspected four times per month.

High Priority Regulators are regulators that convey at least five million gallons per day and / or inherently require high maintenance, or pose a threat to beaches because of their locations.

Normal priority regulators shall be inspected once per month.

Items of Inspection

The field crews inspect the entire regulator including, tide gates, sluice gates, access ways, electrical controls and any mechanical equipment and instrumentation located within each site. An inspection report must be completed for each CSO facility. This form is attached in appendix A.

During the inspection, the crews are responsible for correcting any conditions that they encounter which may have adverse effects on the proper operation of the regulator. Examples of these conditions include blockages or obstructions caused by debris that may result in partial or full dry weather bypassing.

Any blockage that the crew is not capable of removing is referred to an emergency Contractor, who is retained by the NYC DEP for such cases. The contractor is required to respond to the site within twenty-four hours of notification.

Furthermore, any structural damage noticed during the inspections upstream of the

regulators is referred to the appropriate group within DEP for repairs.

- (b) *The permittee shall include in the maintenance and inspection program a plan to maintain CSO tide gates to prevent infiltration of seawater into the collection system such that the WPCP influent concentration of chlorides does not exceed a twelve-month rolling average of 400 mg/l. The maintenance and inspection program shall specify corrective actions to be taken within twelve months of the influent chloride exceedance of 400 mg/l.*

CSO Tide Gate Maintenance Program

All tide gates are maintained and inspected on the same schedule as regulators. Antiquated tide gates are earmarked for replacement or reconstruction.

The maximum twelve-month rolling average of influent chloride concentration in the SPDES permits at all the applicable WPCPs except North River is 400-mg/L. The influent chloride concentration in the SPDES permit for North River WPCP is 250-mg/L.

In order to maintain CSO tide gates to prevent inflow of seawater into collection system the crews are responsible for correcting any conditions that they encounter during the inspections that may have adverse effects on the proper operation of the tide gates.

DEP is responsible for developing a drainage area evaluation program to identify possible sources of seawater infiltration. Chloride sampling and tide gate repairs are performed immediately by the CFO crews when seawater inflow is discovered and result in elevated levels of chlorides at the WPCPs. Corrective actions are taken within twelve months of influent chloride exceedance of 400 mg/l.

- (c) *The permittee shall include in the maintenance and inspection program a schedule for telemetering regulators and a plan to report the telemetering results. Within six months after the completion of the telemetering of regulators required in the NYSDEC/NYCDEP Omnibus IV Consent Order Compliance Schedule (as noted in the outfall description page) the permittee shall record and report the number and duration of events that cause a discharge at an outfall during dry weather conditions.*

Regulator Telemetering

The installation of the telemetering equipment at one hundred and two regulators was completed in May, 2001 in accordance with the compliance schedule in Schedule B to the Omnibus IV Order on Consent.

The system is currently maintained through a service contract. The contractor is responsible for all maintenance work.

DEP records and reports the number and duration of events that cause a discharge during dry weather conditions.

- (d) *CSO maintenance and inspection program reports shall be available for DEC review no later than 9 AM on the day following the day of the inspection was conducted and shall be available for DEC review at the associated WPCP no later than 30 days following the inspection*

Maintenance and Inspection Reports

The CSO maintenance and inspection program reports are kept at each respective crew quarters and are available for DEC by 9:00 AM on the day following an inspection. Rather than store these reports at WPCP's where they may get misplaced, we have centralized the storage into 5 collection crew quarters.

These crew quarters are located as follows:

Tallman Island WPCP
Wards Island WPCP
Paedergat Pump Station
Gowanus Pump Station
Oakwood Beach WPCP

We believe this record storage policy is more conducive to record retention and retrieval than storing at WPCP's, many of which are undergoing massive upgrades.

Regulator Truck # : _____

REGULATOR and TIDE GATE Inspection Log

Backup Truck # : _____

DATE : _____ RUN : _____

WEATHER : _____

Reporting System for Regulator and Tide Gate Locations

INSPECTION LEVEL :

- LEVEL 1) : Diversion, Regulator and Tide Gate Manhole Inspections performed from above ground which DO NOT involve entry into regulator or tide gate chambers
- LEVEL 2) : FULL ENTRY Regulator and Tide Gate inspections which DO NOT involve the use of back - up trucks
- LEVEL 3) : FULL ENTRY Regulator and Tide Gate inspections which DO involve the use of back - up trucks

REGULATOR CHAMBERS :

- A 1) : Regulator flow O.K. No visible flow obstruction through regulator. Gate operational in automatic mode.
- A 2) : Regulator flow O.K. No visible flow obstruction through regulator. Gate operational in manual mode ONLY
- A 3) : Regulator flow O.K. No visible flow obstruction through regulator. Gate NOT OPERATIONAL
- A 4) : Partial Blockage in Regulator. When flow through regulator is partially obstructed by debris, which may result in dry weather by-passing
- A 5) : Blockage in Regulator causing partial or full dry weather by-passing.

Explanation of problem required on log sheet

TIDE GATE CHAMBERS :

- B 1) : No leak from TIDE GATE. When the gate is properly closed and there is no tidal flow
- B 2) : Minor leak from TIDE GATE. When tidal inflow is small and acceptable.
- B 3) : Mild leak from TIDE GATE. When tidal inflow is noticeably higher than a minor leak.
- B 4) : MAJOR LEAK from TIDE GATE. When tidal inflow is significantly high and may impact treatment plant processes with high chlorides

INSPECTIONS DURING LOW TIDE :

- C 1) : No leak from TIDE GATE. When the gate is properly closed and there is no evidence of any potential tidal inflow problem.
- C 2) : TIDE GATE is visibly held open by DEBRIS or FROZEN HINGES etc.
- C 3) : TIDE GATE Vulnerable to inflow. When gate is closed, damaged seals, warping or other factors likely to allow leakage.

Explanation of problem required on log sheet

Regulator Tide Gate Number	Inspection Level 1 / 2 / 3 ?	Diversion y / n	Inspection Of Regulator	Tide Gate y / n
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				

S.S.T.W. : _____

S.E.E. : _____

S.S.E.E. : _____

CHIEF : _____

Appendix A

Appendix 1.2: EXHIBIT 2 -ROCKAWAY SANITARY AND STORM SEWER PROJECTS

Appendix 1.2.1: Completed Projects

Project No. Locations Status

PS-312Q Beach Channel Completed in Sept-2017

SEQ-002516/ 200352 Cornaga Ave. Completed in Jun-2006, part of QED965

SE-196/372 Camp Road, etc. Completed in Jun-1991

SE-378A/379A B. 130th Street, etc. Completed in Mar-1989

SE-378B/379B Rockaway Beach Blvd. etc. Completed in Nov-1998

SE-422A/423A B. 121st Street, etc. Completed in Jun-1989

SE-422B/423B B. 123rd Street, etc. Completed in Apr-1990

SE-422C/423C B. 127th Street, etc. Completed in Apr-1991

SE-424A/425A B. 132nd Street, etc. Completed in Apr-1993

SE-426A/427A B. 135th Street, etc. Completed in Dec-1990

SE-426B/427B B. 138th Street, etc. Completed in Nov-1990

SE-426C/427C B. 140th Street, etc. Completed in Jun-2003

SE-424B/425B B. 134th Street, etc. Completed in Aug-1999

SE-426C/427C Beach 69th St. Completed in Jan-2003

SE-772/87HW Formerly SEQ-200350 Beach 71st Str. Completed in Dec-2004

SE-789 / HWQ631B1 Sommerville Area Completed in May-2014

SE-795 Chandler Completed in Jun-2017

SE-817 Beach 29th St. Completed in Aug-2015

SEQ- 002546/ 200425 Grandview Terrace Completed in Mar-2004

SEQ- 200358 Beach 87th St. Completed in Sep-2002

SEQ- 200368 Redfern Ave. Completed in Jun-2006

SEQ-002348 Rockaway Blvd., etc. Completed in May-1997

SEQ-002355 Beach 43rd Street, etc. Completed in Apr-1991

SEQ-002363 Beach 37th Street, etc. Completed in Apr-1996

SEQ-002380 Rockaway Beach Blvd. Completed in Nov-1996

SEQ-002402 Beach 45th Street, etc. Completed in Sep-1997

SEQ-002413/ 200275 R. Collier Avenue, etc. Completed in Mar-2005

SEQ-002426 Bay 25th Street, etc. Completed in Sep-1998

SEQ-002427 Cold Spring Road, etc. Completed in May-1998

SEQ-002428 Healy Avenue, etc. Completed in Jan-2000

SEQ-002460 West Bourne Ave, etc. Completed in Nov-2000

SEQ-002499 Beach 61st St. Completed in Sep-2000

SEQ-002511/ 200347 Beach 36th St. Completed in Jan-2003

SEQ-002538/ 200371 Beach 18th St. Completed in Aug-2003

SEQ-002550/ 200390 Beach 40 St. (Edgemere Phase HD153B) Completed in Nov-2005

SEQ-002551/ 200398 (HD153B1) Edgemere Phase B1. Completed in Jun-2007

SEQ-002571/ 200412 Hope VI Phase A Completed in Apr-2004

SEQ-02479/ QED-983/ SEQ-200341 Rockaway Beach Blvd. Completed in Sep-2014

SEQ-200239 Rockaway Freeway, etc. Completed in Aug-1996

SEQ-200240 Rockaway Freeway, etc. Completed in Aug-1996

SEQ-200251 Rockaway Beach Blvd. Completed in May-1997

SEQ-200254 Beach 108th Street, etc. Completed in Nov-1998

SEQ-200305 Amstel Blvd, etc. Completed in May-2000

SEQ-200311 Beach 35th St. Edgemere Completed in Apr-2002

SEQ-200378 Seagirt Blvd. Completed in Sep-2002

SEQ-200453 Thursby Ave. Completed in Jun-2007

SEQ-200508 Beach 32nd St. Completed in Jun-2015

SEQ-200523 New Haven Avenue, etc. Completed in Aug-2013

SEQ-200524 Beach 21st St. Completed in April-2020

SEQ-200533 Beach 42nd Street Completed in Jun-2012

HD153C1/ SEQ002562/ SEQ200406 Edgemere C1 Completed in Nov-2016

HD153C2/ SE-Q200421/ SEQ-002576 Edgemere C2 Completed in Sep-2014

HD153C1/ SEQ-200406/ 2562 Edgemere C1 Completed in Apr-2009

HWQ-631 Beach 72 Street Completed in Dec-2004

SEQ-002442 Burchell Av Completed in Jun-2000

SEQ-002443 Beach 87 Street Completed in Apr-2000

SEQ-200251 Rockaway Beach Blvd Completed in May-1997

SEQ-0201A6 Burchell Avenue Completed in May-2001

SEQ-0201A7 Beach 67 Street Completed in Aug-2002

SEQ-0201B3 Beach 86 Street Completed

SE-569U Thursby Avenue Completed in May-2004

SE-569V Alameda Avenue Completed in May-2005

SE-569W Shore Front Parkway Completed in May-2006

SE-569Y Beach 80 Street Completed

SEQ-0201B5 Beach 113 Street Completed

SEQ-201BS4 Beach 87th Street Completed

SEQ-201BS2 Beach 114 Street Completed

SEC-20004I Seaside Avenue Completed

SEQ-200381R Beach 53 Street Completed in Mar-2004

HWQ-230GR Cornaga Avenue Completed in Sep-2005

HWQ-1126A Alameda Avenue Completed in Apr-2004

SEQ-002413R Collier Avenue Completed in Mar-2005

QED-973 Rockaway Turnpike Completed in Jul-2002

SE-196B Camp Road Completed in Jun-1998

SE-610 Granada Place Completed in Dec-1996

SEQ-200364 Edgemere Avenue Completed in Apr-2003

QED-988 Channing Road Completed in Jan-2007

SEQ-002623 Nameoke Street Completed in Jun-2007

SEQ-200550 Beach 99th St. Completed in May-2018

SEQ-002453 B. 47th Street, etc. Cancelled Dec-1997

SEQ-002507 Beach 69th St. Cancelled, included SEQ-200356 in HWQ641 completed Dec-2004

SEQ-200381 Beach 53th St. Cancelled due to LIPA issues, was scheduled for FY 2002

HWQ1682/SE-884 Shore Front Parkway Cancelled Mar-2015

Appendix 1.2.2: Active Projects

Project No. Locations Status

HWQ-1126C Rockaway Beach on hold

SEQ-200426/ HWQ1126B Hope VI Phase B on hold

SEQ-200595 / HWQ1187- Westbourne Norton Drive Reconstruction, Revising CPI, MM1 forecasted for Sept 2020

HD-153C3/ SEQ-002682 Edemere C3 on hold

SEQ-200597/ HWQ631B2 Somerville Area CPI development, FY2023

SEQ-200598/ HWQ631B3 Somerville CPI development, FY2026

SEQ200599/HWQ631B3 Somerville Area CPI development, FY2029

SEQ-200582/HWQ1182A Broad Channel Phase I – Projected Completion 6/20/20

SEQ-200586/HWQ1182B Broad Channel Phase II- Bid taken Sept 2019, targeted to commence construction Spring 2020

QED-1007 Rockaway Beach Blvd. & B. 49 St. Construction started 8/6/18 projected completion 8/4/21

QED982/ SANDHW13 Rockaway Beach Blvd. & B. 73rd St. Construction started 8/21/17 projected completion 6/15/20

SEQ-200524 B. 21st St. construction started in Jan-2016 projected construction completion 4/7/20

SANDR02/SE-830 Far Rockaway Business District - Construction started 9/3/19 projected completion 8/1/21

SE-829 Brunswick Ave. - CPI development, FY2025

SE-886/HWQ1079 Beach Channel Dr. area - CPI development, FY2023

SE-887HWQ1079 Cornaga Ave area - CPI development, FY2027

SE-900 Beach 22 Street area – CPI development, FY2029

SANDR04 / QED-1044 Beach 108th Street - in Procurement, FY2020

SANDHW11/ QED-1030 Beach Channel - Construction started 3/12/18 projected completion 6/8/20

SANDHW11B/QED1030B Beach Channel Phase 2 – CPI development FY2023

Appendix 1.3: TABLE 1 - 2019 12 MONTH ROLLING AVERAGE INFLUENT CHLORIDES (MG/L)

	Jan-2019	Feb-2019	Mar-2019	Apr-2019	May-2019	Jun-2019	Jul-2019	Aug-2019	Sep-2019	Oct-2019	Nov-2019	Dec-2019
Wards Island	450	450	400	400	400	390	380	400	410	440	450	470
North River	290	300	260	260	260	260	250	260	270	280	280	280
Hunts Point	540	560	530	540	530	540	530	530	510	500	510	520
26th Ward	410	420	390	350	340	330	340	370	370	360	370	390
Coney Island	750	770	720	720	710	740	780	820	850	880	940	980
Owls Head	260	270	250	230	220	230	230	230	240	260	260	310
Newtown Creek	630	630	630	620	620	610	580	600	600	620	630	650
Red Hook	430	430	430	420	420	420	380	380	330	340	340	370
Jamaica	290	290	290	290	280	280	280	280	270	260	260	270
Tallman Island	330	350	290	290	290	280	290	290	290	300	310	330
Bowery Bay	340	370	270	270	280	280	270	270	280	350	380	400
Rockaway	2,040	2,030	1,940	1,910	1,860	1,840	1,810	1,830	1,880	1,930	1,980	2,050
Oakwood Beach	310	310	290	290	280	290	280	280	270	260	260	260
Port Richmond	480	460	420	390	380	370	360	370	370	370	380	420

(*) The chloride concentration action level for WRRFs is 400 mg/L with the exception of Rockaway that has a plant specific action level of 3,000 mg/L.

Appendix 1.4: TABLE 2: YEARLY AVERAGE TIDAL INFLOW COMPARISON FOR CY '18-'19

WPCP	JANUARY - DECEMBER 18		JANUARY - DECEMBER 19		VARIANCE (CY19-CY18)		REMARKS*			
	INFLOW (MGD)	% DWF	INFLOW (MGD)	% DWF	INFLOW (MGD)	% DWF				
WARDS ISLAND	5.1	2.5%	4.8	2.6%	-0.36	0.1%	7% Decrease	-7.0%	Decrease	7.0
NORTH RIVER	2.3	2.2%	2.2	2.2%	-0.09	-0.1%	4% Decrease	-4.0%	Decrease	4.0
HUNTS POINT	2.8	2.1%	2.4	2.1%	-0.35	0.0%	12.4% Decrease	-12.4%	Decrease	12.4
26th WARD	0.8	1.8%	0.7	1.7%	-0.07	-0.1%	9.5% Decrease	-9.5%	Decrease	9.5
CONEY ISLAND	2.5	2.7%	3.4	3.6%	0.96	0.9%	39.1% Increase	39.1%	Increase	39.1
OWLS HEAD	0.8	0.9%	0.9	1.1%	0.09	0.2%	11.4% Increase	11.4%	Increase	11.4
NEWTOWN CREEK	5.6	2.8%	5.6	2.9%	0.04	0.1%	0.8% Increase	0.8%	Increase	0.8
RED HOOK	0.5	1.8%	0.4	1.5%	-0.13	-0.3%	25.3% Decrease	-25.3%	Decrease	25.3
JAMAICA	1.0	1.3%	0.9	1.2%	-0.04	-0.1%	3.8% Decrease	-3.8%	Decrease	3.8
TALLMAN ISLAND	0.8	1.4%	0.8	1.3%	-0.01	-0.1%	1.5% Decrease	-1.5%	Decrease	1.5
BOWERY BAY	1.2	1.4%	1.4	1.6%	0.18	0.2%	14.7% Increase	14.7%	Increase	14.7
ROCKAWAY	1.7	9.2%	1.9	8.9%	0.20	-0.3%	12% Increase	12.0%	Increase	12.0
OAKWOOD BEACH	0.4	1.2%	0.3	1.0%	-0.06	-0.2%	16.9% Decrease	-16.9%	Decrease	16.9
PORT RICHMOND	0.6	2.5%	0.5	2.1%	-0.07	-0.4%	12% Decrease	-12.0%	Decrease	12.0

<i>*Tidal Inflow (MGD) annual percentage change.</i>		
WRRF Dry Weather Flows (MGD)		
WRRF	CY2018	CY2019
WARDS ISLAND	203	182
NORTH RIVER	104	102
HUNTS POINT	130	116
26th WARD	45	42
CONEY ISLAND	91	95
OWLS HEAD	87	82
NEWTOWN CREEK	199	195
RED HOOK	29	26
JAMAICA	77	79
TALLMAN ISLAND	57	59
BOWERY BAY	91	90
ROCKAWAY	18	21
OAKWOOD BEACH	31	31
PORT RICHMOND	25	26
WRRF Influent		
WRRF	CY2018	CY2019
WARDS ISLAND	449	465
NORTH RIVER	292	284
HUNTS POINT	532	523
26th WARD	408	391
CONEY ISLAND	737	976
OWLS HEAD	263	309
NEWTOWN CREEK	635	653
RED HOOK	443	368
JAMAICA	288	269
TALLMAN ISLAND	342	327
BOWERY BAY	342	396
ROCKAWAY	2117	2050
OAKWOOD BEACH	319	264
PORT RICHMOND	503	417

Receiving Waters								
WRRF	CY2018	CY2019	East River	Harlem & Hudson	New York Bay	Jamaica Bay	Arthur and Kill Van Kull	Check
WARDS ISLAND	17,800	17,800	40%	60%				100%
NORTH RIVER	13,000	13,000		100%				100%
HUNTS POINT	25,000	25,000	100%					100%
26th WARD	23,000	23,000				100%		100%
CONEY ISLAND	27,000	27,000			80%	20%		100%
OWLS HEAD	28,000	28,000			100%			100%
NEWTOWN CREEK	22,600	22,600	80%	20%				100%
RED HOOK	25,000	25,000	100%					100%
JAMAICA	23,000	23,000				100%		100%
TALLMAN ISLAND	25,000	25,000	100%					100%
BOWERY BAY	25,000	25,000	100%					100%
ROCKAWAY	23,000	23,000				100%		100%
OAKWOOD BEACH	26,400	26,400			80%		20%	100%
PORT RICHMOND	20,000	20,000					100%	100%
Receiving Water Salinity								
Waterbody	WRRF			Salinity				
East River	WI, TI, HP, BB, NC, RH			25,000				
New York Bay	OH, CI, OB			28,000				
Arthur & Kill Van Kull	PR			20,000				
Harlem & Hudson River	NR			13,000				
Jamaica Bay	JA, 26W, RK			23,000				

Appendix 2:

Appendix 2.1: BWSO

- Appendix 2.1.1: Maps of Cleaning Activities for NYC DDC: TV Inspection and Cleaning
- Appendix 2.1.2: Maps of Cleaning Activities for CSI Section by Borough
- Appendix 2.1.3: Maps of Cleaning Activities for CSI Section by Community Board
- Appendix 2.1.4: CSI Sewer Inspection Cleaning List 2019

Appendix 2.2: BWT

- Appendix 2.2.1: Table 1 – Summary of 100 Telemetered Regulators
- Appendix 2.2.2: Table 2 – Sediments Removed from Non-Interceptor Assets
- Appendix 2.2.3: Table 3 – Intercepting Sewer Inspections 2019 – Pipe Rating Index and Ranking
- Appendix 2.2.4: Map 1 - 2019 BMP Interceptors and Local Sewers CCTV/SONAR, Pump Stations, Regulators and Interceptors/Local Sewers Cleaned Map

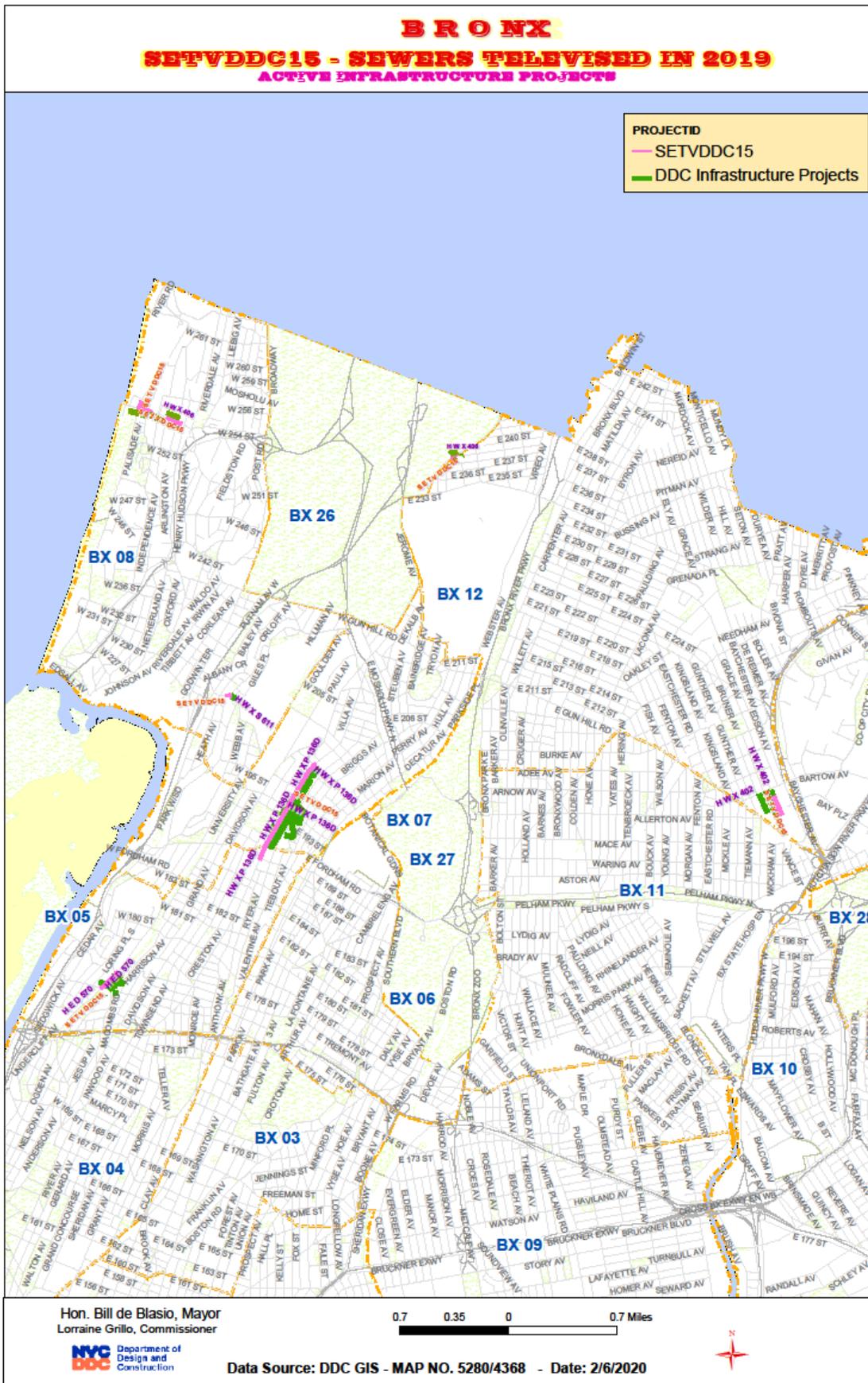
Appendix 2.1: BWSO

Appendix 2.1.1: Maps of Cleaning Activities for NYC DDC

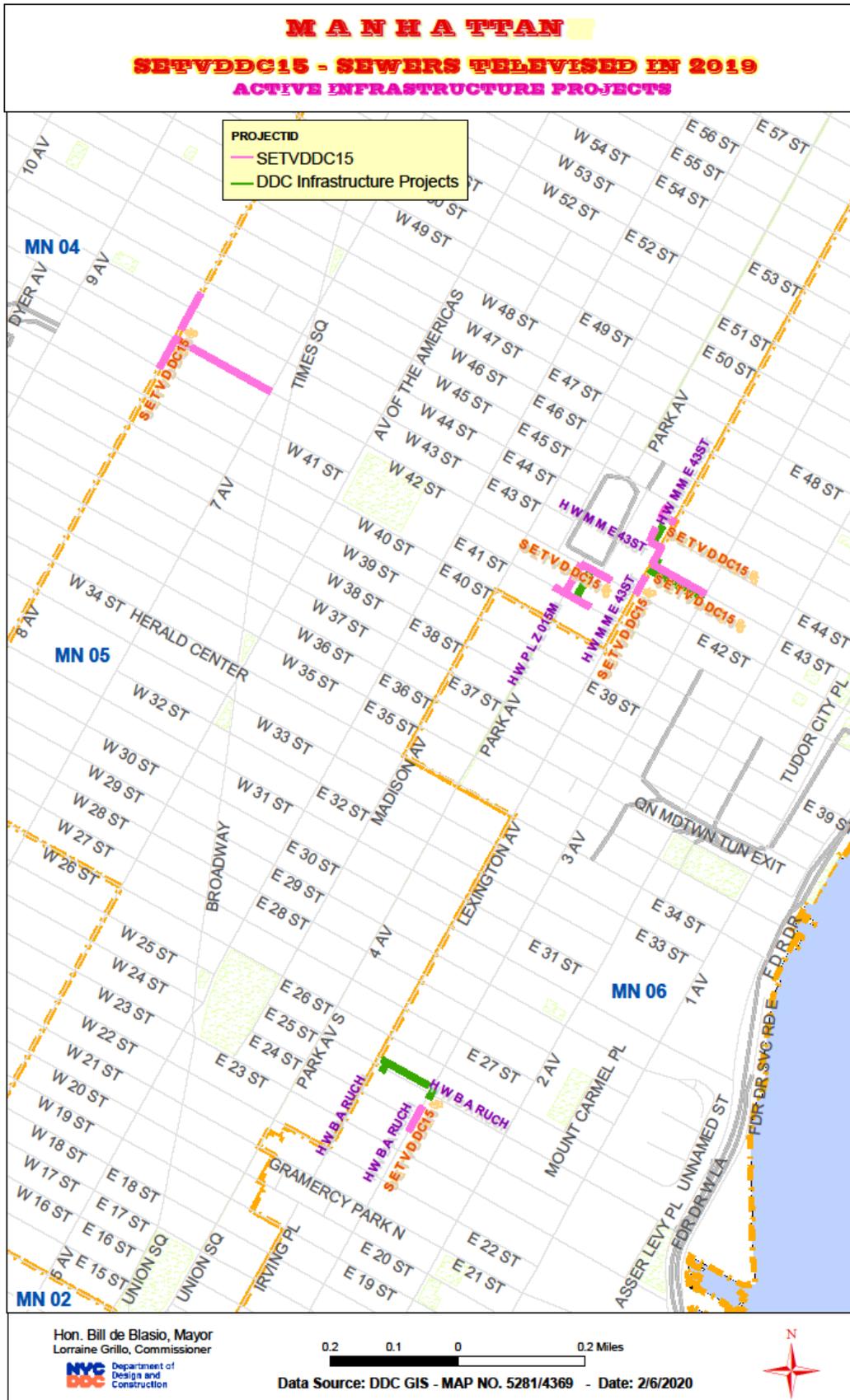
Appendix 2.1.1.1: Brooklyn



Appendix 2.1.1.2: Bronx



Appendix 2.1.1.3: Manhattan



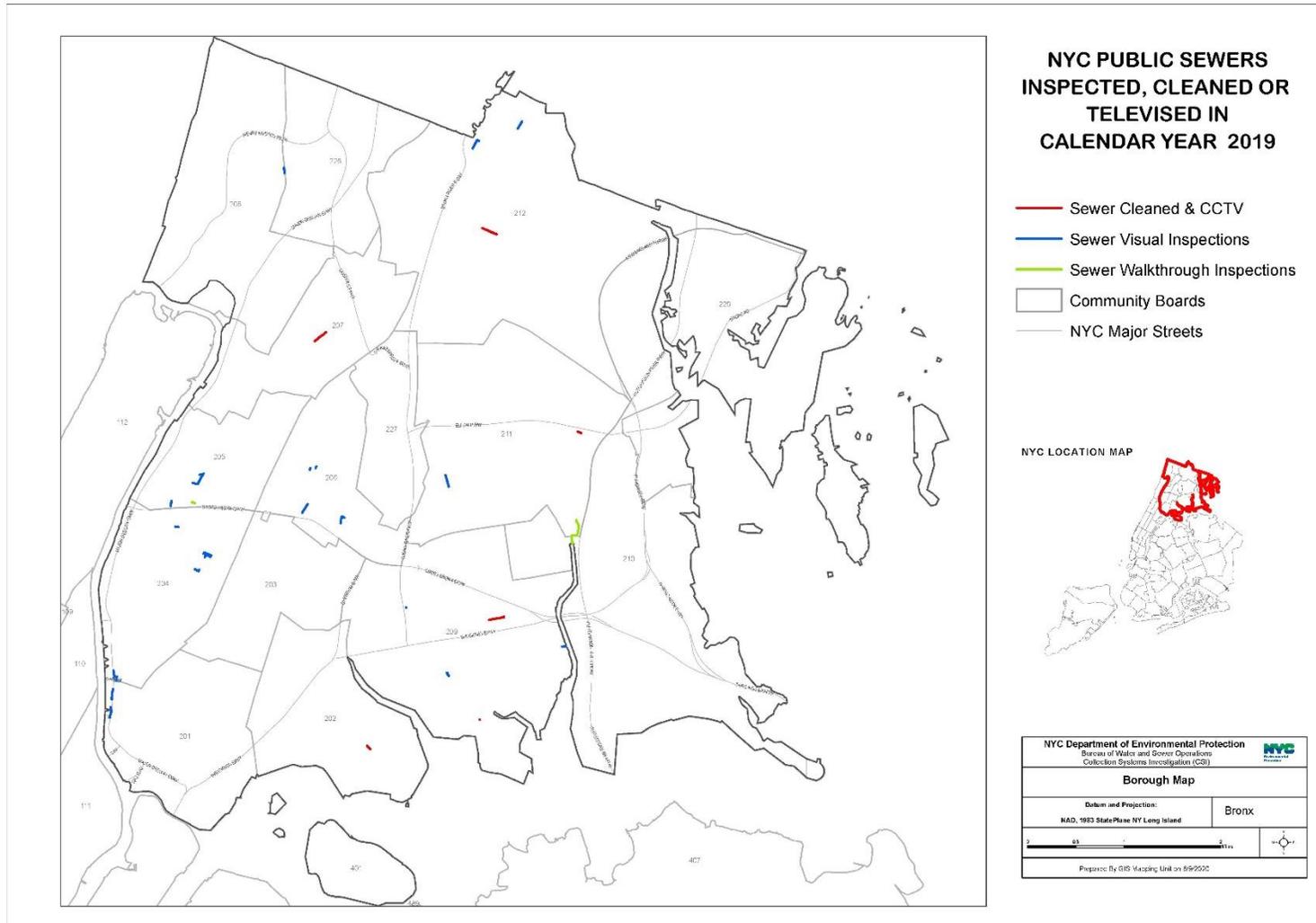
Appendix 2.1.1.4: Queens

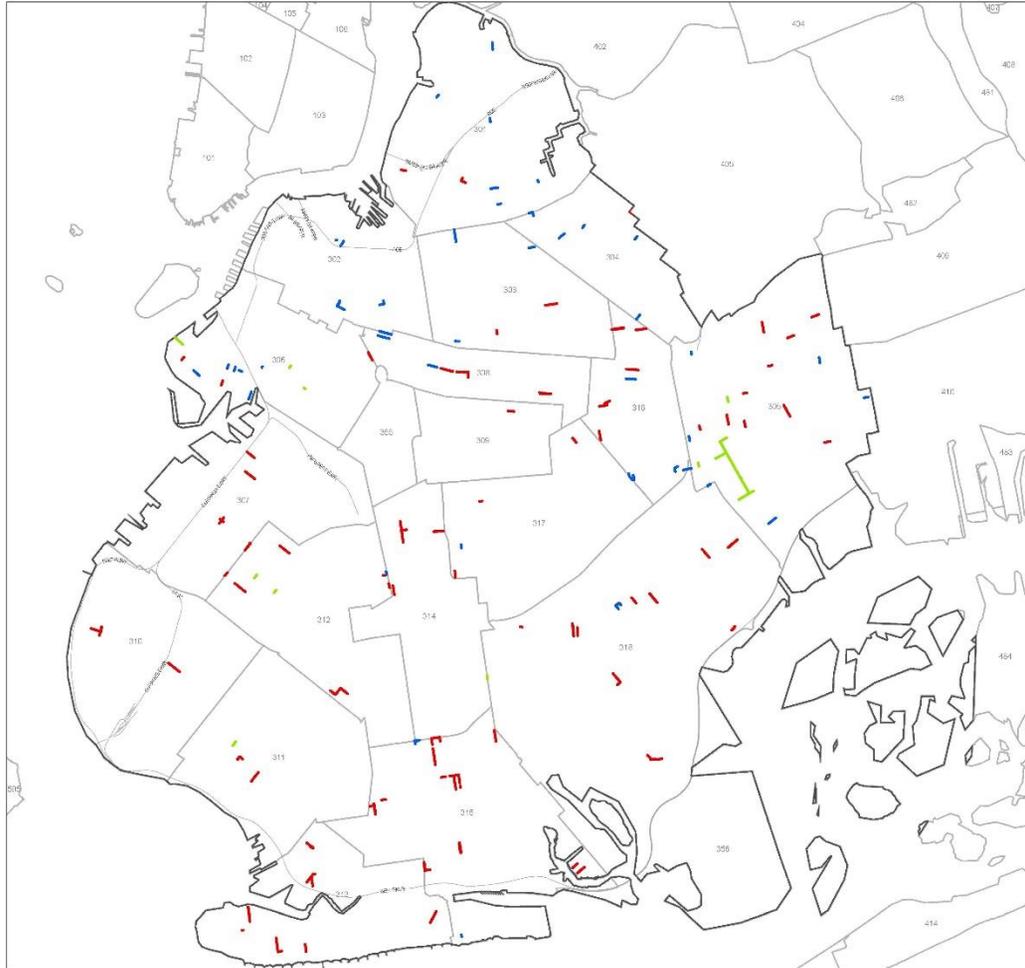


Appendix 2.1.1.5: Staten Island



Appendix 2.1.2: Maps of Cleaning Activities for CSI Section by Borough





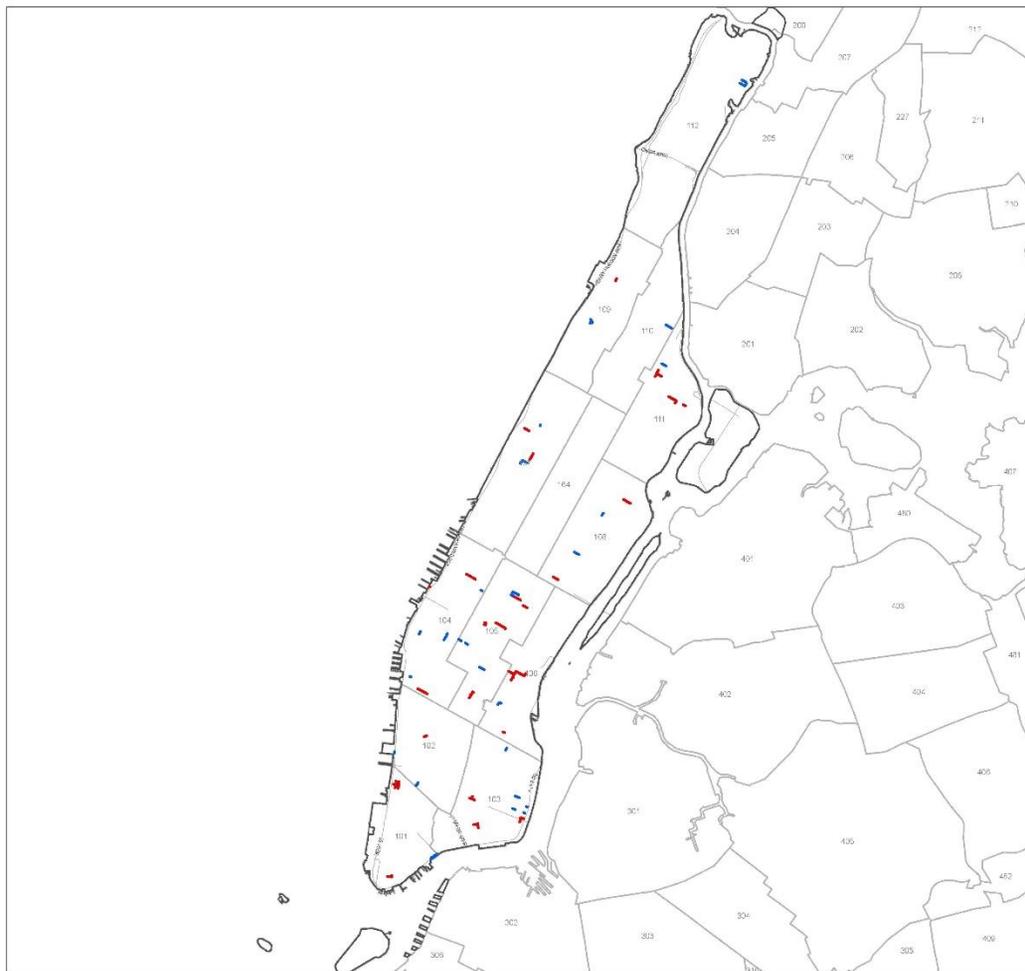
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVIEWED IN CALENDAR YEAR 2019

- Sewer Cleaned & CCTV
- Sewer Visual Inspections
- Sewer Walkthrough Inspections
- Community Boards
- NYC Major Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Borough Map		
Datum and Projection: NAD, 1983 StatePlane NY Long Island		Brooklyn
<small>Prepared by GIS Mapping Unit on 09/20/20</small>		



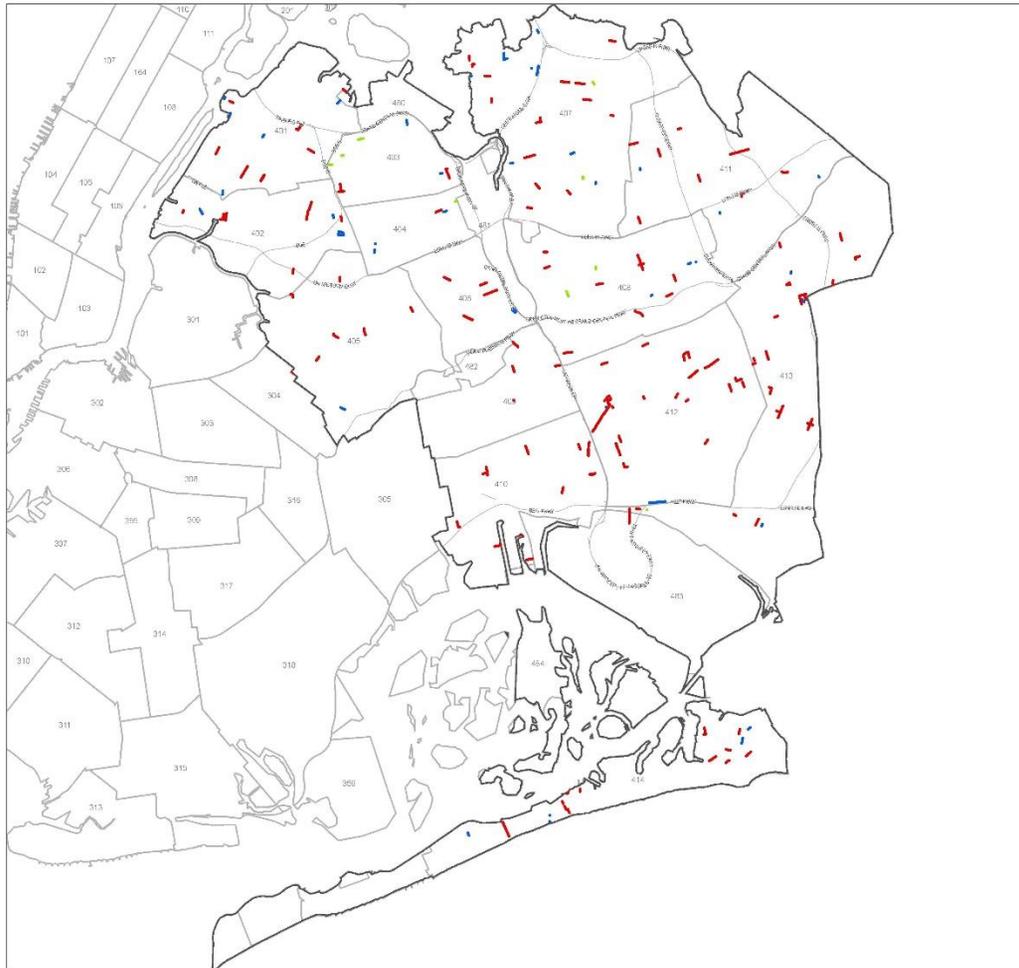
**NYC PUBLIC SEWERS
INSPECTED, CLEANED OR
TELEVIEWED IN
CALENDAR YEAR 2019**

- Sewer Cleaned & CCTV
- Sewer Visual Inspections
- Community Boards
- NYC Major Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Borough Map		
Datum and Projection: NAD, 1983 StatePlane NY Long Island		Manhattan
Prepared By GIS Mapping Unit on 09/20/20		



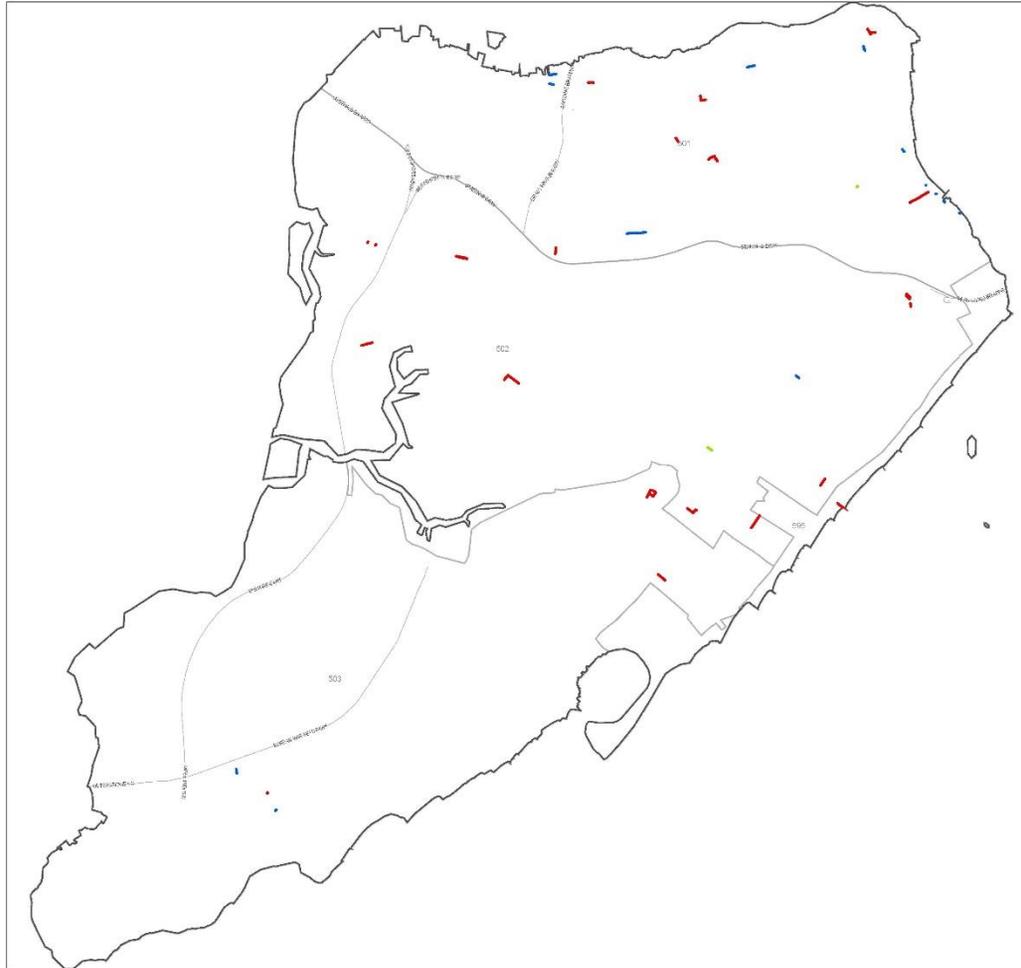
**NYC PUBLIC SEWERS
INSPECTED, CLEANED OR
TELEVIEWED IN
CALENDAR YEAR 2019**

- Sewer Cleaned & CCTV
- Sewer Visual Inspections
- Sewer Walkthrough Inspections
- Community Boards
- NYC Major Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Borough Map		
Datum and Projection: NAD, 1983 StatePlane NY Long Island		Queens
Prepared By GIS Mapping Unit on 09/20/20		



**NYC PUBLIC SEWERS
INSPECTED, CLEANED OR
TELEVIEWED IN
CALENDAR YEAR 2019**

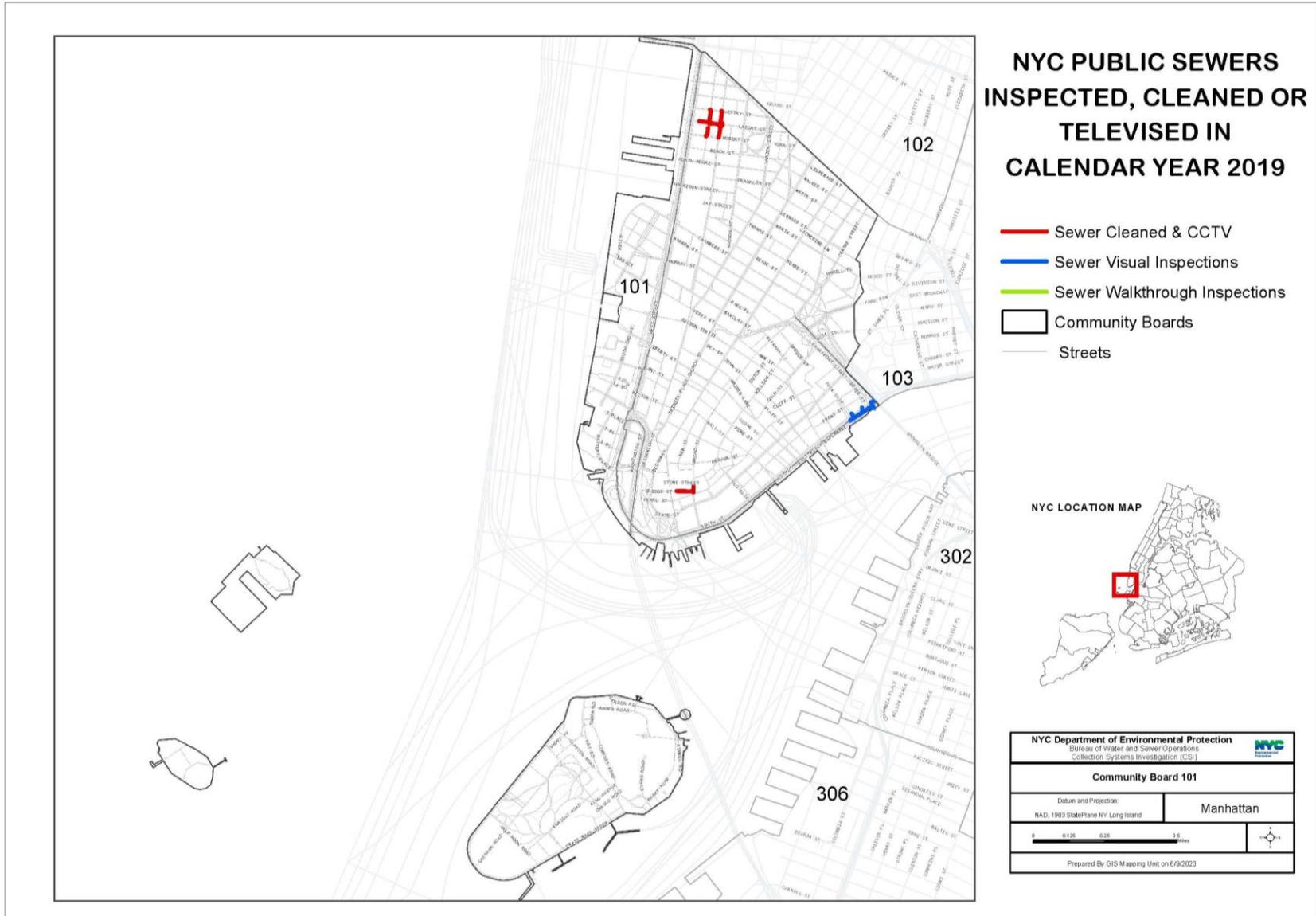
- Sewer Cleaned & CCTV
- Sewer Visual Inspections
- Sewer Walkthrough Inspections
- Community Boards
- NYC Major Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Borough Map		
Datum and Projection: NAD, 1983 StatePlane NY Long Island		Staten Island
Prepared By GIS Mapping Unit on 09/20/20		

Appendix 2.1.3: Maps of Cleaning Activities for CSI Section by Community Board





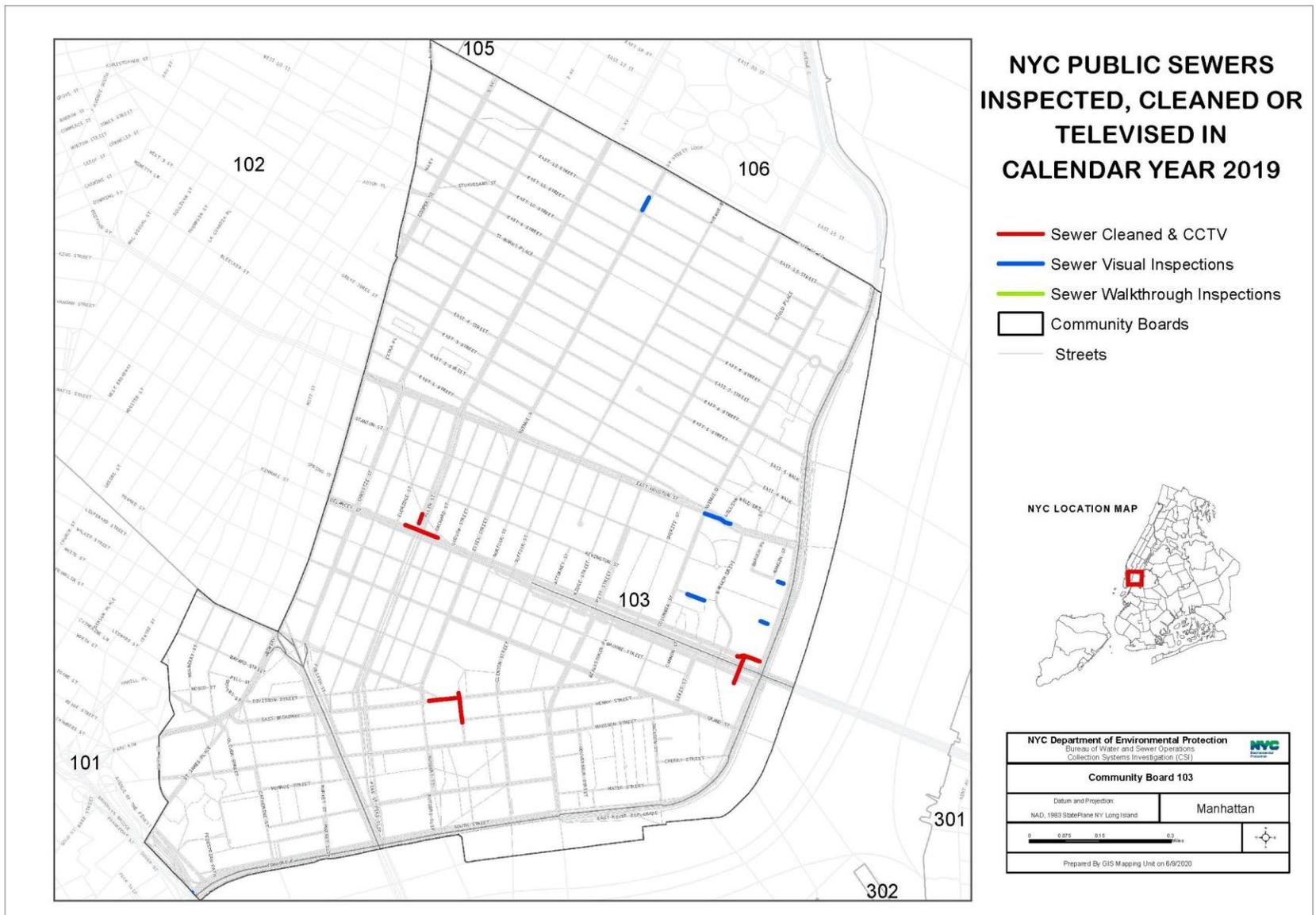
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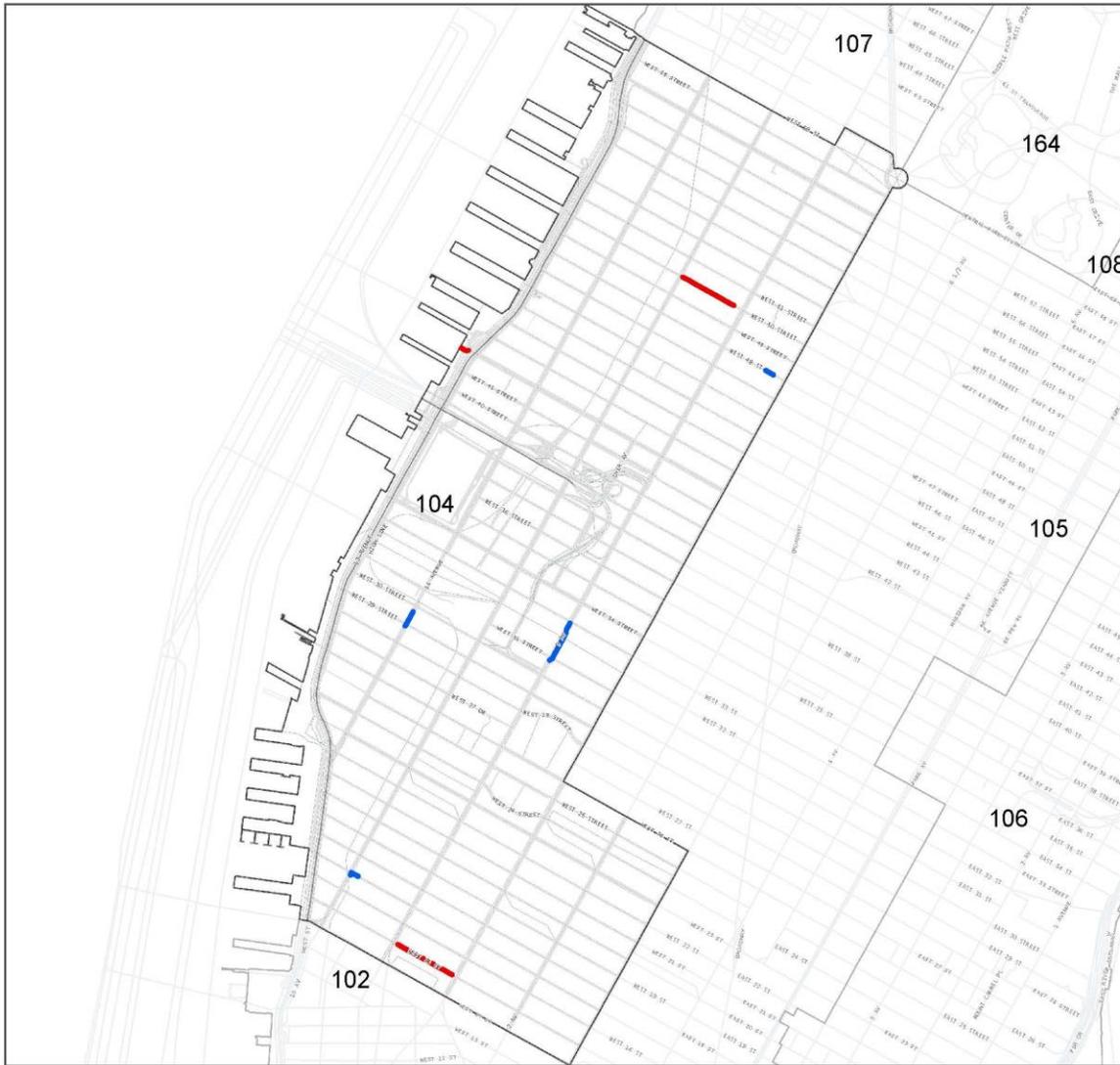
- Sewer Cleaned & CCTV
- Sewer Visual Inspections
- Sewer Walkthrough Inspections
- Community Boards
- Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 102		
Datum and Projection:		Manhattan
NAD, 1983 StatePlane N.Y. Long Island		
Prepared By GIS Mapping Unit on 6/9/2020		





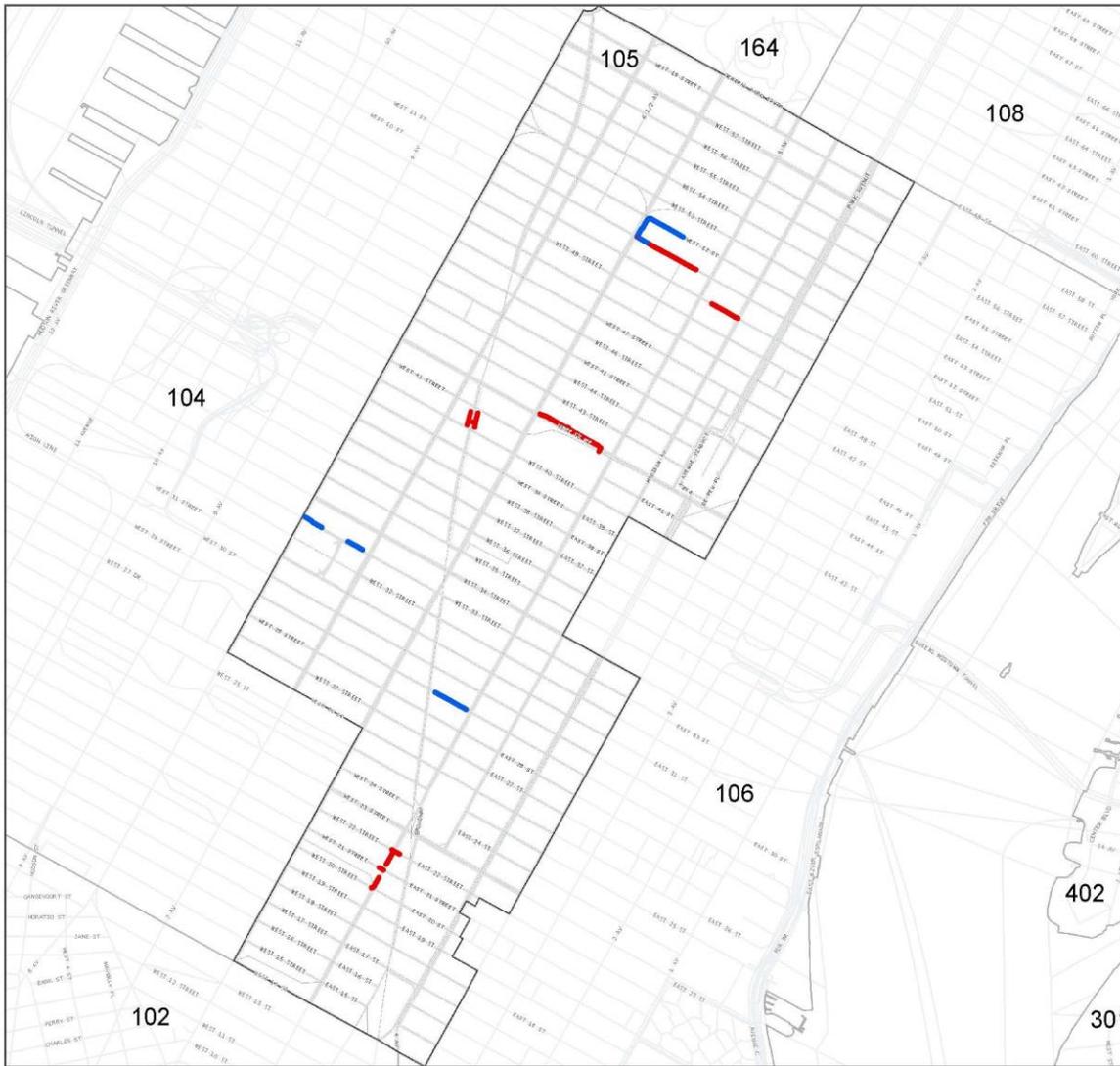
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2019

- Sewer Cleaned & CCTV
- Sewer Visual Inspections
- Sewer Walkthrough Inspections
- Community Boards
- Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 104		
Datum and Projection:		Manhattan
NAD, 1983 StatePlane N.Y. Long Island		
Prepared By GIS Mapping Unit on 6/9/2020		



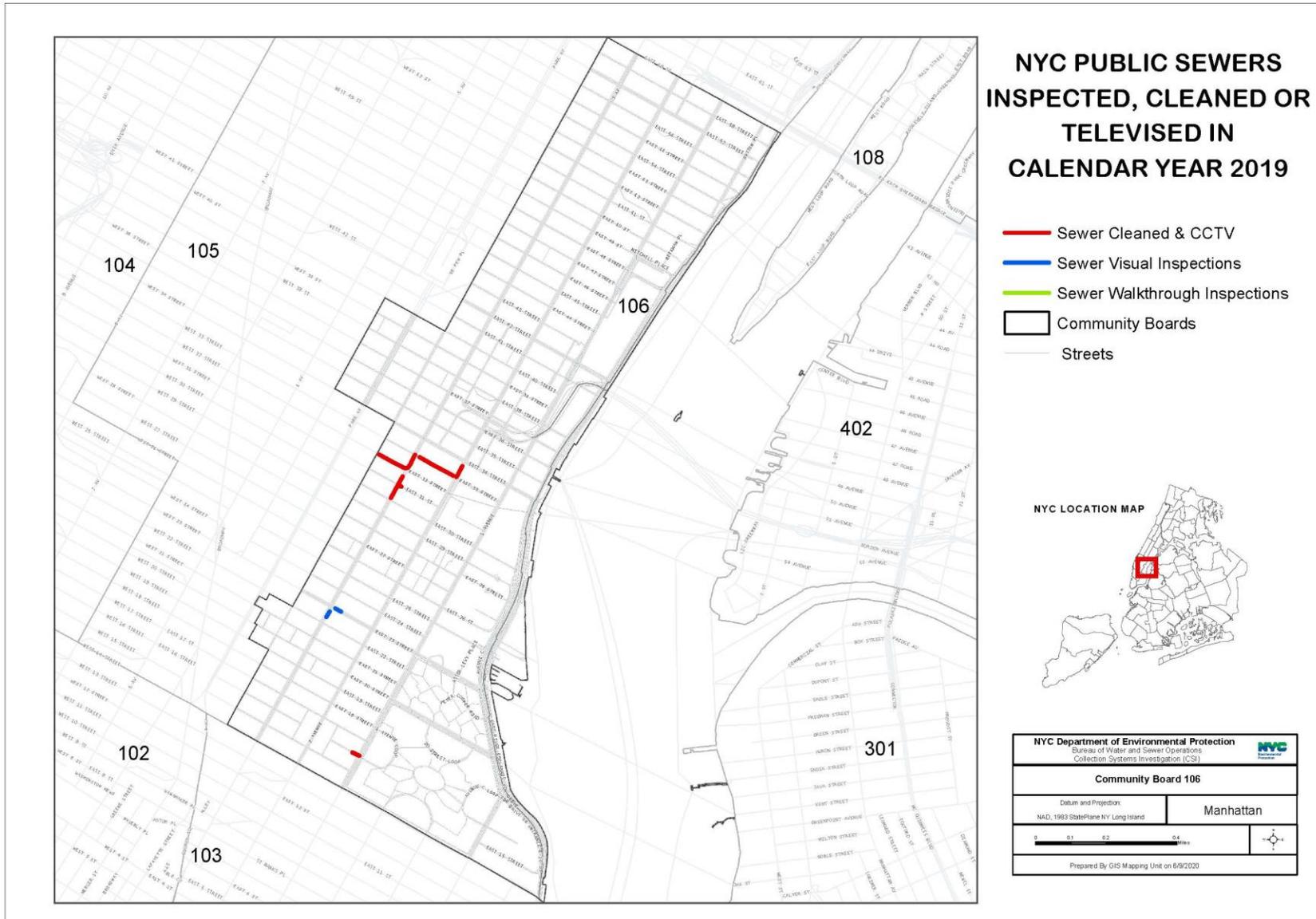
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVIEWED IN CALENDAR YEAR 2019

- Sewer Cleaned & CCTV
- Sewer Visual Inspections
- Sewer Walkthrough Inspections
- Community Boards
- Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 105		
Datum and Projection: NAD, 1983 StatePlane N.Y. Long Island		Manhattan
Prepared By GIS Mapping Unit on 6/9/2020		



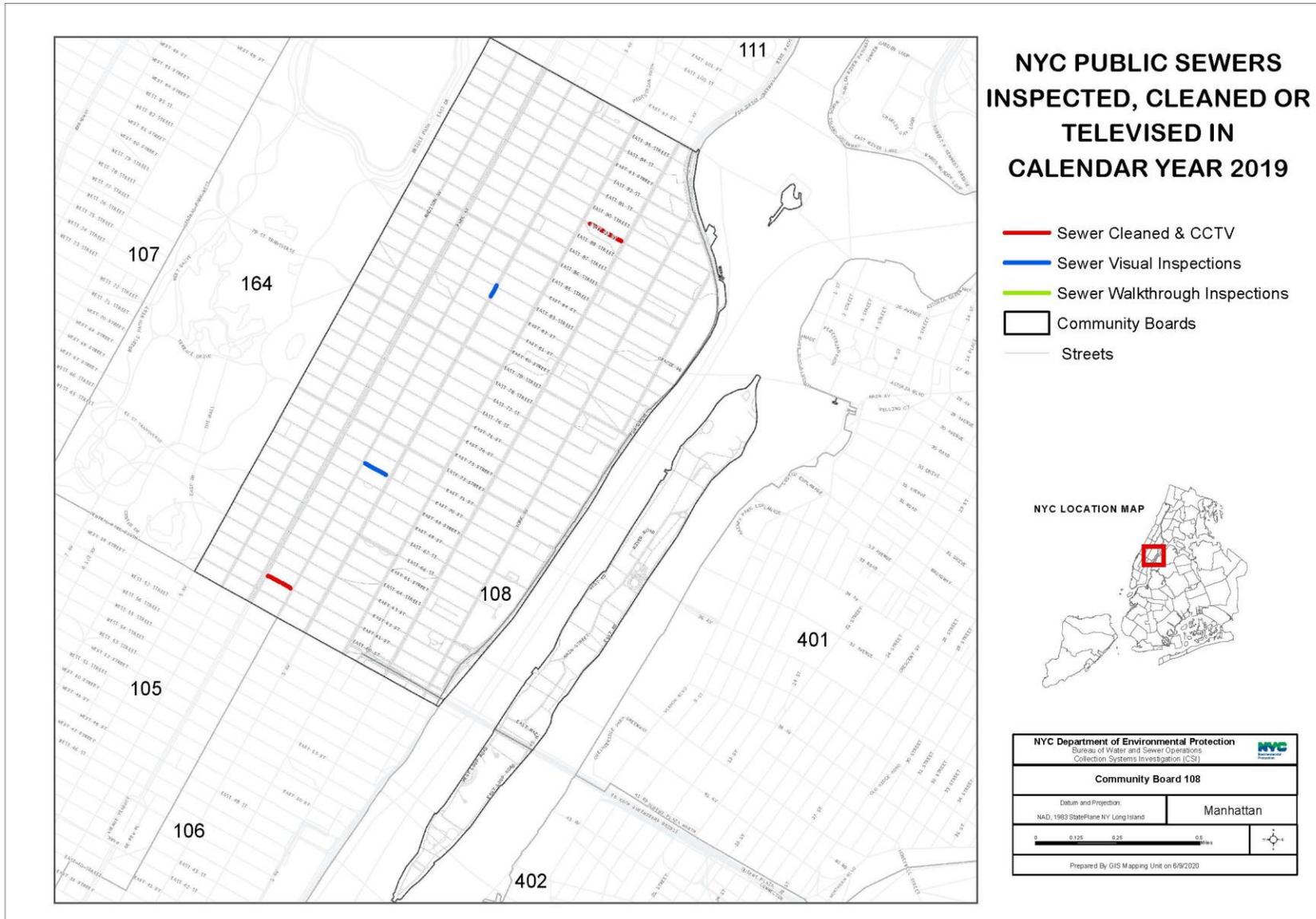


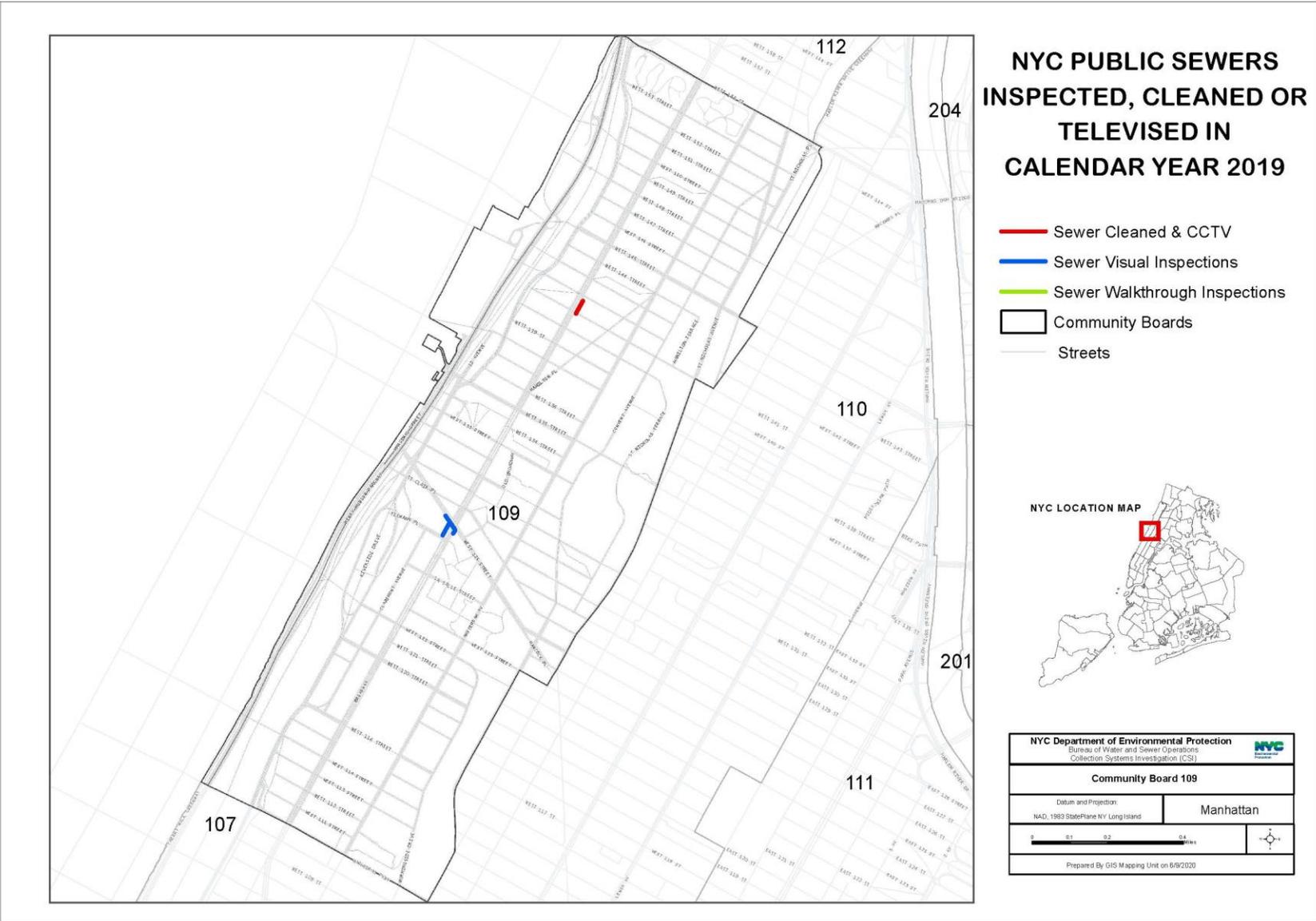
**NYC PUBLIC SEWERS
INSPECTED, CLEANED OR
TELEVIEWED IN
CALENDAR YEAR 2019**

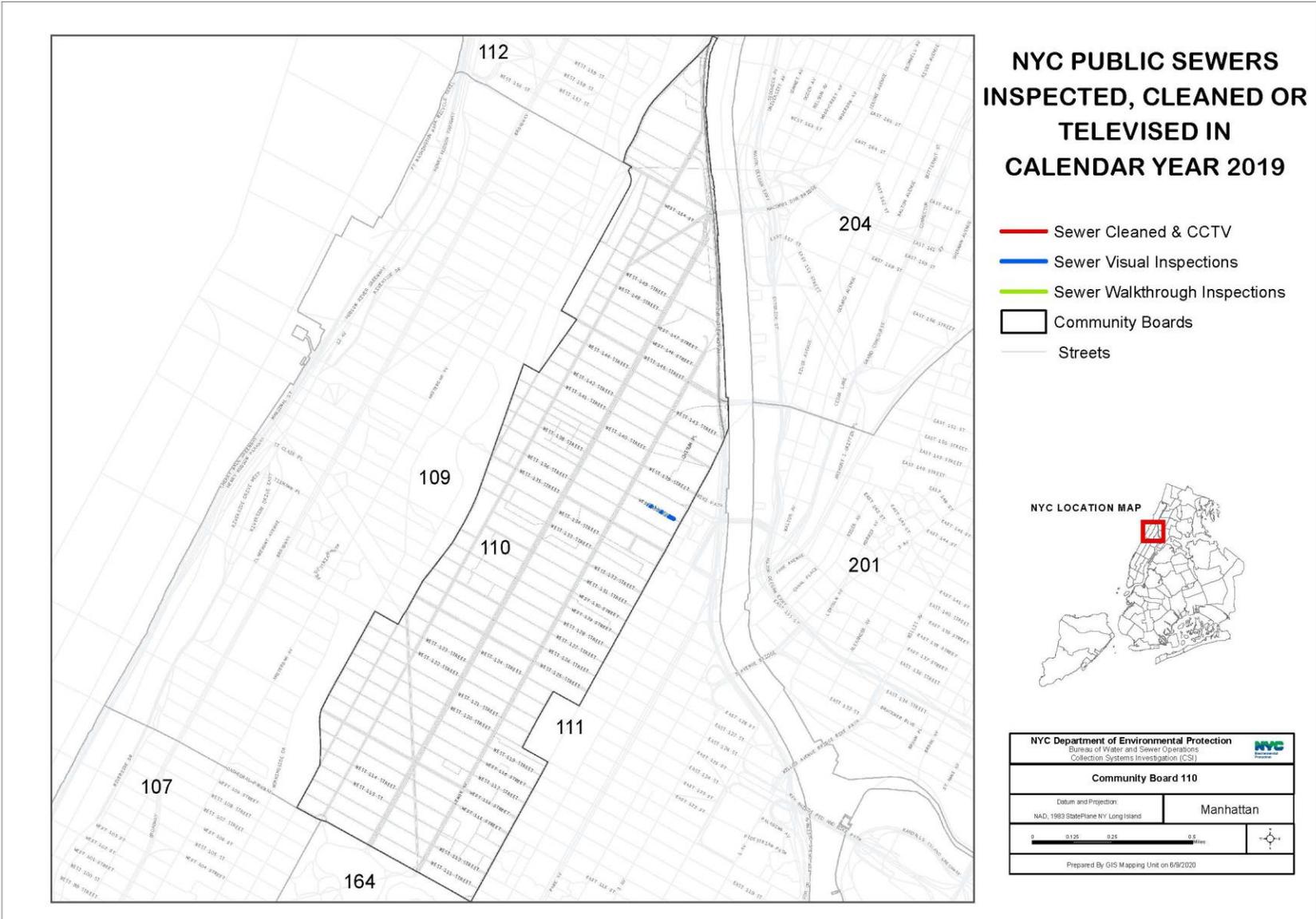
- Sewer Cleaned & CCTV
- Sewer Visual Inspections
- Sewer Walkthrough Inspections
- Community Boards
- Streets

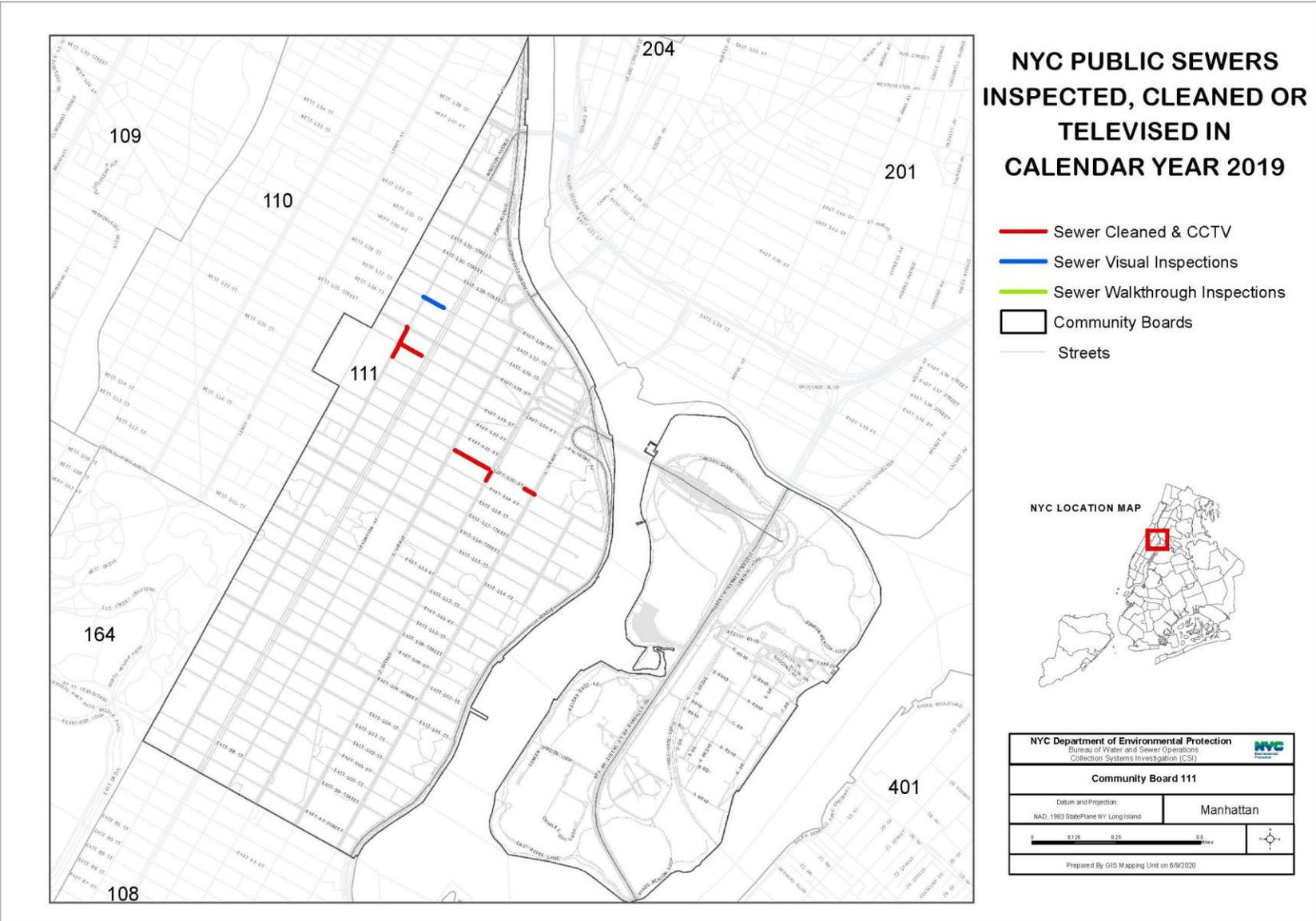


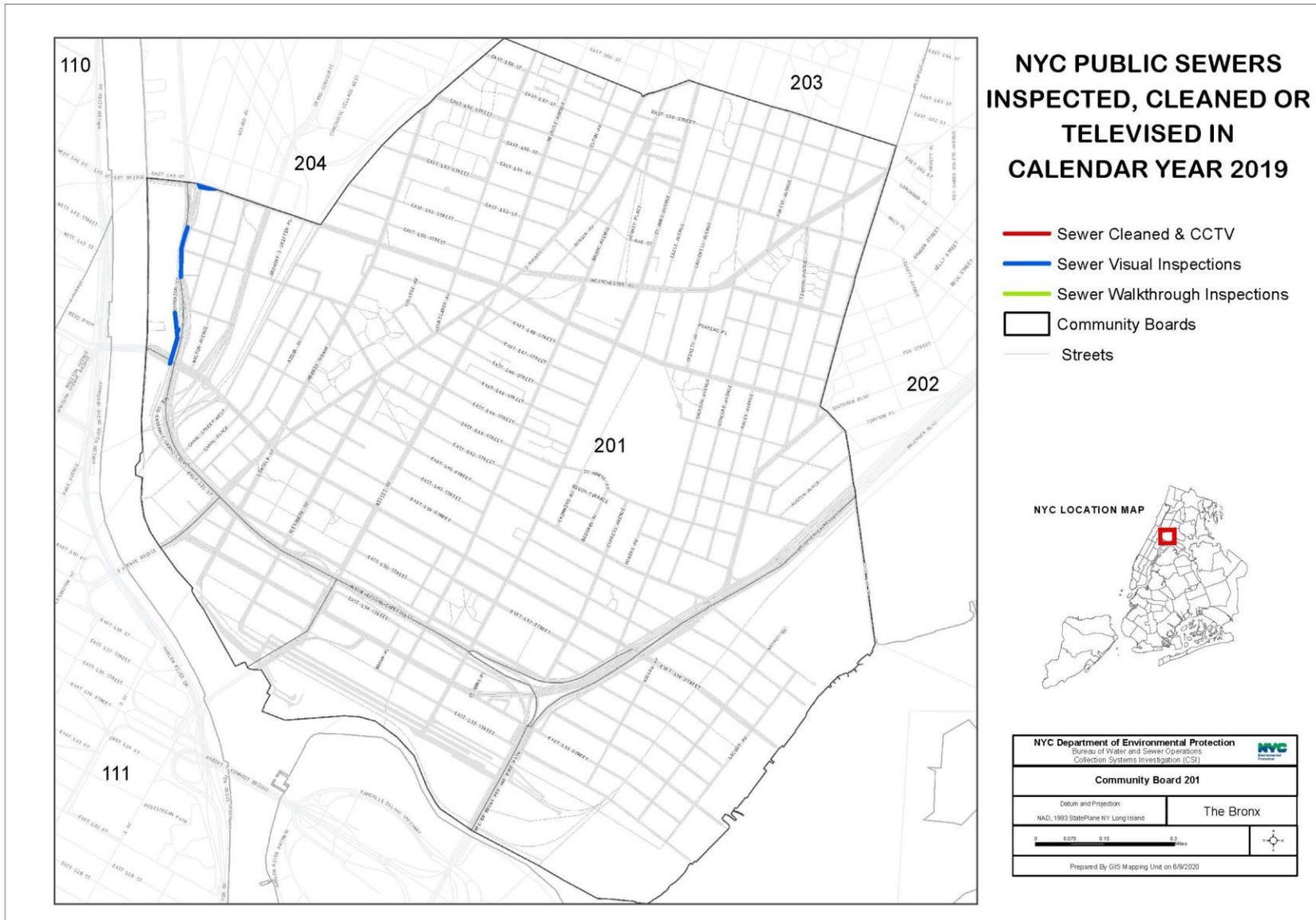
NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 107		
Datum and Projection:		Manhattan
NAD, 1983 StatePlane N.Y. Long Island		
Prepared By GIS Mapping Unit on 6/9/2020		

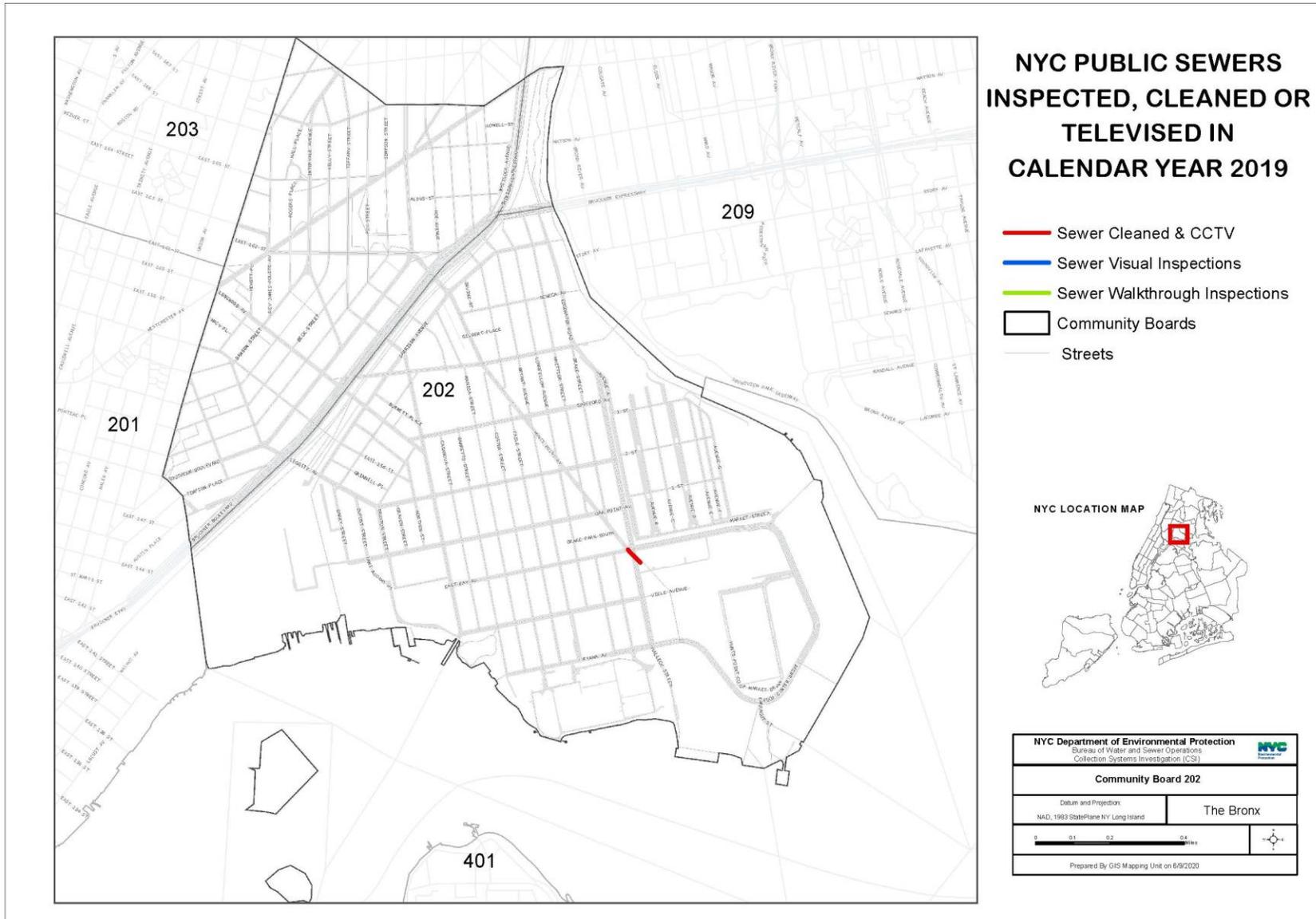


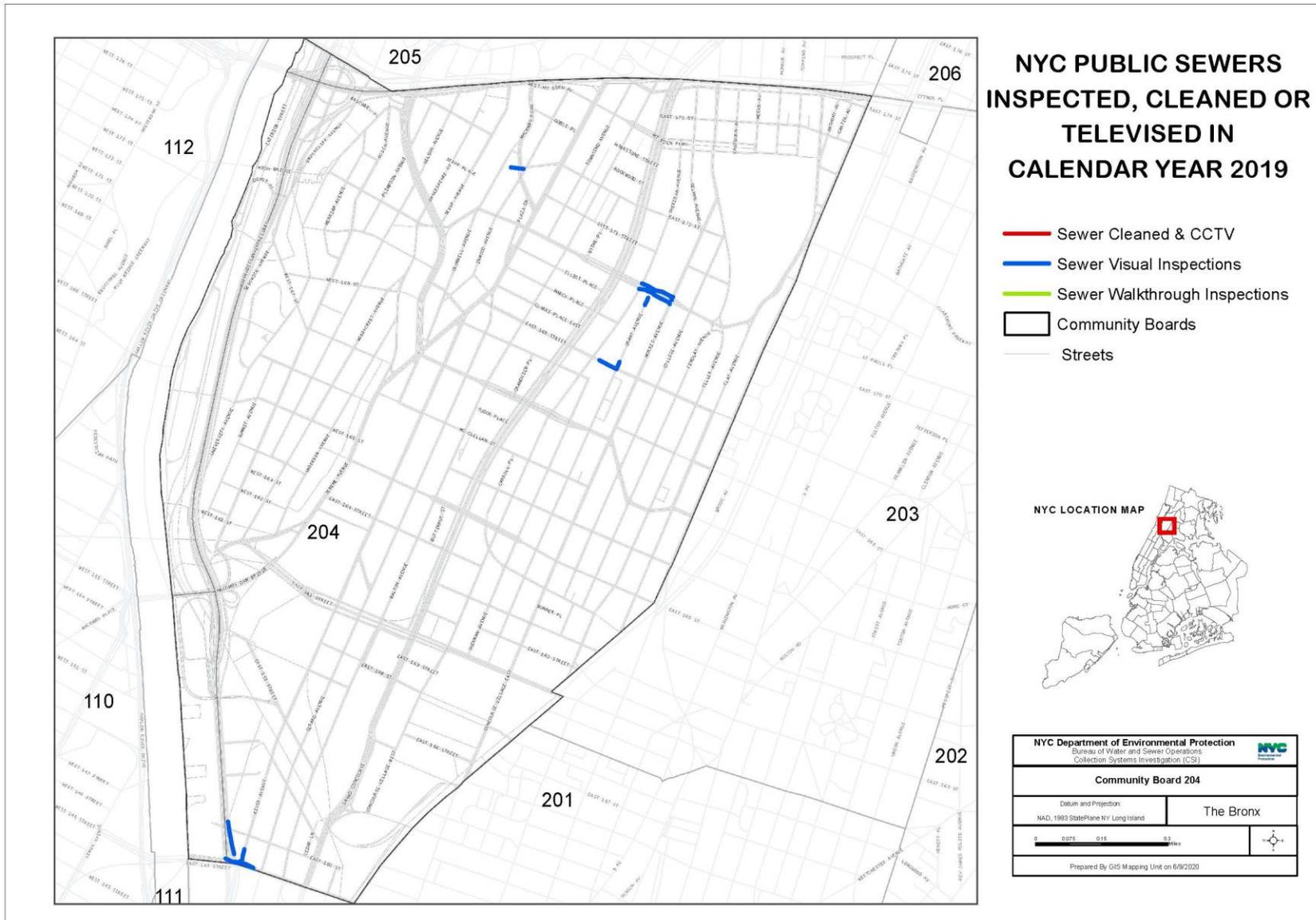


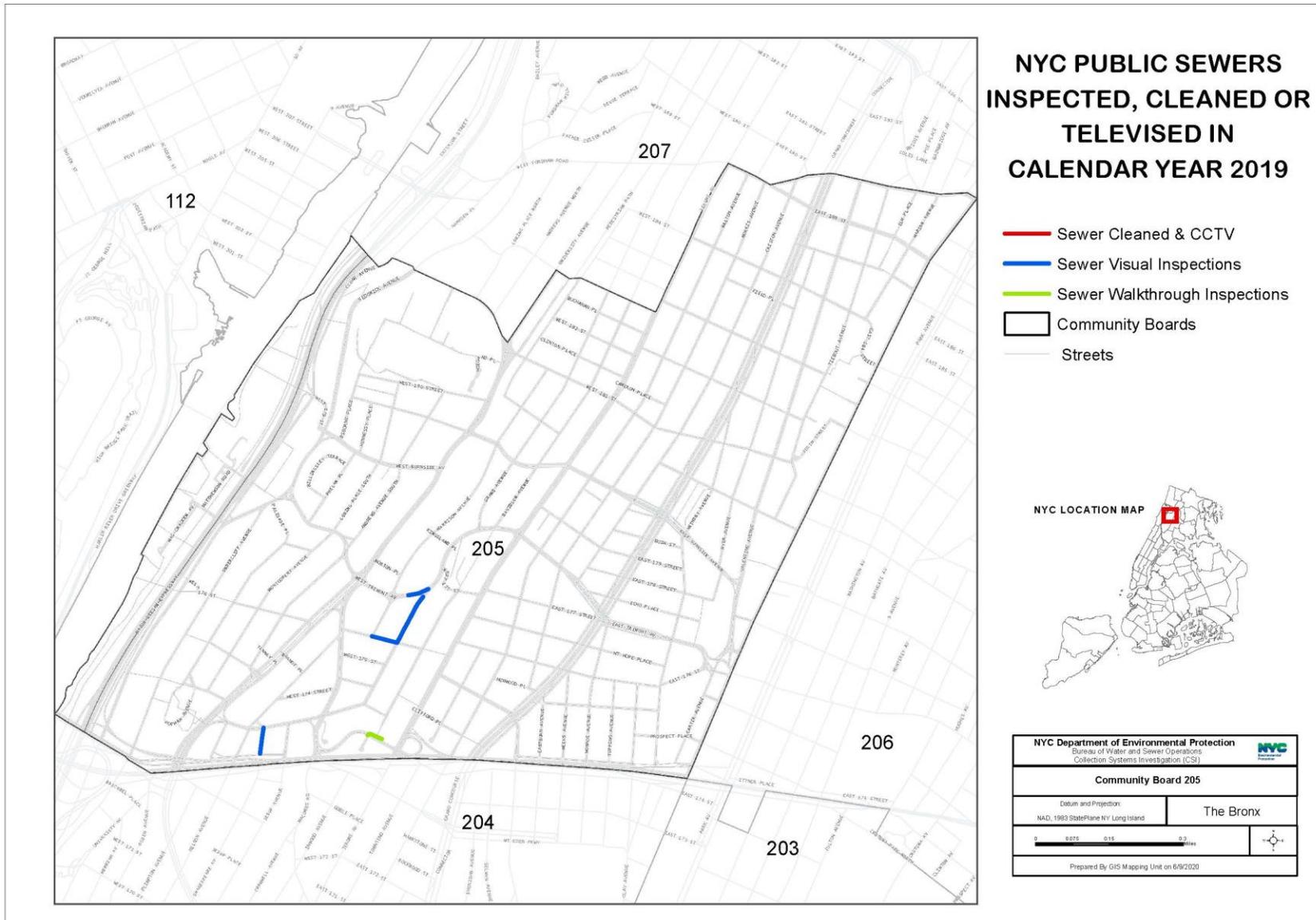


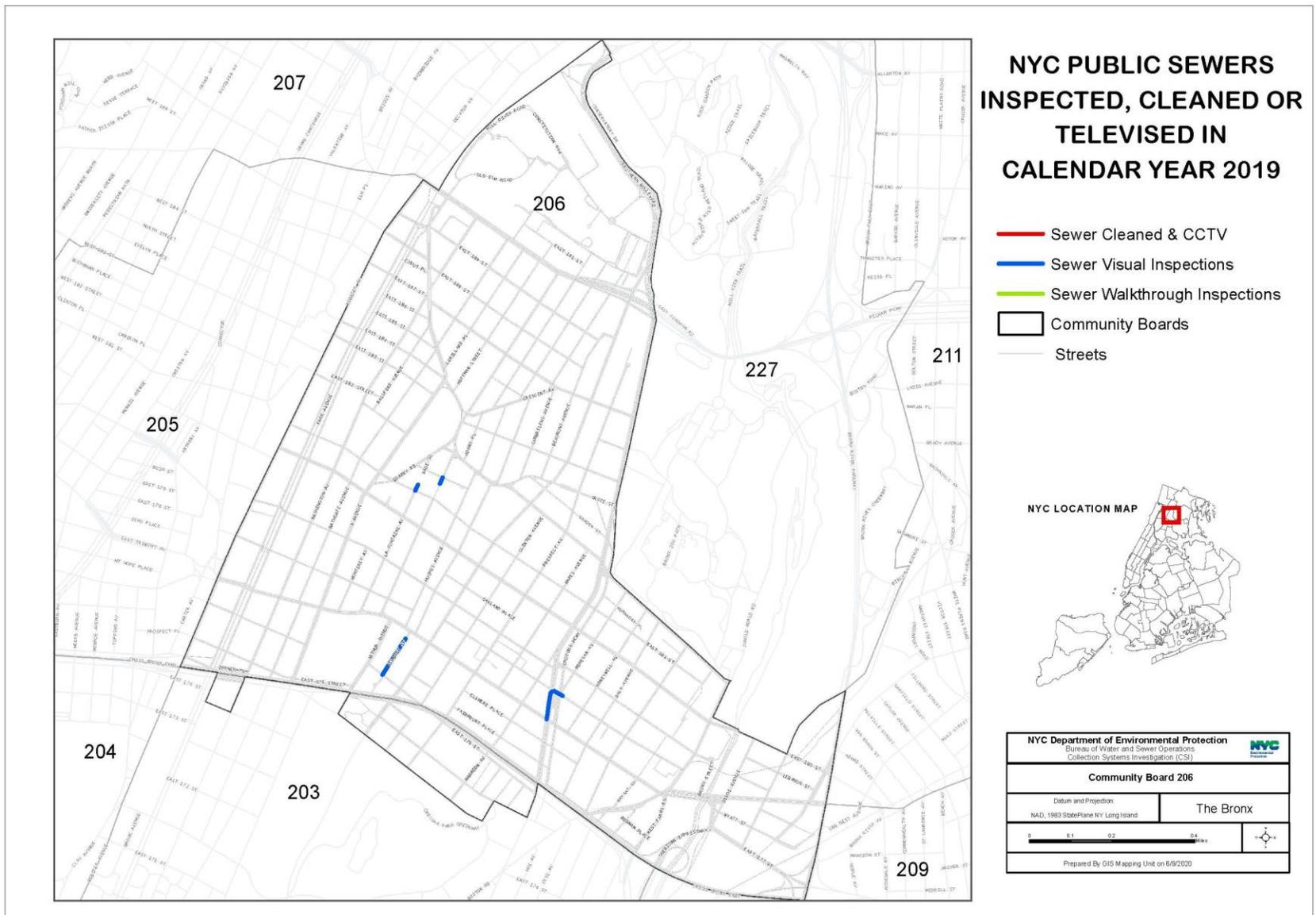


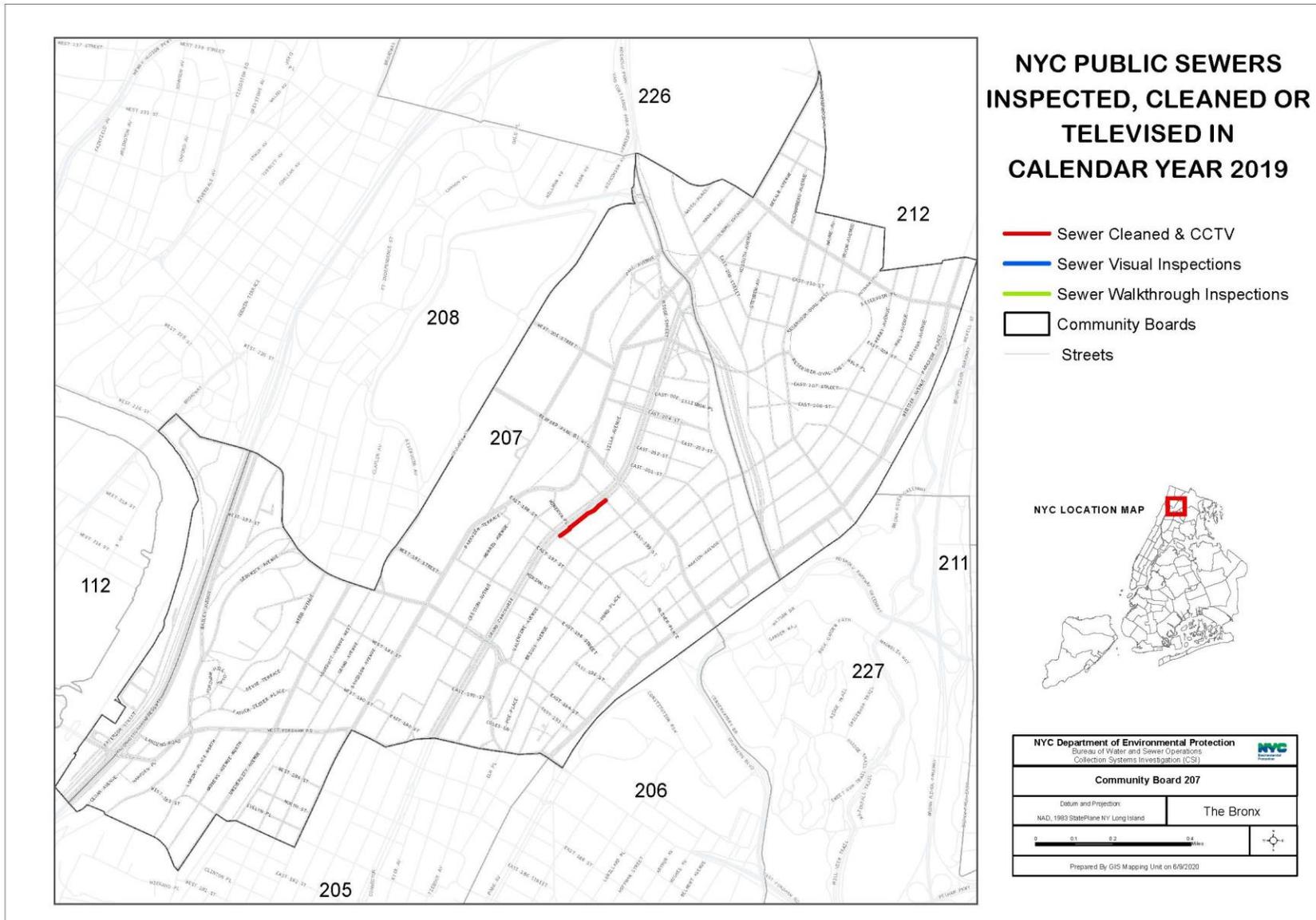


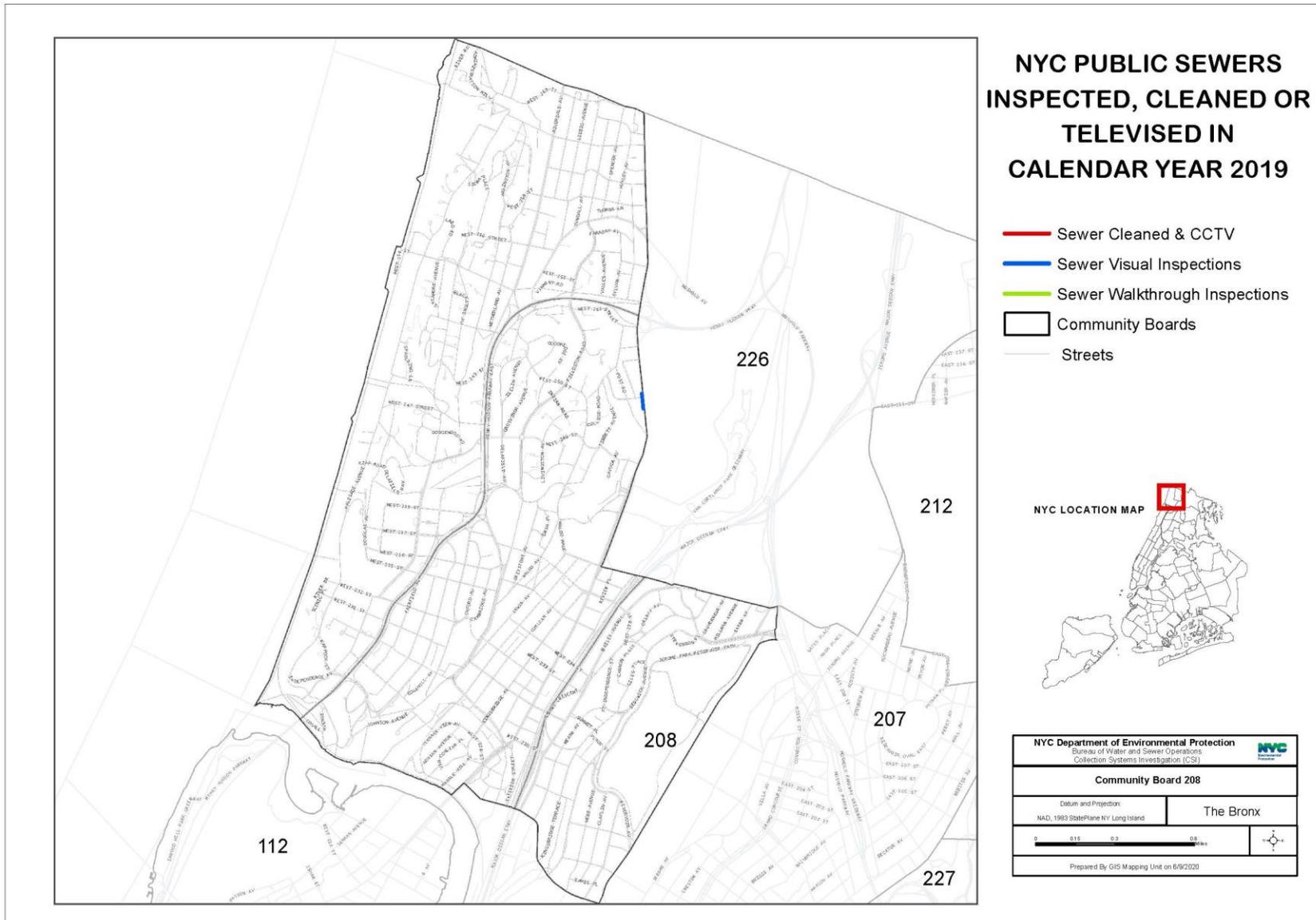


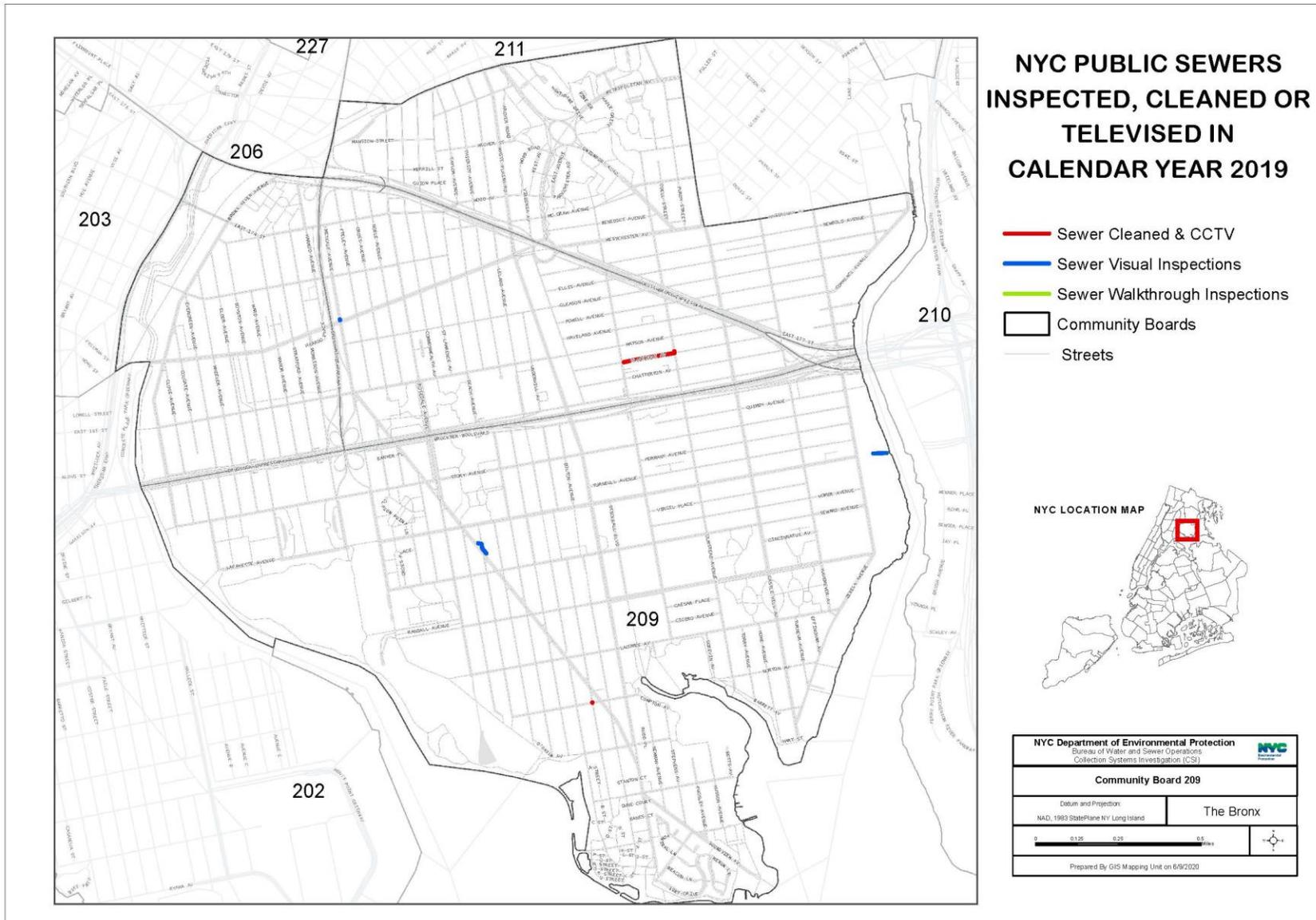


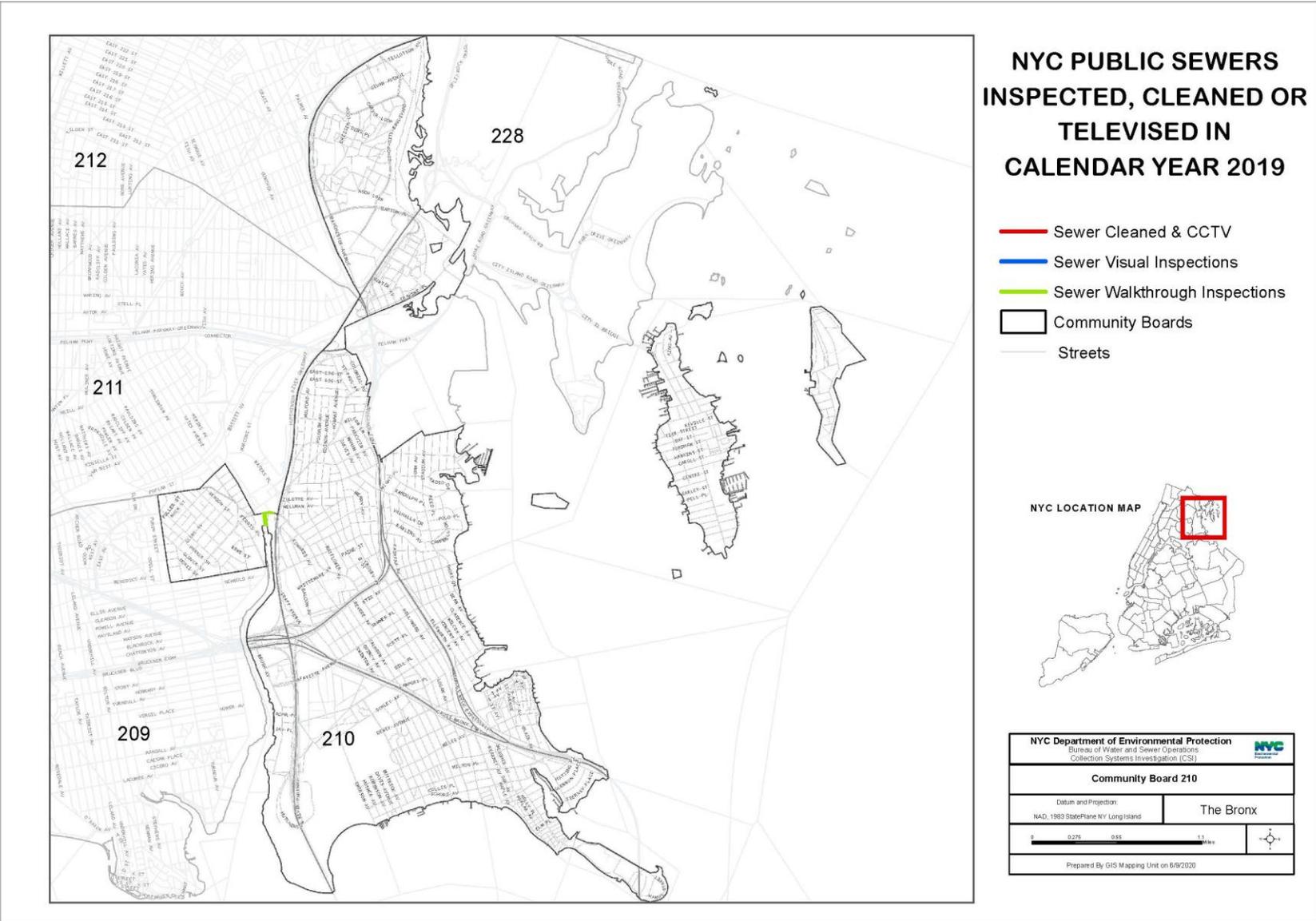


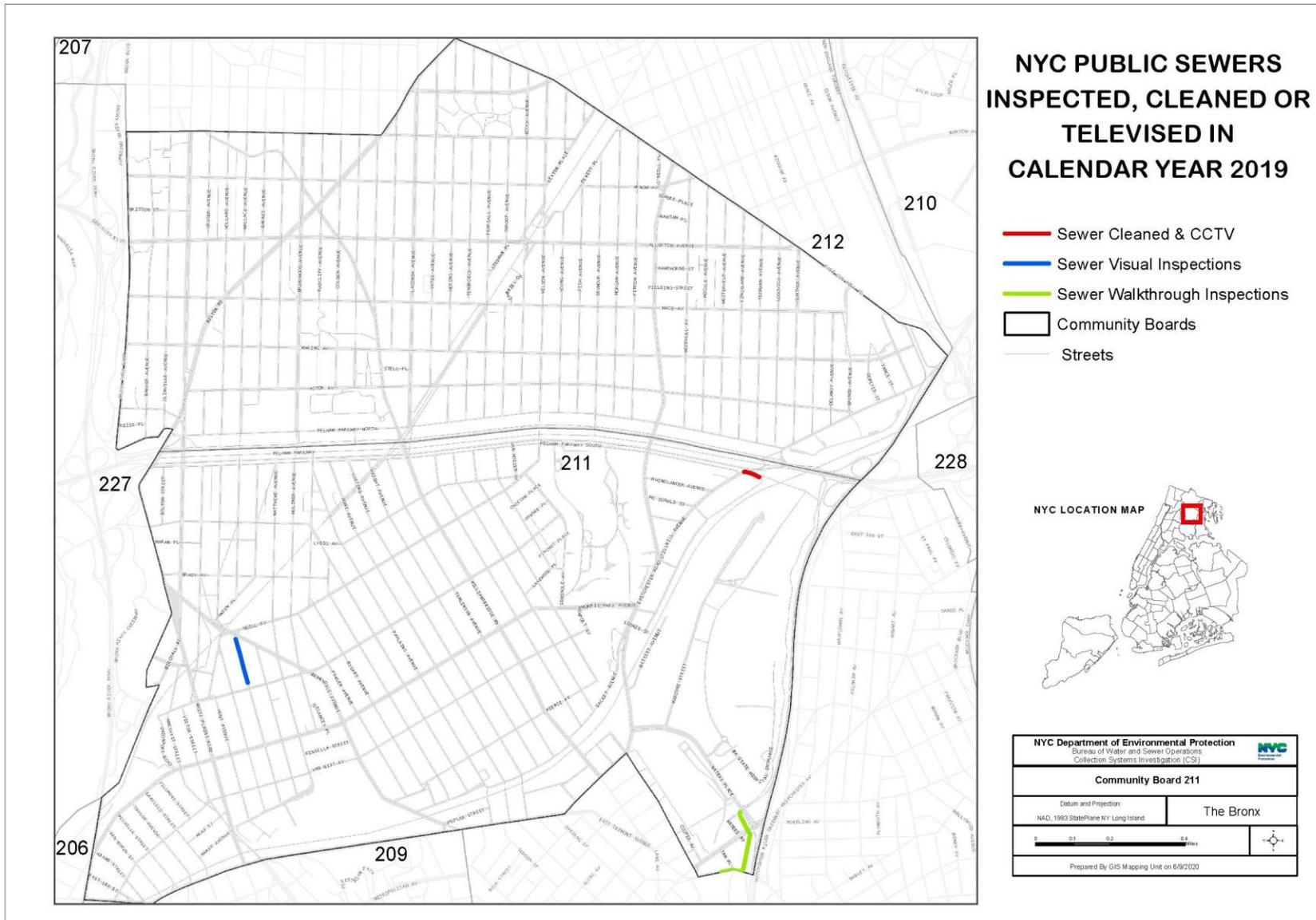


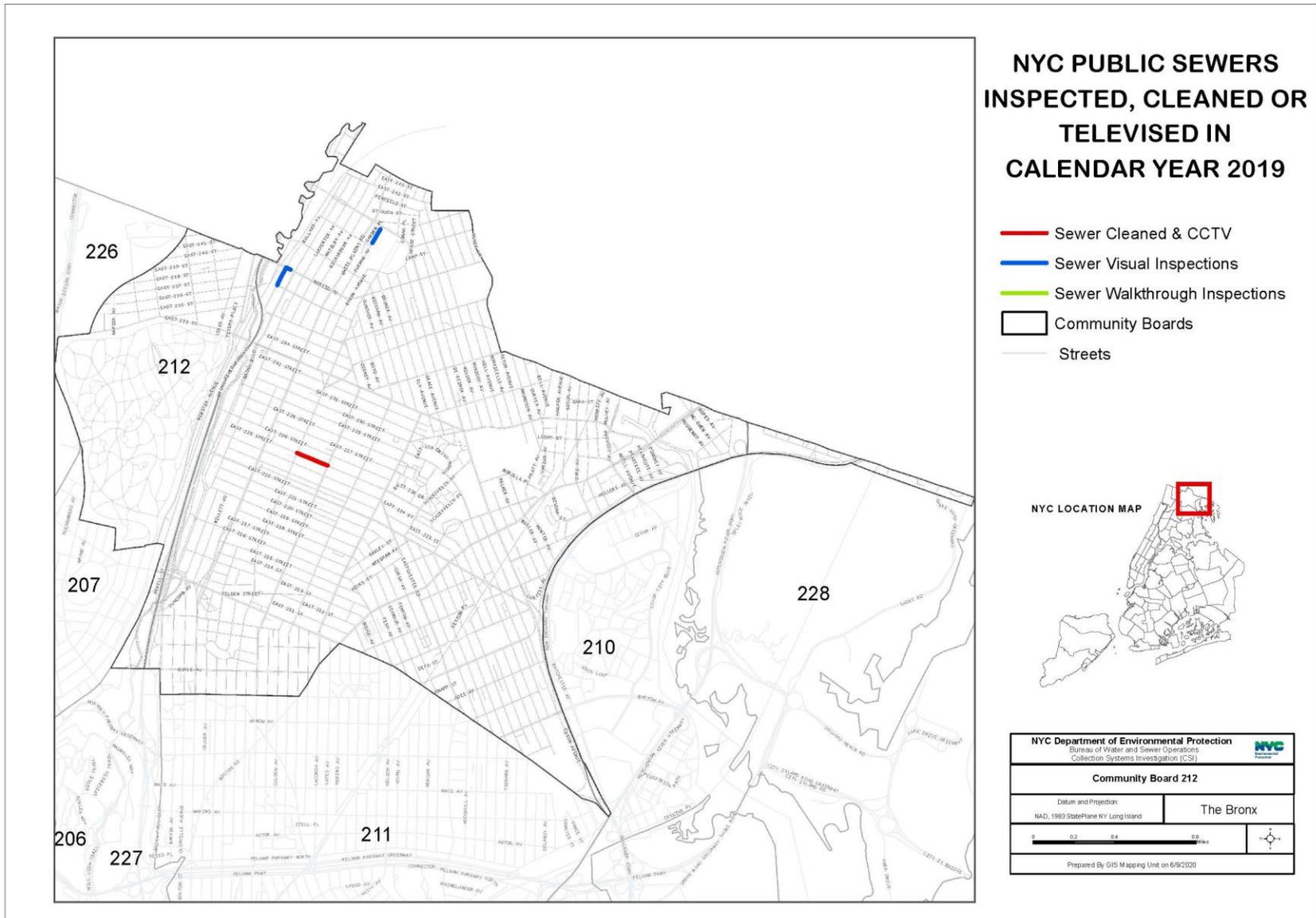


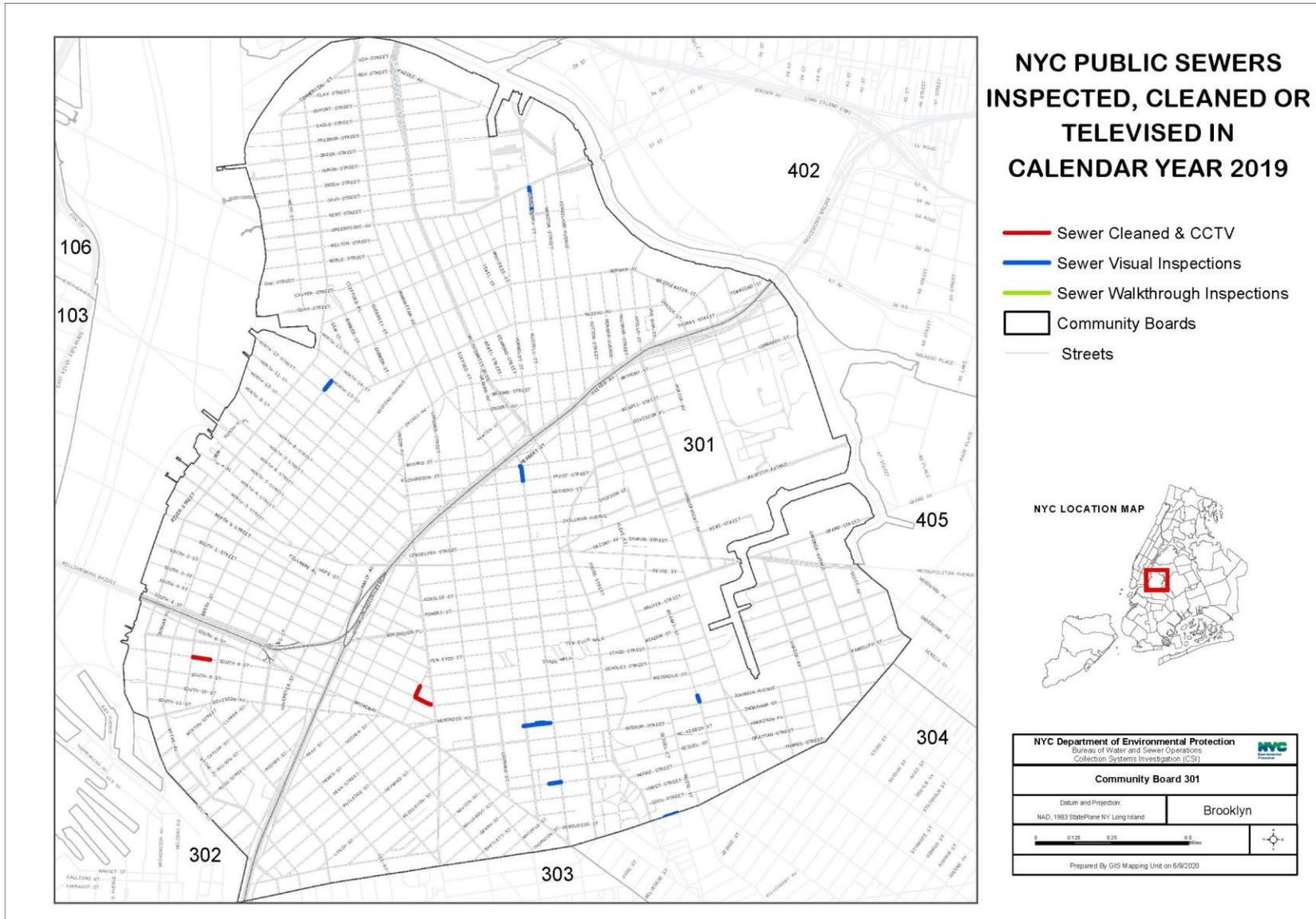














NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVIEWED IN CALENDAR YEAR 2019

- Sewer Cleaned & CCTV
- Sewer Visual Inspections
- Sewer Walkthrough Inspections
- Community Boards
- Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 302		
Datum and Projection:		Brooklyn
NAD, 1983 StatePlane N.Y. Long Island		
Prepared By GIS Mapping Unit on 6/9/2020		



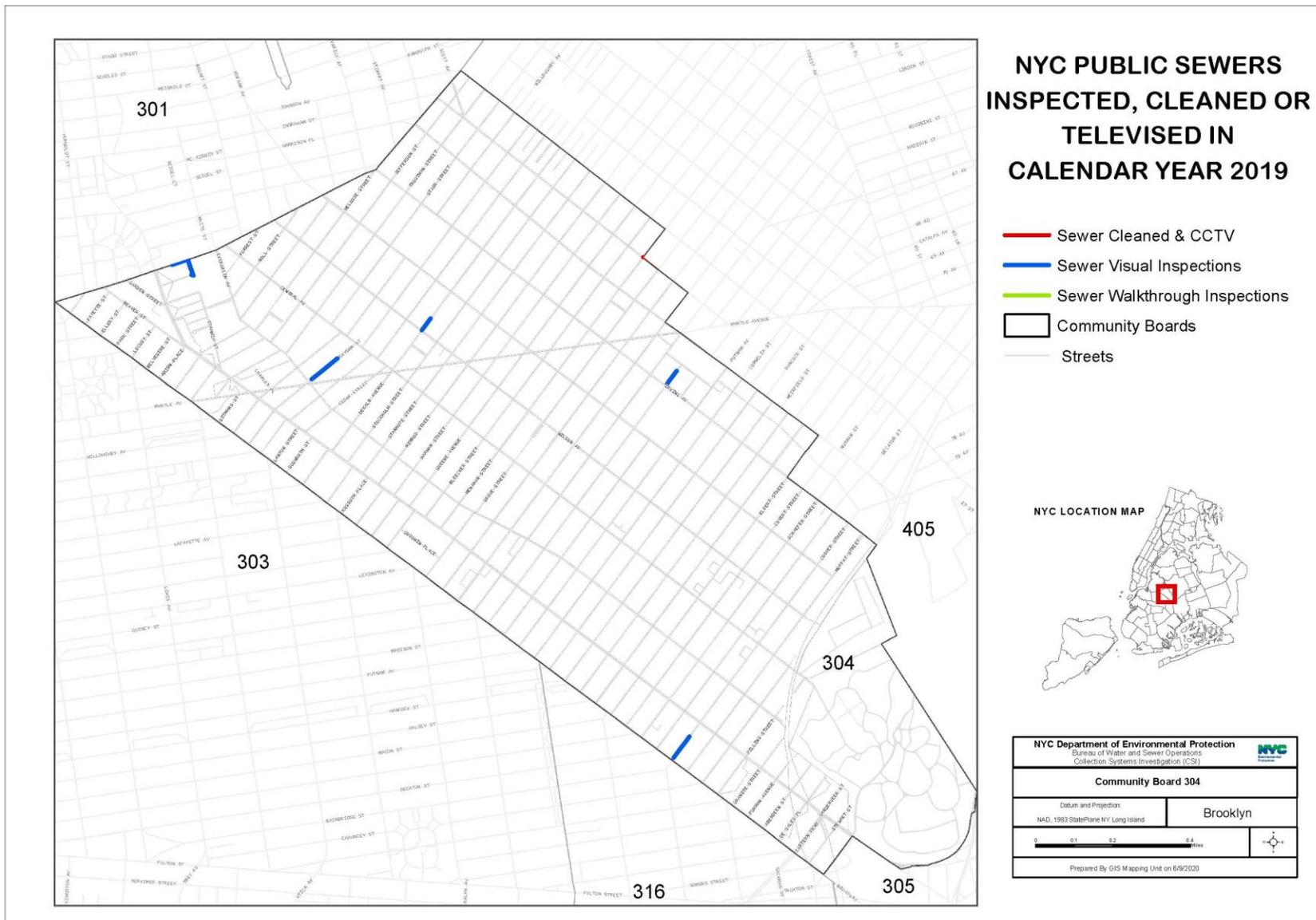
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVIEWED IN CALENDAR YEAR 2019

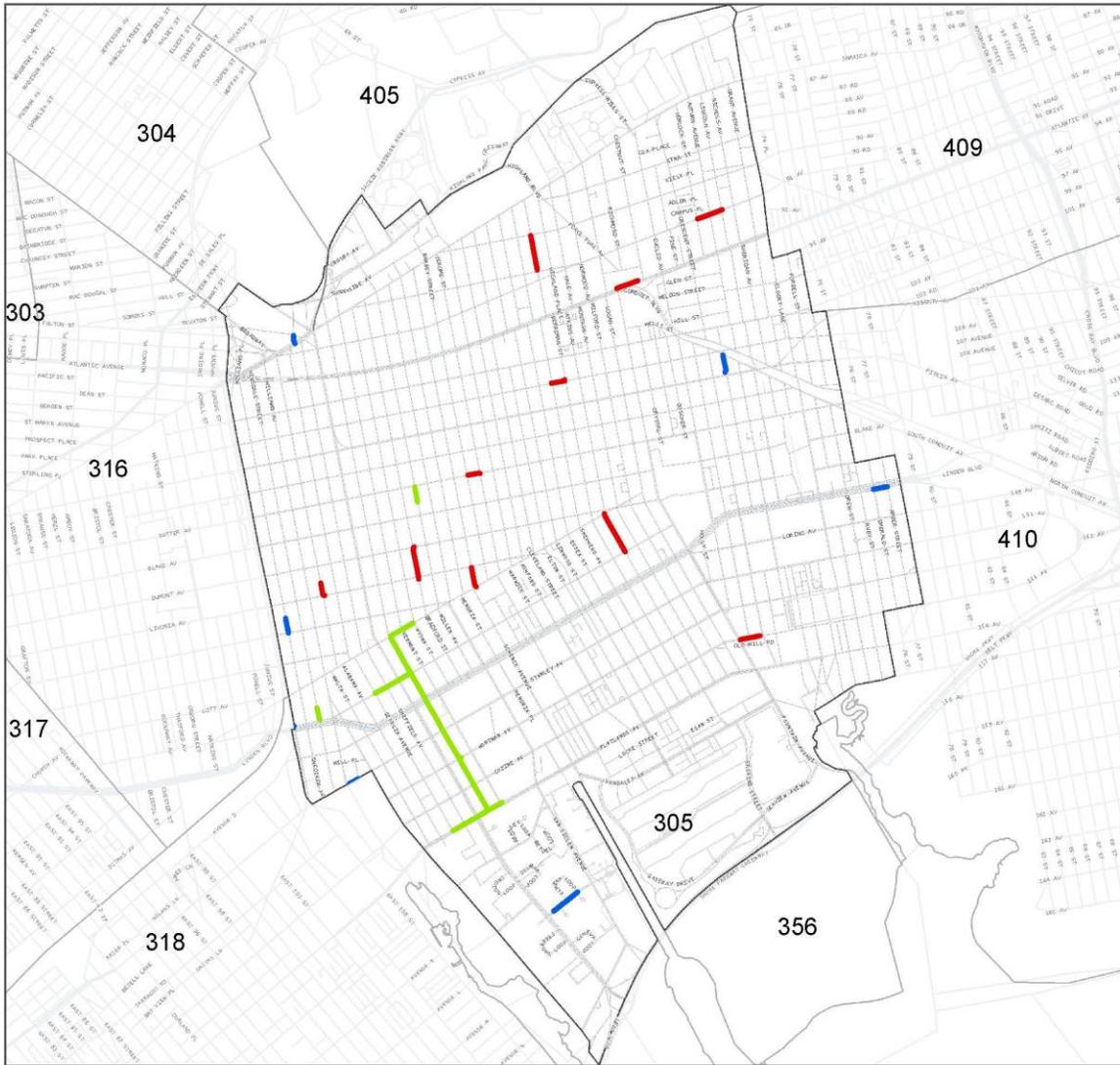
- Sewer Cleaned & CCTV
- Sewer Visual Inspections
- Sewer Walkthrough Inspections
- Community Boards
- Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 303		
Datum and Projection:		Brooklyn
NAD, 1983 StatePlane N.Y. Long Island		
Prepared By GIS Mapping Unit on 6/9/2020		





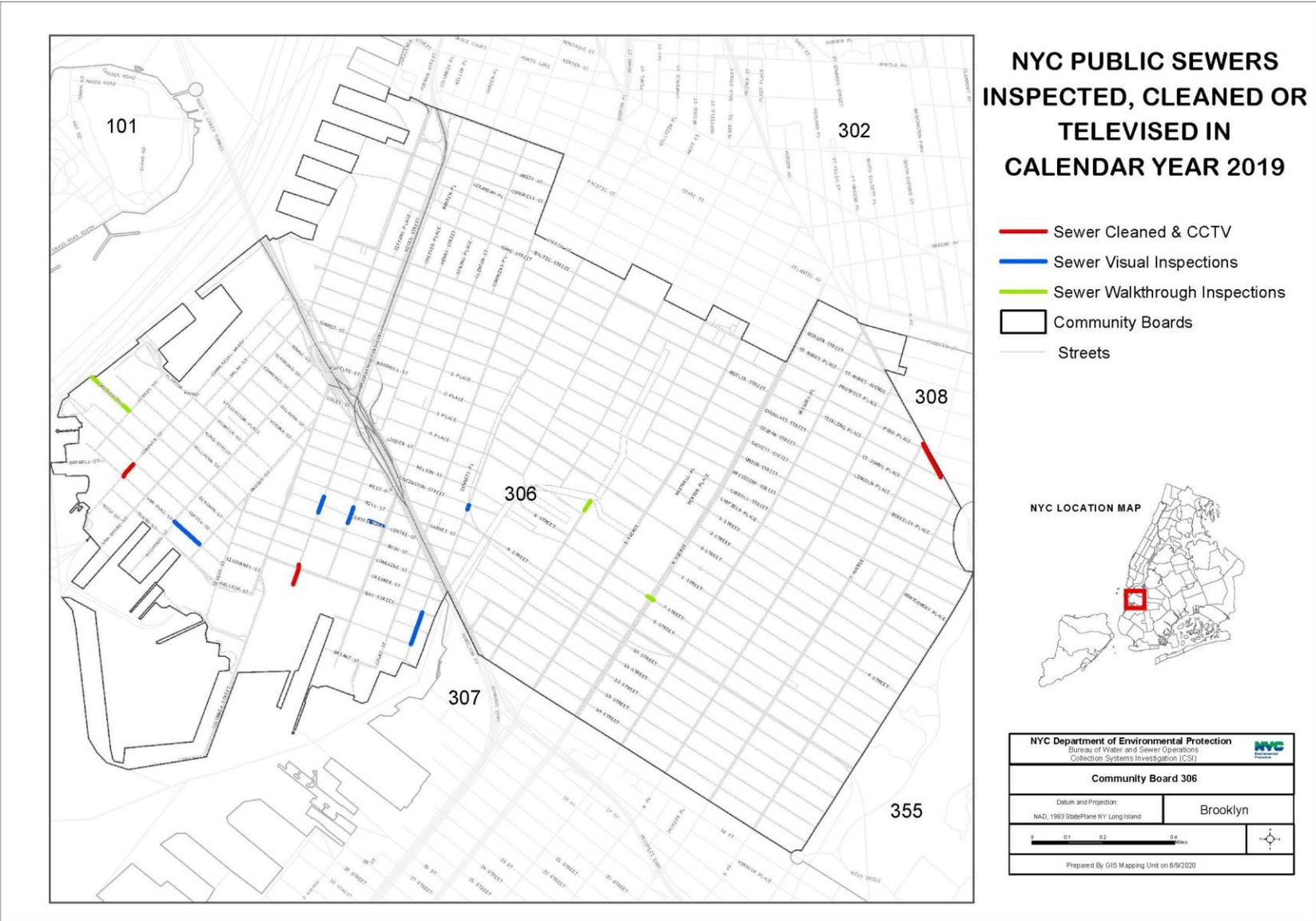
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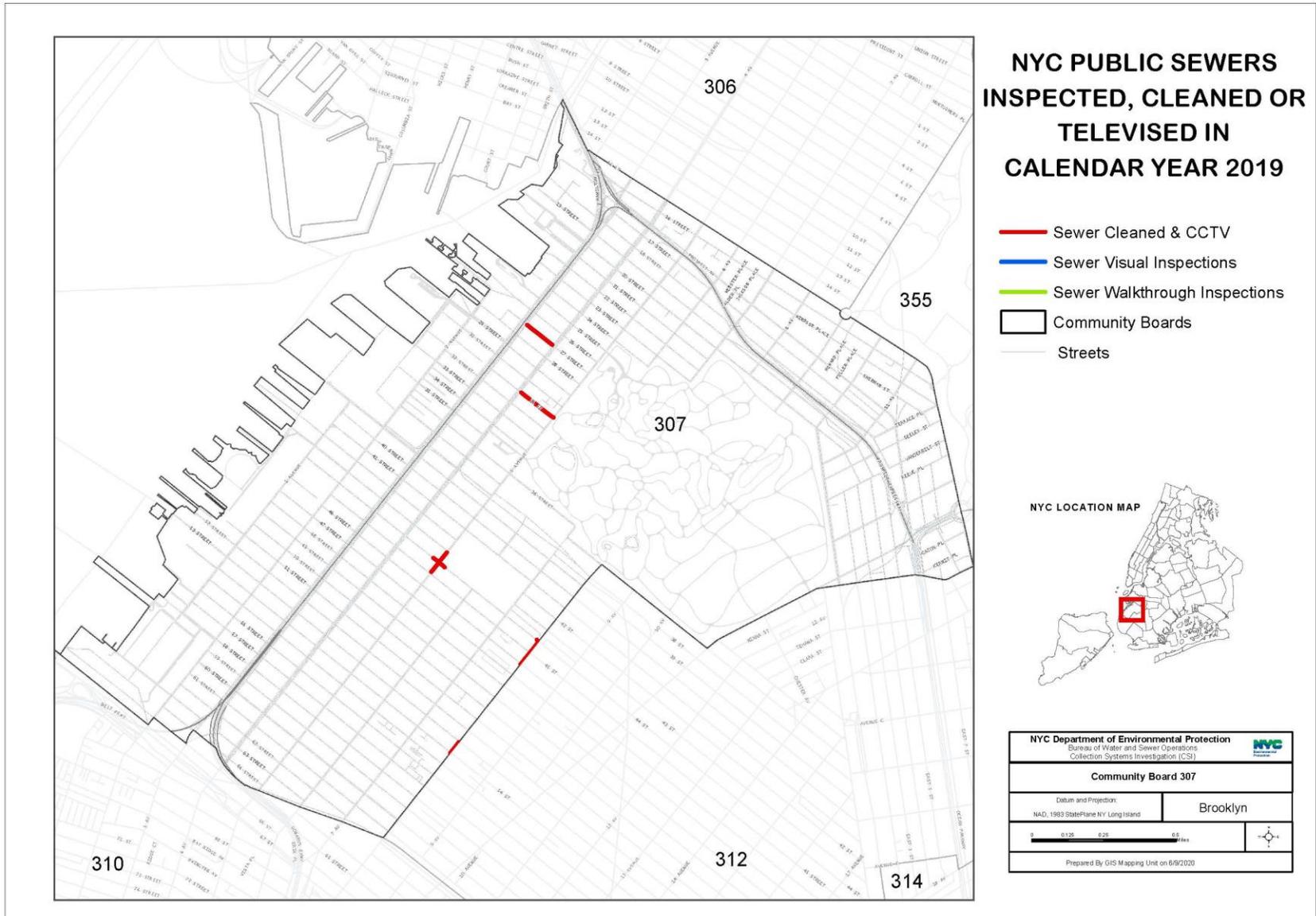
- Sewer Cleaned & CCTV
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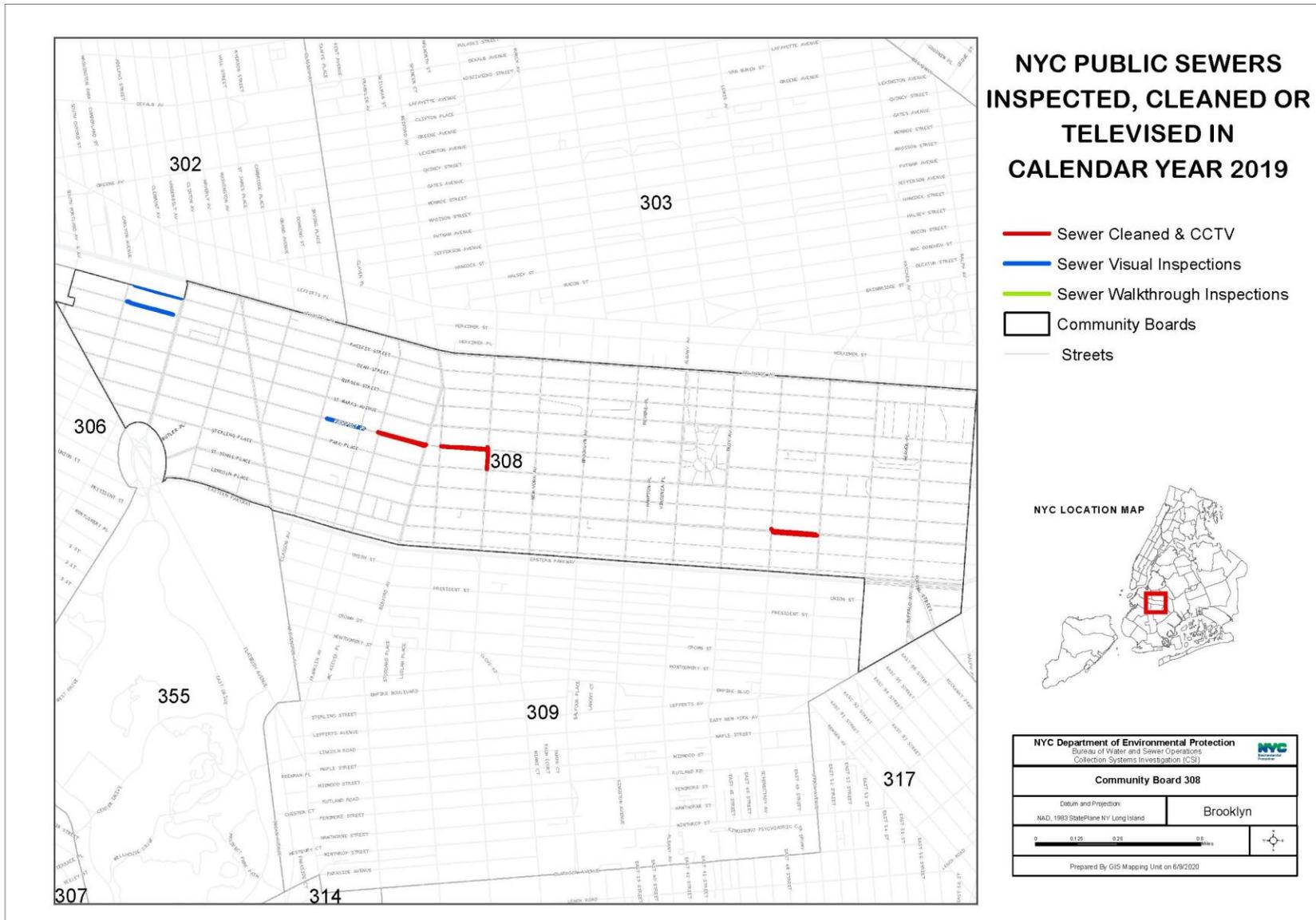
NYC LOCATION MAP

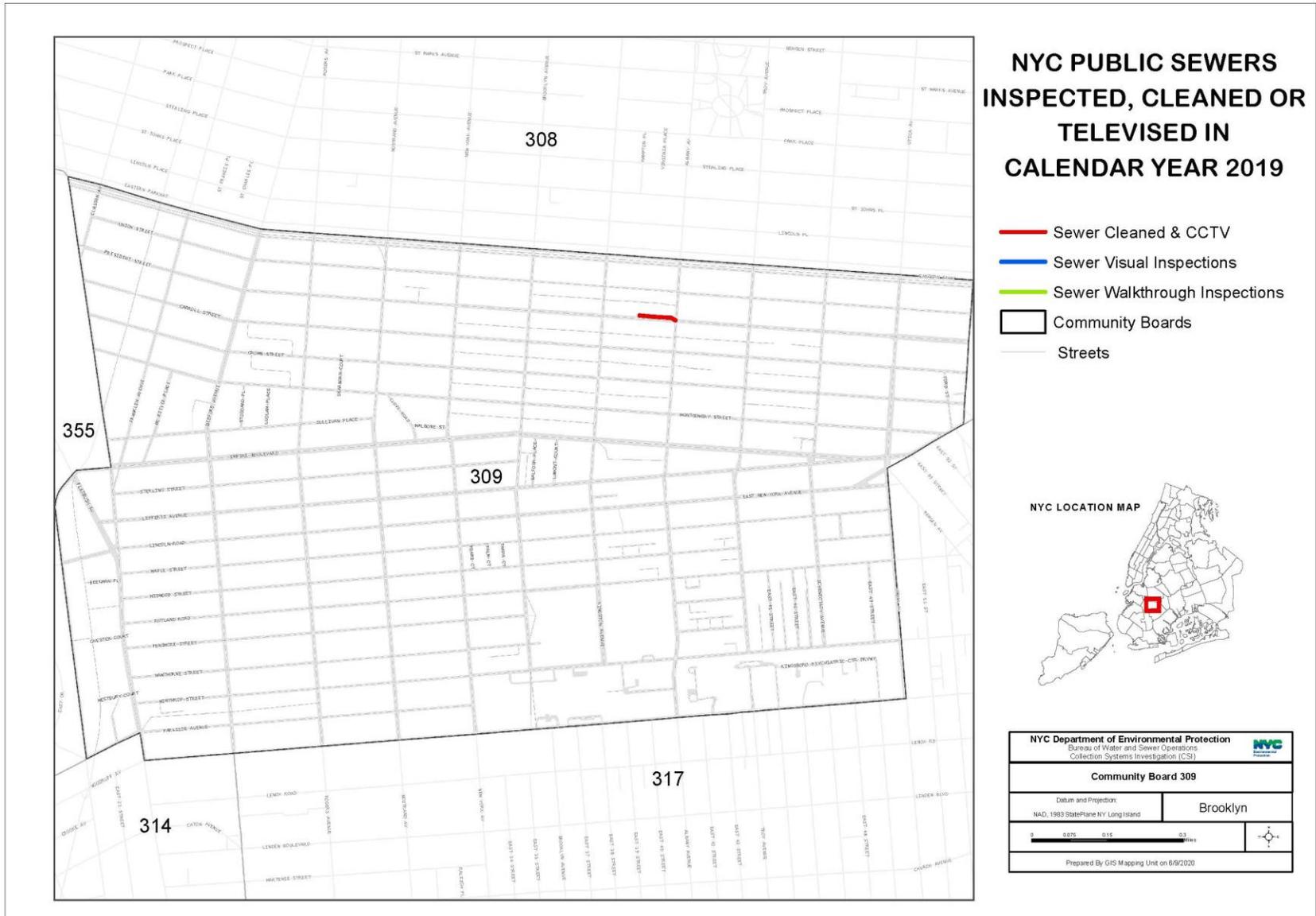


NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 305		
Datum and Projection:		Brooklyn
NAD, 1983 StatePlane N.Y. Long Island		
Prepared By GIS Mapping Unit on 6/9/2020		











NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVIEWED IN CALENDAR YEAR 2019

- Sewer Cleaned & CCTV
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- Streets



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 310		
Datum and Projection:		Brooklyn
NAD, 1983 StatePlane N.Y. Long Island		
Prepared By GIS Mapping Unit on 6/9/2020		



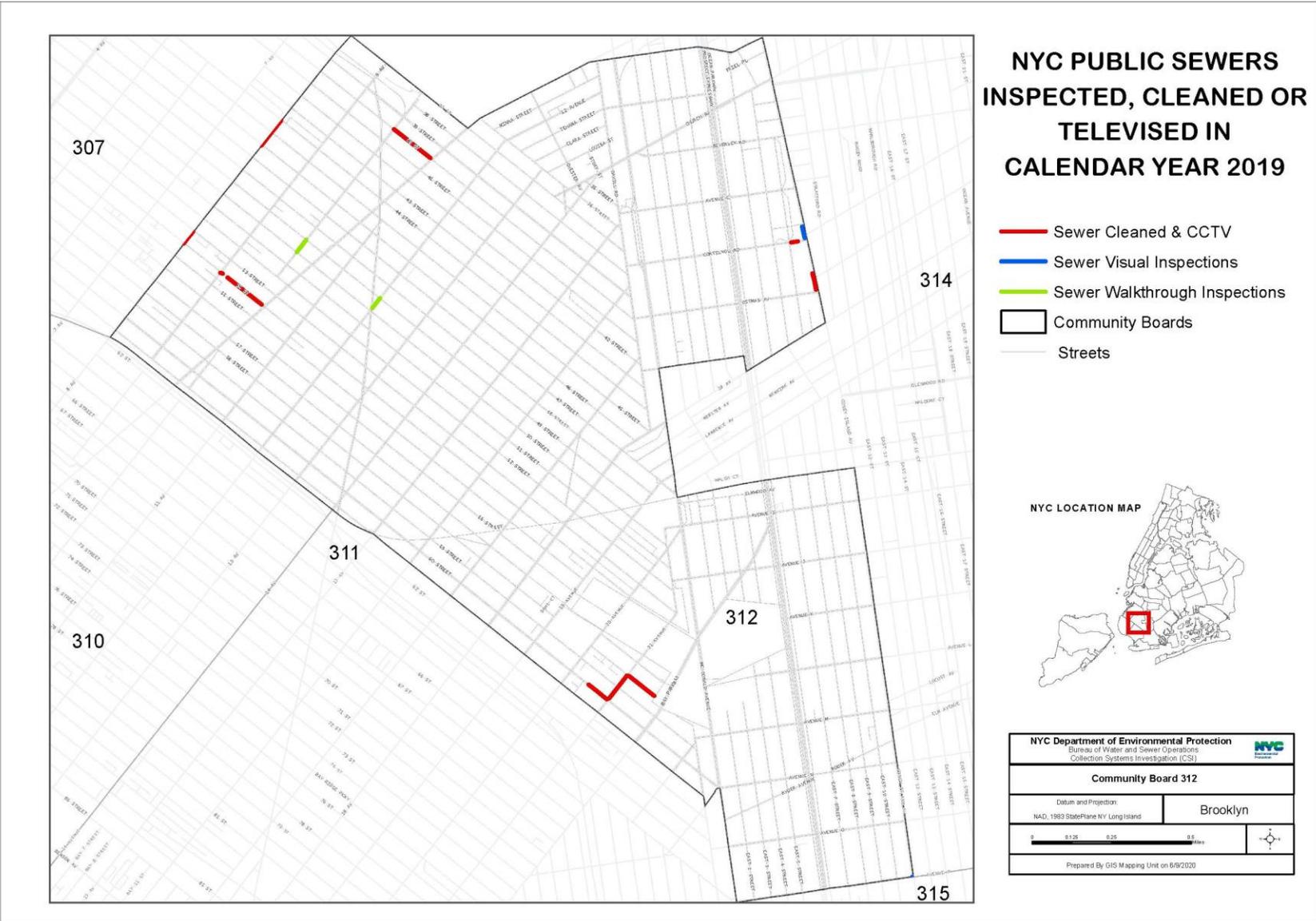
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVIEWED IN CALENDAR YEAR 2019

- Sewer Cleaned & CCTV
- Sewer Visual Inspections
- Sewer Walkthrough Inspections
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NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 311		
Datum and Projection:		Brooklyn
NAD, 1983 StatePlane N.Y. Long Island		
Prepared By GIS Mapping Unit on 6/9/2020		





NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVIEWED IN CALENDAR YEAR 2019

- Sewer Cleaned & CCTV
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NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 313		
Datum and Projection:		Brooklyn
NAD, 1983 StatePlane N.Y. Long Island		
Prepared By GIS Mapping Unit on 6/9/2020		



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVIEWED IN CALENDAR YEAR 2019

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- Community Boards
- Streets



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 314		
Datum and Projection: NAD, 1983 StatePlane N.Y. Long Island		Brooklyn
Prepared By GIS Mapping Unit on 6/9/2020		



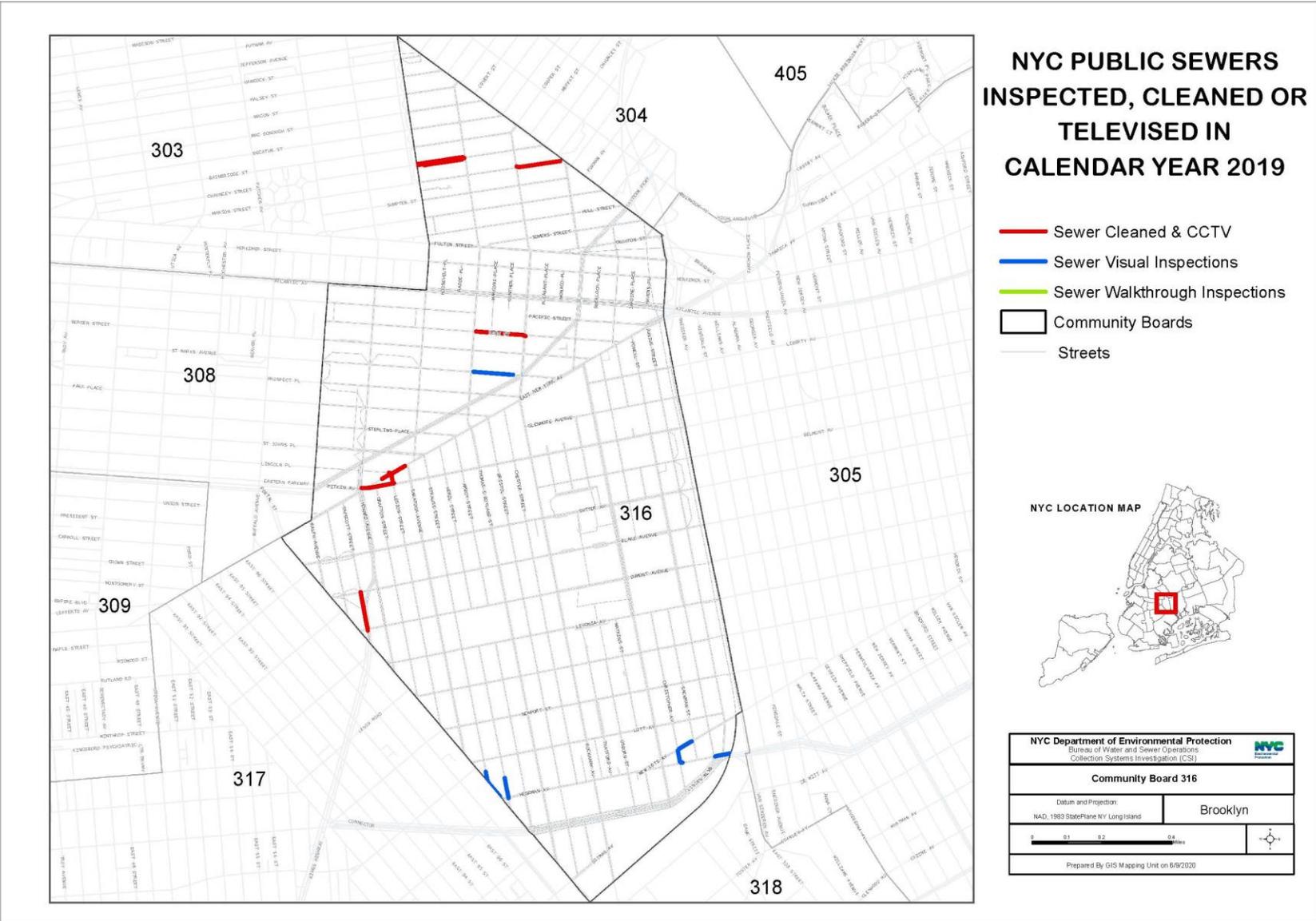
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVIEWED IN CALENDAR YEAR 2019

- Sewer Cleaned & CCTV
- Sewer Visual Inspections
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NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 315		
Datum and Projection:		Brooklyn
NAD, 1983 StatePlane N.Y. Long Island		
Prepared By GIS Mapping Unit on 6/9/2020		





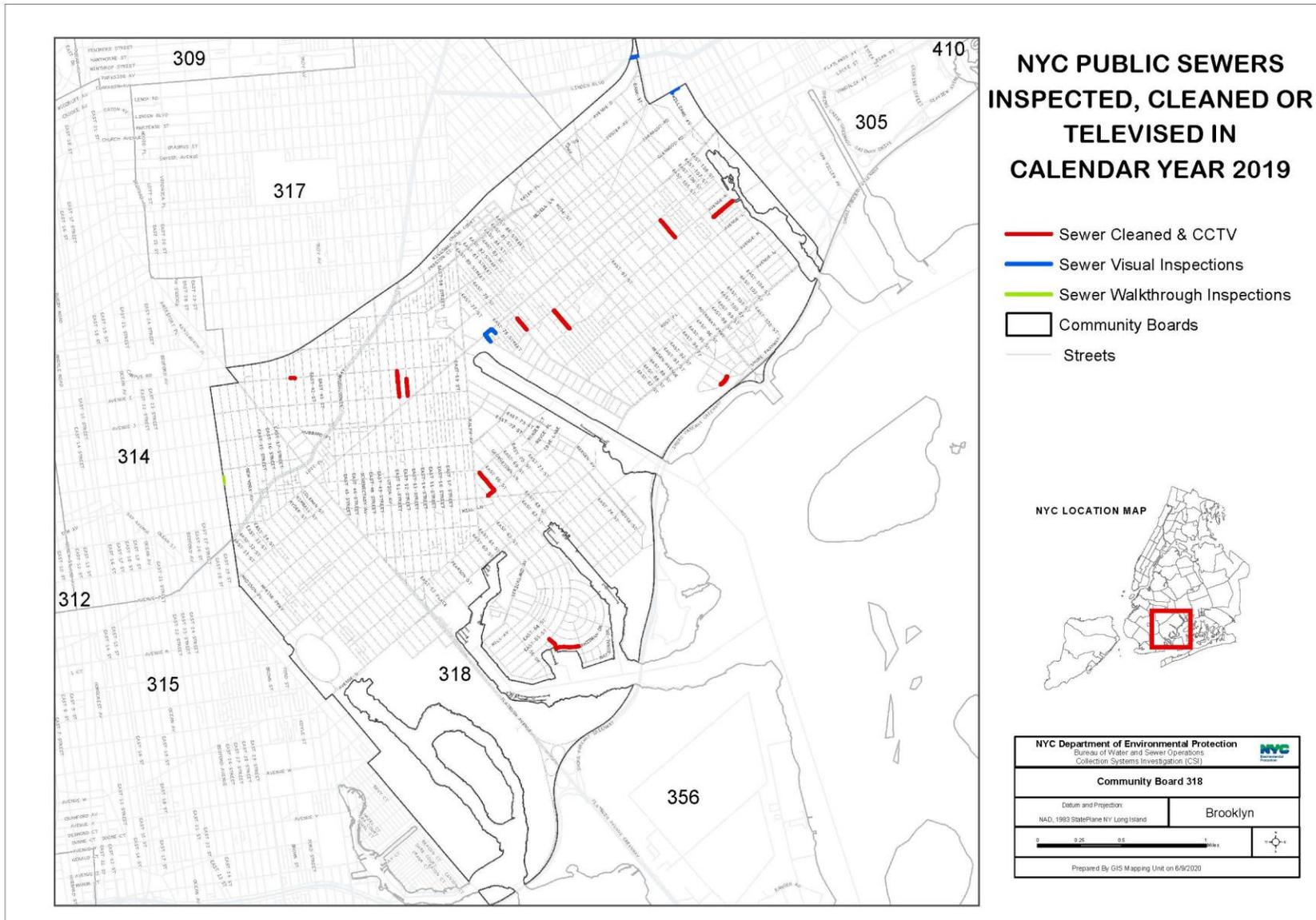
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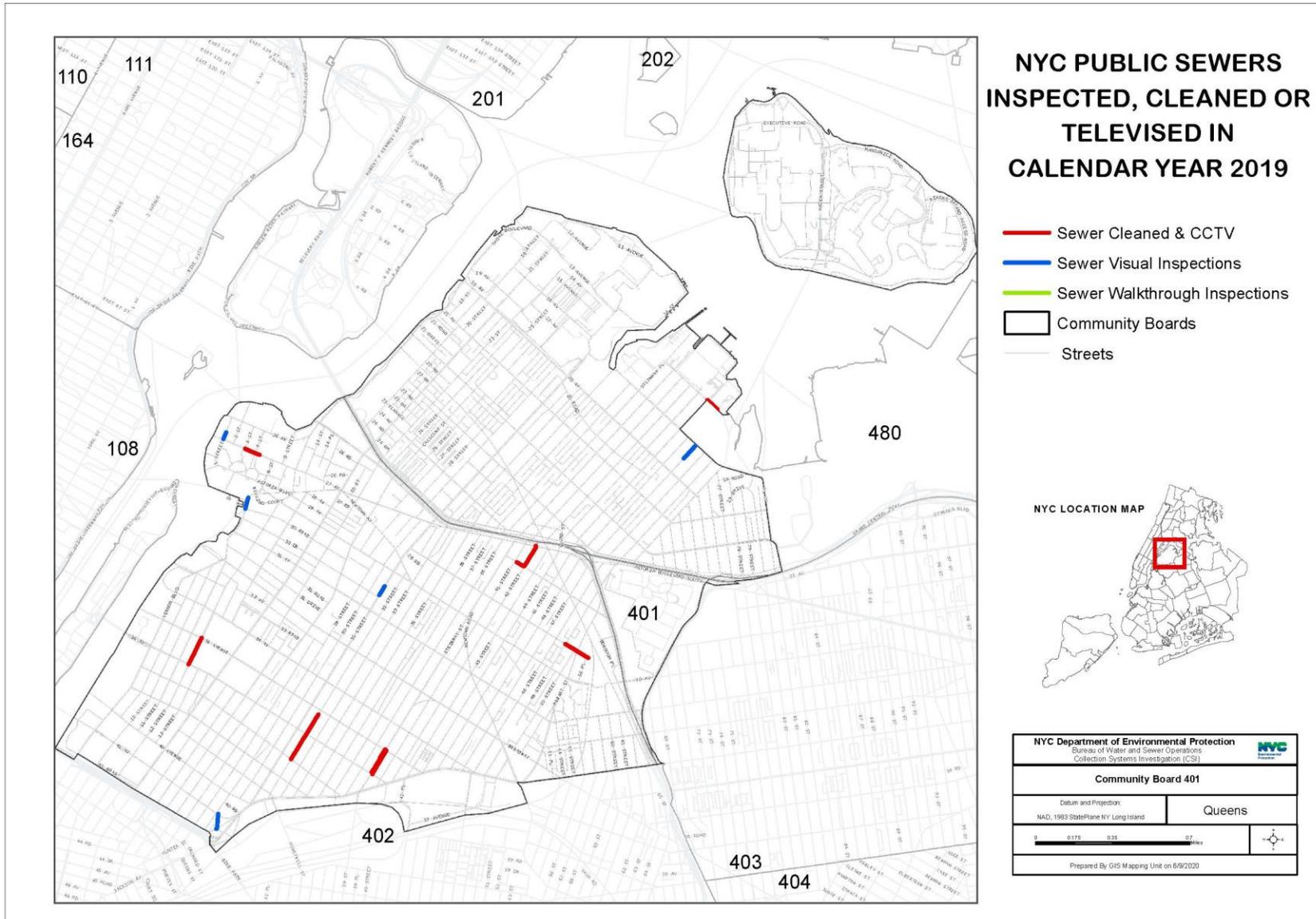
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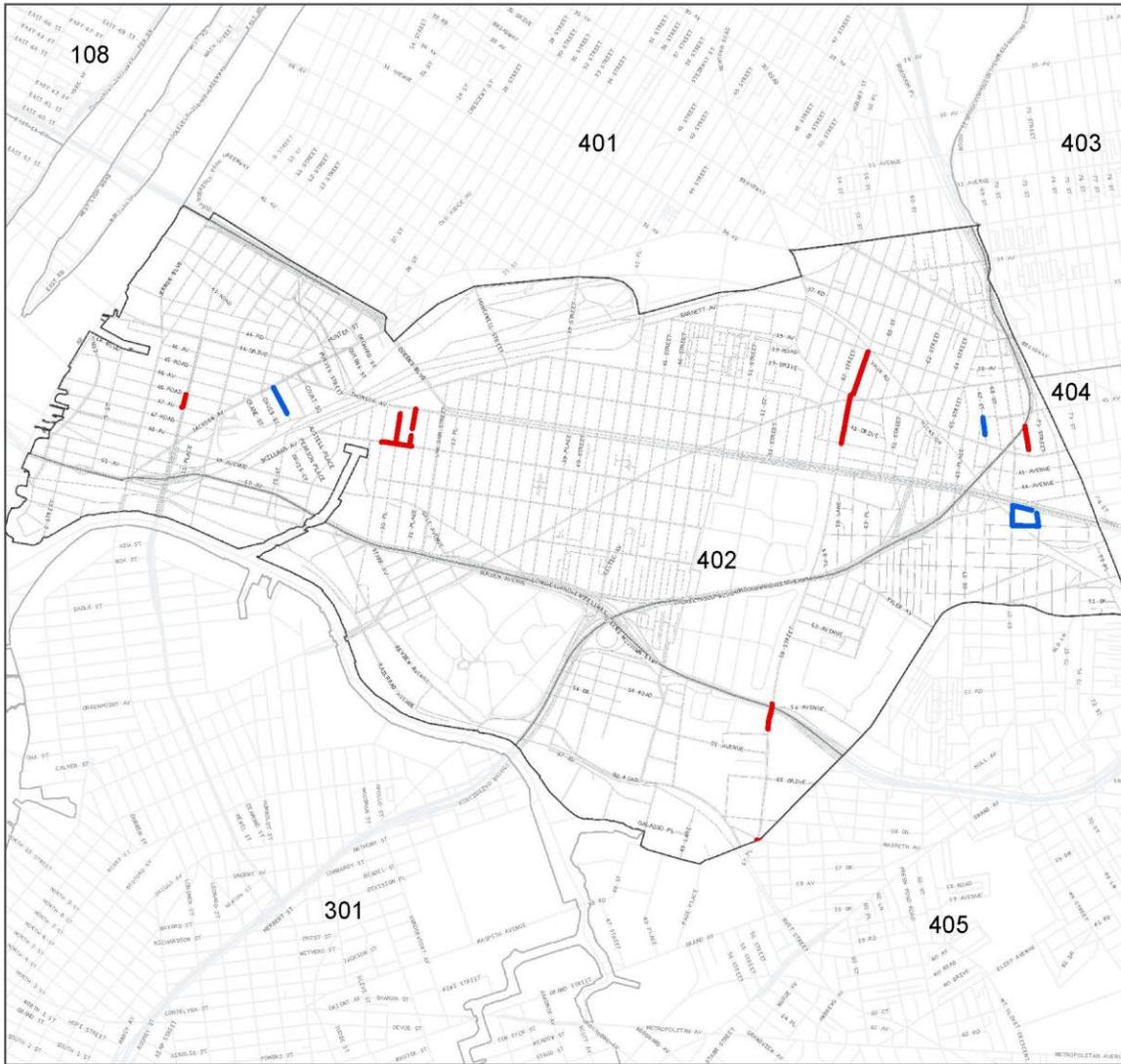
NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 317		
Datum and Projection:		Brooklyn
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Prepared By GIS Mapping Unit on 6/9/2020		







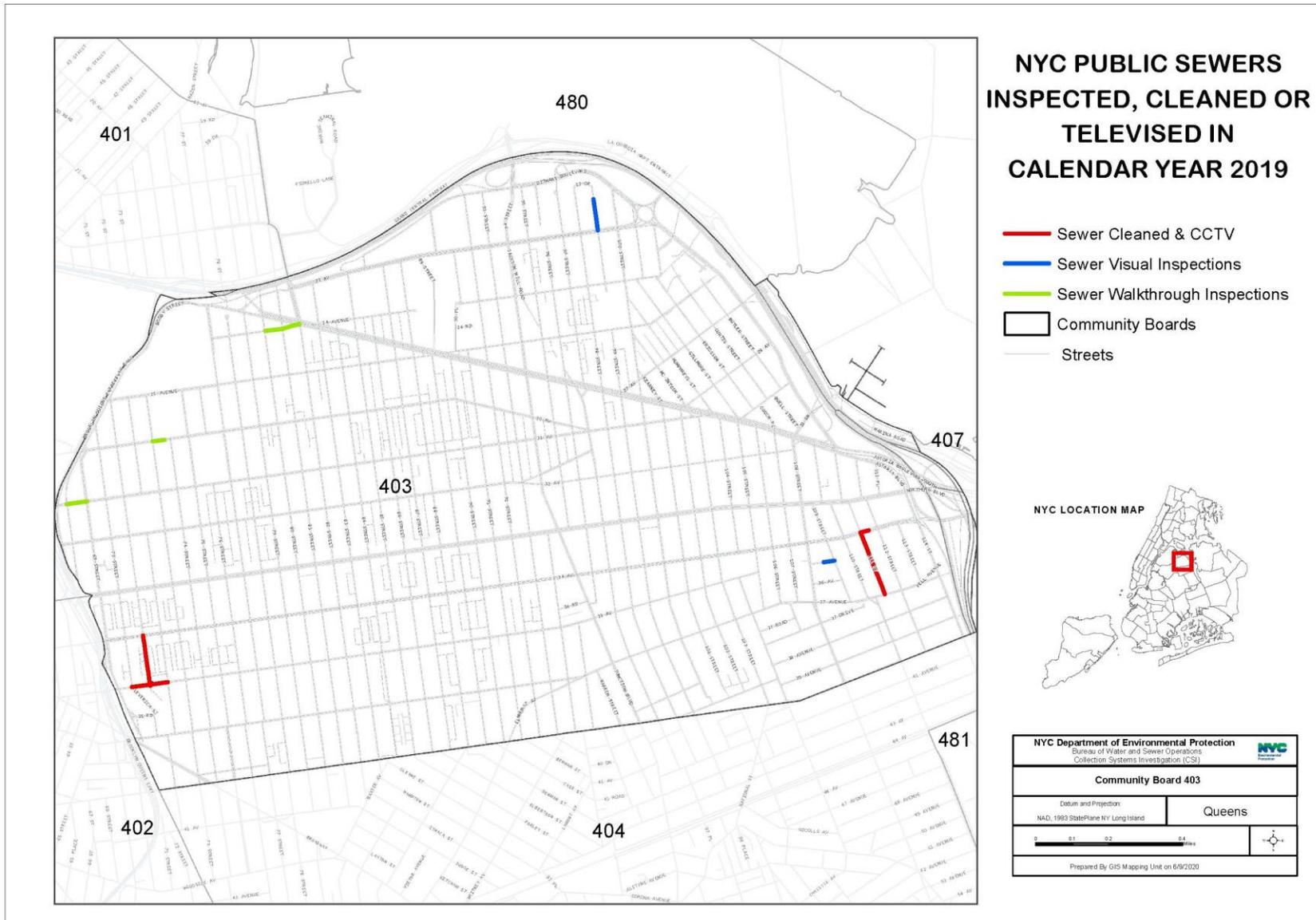
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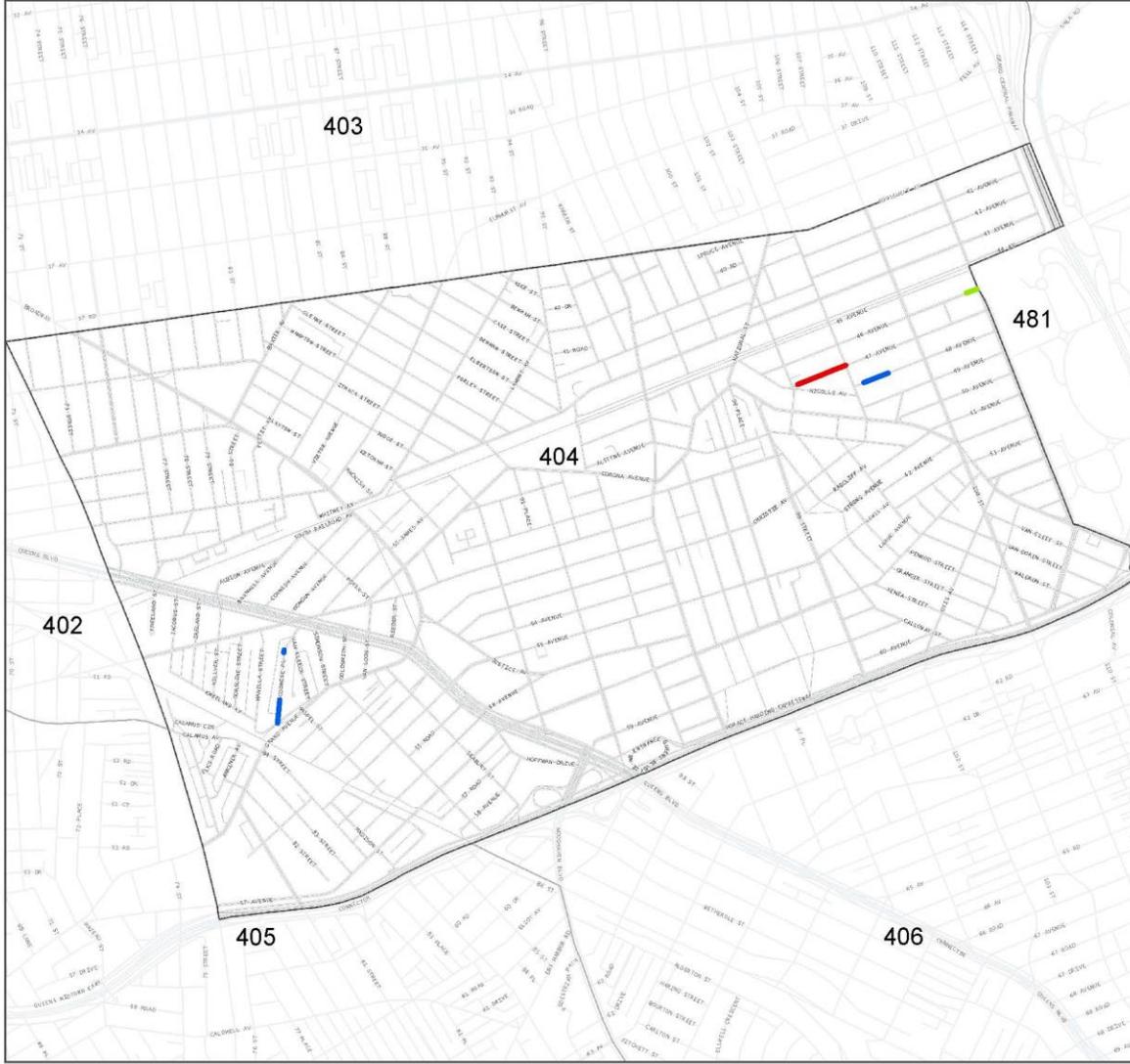
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NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)	
Community Board 402	
Datum and Projection: NAD, 1983 StatePlane N.Y. Long Island	
Queens	
Prepared By GIS Mapping Unit on 6/9/2020	



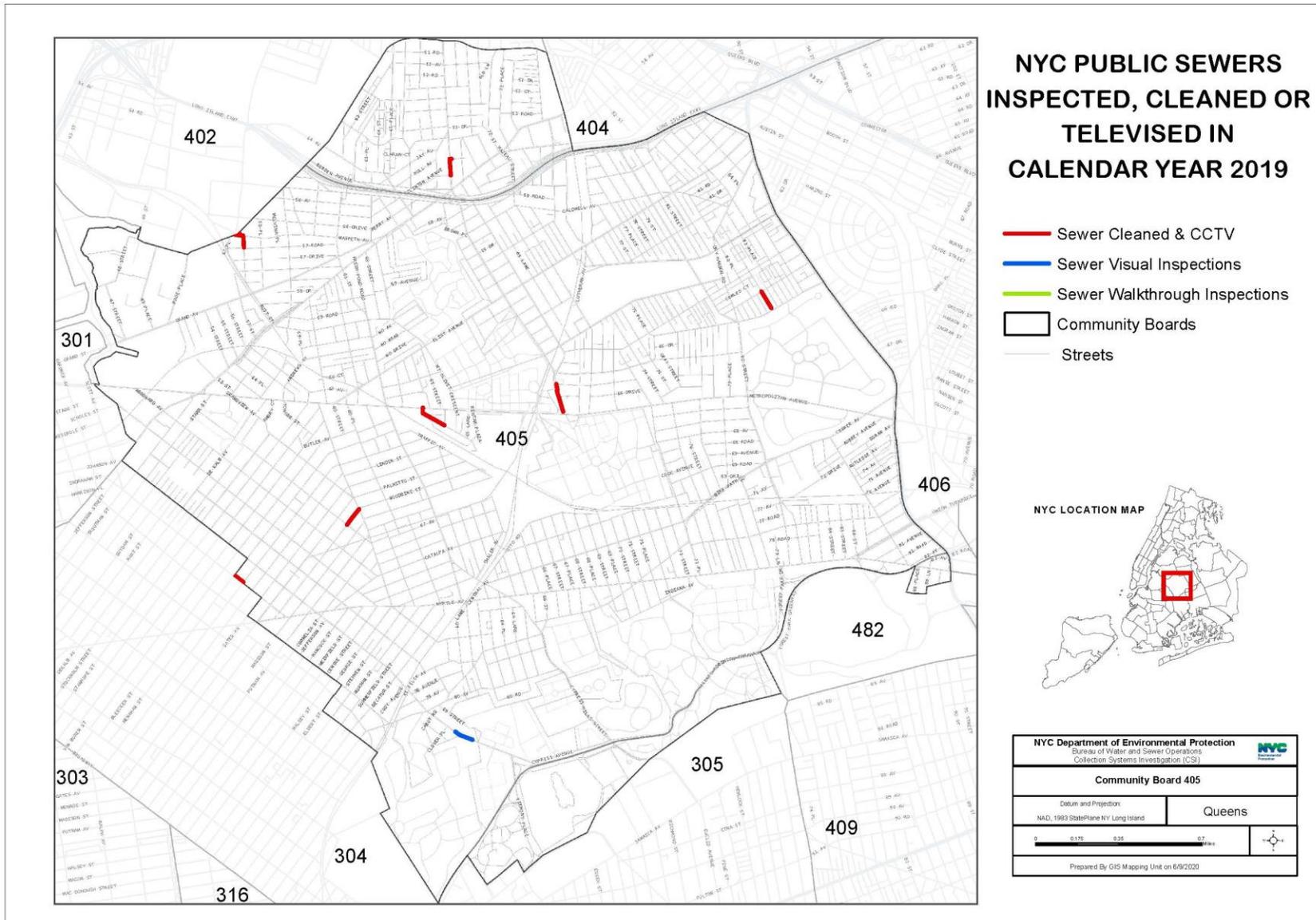


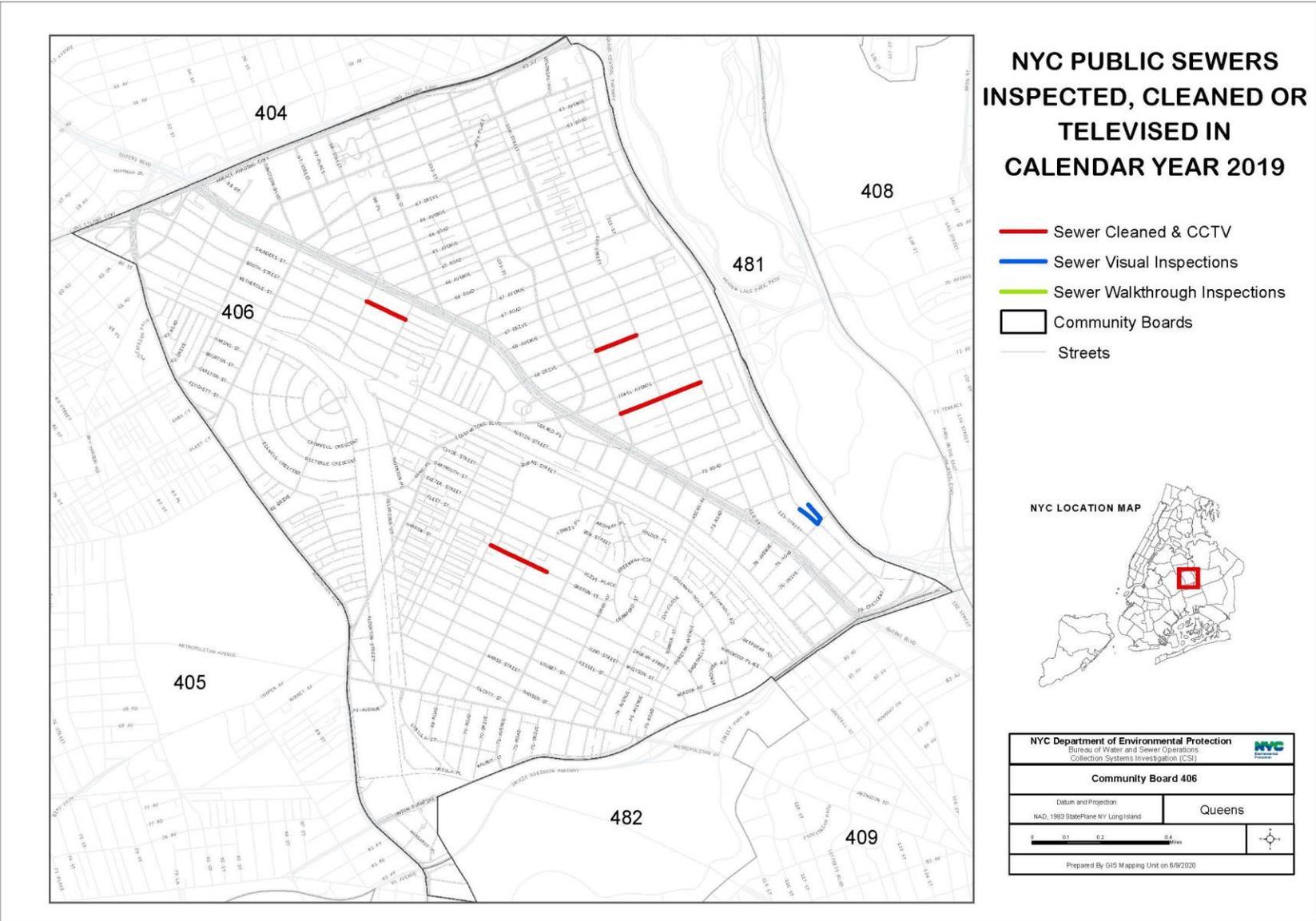
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2019

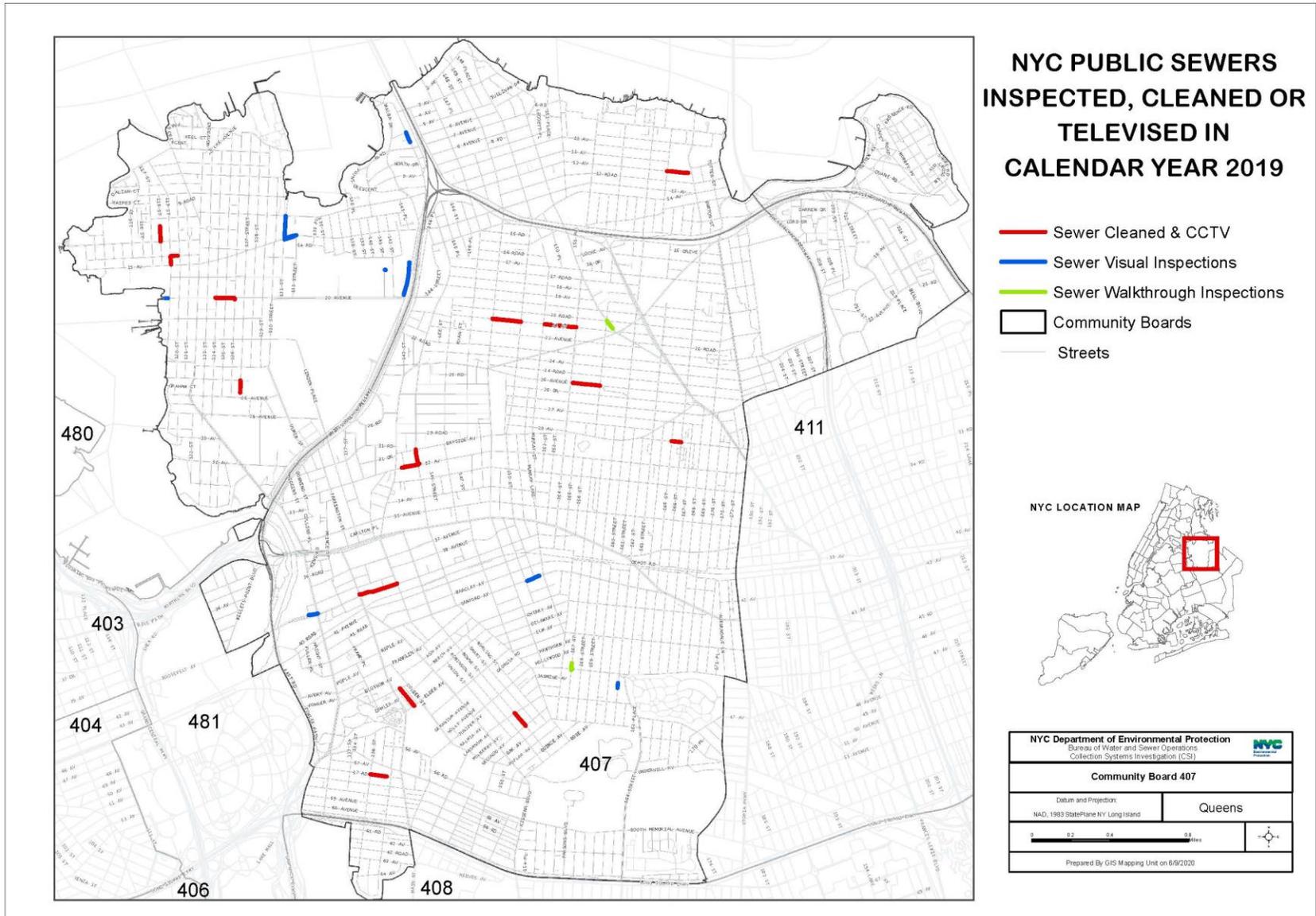
- Sewer Cleaned & CCTV
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NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)	
Community Board 404	
Datum and Projection: NAD, 1983 StatePlane N.Y. Long Island	Queens
	
Prepared By GIS Mapping Unit on 6/9/2020	









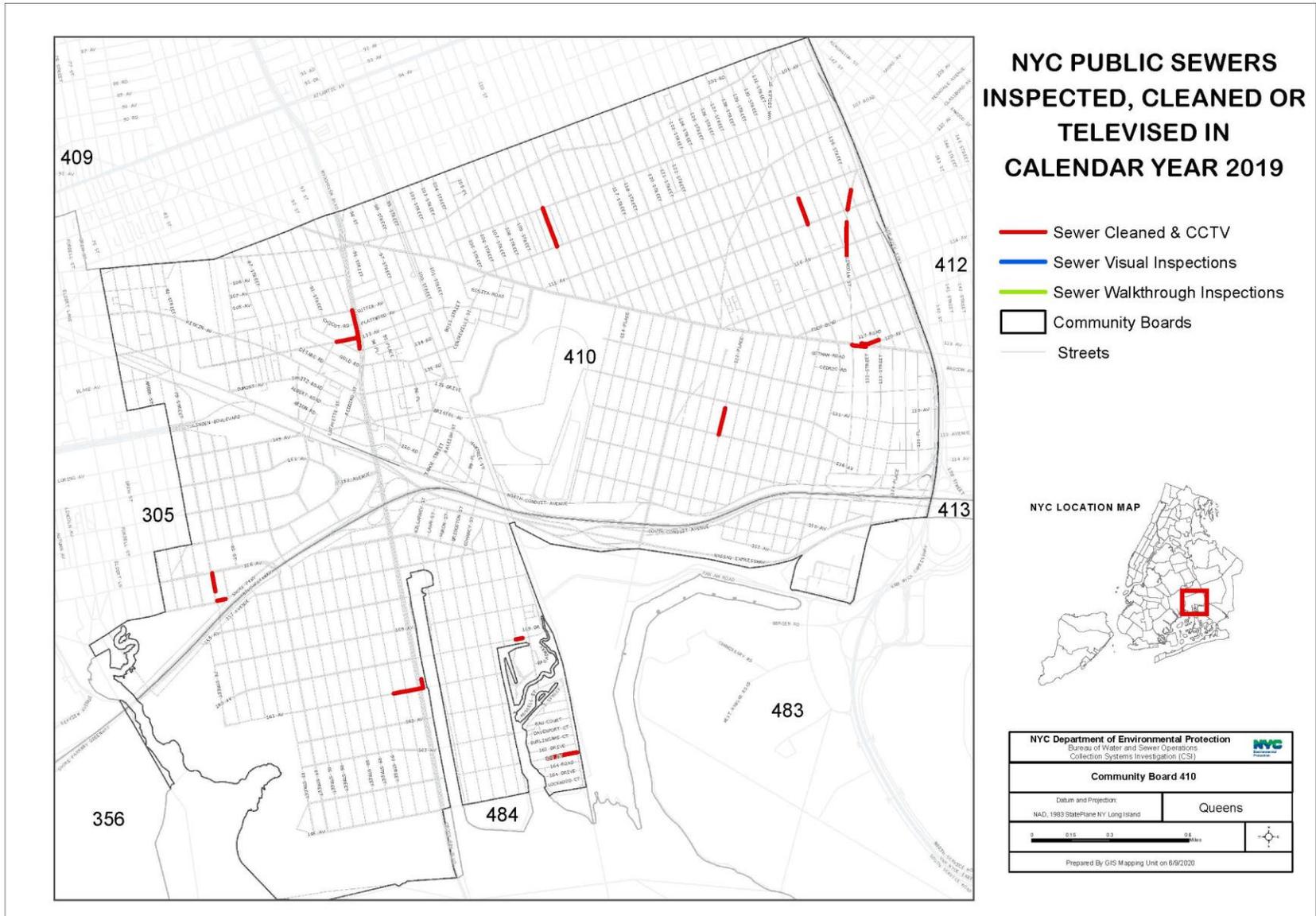
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2019

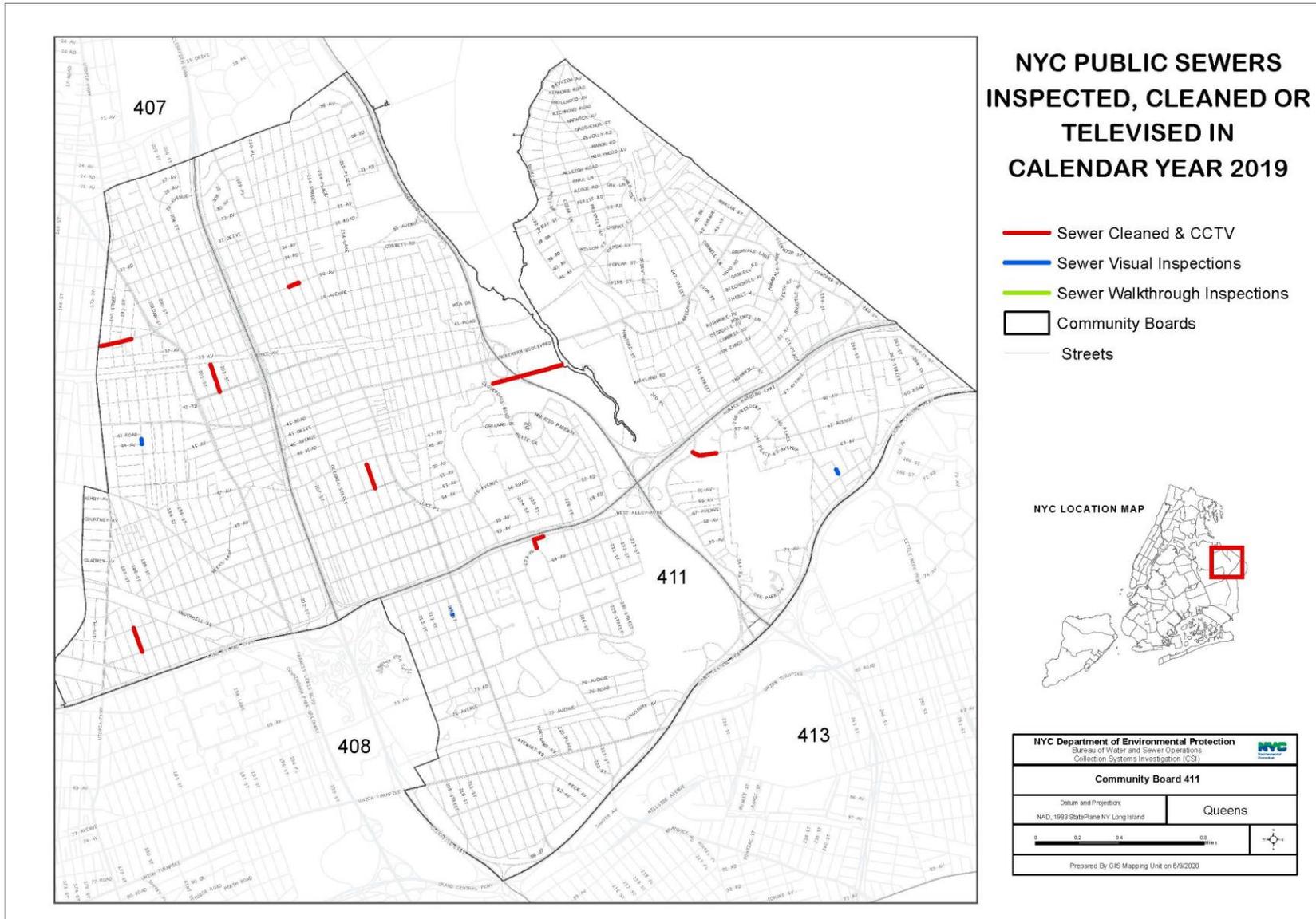
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NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)	
Community Board 408	
Datum and Projection: NAD, 1983 StatePlane N.Y. Long Island	Queens
Prepared By GIS Mapping Unit on 6/9/2020	





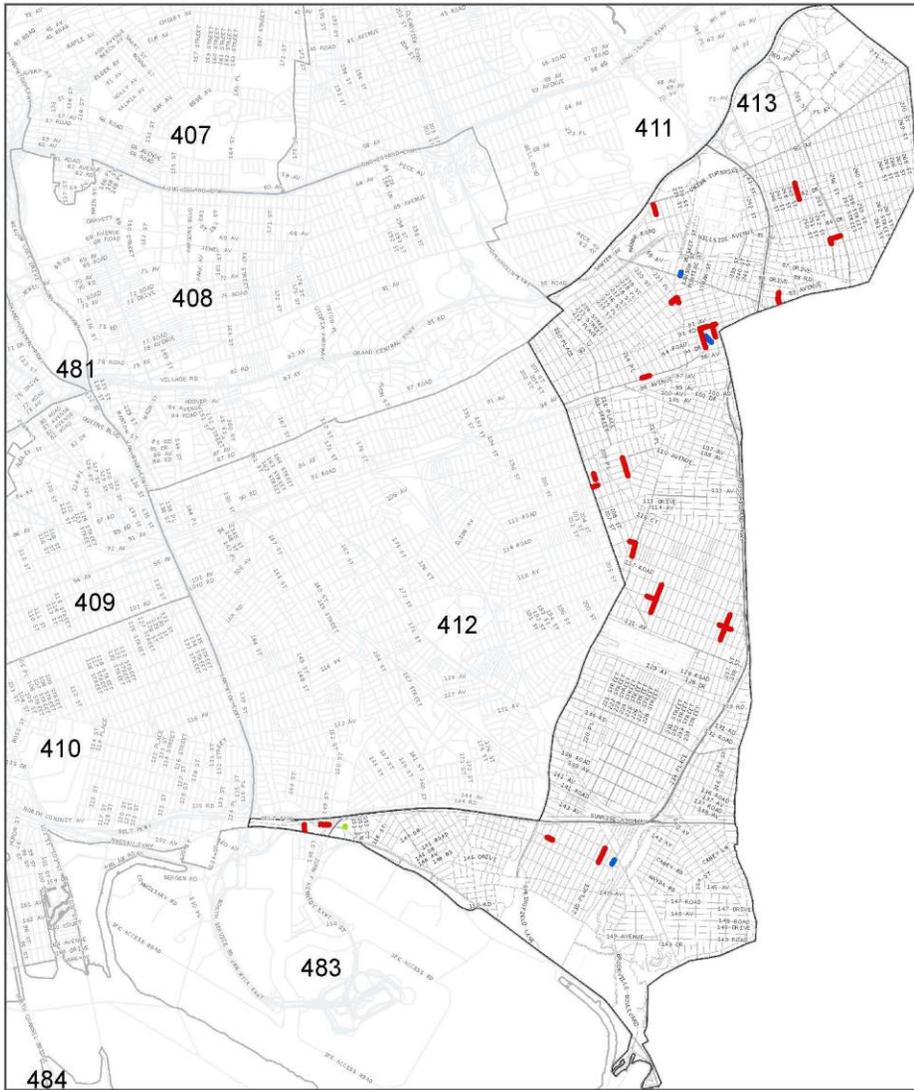


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVIEWED IN CALENDAR YEAR 2019

- Sewer Cleaned & CCTV
- Sewer Visual Inspections
- Sewer Walkthrough Inspections
- Community Boards
- Streets



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)	
Community Board 412	
Datum and Projection: NAD, 1983 StatePlane N.Y. Long Island	
Queens	
Prepared By GIS Mapping Unit on 6/9/2020	



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVIEWED IN CALENDAR YEAR 2019

- Sewer Cleaned & CCTV
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NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)	
Community Board 413	
Datum and Projection:	
NAD, 1983 StatePlane N.Y. Long Island	Queens
<small>Prepared By GIS Mapping Unit on 6/9/2020</small>	



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVIEWED IN CALENDAR YEAR 2019

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NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 414		
Datum and Projection: NAD, 1983 StatePlane N.Y. Long Island		Queens
Prepared By GIS Mapping Unit on 6/9/2020		



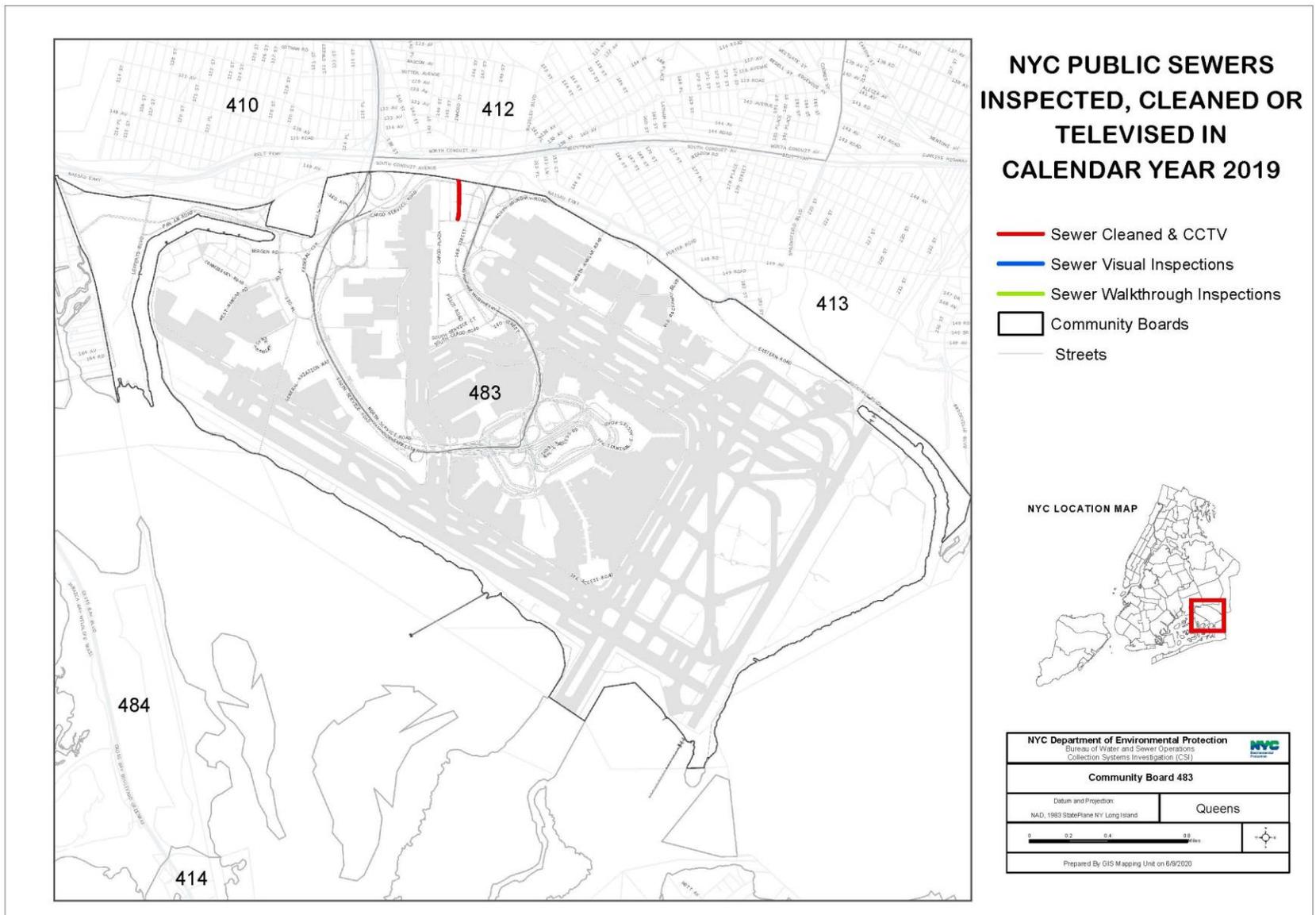
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2019

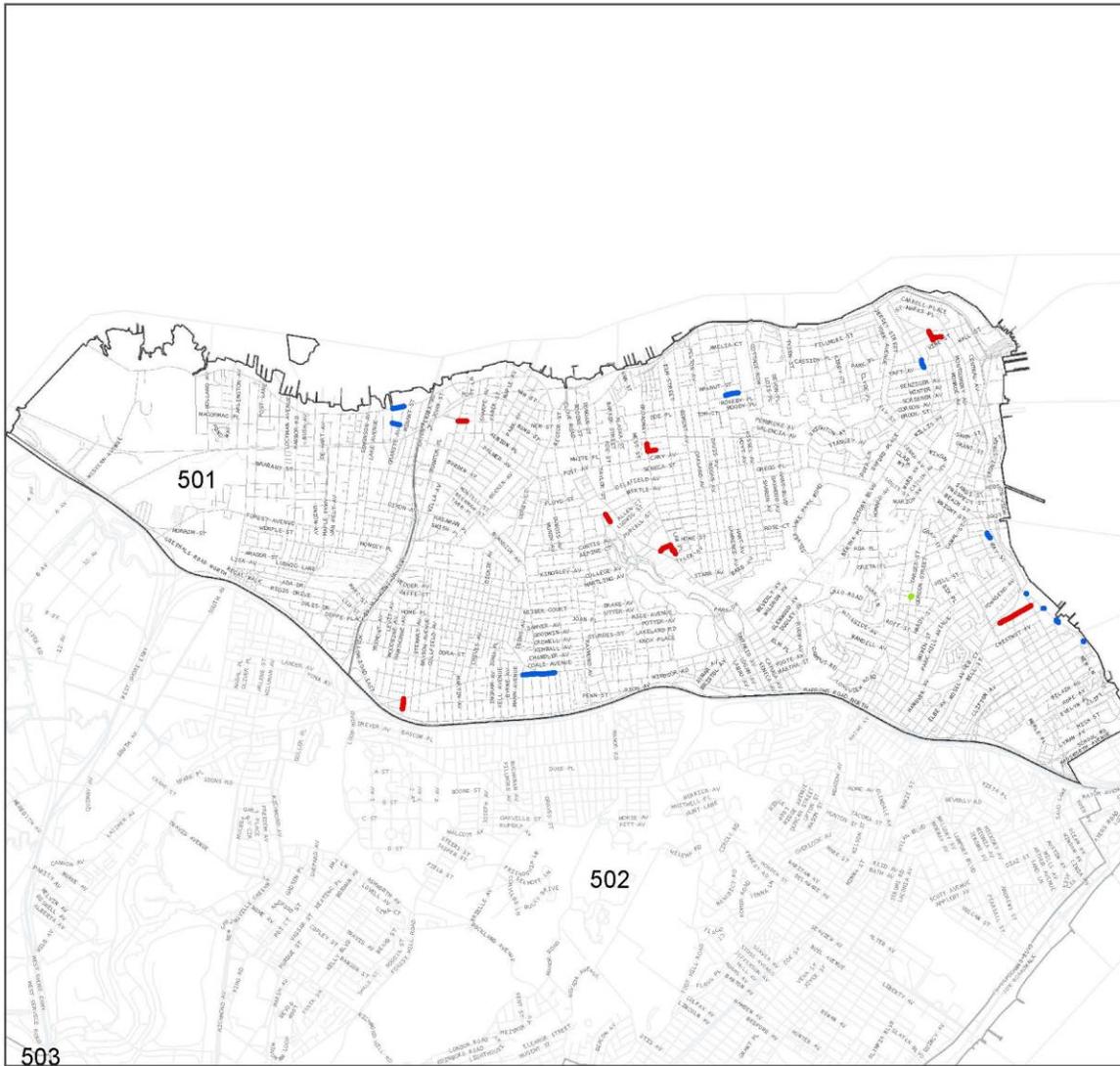
- Sewer Cleaned & CCTV
- Sewer Visual Inspections
- Sewer Walkthrough Inspections
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- Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 482		
Datum and Projection:		Queens
NAD, 1983 StatePlane N.Y. Long Island		
Prepared By GIS Mapping Unit on 6/9/2020		





NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVIEWED IN CALENDAR YEAR 2019

- Sewer Cleaned & CCTV
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- Sewer Walkthrough Inspections
- Community Boards
- Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)	
Community Board 501	
Datum and Projection: NAD, 1983 StatePlane N.Y. Long Island	
Staten Island	
<small>Prepared By GIS Mapping Unit on 6/9/2020</small>	



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVIEWED IN CALENDAR YEAR 2019

- Sewer Cleaned & CCTV
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- Sewer Walkthrough Inspections
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- Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 502		
Datum and Projection:		Staten Island
NAD, 1983 StatePlane N.Y. Long Island		
Prepared By GIS Mapping Unit on 6/9/2020		



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2019

- Sewer Cleaned & CCTV
- Sewer Visual Inspections
- Sewer Walkthrough Inspections
- Community Boards
- Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 503		
Datum and Projection:		Staten Island
NAD, 1983 StatePlane N.Y. Long Island		
Prepared By GIS Mapping Unit on 6/9/2020		



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVIEWED IN CALENDAR YEAR 2019

- Sewer Cleaned & CCTV
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- Sewer Walkthrough Inspections
- Community Boards
- Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Collection Systems Investigation (CSI)		
Community Board 595		
Datum and Projection:		Staten Island
NAD, 1983 StatePlane NY Long Island		
Prepared By GIS Mapping Unit on 6/9/2020		

Appendix 2.1.4: CSI Sewer Inspection Cleaning List 2019

Appendix 2.1.4.1: In-House Survey

Appendix 2.1.4.1.1: Brooklyn

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
1	17-582	66 St (1134) bt 11 Av and 12 Av	TC	10	5/3/2019	5/3/2019	0	0	0
2	17-676	Lynch St (233)	JS	01	1/29/2019	1/29/2019	0	0	0
3	17-847	Dahill Rd (1323) bt 59 St and 60 St	JS	12	5/7/2019	5/13/2019	0	0	0
			SA	12	5/7/2019	5/13/2019	0	0	0
4	18-034	Halsey St (1240) bt Wilson Av and Knickerbocker Av	MA	04	11/24/2019	11/24/2019	0	0	0
5	18-242	Bay 29 St (127) bt Benson Av and Bath Av	JS	11	3/13/2019	3/13/2019	0	0	0
6	18-282	17 Av (6224) bt 62 St and 63 St	MS	11	3/5/2019	3/5/2019	0	0	525
7	18-555	W 20 St (2837) bt Mermaid Av and Neptune Av	SA	13	3/14/2019	-	0	0	0
8	18-733	Coney Island Av (1380) bt Av J and Av K	CO	12	8/22/2019	8/22/2019	0	0	0
9	18-835	W 28 St (2980) bt Surf Av and Mermaid Av	JS	13	1/29/2019	1/29/2019	0	0	0
10	18-845	Flatlands Av (7602) bt E 76 St and E 77 St	KB	18	12/15/2018	1/22/2019	0	856	0
11	18-846	Fort Hamilton Pkwy and 101 St	TC	10	2/13/2019	2/13/2019	0	0	0
12	18-854	Johnson Av and Manhattan Av	RF	01	1/9/2019	1/29/2020	0	424	0
13	18-860	Vandervoort Av (510) bt Anthony St and Cherry St	KB	01	2/23/2019	2/23/2019	0	0	0
14	18-863	Amherst St (240) bt Oriental Blvd and Esplanade (BBL 3-8738-0070)	KB	15	1/3/2019	1/3/2019	0	143	0
15	18-867	Wythe Av bt N 12 St and N 13 St	KB	01	1/3/2019	1/3/2019	0	202	0
16	18-869	Red Hook Integrated Flood Protection System at Wolcott St	MS		1/16/2019	1/16/2019	0	0	780
17	18-869A	SEK002321-Reconstruction of Wolcott Street Outfall	MS		1/16/2019	1/16/2019	0	0	780
18	18-896	Cozine Av (709) bt Crescent St and Pine St	JS	05	2/4/2019	2/4/2019	0	0	0
19	18-900	Montieth St Development (10) bt Bushwick Av and Stanwix St	RF	04	2/7/2019	2/7/2019	0	0	0
20	19-029	58 St (724) bt 7 Av and 8 Av	TC	07	1/29/2019	1/29/2019	0	0	0
21	19-030	58 St (722) bt 7 Av and 8 Av	TC	07	1/29/2019	1/29/2019	0	0	0
22	19-031	45 St (621) bt 6 Av and 7 Av	TC	07	1/29/2019	1/29/2019	0	0	0
23	19-037	Franklin St (226) bt Green St and Freeman St	KB	01	2/6/2019	2/6/2019	0	0	0
24	19-037A	Franklin St (226) bt Green St and Freeman St	KB	01	2/6/2019	2/6/2019	0	0	0
25	19-037B	Franklin St (226) bt Green St and Freeman St	KB	01	2/6/2019	2/7/2019	0	0	0
26	19-040	Huntington St and E of Smith St - DPK-008-17	KB	06	3/1/2019	3/1/2019	0	91	0
27	19-056	Clarendon Rd and Ditmas Av	KB	17	2/21/2019	2/21/2019	0	0	0
28	19-061	Cleveland St (780) bt Livonia Av and Hegeman Av	MA	05	2/12/2019	2/12/2019	0	0	0
			SA	05	9/16/2019	10/11/2019	0	0	0
29	19-064	Fanchon Pl (51) bt Bushwick Av and Jamaica Av	RF	05	2/14/2019	2/14/2019	166	0	0
30	19-073	Van Siclen Av (1540) bt Schroeders Av and Seaview Av	KB	05	2/19/2019	2/19/2019	0	586	0
31	19-073A	Van Siclen Av (1540) bt Schroeders Av and Seaview Av	KB	05	2/19/2019	2/19/2019	0	0	0
32	19-078	Stanwix St (115) bt Montieth St and Flushing Av	KB	04	2/27/2019	2/27/2019	0	591	0
33	19-079	Tilden Av (4802) bt E 48 St and E 49 St	KB	17	3/15/2019	3/15/2019	0	0	0
34	19-082	Herkimer St (821) bt Suydam Pl and Buffalo Av	TC	03	3/26/2019	3/26/2019	0	0	0
35	19-083	Butler St (186) bt Nevins St and Bond St	JS	06	7/11/2019	7/11/2019	0	0	0
36	19-084	Coney Island Av (2799) bt Av Y and Av Z	JS	15	3/13/2019	3/13/2019	0	0	0
37	19-086	Flatbush Av (2301) bt Av S and Fillmore Av	DC	18	5/21/2019	5/21/2019	0	0	0
38	19-109	Dikeman St (173) bt Conover St and Ferris St	TC	06	3/26/2019	3/26/2019	0	0	0
39	19-117	Buffalo Av (170) bt St Marks Av and Prospect Pl	KB	08	3/14/2019	3/14/2019	0	0	0
40	19-117A	Buffalo Av (170) bt St Marks Av and Prospect Pl	KB	08	3/14/2019	3/14/2019	0	0	0
41	19-117B	Buffalo Av (170) bt St Marks Av and Prospect Pl	KB	08	3/14/2019	3/14/2019	0	0	0
42	19-136	Smith St (165) bt Bergen St and Wyckoff St	KB	02	4/1/2019	4/1/2019	0	0	0
43	19-151	Malcolm X Blvd (268) bt Halsey St and Macon St	TC	03	3/26/2019	3/26/2019	0	0	0
44	19-164	Brooklyn Terminal Market (48) bt E 83 St and E 84 St	KB	18	4/10/2019	4/10/2019	0	0	0
45	19-183	Autumn Av (294) bt Fulton St and Atlantic Av	CO	05	6/25/2019	6/25/2019	0	0	0
46	19-200	18 Av (4504) bt 45 St and 46 St	DC	12	4/24/2019	4/24/2019	0	0	0
47	19-201	Myrtle Av (714) bt Spencer St and Walworth St	DC	03	4/24/2019	4/24/2019	0	0	0
48	19-227	Atlantic Av (4006) bt B 40 St and B 42 St	KB	13	4/24/2019	4/24/2019	0	604	0
49	19-228	Dean St (595) bt Carlton Av and Vanderbilt Av	TC	08	6/3/2019	6/3/2019	0	2,280	0
50	19-233	Moore St bt Humbolt St and Manhattan Av	RF	01	5/15/2019	5/23/2019	306	0	0
51	19-243	Stanley Av (1387) bt Emerald St and Amber St	KB	05	5/6/2019	5/6/2019	0	0	0
52	19-253	3 Ave (7316) bt 73 St and 74 St	JS	10	7/11/2019	7/11/2019	0	0	0
53	19-261	Greenpoint Av (370) bt	KB	01	5/8/2019	5/8/2019	0	426	0
54	19-269	Graham Av (443) bt Frost St and Richardson St	KB	01	6/1/2019	6/1/2019	0	260	0
55	19-271	Gates Av (1110) bt Broadway and Bushwick Av	TC	04	6/12/2019	6/12/2019	0	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
56	19-272	Nostrand Av (2605) bt Av L and Av M	MS	18	6/25/2019	6/25/2019	0	0	205
57	19-278	E 53 St (1178) bt Av I and Av J	TC	18	6/12/2019	6/12/2019	0	0	0
58	19-283	Flatlands Av bt Van Siclen Av and Georgia Av-SE856	MS	05	5/8/2019	6/4/2019	0	0	6,228
59	19-293	Richards St (280) bt Beard St and DE	TC	06	6/3/2019	6/3/2019	0	0	0
60	19-304	Stanley Av bt Anna Ct and Louisiana Av-NYCDDC SE-853	TC	05	6/25/2019	6/25/2019	0	230	230
61	19-305	Flushing Av (376-378) bt Kent Av and Franklin Av	KB	03	6/5/2019	6/5/2019	0	0	0
62	19-306	Park Av (559) bt Sandford St and Nostrand Av	KB	03	6/1/2019	6/1/2019	0	764	0
63	19-325	Greenpoint Av; NCB-003	PR	01	9/5/2019	9/5/2019	0	0	0
64	19-347	Crescent St (471) bt Glenmore Av and Pitkin Av	LJ	05	6/6/2019	6/6/2019	0	311	0
65	19-349	Dekalb Av (1376) bt Wilson Av and Myrtle Av	KB	04	6/7/2019	6/7/2019	0	428	0
66	19-350	Suydam St (101) bt Evergreen Av and Central Av	TC	04	6/16/2019	6/16/2019	0	456	0
67	19-372	St Marks Av (1633) bt Thomas S Boyland St and Bend	KB	16	6/20/2019	6/20/2019	0	599	0
68	19-373	E 98 St (527) bt Strauss St and Hegeman Av	TC	16	7/10/2019	7/10/2019	0	694	0
69	19-407	Bedford Av (1263) bt Brevoort Pl and Herkimer St	TC	03	7/10/2019	7/10/2019	0	278	0
70	19-415	Malta St and Flatlands Av	RF	05	6/26/2019	6/26/2019	0	0	0
71	19-415A	Malta St and Flatlands Av	RF	05	6/26/2019	6/26/2019	0	0	0
72	19-438	Nevins St and Degraw St; RH-038	JS	06	8/2/2019	8/2/2019	0	0	0
73	19-439	Nevins St and Sackett St; RH-037	JS	06	8/2/2019	8/2/2019	0	0	0
74	19-440	Nevins St and Union St; RH-036	JS	06	8/2/2019	8/5/2019	0	0	0
75	19-441	Lorraine St and Hicks St; RH-030	JS	06	8/5/2019	8/5/2019	0	0	0
76	19-442	Pearl St and John St; RH-006	JS	02	8/6/2019	8/6/2019	0	0	0
77	19-449	Nevins St and Douglass St; RH-033	JS	06	8/2/2019	8/2/2019	0	0	0
78	19-454	Lorraine St and Smith St; RH-031	JS	06	8/2/2019	8/2/2019	0	0	0
79	19-455	Imlay St and Bowne St; RH-022	JS	06	8/5/2019	8/5/2019	0	0	0
80	19-456	Vernon Av (388) bt Lewis Av and Stuyvesant Av	KB	03	7/5/2019	7/5/2019	0	379	0
81	19-457	Hicks St and Centre Mall - Red Hook Houses	TC	06	7/19/2019	7/19/2019	0	113	0
82	19-457A	Clinton St and Mill St - Red Hook Houses E and W	TC	06	7/19/2019	7/19/2019	0	250	0
83	19-457B	Henry St and Centre Mall	TC	06	7/19/2019	7/19/2019	0	250	0
84	19-459	S 2 St (189-191) bt Driggs Av and Roebling St	KB	01	7/23/2019	7/23/2019	0	0	0
85	19-467	Evergreen Av (105) bt Melrose St and Jefferson St	KB	04	7/23/2019	7/23/2019	0	0	0
86	19-472	Montgomery St (637) bt Brooklyn Av and Kingston Av	TC	09	7/29/2019	7/29/2019	0	0	0
87	19-478	Powers St (147) bt Manhattan Av and Graham Av	KB	01	8/1/2019	8/1/2019	0	0	0
88	19-485	Pacific St (438) bt Bond St and Nevins St	TC	02	7/30/2019	7/30/2019	0	0	0
89	19-514	2 Av and 39 St-BED807	CJ	07	8/5/2019	8/5/2019	0	0	0
90	19-521	4 Av bt Carroll St and 7 St	MS	06	8/9/2019	8/9/2019	0	245	0
91	19-529	Cooper St (15) bt Broadway and Bushwick Av	KB	04	8/12/2019	8/12/2019	0	296	0
92	19-537	12 Av (4901) bt 49 St and New Utrecht Av	MS	12	10/9/2019	10/9/2019	0	0	50
93	19-540	10 Av (4915) bt 49 St and 50 St	MS	12	10/9/2019	10/9/2019	0	0	100
94	19-549	Snediker Av bt Riverdale Av and Livonia Av	MA	05	8/29/2019	8/29/2019	0	144	0
95	19-550	Waverly Av (365) bt Lafayette Av and Greene Av	KB	02	8/27/2019	8/27/2019	0	0	0
96	19-574	Skillman St (113) bt Park Av and Myrtle Av	DC	03	9/11/2019	9/11/2019	0	0	0
97	19-578	Meeker Av bt Van Dam St and Apollo St-SE-166-Y1	PR	01	9/5/2019	9/5/2019	0	0	0
98	19-581	Manhattan Av (807) bt Meserole Av and Calyer St	TC	01	9/9/2019	9/9/2019	0	0	0
99	19-590	Greene Av (75) bt Adelphi St and Clermont Av	TC	02	9/11/2019	9/11/2019	464	464	0
100	19-601	Coney Island Av (1941) bt Av P and Quentin Rd	TC	15	9/15/2019	9/15/2019	0	1,007	0
101	19-603	Bedford Av (1017) bt Lafayette Av and Clifton Pl	TC	03	10/19/2019	10/19/2019	0	0	0
102	19-605	Covert St (114) bt Evergreen Av and Central Av	KB	04	9/17/2019	9/17/2019	0	0	0
103	19-606	85 St (2376) bt 23 Av and 24 Av	SA	11	9/11/2019	9/11/2019	0	0	0
104	19-608	Macon St (346) bt Marcus Garvey Blvd and Lewis Av	DC	3	9/11/2019	9/11/2019	0	0	0
105	19-611	W 8 St (1515) bt Av O and Av P	SA	11	9/11/2019	9/11/2019	0	0	0
106	19-613	Miller Av (446) bt Sutter Av and Blake Av	MS	05	9/19/2019	9/19/2019	0	0	100
107	19-631	Christopher Av (589) bt New Lots Av and Hegeman Av	TL	16	9/15/2019	9/15/2019	0	449	0
108	19-631A	Christopher Av (589) bt New Lots Av and Christopher Av	TC	16	9/15/2019	9/15/2019	0	0	0
109	19-631B	Christopher Av (589) bt New Lots Av and Sackman	TC	16	9/15/2019	9/15/2019	0	0	0
110	19-631C	Christopher Av (589) bt New Lots Av and Sackman St	TC	16	9/15/2019	9/15/2019	0	0	0
111	19-658	17 Av (8411) bt 84 St and 85 St	MS	11	12/24/2019	12/24/2019	0	0	100
112	19-661	Smith St (628) bt Sigourney St and Halleck St	TC	06	9/25/2019	9/25/2019	0	497	0
113	19-661A	Smith St (628) bt Sigourney St and Halleck St	TC	06	10/11/2019	10/11/2019	0	0	0
114	19-664	Fulton St (1557) bt Throop Av and Albany Av	MA	03	10/3/2019	10/3/2019	0	0	0
115	19-692	Coney Island Av (750) bt Av C and Cortelyou Rd	LJ	12	11/10/2019	11/10/2019	0	191	0
116	19-693	Boerum St (121) bt Manhattan Av and Graham Av	TC	01	10/25/2019	10/25/2019	0	0	0
117	19-704	Flatbush Av (100) bt Schermerhorn St and State St	TC	02	12/8/2019	12/8/2019	0	1,068	0
118	19-722	Ocean Pkwy (1882) bt Av R and Av T	JS	15	11/19/2019	11/19/2019	0	0	0
119	19-730	Linden Blvd (2858) bt Emerald St and Amber St	LJ	05	11/10/2019	11/10/2019	0	267	0
120	19-731	Prospect Pl (550) bt Classon Av and Franklin Av Shuttle line	TC	08	12/4/2019	12/4/2019	0	566	0
121	19-732	Bogart St (371) bt Johnson Av and White St	TC	01	11/14/2019	11/14/2019	0	105	0
122	19-733	Woodbine St (392) bt Irving Av and Ridgewood Pl	KB	04	11/26/2019	11/26/2019	0	219	0
123	19-742	Park Av bt Navy St and N Elliot Pl - B021-119M	RF	02	11/14/2019	11/14/2019	366	0	0
124	19-744	Linden Blvd and Hegeman Av	LJ	16	11/30/2019	11/30/2019	0	522	0
125	19-756	Rogers Av (1076) bt Cortelyou Rd and Clarendon Rd	MA	17	11/13/2019	12/18/2019	0	226	0
126	19-756A	Rogers Av (1076) bt Cortelyou Rd and Clarendon Rd	MA	17	12/18/2019	12/18/2019	0	0	0
127	19-772	8 Av (5117) bt 51 St and 52 St	MA	12	12/6/2019	12/6/2019	0	0	0
128	19-774A	E 23 St (2352) bt Av W and Av X (sanitary)	KB	15	12/31/2019	12/31/2019	0	0	0
129	19-788	Van Dyke St (69) bt Dwight St and Richards St	TC	06	12/16/2019	12/16/2019	0	488	0

Apeendix 2.1.4.1.2: Manhattan

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
130	13-525	W 125 St (319) bt 8 Av and St Nicholas Av	SA	10	4/11/2019	4/11/2019	0	0	0
131	17-464	Cromwell Av & Raymond Av PR-616 PR-613	JS	08	4/10/2019	4/11/2019	0	0	0
132	18-463	W 143 St (615) bt Broadway and Riverside Dr	TC	09	11/16/2019	11/16/2019	0	0	0
133	18-883	W End Av (752) bt W 96 St and W 97 St	TC	07	1/7/2019	1/7/2019	0	0	0
134	18-885	W 29 St (601) bt 11 Av and 12 Av	TC	04	1/6/2019	1/6/2019	0	209	0
135	18-899	W 148 St (302) bt Bradhurst Av and Frederick Douglass Blvd	JS	10	2/13/2019	2/13/2019	0	0	0
136	19-014	10 Av (118) bt W 17 St and W 18 St	MA	04	1/20/2019	1/20/2019	0	87	0
137	19-024	E 70 St (160) bt Lexington Av and 3 Av	RF	08	2/1/2019	2/1/2019	0	388	0
138	19-026	W 207 St (410) bt 9 Av and 10 Av	KB	12	2/15/2019	2/15/2019	0	414	0
139	19-026A	W 207 St (410) bt 9 Av and 10 Av	KB	12	2/15/2019	2/15/2019	0	174	0
140	19-026B	W 207 St (410) bt 9 Av and 10 Av	KB	12	2/15/2019	2/15/2019	0	312	0
141	19-036	7 Av (485) bt W 36 St and W 37 St	KB	05	3/3/2019	3/3/2019	0	0	0
142	19-036A	7 Av bt W 36 St and W 37 St	KB	05	3/3/2019	3/3/2019	0	0	0
143	19-036B	7 Av bt W 35 St and W 36 St	KB	05	3/3/2019	3/3/2019	0	0	0
144	19-036C	W 36 St bt 7 Av and Broadway	KB	05	3/3/2019	3/3/2019	0	0	0
145	19-036D	Broadway bt W 36 St and W 37 St	KB	05	3/3/2019	3/3/2019	0	0	0
146	19-041	9 Av bt W 31 St and W 33 St	RF	04	3/15/2019	3/15/2019	0	0	0
147	19-042	Washington St (550) bt Spring St and W Houston St	TC	02	2/3/2019	2/3/2019	0	0	0
148	19-042A	Washington St (550) bt Spring St and W Houston St	TC	02	2/3/2019	2/3/2019	0	0	0
149	19-051	E 46 St (148) bt Lexington Av and 3 Av	TC	06	11/16/2019	11/16/2019	0	0	0
150	19-096	Broadway (2330) bt W 84 St and W 85 St	KB	07	3/9/2019	3/9/2019	0	654	0
151	19-097	E 126 St (63) bt Madison Av and Park Av	LJ	11	2/27/2019	2/27/2019	0	344	0
152	19-099	Hudson Blvd (66) bt W 35 St and W 34 St	TC	04	2/26/2019	2/26/2019	0	0	0
153	19-104	2 Av (2349) bt E 120 St and E 121 St	ZS	11	11/16/2019	11/16/2019	0	0	0
154	19-111	FDR Dr SR E (24-20) bt E 23 St and Bend	RF	06	3/13/2019	3/13/2019	0	0	0
155	19-112	Thompson St bt Grand St and 6 Av	MA	02	4/3/2019	4/6/2019	0	484	0
156	19-141	John St (24) bt Broadway and Nassau St	KB	01	3/20/2019	3/20/2019	0	0	0
157	19-144	Av A (204) bt E 12 St and E 13 St	TC	03	4/23/2019	4/23/2019	0	170	0
158	19-162	W (1) 29 St bt 5 Av and Broadway	TC	05	4/23/2019	4/23/2019	0	407	0
159	19-163	Park Av (301) bt E 49 St and E 50 St (Waldorf Astoria)	KB	05	4/17/2019	4/17/2019	0	0	0
160	19-163A	Park Av (301) bt E 49 St and E 50 St (Waldorf Astoria)	KB	05	5/9/2019	5/9/2019	0	0	0
161	19-163B	Park Av (301) bt E 49 St and E 50 St (Waldorf Astoria)	KB	05	5/9/2019	5/9/2019	0	0	0
162	19-207	W 135 St (601) bt Broadway and Riverside Dr	SA	09	4/11/2019	4/11/2019	0	0	0
163	19-223	W 48 St (317) bt 8 Av and 9 Av	TC	04	5/15/2019	5/15/2019	0	0	0
164	19-234	Columbia St (80) bt Rivington St and Stanton St (Building 2- 577 FDR Dr)	KB	03	5/21/2019	5/21/2019	0	0	0
165	19-234A	Columbia St (80) bt Rivington St and Stanton St (Building 3 549 FDR Dr)	KB	03	5/21/2019	5/21/2019	0	0	0
166	19-234B	Columbia St (80) bt Rivington St and Stanton St (Building 17-170 Colum)	KB	03	5/21/2019	5/21/2019	0	0	0
167	19-234C	Columbia St (80) bt Rivington St and Stanton St (Building 18- 72 Colum)	KB	03	5/21/2019	5/21/2019	0	0	0
168	19-249	W 59 St (445) bt 9 Av and 10 Av	TC	07	5/15/2019	5/15/2019	0	0	0
169	19-251	W 30 St (553) bt High Line and 11 Av	TC	04	5/25/2019	5/25/2019	0	0	0
170	19-265	W 207 (410) bt 9 Av and 10 Av	TC	12	5/12/2019	5/12/2019	0	0	0
171	19-265A	W 207 St (410) bt 9 Av and 10 Av	TC	12	5/12/2019	5/12/2019	0	0	0
172	19-300	S St (42) bt Old Slip and Gouverneur La-EMS Division 1-Station 4	KB	01	6/12/2019	7/9/2019	0	0	0
173	19-300A	S St (42) bt Old Slip and Gouverneur La-FDNY Division 1-Station 4	KB	01	7/12/2019	7/12/2019	0	0	0
174	19-300B	S St (270) bt Rutgers Slip and Clinton St-Department of Sanitation	KB	03	6/12/2019	7/9/2019	0	0	0
175	19-301	Laight St (13-17) bt St Johns La and Varick St	TC	01	6/27/2019	6/27/2019	0	0	0
176	19-329	Albany St and West St; NCM-071	JS	01	8/27/2019	8/27/2019	0	0	0
177	19-342	Madison Av (555) bt E 55 St and E 56 St	TC	05	6/13/2019	8/13/2019	0	0	0
178	19-364	FDR Dr and Av C; NCM-049	JS	06	8/27/2019	8/27/2019	0	0	0
179	19-382	FDR Dr (577) bt Williamsburg Brdg and FDR Dr SB EN E Houston St	KB	03	7/11/2019	7/11/2019	0	88	0
180	19-383	FDR Dr (549) bt Williamsburg Brdg and FDR Dr SB EN E Houston St	KB	03	7/11/2019	7/11/2019	0	108	0
181	19-384	Columbia St (80) bt Rivington St and Stanton St (170 Columbia St - Bui	KB	03	7/11/2019	7/11/2019	0	306	0
182	19-385	Columbia St (72) bt Delancey St and Rivington St - Building 18	KB	03	7/11/2019	7/11/2019	0	108	0
183	19-386	E 83 St (200) bt 3 Av and 2 Av	TC	08	6/16/2019	6/16/2019	0	197	0
184	19-401	5 Av (685) bt 5 Av and Madison Av	MA	05	7/27/2019	7/27/2019	0	0	0
185	19-405	W 48 St (305) bt 8 Av and 9 Av	MA	04	7/27/2019	7/27/2019	0	109	0
186	19-406	Baruch Dr (72) bt Bend and Bend	KB	03	6/23/2019	7/17/2019	0	34	0
187	19-414	Washington St (771-775) bt W 12 St and Jane St	TC	02	7/12/2019	7/12/2019	0	0	0
188	19-433	South St (161) bt Dover St and Brooklyn Bridge En Ramp FDR Drv	KB	01	9/11/2019	9/11/2019	101	0	0
189	19-433A	South St (161) bt Dover St and Brooklyn Bridge En Ramp FDR Drv	KB	01	9/11/2019	9/11/2019	0	0	0
190	19-488	E 71 St (132) bt Park Av and Lexington Av	KB	08	7/27/2019	7/27/2019	0	0	0
191	19-492	S St (10) bt Whithall St and Broad St	RF	01	7/29/2019	2/22/2020	0	0	0
192	19-511	3 Av (299) bt E 22 St and E 23 St	MA	06	8/11/2019	8/11/2019	0	0	204
193	19-527	Chambers St (51) bt Elk St and Broadway	MA	01	8/11/2019	8/11/2019	0	0	0
194	19-533	E Broadway (197) bt Jefferson St and Clinton St	TC	03	8/14/2019	8/14/2019	0	0	0
195	19-553	Av of the Americas (1290) bt W 51 St and W 52 St	TC	05	9/12/2019	9/13/2019	1,082	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
196	19-559	W End Av (720) bt W 95 St and W 96 St	KB	07	9/13/2019	9/13/2019	0	0	0
197	19-562	TBTA RK22-FDR Ramps-RFK Bridge Repairs	NA	11	8/16/2019	8/16/2019	0	0	0
198	19-569	W 32 St (22) bt 5 Av and Broadway	KB	05	8/31/2019	8/31/2019	0	0	0
199	19-589	W 35 St (29) bt 5 Av and Av of the Americas	TC	05	11/16/2019	11/16/2019	0	0	0
200	19-632	33 St bt 7 Av and 8 Av (N Sidewalk E side near 7Av)	TC	05	11/6/2019	11/6/2019	0	0	0
201	19-632A	33 St bt 7 Av and 8 Av (N Sidewalk W side near 8 Av)	TC	05	12/5/2019	12/5/2019	312	0	0
202	19-647	Washington St (550) bt Spring St and W Houston St	KB	02	9/28/2019	9/28/2019	0	110	0
203	19-662	Washington St (550) bt Spring St and W Houston St	KB	02	9/28/2019	9/28/2019	0	0	0
204	19-662A	W St and Washington St	KB	02	9/28/2019	9/28/2019	0	0	0
205	19-663	10 Av (118-124) bt W 17 St and W 18 St	TC	04	10/20/2019	10/20/2019	0	0	0
206	19-663A	10 Av (118-124) bt W 17 St and W 18 St	KB	04	10/23/2019	10/23/2019	0	0	0
207	19-677	3 Av bt 23 St and 25 St- HWBaruch	RF	06	10/7/2019	10/11/2019	0	0	0
208	19-680	3 Av (2306) bt E 125 St and E 126 St	TC	11	10/15/2019	10/15/2019	0	0	0
209	19-712	W 137 St (12-44) bt 5 Av and Lenox Av	KB	10	11/18/2019	11/18/2019	0	495	0
210	19-713	Washington St (601) bt Leroy St and Morton St	RF	02	10/30/2019	1/16/2020	0	0	0
211	19-715	Wadsworth Terr (65-71) bt W 190 St and Fairview Av	MA	12	10/29/2019	11/4/2019	0	0	0
212	19-716	W 170 St (503) bt Amsterdam Av and Audubon Av	MA	12	11/4/2019	11/18/2019	0	0	0
213	19-737	W (125) St bt Broadway and W 126 St	MA	09	11/21/2019	11/24/2019	0	490	0
214	19-745	Broadway (2551) bt W 95 St and W 96 St	TC	07	12/5/2019	12/5/2019	0	146	0

Apeendix 2.1.4.1.3: Queens

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
215	17-404	Archer Av bt 143 St and 139 St	SA	12	6/11/2019	11/8/2019	0	0	0
216	18-214	Dickens St and Enright Rd (Mott Basin Outfalls)	TC	14	12/16/2019	12/16/2019	0	0	0
217	18-214A	95 St and 158 Av (Old Howard B Outfalls)	TC	10	12/16/2019	12/16/2019	0	0	0
218	18-214B	99 St and 165 Av (Old Howard B Outfalls)	TC	10	12/16/2019	12/16/2019	0	0	0
219	18-647	Cross Bay Blvd and West 3 Rd; ROC-1907	JS	14	4/12/2019	4/12/2019	0	0	0
220	18-709	85 Av (107-03) bt 107 St and 108 St	DC	09	4/29/2019	4/29/2019	0	0	0
221	18-713	151 Pl and 12 Av	SA	07	5/13/2019	5/13/2019	0	0	0
222	18-771	Rockaway B Blvd bt B 59 St and B 56 Pl	SA	14	3/25/2019	5/7/2019	0	0	0
223	18-777	Grandview Av (339) bt Metropolitan Av and Rene Ct	JS	05	11/28/2018	1/3/2019	0	0	0
224	18-778	Highland Av (172-39) bt Kingston Pl and Ava Pl	SA	08	1/23/2019	-	0	0	0
225	18-794	Beach Channel Dr and Rockaway Beach Blvd; G411596	JS	14	4/15/2019	4/15/2019	0	0	0
226	18-830	Barnett Av and 43 St - PS 429Q	TC	02	2/5/2019	2/5/2019	0	0	0
227	18-833	185 St (102-13) bt 104 Av and Henderson Av	JS	12	2/8/2019	2/8/2019	0	0	0
228	18-836	B 25 St (556) bt Rockaway Fwy and Brookhaven Av	JS	14	1/14/2019	4/12/2019	0	0	0
229	18-841	99 St and 160 Av	JS	10	12/18/2018	5/22/2019	0	0	0
230	18-843	85 Av and 164 St	SA	08	3/12/2019	6/14/2019	0	0	0
231	18-848	Vernon Blvd (30-01) bt Main Av and 30 Rd (Hallets Cove Multi-Purpos	TC	01	1/10/2019	1/10/2019	0	0	0
232	18-853	113 St (71-25) bt 71 Av and 71 Rd (PS 196)	KB	06	1/7/2019	1/7/2019	0	0	0
233	18-855	Lakewood Ave and Sutphin Blvd	SA	12	3/27/2019	-	0	0	0
234	18-857	SE889-Guy Brewer Spine and N Conduit Av along Baisley Blvd and Ro	MS	12	1/15/2019	1/15/2019	0	1,567	0
235	18-859	Curzon Rd (117-03) bt 117 St and 118 St	KB	09	12/14/2018	1/11/2019	0	0	0
236	18-861	160 St (10-14) bt 10 Av and 11 Av	TC	07	4/12/2019	4/12/2019	0	0	0
237	18-870	Henley Rd and Kendrick Pl	SA	08	5/20/2019	5/20/2019	0	0	0
238	18-871	Dunton Av (194-05) bt Salerno Av and Bend	SA	08	1/15/2019	5/16/2019	0	0	0
239	18-872	Midland Pkwy (186-28) bt Chevy Chase St and 188 St	TC	08	1/6/2019	1/6/2019	0	0	0
240	18-889	260 St and 74 Av	DC	13	1/24/2019	5/20/2019	0	0	0
			SA	13	1/24/2019	5/20/2019	0	0	0
241	18-892	149 Av (78-02) bt Loring Av and 79 St	DC	10	1/23/2019	4/29/2019	0	0	0
			SA	10	1/23/2019	4/29/2019	0	0	0
242	18-897	145 St (116-19) bt Foch Blvd and 116 Av	JS	12	1/14/2019	1/14/2019	0	0	0
243	18-898	90 Av (172-20) bt 172 St and 175 St	JS	12	2/8/2019	-	0	0	0
244	19-001	29 Av (161-10) bt 161 St and Bayside La	TC	07	1/18/2019	1/18/2019	0	0	0
245	19-003	SE862-Springfield Gardens Reconstruction-Triple Barrel Inspection	MS		2/14/2019	2/14/2019	0	0	150
246	19-006	67 Av (172-18) bt 172 St and 173 St	TC	08	1/18/2019	1/18/2019	0	0	0
247	19-007	186 St (58-18) bt 58 Av and Horace Harding Expy SR N	TC	11	2/3/2019	2/3/2019	0	0	0
248	19-008	158 St (41-11) bt Station Rd and Sanford Av	TL	11	3/12/2019	3/12/2019	0	0	0
249	19-009	65 St (74-62) bt Cypress Hills St and Cooper Av	MA	05	1/15/2019	1/15/2019	0	0	0
250	19-013	B 88 St bt Rockaway Fwy and Rockaway B Blvd	DC	14	1/24/2019	1/25/2019	0	0	0
			SA	14	1/24/2019	1/25/2019	0	0	0
251	19-018	93 Rd (224-14) bt 224 St and Gettysburg St	DC	13	1/24/2019	1/25/2019	0	0	0
			SA	13	1/24/2019	1/25/2019	0	0	0
252	19-027	Hazen St (22-15) bt Ditmars Blvd and Astoria Blvd	TC	01	3/7/2019	3/7/2019	0	0	0
253	19-028	255 St (38-06) bt 38 Av and 39 Av	TC	11	2/1/2019	2/1/2019	0	0	0
254	19-032	92 St (23-42) bt 23 Av and 24 Av	TC	03	2/4/2019	2/4/2019	0	0	0
255	19-033	64 Av (227-11) bt Cloverdale Blvd and 228 St	KB	11	2/6/2019	2/6/2019	0	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
256	19-034	45 Rd (211-38) bt 211 St and Bell Blvd	TC	11	2/4/2019	2/4/2019	0	0	0
257	19-038	148 St (106-16) bt 106 Av and 150 St	TC	12	2/11/2019	2/11/2019	0	0	0
258	19-046	B 21 St bt Mott Av and Cornaga Av	KB	14	2/23/2019	2/23/2019	0	531	0
259	19-047	41 Av (29-19) bt 29 St and Queens Plza	KB	01	2/1/2019	2/1/2019	0	385	0
260	19-055	199 St and Union Tpk	MA	08	2/5/2019	2/9/2019	0	823	0
261	19-058	70 Av (72-36) bt 72 Pl and 73 St - BBL-4-3665-4	MA	05	2/1/2019	2/1/2019	0	0	0
262	19-065	79 St (91-19) bt 91 Av and Rockaway Blvd	TC	09	2/11/2019	2/11/2019	0	0	0
263	19-066	85 St (97-46) bt Bend and 101 Av	TC	09	2/25/2019	2/25/2019	0	0	0
264	19-069	B Channel Dr bt B 145 St and B 108 St-QED1030B-SANDHW11B	DC	14	3/14/2019	3/15/2019	0	0	0
265	19-074	Jackson Av (22-34) bt Crane St and 46 Av	TC	02	5/6/2019	5/6/2019	0	0	0
266	19-077	Grand Central Pkwy (75-42) bt 75 Av and 76 Rd	MA	06	2/20/2019	2/20/2019	0	756	0
267	19-090	Virginia St (13-11) bt Central Av and Brunswick Av	JS	14	4/1/2019	4/1/2019	0	0	0
268	19-091	Groton St (70-05) bt 70 Av and 71 Av	JS	06	4/1/2019	4/1/2019	0	0	0
269	19-098	49 Av (198-26) bt Weeks La and Francis Lewis Blvd	TC	11	3/12/2019	3/12/2019	0	0	0
270	19-108	53 Av (200-04) bt Francis Lewis Blvd and 201 St	SA	11	3/11/2019	6/17/2019	0	0	0
271	19-118	Waltham St (107-36) bt Shore Av and Lakewood Av	TC	12	3/28/2019	3/28/2019	0	449	0
272	19-120	Shore Front Pkwy bt 97 St and 101 St	RF	14	4/1/2019	4/2/2019	411	0	0
273	19-123	Janet Pl (39-08) bt Roosevelt Av and College Point Blvd	TC	07	3/30/2019	3/30/2019	0	217	0
274	19-124	14 Av (132-21) bt 132 St and 133 Pl	KB	07	3/30/2019	3/30/2019	0	1,370	0
275	19-137	215 St (64-34) bt 64 Av and 67 Av	LJ	11	3/19/2019	3/19/2019	0	150	0
276	19-138	216 St (42-15) bt 42 Av and 43 Av	TC	11	3/25/2019	3/25/2019	0	0	0
277	19-140	43 Av (25-21) bt Crescent St and 27 St	RF	02	3/21/2019	3/21/2019	0	0	0
278	19-142	75 Av (212-04) bt 210 St and Bell Blvd	MA	11	3/21/2019	3/21/2019	0	0	0
279	19-145	95 St and 158 Av	KB	10	3/27/2019	3/27/2019	0	0	0
280	19-166	45 Av (167-17) bt 167 St and 168 St	TC	07	4/3/2019	4/3/2019	0	0	0
281	19-175	Jackson Av (23-20) bt 23 St and 45 Rd	KB	02	4/11/2019	4/11/2019	0	0	0
282	19-177	117 St (84-36) bt 84 Av and 85 Av	SA	09	5/8/2019	5/8/2019	0	0	0
283	19-178	Liverpool St (95-06) bt 95 Av and 97 Av	SA	12	4/24/2019	4/24/2019	0	0	0
284	19-179	Liverpool St (106-41) bt South Rd and 107 Av	SA	12	4/24/2019	4/24/2019	0	0	0
285	19-180	110 Av (155-04) bt 155 St and 156 St	SA	12	5/8/2019	5/8/2019	0	0	0
286	19-184	183 St (61-28) bt Horace Harding Expy SR S and 64 Av	TC	08	4/12/2019	4/12/2019	0	0	0
287	19-185	167 St (69-33) bt 69 Av and Jewel Av	TC	08	4/12/2019	4/12/2019	0	0	0
288	19-193	230 Pl (146-18) bt 146 Av and 147 Av	TC	13	4/16/2019	4/16/2019	0	0	0
289	19-199	11 St bt 46 Av and 46 Rd	DC	02	10/8/2019	10/8/2019	0	0	0
290	19-202	132 Av (137-05) bt Van Wyck Scp and 140 St	SA	12	4/23/2019	4/23/2019	0	0	0
291	19-203	138 St (88-38) bt Hillside Av and Jamaica Av	SA	12	7/22/2019	7/22/2019	0	0	0
292	19-204	Tuskegee Airmen Way (147-14) bt Sutphin Blvd and 150 St	SA	12	4/24/2019	4/24/2019	0	0	0
293	19-205	146 St (114-14) bt Linden Blvd and 115 Av	SA	12	4/23/2019	4/23/2019	0	0	0
294	19-206	Cornaga Av (18-26) bt B 19 St and Mott Av	SA	14	7/8/2019	7/8/2019	0	0	0
295	19-208	B 101 St (183) bt Shore Front Pkwy and Hollyhurst Ct	KB	14	4/19/2019	4/19/2019	0	387	0
296	19-209	B 72 St (536) bt Elizabeth Av and Burchell Av	MA	14	7/30/2019	7/30/2019	0	0	0
297	19-220	Grand Av (55-15) bt 55 St and 56 St	TC	05	4/30/2019	4/30/2019	0	0	0
298	19-221	231 St (64-11) bt 64 Av and 67 Av	KB	11	5/10/2019	5/10/2019	0	0	0
299	19-222	67 St (41-33) bt 41 Av and Woodside Av	RF	02	5/7/2019	5/7/2019	308	0	0
300	19-224	Curzon Rd (117-03) bt 117 St and 118 St	KB	09	5/17/2019	5/17/2019	0	515	0
301	19-230	46 Av and 111 St - HWD10311	MS	04	5/31/2019	5/31/2019	0	0	144
302	19-231	231 St (147-53A) bt 147 Av and 148 Av	TC	13	4/29/2019	4/29/2019	0	0	0
303	19-246	24 Av bt 80 St and 81 St	MS	03	8/14/2019	8/14/2019	0	0	500
304	19-250	Maspeth Av (49-01) bt 49 St and 49 Pl	KB	02	5/14/2019	5/14/2019	0	0	0
305	19-256	Merrick Blvd (129-21) bt Zoller Rd and Eveleth Rd	JS	12	8/22/2019	-	0	0	0
306	19-257	Mott Ave (24-21) bt B 25 St and B 24 St	JS	14	8/22/2019	8/22/2019	0	0	0
307	19-270	201 Pl (118-17) bt 118 Av and 119 Av	SA	12	6/11/2019	6/11/2019	0	0	0
308	19-288	Queens Blvd (69-02) bt 69 St and 45 Av	TC	02	6/8/2019	6/8/2019	0	1,447	0
309	19-288A	69 St and Queens Blvd	TC	02	6/8/2019	6/8/2019	0	0	0
310	19-288B	70 St bt Queens Blvd and 47 Av	TC	02	6/8/2019	6/8/2019	0	0	0
311	19-288C	47 Av bt 69 St and 70 St	TC	02	6/8/2019	6/8/2019	0	0	0
312	19-291	Memphis Av (253-07) bt 253 St and 254 St	KB	13	5/31/2019	5/31/2019	0	0	0
313	19-296	30 Av (73-09) bt 73 St and 74 St	MS	03	8/28/2019	8/28/2019	0	0	354
314	19-298	Northern Queens Outfalls-CSEAP-1	CJ	08	5/20/2019	5/23/2019	0	0	0
315	19-299	Radnor Rd (182-15) bt Grand Central Pkwy SR N and Bend	KB	08	5/31/2019	5/31/2019	0	0	0
316	19-303	119 St and 20 Av - College Point Blvd Area St	TC	07	6/21/2019	6/21/2019	0	58	58
317	19-313	2 St and 51 Av; BB-016	PR	02	7/25/2019	7/25/2019	0	0	0
318	19-337	46 St (19-41) bt 19 Av and 20 Av	TC	01	6/10/2019	6/18/2019	0	412	0
319	19-351	Calamus Av (7229) and 72 Pl	KB	02	6/18/2019	6/18/2019	0	0	0
320	19-354	162 St (40-35) bt LIRR Port Washington Line and Station Rd	TC	07	7/26/2019	7/26/2019	0	0	0
321	19-354A	162 St (40-37) bt LIRR Port Washington Line and Station Rd	TC	07	7/26/2019	7/26/2019	0	0	0
322	19-378	Hillside Av (187-42) bt 187 Pl and 188 St	DC	12	6/10/2019	6/10/2019	0	0	0
323	19-379	111 Av (190-27) bt 194 St and Farmers Blvd	JS	12	6/24/2019	6/24/2019	0	0	0
324	19-381	120 Av (169-29) bt 170 St and Marsden St	JS	12	6/24/2019	6/24/2019	0	0	0
325	19-387	15 Av (148-09) bt 148 St and 149 St	LJ	07	6/15/2019	6/15/2019	0	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
326	19-392	Bayside Av (146-18) bt 146 St and 148 St	KB	07	7/15/2019	7/15/2019	0	0	0
327	19-393	Sanford Av (149-54) bt 150 St and Murray St	TC	07	6/16/2019	6/16/2019	0	402	0
328	19-399	138 St (58-29) bt 58 Rd and 59 Av	TC	07	6/28/2019	6/28/2019	0	0	0
329	19-400	195 St (4727) bt Bend and 48 Av	TC	11	6/28/2019	6/28/2019	0	0	0
330	19-409	Utopia Pkwy (80-75) bt 80 Dr and Unnamed St	TC	08	6/29/2019	6/29/2019	0	0	0
331	19-411	Deerfield Rd (25-15) bt Beach 27 St and Beach 25 St	JS	14	8/22/2019	8/22/2019	0	0	0
332	19-417	121 St (91-53) bt 91 Av and Atlantic Av	RF	09	7/30/2019	7/30/2019	120	0	0
333	19-428	48 Av (104-13) bt 104 St and 108 St	MA	04	6/29/2019	6/29/2019	0	300	0
334	19-429	113 St (71-25) bt 71 Av and 71 Rd (PS196Q)	KB	06	7/22/2019	7/22/2019	0	0	0
335	19-430	147 St (42-50) bt Ash Av and Beech Av	TC	07	8/2/2019	8/2/2019	0	0	0
336	19-432	Court Sq (45-18) bt Bend and DE	TC	02	7/5/2019	7/5/2019	0	534	0
337	19-436	College Pl and 5 Av; TI-020	PR	07	7/25/2019	7/25/2019	0	0	0
338	19-452	20 Av and Shore Blvd; BB-037	PR	01	7/25/2019	7/25/2019	0	0	0
339	19-468	Cypress Av (80-97) bt Cemetery of Evergrns Bndy and Mt Judah Cem	TC	05	7/21/2019	7/21/2019	0	430	0
340	19-469	37 Av (58-09) bt 58 St and 59 St	KB	02	8/6/2019	8/6/2019	0	0	0
341	19-474	Janet Pl (39-08) bt 39 Av Roosevelt Av	TC	07	9/22/2019	12/18/2019	0	0	0
342	19-477	41 St (19-60) bt 19 Av and 20 Av	TC	01	7/31/2019	7/31/2019	0	0	0
343	19-481	B 120 St and Newport Av	SA	14	7/9/2019	7/16/2019	0	0	0
			SAP	14	7/9/2019	7/16/2019	0	0	0
344	19-483	Astoria Park and Shore Blvd	JS	01	7/12/2019	7/12/2019	0	0	0
345	19-493	Archer Av (148-10) bt 148 St and 149 St	RF	12	7/30/2019	7/30/2019	0	0	0
346	19-494	213 St from 34 Rd north across 34 Av to DE	SA	11	7/24/2019	7/24/2019	0	0	0
347	19-499	Clintonville St (20-34) bt 20 Rd and Wilets Point Blvd	MS	07	8/2/2019	8/2/2019	0	0	266
348	19-508	B 42 St (361) bt B 41 Pl and B Channel Dr	MA	14	8/9/2019	8/9/2019	0	0	0
349	19-513	Point Crst (10) bt 7 Av and Bend	KB	07	8/14/2019	8/14/2019	0	0	0
350	19-531	260 St (55-47) bt Nassau Blvd and Horace Harding Expy SR N	MA	11	8/9/2019	8/9/2019	0	0	0
351	19-545	119 St (7-32) bt 7 Av and 8 Av	MA	07	8/13/2019	8/13/2019	0	0	0
352	19-547	45 Dr (209-34) bt Oceania St and 211 St	MA	11	8/29/2019	8/29/2019	0	0	0
353	19-548	164 St (89-60) bt 89 Av and Jamaica Av	TC	12	8/13/2019	8/13/2019	0	0	0
354	19-551	35 Av (108-15) bt 108 St and 109 St	RF	03	8/15/2019	8/15/2019	0	0	153
355	19-558	159 St bt 109 Av and 110 Av - S Jamaica Houses	MA	12	8/20/2019	8/20/2019	0	0	0
356	19-560	9 Av (128-05) bt 128 St and 129 St	TC	07	8/26/2019	8/26/2019	0	0	0
357	19-565	162 St (12-43) bt 12 RD and 13 Av	MA	07	11/13/2019	11/13/2019	0	0	0
358	19-568	Queens Blvd (79-21) bt Barnwell Av and Cornish Av	TC	04	12/14/2019	12/14/2019	0	0	0
359	19-577	159 St (112-28) bt Meyer Av and 111 Av	JS	12	8/22/2019	8/22/2019	0	0	0
360	19-579	177 St (110-41) bt 110 Av and 111 Av	MA	12	8/28/2019	8/28/2019	0	0	0
361	19-591	139 St from 28 Rd to 31 Rd - SEQ200541	CJ	07	9/23/2019	9/23/2019	0	0	0
362	19-622	Augustina Av bt Nameoke Av and Bayport Pl	MA	14	9/27/2019	9/27/2019	0	297	0
363	19-634	Cross Island Pkwy and Hempstead Av	MA	13	10/28/2019	11/3/2019	0	0	0
364	19-635	Railroad Av (37-98) bt JJ Byrne Memorial Brdg Bike Path and Bend	RF	02	9/19/2019	9/19/2019	0	0	0
365	19-644	164 St (71-09) bt 71 Av and 72 Av	MS	08	10/24/2019	10/24/2019	0	0	171
366	19-652	31 Av (68-19) bt Boody St and 69 St	MS	03	10/17/2019	10/17/2019	0	0	100
367	19-653	150 St (76-07) bt 76 Av and 76 Rd	MS	08	11/15/2019	11/15/2019	0	0	496
368	19-655	157 Av and 79 St	JS	10	9/16/2019	-	0	0	0
369	19-667	156 St (42-49) bt Sanford Av and Beech Av	LJ	07	10/17/2019	10/17/2019	0	0	0
370	19-668	192 St (43-39) bt 43 Rd and 44 Av	LJ	11	10/25/2019	10/25/2019	0	124	0
371	19-669	Parsons Blvd (6-03) bt Summit Pl and Boulevard	KB	07	10/10/2019	10/10/2019	0	356	0
372	19-670	Codwise Pl (51-63) bt Bend and Kneeland Av	TC	04	10/4/2019	10/4/2019	0	824	0
373	19-672	90 Av (138-33) bt 138 Pl and 139 St	SA	12	10/7/2019	10/7/2019	0	0	0
374	19-673	86 Rd (139-51) bt 139 St and 143 St	SA	08	10/7/2019	10/7/2019	0	0	0
375	19-688	232 St bt 145 Av and Edgewood Av	RF	13	10/23/2019	10/23/2019	197	0	0
376	19-690	82 Av bt 126 St and 132 St	KB	09	10/22/2019	10/30/2019	0	0	0
377	19-694	Jamaica Av (222-25) bt 222 St and 224 St	KB	13	11/13/2019	11/13/2019	0	0	0
378	19-694A	Jamaica Av (222-25) bt 222 St and 224 St	TC	13	12/10/2019	12/10/2019	0	0	0
379	19-703	Morenci La (50-67) bt Cambria Av and Van Zandt Av	LJ	11	10/30/2019	10/30/2019	0	0	0
380	19-706	118 Av (188-27) bt Farmers Blvd and 189 St	MA	12	10/30/2019	10/30/2019	0	462	0
381	19-707	113 St (71-25) bt 71 Av and 71 Rd - PS196 Q	TC	06	10/31/2019	10/31/2019	0	0	0
382	19-711	46 Av (200-31) bt Francis Lewis Blvd and 202 St	KB	11	11/8/2019	11/8/2019	0	0	0
383	19-714	St Nicholas Av (350) bt Palmetto St and Woodbine St	MA	05	11/4/2019	11/27/2019	0	0	0
384	19-726	1 St (26-40) bt 26 Av and 27 Av	KB	01	11/20/2019	11/20/2019	0	170	0
385	19-727	Whitestone Exp (17-20) bt 14 Av and Whitestone Expy Et 15 SB	TC	07	12/3/2019	12/3/2019	0	890	0
386	19-727A	Whitestone Exp (17-22) bt 14 Av and Whitestone Expy Et 15 SB	TC	07	12/3/2019	12/3/2019	0	21	0
387	19-734	58 Av (230-01) bt 230 St and E Hampton Blvd	MA	11	11/15/2019	11/15/2019	0	0	0
388	19-736	Maple Av and Kissena Blvd- NYCDPR Maple Playground	MA	07	12/8/2019	12/8/2019	0	0	0
389	19-741	Marinette St (29-20) bt Richmond Rd and Warwick Av-	LJ	11	11/15/2019	11/15/2019	0	0	0
390	19-761	176 St and Sayres Av	MS	12	11/27/2019	11/27/2019	0	0	225
391	19-764	31 St (30-43) bt 30 Av and 30 Dr	KB	01	11/30/2019	11/30/2019	0	242	0
392	19-765	Vernon Blvd (3007) bt Main Av and 30 Rd	TC	01	12/13/2019	12/13/2019	0	260	0
393	19-765A	Vernon Blvd (3007) bt Main Av and 30 Rd	TC	01	12/13/2019	12/13/2019	0	0	0
394	19-768	162 St (46-34) bt 46 Av and Laburnum Av	LJ	07	11/14/2019	11/14/2019	0	132	0
395	19-769	251 St (64-24) bt 64 Av and Cullman Av	LJ	11	11/14/2019	11/14/2019	0	105	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
396	19-770	B 130 St (427) bt Newport Av and Cronston Av	LJ	14	12/10/2019	12/10/2019	0	250	0
397	19-773	Aberdeen Rd (181-45) bt Bend and Surrey Pl	LJ	08	12/13/2019	12/13/2019	0	100	0
398	19-784	115 St (85-31) bt 85 Av and Myrtle Av	LJ	09	12/14/2019	12/14/2019	0	0	0
399	19-785	197 St (98-16) bt Carpenter Av and DE	LJ	12	12/5/2019	12/5/2019	0	0	0
400	19-789	Braddock Av (222-57) bt Sabre St and 222 St	LJ	13	12/11/2019	12/11/2019	0	143	0
401	19-793	35 Av (214-43) bt 214 Pl and 214 Ln	TC	11	12/19/2019	12/19/2019	0	0	0
402	19-800	215 St (35-24) bt 35 Av and 36 Av	MA	11	12/19/2019	12/19/2019	0	0	0

Apeendix 2.1.4.1.4: Staten Island

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
403	14-470	Mildred Av (55)	DC	02	8/23/2019	8/23/2019	0	0	0
404	15-245	Willow Av (66) bt Bay St and Langere Pl	SA	01	5/16/2019	5/16/2019	0	0	0
405	15-654	Cannon Av (25)	DC	02	8/23/2019	8/23/2019	0	0	0
406	16-615	Amador St (48) bt Knollwood Ct and Briarwood Rd	MA	01	10/31/2016	11/24/2019	0	0	0
407	17-195	Targee St (134) bt Purroy Pl and Broad St	MA	01	4/16/2017	11/24/2019	0	0	0
408	17-376	SER200313 - Ocean Terr (440) bt Butterworth Av and Coverly Av	SA	02	4/15/2019	4/23/2019	0	0	0
409	18-228	Arden Av (1610) bt Noel St and Lenzie St	MA	03	5/1/2018	12/14/2019	0	0	0
410	18-271	East Brandis Av and Armstrong Av; OB-645	JS	03	4/11/2019	4/11/2019	0	0	0
411	18-439	Targee St (357) bt Osgood Av and Waverly Pl	TC	01	12/14/2019	12/14/2019	0	0	0
412	18-593	Parkinson Av and Kramer St; OB-1915	SA	02	1/14/2019	1/14/2019	0	0	0
413	18-598	Aspen Knolls Wy and Arthur Kill Rd; OB-1949	JS	03	2/5/2019	2/5/2019	0	0	0
414	18-602	Fairlawn Av and Hylan Blvd; OB-1973	DC	03	12/11/2018	3/6/2019	0	0	0
415	18-603	Petersons Ln and Amboy Rd; OB-1978	CO	03	1/4/2019	1/4/2019	0	247	0
416	18-607	Correll Av and Bombay St; OB-1996	JS	03	5/6/2019	5/6/2019	0	0	0
417	18-620	Alverson Av and Barrow Pl; OB-2028	JS	03	5/6/2019	5/6/2019	0	0	0
418	18-622	Parkwood Av and Uncas Av; OB-2036	JS	03	5/6/2019	5/6/2019	0	0	0
419	18-628	Indale Av and Hylan Blvd; OB-2058	CO	03	4/22/2019	4/22/2019	0	0	0
420	18-629	Bartow Av and Eugene St; OB-2063	DC	03	1/9/2019	1/9/2019	0	0	0
421	18-633	Latourette St and South Goff Av; OB-628	JS	03	5/3/2019	5/3/2019	0	0	0
422	18-636	Arbutus Av and Eugene Pl; OB-710	DC	03	1/9/2019	1/9/2019	0	0	0
423	18-637	Ruggles St and Amboy Rd; OB-711	DC	03	1/9/2019	1/9/2019	0	0	0
424	18-638	Bayview Av and Excelsior Av; OB-719	RB	03	1/4/2019	1/4/2019	0	62	0
425	18-831	Port Richmond Av (275) bt Palmer Av and Anderson Av	JS	01	2/5/2019	2/5/2019	0	0	0
426	18-834	Roe St (132) bt Delafield Av and Cary Av	JS	01	2/5/2019	2/5/2019	0	0	0
427	18-847	Holcomb Av (21 and 25) bt Crown Av and Woodrow Rd	TC	03	1/15/2019	1/15/2019	0	1,725	0
428	18-862	Glen Av bt Castleton Av and Stanley Av	MA	01	12/23/2018	2/7/2019	0	610	0
429	18-866	Nick Laporte Pl and Richmond Terr (St George South Municipal Parkin	TC	01	2/9/2019	2/9/2019	0	0	0
430	18-866A	Nick Laporte Pl and Richmond Terr (St George South Municipal Parkin	TC	01	2/9/2019	2/9/2019	0	0	0
431	18-866B	Nick Laporte Pl and Richmond Terr (St George South Municipal Parkin	TC	01	2/9/2019	2/9/2019	0	0	0
432	18-866C	Nick Laporte Pl and Richmond Terr (St George South Municipal Parkin	TC	01	2/9/2019	2/9/2019	0	0	0
433	18-866D	Nick Laporte Pl and Richmond Terr (St George South Municipal Parkin	TC	01	2/9/2019	2/9/2019	0	0	0
434	18-866E	Nick Laporte Pl and Richmond Terr (St George South Municipal Parkin	TC	01	2/9/2019	2/9/2019	0	0	0
435	18-866F	Nick Laporte Pl and Richmond Terr (St George South Municipal Parkin	TC	01	2/9/2019	2/9/2019	0	0	0
436	18-866G	Nick Laporte Pl and Richmond Terr (St George South Municipal Parkin	TC	01	2/9/2019	2/9/2019	0	0	0
437	18-866H	Nick Laporte Pl and Richmond Terr (St George South Municipal Parkin	TC	01	2/9/2019	2/9/2019	0	0	0
438	18-866I	Nick Laporte Pl and Richmond Terr (St George South Municipal Parkin	TC	01	2/9/2019	2/9/2019	0	0	0
439	18-866J	Nick Laporte Pl and Richmond Terr (St George South Municipal Parkin	TC	01	2/9/2019	2/9/2019	0	0	0
440	18-866K	Nick Laporte Pl and Richmond Terr (St George South Municipal Parkin	TC	01	2/9/2019	2/9/2019	0	0	0
441	18-866L	Nick Laporte Pl and Richmond Terr (St George South Municipal Parkin	TC	01	2/9/2019	2/9/2019	0	0	0
442	18-866M	Nick Laporte Pl and Richmond Terr (St George South Municipal Parkin	TC	01	2/9/2019	2/9/2019	0	0	0
443	18-866N	Nick Laporte Pl and Richmond Terr (St George South Municipal Parkin	TC	01	2/9/2019	2/9/2019	0	0	0
444	18-868	S Gannon Av and Sheraden Av	CO	02	1/8/2019	1/25/2019	0	0	0
			SA	02	1/8/2019	1/25/2019	0	0	0
445	18-893	Mann Av (18) bt Victory Blvd and Marble St	JS	01	2/5/2019	4/23/2019	0	0	0
446	18-901	Harvard Av (167) bt Prospect Av and DE	TC	01	1/11/2019	1/11/2019	0	0	0
			CO	03	1/24/2019	4/11/2019	0	0	0
447	19-002	Arthur Kill Rd and Getz Av	JS	03	1/24/2019	4/11/2019	0	0	0
			SA	03	1/24/2019	4/11/2019	0	0	0
448	19-005	Richmond Terr (2604) bt Granite Av and Housman Av	MA	01	2/4/2019	3/4/2019	0	377	0
449	19-072	Maguire Av (83) bt Amboy Rd and Sagona Ct	KB	03	3/6/2019	3/6/2019	0	0	0
450	19-076	Edgewater St (186) bt Lynhurst Av and Sylvaton Ter	MA	01	3/22/2019	3/22/2019	0	224	0
451	19-100	Trinity Pl (14) bt Barker St and Taylor St	MA	01	3/5/2019	3/5/2019	0	0	0
452	19-102	Port Richmond Av (91) bt Ann St and Bennett St	KB	01	6/21/2019	6/21/2019	0	0	0
453	19-103	Bay St (331) bt St Julian Pl and Grant St	KB	01	3/29/2019	3/29/2019	0	0	0
454	19-113	Hylan Blvd (2700-2754) bt Allison Av and Princeton Av	MA	02	4/1/2019	4/1/2019	0	0	0
455	19-114	Barry St (15) bt Rossville Av and Rutherford Ct	KB	03	3/19/2019	3/19/2019	0	501	0
456	19-176	Hancock st (40) bt Garretson Av and Cromwell Av	CO	02	6/21/2019	6/21/2019	0	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
457	19-187A	Arthur Kill Rd and Armstrong Av- Temp 5009	MA	03	10/14/2019	10/14/2019	0	0	0
458	19-192	Van Buren St bt York Av and Franklin Av	JS		4/15/2019	5/16/2019	0	0	0
459	19-197	Ilyssa Way (669) bt Emily La and Arthur Kill Rd	MA	03	4/11/2019	4/11/2019	0	0	0
460	19-241A	Titus Av (50) bt New Dorp La and Ina St	MA	02	5/24/2019	5/24/2019	0	0	0
461	19-244	Richmond Terr (2604) bt Granite Av and Housman Av	MA	01	5/28/2019	5/28/2019	0	0	0
462	19-244A	Richmond Terr (2604) bt Granite Av and Housman Av	MA	01	5/24/2019	5/24/2019	0	247	0
463	19-245	Quintard St (101) bt Ledyard Pl and Hurlbert St	MA	02	5/24/2019	5/24/2019	0	0	0
464	19-245A	Quintard St (101) bt Ledyard Pl and Hurlbert St (sanitary)	MA	02	5/24/2019	5/24/2019	0	0	0
465	19-252	Green Valley Rd (302) bt Manchester Dr and Victoria Rd	CO	03	5/21/2019	5/21/2019	0	0	0
466	19-268	Henderson Av (394) bt Kissel Av and Bend	MA	01	5/30/2019	5/30/2019	0	435	0
467	19-352	Whitney Av (88) bt DE and Parkinson Av	MA	02	6/4/2019	6/14/2019	0	211	0
468	19-353	Kissel Av (52) bt Snug Harbor Rd and Amelia Ct	MA	01	6/4/2019	6/4/2019	0	0	0
469	19-355	Saxon Av (110) bt Gadsen Pl and Draper Pl	MA	02	5/29/2019	8/5/2019	0	0	0
470	19-359	Edgewater St and Camden St; PR-018	CO	01	7/25/2019	7/25/2019	0	100	0
471	19-360	Edgewater St and Lynhurst Av; PR-019	CO	01	7/25/2019	7/25/2019	0	100	0
472	19-361	Edgewater St and Hylan Blvd; PR-021	CO	01	7/25/2019	7/25/2019	0	100	0
473	19-362	Richmond Terr and Newark Bay Shoreline; PR-024	DC	01	7/30/2019	7/30/2019	0	0	0
474	19-375	Bay St (580) bt Union Pl and Water St	JS	01	11/18/2019	11/18/2019	0	0	0
475	19-408	Guyon Av (73) bt Amboy Rd and N Railroad Av	MA	03	7/3/2019	7/3/2019	0	0	0
476	19-418	Arthur Kill Rd (2636) bt St Lukes Cemetery Bndy and Bloomingdale Rd	MA	03	7/3/2019	7/3/2019	0	0	0
477	19-446	Richmond Terrace and Houseman Av; PR-028	DC	01	7/30/2019	7/30/2019	0	0	0
478	19-448	Richmond Terrace and South Av; PR-025	DC	01	7/30/2019	7/30/2019	0	0	0
479	19-479	Seaview Av (777) bt Oceanside Av and Fr Capodanno Blvd - MH1	MA	02	8/15/2019	8/15/2019	0	0	0
480	19-479A	Seaview Av (777) bt Oceanside Av and Fr Capodanno Blvd - MH2	MA	02	8/15/2019	8/15/2019	0	0	0
481	19-479B	Seaview Av (777) bt Oceanside Av and Fr Capodanno Blvd - Sanitary	MA	02	8/15/2019	8/15/2019	0	0	0
482	19-484	Garretson Av (128) bt Jefferson St and N Railroad Av	MA	02	8/13/2019	8/13/2019	0	0	0
483	19-489	Westervelt Av and Layton Av	MA	01	8/29/2019	8/29/2019	0	217	0
484	19-515	Laurel Av (41) bt Gordon St and Targee St	MS	01	9/5/2019	9/5/2019	0	0	70
485	19-516	Bryant Av (16) bt Richmond Rd and Allison Pl	MS	02	8/12/2019	8/12/2019	0	0	275
486	19-520	Arthur Kill Rd (2636) bt St Lukes Cemetery Bndy and Bloomingdale Rd	MA	03	7/3/2019	7/3/2019	0	0	0
487	19-523	Saxon Av (110) bt Gadsen Pl and Draper Pl	SA	02	10/9/2019	10/9/2019	0	0	0
488	19-532	MacFarland Av (101) bt Wallace Av and Sand La	TC	02	8/8/2019	8/8/2019	0	0	0
489	19-532A	MacFarland Av (101) bt Wallace Av Sand Ln	TC	02	8/8/2019	8/8/2019	0	0	0
490	19-561	Rossville Av (800) bt Woodrow Rd to Correll Av	DC	03	11/8/2019	6/16/2020	0	0	0
491	19-563	Yetman Av and Billop Av	MA	03	8/2/2019	8/2/2019	0	0	0
492	19-572	South St (47) bt N Burgher Ave and Broadway	SA	01	9/13/2019	9/13/2019	0	0	0
493	19-584	Victory Blvd bt Manor Rd and Harvey Av-SER200303	KB	01	9/5/2019	9/18/2019	0	767	0
494	19-604	Bertram Av (435) bt Lynch St and Philip Av	TC	03	9/5/2019	9/5/2019	0	0	0
495	19-612	Ovis Pl (40) bt Thollen St and Hylan Blvd	SA	03	9/13/2019	9/13/2019	0	0	0
496	19-623	Clove Rd (1498) bt Howard Av and Little Clove Rd	MA	01	9/23/2019	9/23/2019	0	0	0
497	19-654	B Rd (344) bt HillCrest St and Sycamore St	TC	03	9/23/2019	9/23/2019	0	0	0
498	19-678	Palma Dr (190) and Targee St - Luis Lopez Playground	MA	01	11/21/2019	11/21/2019	0	0	0
499	19-689	Melvin Av bt Wild Av and Pearson St - Pumpstation 91	MA	02	10/21/2019	11/21/2019	0	0	0
500	19-697	Bard Av (355) bt St Austins Pl S and Castleton Av	TC	01	9/30/2019	9/30/2019	0	0	0
501	19-720	Grasmere Av (66) bt Railroad Av and Christ St	JS	02	11/18/2019	11/18/2019	0	0	0
502	19-735A	Bay St and Broad St - New Stapleton Waterfront	KB	01	11/22/2019	11/22/2019	0	254	0

Apeendix 2.1.4.1.5: The Bronx

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
503	18-319	Davidson Av and Inwood Av-HWXS711	MS	05	6/11/2019	6/11/2019	0	0	180
504	18-548	E 149 St and Exterior St (LCI-2)	TC	01	5/22/2019	5/22/2019	1,683	0	0
505	18-884	Bullard Av (4380) bt E 237 St and Nereid Av	KB	12	1/14/2019	1/14/2019	0	642	0
506	19-004	Fulton Av (1180) bt E 167 St and E 168 St	RF	03	1/17/2019	1/17/2019	0	0	0
507	19-023	Lafayette Av bt Zerega Av and Westchester Creek	RF		3/12/2019	3/12/2019	0	225	0
508	19-035	St Lawrence Av (728) bt Soundview Av and DE	KB	09	1/30/2019	1/30/2019	0	0	0
509	19-035A	St Lawrence Av (728) bt Soundview Av and DE	KB	09	1/31/2019	1/31/2019	0	229	0
510	19-043	E 162 St (432) bt Melrose Av and DE	TC	03	2/5/2019	2/5/2019	0	0	0
511	19-043A	E 162 St (432) bt Melrose Av and DE	TC	03	2/5/2019	2/5/2019	0	0	0
512	19-044	W 169 St (120) bt Nelson Av and Plimpton Av	TC	04	2/5/2019	2/5/2019	0	0	0
513	19-044A	W 169 St (120) bt Nelson Av and Plimpton Av	TC	04	2/5/2019	2/5/2019	0	0	0
514	19-045	Willis Av (456) bt E 145 St and E 146 St	TC	01	2/12/2019	2/12/2019	0	0	0
515	19-067	Boston Rd (1776) bt E 174 St and Hoe Av	RF	03	2/13/2019	3/12/2019	0	0	0
516	19-075	Grand Av (1701) bt W 176 St and W Tremont Av	TC	05	3/4/2019	3/4/2019	0	573	0
517	19-119	Shakespeare Av and Featherbed Ln	TC	05	3/8/2019	3/8/2019	0	291	0
518	19-139	Boston Rd (3362) bt E 212 St and Bouck Av	RF	12	3/19/2019	3/19/2019	0	714	0
519	19-161	Riverdale Av (6015) bt W 260 St and W 261 St	KB	08	4/5/2019	4/5/2019	0	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
520	19-169	St Lawrence Av (728) bt Soundview Av and DE	KB	09	4/2/2019	4/2/2019	0	0	0
521	19-170	Exterior St (325) bt Major Deegan Expwy Et 3 SB and Major Deegan E	TC	01	5/25/2019	5/25/2019	0	570	0
522	19-171	Exterior St (355) bt Major Deegan Expwy Et 3 SB and Major Deegan E	TC	01	5/25/2019	5/25/2019	0	0	0
523	19-172	Exterior St (399) bt E 144 St and Exterior St	TC	01	5/25/2019	5/25/2019	0	0	0
524	19-173	Exterior St bt 144 St and 146 St	TC	01	5/25/2019	5/25/2019	0	0	0
525	19-174	Parkside Pl (3211) bt Webster Av and E207 St	RF	07	4/4/2019	4/4/2019	0	0	0
526	19-198	E Tremont Av (2925) bt Blondell Av and Tan Pl	MS	11	4/11/2019	4/11/2019	0	0	300
527	19-236	Grand Av (1701) bt W 176 St and W Tremont Av	TC	05	5/7/2019	5/10/2019	0	664	0
528	19-264	Powell Av (2160) bt Cross Bronx Exp SrR N and Castle Hill Av	KB	09	5/17/2019	5/17/2019	0	0	0
529	19-264A	Cross Bronx Exp (2160) bt Haviland Av and Castle Hill Av	KB	09	5/17/2019	5/17/2019	0	0	0
530	19-267	Bartow Av (1915) bt Ely Av and Grace Av	KB	12	5/22/2019	5/22/2019	0	0	0
531	19-289	Marmion Av (1801) bt Crotona Park N and E 175 St	KB	06	6/26/2019	6/26/2019	0	0	0
532	19-290	E 175 St (846) bt Marmion Av and Mohegan Av	KB	06	6/26/2019	6/26/2019	0	0	0
533	19-294	Webster Av (1251) bt E 168 St and E 169 St	TL	04	6/12/2019	6/13/2019	0	0	0
534	19-295	College Av (1042) bt E 165 St and E 166 St	MA	04	8/16/2019	8/16/2019	0	0	0
535	19-302	Nelson Av (1395) bt W 170 St and Edward L Grant Hwy	RF	04	6/14/2019	6/14/2019	0	0	0
536	19-307	Crotona Pkwy (1976) bt E Tremont Av and E178 St	KB	06	6/11/2019	6/11/2019	0	505	0
537	19-308	E 241 St (714) bt Cranford Av and Furman Av	LJ	12	5/24/2019	5/24/2019	0	419	0
538	19-309	Fox St (1000) bt E 163 St and Westchester Av	RF	02	6/25/2019	6/25/2019	0	0	0
539	19-336	Belmont Av (1908) bt E 176 St and E Tremont Av	RF	06	7/16/2019	7/16/2019	0	0	0
540	19-348	Marmion Av (1794) bt Crotona Park N and E 175 St-PDQ-004-19	TC	06	6/26/2019	6/26/2019	0	0	0
541	19-390	Lydig Av (1140) bt Williamsbridge Rd and Yates Av	LJ	11	6/15/2019	6/15/2019	0	0	0
542	19-391	E 195 St (2860) bt MayFlower Av and Hobart Av	KB	10	7/15/2019	7/15/2019	0	0	0
543	19-416	Greystone Av (3598) bt Greystone Av and W 236 St	MA	08	6/25/2019	7/19/2019	0	0	0
544	19-471	Grosvenor Av (5300) bt Bend and Iselin Av	TC	08	7/18/2019	7/18/2019	0	0	0
545	19-512	Thieriot Av (505) bt Lacombe Av and Bend	RF	09	8/1/2019	8/1/2019	0	0	0
546	19-528	Wallace Av (1953) bt Rhinelander Av and Bronxdale Av	KB	11	8/21/2019	8/21/2019	0	648	0
547	19-564	Jerome Av and E 167 St-HWCSC4D	CJ	04	8/23/2019	8/28/2019	0	140	0
548	19-566	Topping Av (1761) bt Cross Bronx Expy SR N and E 175 St	RF	05	10/29/2019	11/7/2019	0	0	0
549	19-567	Leggett Av (1080) bt Garrison Av and Barry St	TC	02	12/14/2019	12/14/2019	0	0	0
550	19-583	Beach Av (702) bt Seward Av and Lafayette Av	TL	09	9/3/2019	9/3/2019	0	0	0
551	19-602	Broadway (6161) bt Manhattan College Pkwy and W 251 St	KB	08	9/16/2019	9/16/2019	0	302	0
552	19-602A	Broadway (6161) bt Manhattan College Pkwy and W 251 St	KB	08	10/8/2019	10/8/2019	0	0	0
553	19-620	Wayne Av (3530) bt E Gun Hill Rd and E 211 St	KB	07	9/19/2019	9/19/2019	0	0	0
554	19-620A	Wayne Av (3530) bt E Gun Hill Rd and E 211 St	KB	07	9/19/2019	9/19/2019	0	0	0
555	19-621	Willet Av (3601) bt E 213 St and E 216 St	TC	12	9/16/2019	9/16/2019	0	0	0
556	19-633	Food Center Dr (352-355) and Bend	KB	02	10/2/2019	10/2/2019	0	0	0
557	19-665A	Belmont Av (1899) bt E 176 St and E Tremont Av	TC	06	10/1/2019	10/1/2019	0	554	0
558	19-666	Grant Av bt E 169 St and E 170 St-NYCDPR-X271-119M	RF	04	9/26/2019	9/27/2019	1,251	0	0
559	19-666B	Grant Av bt E 169 St and E 170 St-NYCDPR-X271-119M	RF	04	10/11/2019	10/11/2019	96	0	0
560	19-691	Wales Av bt 141 St and 142 St	TC	01	10/18/2019	10/18/2019	0	0	0
561	19-696	Macombs Rd (1475) bt Inwood Av and W 172 St	TC	04	11/19/2019	11/19/2019	0	173	173
562	19-696A	W 172 St bt Macombs Rd and Inwood Av	TC	04	11/19/2019	11/19/2019	0	0	0
563	19-705	Tibbett Av (4456) bt W 244 St and W 246 St-Horace Mann School	KB	08	11/7/2019	11/7/2019	0	226	0
564	19-709	Dwight Pl (1526) bt Griswold Av and Ampere Av	RF	10	11/19/2019	11/19/2019	0	0	0
565	19-729	Fteley Av (1282) bt Westchester Av and E 172 St	MA	09	11/13/2019	11/26/2019	0	0	0
566	19-739	Quarry Ballfields on E 181 St and Hughes Av	RF	06	11/18/2019	-	172	0	0
567	19-746	Senger Pl (2465) bt Brush Av and Hutchinson River Pkwy SR	KB	10	12/18/2019	12/18/2019	0	0	0
568	19-759	Prospect Av (2155) bt E 181 St and E 182 St	MA	06	11/27/2019	11/27/2019	0	0	0
569	19-786	Buchanan Pl (27) bt Davidson Av and Grand Av	RF	05	12/19/2019	12/19/2019	0	0	0
570	19-792	Metcalfe Av (1240) bt Westchester Av and E 172 St	KB	09	12/20/2019	12/20/2019	0	0	0
571	19-801	3 Av (3279) bt Boston Rd and E 164 St	RF	03	12/18/2019	3/9/2020	0	0	0

2019 In-House Survey Total, LF:

71,916 (13.62 mi)

1/2/2019 12/31/2019

7,035

51,964

12,917

Operating Expenses, \$

* No footage indicates investigation where inspection of sewers was not required or completed

Appendix 2.1.4.2: Citywide

Appendix 2.1.4.2.1: Brooklyn

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
572	15-857	E 80 St (925) bt Flatlands Av and Av J	KJ	18	6/11/2019	6/11/2019	688	0	0
573	16-311	Av S bt E 17 St and E 18 St	MD	15	6/21/2019	6/21/2019	262	0	0
574	16-350	W 21 St (3050) bt Surf Av and DE	KJ	13	6/28/2019	6/28/2019	197	0	0
575	17-493	E 40 St and Av I	KJ	18	6/28/2019	6/28/2019	139	0	0
576	17-757	Schenck St (9203) bt E 92 St and E 93 St	JL	18	2/14/2019	2/14/2019	625	0	0
577	17-849	Cyrus Av (26) bt Ivan Ct and Hymen Ct	EV	15	4/23/2019	-	503	0	0
578	18-155	E 15 St (1718)	PR	15	12/9/2019	12/9/2019	1,021	0	0
579	18-246	Av P (1610) bt E 16 St and E 17 St	PR	15	12/10/2019	-	1,202	0	0
580	18-325	Prospect Pl (647) bt Franklin Av and Bedford Av	BI	08	3/26/2019	3/27/2019	1,559	0	0
581	18-408	20 Av (8621) bt 86 St and Benson Av	KS	11	2/28/2019	2/28/2019	757	0	0
582	18-467	New York Av (881) bt Linden Blvd and Martense St	JL	17	2/13/2019	-	158	0	0
			TC	17	2/13/2019	-	0	0	0
583	18-499	Alabama Av (475) bt Dumont Av and Livonia Av	JP	05	9/19/2018	2/14/2019	267	0	0
584	18-500	Chauncey St (489) bt Saratoga Av and Thomas S Boyland St	AP	16	2/7/2019	2/26/2019	764	0	0
			JP	16	2/7/2019	2/26/2019	589	0	0
			KJ	16	2/7/2019	2/26/2019	717	0	0
585	18-501	Atkins Av bt Hegeman Av and New Lots Av	KJ	05	1/8/2019	1/9/2019	68	0	0
			KS	05	1/8/2019	1/9/2019	756	0	0
586	18-502	E 53 St (1184) bt Av I and Av J	KS	18	12/26/2018	1/3/2019	319	0	0
587	18-503	8 Av (5323) bt 53 St and 54 St	AB	12	12/19/2019	12/19/2019	257	0	0
588	18-506	E 52 St (1271) bt Av I and Av J	AP	18	1/28/2019	-	476	0	0
			JL	18	1/28/2019	-	348	0	0
			KJ	18	1/28/2019	-	240	0	0
589	18-516	Hicks St and Bay St (Red Hook Parks and Recreation)	AP	06	1/14/2019	-	0	0	0
			AP		2/14/2019	-	0	0	0
			JL	06	1/14/2019	-	0	0	0
			JL		4/8/2019	-	0	0	0
			JP	06	1/14/2019	-	0	0	0
			MA	06	1/14/2019	-	0	0	0
590	18-540	79 St bt 7 Av and 10 Av	JP	10	2/20/2019	2/20/2019	919	0	0
591	18-556	Hewes St (366) bt S 3 St and S 4 St	EV	01	4/24/2019	5/17/2019	211	0	0
			JL	01	4/24/2019	5/17/2019	298	0	0
			KJ	01	4/24/2019	5/17/2019	0	0	0
592	18-557	E 100 St (1058) bt Av J and Av K	KJ	18	6/11/2019	-	712	0	0
593	18-577	4 Av (778) bt 26 St and 27 St	EV	07	4/18/2019	4/18/2019	606	0	0
594	18-686	80 St and Colonial Rd	AP	10	3/27/2019	3/28/2019	820	0	0
			BI	10	3/27/2019	3/28/2019	528	0	0
595	18-687	Fulton St and Autumn Av	JL	05	2/5/2019	2/5/2019	512	0	0
596	18-688	Blake Av and Rockaway Av	JL	16	5/1/2019	-	0	0	0
			TC	16	5/1/2019	-	0	0	0
597	18-694	Prospect Pl bt Nostrand Av and New York Av	MD	08	4/29/2019	5/1/2019	1,477	0	0
			TC	08	4/29/2019	5/1/2019	138	0	0
598	18-696	40 St (1031) bt 10 Av and Ft Hamilton Pkwy	JL	12	2/28/2019	2/28/2019	771	0	0
599	18-720	Cortelyou Rd (913) bt E 9 St and Coney Island Av	AP	12	2/13/2019	3/19/2020	391	0	0
600	18-722	Glenmore Av (801) bt Shepherd Av and Berriman St	JL	05	1/10/2019	2/6/2019	0	0	0
			KJ	05	1/10/2019	2/6/2019	260	0	0
601	18-723	Tilden Av (2225) bt Flatbush Av and Bedford Av	EV	14	3/14/2019	3/15/2019	334	0	0
			KS	14	3/14/2019	3/15/2019	304	0	0
602	18-724	Bradford St (525) bt Dumont Av and Livonia Av	JL	05	1/9/2019	2/6/2019	0	0	0
			KJ	05	1/9/2019	2/6/2019	616	0	0
603	18-725	Pitkin Av (1468) bt Howard Av and Grafton St	AP	16	1/10/2019	1/10/2019	505	0	0
604	18-726	Watkins St bt Riverdale Av and Newport St	KS	16	1/3/2019	-	0	0	0
605	18-754	Neptune Av (3516) bt W 35 St and W 36 St	KS	13	2/28/2019	-	127	0	0
606	18-769	Sloan Pl bt W St and Av T	JL	15	2/18/2019	2/21/2019	1,913	0	0
			MD	15	2/18/2019	2/21/2019	0	0	0
607	18-782	Beverly Rd and E 15 St	BI	14	3/12/2019	3/13/2019	776	0	0
			MD	14	3/12/2019	3/13/2019	1,149	0	0
608	18-783	18 Av (8601) bt 86 St and Benson Av	AP	11	11/20/2018	-	226	0	0
			DC	11	11/20/2018	-	201	0	0
609	18-822	E 25 St (449) bt Newkirk Av and Foster Av	KJ	17	1/28/2019	2/4/2019	134	0	0
			KS	17	1/28/2019	2/4/2019	288	0	0
610	18-823	Rutland Rd (999A) bt E 93 St and E 94 St	EV	17	3/18/2019	-	375	0	0
611	18-824	DeKalb Av (726) bt Tompkins Av and Marcy Av	AP	02	2/25/2019	-	0	0	0
			BI	02	2/25/2019	-	0	0	0
			JL	02	2/25/2019	-	0	0	0
			TC	02	2/25/2019	-	0	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
612	18-835	W 28 St (2980) bt Surf Av and Mermaid Av	JB	13	12/30/2019	12/31/2019	556	0	0
613	18-865	E 65 St (1348) bt Av M and Av N	JS	18	12/18/2019	12/19/2019	480	0	0
			MA	18	12/18/2019	12/19/2019	496	0	0
614	18-877	Nova Ct (27) bt Madoc Av and Noel Av	EV	15	2/14/2019	6/5/2019	246	0	0
			JL	15	2/14/2019	6/5/2019	0	0	0
			MD	15	2/14/2019	6/5/2019	355	0	0
615	18-878	54 St (912) bt 9 Av and Ft Hamilton Pkwy	JP	12	4/29/2019	4/29/2019	879	0	0
616	18-880	Shepherd Av (120) bt Ridgewood Av and Arlington Av	EV	05	4/17/2019	4/17/2019	679	0	0
617	18-882	Schenck Av bt Livonia Av and New Lots Av	EV	05	5/8/2019	6/18/2019	423	0	0
			KJ	05	5/8/2019	6/18/2019	0	0	0
618	18-895	E 17 St (629) bt Newkirk Av and Foster Av	EV	14	2/4/2019	-	0	0	0
619	18-896	Cozine Av (709) bt Crescent St and Pine St	KJ	05	5/8/2019	5/8/2019	349	0	0
620	19-016	Bergen St (2021) bt Thomas S Boyland St and Rockaway Av	AP	16	2/5/2019	2/7/2019	508	0	0
			JP	16	2/5/2019	2/7/2019	262	0	0
621	19-020	Tapscott St (214) bt Blake Av and Dumont Av	JP	16	2/7/2019	2/7/2019	579	0	0
622	19-050	Tompkins Av (461) bt Macon St and MacDonough St	EV	03	4/25/2019	4/25/2019	231	0	0
623	19-060	Stratford Rd (400 & 457) bt Cortelyou Rd and Dorchester Rd	MD	14	4/3/2019	4/3/2019	622	0	0
624	19-084	Coney Island Av (2799) bt Av Y and Av Z	JS	15	12/13/2019	12/16/2019	337	0	0
			PR	15	12/13/2019	12/16/2019	1,031	0	0
625	19-085	Ocean Av (2450) bt Av S and Av T	EV	15	6/5/2019	7/8/2019	1,797	0	0
			KJ	15	6/5/2019	7/8/2019	545	0	0
626	19-107	8 Av and 44 St	KS	07	3/1/2019	3/1/2019	609	0	0
627	19-130	Flatlands 3 St (105-30) from E 105 St and E 108 St	JP	18	4/30/2019	4/30/2019	1,588	0	0
628	19-131	Sutter Av bt Barbey St and Jerome St	KJ	05	6/27/2019	6/27/2019	239	0	0
629	19-147	Marion St (472) bt Rockaway Av and Bend	MD	16	6/25/2019	6/25/2019	697	0	0
630	19-149	W 24 St (2970) bt Mermaid Av and Surf Av	MD	13	5/16/2019	-	0	0	0
			EV	13	5/16/2019	-	644	0	0
631	19-150	W 33 St (2730) bt Bayview Av and Neptune Av	MD	13	5/16/2019	-	965	0	0
			EV	01	5/23/2019	5/23/2019	293	0	0
632	19-152	S 8 St (105) bt Berry St and Bedford Av	EV	01	5/23/2019	5/23/2019	293	0	0
633	19-153	Whitman Dr (352) bt Indiana Pl and Dakota Pl	EV	18	5/20/2019	6/19/2019	1,120	0	0
634	19-154	E 84 St (1031) bt Av J and Church La	EV	18	5/21/2019	5/22/2019	1,475	0	0
			EV	13	6/21/2019	6/27/2019	0	0	0
			KJ	13	6/21/2019	6/27/2019	182	0	0
635	19-165	Bath Av bt 27 Av and Bay 46 St	MD	13	6/21/2019	6/27/2019	815	0	0
			EV	15	6/20/2019	7/1/2019	720	0	0
636	19-167	Nostrand Av (2972) bt Av P and Stuart St	EV	15	6/20/2019	7/1/2019	720	0	0
637	19-168	E 18 St (2448) bt Av X and Av Y	JS	15	12/16/2019	12/18/2019	1,252	0	0
			KJ	15	6/11/2019	12/19/2019	0	0	0
638	19-194	President St (1475) bt Kingston Av and Albany Av	EV	09	4/15/2019	4/15/2019	407	0	0
639	19-218	Putnam Av (772) bt Stuyvesant Av and Malcolm X Blvd	EV	03	5/24/2019	5/24/2019	787	0	0
640	19-273	Bay 50 St (107) bt Private Catanzaro Sq and W 17 St	JP	13	7/9/2019	7/10/2019	595	0	0
			KJ	13	7/9/2019	7/10/2019	784	0	0
641	19-276	Brighton 11 St (120) bt Ocean View Av and Brighton B Av	KJ	13	7/12/2019	-	792	0	0
			DC	08	5/30/2019	-	0	0	0
642	19-339	St Johns Pl (1351) bt Schenectady Av and Utica Av	EV	08	5/30/2019	-	742	0	0
			KJ	08	5/30/2019	-	0	0	0
			MD	08	5/30/2019	-	736	0	0
			EV	16	7/5/2019	7/5/2019	384	0	0
643	19-434	E New York Av and Lincoln Pl	EV	16	7/5/2019	7/5/2019	384	0	0
644	19-435	Atlantic Av bt Logan St and Chestnut St	BI	05	7/2/2019	7/19/2019	409	0	0
			JL	05	7/2/2019	7/19/2019	226	0	0
645	19-458	Flatbush Av bt Sterling Pl and Park Pl	BI	08	7/12/2019	7/16/2019	109	0	0
			MD	08	7/12/2019	7/16/2019	457	0	0
646	19-460	31 St (199) bt 4 Av and 5 Av	PR	07	12/11/2019	12/11/2019	758	0	0
647	19-519	Evergreen Av bt Decatur St and Schaefer St	BI	4	8/2/2019	8/2/2019	0	0	0
648	19-698	Av T (430) bt E 2 St and E 3 St	AB	15	12/20/2019	12/20/2019	257	0	0
649	19-700	58 St (2163) bt 21 Av and Washington Cemetery Bndy	AB	12	12/16/2019	-	1,085	0	0
			JB	12	12/16/2019	-	392	0	0
650	19-740	Conover St bt Coffrey St and Van Dyke St	JB	06	12/9/2019	12/9/2019	222	0	0
651	19-776	44 St and 5 Av	FM	07	12/2/2019	12/11/2019	699	0	0
			PR	07	12/2/2019	12/11/2019	0	0	0
652	16-754	Orchard St bt Delancey St and Rivington St	AP	03	7/8/2019	7/16/2019	244	0	0
			MD	03	7/8/2019	7/16/2019	0	0	0
653	17-825	W 42 St bt 5 Av and 6 Av	JL	05	5/28/2019	5/29/2019	928	0	0
654	18-309	W 42 St and 12 Av	AP	04	6/14/2018	3/7/2019	0	0	0
			AP	-	5/15/2019	5/23/2019	0	0	0
			EC	04	5/15/2019	5/23/2019	0	0	0
			KS	04	6/14/2018	3/7/2019	0	0	0
655	18-311	W 24 St and 12 Av (Joe Dimaggio Hwy Bike Path)	AP	04	4/1/2019	-	0	0	0
			EC	04	4/1/2019	-	0	0	0
656	18-470	E 21 St bt 5 Av and Broadway	AP	05	11/26/2018	-	441	0	0
657	18-537	W 50 St (404) bt 9 Av and 10 Av	KB	04	5/2/2019	5/3/2019	722	0	0
658	18-545	E 50 St (18) bt 5 Av and Madison Av	KB	05	5/3/2019	5/3/2019	348	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
659	18-546	Madison Av (606) bt E 57 St and E 58 St	JL	05	5/6/2019	-	0	0	0
			KJ	05	5/6/2019	-	0	0	0
			MD	05	5/6/2019	-	0	0	0
660	18-582	Lafayette St (303) bt Jersey St and Houston St	KJ	02	6/6/2019	-	0	0	0
661	18-703	E 121 St (235) bt 3 Av and 2 Av	JL	11	11/2/2018	-	950	0	0
662	18-710	W 93 St (307) bt W End Av and Riverside Dr	KJ	07	6/4/2019	6/6/2019	365	0	0
663	18-731	Jones St (21) bt W 4 St and Bleecker St	KS	02	3/18/2019	-	212	0	0
664	18-874	E 61 St (111) and Park Av	MD	08	5/6/2019	5/6/2019	393	0	0
665	19-011	W 15 St (340) bt 8 Av and 9 Av	BI	04	2/25/2019	7/11/2019	220	0	0
			JL	04	2/25/2019	7/11/2019	0	0	0
			KJ	04	2/25/2019	7/11/2019	393	0	0
			KS	04	2/25/2019	7/11/2019	100	0	0
666	19-068	Laight St (71) bt Washington St and Greenwich St	AP	01	2/8/2019	3/18/2019	778	0	0
			JL	01	2/8/2019	3/18/2019	180	0	0
			KS	01	2/8/2019	3/18/2019	527	0	0
667	19-125	E 124 St bt Madison Av and Park Av	EC	11	3/11/2019	3/13/2019	267	0	0
			JL	11	3/11/2019	3/13/2019	663	0	0
668	19-143	3 Av bt E 32 St and E 33 St	AP	06	3/20/2019	3/21/2019	204	0	0
			AP		3/23/2019	3/26/2019	0	0	0
			EC	06	3/23/2019	3/26/2019	0	0	0
			JL	06	3/20/2019	3/21/2019	90	0	0
			JL		3/23/2019	3/26/2019	0	0	0
			JL		4/1/2019	4/3/2019	0	0	0
669	19-216	Broadway (1440) bt W 40 St and 41 St	JL	05	4/25/2019	5/13/2019	78	0	0
			KJ	05	4/25/2019	5/13/2019	310	0	0
670	19-235	Mangin St bt Delancey St and Delancey St N-SANDRESM1	BI	03	5/13/2019	5/30/2019	0	0	0
			JL	03	5/13/2019	5/30/2019	641	0	0
671	19-247	E 16 St (344) bt N D Perlman Pl and 1 Av	KB	06	5/2/2019	5/2/2019	110	0	0
672	19-338	3 Av and E 31 St	BI	06	5/30/2019	-	95	0	0
			JL	06	5/30/2019	-	191	0	0
			KJ	06	5/30/2019	-	0	0	0
			MD	06	5/30/2019	-	189	0	0
673	19-389	Amsterdam Av and W 87 St - E side of Amsterdam Av	AP	07	6/13/2019	-	423	0	0
			JL	07	6/13/2019	-	153	0	0
674	19-394	E Broadway (187) bt Canal St and Jefferson St	AP	03	6/24/2019	6/27/2019	470	0	0
			JL	03	6/24/2019	6/27/2019	226	0	0
675	19-420	E 25 St bt 3 Av and Lexington Av	MD	06	7/19/2019	-	0	0	0
676	19-431	Broadway (3478) bt W 141 St and W 142 St	BI	09	7/2/2019	-	0	0	0
			EV	09	7/2/2019	-	128	0	0
677	19-495	6 Av (1280) bt W 51 St and W 52 St	KJ	05	7/24/2019	-	785	0	0
678	19-629	E 89 St (325) bt 2 Av and 1 Av	DC	08	12/19/2019	12/20/2019	566	0	0
679	19-719	Bridge St and Broad St	DC	01	12/17/2019	12/19/2019	457	0	0

Apeendix 2.1.4.2.2: Manhattan

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
652	16-754	Orchard St bt Delancey St and Rivington St	AP	03	7/8/2019	7/16/2019	244	0	0
			MD	03	7/8/2019	7/16/2019	0	0	0
653	17-825	W 42 St bt 5 Av and 6 Av	JL	05	5/28/2019	5/29/2019	928	0	0
654	18-309	W 42 St and 12 Av	AP	04	6/14/2018	3/7/2019	0	0	0
			AP		5/15/2019	5/23/2019	0	0	0
			EC	04	5/15/2019	5/23/2019	0	0	0
			KS	04	6/14/2018	3/7/2019	0	0	0
655	18-311	W 24 St and 12 Av (Joe Dimaggio Hwy Bike Path)	AP	04	4/1/2019	-	0	0	0
			EC	04	4/1/2019	-	0	0	0
656	18-470	E 21 St bt 5 Av and Broadway	AP	05	11/26/2018	-	441	0	0
657	18-537	W 50 St (404) bt 9 Av and 10 Av	KB	04	5/2/2019	5/3/2019	722	0	0
658	18-545	E 50 St (18) bt 5 Av and Madison Av	KB	05	5/3/2019	5/3/2019	348	0	0
659	18-546	Madison Av (606) bt E 57 St and E 58 St	JL	05	5/6/2019	-	0	0	0
			KJ	05	5/6/2019	-	0	0	0
			MD	05	5/6/2019	-	0	0	0
660	18-582	Lafayette St (303) bt Jersey St and Houston St	KJ	02	6/6/2019	-	0	0	0
661	18-703	E 121 St (235) bt 3 Av and 2 Av	JL	11	11/2/2018	-	950	0	0
662	18-710	W 93 St (307) bt W End Av and Riverside Dr	KJ	07	6/4/2019	6/6/2019	365	0	0
663	18-731	Jones St (21) bt W 4 St and Bleecker St	KS	02	3/18/2019	-	212	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
664	18-874	E 61 St (111) and Park Av	MD	08	5/6/2019	5/6/2019	393	0	0
665	19-011	W 15 St (340) bt 8 Av and 9 Av	BI	04	2/25/2019	7/11/2019	220	0	0
			JL	04	2/25/2019	7/11/2019	0	0	0
			KJ	04	2/25/2019	7/11/2019	393	0	0
			KS	04	2/25/2019	7/11/2019	100	0	0
666	19-068	Laight St (71) bt Washington St and Greenwich St	AP	01	2/8/2019	3/18/2019	778	0	0
			KS	01	2/8/2019	3/18/2019	180	0	0
667	19-125	E 124 St bt Madison Av and Park Av	EC	11	3/11/2019	3/13/2019	267	0	0
			JL	11	3/11/2019	3/13/2019	663	0	0
668	19-143	3 Av bt E 32 St and E 33 St	AP	06	3/20/2019	3/21/2019	204	0	0
			AP		3/23/2019	3/26/2019	0	0	0
			EC	06	3/23/2019	3/26/2019	0	0	0
			JL	06	3/20/2019	3/21/2019	90	0	0
			JL		3/23/2019	3/26/2019	0	0	0
			JL		4/1/2019	4/3/2019	0	0	0
			KS	06	3/20/2019	3/21/2019	197	0	0
669	19-216	Broadway (1440) bt W 40 St and 41 St	JL	05	4/25/2019	5/13/2019	78	0	0
			KJ	05	4/25/2019	5/13/2019	310	0	0
670	19-235	Mangin St bt Delancey St and Delancey St N-SANDRESM1	BI	03	5/13/2019	5/30/2019	0	0	0
			JL	03	5/13/2019	5/30/2019	641	0	0
671	19-247	E 16 St (344) bt N D Perlman Pl and 1 Av	KB	06	5/2/2019	5/2/2019	110	0	0
672	19-338	3 Av and E 31 St	BI	06	5/30/2019	-	95	0	0
			JL	06	5/30/2019	-	191	0	0
			KJ	06	5/30/2019	-	0	0	0
			MD	06	5/30/2019	-	189	0	0
673	19-389	Amsterdam Av and W 87 St - E side of Amsterdam Av	AP	07	6/13/2019	-	423	0	0
			JL	07	6/13/2019	-	153	0	0
674	19-394	E Broadway (187) bt Canal St and Jefferson St	AP	03	6/24/2019	6/27/2019	470	0	0
			JL	03	6/24/2019	6/27/2019	226	0	0
675	19-420	E 25 St bt 3 Av and Lexington Av	MD	06	7/19/2019	-	0	0	0
676	19-431	Broadway (3478) bt W 141 St and W 142 St	BI	09	7/2/2019	-	0	0	0
			EV	09	7/2/2019	-	128	0	0
677	19-495	6 Av (1280) bt W 51 St and W 52 St	KJ	05	7/24/2019	-	785	0	0
678	19-629	E 89 St (325) bt 2 Av and 1 Av	DC	08	12/19/2019	12/20/2019	566	0	0
679	19-719	Bridge St and Broad St	DC	01	12/17/2019	12/19/2019	457	0	0

Appendix 2.1.4.2.3: Queens

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
680	14-032	70 St (41-62)	JL	02	2/26/2019	2/26/2019	424	0	0
681	14-198	118 St (14-53) bt 14 Rd and 15 Av	BI	07	4/16/2019	2/12/2020	0	0	0
682	14-201	Sayres Av bt 176 St and 177 St	KJ	12	5/7/2019	5/7/2019	431	0	0
683	14-419	36 Av (211-06)	KJ	11	5/3/2019	5/3/2019	536	0	0
684	14-736	Roosevelt Av (136-39)	MD	07	6/19/2019	6/20/2019	1,089	0	0
685	16-126	20 Av bt 124 St and 125 St	BI	07	6/4/2019	6/4/2019	1,053	0	0
686	16-219	Maspeth Av (57-64)	KJ	05	4/17/2019	4/17/2019	657	0	0
687	16-319	61 Av bt 244 St and Douglaston Pkwy	AP	11	4/15/2019	4/16/2019	0	0	0
			BI	11	4/15/2019	4/16/2019	921	0	0
688	16-515	Jewel Av and Main St	JP	07	4/11/2019	4/11/2019	504	0	0
689	16-537	109 Rd bt Farmers Blvd and 195 St	KJ	12	5/21/2019	5/23/2019	1,547	0	0
690	16-556	127 St (25-64) bt DE and 26 Av	MD	07	4/5/2019	-	457	0	0
691	16-558	27 Av and 4 St	JP	01	5/2/2019	-	387	0	0
692	16-692	70 Av (110-11) bt 110 St and 112 St	EV	06	6/12/2019	6/13/2019	1,359	0	0
693	17-051	58 St and 54 Av	KJ	02	4/17/2019	4/22/2019	468	0	0
694	17-061	Whitestone Expy (30-02) bt Linden Pl and Whitestone Expy	AP	07	3/11/2019	-	0	0	0
695	17-069	90 Av (155-01) bt Grace Ct and Parsons Blvd	BI	12	1/8/2019	1/8/2019	596	0	0
			KS	12	1/8/2019	1/8/2019	0	0	0
696	17-613	Thompson Av (30-30) bt 30 Pl and 30 St	JL	02	3/19/2019	3/20/2019	1,819	0	0
697	17-674	35 Av (70-22) bt 70 St and 71 St	MD	03	4/4/2019	4/5/2019	1,256	0	0
698	17-730	Merrick Blvd and Baisley Blvd	BI	12	4/26/2019	3/31/2020	0	0	0
			BI		7/16/2019	7/17/2019	1,107	0	0
			JP	12	4/26/2019	3/31/2020	0	0	0
			MD	12	4/26/2019	3/31/2020	0	0	0
			RF	12	4/26/2019	3/31/2020	0	0	0
699	17-817	B 94 St (320) bt Bend and B 92 St	AP	14	2/6/2019	2/6/2019	243	0	0
700	17-843	186 St (56-47) bt 56 Av and 58 Av	DC	11	6/11/2019	6/11/2019	635	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
701	17-968	25 Av (41-09) bt 41 St and 42 St	JS	01	11/25/2019	11/26/2019	767	0	0
702	17-976	Ursina Rd (177-32) bt Irwin Pl and 178 St	SA	12	12/9/2019	12/9/2019	463	0	0
703	17-980	Coldspring Rd (27-30) bt Bay 27 St and Bay Park Pl	CO	14	12/2/2019	5/7/2020	808	0	0
704	17-981	Deerfield Rd (24-18) bt Briar Pl and B 25 St	CO	14	12/3/2019	-	383	0	0
705	18-081	32 St (35-29) bt 35 Av and 37 Av	JS	01	11/26/2019	11/27/2019	1,266	0	0
706	18-088	111 St 107-26) bt 107 Av and 109 Av	BI	10	4/8/2019	4/18/2019	831	0	0
			KJ	10	4/8/2019	4/18/2019	0	0	0
707	18-103	Atlantic Av bt 120 St and 121 St	KJ	09	4/15/2019	-	0	0	0
708	18-123	230 Pl (144-46) bt 144 Av and 145 Av	BI	13	6/11/2019	6/12/2019	410	0	0
			JL	13	6/11/2019	6/12/2019	262	0	0
709	18-147	207 St (111-08)	SA	13	12/9/2019	12/10/2019	778	0	0
710	18-148	247 St (90-13)	SA	13	12/10/2019	12/11/2019	526	0	0
711	18-149	Beach 93 St (138)	CO	14	12/4/2019	12/5/2019	913	0	0
712	18-152	93 Rd (222-08)	SA	13	12/11/2019	12/12/2019	1,203	0	0
713	18-172	B Channel Dr (13-04) bt Mott Av and Bend	AP	14	2/6/2019	2/6/2019	490	0	0
714	18-197	21 Av (151-44) bt Murray St and 154 St	RF	07	4/9/2019	4/9/2019	877	0	0
715	18-198	57 Rd (136-13) bt 136 St and 138 St	JP	07	4/10/2019	4/10/2019	446	0	0
716	18-209	85 Rd (253-14) bt 253 St and Little Neck Pkwy	JB	13	12/10/2019	12/11/2019	660	0	0
717	18-222	109 Rd (191-29)	JB	14	12/24/2019	12/26/2019	912	0	0
718	18-238	Charlecote Rdge (83-33) bt Homelawn St and Croydon Rd	KJ	08	3/11/2019	3/13/2019	941	0	0
719	18-287	212 St (48-30) bt 48 Av and 50 Av	MD	11	3/14/2019	3/14/2019	428	0	0
720	18-295	164 Av (99-33) bt 104 St and Hawtree Basin	JB	10	12/27/2019	12/27/2019	609	0	0
721	18-303	25 Av (154-11) bt 154 St and 157 St	JP	07	4/9/2019	4/10/2019	418	0	0
			RF	07	4/9/2019	4/10/2019	333	0	0
722	18-326	B 85 St and B Channel Dr	JL	14	4/11/2019	4/12/2019	393	0	0
723	18-327	131 St (111-34) bt 111 Av and Linden Blvd	AP	10	4/10/2019	4/11/2019	0	0	0
			JL	10	4/10/2019	4/11/2019	558	0	0
724	18-329	222 St (119-25) bt 119 Av and 120 Av	AP	13	3/15/2019	3/29/2019	889	0	0
			JP	13	3/15/2019	3/29/2019	133	0	0
			KJ	13	3/15/2019	3/29/2019	452	0	0
725	18-330	69 St (55-13) bt Hull Av and Clinton Av	JL	05	2/22/2019	2/22/2019	395	0	0
726	18-331	Admiral Av bt Metropolitan Av and 65 St	MD	05	1/25/2019	1/25/2019	683	0	0
727	18-332	83 St (64-61) bt 64 Rd and Furmanville Av	JP	05	4/11/2019	4/11/2019	452	0	0
728	18-362	199 St (113-29) bt 113 Av and Murdock Av	KJ	12	11/8/2018	4/16/2019	1,086	0	0
729	18-380	118 St (12-24) bt DE and 14 Av	BI	07	4/8/2019	4/8/2019	421	0	0
730	18-395	Avon Rd (186-29) bt Chevy Chase St and 188 St	KS	08	3/11/2019	3/11/2019	625	0	0
731	18-453	Rockaway Blvd (131-14) bt 131 St and 120 Av	AP	10	4/16/2019	6/24/2019	0	0	0
			EV	10	4/16/2019	6/24/2019	264	0	0
			JL	10	4/16/2019	6/24/2019	583	0	0
732	18-456	34 Av (111-12) bt 111 St and 112 St	KJ	03	4/23/2019	4/23/2019	1,108	0	0
733	18-497	28 Av and 56 Pl	JL	01	12/28/2018	3/20/2019	650	0	0
734	18-544	43 Av bt 108 St and 111 St	JL	04	2/22/2019	-	0	0	0
735	18-560	145 St (119-17) bt 119 Av and 120 Av	JB	12	12/26/2019	12/27/2019	675	0	0
736	18-564	Gerson Ct (2923) bt Beach 25 St and Beach 32 St	KJ	14	5/6/2019	5/6/2019	770	0	0
737	18-567	72 Pl (53-18) and 53 Rd	JL	05	9/13/2018	2/26/2019	0	0	0
738	18-574	Saint Nicholas Av (275) bt Menahan St and Grove St	AP	05	2/25/2019	2/25/2019	97	0	0
739	18-579	29 Av (165-20) bt 165 St and 166 St	BI	07	4/23/2019	-	262	0	0
			JL	10	8/9/2019	8/9/2019	0	0	0
740	18-580	78 St (156-51) bt 156 Av and 157 Av	JP	10	11/13/2018	5/1/2019	887	0	0
			ZS	10	8/9/2019	8/9/2019	0	0	0
			KJ	02	2/26/2019	4/24/2019	1,052	0	0
741	18-697	Roosevelt Av (58-02) bt 58 St and 59 St	KS	02	2/26/2019	4/24/2019	679	0	0
742	18-699	Elmhurst Av (84-11) bt 45 Av and Macnish St	KJ	04	5/7/2019	-	0	0	0
743	18-713	151 Pl and 12 Av	KS	07	1/2/2019	-	0	0	0
744	18-781	Horace Harding Expy (224-28) bt 224 St and Cloverdale Blvd	KS	11	12/27/2018	1/2/2019	463	0	0
745	18-816	Saunders St (65-44) bt 65 Rd and 66 Av	JP	06	1/3/2019	1/4/2019	405	0	0
			KS	06	1/3/2019	1/4/2019	265	0	0
746	18-817	Byrd St bt Cherry Av and Elder Av	JL	07	3/25/2019	3/26/2019	487	0	0
			JP	07	3/25/2019	3/26/2019	368	0	0
747	18-818	12 St (34-36) bt 34 Av and 35 Av	AP	01	1/8/2019	1/17/2019	589	0	0
			JP	01	1/8/2019	1/17/2019	131	0	0
			KS	01	1/8/2019	1/17/2019	0	0	0
748	18-833	185 St (102-13) bt 104 Av and Henderson Av	BI	12	5/29/2019	6/3/2019	829	0	0
			MD	12	5/29/2019	6/3/2019	876	0	0
749	18-839	Woodbine St (2017) and Forest Av	JL	05	2/25/2019	2/25/2019	445	0	0
750	18-842	69 St (66-66) bt 66 Rd and Metropolitan Av	JP	05	1/18/2019	1/25/2019	297	0	0
			JS	05	1/18/2019	1/25/2019	362	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
751	18-855	Lakewood Ave and Sutphin Blvd	AB	12	12/6/2019	-	900	0	0
			BI	12	4/1/2019	-	1,706	0	0
			EC	12	12/6/2019	-	1,908	0	0
			FM	12	12/6/2019	-	1,508	0	0
			JL	12	4/1/2019	-	790	0	0
			KJ	12	4/1/2019	-	245	0	0
			MD	12	4/1/2019	-	927	0	0
752	18-856	Cloverdale Blvd and 223 St (Alley Creek)	JP	11	5/9/2019	5/9/2019	0	0	0
753	18-887	Winchester Blvd bt 92 Av and 221 Pl	MD	13	2/15/2019	-	791	0	0
754	18-888	234 St (119-01) bt 119 Av and 120 Av	JL	13	3/29/2019	4/1/2019	993	0	0
			JP	13	3/29/2019	4/1/2019	772	0	0
755	18-897	145 St (116-19) bt Foch Blvd and 116 Av	BI	12	6/13/2019	6/14/2019	1,173	0	0
756	18-898	90 Av (172-20) bt 172 St and 175 St	JP	12	3/15/2019	-	587	0	0
757	19-010	47 Av (102-07) bt 102 St and 104 St	JL	04	2/22/2019	2/22/2019	612	0	0
758	19-017	B 90 St (315) bt Rockaway Fwy to B Channel Dr	CO	14	6/13/2019	-	111	0	0
759	19-018	93 Rd (224-14) bt 224 St and Gettysburg St	JL	13	1/29/2019	-	679	0	0
			KS	13	1/29/2019	-	0	0	0
760	19-019	250 St (82-65) bt 82 Av and 83 Av	JL	13	6/11/2019	6/11/2019	729	0	0
761	19-022	73 Av and 181 St	KJ	08	4/8/2019	4/8/2019	1,218	0	0
762	19-053	76 Av (164-28) bt 164 st and 166 St	JP	08	4/9/2019	4/9/2019	599	0	0
763	19-054	68 Dr bt 108 St and 110 St	KJ	06	5/3/2019	5/6/2019	276	0	0
			MD	06	5/3/2019	5/6/2019	413	0	0
764	19-091	Groton St (70-05) bt 70 Av and 71 Av	JB	06	12/23/2019	12/23/2019	957	0	0
765	19-093	Crocheron Av (189-01) bt Utopia Pkwy and 190 St	BI	11	4/18/2019	4/22/2019	795	0	0
766	19-105	Gateway Blvd and New Haven Av	BI	14	4/1/2019	4/1/2019	620	0	0
767	19-116	Park La S (119-12) bt Abingdon Rd and Onslow Pl	MD	09	3/11/2019	3/11/2019	804	0	0
768	19-132	Murdock Av bt 177 St and 178 St	KJ	12	5/7/2019	-	160	0	0
769	19-133	Parsons Blvd and 32 Av	KJ	07	6/24/2019	6/24/2019	1,276	0	0
770	19-134	78 St (69-02) bt 69 Av and 69 Rd	EV	05	6/17/2019	6/17/2019	0	0	0
771	19-146	160 Av (101-06) bt 101 St and 102 St	AP	10	4/10/2019	-	104	0	0
772	19-156	Northern Blvd W of Honeywell St (Northern Blvd Siphon Issues)	AP	01	5/24/2019	-	0	0	0
			JL	01	5/24/2019	-	0	0	0
			JP	01	5/24/2019	-	0	0	0
			RF	01	5/24/2019	-	0	0	0
773	19-158	Cross Bay Blvd (132-50) bt Chicot Rd and 133 Av	BI	10	6/5/2019	6/7/2019	1,343	0	0
774	19-159	122 Pl (133-25) bt 133 Av and 135 Av	KJ	10	6/25/2019	6/25/2019	572	0	0
775	19-160	145 Av (222-05) bt 222 St and 223 St	AP	13	6/25/2019	6/25/2019	508	0	0
776	19-177	117 St (84-36) bt 84 Av and 85 Av	SA	09	12/13/2019	12/16/2019	461	0	0
777	19-181	196 St (114-03) bt Murdock Av and 115 Av	FM	12	12/18/2019	12/19/2019	721	0	0
778	19-199	11 St bt 46 Av and 46 Rd	JP	02	5/2/2019	5/2/2019	247	0	0
779	19-205	146 St (114-14) bt Linden Blvd and 115 Av	BI	12	6/10/2019	-	604	0	0
780	19-226	74 Av (99-55) bt Metropolitan Av and Kessel St	AP	06	7/23/2019	1/31/2020	0	0	0
			MD	06	7/23/2019	1/31/2020	0	0	0
781	19-237	Ocean Crest Blvd bt Grassmere Terr and Nasby Pl	AP	14	6/12/2019	6/25/2019	0	0	0
			BI	14	6/12/2019	6/25/2019	486	0	0
782	19-255	Cross Bay Blvd (160-31) bt 161 Ave and 160 Ave	DC	10	12/30/2019	12/30/2019	783	0	0
783	19-258	110 Ave (212-14) bt 209 Pl and 212 St	FM	13	12/19/2019	12/23/2019	409	0	0
			JB	13	12/19/2019	12/23/2019	383	0	0
784	19-263	Jamaica Av (214-69) bt Vanderveer St and 215 St	JL	13	5/7/2019	-	362	0	0
785	19-310	Berrian Blvd from 45 St and DE	BI	01	5/30/2019	5/30/2019	30	0	0
786	19-343	14 Rd bt 119 St and 120 St	JL	07	6/17/2019	6/18/2019	403	0	0
787	19-374	Steinway St (35-13) bt 35 Av and 36 Av	JL	01	6/18/2019	6/20/2019	1,306	0	0
788	19-388	181 St (69-31) bt 69 Av and 73 Av	AP	08	6/10/2019	6/10/2019	892	0	0
789	19-412	Beach 116 St (117) bt Ocean pr and Rockaway Beach Blvd	CO	14	12/5/2019	12/6/2019	559	0	0
			PR	14	12/5/2019	12/6/2019	1,068	0	0
790	19-413	116 Av (209-20) bt Nashville Blvd and Springfield Blvd	FM	13	12/16/2019	12/18/2019	29	0	0
			PR	13	12/16/2019	12/18/2019	603	0	0
			SA	13	12/16/2019	12/18/2019	255	0	0
791	19-423	192 St (81-39) bt 81 Av and Aberdeen Rd	AB	08	12/13/2019	12/13/2019	619	0	0
792	19-476	Hillside Av (136-06) bt 136 St and Van Wyck Exp SR W	AP	09	7/22/2019	7/22/2019	448	0	0
793	19-595	Bowne St and Negundo Av	FM	07	12/4/2019	12/4/2019	448	0	0
794	19-597	12 Av (162-27) bt 162 St and 166 St	FM	07	12/4/2019	12/5/2019	574	0	0
795	19-673	86 Rd (139-51) bt 139 St and 143 St	SA	08	12/13/2019	12/13/2019	796	0	0
796	19-777	21 Av bt 150 St and Murray St	FM	07	12/5/2019	12/6/2019	1,530	0	0
797	19-781	202 St (40-10) bt DE and 42 Av	JB	11	12/12/2019	12/12/2019	710	0	0

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
798	19-783	150 St and S Conduit Av	DC	13	12/7/2019	1/31/2020	0	0	0
			EC	13	12/6/2019	4/30/2020	0	0	0
			EC		12/7/2019	1/31/2020	411	0	0
			JP	13	12/6/2019	4/30/2020	0	0	0
			KB	13	12/6/2019	4/30/2020	0	0	0
			RF	13	12/6/2019	4/30/2020	0	0	0
			SA	13	12/6/2019	4/30/2020	0	0	0
799	19-799	Sanitary Trunkline Sewer 1 In SE Queens	FM		12/12/2019	6/9/2020	247	0	0
800	19-808	231 St (80-56) bt Stronghurst Av and Seward Av	FM	13	12/31/2019	1/2/2020	430	0	0

Apeendix 2.1.4.2.4: Staten Island

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
801	14-534	Benton Av bt Hurlbert Av and Masson Av	KJ	02	5/13/2019	-	0	0	0
802	15-413	Elizabeth St (232) bt Forest Av and Allen Ct	MD	01	5/14/2019	-	0	0	0
803	16-039	Fairbanks Av (261) bt Hylan Blvd and Pendale St	MD	03	4/8/2019	4/9/2019	516	0	0
804	17-903	Castleton Av bt Grove Pl and Nicholas Av	KJ	01	5/13/2019	5/13/2019	242	0	0
805	17-983	Pouch Terr (49) bt Roderick Av and Piedmont Av	MD	02	4/12/2019	4/12/2019	195	0	0
806	18-108	Travis Av (446) bt Denker Pl and Nehring Av	BI	02	4/2/2019	4/3/2019	524	0	0
			MD	02	4/2/2019	4/3/2019	562	0	0
807	18-157	Broadway (700)	MA	01	12/19/2019	12/20/2019	896	0	0
808	18-219	Princeton Av (89)	AB	02	12/27/2019	12/27/2019	705	0	0
809	18-302	Paulding Av (121) bt Firth Rd and Speedwell Av	BI	02	4/3/2019	4/4/2019	1,848	0	0
810	18-445	Castleton Av (303) bt Harbor View Ct and Bend	MD	01	4/12/2019	-	348	0	0
811	18-532	Willowbrook Rd bt Neptune Pl and Wyona Av	MD	01	4/9/2019	-	585	0	0
812	18-554	Colony Av (212) bt Mapleton Av and Hempstead Av	KS	02	10/31/2018	1/7/2019	451	0	0
813	18-572	Father Capodanno Blvd and Midland Av Outfall	AP	02	9/12/2018	10/17/2019	0	0	0
			AP		4/4/2019	10/17/2019	0	0	0
			JL	02	4/4/2019	10/17/2019	0	0	0
			KS	02	9/12/2018	10/17/2019	0	0	0
			MA	02	9/12/2018	10/17/2019	0	0	0
			MA		4/4/2019	10/17/2019	0	0	0
814	18-831	Port Richmond Av (275) bt Palmer Av and Anderson Av	KJ	01	5/10/2019	-	0	0	0
815	18-864	Edward Curry Av bt Chelsea Rd and Gulf Av	KS	02	1/7/2019	1/7/2019	0	0	0
816	18-893	Mann Av (18) bt Victory Blvd and Marble St	MD	01	4/2/2019	4/2/2019	239	0	0
817	19-039	Vincent Av (105) bt Dalton Av and Coverly St	JL	03	4/5/2019	4/5/2019	1,232	0	0
818	19-071	Hylan Blvd (711) bt Piedmont Av and Roderick Av	KJ	02	5/13/2019	5/13/2019	555	0	0
819	19-092	Victory Blvd (3908) bt Simmons La and Meredith Av	KJ	02	5/10/2019	-	636	0	0
820	19-135	Clove Rd (821) bt Glenwood Pl and Broadway	KJ	01	3/12/2019	-	238	0	0
821	19-191	Belmont Pl (11) bt Daniel Low Ter and Bend	MD	01	4/10/2019	4/11/2019	890	0	0
822	19-241	Titus Av (1) bt New Dorp La and Ina St	KJ	01	5/9/2019	5/10/2019	1,054	0	0
823	19-572	South St (47) bt N Burgher Ave and Broadway	AB	01	12/23/2019	12/23/2019	519	0	0
824	19-674	Willow Av (66) bt Ditson St and Bay St	AB	01	12/23/2019	12/26/2019	1,461	0	0

Apeendix 2.1.4.2.5: Bronx

N	LOG	Location	Ins	CB	Start	Comp	*Footage (LF)		
							Cleaned	Surveyed	Walked
825	16-538	Blackrock Av bt Pugsley Av and Olmstead Av	KJ	09	5/20/2019	5/20/2019	838	0	0
826	17-793	Stillwell Av (1680) bt Rhinelander Av and Pelham Pkwy S	MD	11	5/17/2019	5/17/2019	237	0	0
827	18-776	Grand Concourse (2910) bt Minerva Pl and E 199 St	KJ	07	4/12/2019	5/17/2019	440	0	0
			MD	07	4/12/2019	5/17/2019	0	0	0
828	19-015	Soundview Av (413) bt Underhill Av and Leland Av	KJ	09	6/25/2019	6/25/2019	201	0	0
829	19-059	Halleck St bt E Bay Av and Viele Av	AP	02	3/11/2019	3/11/2019	0	0	0
830	19-110	E 225 St (849) bt Barnes Av and Bronxwood Av	AP	12	2/28/2019	3/1/2019	859	0	0
831	19-266	Sedgwick Av (1560) bt Cross Bronx Expy Et 1 D SB and W 176 St	KJ	05	5/3/2019	2/18/2020	336	0	0

2019 In-House Survey Total, LF:	176,063	(33.35 mi)	1/2/2019	12/31/2019	176,063	0	0
Operating Expenses, \$	3,172,957						
* No footage indicates investigation where inspection of sewers was not required or completed							
2019 Citywide Total, LF:	247,979	(46.97 mi)	1/2/2019	12/31/2019	183,098	51,964	12,917
Operating Expenses, \$	3,172,957						

Appendix 2.2: BWT

Appendix 2.2.1: Table 1 - Summary of 100 Telemetered Regulators

Summary of 100 Telemetered Regulators													
				= 17 with Inclinometers									
				= 27 Key Regulators*								05/01/16	
No.	WPCP	Reg. No.	Regulator Location	Outfall SPDES No.	Reg. Type	Flow Compartment	Weir Data		Hydraulic Capacity (mgd)	Flow Data			
							Length (ft)	Elev. (ft)		Peak (mgd)	Mean DWF (mgd)		
1	26W	01	TIDE GATE (26 WARD WPCP)	004	TG.	S.G./72"x56"			N/A	21.71	19.15		
2	26W	02	WILLIAMS & FLATLANDS AVES.	003	HYD.	S.G./48"x36"	68'-0"	-6.00	32.85	11.34	9.80		
3	26W	03	CRESENT ST. & FLATLANDS AVE.	005	HYD.	S.G./48"x36"	76'-0"	-6.85	38.53	29.72	24.64		
3 Subtotal													
1	BBL	L-04	47th AV. BETW. 28th & 29th ST.	026	HYD	SG/36"x30"	9'-0"	-2.50	24.46	9.57	6.67		
2	BBL	L-21	37th AVE. & VERNON BLVD.	028	HYD	SG/30"x24"	22'-6"	-4.00	20.00	14.50	11.19		
3	BBL	L-22	VRNON BLVD. & BROADWAY	029	HYD	SG/30"x24"	12'-0"	-5.00	19.72	12.18	9.06		
4	BBL	L-23	30th RD. & VERNON BLVD.	030	DC/TG	FO/12"DIA.	2'-0"	-1.75	1.36	N/A	0.21		
5	BBL	L-30	ASTORIA PARKS E/O SHORE BLVD.	034	HYD	SG/24"x24"	13'-0"	-0.25	12.67	15.48	12.28		
6	BBH	02	45th ST. & PLANT	002	DC/TG	AT THE PLANT	9'-0"	-3.50	N/A	89.08	61.32		
7	BBH	03	HAZEN ST. & 19th ST. AVE.	003	DC/TG	FO/18" DIA.	5'-6"	+4.00	7.45	2.16	1.54		
8	BBH	06	108th ST. & DITMARS BLVD.	008	DC	FO,DP	4'-0"	+9.00	94.94	N/A	33.29		
9	BBH	09	108th ST. & 43rd. AVE.	008	DC	FO,DP	5'-0"	+14.80	99.58	49.71	40.27		
9 Subtotal													
1	HP	01	E.177th ST. E/O TIERNEY PL.	022	HYD.	S.G./18"x12"	9'-2"	-5.00	4.35	1.52	0.61		
2	HP	02	SHORE DR. S/O PENNYFIELD AVE.	021	HYD.	S.G./30"x30"	8'-0"	-4.77	13.17	6.56	5.61		
3	HP	03	CALHOUN AVE. S/O SCHURZ AVE.	019	HYD.	S.G./12"x12"	8'-0"	-2.88	2.71	1.84	1.30		
4	HP	04	BRUSH AVE. & BRUCKNER BLVD.	016	HYD.	S.G./30"x30"	8'-10"	-4.50	9.84	4.18	3.18		
5	HP	05	WHITE PL. RD. S/O RIVER AVE.	011	HYD.	S.G./18"x12"	26'-0"	-4.50	1.87	N/A	0.50		
6	HP	06	WHITE PL. RD. & O'BRIEN AVE.	011	HYD.	S.G./2EA.72"x48"	8'-0"	-5.00	150.13	81.41	66.49		
7	HP	08	TRUXTON ST. & OAKPOINT AVE.	025	HYD.	S.G./24"x24"	9'-0"	-2.92	15.27	6.86	5.30		
8	HP	09	TIFFANY ST. & EAST BAY AVE.	002	HYD.	S.G.48"x36"	12'-0"	-3.60	52.54	15.41	11.94		
9	HP	10	HUNTS POINT AVE. & RYAWA AVE.	003	HYD.	S.G./2EA.36"x30"	15'-0"	-3.65	56.38	18.01	15.58		
10	HP	11	EMERSON & SCHURZ AVENUES	017	HYD.	S.G.18"x18"	16'-6"	-4.00	5.58	2.33	1.40		
11	HP	12	ROBINSON & SCHURZ AVENUES	018	HYD.	S.G./12"x12"	4'-0"	-2.72	3.48	0.17	0.09		
12	HP	13	METCALF AVE. & SOUNDVIEW PARK	009	HYD.	S.G./2EA.36"x30"	21'-0"	-5.00	51.37	44.07	21.63		
13	HP	14	EDGEWATER PARK	026	TG.	F.O.			N/A	N/A	N/A		
13 Subtotal													
1	JA	01	JFK AIRPORT	006	DC/TG.	F.O.	12'-0"	+1.00	N/A	N/A	53.95		
2	JA	02	79th ST. N. CONDUIT AVE.	26W-005	HYD. MAN	S.G./36"x24" S.G./36"x48"	5'-0"	-0.21	23.14	N/A	2.82		
3	JA	03	123rd. PLACE & 150th AVE.	003	HYD.	S.G./36"x48"	16'-3"	+3.15	40.92	14.20	11.06		
4	JA	09	LINDEN BLVD. & SPRINGFIELD BLVD.	005	DC.	F.O.	22'-0"	+27.77	N/A	N/A	8.30		
5	JA	14	124th ST. & N.CONDUIT AVE.	003a	HYD.	S.G./24"x18"	30'-0"	-1.35	N/A	3.70	2.69		
5 Subtotal													
1	NC(Q)	Q-01	RUST ST. & 56th ST.	077	HYD.	S.G./24"x24"	16'-0"	+1.00	15.14	8.07	4.92		
2	NC(B)	B-01	JOHNSON AVE. W/O PORTER AVE.	015	HYD.	S.G./2ea.48"x36"		-4.68	157.45	44.53	36.57		
3	NC(B)	B-04	KENT AVE. & TAYLOR ST.	014	HYD.	S.G./48"x36"	12'-3"	-8.57	41.08	47.68	40.91		
4	NC(B)	B-05	DIVISION AVE. W/O KENT AVE.	013	HYD.	S.G./48"x36"	12'-0"	-4.59	52.86	20.17	17.27		
5	NC(B)	B-06	S.5th AVE. W/O KENT AVE.	012	HYD.	S.G./36"x24"	16'-6"	-2.59	20.95	15.99	11.98		

1	RK	01	B.106th ST. & BEACH CHANNEL DR.	029	MECH.	.G./2EA.40.75"x20	5'-6"	-6.00	103.98	13.89	10.99
1 Subtotal											
1	TI	09	LINDEN PL & 32nd AVE.	011	HYD.	F.O. 60"DIA.	15'-9"	+4.75	103.40	46.74	32.56
2	TI	10A	144th ST. & 7th AVE.	003	DC.	F.O./12"DIA.	5'-0"	+8.50	30.34	9.89	N/A
3	TI	13	15th DR. & WILLETS POINT BLVD.	023	HYD.	S.G./24"x18"	9'-0"	+24.65	12.78	3.87	2.81
4	TI	30	QUINCE AVE. & KISSENA BLVD.	010	MECH.	S.G./9"x33"	10'-0"	+1.88	5.45	5.27	2.10
5	TI	40	FRESH MEADOW LA. & PECK AVE.	010	HYD.	S.G./36"x28"	11'-6"	+19.05	24.31	7.56	5.00
6	TI	46	210 th ST. & LIE (N.S)	008	DC.	F.O./30"DIA.	12'-0"	+51.10	15.91	4.90	2.54
7	TI	47	218th ST & LIE (N.S)	008	DC.	F.O.	7'-6"	+69.40	12.48	0.80	0.61
8	TI	49	220th PL. & 46th AVE.	008	DC.	F.O./12"DIA.	6'-6"	+44.50	1.57	0.43	0.23
8 Subtotal											
1	WI(M)	02B	N/O E. 74th ST. & FDR DR.	003	HYD.	S.G./30"x24"			26.00	N/A	N/A
2	WI(M)	07	E.79th ST. & FDR DR.	008	HYD.	S.G./30"x24"	4'-4"	-2.14	22.27	11.98	8.00
3	WI(M)	23	E.106th ST. & FDR DR.	023	HYD.	S.G./30"x24"	15'-0"	-3.82	16.84	10.17	6.81
4	WI(M)	24	E.110th ST. & FDR DR.	024	HYD.	S.G./48"x36"	17'-0"	-4.57	38.28	14.63	10.70
5	WI(M)	38	E.135th ST. & E/O HARLEM R. DR.	038	HYD.	S.G./24"x24"	5'-0"	-4.30	15.36	13.38	10.63
6	WI(M)	45	W.147th ST. & IRT YARD	045	MAN.	S.G./18"x18"	7'-6"	-4.47	7.29	6.88	5.28
7	WI(M)	46	W.151st ST. & PLAYGROUND	046	HYD.	S.G./30"x24"	13'-0"	-3.50	19.36	11.37	10.20
8	WI(M)	51	N/S HARLEM R. DR. (W.167th ST.)	051	HYD.	S.G./18"x18"	3'-6"	+9.80	10.81	5.69	3.98
9	WI(M)	52	N/S HARLEM R. DR. (W.176th ST.)	052	HYD.	S.G./18"x18"	7'-0"	+43.88	8.32	6.20	3.94
10	WI(B)	53	BRUCKNER BLVD. & BROOK AVE.	068	HYD.	S.G./42"x42"	25'-0"	-7.42	248.67	62.39	52.64
11	WI(B)	58	MAJOR DEEGAN S/S 138th ST.	075	HYD.	S.G./30"x24"	11'-2"	-3.75	16.06	17.47	7.79
12	WI(B)	60	JEROME AVE. & McCOMBS DAM PARK	062	HYD.	S.G./42"x42"	9'-3"	-2.81	67.29	16.10	13.42
13	WI(B)	62	UNDERCLIFF & SEDGEWICK AVE.	060	HYD.	S.G./30"x24"	12'-8"	-3.83	16.36	36.24	22.66
14	WI(B)	67	E.192nd ST. W/O BAYLEY AVE.	056	HYD.	S.G./48"x36"	28'-0"	-3.55	57.85	49.05	36.38
15	WI(B)	68	E.149th ST. & EAST RIVER	072	HYD.	S.G./24"x24"	8'-0"	-3.00	13.6	9.14	8.27
15 Subtotal											

15 Subtotal

100 Total

*Original count of 28 Key Regulators temporarily included PR-35W while PR-13E and PR-06W were out of service for repair.

Appendix 2.2.2: Table 2 - Sediments From Non-interceptor Assets

Plant Name	Asset Type Cleaned	Tons Removed	Cubic Yards Removed
BB	AT#1	134.6	86.8
OB	<u>Inffluent</u> Thickener & sludge Well	36.2	23.3
PR	PST#4	131.7	86.0
WI	WI-D Battery Tank, Influent Channel, and FST #34, 36	2997	1934.1
Total		3299.5	2130.2

CSO Name	Asset Type Cleaned	Tons Removed	Cubic Yards Removed
Holding Tank	Paerdegat Facility	846.6	546.2
Total		846.6	546.2

Pump Station Name	Asset Type Cleaned	Tons Removed	Cubic Yards Removed
2nd Ave	Wet Well & Bar Screens	8.28	5.34
Auburn Ave	Wet Well & Bar Screens	3.44	2.22
Ave M	Wet Well & Bar Screens	12.92	8.34
Ave V	Wet Well & Bar Screens	331.90	214.14
<u>Baywater Ave</u>	Wet Well & Bar Screens	12.30	7.94
Borden Ave	Wet Well & Bar Screens	7.27	4.69
Broad Channel	Wet Well & Bar Screens	13.77	8.88
Cannon Ave	Wet Well & Bar Screens	39.24	25.31
Hannah St	Wet Well & Bar Screens	139.66	90.09
Mark St.	Wet Well & Bar Screens	3.44	2.22
<u>Mersereau Ave</u>	Wet Well & Bar Screens	51.65	33.31
<u>Paerdegat</u>	Wet Well & Bar Screens	128.59	82.89
Richmond Hill Rd.	Wet Well & Bar Screens	26.31	16.97
Riker's Island North	Wet Well & Bar Screens	106.82	68.92
Seagirt Ave	Wet Well & Bar Screens	42.26	27.26
South Beach	Wet Well & Bar Screens	44.26	28.56
Victory Blvd	Wet Well & Bar Screens	7.16	4.62
Total		979.27	631.7

Appendix 2.2.3: Table 3 - Intercepting Sewer Inspections 2019 – Pipe Rating Index and Ranking

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
BB_E_1	2.0	0.0	4	4
BB_E_10	2.3	3.0	4	3
BB_E_103	2.3	0.0	4	4
BB_E_104	2.3	0.0	4	4
BB_E_104A	2.0	0.0	4	4
BB_E_104B	2.0	0.0	4	4
BB_E_106	2.0	0.0	4	4
BB_E_107	2.0	0.0	4	4
BB_E_11	2.2	0.0	4	4
BB_E_110	2.0	0.0	4	4
BB_E_111	2.4	0.0	4	4
BB_E_112	2.8	0.0	4	4
BB_E_113	3.0	0.0	3	4
BB_E_114	2.3	0.0	4	4
BB_E_115	2.0	0.0	4	4
BB_E_116	2.0	2.0	4	4
BB_E_117	2.0	0.0	4	4
BB_E_118	2.0	0.0	4	4
BB_E_119	2.0	0.0	4	4
BB_E_11A	3.5	0.0	3	4
BB_E_12	2.1	0.0	4	4
BB_E_120	2.1	0.0	4	4
BB_E_121	2.0	0.0	4	4
BB_E_122	2.0	0.0	4	4
BB_E_123	2.0	0.0	4	4
BB_E_124	2.0	0.0	4	4
BB_E_125	2.0	0.0	4	4
BB_E_126	2.0	0.0	4	4
BB_E_127	2.0	0.0	4	4
BB_E_128	2.3	0.0	4	4
BB_E_129	2.2	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
BB_E_13	2.1	0.0	4	4
BB_E_130	2.1	0.0	4	4
BB_E_131	2.6	0.0	4	4
BB_E_132	2.2	0.0	4	4
BB_E_133	2.0	0.0	4	4
BB_E_134	3.5	0.0	3	4
BB_E_135	2.8	0.0	4	4
BB_E_136	3.7	0.0	3	4
BB_E_137	2.6	0.0	4	4
BB_E_138	2.9	2.0	4	4
BB_E_139	2.5	0.0	4	4
BB_E_14	2.0	5.0	4	3
BB_E_140	3.2	0.0	3	4
BB_E_141	3.5	0.0	3	4
BB_E_144	2.0	0.0	4	4
BB_E_145	2.0	0.0	4	4
BB_E_146	2.0	0.0	4	4
BB_E_147	2.0	0.0	4	4
BB_E_15	2.0	0.0	4	4
BB_E_16	2.0	0.0	4	4
BB_E_17	2.0	0.0	4	4
BB_E_18	2.0	0.0	4	4
BB_E_2	2.2	0.0	4	4
BB_E_21	2.0	0.0	4	4
BB_E_22	2.0	5.0	4	3
BB_E_23	2.0	0.0	4	4
BB_E_24	2.0	0.0	4	4
BB_E_25	2.0	0.0	4	4
BB_E_26	2.0	0.0	4	4
BB_E_27	2.0	0.0	4	4
BB_E_28	2.0	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
BB_E_29	2.0	0.0	4	4
BB_E_3	2.1	0.0	4	4
BB_E_30	2.0	0.0	4	4
BB_E_31	2.0	0.0	4	4
BB_E_32	2.0	0.0	4	4
BB_E_33	2.0	0.0	4	4
BB_E_34	1.8	0.0	4	4
BB_E_35	2.0	0.0	4	4
BB_E_36	2.0	0.0	4	4
BB_E_37	2.2	0.0	4	4
BB_E_37A	2.0	0.0	4	4
BB_E_38	2.0	0.0	4	4
BB_E_39	2.0	0.0	4	4
BB_E_40	2.0	0.0	4	4
BB_E_41	2.0	0.0	4	4
BB_E_42	2.0	0.0	4	4
BB_E_43	2.0	0.0	4	4
BB_E_44	2.0	0.0	4	4
BB_E_45	2.0	0.0	4	4
BB_E_45A	2.0	0.0	4	4
BB_E_46	2.0	0.0	4	4
BB_E_47	2.0	0.0	4	4
BB_E_47A	2.0	0.0	4	4
BB_E_48	2.0	0.0	4	4
BB_E_49	2.0	0.0	4	4
BB_E_50	2.0	0.0	4	4
BB_E_51	2.0	0.0	4	4
BB_E_52	2.0	0.0	4	4
BB_E_53	2.0	0.0	4	4
BB_E_54	2.0	4.0	4	3
BB_E_55	2.0	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
BB_E_56	2.0	0.0	4	4
BB_E_57	2.0	0.0	4	4
BB_E_58	2.0	0.0	4	4
BB_E_59	2.0	0.0	4	4
BB_E_60	2.0	0.0	4	4
BB_E_61	2.3	0.0	4	4
BB_E_62	2.7	0.0	4	4
BB_E_71	2.1	0.0	4	4
BB_E_78	2.2	5.0	4	3
BB_E_8	2.0	0.0	4	4
BB_E_80	2.0	3.0	4	3
BB_E_80A	2.0	0.0	4	4
BB_E_81	2.4	0.0	4	4
BB_E_81A	2.0	5.0	4	3
BB_E_82	2.4	0.0	4	4
BB_E_83	2.0	0.0	4	4
BB_E_84	2.0	0.0	4	4
BB_E_85	2.0	0.0	4	4
BB_E_86	2.0	0.0	4	4
BB_E_87	2.3	3.0	4	3
BB_E_88	3.0	0.0	3	4
BB_E_89	2.0	0.0	4	4
BB_E_9	2.0	0.0	4	4
BB_E_90	2.3	0.0	4	4
BB_E_91	2.0	0.0	4	4
BB_W_10	2.0	0.0	4	4
BB_W_10A	2.0	0.0	4	4
BB_W_11	2.2	0.0	4	4
BB_W_12	2.3	0.0	4	4
BB_W_13	2.2	0.0	4	4
BB_W_14	2.0	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
BB_W_15	2.6	3.0	4	3
BB_W_16	2.0	4.0	4	3
BB_W_17	2.5	4.0	4	3
BB_W_18	2.4	1.7	4	4
BB_W_19	2.0	0.0	4	4
BB_W_2	2.0	0.0	4	4
BB_W_20	2.0	0.0	4	4
BB_W_21	2.0	0.0	4	4
BB_W_22	2.2	5.0	4	3
BB_W_23	2.0	0.0	4	4
BB_W_24	2.0	0.0	4	4
BB_W_25	2.0	0.0	4	4
BB_W_26	2.1	0.0	4	4
BB_W_27	2.0	3.0	4	3
BB_W_28	2.0	3.0	4	3
BB_W_29	2.0	3.0	4	3
BB_W_3	2.0	0.0	4	4
BB_W_30	2.0	3.0	4	3
BB_W_31	2.0	0.0	4	4
BB_W_32	2.0	0.0	4	4
BB_W_33	2.1	0.0	4	4
BB_W_34	2.1	0.0	4	4
BB_W_35	2.0	5.0	4	3
BB_W_36	2.0	0.0	4	4
BB_W_37	2.0	0.0	4	4
BB_W_38	2.0	0.0	4	4
BB_W_39	2.0	0.0	4	4
BB_W_4	2.0	0.0	4	4
BB_W_40	2.0	0.0	4	4
BB_W_41	2.0	0.0	4	4
BB_W_42	2.0	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
BB_W_43	2.0	0.0	4	4
BB_W_44	2.0	0.0	4	4
BB_W_45	2.0	0.0	4	4
BB_W_46	2.0	0.0	4	4
BB_W_47	2.0	0.0	4	4
BB_W_48	2.0	0.0	4	4
BB_W_49	2.8	0.0	4	4
BB_W_5	2.0	0.0	4	4
BB_W_50	2.0	0.0	4	4
BB_W_51	2.0	0.0	4	4
BB_W_52	2.0	0.0	4	4
BB_W_53	2.0	0.0	4	4
BB_W_54	2.0	0.0	4	4
BB_W_55	2.0	3.7	4	3
BB_W_55A	2.0	5.0	4	3
BB_W_56	2.0	0.0	4	4
BB_W_57	2.2	0.0	4	4
BB_W_58	2.1	0.0	4	4
BB_W_59	2.0	3.0	4	3
BB_W_6	1.9	2.0	4	4
BB_W_60	2.0	0.0	4	4
BB_W_61	2.0	0.0	4	4
BB_W_62	2.0	0.0	4	4
BB_W_63	1.9	0.0	4	4
BB_W_64	2.0	0.0	4	4
BB_W_65	2.0	0.0	4	4
BB_W_65A	2.0	0.0	4	4
BB_W_66	2.0	0.0	4	4
BB_W_67	2.3	0.0	4	4
BB_W_68	2.0	0.0	4	4
BB_W_69	2.1	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
BB_W_7	2.0	0.0	4	4
BB_W_8	2.1	0.0	4	4
BB_W_9	1.9	0.0	4	4
CI_W_32	2.0	3.0	4	3
CI_W_33	2.0	0.0	4	4
CI_W_33A	2.1	0.0	4	4
CI_W_34	2.0	0.0	4	4
CI_W_35	2.0	0.0	4	4
CI_W_36	2.0	0.0	4	4
CI_W_37	2.1	3.5	4	3
CI_W_38	2.0	0.0	4	4
CI_W_38A	2.0	0.0	4	4
CI_W_39	2.2	0.0	4	4
CI_W_40	2.8	3.0	4	3
CI_W_41	3.3	0.0	3	4
CI_W_42	3.3	0.0	3	4
CI_W_43	3.0	0.0	3	4
CI_W_45	2.0	3.0	4	3
CI_W_46	2.0	3.0	4	3
CI_W_47	2.0	3.0	4	3
CI_W_48	2.0	3.0	4	3
CI_W_49	2.0	3.0	4	3
CI_W_50	2.2	0.0	4	4
CI_W_51	2.0	0.0	4	4
CI_W_52	2.0	0.0	4	4
CI_W_52A	2.0	0.0	4	4
CI_W_55	3.1	0.0	3	4
CI_W_56	3.4	0.0	3	4
CI_W_57	2.0	0.0	4	4
CI_W_57A	3.7	0.0	2	4
JA_E_10	2.0	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
JA_E_11	2.0	0.0	4	4
JA_E_12	2.3	0.0	4	4
JA_E_13	2.0	0.0	4	4
JA_E_14	2.0	0.0	4	4
JA_E_15	2.0	0.0	4	4
JA_E_16	2.0	0.0	4	4
JA_E_17	2.5	0.0	4	4
JA_E_18	2.5	0.0	4	4
JA_E_19	2.7	0.0	4	4
JA_E_20	2.0	0.0	4	4
JA_E_21	2.0	0.0	4	4
JA_E_22	2.0	0.0	4	4
JA_E_23	3.0	0.0	3	4
JA_E_24	2.3	0.0	4	4
JA_E_25	2.8	0.0	4	4
JA_E_26	2.5	0.0	4	4
JA_E_27	2.0	0.0	4	4
JA_E_28	2.0	0.0	4	4
JA_E_29	2.3	0.0	4	4
JA_E_3	2.3	0.0	4	4
JA_E_30	2.0	0.0	4	4
JA_E_4	2.3	0.0	4	4
JA_E_5	2.0	0.0	4	4
JA_E_6	2.5	0.0	4	4
JA_E_7	2.0	0.0	4	4
JA_E_8	2.0	5.0	4	3
JA_E_9	2.0	0.0	4	4
NR_S_4	2.0	0.0	4	4
OH_N_1	2.0	0.0	4	4
OH_N_1A	2.7	0.0	2	4
OH_N_2	2.0	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
OH_N_3	2.0	0.0	4	4
OH_N_4	2.0	0.0	4	4
OH_N_5	2.5	0.0	4	4
OH_N_6	3.2	3.0	2	3
OH_N_7	4.2	0.0	1	4
OH_S_10	2.4	2.0	4	4
OH_S_10A	2.1	0.0	4	4
OH_S_11	2.0	0.0	4	4
OH_S_12	2.0	0.0	4	4
OH_S_13	2.0	0.0	4	4
OH_S_14	2.0	0.0	4	4
OH_S_15	2.0	0.0	4	4
OH_S_16	2.0	0.0	4	4
OH_S_16A	2.0	0.0	4	4
OH_S_2	2.1	0.0	4	4
OH_S_3	2.2	0.0	4	4
OH_S_4	2.1	0.0	4	4
OH_S_5	5.0	0.0	1	4
OH_S_6	5.0	0.0	1	4
OH_S_7	5.0	0.0	1	4
OH_S_8	2.0	0.0	4	4
OH_S_9	2.0	2.0	4	4
TI_E_1	3.4	0.0	2	4
TI_E_10	2.0	0.0	4	4
TI_E_11	2.0	0.0	4	4
TI_E_11A	2.0	0.0	4	4
TI_E_12	2.0	1.0	4	4
TI_E_13	2.0	0.0	4	4
TI_E_14	2.0	0.0	4	4
TI_E_15	2.0	0.0	4	4
TI_E_16	2.0	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
TI_E_17	2.1	0.0	4	4
TI_E_18	2.0	0.0	4	4
TI_E_19	2.0	0.0	4	4
TI_E_1A	2.0	0.0	4	4
TI_E_1B	2.0	0.0	4	4
TI_E_1C	2.0	0.0	4	4
TI_E_2	2.0	3.0	4	3
TI_E_20	2.0	3.0	4	3
TI_E_21	2.0	3.0	4	4
TI_E_22	2.0	5.0	4	3
TI_E_22A	2.0	0.0	4	4
TI_E_23	2.0	5.0	4	3
TI_E_24	2.0	0.0	4	4
TI_E_25	2.0	0.0	4	4
TI_E_26	2.0	0.0	4	4
TI_E_27	2.0	0.0	4	4
TI_E_28	2.0	0.0	4	4
TI_E_29	2.0	0.0	4	4
TI_E_3	2.0	3.0	4	3
TI_E_30	2.0	5.0	4	3
TI_E_31	2.1	0.0	4	4
TI_E_32	2.0	0.0	4	4
TI_E_33	2.0	0.0	4	4
TI_E_34	2.1	0.0	4	4
TI_E_35	2.0	0.0	4	4
TI_E_36	2.0	0.0	4	4
TI_E_37	2.0	0.0	4	4
TI_E_38	2.0	0.0	4	4
TI_E_39	2.1	0.0	4	4
TI_E_4	2.0	0.0	4	4
TI_E_40	2.0	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
TI_E_41	2.0	0.0	4	4
TI_E_42	2.3	0.0	4	4
TI_E_43	2.4	5.0	4	3
TI_E_44	2.2	5.0	4	3
TI_E_45	2.7	0.0	4	4
TI_E_46	2.9	5.0	1	3
TI_E_47	2.2	0.0	4	4
TI_E_48	2.2	5.0	4	3
TI_E_49	2.0	0.0	4	4
TI_E_5	2.0	0.0	4	4
TI_E_50	2.0	0.0	4	4
TI_E_51	2.0	0.0	4	4
TI_E_52	2.0	0.0	4	4
TI_E_53	2.0	0.0	4	4
TI_E_54	2.3	0.0	4	4
TI_E_55	2.0	0.0	4	4
TI_E_56	2.6	5.0	4	3
TI_E_57	2.0	0.0	4	4
TI_E_58	2.0	0.0	4	4
TI_E_59	2.0	5.0	4	3
TI_E_6	2.0	0.0	4	4
TI_E_60	2.0	0.0	4	4
TI_E_61	2.0	0.0	4	4
TI_E_62	2.0	0.0	4	4
TI_E_63	2.0	0.0	4	4
TI_E_64	2.0	0.0	4	4
TI_E_65	2.0	0.0	4	4
TI_E_66	2.0	5.0	4	3
TI_E_67	2.0	0.0	4	4
TI_E_68	2.0	2.0	4	4
TI_E_69	2.0	2.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
TI_E_7	2.0	0.0	4	4
TI_E_70	2.0	2.5	4	4
TI_E_71	2.0	2.0	4	4
TI_E_72	2.0	0.0	4	4
TI_E_73	2.6	0.0	1	4
TI_E_74	5.0	0.0	2	4
TI_E_8	2.2	0.0	4	4
TI_E_9	2.1	0.0	4	4
TI_S_10	2.0	0.0	4	4
TI_S_100	2.0	0.0	4	4
TI_S_101	2.0	0.0	4	4
TI_S_102	2.0	0.0	4	4
TI_S_103	2.0	0.0	4	4
TI_S_104	2.2	0.0	4	4
TI_S_105	2.0	0.0	4	4
TI_S_106	2.0	0.0	4	4
TI_S_107	2.0	0.0	4	4
TI_S_108	2.0	3.0	4	3
TI_S_109	2.0	0.0	4	4
TI_S_11	2.0	0.0	4	4
TI_S_110	2.0	0.0	4	4
TI_S_111	2.0	0.0	4	4
TI_S_112	2.0	0.0	4	4
TI_S_113	2.0	0.0	4	4
TI_S_114	2.0	0.0	4	4
TI_S_114A	2.0	0.0	4	4
TI_S_115	2.3	4.0	4	3
TI_S_116	2.2	0.0	4	4
TI_S_117	2.0	0.0	4	4
TI_S_118B	2.0	0.0	4	4
TI_S_119A	3.0	3.0	3	3

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
TI_S_12	2.0	0.0	4	4
TI_S_120B	1.9	0.0	4	4
TI_S_121	3.0	3.1	3	3
TI_S_122B	2.0	0.0	4	4
TI_S_123A	3.0	0.0	3	4
TI_S_124A	3.8	0.0	2	4
TI_S_124B	2.0	0.0	4	4
TI_S_125	2.0	0.0	4	4
TI_S_126	2.0	0.0	4	4
TI_S_127	2.1	0.0	4	4
TI_S_128	2.0	0.0	4	4
TI_S_13	2.0	0.0	4	4
TI_S_131	2.0	0.0	4	4
TI_S_132	2.1	0.0	4	4
TI_S_133	2.3	0.0	4	4
TI_S_134	2.0	0.0	4	4
TI_S_135	2.3	0.0	4	4
TI_S_136	2.6	0.0	4	4
TI_S_137	4.0	3.0	1	3
TI_S_138	2.0	0.0	4	4
TI_S_139	2.0	0.0	4	4
TI_S_14	2.0	0.0	4	4
TI_S_140	2.0	0.0	4	4
TI_S_141	2.0	0.0	4	4
TI_S_142	2.3	0.0	4	4
TI_S_143	2.0	0.0	4	4
TI_S_144	2.0	0.0	4	4
TI_S_145	2.5	0.0	4	4
TI_S_146	2.0	0.0	4	4
TI_S_147	2.0	0.0	4	4
TI_S_147A	2.0	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
TI_S_148	2.0	0.0	4	4
TI_S_149	2.0	0.0	4	4
TI_S_15	2.0	0.0	4	4
TI_S_150	2.0	0.0	4	4
TI_S_151	2.0	0.0	4	4
TI_S_152	2.0	0.0	4	4
TI_S_153	2.0	0.0	4	4
TI_S_154	2.4	0.0	4	4
TI_S_155	2.0	0.0	4	4
TI_S_156	2.3	0.0	4	4
TI_S_157	2.0	0.0	4	4
TI_S_158	2.0	0.0	4	4
TI_S_159	2.0	0.0	4	4
TI_S_16	2.2	3.0	4	3
TI_S_160	2.0	0.0	4	4
TI_S_161	2.0	0.0	4	4
TI_S_162	2.0	0.0	4	4
TI_S_163	2.0	0.0	4	4
TI_S_164	2.0	0.0	4	4
TI_S_165	2.0	0.0	4	4
TI_S_166	2.4	0.0	4	4
TI_S_167	2.0	0.0	4	4
TI_S_168	2.0	0.0	4	4
TI_S_169	2.0	0.0	4	4
TI_S_17	2.0	0.0	4	4
TI_S_170	2.0	0.0	4	4
TI_S_171	1.8	0.0	4	4
TI_S_172	2.0	0.0	4	4
TI_S_173	2.0	0.0	4	4
TI_S_174	2.0	0.0	4	4
TI_S_175	2.0	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
TI_S_176	2.0	0.0	4	4
TI_S_177	2.0	0.0	4	4
TI_S_178	2.0	0.0	4	4
TI_S_179	2.0	0.0	4	4
TI_S_18	2.0	0.0	4	4
TI_S_180	2.0	0.0	4	4
TI_S_181	2.0	0.0	4	4
TI_S_182	2.0	0.0	4	4
TI_S_183	2.0	0.0	4	4
TI_S_184	2.0	0.0	4	4
TI_S_186	2.0	0.0	4	4
TI_S_19	2.1	0.0	4	4
TI_S_190	2.0	0.0	4	4
TI_S_191	2.0	0.0	4	4
TI_S_192	2.0	0.0	4	4
TI_S_193	2.0	0.0	4	4
TI_S_194	2.0	0.0	4	4
TI_S_195	2.0	0.0	4	4
TI_S_195A	2.0	0.0	4	4
TI_S_198	2.0	0.0	4	4
TI_S_2	2.0	0.0	4	4
TI_S_20	2.0	0.0	4	4
TI_S_200	2.0	0.0	4	4
TI_S_201	2.0	3.0	4	3
TI_S_202	2.0	3.0	4	3
TI_S_203	2.5	0.0	4	4
TI_S_204	2.3	0.0	4	4
TI_S_205	2.0	0.0	4	4
TI_S_206	2.0	0.0	4	4
TI_S_207	2.0	0.0	4	4
TI_S_208	2.0	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
TI_S_209	2.0	0.0	4	4
TI_S_21	2.0	0.0	4	4
TI_S_210	2.0	0.0	4	4
TI_S_211	2.0	0.0	4	4
TI_S_212	2.0	0.0	4	4
TI_S_213	2.0	2.0	4	4
TI_S_214	1.9	0.0	4	4
TI_S_215	2.5	0.0	4	4
TI_S_215A	2.3	3.0	4	3
TI_S_216	2.0	0.0	4	4
TI_S_216A	2.0	0.0	4	4
TI_S_217	2.0	0.0	4	4
TI_S_217A	2.0	0.0	4	4
TI_S_217B	2.0	0.0	4	4
TI_S_218	2.9	0.0	4	4
TI_S_22	2.0	0.0	4	4
TI_S_23	2.0	0.0	4	4
TI_S_24	2.0	0.0	4	4
TI_S_25	2.1	0.0	4	4
TI_S_26	2.0	0.0	4	4
TI_S_27	2.4	0.0	4	4
TI_S_28	2.1	0.0	4	4
TI_S_29	2.1	0.0	4	4
TI_S_3	2.0	0.0	4	4
TI_S_30	2.7	0.0	4	4
TI_S_31	3.0	0.0	3	4
TI_S_32	2.5	0.0	4	4
TI_S_33	2.3	0.0	4	4
TI_S_34	2.0	0.0	4	4
TI_S_35	2.2	0.0	4	4
TI_S_36	2.0	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
TI_S_36A	2.0	0.0	4	4
TI_S_37	2.0	0.0	4	4
TI_S_38	2.0	0.0	4	4
TI_S_39	2.0	0.0	4	4
TI_S_4	2.0	0.0	4	4
TI_S_40	2.0	0.0	4	4
TI_S_41	2.0	0.0	4	4
TI_S_42	2.0	0.0	4	4
TI_S_43	2.0	0.0	4	4
TI_S_44	2.0	0.0	4	4
TI_S_45	2.0	0.0	4	4
TI_S_46	2.0	0.0	4	4
TI_S_47	2.4	0.0	4	4
TI_S_48	2.3	0.0	4	4
TI_S_49	2.0	0.0	4	4
TI_S_5	2.0	0.0	4	4
TI_S_50	2.0	0.0	4	4
TI_S_51	2.0	0.0	4	4
TI_S_52	2.0	0.0	4	4
TI_S_52A	2.0	0.0	4	4
TI_S_53	2.0	0.0	4	4
TI_S_54	2.0	0.0	4	4
TI_S_54A	2.0	0.0	4	4
TI_S_55	2.0	0.0	4	4
TI_S_55A	2.3	0.0	4	4
TI_S_55B	2.0	0.0	4	4
TI_S_55C	2.0	0.0	4	4
TI_S_56A	2.0	0.0	4	4
TI_S_56B	2.0	0.0	4	4
TI_S_58A	2.0	0.0	4	4
TI_S_58B	2.0	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
TI_S_59A	2.2	5.0	4	3
TI_S_59B	2.0	0.0	4	4
TI_S_6	2.0	0.0	4	4
TI_S_60A	2.2	5.0	4	3
TI_S_60B	2.0	0.0	4	4
TI_S_61A	2.0	0.0	4	4
TI_S_61B	2.0	0.0	4	4
TI_S_62A	2.0	0.0	4	4
TI_S_62B	2.0	0.0	4	4
TI_S_63A	2.0	0.0	4	4
TI_S_63B	2.0	0.0	4	4
TI_S_64A	2.0	0.0	4	4
TI_S_64B	2.0	0.0	4	4
TI_S_65A	2.0	0.0	4	4
TI_S_65B	2.0	0.0	4	4
TI_S_66A	2.0	0.0	4	4
TI_S_66B	2.3	0.0	4	4
TI_S_67A	2.0	0.0	4	4
TI_S_67B	2.0	0.0	4	4
TI_S_68A	2.0	0.0	4	4
TI_S_68B	2.4	0.0	4	4
TI_S_69	2.0	0.0	4	4
TI_S_7	2.0	0.0	4	4
TI_S_70	2.0	0.0	4	4
TI_S_71	2.0	0.0	4	4
TI_S_72	2.8	0.0	4	4
TI_S_73	2.0	0.0	4	4
TI_S_73A	2.0	0.0	4	4
TI_S_73B	2.2	0.0	4	4
TI_S_74	2.0	0.0	4	4
TI_S_74_2	2.0	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
TI_S_74_3	2.0	0.0	4	4
TI_S_74_4	2.2	0.0	4	4
TI_S_74_5	2.2	0.0	4	4
TI_S_74_6	2.0	0.0	4	4
TI_S_74_7	3.2	0.0	3	4
TI_S_75	2.0	0.0	4	4
TI_S_76	2.0	0.0	4	4
TI_S_77	2.0	0.0	4	4
TI_S_78	2.0	0.0	4	4
TI_S_79	2.2	0.0	4	4
TI_S_8	2.0	0.0	4	4
TI_S_80	2.0	0.0	4	4
TI_S_80A	2.0	0.0	4	4
TI_S_81	2.0	0.0	4	4
TI_S_82	2.0	0.0	4	4
TI_S_83	2.0	0.0	4	4
TI_S_84	2.0	0.0	4	4
TI_S_85	2.0	0.0	4	4
TI_S_86	2.0	0.0	4	4
TI_S_86A	2.0	0.0	4	4
TI_S_87	2.0	0.0	4	4
TI_S_88	2.0	0.0	4	4
TI_S_88_1	2.3	0.0	4	4
TI_S_88_10	2.0	5.0	4	3
TI_S_88_11	2.0	0.0	4	4
TI_S_88_12	2.0	0.0	4	4
TI_S_88_13	2.0	0.0	4	4
TI_S_88_14	2.0	0.0	4	4
TI_S_88_15	2.0	0.0	4	4
TI_S_88_2	2.0	0.0	4	4
TI_S_88_3	2.0	0.0	4	4

Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
TI_S_88_4	2.6	1.0	4	4
TI_S_88_6	3.0	0.0	3	4
TI_S_89A	2.0	0.0	4	4
TI_S_9	2.0	0.0	4	4
TI_S_90	2.0	0.0	4	4
TI_S_90_1	2.0	0.0	4	4
TI_S_90_2	2.0	0.0	4	4
TI_S_90_3	2.3	0.0	4	4
TI_S_90_4	2.3	0.0	4	4
TI_S_90_5	2.0	0.0	4	4
TI_S_90_6	2.0	0.0	4	4
TI_S_91	2.0	0.0	4	4
TI_S_92	2.0	0.0	4	4
TI_S_93	2.0	0.0	4	4
TI_S_94	2.0	0.0	4	4
TI_S_95	2.0	0.0	4	4
TI_S_96	2.0	0.0	4	4
TI_S_97	2.0	0.0	4	4
TI_S_98	2.0	0.0	4	4
TI_S_99	2.0	0.0	4	4
TI_W_10	3.3	3.0	2	3
TI_W_11	3.0	3.0	3	3
TI_W_12	2.2	0.0	4	4
TI_W_13	2.1	0.0	4	4
TI_W_14	2.2	0.0	4	4
TI_W_15	2.5	0.0	4	4
TI_W_16	2.2	0.0	4	4
TI_W_17	3.1	3.0	3	3
TI_W_2	2.0	3.0	4	3
TI_W_20	2.7	0.0	4	4
TI_W_20A	2.0	0.0	4	4

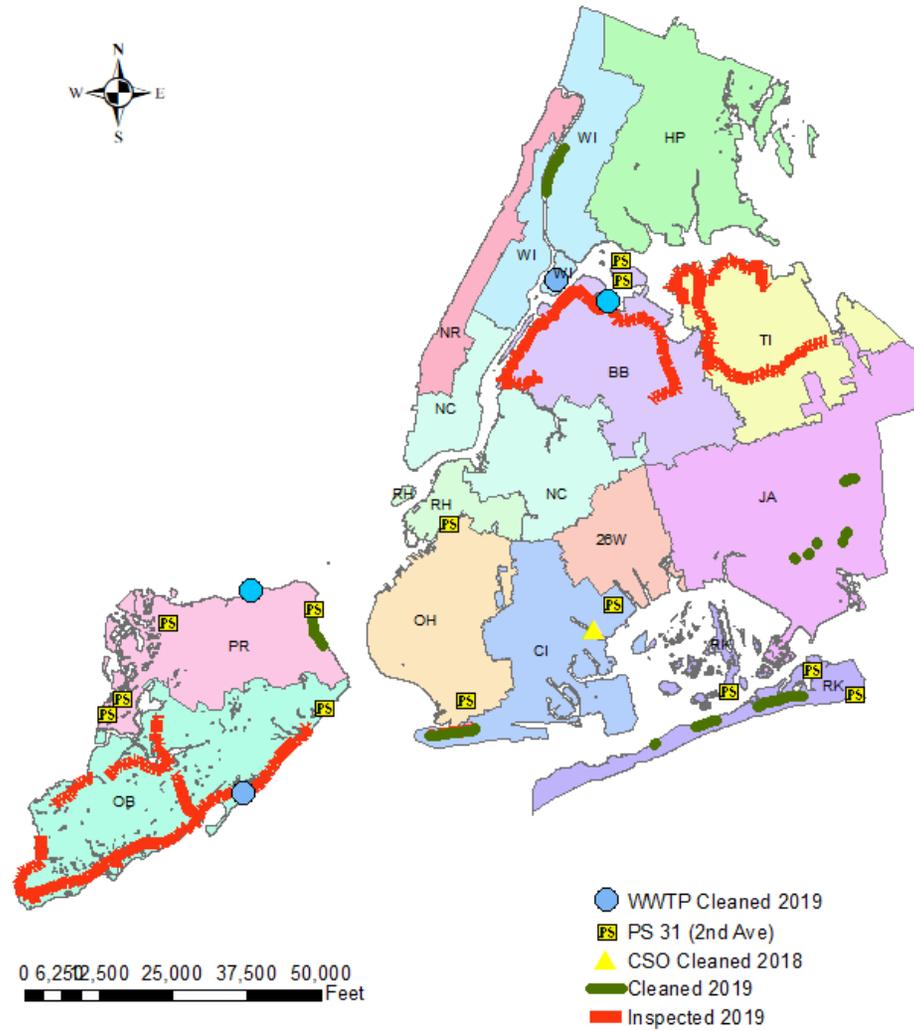
Asset	O&M Rating	Structural Rating	O&M Rank	Structural Rank
TI_W_21	2.4	0.0	4	4
TI_W_22	3.3	0.0	3	4
TI_W_23	3.8	0.0	2	4
TI_W_24	3.8	0.0	2	4
TI_W_25	4.0	0.0	2	4
TI_W_26	4.2	0.0	2	4
TI_W_3	2.0	3.1	4	3
TI_W_4	2.2	0.0	4	4
TI_W_6	2.6	0.0	4	4
TI_W_7	2.1	0.0	4	4
TI_W_8	2.2	0.0	4	4
TI_W_9	3.0	3.0	2	3

Appendix 2.2.4: 2018 and 2019 Asset Repair List

Asset Name	Date Inspected	Length (ft)	Defect	Structural Index	Comments	Final Decision	Corrective Action By
RK_E_97	9/6/2018	114.2	Hole Soil Visible	5	Severe Surface Reinforcement Visible throughout.	Repair, needs concrete surface coating.	2022
RK_E_58	9/12/2018	141.6	Broken Soil Visible	5	Severe Surface Reinforcement Visible throughout.	Repair, needs concrete surface coating.	2022
RK_E_117	9/13/2018	141.1	Broken	5	Severe Surface Reinforcement Visible throughout.	Repair, needs concrete surface coating.	2022
RK_E_119	9/13/2018	138.3	Surface Reinforcement Corroded	5	Severe Surface Reinforcement Visible sporadically.	Repair, needs concrete surface coating.	2022
RK_E_13	10/2/2018	246.2	Surface Reinforcement Corroded	5	One section of Surface Corrosion, and walls look bad.	Repair, needs concrete surface coating.	2022
RK_E_1	10/5/2018	235.1	Surface Reinforcement Corroded	5	Moderate to severe corrosion throughout.	Repair, needs concrete surface coating.	2022
RK_E_1A	10/5/2018	244.7	Surface Reinforcement Corroded	5	Moderate to severe corrosion throughout.	Repair, needs concrete surface coating.	2022

Appendix 2.2.5: Map 1 - 2019 BMP Interceptors and Local Sewers CCTV/SONAR, Pump Stations, Regulators and Interceptors/Local Sewers Cleaned Map

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Appendix 3:

- Appendix 3.1:Key Regulator Monitoring Report CY2019 Summary
- Appendix 3.2: Wet Weather Throttling Summary – CY2019
- Appendix 3.3: Estimation of Wet-Weather Capture

Appendix 3.1: KEY REGULATOR MONITORING REPORT CY2019 SUMMARY

CY2019 Key Regulator Monitoring Report

Regulator 26W-01	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-19	1	1/19/19 11:15 PM	1/20/19 12:45 AM	1.50	99	120	127.5	1/20/19 1:00 AM	1/20/19 11:45 AM	138	133
NOTES: * Potential CSO Discharge Duration was less than the 15-minute reportable interval. ** "WWTP Event Maximum Flow" values reported with two asterisks(**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below: *** "WWTP Event Average Flow" values reported with three asterisks(***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"). These events were reported in the Wet Weather Quarterly Report submittal.											

CY2019 Key Regulator Monitoring Report

Regulator 26W-02	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-19	1a	1/20/19 12:15 AM	1/20/19 12:45 AM	0.50	103	120	127.5	1/20/19 1:00 AM	1/20/19 11:45 AM	138	133
	1b	1/20/19 12:00 PM	1/20/19 2:15 PM	2.25	127	127	127.5	N/A	N/A	N/A	N/A
Feb-19	1	2/7/19 2:15 AM	2/7/19 3:30 AM	1.25	125	125	127.5	2/6/19 10:30 PM	2/7/19 2:00 AM	135	132
	2	2/21/19 2:45 AM	2/21/19 3:45 AM	1.00	124	127	127.5	2/21/19 12:30 AM	2/21/19 2:30 AM	136	133
Apr-19	1	4/8/19 4:30 AM	4/8/19 4:45 AM	0.25	118	118	127.5	4/8/19 3:30 AM	4/8/19 4:15 AM	135	133
	2a	4/15/19 8:45 AM	4/15/19 11:30 AM	2.75	117	118	127.5	4/15/19 6:45 AM	4/15/19 8:30 AM	144	132
	2b	4/15/19 12:00 PM	4/15/19 12:00 PM	0.00	126	126	127.5	4/15/19 12:15 PM	4/15/19 1:15 PM	132	131
	3	4/20/19 12:00 PM	4/20/19 12:30 PM	0.50	122	110	127.5	4/20/19 9:00 AM	4/20/19 10:30 AM	N/A	N/A
	4a	4/26/19 6:30 AM	4/26/19 7:15 AM	0.75	123	88	127.5	N/A	N/A	N/A	N/A
	4b	4/26/19 1:00 PM	4/26/19 1:30 PM	0.50	55	134	127.5	4/26/19 1:30 PM	4/26/19 4:15 AM	135	131
	4c	4/26/19 4:30 PM	4/26/19 9:00 PM	4.50	119	136	127.5				
	4d	4/26/19 10:15 PM	4/27/19 12:00 AM	1.75	129	129	127.5	4/26/19 9:00 PM	4/26/19 10:00 PM	135	131
Aug-19	1	8/23/19 3:30 AM	8/23/19 6:00 AM	2.50	124	124	127.5	8/22/19 9:30 PM	8/23/19 3:00 AM	140	134
Sep-19	1a	9/2/19 2:30 PM	9/2/19 3:30 PM	1.00	126	126	127.5	9/2/19 1:00 PM	9/2/19 2:15 PM	133	132
	1b	9/2/19 5:45 PM	9/2/19 6:00 PM	0.25	125	125	127.5	9/2/19 3:45 PM	9/2/19 5:30 PM	136	132
	2	9/6/19 6:30 PM	9/6/19 7:15 PM	0.75	119	119	127.5	9/6/19 2:45 PM	9/6/19 6:15 PM	137	133
Oct-19	1	10/17/19 1:00 AM	10/17/19 4:15 AM	3.25	126	126	127.5	10/16/19 6:15 PM	10/17/19 12:45 AM	138	133
Dec-19	1a	12/9/19 12:00 PM	12/9/19 12:45 PM	0.75	122	122	127.5	12/9/19 7:45 AM	12/9/19 11:45 AM	136	131
	1b	12/9/19 10:45 PM	12/10/19 12:15 AM	1.50	127	127	127.5	12/9/19 5:30 PM	12/9/19 10:30 PM	135	131

NOTES:
 * Potential CSO Discharge Duration was less than the 15-minute reportable interval.
 ** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:
 *** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").
 These events were reported in the Wet Weather Quarterly Report submittal.

CY2019 Key Regulator Monitoring Report

Regulator BBH-02	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Dec-19	1a	12/9/19 9:15 AM	12/9/19 11:30 AM	2.25	270	270	300	N/A	N/A	N/A	N/A
	1b	12/9/19 6:30 PM	12/9/19 9:45 PM	2.25	266	270	300	N/A	N/A	N/A	N/A
NOTES: * Potential CSO Discharge Duration was less than the 15-minute reportable interval. ** "WWTP Event Maximum Flow" values reported with two asterisks(**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below: *** "WWTP Event Average Flow" values reported with three asterisks(***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"). These events were reported in the Wet Weather Quarterly Report submittal.											

CY2019 Key Regulator Monitoring Report

Regulator BBH-06	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jul-19	1	7/17/19 8:30 PM	7/17/19 8:30 PM	0.00*	139	139	300	7/17/19 9:00 PM	7/18/19 1:45 AM	311	302
	2	7/22/19 7:15 PM	7/22/19 7:45 PM	0.50	299	299	300	N/A	N/A	N/A	N/A
Oct-19	1a	10/9/19 11:30 AM	10/9/19 11:30 AM	0.00*	267	267	284	10/9/19 11:45 AM	10/9/19 3:30 PM	317	301
	1b	10/9/19 3:45 PM	10/9/19 4:00 PM	0.25	277	277	284	10/20/19 5:30 PM	10/20/19 8:45 PM	355	303
	2	10/20/19 9:00 PM	10/20/19 10:45 PM	1.75	281	281	284	10/27/19 10:45 AM	10/27/19 5:00 PM	326	309
	3	10/27/19 5:15 PM	10/27/19 5:30 PM	0.25	269	269	284	11/18/19 10:00 PM	11/19/19 4:15 AM	319	304
Nov-19	1	11/18/19 9:45 PM	11/18/19 9:45 PM	0.00*	239	239	284	11/24/19 12:00 PM	11/24/19 1:30 PM	290	287
	2a	11/24/19 10:30 AM	11/24/19 11:45 AM	1.25	267	267	284	11/24/19 12:00 PM	11/24/19 1:30 PM	290	287
	2b	11/24/19 1:45 PM	11/24/19 2:00 PM	0.25	282	282	284	11/24/19 12:00 PM	11/24/19 1:30 PM	290	287
Dec-19	1	12/1/19 4:30 PM	12/1/19 4:45 PM	0.25	271	288	300	12/1/19 5:00 PM	12/1/19 9:45 PM	322	308
	2	12/2/19 4:00 PM	12/2/19 6:30 PM	2.50	245	261	300	N/A	N/A	N/A	N/A
	3a	12/9/19 7:45 AM	12/9/19 12:00 PM	4.25	252	270	300	N/A	N/A	N/A	N/A
	3b	12/9/19 4:45 PM	12/9/19 10:15 PM	5.50	265	270	300	N/A	N/A	N/A	N/A
	4	12/13/19 5:45 PM	12/13/19 8:00 PM	2.25	254	296	300	12/13/19 8:15 PM	12/14/19 8:00 AM	343	315
	5a	12/17/19 2:15 AM	12/17/19 2:30 AM	0.25	288	297	300	12/17/19 2:45 AM	12/17/19 5:00 AM	315	304
	5b	12/17/19 5:15 AM	12/17/19 7:00 AM	1.75	297	299	300	12/17/19 2:45 AM	12/17/19 5:00 AM	315	304
	5c	12/17/19 5:15 PM	12/17/19 6:15 PM	1.00	288	288	300	12/17/19 7:45 AM	12/17/19 4:45 PM	343	309
	6	12/29/19 9:30 PM	12/29/19 10:30 PM	1.00	275	282	300	N/A	N/A	N/A	N/A
7	12/30/19 4:30 PM	12/30/19 5:00 PM	0.50	237	294	300	12/30/19 5:15 PM	12/30/19 6:30 PM	320	314	

NOTES:

* Potential CSO Discharge Duration was less than the 15-minute reportable interval.

** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:

*** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").

These events were reported in the Wet Weather Quarterly Report submittal.

CY2019 Key Regulator Monitoring Report

Regulator BBL-04	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-19	1	1/9/19 12:30 AM	1/9/19 1:30 AM	1.0	156	299	300	N/A	N/A	N/A	N/A
	2	1/19/19 11:30 PM	1/20/19 12:15 AM	0.75	289	298	300	1/20/19 12:30 AM	1/20/19 11:45 AM	350	310
Feb-19	1	2/7/19 2:00 AM	2/7/19 2:00 AM	0.00*	294	294	300	2/6/19 11:00 PM	2/7/19 1:45 AM	306	301
	2	2/8/19 2:00 AM	2/8/19 2:15 AM	0.25	137	205	300	2/8/19 2:30 AM	2/8/19 4:15 AM	310	306
	3	2/21/19 12:15 AM	2/21/19 12:15 AM	0.00*	293	293	300	2/21/19 12:30 AM	2/21/19 3:45 AM	311	304
	4	2/24/19 6:00 AM	2/24/19 6:00 AM	0.00*	283	283	300	2/24/19 6:15 AM	2/24/19 11:00 AM	333	306
Mar-19	1	3/10/19 6:30 AM	3/10/19 7:30 AM	1.00	205	299	300	3/10/19 7:45 AM	3/10/19 7:45 AM	340	316
	2	3/15/19 10:00 PM	3/15/19 10:15 PM	0.25	220	239	300	3/15/19 10:30 PM	3/15/19 11:15 PM	341	324
Apr-19	1	4/8/19 2:45 AM	4/8/19 3:30 AM	0.75	78	192	284	4/8/19 3:45 AM	4/8/19 5:00 AM	297	293
	2a	4/12/19 10:45 PM	4/12/19 11:00 PM	0.25	276	276	284	4/12/19 11:15 PM	4/13/19 3:30 AM	318	304
	2b	4/13/19 6:00 AM	4/13/19 6:30 AM	0.50	124	239	284	4/13/19 6:45 AM	4/13/19 8:45 AM	314	309
	3	4/15/19 11:30 AM	4/15/19 12:00 PM	0.50	222	241	284	4/15/19 12:45 PM	4/15/19 2:30 PM	317	307
May-19	4	4/26/19 5:15 AM	4/26/19 5:45 AM	0.50	83	209	284	4/26/19 6:00 AM	4/26/19 6:45 AM	288	286
	1a	5/5/19 4:15 AM	5/5/19 4:30 AM	0.25	208	292	300	5/5/19 4:45 AM	5/5/19 8:00 AM	335	311
	1b	5/5/19 7:45 PM	5/5/19 7:45 PM	0.00*	221	221	300	5/5/19 8:00 PM	5/5/19 8:30 PM	313	307
	2a	5/12/19 5:15 AM	5/12/19 6:00 AM	0.75	286	297	300	N/A	N/A	N/A	N/A
	2b	5/12/19 11:30 AM	5/12/19 12:00 PM	0.50	277	288	300	5/12/19 12:30 PM	5/12/19 8:00 PM	361	319
	3a	5/13/19 2:45 PM	5/13/19 3:15 PM	0.50	191	287	300	5/13/19 7:45 PM	5/13/19 7:45 PM	311	308
	3b	5/13/19 8:00 PM	5/13/19 8:30 PM	0.50	254	272	300	N/A	N/A	N/A	N/A
	4	5/14/19 8:45 PM	5/14/19 10:30 PM	1.75	155	298	300	N/A	N/A	N/A	N/A
	5	5/23/19 4:30 PM	5/23/19 5:30 PM	1.00	96	240	300	N/A	N/A	N/A	N/A
	6a	5/26/19 6:30 PM	5/26/19 6:45 PM	0.25	208	258	300	5/26/19 7:00 PM	5/26/19 7:15 PM	308	305
	6b	5/26/19 7:30 PM	5/26/19 7:30 PM	0.00*	294	294	300				
	7	5/29/19 6:45 PM	5/29/19 7:15 PM	0.50	121	262	300	5/29/19 7:30 PM	5/29/19 9:45 PM	329	317
8	5/30/19 6:30 PM	5/30/19 7:00 PM	0.50	105	219	300	5/30/19 7:15 PM	5/30/19 7:30 PM	323	314	
Jun-19	1	6/2/19 10:30 PM	6/2/19 11:00 PM	0.50	168	315	284	6/2/19 11:00 PM	6/3/19 12:15 AM	346	313
	2	6/10/19 5:15 PM	6/10/19 5:45 PM	0.50	299	299	284	N/A	N/A	N/A	N/A
	3	6/11/19 6:00 AM	6/11/19 6:45 AM	0.75	92	297	284	6/11/19 6:45 AM	6/11/19 7:45 AM	299	295
	4	6/14/19 10:00 PM	6/14/19 11:15 PM	1.25	149	287	284	N/A	N/A	N/A	N/A
	5a	6/18/19 1:15 PM	6/18/19 2:15 PM	1.00	131	306	284	6/18/19 2:15 PM	6/18/19 5:45 PM	318	309
	5b	6/18/19 6:30 PM	6/18/19 7:00 PM	0.50	263	291	284	6/18/19 7:00 PM	6/18/19 9:30 PM	337	308
	6a	6/20/19 4:15 PM	6/20/19 6:15 PM	2.00	116	315	284				
	6b	6/20/19 6:30 PM	6/20/19 7:15 PM	0.75	311	311	284	6/20/19 4:45 PM	6/20/19 8:45 PM	315	305
	6c	6/21/19 6:15 AM	6/21/19 7:15 AM	1.00	161	311	284				
	6d	6/21/19 9:00 AM	6/21/19 10:15 AM	1.25	315	325	284	6/21/19 6:30 AM	6/21/19 12:15 PM	325	310
	7	6/25/19 7:30 AM	6/25/19 9:00 AM	1.50	59	369	284	6/25/19 8:15 AM	6/25/19 11:00 AM	369	311
	Jul-19	1	7/11/19 9:00 PM	7/11/19 9:15 PM	0.25	214	265	300	7/11/19 9:30 PM	7/12/19 12:30 AM	317
2		7/17/19 8:30 PM	7/17/19 8:30 PM	0.00*	139	139	300	7/17/19 9:00 PM	7/18/19 1:45 AM	311	302
3		7/18/19 10:30 AM	7/18/19 10:45 AM	0.25	287	289	300	7/18/19 11:00 AM	7/18/19 12:15 PM	308	304
4a		7/22/19 6:15 PM	7/22/19 6:45 PM	0.50	170	288	300				
4b		7/22/19 8:00 PM	7/22/19 10:15 PM	2.25	292	296	300	N/A	N/A	N/A	N/A
Aug-19	4c	7/23/19 6:30 AM	7/23/19 6:45 AM	0.25	217	246	300	7/23/19 7:00 AM	7/23/19 8:45 AM	322	314
	5	7/31/19 5:00 PM	7/31/19 5:15 PM	0.25	144	224	300	7/31/19 5:30 PM	7/31/19 6:15 PM	314	310
	1	8/4/19 12:30 AM	8/4/19 1:00 AM	0.50	113	227	284	N/A	N/A	N/A	N/A
Sep-19	2	8/7/19 6:00 PM	8/7/19 6:45 PM	0.75	116	269	284	8/7/19 7:00 PM	8/7/19 11:15 PM	340	306
	3	8/22/19 9:00 PM	8/22/19 9:15 PM	0.25	136	174	284	8/22/19 9:30 PM	8/23/19 3:00 AM	320	306

CY2019 Key Regulator Monitoring Report

Regulator BBL-04	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Regulator BBL-04 cont.											
Oct-19	1	10/2/19 7:15 PM	10/2/19 7:30 PM	0.25	141	225	284	N/A	N/A	N/A	N/A
	2	10/9/19 10:45 AM	10/9/19 11:30 AM	0.75	97	267	284	10/9/19 11:45 AM	10/9/19 3:30 PM	317	301
	3	10/16/19 3:45 PM	10/16/19 4:45 PM	1.00	189	279	284	10/16/19 5:30 PM	10/17/19 1:45 AM	319	307
Nov-19	1	11/18/19 9:30 PM	11/18/19 9:45 PM	0.25	173	239	284	11/18/19 10:00 PM	11/19/19 4:15 AM	319	304
Dec-19	1	12/1/19 4:45 PM	12/1/19 4:45 PM	0.00*	288	288	300	12/1/19 5:00 PM	12/1/19 9:45 PM	322	308
	2a	12/9/19 7:45 AM	12/9/19 12:00 PM	4.25	252	270	300	N/A	N/A	N/A	N/A
	2b	12/9/19 5:00 PM	12/9/19 11:30 PM	6.50	257	268	300	N/A	N/A	N/A	N/A
	3	12/13/19 6:00 PM	12/13/19 7:45 PM	1.75	269	290	300	12/13/19 8:15 PM	12/14/19 8:00 AM	343	315
	4	12/30/19 5:00 PM	12/30/19 5:00 PM	0.00*	294	294	300	12/30/19 5:15 PM	12/30/19 6:30 PM	320	314
NOTES:											
* Potential CSO Discharge Duration was less than the 15-minute reportable interval.											
** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:											
*** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").											
These events were reported in the Wet Weather Quarterly Report submittal.											

CY2019 Key Regulator Monitoring Report

Regulator BBL-22	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Apr-19	1	4/12/19 10:45 PM	4/12/19 11:00 PM	0.25	275	275	284	4/12/19 11:15 PM	4/13/19 3:30 AM	318	304
	2	4/15/19 5:15 AM	4/15/19 5:30 AM	0.25	77	172	284	4/15/19 6:00 AM	4/15/19 10:15 AM	356	312
May-19	1	5/23/19 4:45 PM	5/23/19 5:15 PM	0.50	136	214	300	N/A	N/A	N/A	N/A
Jun-19	1	6/20/19 5:00 PM	6/20/19 5:45 PM	0.75	314	314	284	6/20/19 4:45 PM	6/20/19 8:45 PM	315	305
	2	6/21/19 6:00 AM	6/21/19 6:45 AM	0.75	92	311	284	6/21/19 6:30 AM	6/21/19 12:15 PM	325	310
	3	6/25/19 7:45 AM	6/25/19 8:15 AM	0.50	101	307	284	6/25/19 8:15 AM	6/25/19 11:00 AM	369	311
	4	6/30/19 3:15 PM	6/30/19 3:45 PM	0.50	111	173	284	N/A	N/A	N/A	N/A
Jul-19	1	7/17/19 8:30 PM	7/17/19 9:00 PM	0.50	139	241	300	7/17/19 9:00 PM	7/18/19 1:45 AM	311	302
	2	7/18/19 9:15 AM	7/18/19 9:45 AM	0.50	166	294	300	N/A	N/A	N/A	N/A
	3	7/22/19 7:00 PM	7/22/19 8:00 PM	1.00	290	299	300	N/A	N/A	N/A	N/A
Aug-19	1	8/7/19 6:15 PM	8/7/19 6:45 PM	0.50	126	269	284	8/7/19 7:00 PM	8/7/19 11:15 PM	340	306
	2	8/18/19 6:30 PM	8/18/19 6:30 PM	0.00	119	119	284	8/18/19 7:00 PM	8/18/19 8:00 PM	300	296
	3	8/22/19 9:00 PM	8/22/19 9:00 PM	0.00	136	136	284	8/22/19 9:30 PM	8/23/19 3:00 AM	320	306
Dec-20	1	12/30/19 5:00 PM	12/30/19 5:00 PM	0.00*	294	294	300	12/30/19 5:15 PM	12/30/19 6:30 PM	320	314

NOTES:
 * Potential CSO Discharge Duration was less than the 15-minute reportable interval.
 ** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below.
 *** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").
 These events were reported in the Wet Weather Quarterly Report submittal.

CY2019 Key Regulator Monitoring Report

Regulator HP-05	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-19	1	1/1/19 1:30 AM	1/1/19 2:45 AM	1.25	367	367	400	1/1/19 12:00 AM	1/1/19 1:00 AM	416	404
	2	1/20/19 4:45 AM	1/20/19 5:30 AM	0.75	388	390	400	1/20/19 1:15 AM	1/20/19 4:00 AM	413	398***
Feb-19	1	2/8/19 6:15 AM	2/8/19 7:00 AM	0.75	167	168	400	N/A	N/A	N/A	N/A
	2	2/24/19 9:00 AM	2/24/19 9:45 AM	0.75	389	389	400	N/A	N/A	N/A	N/A
Mar-19	1	3/15/19 10:30 PM	3/16/19 12:15 AM	1.75	362	362	400	N/A	N/A	N/A	N/A
	2	3/22/19 4:15 AM	3/22/19 6:15 AM	2.00	390	395	400	3/22/19 3:00 AM	3/22/19 4:00 AM	423	409
Apr-19	1	4/8/19 5:30 AM	4/8/19 6:30 AM	1.00	202	215	400	N/A	N/A	N/A	N/A
	2	4/15/19 12:00 PM	4/15/19 1:15 PM	1.25	359	359	400	N/A	N/A	N/A	N/A
May-19	1	5/26/19 8:00 PM	5/26/19 11:00 PM	3.00	310	310	400	N/A	N/A	N/A	N/A
	2a	5/29/19 9:00 PM	5/29/19 9:45 PM	0.75	398	399	400	5/29/19 8:45 PM	5/29/19 8:45 PM	432	416
	2b	5/29/19 11:15 PM	5/30/19 3:15 AM	4.00	253	285	400	N/A	N/A	N/A	N/A
	3a	5/30/19 11:00 PM	5/31/19 1:15 AM	2.25	397	397	400	5/30/19 8:00 PM	5/30/19 10:45 PM	425	411
	3b	5/31/19 1:30 AM	5/31/19 3:30 AM	2.00	211	211	400	N/A	N/A	N/A	N/A
Jun-19	1	6/25/19 9:15 AM	6/25/19 10:15 AM	1.00	393	344	400	6/25/19 8:15 AM	6/25/19 9:00 AM	430	414
Jul-19	1	7/18/19 3:45 AM	7/18/19 6:30 AM	2.75	302	302	400	N/A	N/A	N/A	N/A
	2a	7/22/19 9:00 PM	7/22/19 9:45 PM	0.75	399	399	400	7/22/19 6:45 PM	7/22/19 8:45 PM	427	407
	2b	7/23/19 7:30 AM	7/23/19 8:30 AM	1.00	399	399	400	N/A	N/A	N/A	N/A
	2c	7/23/19 8:45 AM	7/23/19 10:00 AM	1.25	321	321	400	N/A	N/A	N/A	N/A
	4	7/31/19 4:45 PM	7/31/19 6:30 PM	1.75	355	355	400	N/A	N/A	N/A	N/A
Aug-19	1	8/4/19 6:15 AM	8/4/19 6:45 AM	0.50	163	163	400	N/A	N/A	N/A	N/A
	2	8/7/19 9:45 PM	8/7/19 11:45 PM	2.00	329	329	330	8/7/19 7:00 PM	8/7/19 9:30 PM	380	345
	3	8/19/19 6:30 PM	8/19/19 8:15 PM	1.75	298	298	400	N/A	N/A	N/A	N/A
	4	8/22/19 9:30 PM	8/22/19 11:30 PM	2.00	368	397	400	N/A	N/A	N/A	N/A
Oct-19	1	10/9/19 1:30 PM	10/9/19 2:30 PM	1.00	392	392	400	10/9/19 12:15 PM	10/9/19 1:15 PM	413	407
	2a	10/16/19 6:00 PM	10/16/19 8:45 PM	2.75	333	387	400	N/A	N/A	N/A	N/A
	2b	10/17/19 5:45 AM	10/17/19 6:45 AM	1.00	158	158	400	N/A	N/A	N/A	N/A
	3	10/27/19 1:00 PM	10/27/19 5:15 PM	4.25	373	387	400	10/27/19 12:00 PM	10/27/19 12:45 PM	431	415

NOTES:
 * Potential CSO Discharge Duration was less than the 15-minute reportable interval.
 ** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:
 *** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").
 These events were reported in the Wet Weather Quarterly Report submittal.

CY2019 Key Regulator Monitoring Report

Regulator HP-10	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Feb-19	1	2/24/19 8:00 AM	2/24/19 9:15 AM	1.25	390	393	400	N/A	N/A	N/A	N/A
Mar-19	1	3/22/19 4:15 AM	3/22/19 4:30 AM	0.25	390	395	400	3/22/19 3:30 AM	3/22/19 4:00 AM	423	409
Apr-19	1	4/10/19 5:15 AM	4/10/19 7:15 AM	2.00	172	258	400	N/A	N/A	N/A	N/A
	2	4/12/19 11:45 PM	4/13/19 12:15 AM	0.50	303	335	400	N/A	N/A	N/A	N/A
Jun-19	1	6/10/19 2:45 PM	6/10/19 3:30 PM	0.75	173	365	400	N/A	N/A	N/A	N/A
	2	6/18/19 6:45 PM	6/18/19 7:45 PM	1.00	263	295	400	N/A	N/A	N/A	N/A
	3	6/20/19 6:30 PM	6/20/19 7:45 PM	1.25	196	356	400	N/A	N/A	N/A	N/A
	4	6/21/19 9:00 AM	6/21/19 10:00 AM	1.00	329	397	400	N/A	N/A	N/A	N/A
	5	6/25/19 7:45 AM	6/25/19 9:45 AM	2.00	199	430	400	6/25/19 8:15 AM	6/25/19 9:00 AM	430	414
Jul-19	1	7/17/19 8:45 PM	7/17/19 9:00 PM	0.25	187	381	400	7/17/19 9:15 PM	7/18/19 2:00 AM	435	407
	2	7/22/19 5:30 PM	7/22/19 6:30 PM	1.00	276	376	400	7/22/19 6:45 PM	7/22/19 8:45 PM	427	407
	3	7/31/19 4:30 PM	7/31/19 6:00 PM	1.50	363	363	400	N/A	N/A	N/A	N/A
Aug-19	1	8/18/19 6:30 PM	8/18/19 7:00 PM	1.50	335	335	400	N/A	N/A	N/A	N/A
	2	8/22/19 9:15 PM	8/22/19 10:00 PM	0.75	253	397	400	N/A	N/A	N/A	N/A
Oct-19	1	10/2/19 7:00 PM	10/2/19 9:15 PM	2.25	171	273	400	N/A	N/A	N/A	N/A
	2	10/9/19 1:30 PM	10/9/19 2:00 PM	0.50	392	392	400	10/9/19 12:15 PM	10/9/19 1:15 PM	413	407
	3	10/16/19 6:30 PM	10/16/19 8:45 PM	2.25	357	387	400	N/A	N/A	N/A	N/A
	4	10/27/19 1:00 PM	10/27/19 3:00 PM	2.00	373	387	400	10/27/19 12:00 PM	10/27/19 12:45 PM	431	415
Nov-19	1	11/18/19 10:00 PM	11/19/19 11:30 PM	1.50	260	346	400	N/A	N/A	N/A	N/A
Dec-19	1	12/14/19 1:00 AM	12/14/19 4:00 AM	3.00	395	397	400	12/13/19 10:30 PM	12/14/19 12:45 AM	415	407

NOTES:
 * Potential CSO Discharge Duration was less than the 15-minute reportable interval.
 ** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:
 *** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").
 These events were reported in the Wet Weather Quarterly Report submittal.

CY2019 Key Regulator Monitoring Report

Regulator HP-13	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-19	1	1/1/19 1:15 AM	1/1/19 2:30 AM	1.75	394	394	400	N/A	N/A	N/A	N/A
	2	1/5/19 3:30 AM	1/5/19 4:30 AM	1.00	283	283	400	N/A	N/A	N/A	N/A
	3	1/20/19 4:15 AM	1/20/19 6:30 AM	2.25	385	390	400	1/20/19 1:15 AM	1/20/19 4:00 AM	413	398***
	4a	1/24/19 7:45 AM	1/24/19 10:30 AM	2.75	191	364	400	1/24/19 11:15 AM	1/24/19 5:15 PM	418	405
	4b	1/24/19 5:30 PM	1/24/19 6:45 PM	1.25	388	392	400	1/24/19 11:15 AM	1/24/19 5:15 PM	418	405
Feb-19	1	2/24/19 8:00 AM	2/24/19 9:15 AM	1.25	390	393	400	N/A	N/A	N/A	N/A
Mar-19	1	3/10/19 7:15 AM	3/10/19 8:15 AM	1.00	281	309	400	N/A	N/A	N/A	N/A
	2	3/15/19 9:45 PM	3/16/19 1:00 AM	3.25	335	362	400	N/A	N/A	N/A	N/A
	3	3/22/19 4:15 AM	3/22/19 8:15 AM	4.00	390	395	400	3/22/19 3:00 AM	3/22/19 4:00 AM	423	409
Apr-19	1	4/8/19 4:15 AM	4/8/19 6:00 AM	1.75	292	292	400	N/A	N/A	N/A	N/A
	2	4/12/19 11:00 PM	4/13/19 1:30 AM	2.50	268	395	400	N/A	N/A	N/A	N/A
	3	4/15/19 12:00 PM	4/15/19 1:30 PM	1.50	359	359	400	N/A	N/A	N/A	N/A
	4	4/20/19 7:45 AM	4/20/19 9:15 AM	1.50	271	388	400	N/A	N/A	N/A	N/A
	5	4/26/19 9:00 PM	4/26/19 10:45 PM	1.75	367	396	400	N/A	N/A	N/A	N/A
May-19	1a	5/5/19 4:30 AM	5/5/19 5:45 AM	1.25	257	336	400	N/A	N/A	N/A	N/A
	1b	5/5/19 6:45 AM	5/5/19 8:30 AM	1.75	318	378	400	N/A	N/A	N/A	N/A
	2	5/12/19 10:45 AM	5/12/19 1:45 PM	3.00	315	399	400	5/12/19 2:00 PM	5/12/19 2:15 PM	412	408
	3a	5/23/19 6:30 AM	5/23/19 6:30 AM	0.00*	193	334	330	5/23/19 6:45 AM	5/23/19 7:15 AM	335	339
	3b	5/23/19 7:30 AM	5/23/19 8:30 AM	1.00	313	313	330				
	4	5/26/19 6:45 PM	5/26/19 7:15 PM	3.00	364	364	400	N/A	N/A	N/A	N/A
	5a	5/29/19 6:45 PM	5/29/19 7:00 PM	0.25	238	357	400	5/29/19 7:15 PM	5/29/19 8:45 PM	432	416
5b	5/29/19 9:00 PM	5/29/19 11:00 PM	2.00	398	399	400	5/29/19 7:15 PM	5/29/19 8:45 PM	432	416	
6	5/30/19 11:00 PM	5/31/19 1:00 AM	2.00	397	397	400	5/30/19 10:00 PM	5/30/19 10:45 PM	425	411	
Jun-19	1	6/10/19 3:30 PM	6/10/19 4:15 PM	0.75	365	383	400	N/A	N/A	N/A	N/A
	2	6/13/19 11:00 AM	6/13/19 1:45 PM	2.75	379	393	400	N/A	N/A	N/A	N/A
	3a	6/18/19 8:30 AM	6/18/19 9:15 AM	0.75	196	189	400	N/A	N/A	N/A	N/A
	3b	6/18/19 6:30 PM	6/18/19 8:00 PM	1.50	225	286	400	N/A	N/A	N/A	N/A
	4	6/20/19 6:45 PM	6/20/19 8:15 PM	1.50	278	356	400	N/A	N/A	N/A	N/A
	5	6/21/19 8:45 AM	6/21/19 10:30 AM	1.75	266	397	400	N/A	N/A	N/A	N/A
6	6/25/19 8:00 AM	6/25/19 10:15 AM	2.25	335	430	400	6/25/19 8:15 AM	6/25/19 9:00 AM	430	414	
Jul-19	1	7/12/19 12:00 AM	7/12/19 1:45 AM	1.75	250	364	400	7/11/19 9:45 PM	7/11/19 11:45 PM	424	403
	2a	7/17/19 9:00 PM	7/17/19 9:00 PM	0.00*	381	381	400	7/17/19 9:15 PM	7/18/19 2:00 AM	435	407
	2b	7/18/19 2:30 AM	7/18/19 3:15 AM	0.75	398	398	400				
	3a	7/22/19 6:30 PM	7/22/19 6:30 PM	0.00	376	376	400	7/22/19 6:45 PM	7/22/19 8:45 PM	427	407
	3b	7/22/19 9:00 PM	7/22/19 10:30 PM	1.50	399	399	400				
3c	7/23/19 7:30 AM	7/23/19 9:30 AM	2.00	399	399	400	7/23/19 5:45 AM	7/23/19 7:15 AM	426	412	
5	7/31/19 4:00 PM	7/31/19 7:30 PM	3.50	214	363	400	N/A	N/A	N/A	N/A	
Aug-19	1	8/7/19 9:45 PM	8/7/19 10:30 PM	0.75	329	329	330	8/7/19 7:00 PM	8/7/19 9:30 PM	380	345
	2a	8/18/19 6:30 PM	8/18/19 8:00 PM	1.50	335	335	400	N/A	N/A	N/A	N/A
	2b	8/19/19 5:45 PM	8/19/19 7:15 PM	1.50	213	303	400	N/A	N/A	N/A	N/A
	3a	8/22/19 9:15 PM	8/23/19 12:30 AM	3.25	253	397	400	N/A	N/A	N/A	N/A
3b	8/23/19 1:00 AM	8/23/19 2:15 AM	1.25	398	398	400	N/A	N/A	N/A	N/A	

CY2019 Key Regulator Monitoring Report

Regulator HP-13	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Regulator HP-13 cont.											
Oct-19	1	10/2/19 7:15 PM	10/2/19 9:30 PM	2.25	266	266	400	N/A	N/A	N/A	N/A
	2a	10/9/19 12:00 PM	10/9/19 12:00 PM	0.00*	372	372	400	10/9/19 12:15 PM	10/9/19 1:15 PM	413	407
	2b	10/9/19 1:30 PM	10/9/19 3:00 PM	1.50	392	392					
	3	10/16/19 5:00 PM	10/16/19 10:30 PM	5.50	293	387	400	N/A	N/A	N/A	N/A
	4	10/23/19 1:15 AM	10/23/19 2:45 AM	1.50	320	338	400	N/A	N/A	N/A	N/A
	5	10/27/19 1:00 PM	10/27/19 4:45 PM	3.75	373	387	400	10/27/19 12:00 PM	10/27/19 12:45 PM	431	415
Nov-19	6	10/31/19 6:15 AM	10/31/19 8:30 AM	2.25	170	266	400	N/A	N/A	N/A	N/A
	1	11/18/19 10:00 PM	11/19/19 12:15 AM	2.25	260	346	400	N/A	N/A	N/A	N/A
Dec-19	2	11/24/19 3:15 AM	11/24/19 6:45 AM	3.50	272	351	400	N/A	N/A	N/A	N/A
	1	12/1/19 6:30 PM	12/1/19 8:15 PM	1.75	395	395	400	12/1/19 5:45 PM	12/1/19 6:15 PM	410	406
	2a	12/9/19 11:00 AM	12/9/19 11:00 AM	0.00*	399	399	400	12/9/19 9:45 AM	12/9/19 10:45 AM	413	408
	2b	12/9/19 4:30 PM	12/9/19 7:00 PM	2.50	254	395	400	12/9/19 7:15 PM	12/9/19 8:45 PM	424	409
	3a	12/13/19 5:30 PM	12/13/19 9:15 PM	3.75	263	336	400	12/13/19 10:30 PM	12/14/19 12:45 AM	415	407
	3b	12/14/19 1:00 AM	12/14/19 7:45 AM	6.75	395	397	400	12/13/19 10:30 PM	12/14/19 12:45 AM	415	407
	4a	12/17/19 8:00 AM	12/17/19 10:45 AM	2.75	306	337	400	N/A	N/A	N/A	N/A
	4b	12/17/19 12:00 PM	12/17/19 12:30 PM	0.50	356	356	400	N/A	N/A	N/A	N/A

NOTES:
 * Potential CSO Discharge Duration was less than the 15-minute reportable interval.
 ** "WWTP Event Maximum Flow" values reported with two asterisks(**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:
 *** "WWTP Event Average Flow" values reported with three asterisks(***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").
 These events were reported in the Wet Weather Quarterly Report submittal.

CY2019 Key Regulator Monitoring Report

Regulator JA-03	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-19	1	1/5/19 3:00 AM	1/5/19 4:00 AM	1.25	111	146	200	N/A	N/A	N/A	N/A
	2	1/5/19 6:30 PM	1/5/19 7:30 PM	1.25	143	157	200	N/A	N/A	N/A	N/A
	3	1/9/19 12:30 PM	1/10/19 2:15 AM	14.00	98	107	200	N/A	N/A	N/A	N/A
	4	1/19/19 10:30 PM	1/20/19 6:45 AM	8.25	126	196	200	N/A	N/A	N/A	N/A
	5a	1/20/19 8:00 AM	1/20/19 8:45 AM	0.75	175	176	200	N/A	N/A	N/A	N/A
	5b	1/20/19 9:00 AM	1/20/19 11:15 AM	2.25	179	188	200	N/A	N/A	N/A	N/A
	6	1/24/19 10:30 AM	1/24/19 6:00 PM	7.50	169	183	200	1/24/19 11:45 AM	1/24/19 2:00 PM	218	207
7	1/29/19 8:15 PM	1/29/19 9:15 PM	1.00	120	161	200	N/A	N/A	N/A	N/A	
Feb-19	1	2/6/19 10:30 PM	2/7/19 1:45 AM	3.25	152	195	200	N/A	N/A	N/A	N/A
	2	2/8/19 9:15 PM	2/9/19 1:45 AM	4.50	153	96	200	N/A	N/A	N/A	N/A
	3	2/12/19 3:00 AM	2/12/19 4:00 AM	1.00	91	74	200	N/A	N/A	N/A	N/A
	4	2/21/19 12:00 AM	2/21/19 2:30 AM	2.50	163	187	200	N/A	N/A	N/A	N/A
	5	2/24/19 5:00 AM	2/24/19 10:30 AM	5.50	120	196	200	N/A	N/A	N/A	N/A
Mar-19	1	3/4/19 12:45 PM	3/4/19 3:30 PM	2.75	175	180	200	N/A	N/A	N/A	N/A
	2a	3/10/19 6:15 AM	3/10/19 8:30 AM	2.25	104	162	200	N/A	N/A	N/A	N/A
	2b	3/10/19 10:00 AM	3/10/19 1:45 PM	3.75	160	196	200	N/A	N/A	N/A	N/A
	3	3/15/19 10:30 PM	3/16/19 12:15 AM	1.75	134	171	200	N/A	N/A	N/A	N/A
	4	3/21/19 7:15 PM	3/21/19 7:45 PM	0.50	141	151	200	N/A	N/A	N/A	N/A
Apr-19	5	3/21/19 11:00 PM	3/22/19 6:30 AM	7.50	157	199	200	N/A	N/A	N/A	N/A
	1	4/8/19 3:15 AM	4/8/19 4:45 AM	1.50	86	152	200	N/A	N/A	N/A	N/A
	2	4/9/19 7:30 PM	4/9/19 8:45 PM	1.25	101	171	200	N/A	N/A	N/A	N/A
	3a	4/12/19 10:00 PM	4/12/19 10:30 PM	0.50	136	142	200	N/A	N/A	N/A	N/A
	3b	4/12/19 11:45 PM	4/13/19 2:15 AM	2.50	135	175	200	N/A	N/A	N/A	N/A
	3c	4/13/19 6:45 AM	4/13/19 8:15 AM	2.50	133	161	200	N/A	N/A	N/A	N/A
	4a	4/15/19 6:00 AM	4/15/19 8:15 AM	2.25	110	174	200	N/A	N/A	N/A	N/A
	4b	4/15/19 12:15 PM	4/15/19 1:45 PM	1.50	141	170	200	N/A	N/A	N/A	N/A
	5	4/20/19 7:30 AM	4/20/19 10:45 AM	3.25	91	178	200	N/A	N/A	N/A	N/A
	6	4/22/19 4:45 PM	4/22/19 5:45 PM	1.00	159	163	200	N/A	N/A	N/A	N/A
	7a	4/26/19 5:45 AM	4/26/19 7:00 AM	1.25	76	137	200	N/A	N/A	N/A	N/A
	7b	4/26/19 1:15 PM	4/26/19 3:45 PM	2.50	129	199	200	N/A	N/A	N/A	N/A
	7c	4/26/19 9:00 PM	4/26/19 10:30 PM	1.50	164	179	200	N/A	N/A	N/A	N/A
May-19	1a	5/12/19 10:00 AM	5/12/19 11:00 AM	1.00	166	174	200	N/A	N/A	N/A	N/A
	1b	5/12/19 12:00 PM	5/12/19 1:00 PM	1.00	179	181	200	N/A	N/A	N/A	N/A
	1c	5/12/19 3:30 PM	5/12/19 6:15 PM	2.75	193	199	200	N/A	N/A	N/A	N/A
	2a	5/13/19 3:00 PM	5/13/19 4:15 PM	1.25	148	179	200	N/A	N/A	N/A	N/A
	2b	5/13/19 6:00 PM	5/13/19 8:00 PM	2.00	180	197	200	N/A	N/A	N/A	N/A
	3a	5/23/19 8:45 AM	5/23/19 9:30 AM	0.75	156	172	200	N/A	N/A	N/A	N/A
	3b	5/23/19 5:00 PM	5/23/19 6:00 PM	1.00	111	167	200	N/A	N/A	N/A	N/A
	4	5/26/19 7:00 PM	5/26/19 8:00 PM	1.00	103	185	200	N/A	N/A	N/A	N/A
	5	5/29/19 7:15 PM	5/29/19 9:15 PM	2.00	130	196	200	N/A	N/A	N/A	N/A
6	5/30/19 7:00 PM	5/30/19 8:15 PM	1.25	125	196	200	5/30/19 8:30 PM	5/30/19 10:30 PM	212	205	

CY2019 Key Regulator Monitoring Report

Regulator JA-03	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event				
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)	
Regulator JA-03 cont.												
Jun-19	1	6/6/19 2:30 AM	6/6/19 3:45 AM	1.25	131	162	200	N/A	N/A	N/A	N/A	
	2	6/10/19 3:00 PM	6/10/19 4:30 PM	1.50	150	179	200	N/A	N/A	N/A	N/A	
	3a	6/13/19 9:30 AM	6/13/19 11:30 AM	2.00	137	182	200	N/A	N/A	N/A	N/A	
	3b	6/13/19 10:30 PM	6/14/19 12:15 AM	1.75	125	175	200	N/A	N/A	N/A	N/A	
	4a	6/18/19 1:15 PM	6/18/19 5:30 PM	4.25	110	197	200	6/18/19 3:00 PM	6/18/19 5:15 PM	220	211	
	4b	6/18/19 7:00 PM	6/18/19 9:30 PM	1.50	171	188	200	N/A	N/A	N/A	N/A	
	5a	6/20/19 7:00 AM	6/20/19 7:30 AM	0.50	93	137	200	N/A	N/A	N/A	N/A	
	5b	6/20/19 6:30 PM	6/20/19 7:30 PM	1.00	148	180	200	N/A	N/A	N/A	N/A	
	5c	6/21/19 6:15 AM	6/21/19 7:45 AM	1.50	95	188	200	N/A	N/A	N/A	N/A	
	5d	6/21/19 9:15 AM	6/21/19 10:30 AM	1.25	176	198	200	N/A	N/A	N/A	N/A	
	6	6/25/19 8:00 AM	6/25/19 9:00 AM	1.00	133	177	200	N/A	N/A	N/A	N/A	
	Jul-19	1	7/6/19 3:00 PM	7/6/19 3:30 PM	0.50	112	148	200	N/A	N/A	N/A	N/A
		2	7/11/19 9:30 PM	7/12/19 12:00 AM	2.50	164	195	200	N/A	N/A	N/A	N/A
		3a	7/17/19 10:30 PM	7/17/19 11:15 PM	0.75	150	194	200	7/17/19 11:30 PM	7/18/19 12:15 AM	207	204
3b		7/18/19 12:30 AM	7/18/19 12:45 AM	0.25	198	198	200					
4a		7/22/19 7:15 PM	7/22/19 7:45 PM	0.50	131	189	200	7/22/19 8:00 PM	7/22/19 9:45 PM	229	216	
4b		7/23/19 7:15 AM	7/23/19 8:00 AM	0.75	118	196	200	7/23/19 8:15 AM	7/23/19 9:15 AM	206	204	
Aug-19	1a	8/7/19 6:30 PM	8/7/19 7:45 PM	1.25	135	199	200	8/7/19 8:00 PM	8/7/19 9:30 PM	213	207	
	1b	8/8/19 9:30 PM	8/8/19 10:00 PM	0.50	125	154	200	N/A	N/A	N/A	N/A	
	1c	8/9/19 5:30 PM	8/9/19 6:15 PM	0.75	101	143	200	N/A	N/A	N/A	N/A	
	2	8/14/19 6:00 PM	8/14/19 7:00 PM	1.00	151	178	200	N/A	N/A	N/A	N/A	
	3	8/21/19 6:45 PM	8/21/19 7:45 PM	1.00	104	166	200	N/A	N/A	N/A	N/A	
	4a	8/22/19 9:30 PM	8/22/19 10:15 PM	0.75	167	197	200	8/22/19 10:30 PM	8/22/19 11:45 PM	212	207	
	4b	8/23/19 12:00 AM	8/23/19 12:00 AM	0.00	198	198	200	8/22/19 10:30 PM	8/22/19 11:45 PM	212	207	
	4c	8/23/19 1:00 AM	8/23/19 2:15 AM	1.25	182	187	200	N/A	N/A	N/A	N/A	
Sep-19	1a	9/2/19 1:00 PM	9/2/19 2:30 PM	1.50	156	172	200	N/A	N/A	N/A	N/A	
	1b	9/2/19 4:00 PM	9/2/19 5:00 PM	1.00	155	177	200	N/A	N/A	N/A	N/A	
	2	9/6/19 4:00 PM	9/6/19 4:30 PM	0.50	149	170	200	N/A	N/A	N/A	N/A	
Oct-19	1	10/2/19 7:45 PM	10/2/19 8:30 PM	0.75	145	162	200	N/A	N/A	N/A	N/A	
	2	10/9/19 11:00 AM	10/9/19 2:00 PM	3.00	125	192	200	N/A	N/A	N/A	N/A	
	3	10/16/19 6:15 PM	10/16/19 8:00 PM	1.75	155	198	200	N/A	N/A	N/A	N/A	
	4	10/20/19 5:15 PM	10/20/19 10:15 PM	5.00	144	181	200	N/A	N/A	N/A	N/A	
	5	10/22/19 8:45 PM	10/23/19 3:00 AM	6.25	98	178	200	N/A	N/A	N/A	N/A	
	6	10/27/19 11:30 AM	10/27/19 12:15 PM	0.75	166	194	200	10/27/19 12:30 PM	10/27/19 3:15 PM	217	209	
NOTES:												
* Potential CSO Discharge Duration was less than the 15-minute reportable interval.												
** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:												
*** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").												
These events were reported in the Wet Weather Quarterly Report submittal.												

CY2019 Key Regulator Monitoring Report

Regulator JA-03	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Regulator JA-03 cont.											
Sep-19	1a	9/2/19 1:00 PM	9/2/19 2:30 PM	1.50	156	172	200	N/A	N/A	N/A	N/A
	1b	9/2/19 4:00 PM	9/2/19 5:00 PM	1.00	155	177	200	N/A	N/A	N/A	N/A
	2	9/6/19 4:00 PM	9/6/19 4:30 PM	0.50	149	170	200	N/A	N/A	N/A	N/A
Oct-19	1	10/2/19 7:45 PM	10/2/19 8:30 PM	0.75	145	162	200	N/A	N/A	N/A	N/A
	2	10/9/19 11:00 AM	10/9/19 2:00 PM	3.00	125	192	200	N/A	N/A	N/A	N/A
	3	10/16/19 6:15 PM	10/16/19 8:00 PM	1.75	155	198	200	N/A	N/A	N/A	N/A
	4	10/20/19 5:15 PM	10/20/19 10:15 PM	5.00	144	181	200	N/A	N/A	N/A	N/A
	5	10/22/19 8:45 PM	10/23/19 3:00 AM	6.25	98	178	200	N/A	N/A	N/A	N/A
	6	10/27/19 11:30 AM	10/27/19 12:15 PM	0.75	166	194	200	10/27/19 12:30 PM	10/27/19 3:15 PM	217	209
NOTES:											
* Potential CSO Discharge Duration was less than the 15-minute reportable interval.											
** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:											
*** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").											
These events were reported in the Wet Weather Quarterly Report submittal.											

CY2019 Key Regulator Monitoring Report

Regulator NCB-01	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Feb-19	1	2/21/19 12:30 AM	2/21/19 1:45 AM	1.25	592	592	700	N/A	N/A	N/A	N/A
	2	2/24/19 6:15 AM	2/24/19 6:15 AM	0.00*	544	544	700	2/24/19 6:30 AM	2/24/19 9:00 AM	788	762
Apr-19	1	4/8/19 3:15 AM	4/8/19 3:45 AM	0.50	440	440	700	N/A	N/A	N/A	N/A
	2	4/15/19 12:00 PM	4/15/19 12:45 PM	0.75	668	692	700	N/A	N/A	N/A	N/A
May-19	1	5/5/19 6:15 AM	5/5/19 6:15 AM	0.00	648	648	700	5/5/19 6:30 AM	5/5/19 8:00 AM	820	765
	2	5/23/19 4:45 PM	5/23/19 5:15 PM	0.50	330	656	700	N/A	N/A	N/A	N/A
	3	5/29/19 7:00 PM	5/29/19 7:00 PM	0.00*	520	520	700	5/29/19 7:15 PM	5/29/19 8:45 PM	817	792
	4	5/30/19 6:45 PM	5/30/19 7:00 PM	0.25	492	571	700	5/30/19 7:15 PM	5/30/19 8:30 PM	836	800
Jun-19	1	6/10/19 2:15 PM	6/10/19 4:00 PM	1.75	602	812	700	6/10/19 2:30 PM	6/10/19 4:45 PM	836	806
	2	6/13/19 10:45 AM	6/13/19 11:15 AM	0.50	652	700	700	6/13/19 10:15 AM	6/13/19 12:00 PM	804	757
	3a	6/18/19 1:00 PM	6/18/19 1:30 PM	0.50	300	780	700	6/18/19 1:30 PM	6/18/19 4:15 PM	852	811
	3b	6/18/19 7:00 PM	6/18/19 7:30 PM	0.50	632	680	700	N/A	N/A	N/A	N/A
	4a	6/20/19 6:15 PM	6/20/19 6:45 PM	0.50	564	812	700	6/20/19 6:30 PM	6/20/19 7:00 PM	812	787
	4b	6/21/19 6:00 AM	6/21/19 6:45 AM	0.75	344	832	700	6/21/19 6:30 AM	6/21/19 6:45 AM	832	807
	4c	6/21/19 8:45 AM	6/21/19 10:00 AM	1.25	488	860	700	6/21/19 9:00 AM	6/21/19 10:30 AM	860	813
5	6/25/19 7:45 AM	6/25/19 8:00 AM	0.25	425	740	700	6/25/19 8:00 AM	6/25/19 9:30 AM	832	782	
Jul-19	1	7/6/19 2:30 PM	7/6/19 3:00 PM	0.50	238	506	700	N/A	N/A	N/A	N/A
	2	7/22/19 6:15 PM	7/22/19 6:15 PM	0.00*	382	382	700	7/22/19 6:45 PM	7/22/19 9:30 PM	820	787
	3	7/23/19 7:15 AM	7/23/19 7:15 AM	0.00*	656	656	700	7/23/19 7:30 AM	7/23/19 8:30 AM	816	778
Aug-19	1	8/4/19 12:45 AM	8/4/19 12:45 AM	0.00	576	576	700	8/4/19 1:00 AM	8/4/19 1:45 AM	820	780
	2	8/7/19 6:00 PM	8/7/19 6:15 PM	0.25	292	492	700	8/7/19 6:30 PM	8/7/19 8:30 PM	840	784
	3	8/14/19 5:15 PM	8/14/19 6:00 PM	0.75	624	648	700	N/A	N/A	N/A	N/A
	4a	8/22/19 9:15 PM	8/22/19 9:15 PM	0.00	406	406	700	8/22/19 9:30 PM	8/22/19 11:30 PM	792	762
4b	8/23/19 12:45 AM	8/23/19 12:45 AM	0.00	628	628	700	8/23/19 1:00 AM	8/23/19 2:00 AM	812	759	
Sep-19	1	9/2/19 3:15 PM	9/2/19 3:15 PM	0.00*	588	588	700	9/2/19 3:30 PM	9/2/19 4:30 PM	844	794
	2	9/6/19 3:45 PM	9/6/19 4:00 PM	0.25	307	418	700	9/6/19 4:15 PM	9/6/19 5:30 PM	828	786
Oct-19	1	10/9/19 11:15 AM	10/9/19 11:30 AM	0.25	469	593	700	10/9/19 11:45 AM	10/9/19 2:30 PM	834	702
	2	10/16/19 6:00 PM	10/16/19 6:00 PM	0.00*	554	554	700	10/16/19 6:15 PM	10/16/19 11:45 PM	822	789
	3	10/20/19 8:30 PM	10/20/19 9:00 PM	0.50	509	526	700	N/A	N/A	N/A	N/A
Dec-19	1	12/1/19 5:15 PM	12/1/19 5:15 PM	0.00*	647	647	700	12/1/19 5:30 PM	12/1/19 7:30 PM	781	749
	2	12/13/19 9:45 PM	12/13/19 9:45 PM	0.00*	688	688	700	12/13/19 10:00 PM	12/14/19 5:15 AM	858	790

NOTES:
 * Potential CSO Discharge Duration was less than the 15-minute reportable interval.
 ** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below.
 *** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").
 These events were reported in the Wet Weather Quarterly Report submittal.

CY2019 Key Regulator Monitoring Report

Regulator NCB-04	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-19	1	1/24/19 4:00 PM	1/24/19 4:15 PM	0.25	679	679	700	1/24/19 11:15 AM	1/24/19 3:45 PM	796	758
	1	2/21/19 12:30 AM	2/21/19 2:45 AM	2.25	592	608	700	N/A	N/A	N/A	N/A
Feb-19	2a	2/24/19 6:15 AM	2/24/19 6:15 AM	0.00*	544	544	700	2/24/19 6:30 AM	2/24/19 9:00 AM	788	762
	2b	2/24/19 9:15 AM	2/24/19 10:00 AM	0.75	688	688	700	2/24/19 6:30 AM	2/24/19 9:00 AM	788	762
Mar-19	1	3/10/19 1:45 PM	3/10/19 3:00 PM	1.25	544	544	700	3/10/19 10:45 AM	3/10/19 10:45 AM	722	722
	2	3/22/19 4:15 AM	3/22/19 4:15 AM	0.00*	656	656	700	3/21/19 11:30 PM	3/22/19 4:00 AM	792	762
Apr-19	1	4/8/19 3:30 AM	4/8/19 4:45 AM	1.25	676	676	700	N/A	N/A	N/A	N/A
	2a	4/15/19 7:45 AM	4/15/19 10:00 AM	2.25	672	672	700	4/15/19 5:30 AM	4/15/19 7:30 AM	776	716
	2b	4/15/19 12:00 PM	4/15/19 12:30 PM	0.50	668	668	700	N/A	N/A	N/A	N/A
	3a	4/26/19 2:00 PM	4/26/19 2:00 PM	0.00*	692	692	700				
3b	4/26/19 4:00 PM	4/26/19 4:15 PM	0.25	612	612	700	4/26/19 2:15 PM	4/26/19 3:45 PM	852	770	
May-19	1	5/2/19 10:30 PM	5/3/19 12:15 AM	1.75	520	588	700	N/A	N/A	N/A	N/A
	2	5/5/19 11:00 PM	5/6/19 1:00 AM	2.00	680	684	700	5/5/19 8:30 PM	5/5/19 10:45 PM	820	765
	3	5/12/19 5:30 PM	5/12/19 7:45 PM	2.25	697	697	700	5/12/19 3:30 PM	5/12/19 5:15 PM	768	746
	4	5/13/19 8:00 PM	5/13/19 8:45 PM	0.75	636	636	700	5/13/19 6:00 PM	5/13/19 7:45 PM	824	777
	5	5/28/19 10:30 PM	5/28/19 11:30 PM	1.00	589	589	700	N/A	N/A	N/A	N/A
	6	5/29/19 9:45 PM	5/29/19 10:45 PM	1.00	592	592	700	5/29/19 7:15 PM	5/29/19 9:30 PM	817	792
	7	5/30/19 10:00 PM	5/30/19 11:30 PM	1.50	699	699	700	5/30/19 7:15 PM	5/30/19 9:45 PM	836	800
Jun-19	1	6/10/19 2:15 PM	6/10/19 4:00 PM	1.75	588	836	700	6/10/19 2:30 PM	6/10/19 4:00 PM	836	792
	2a	6/13/19 10:30 AM	6/13/19 12:15 PM	1.75	752	804	700	6/13/19 10:30 AM	6/13/19 12:00 PM	804	763
	2b	6/13/19 10:45 PM	6/14/19 12:15 AM	1.50	652	696	700	N/A	N/A	N/A	N/A
	3	6/18/19 1:15 PM	6/18/19 4:30 PM	3.25	438	852	700	6/18/19 1:30 PM	6/18/19 4:15 PM	852	835
4	6/25/19 8:00 AM	6/25/19 8:45 AM	0.75	740	832	700	6/25/19 8:00 AM	6/25/19 9:00 AM	832	801	
Jul-19	1	7/6/19 2:30 PM	7/6/19 4:45 PM	2.25	238	506	700	N/A	N/A	N/A	N/A
	2	7/18/19 1:15 AM	7/18/19 2:00 AM	0.75	608	608	700	7/17/19 10:30 PM	7/18/19 1:00 AM	804	773
	3	7/22/19 6:15 PM	7/22/19 6:30 PM	0.25	382	596	700	7/22/19 6:45 PM	7/22/19 9:30 PM	820	787
Aug-19	1a	8/4/19 12:45 AM	8/4/19 12:45 AM	0.00	576	576	700	8/4/19 1:00 AM	8/4/19 1:45 AM	820	780
	1b	8/4/19 2:00 AM	8/4/19 3:45 AM	1.75	660	660	700	8/4/19 1:00 AM	8/4/19 1:45 AM	820	780
	2a	8/7/19 6:00 PM	8/7/19 6:15 PM	0.25	292	492	700	8/7/19 6:30 PM	8/7/19 8:30 PM	840	784
	2b	8/7/19 8:45 PM	8/7/19 10:00 PM	0.25	684	684	700	8/7/19 6:30 PM	8/7/19 8:30 PM	840	784
	3	8/14/19 5:00 PM	8/14/19 6:30 PM	1.50	596	596	700	N/A	N/A	N/A	N/A
	4	8/21/19 7:00 PM	8/21/19 7:45 PM	0.75	592	592	700	N/A	N/A	N/A	N/A
Sep-19	5a	8/22/19 9:15 PM	8/22/19 9:15 PM	0.00	406	406	700	8/22/19 9:30 PM	8/22/19 11:30 PM	792	762
	5b	8/23/19 12:45 AM	8/23/19 12:45 AM	0.00	780	780	700	8/23/19 1:00 AM	8/23/19 2:00 AM	812	759
	1a	9/2/19 2:30 PM	9/2/19 3:15 PM	0.75	680	680	700	9/2/19 1:00 PM	9/2/19 2:15 PM	820	796
	1b	9/2/19 4:45 PM	9/2/19 5:30 PM	0.75	672	672	700	9/2/19 3:30 PM	9/2/19 4:30 PM	844	794
	2	9/4/19 5:15 PM	9/4/19 6:30 PM	1.25	223	490	700	N/A	N/A	N/A	N/A
3	9/6/19 5:45 PM	9/6/19 7:00 PM	1.25	672	672	700	9/6/19 4:15 PM	9/6/19 5:30 PM	828	786	
Oct-19	1	10/2/19 7:00 PM	10/2/19 8:45 PM	1.75	243	520	700	N/A	N/A	N/A	N/A
	2	10/17/19 12:00 AM	10/17/19 12:45 AM	0.75	682	682	700	10/16/19 6:15 PM	10/16/19 11:45 PM	822	789
	3	10/20/19 6:15 PM	10/20/19 9:30 PM	3.25	546	559	700	N/A	N/A	N/A	N/A
	4	10/22/19 9:15 PM	10/23/19 1:45 AM	4.50	583	591	700	N/A	N/A	N/A	N/A
	5	10/27/19 11:15 AM	10/27/19 11:15 AM	0.00*	637	637	700	10/27/19 11:30 AM	10/27/19 3:15 PM	802	764

CY2019 Key Regulator Monitoring Report

Regulator NCB-04	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event							WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)	Start Time		End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)	
Regulator NCB-04 cont.												
Nov-19	1	11/19/19 12:00 AM	11/19/19 12:15 AM	0.25	516	516	518	11/18/19 9:30 PM	11/18/19 11:45 PM	683	574	
Dec-19	1a	12/1/19 5:15 PM	12/1/19 5:15 PM	0.00*	647	647	700	12/1/19 5:30 PM	12/1/19 7:30 PM	781	749	
	1b	12/1/19 7:45 PM	12/1/19 8:15 PM	0.50	669	669	700	12/1/19 5:30 PM	12/1/19 7:30 PM	781	749	
	2	12/9/19 11:00 AM	12/9/19 11:30 AM	0.50	649	649	700	12/9/19 8:15 AM	12/9/19 10:45 AM	754	723	
	3a	12/13/19 9:15 PM	12/13/19 9:45 PM	0.50	667	688	700	12/13/19 10:00 PM	12/14/19 5:15 AM	858	790	
	3b	12/14/19 5:30 AM	12/14/19 5:45 AM	0.25	691	691	700	12/13/19 10:00 PM	12/14/19 5:15 AM	858	790	
	4a	12/17/19 4:00 AM	12/17/19 5:30 AM	1.50	503	503	700	N/A	N/A	N/A	N/A	
	4b	12/17/19 9:15 AM	12/17/19 10:30 AM	1.25	615	650	700	N/A	N/A	N/A	N/A	
	4c	12/17/19 11:30 AM	12/17/19 6:15 PM	6.75	594	620	700	N/A	N/A	N/A	N/A	
	5	12/30/19 5:15 PM	12/30/19 7:30 PM	2.25	581	698	700	N/A	N/A	N/A	N/A	
NOTES: * Potential CSO Discharge Duration was less than the 15-minute reportable interval. ** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below: *** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"). These events were reported in the Wet Weather Quarterly Report submittal.												

CY2019 Key Regulator Monitoring Report

Regulator NCM-47	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Apr-19	1	4/15/19 5:00 AM	4/15/19 5:30 AM	0.50	139	751	700	4/15/19 5:30 AM	4/15/19 7:30 AM	776	716
	2	4/26/19 1:45 PM	4/26/19 2:00 PM	0.25	528	692	700	4/26/19 2:15 PM	4/26/19 3:45 PM	852	770
May-19	1	5/29/19 7:00 PM	5/29/19 7:00 PM	0.00	520	520	700	5/29/19 7:15 PM	5/29/19 8:15 PM	817	792
	2	5/30/19 6:45 PM	5/30/19 7:00 PM	0.25	492	571	700	5/30/19 7:15 PM	5/30/19 8:00 PM	836	800
Jun-19	1	6/2/19 10:15 PM	6/2/19 10:45 PM	0.50	254	662	700	N/A	N/A	N/A	N/A
	2	6/20/19 4:45 PM	6/20/19 5:15 PM	0.50	632	632	700	N/A	N/A	N/A	N/A
	3	6/25/19 7:30 AM	6/25/19 8:30 AM	1.00	243	832	700	6/25/19 8:00 AM	6/25/19 9:00 AM	832	801
Jul-19	1a	7/17/19 8:30 PM	7/17/19 9:30 PM	1.00	314	620	700	N/A	N/A	N/A	N/A
	1b	7/17/19 10:15 PM	7/17/19 10:15 PM	0.00*	608	608	700	7/17/19 10:30 PM	7/18/19 1:00 AM	804	773
Aug-19	1	8/7/19 6:00 PM	8/7/19 6:15 PM	0.25	292	492	700	8/7/19 6:30 PM	8/7/19 8:30 PM	840	784
	2	8/18/19 6:30 PM	8/18/19 7:00 PM	0.50	292	512	700	N/A	N/A	N/A	N/A
	3	8/22/19 9:00 PM	8/22/19 9:00 PM	0.00*	340	340	700	8/22/19 9:30 PM	8/22/19 11:30 PM	792	762

NOTES:

* Potential CSO Discharge Duration was less than the 15-minute reportable interval.

** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:

*** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").

These events were reported in the Wet Weather Quarterly Report submittal.

CY2019 Key Regulator Monitoring Report

Regulator NR-16	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event							WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)	Start Time		End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)	
Jan-19	1	1/20/19 12:30 AM	1/20/19 1:45 AM	1.25	192	275	340	1/20/19 2:00 AM	1/20/19 9:00 AM	364	348	
Apr-19	1a	4/12/19 10:30 PM	4/12/19 11:00 PM	0.50	187	253	340	N/A	N/A	N/A	N/A	
	1b	4/13/19 6:00 AM	4/13/19 6:30 AM	0.50	149	168	340	N/A	N/A	N/A	N/A	
May-19	2	4/15/19 5:00 AM	4/15/19 5:30 AM	0.50	71	197	340	4/15/19 6:15 AM	4/15/19 7:30 AM	359	350	
	1a	5/29/19 6:15 PM	5/29/19 6:45 PM	0.50	152	239	340	N/A	N/A	N/A	N/A	
	1b	5/29/19 7:00 PM	5/29/19 7:00 PM	0.00*	263	263	340	5/29/19 7:15 PM	5/29/19 7:45 PM	345	330	
Jun-19	2	5/30/19 6:30 PM	5/30/19 6:45 PM	0.25	217	276	340	5/30/19 7:00 PM	5/30/19 11:30 PM	367	346	
	1	6/11/19 5:45 AM	6/11/19 6:15 AM	0.50	93	181	340	N/A	N/A	N/A	N/A	
	2	6/25/19 7:45 AM	6/25/19 8:15 AM	0.50	179	345	340	6/25/19 8:00 AM	6/25/19 8:45 AM	353	347	
Jul-19	3	6/29/19 5:15 AM	6/29/19 5:45 AM	0.50	76	77	340	N/A	N/A	N/A	N/A	
	1	7/11/19 9:15 PM	7/11/19 9:45 PM	0.50	271	271	340	N/A	N/A	N/A	N/A	
	2	7/17/19 8:45 PM	7/17/19 8:45 PM	0.00*	206	206	340	7/17/19 9:00 PM	7/18/19 4:00 AM	351	252***	
	3a	7/22/19 6:00 PM	7/22/19 8:00 PM	2.00	226	338	340	7/22/19 8:15 PM	7/22/19 10:30 PM	357	350	
Aug-19	3b	7/23/19 5:15 AM	7/23/19 5:45 AM	0.50	150	240	340	N/A	N/A	N/A	N/A	
	1	8/4/19 11:45 PM	8/5/19 12:15 AM	0.50	187	187	340	N/A	N/A	N/A	N/A	
	2a	8/7/19 3:30 PM	8/7/19 4:00 PM	0.50	184	228	340	N/A	N/A	N/A	N/A	
	2b	8/7/19 6:30 PM	8/7/19 6:30 PM	0.00*	284	284	340	8/7/19 6:45 PM	8/7/19 10:00 PM	369	350	
	3	8/18/19 5:30 PM	8/18/19 6:00 PM	0.50	166	246	340	N/A	N/A	N/A	N/A	
Oct-19	4	8/22/19 9:00 PM	8/22/19 9:30 PM	0.50	236	331	340	8/22/19 9:45 PM	8/23/19 12:15 AM	353	347	
	1	10/7/19 7:45 PM	10/7/19 8:45 PM	1.00	121	258	340	N/A	N/A	N/A	N/A	
	2	10/27/19 11:15 AM	10/27/19 11:15 AM	0.00*	316	316	340	10/27/19 11:30 AM	10/27/19 2:00 PM	354	346	

NOTES:
 * Potential CSO Discharge Duration was less than the 15-minute reportable interval.
 ** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:
 *** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").
 These events were reported in the Wet Weather Quarterly Report submittal.

CY2019 Key Regulator Monitoring Report

Regulator NR-23	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Mar-19	1	3/15/19 9:00 PM	3/15/19 9:45 PM	0.75	123	195	340	N/A	N/A	N/A	N/A
Apr-19	1	4/12/19 10:30 PM	4/12/19 11:00 PM	0.50	186	255	340	N/A	N/A	N/A	N/A
	2	4/15/19 5:15 AM	4/15/19 5:45 AM	0.50	162	274	340	4/15/19 6:15 AM	4/15/19 7:30 AM	359	350
May-19	1	5/30/19 6:30 PM	5/30/19 6:45 PM	0.25	217	276	340	5/30/19 7:00 PM	5/30/19 11:30 PM	367	346
Jun-19	1	6/25/19 7:45 AM	6/25/19 8:30 AM	0.75	179	353	340	6/25/19 8:00 AM	6/25/19 8:45 AM	353	347
	1	7/11/19 10:30 PM	7/11/19 11:00 PM	0.50	197	262	340	N/A	N/A	N/A	N/A
Jul-19	2	7/17/19 8:45 PM	7/17/19 8:45 PM	0.00*	206	206	340	7/17/19 9:00 PM	7/18/19 4:00 AM	351	252***
	3	7/22/19 6:15 PM	7/22/19 7:45 PM	1.50	254	334	340	7/22/19 8:15 PM	7/22/19 10:30 PM	357	350
	1	8/7/19 6:15 PM	8/7/19 6:30 PM	0.25	228	284	340	8/7/19 6:45 PM	8/7/19 10:00 PM	369	350
Aug-19	2	8/18/19 5:30 PM	8/18/19 6:30 PM	1.00	166	246	340	N/A	N/A	N/A	N/A
	3	8/22/19 9:00 PM	8/22/19 9:30 PM	0.50	236	331	340	N/A	N/A	N/A	N/A
Oct-19	1	10/16/19 6:00 PM	10/16/19 7:00 PM	1.00	237	332	340	10/16/19 7:15 PM	10/16/19 9:45 PM	364	350
	2	10/27/19 2:30 PM	10/27/19 2:30 PM	0.00*	328	328	340	10/27/19 11:30 AM	10/27/19 2:00 PM	354	346

NOTES:
 * Potential CSO Discharge Duration was less than the 15-minute reportable interval.
 ** "WWTP Event Maximum Flow" values reported with two asterisks(**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:
 *** "WWTP Event Average Flow" values reported with three asterisks(***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").
 These events were reported in the Wet Weather Quarterly Report submittal.

CY2019 Key Regulator Monitoring Report

Regulator NR-33	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Regulator NR-33 has had no potential discharges outside the period of a critical wet weather event.											

CY2019 Key Regulator Monitoring Report

Regulator OH-01	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Mar-19	1a	3/4/19 12:30 PM	3/4/19 1:00 PM	0.50	213	213	240	3/4/19 1:15 PM	3/4/19 3:30 PM	243	241
	1b	3/4/19 3:45 PM	3/4/19 3:45 PM	0.00*	239	239					
Apr-19	1	4/8/19 3:30 AM	4/8/19 4:45 AM	1.25	200	239	240	N/A	N/A	N/A	N/A
	2a	4/15/19 7:15 AM	4/15/19 8:15 AM	1.00	237	237	240	4/15/19 5:15 AM	4/15/19 7:00 AM	248	242
	2b	4/15/19 12:15 PM	4/15/19 1:45 PM	1.50	239	239	240	4/15/19 12:00 PM	4/15/19 12:00 PM	240	240
	3	4/22/19 3:45 PM	4/22/19 4:45 PM	1.00	199	231	240	N/A	N/A	N/A	N/A
	4	4/26/19 6:00 AM	4/26/19 6:45 AM	0.75	238	238	240	N/A	N/A	N/A	N/A
May-19	1	5/13/19 8:45 PM	5/13/19 9:00 PM	0.25	239	239	240	5/13/19 2:45 PM	5/13/19 8:30 PM	247	243
	2a	5/23/19 8:15 AM	5/23/19 9:15 AM	1.00	202	236	240	5/23/19 9:30 AM	5/23/19 10:45 AM	245	242
	2b	5/23/19 5:15 PM	5/23/19 6:15 PM	1.00	203	238	240	N/A	N/A	N/A	N/A
Jun-19	1	6/6/19 2:15 AM	6/6/19 4:15 AM	2.00	235	245	240	6/6/19 2:45 AM	6/6/19 3:45 AM	245	243
	2	6/10/19 3:00 PM	6/10/19 5:15 PM	2.25	247	248	240	6/10/19 3:00 PM	6/10/19 5:00 PM	248	247
	3	6/13/19 9:30 AM	6/13/19 12:30 PM	3.00	242	245	240	6/13/19 9:30 AM	6/13/19 12:30 PM	250	243
	4	6/13/19 10:30 PM	6/14/19 12:30 AM	2.00	243	244	240	6/13/19 10:30 PM	6/14/19 12:15 AM	244	243
	5a	6/18/19 2:45 PM	6/18/19 6:15 PM	3.50	211	244	240	6/18/19 5:00 PM	6/18/19 8:00 PM	249	244
	5b	6/18/19 6:30 PM	6/18/19 8:00 PM	1.50	247	249	240				
	6a	6/20/19 6:30 PM	6/20/19 7:15 PM	0.75	245	245	240	6/20/19 6:30 PM	6/20/19 7:15 PM	245	243
	6b	6/21/19 6:00 AM	6/21/19 7:30 AM	1.50	243	246	240	6/21/19 6:00 AM	6/21/19 12:15 PM	250	243
6c	6/21/19 8:45 AM	6/21/19 10:15 AM	1.50	247	247	240					
7	6/25/19 7:30 AM	6/25/19 9:45 AM	2.25	150	250	240	6/25/19 8:30 AM	6/25/19 10:00 AM	250	244	
Jul-19	1	7/6/19 3:00 PM	7/6/19 4:00 PM	1.00	187	238	240	N/A	N/A	N/A	N/A
	2	7/12/19 12:00 AM	7/12/19 12:15 AM	0.25	219	219	240	7/11/19 8:45 PM	7/11/19 11:45 PM	245	241
	3	7/18/19 12:15 AM	7/18/19 1:15 AM	1.00	235	235	240	7/17/19 10:15 PM	7/18/19 12:00 AM	241	240
	4	7/22/19 6:45 PM	7/22/19 9:30 PM	2.75	234	235	240	N/A	N/A	N/A	N/A
Aug-19	1	8/7/19 5:45 PM	8/7/19 5:45 PM	0.00*	220	220	240	8/7/19 6:00 PM	8/7/19 11:00 PM	250	247
	2	8/21/19 8:00 PM	8/21/19 8:30 PM	0.50	182	182	240	8/21/19 6:30 PM	8/21/19 7:45 PM	242	241
Sep-19	1a	9/4/19 4:45 PM	9/4/19 4:45 PM	0.00*	215	215	240	9/4/19 5:00 PM	9/4/19 5:30 PM	242	241
	1b	9/4/19 5:45 PM	9/4/19 6:45 PM	1.00	216	216	240	9/4/19 5:00 PM	9/4/19 5:30 PM	242	241
Dec-19	1	12/13/19 10:00 PM	12/13/19 11:00 PM	1.00	189	191	240	12/13/19 5:45 PM	12/13/19 10:45 PM	242	241

NOTES:

- * Potential CSO Discharge Duration was less than the 15-minute reportable interval.
- ** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:
- *** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").
These events were reported in the Wet Weather Quarterly Report submittal.

CY2019 Key Regulator Monitoring Report

Regulator OH-06	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jun-19	1	6/6/19 2:00 AM	6/6/19 3:15 AM	1.25	195	244	240	N/A	N/A	N/A	N/A
	2	6/18/19 2:30 PM	6/18/19 5:30 PM	3.00	185	243	240	6/18/19 5:00 PM	6/18/19 10:00 PM	249	244
	3	6/25/19 7:30 AM	6/25/19 8:45 AM	1.25	150	250	240	6/25/19 8:30 AM	6/25/19 10:00 AM	250	244
Jul-19	1	7/22/19 6:45 PM	7/22/19 9:15 PM	2.50	234	235	240	N/A	N/A	N/A	N/A

NOTES:
 * Potential CSO Discharge Duration was less than the 15-minute reportable interval.
 ** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:
 *** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").
 These events were reported in the Wet Weather Quarterly Report submittal.

CY2019 Key Regulator Monitoring Report

Regulator PR-06W	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-19	1	1/1/19 2:45 AM	1/1/19 3:15 AM	0.50	25	25	120	N/A	N/A	N/A	N/A
	2a	1/5/19 2:30 AM	1/5/19 3:00 AM	0.50	34	34	120	N/A	N/A	N/A	N/A
	2b	1/5/19 12:30 PM	1/5/19 1:45 PM	1.25	57	67	120	N/A	N/A	N/A	N/A
	3	1/9/19 12:30 AM	1/9/19 2:00 AM	1.50	56	85	120	N/A	N/A	N/A	N/A
	4	1/19/19 11:30 PM	1/20/19 4:45 AM	5.25	82	106	120	N/A	N/A	N/A	N/A
	5	1/20/19 10:00 AM	1/20/19 12:00 PM	2.00	90	90	120	N/A	N/A	N/A	N/A
Feb-19	6	1/24/19 4:15 PM	1/24/19 6:15 PM	2.00	89	89	90	1/24/19 11:30 AM	1/24/19 4:00 PM	96	93
	1	2/6/19 10:30 PM	2/6/19 11:30 PM	1.00	71	86	90	N/A	N/A	N/A	N/A
Mar-19	2	2/24/19 5:45 AM	2/24/19 6:15 AM	0.50	68	77	90	2/24/19 6:30 AM	2/24/19 1:00 PM	94	93
	1	3/4/19 1:00 PM	3/4/19 2:00 PM	1.00	76	80	90	N/A	N/A	N/A	N/A
	2a	3/10/19 5:15 AM	3/10/19 5:45 AM	0.50	36	48	90	N/A	N/A	N/A	N/A
	2b	3/10/19 1:30 PM	3/10/19 3:15 PM	1.75	88	88	90	3/10/19 10:00 AM	3/10/19 1:15 PM	95	93
	3	3/15/19 10:15 PM	3/15/19 10:45 PM	0.50	52	55	90	N/A	N/A	N/A	N/A
	4a	3/21/19 11:15 PM	3/22/19 12:45 AM	1.50	81	114	120	3/22/19 1:00 AM	3/22/19 1:00 AM	121	121
Apr-19	4b	3/22/19 1:15 AM	3/22/19 4:15 AM	3.00	115	115	120				
	1a	4/15/19 6:45 AM	4/15/19 6:45 AM	0.00*	116	116	120	4/15/19 7:00 AM	4/15/19 7:00 AM	125	125
	1b	4/15/19 7:15 AM	4/15/19 8:45 AM	1.50	112	112	120	N/A	N/A	N/A	N/A
	1c	4/15/19 11:15 AM	4/15/19 1:00 PM	1.75	55	77	120	N/A	N/A	N/A	N/A
	2	4/20/19 2:15 AM	4/20/19 3:00 AM	0.75	30	43	120	N/A	N/A	N/A	N/A
May-19	3	4/26/19 3:30 PM	4/26/19 4:00 PM	0.50	113	113	120	4/26/19 2:45 PM	4/26/19 3:15 PM	133	126
	1	5/5/19 12:15 PM	5/5/19 3:00 PM	2.75	81	88	120	N/A	N/A	N/A	N/A
	2	5/6/19 12:00 AM	5/6/19 2:30 AM	2.50	92	92	120	N/A	N/A	N/A	N/A
	3a	5/12/19 11:30 AM	5/12/19 1:30 PM	2.00	76	88	120	N/A	N/A	N/A	N/A
	3b	5/12/19 5:00 PM	5/12/19 8:00 PM	3.00	103	103	120	N/A	N/A	N/A	N/A
	4	5/13/19 6:45 PM	5/13/19 11:45 PM	5.00	95	95	120	N/A	N/A	N/A	N/A
	5	5/23/19 5:00 PM	5/23/19 5:30 PM	0.50	76	76	120	N/A	N/A	N/A	N/A
	6	5/28/19 10:15 PM	5/28/19 11:45 PM	1.50	50	91	120	N/A	N/A	N/A	N/A
	7	5/29/19 6:45 PM	5/29/19 10:15 PM	3.50	58	92	120	N/A	N/A	N/A	N/A
	8a	5/30/19 8:00 PM	5/30/19 8:45 PM	0.75	93	116	120	5/30/19 9:00 PM	5/30/19 9:30 PM	123	121
Jun-19	8b	5/30/19 9:45 PM	5/30/19 11:30 PM	1.75	118	118	120				
	1	6/2/19 10:30 PM	6/2/19 11:00 PM	0.50	47	56	120	N/A	N/A	N/A	N/A
	2	6/6/19 2:00 AM	6/6/19 3:15 AM	1.25	25	80	120	N/A	N/A	N/A	N/A
	3	6/10/19 4:00 PM	6/10/19 5:15 PM	1.25	119	119	120	N/A	N/A	N/A	N/A
	4	6/11/19 6:15 AM	6/11/19 7:00 AM	0.75	39	56	120	N/A	N/A	N/A	N/A
	5a	6/13/19 9:00 AM	6/13/19 12:15 PM	3.25	56	93	120	N/A	N/A	N/A	N/A
	5b	6/13/19 10:00 PM	6/13/19 11:45 PM	1.75	55	88	120	N/A	N/A	N/A	N/A
	6a	6/18/19 2:00 PM	6/18/19 4:45 PM	2.75	48	100	120	N/A	N/A	N/A	N/A
	6b	6/18/19 5:00 PM	6/18/19 5:30 PM	0.50	96	96	120	N/A	N/A	N/A	N/A
	7a	6/20/19 5:45 PM	6/20/19 6:15 PM	0.50	38	48	120	N/A	N/A	N/A	N/A
	7b	6/21/19 5:30 AM	6/21/19 6:30 AM	1.00	47	67	120	N/A	N/A	N/A	N/A
	9	6/25/19 7:15 AM	6/25/19 8:30 AM	1.25	41	82	120	N/A	N/A	N/A	N/A
	10	6/29/19 6:30 PM	6/29/19 7:30 PM	1.00	57	60	120	N/A	N/A	N/A	N/A

CY2019 Key Regulator Monitoring Report

Regulator PR-06W	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Regulator PR-06W cont.											
Jul-19	1	7/6/19 2:00 PM	7/6/19 3:00 PM	1.00	45	71	120	N/A	N/A	N/A	N/A
	2	7/11/19 8:30 PM	7/11/19 10:45 PM	2.25	63	95	120	N/A	N/A	N/A	N/A
	3a	7/22/19 7:00 PM	7/22/19 7:00 PM	0.00*	99	99	120	7/22/19 7:00 PM	7/22/19 10:45 PM	126	122
	3b	7/23/19 5:15 AM	7/23/19 8:30 AM	3.25	42	94	120	N/A	N/A	N/A	N/A
	4a	7/31/19 2:45 PM	7/31/19 5:00 PM	2.25	54	79	120	7/31/19 5:00 PM	7/31/19 6:15 PM	133	130
4b	7/31/19 6:30 PM	7/31/19 6:30 PM	0.00*	116	116	120					
Aug-19	1	8/7/19 4:00 PM	8/7/19 4:45 PM	0.75	72	72	120	N/A	N/A	N/A	N/A
	2	8/21/19 6:15 PM	8/21/19 7:30 PM	1.25	42	66	120	N/A	N/A	N/A	N/A
	3	8/22/19 9:00 PM	8/22/19 10:30 PM	1.50	49	96	120	N/A	N/A	N/A	N/A
Sep-19	1a	9/2/19 1:15 PM	9/2/19 2:45 PM	1.50	99	99	120	N/A	N/A	N/A	N/A
	1b	9/2/19 3:00 PM	9/2/19 4:45 PM	1.75	94	112	120	N/A	N/A	N/A	N/A
	2	9/6/19 4:45 PM	9/6/19 6:30 PM	1.75	79	86	120	N/A	N/A	N/A	N/A
Dec-19	1	12/1/19 5:15 PM	12/1/19 6:45 PM	1.50	71	90	120	N/A	N/A	N/A	N/A
	2a	12/9/19 6:30 PM	12/9/19 6:45 PM	0.25	116	118	120	12/9/19 7:00 PM	12/9/19 9:15 PM	123	120
	2b	12/9/19 7:15 PM	12/9/19 7:30 PM	0.25	119	119	120	12/9/19 7:00 PM	12/9/19 9:15 PM	123	120
	3a	12/14/19 12:45 AM	12/14/19 3:15 AM	2.50	117	119	120	12/14/19 3:30 AM	12/14/19 4:45 AM	121	120
	3b	12/14/19 5:00 AM	12/14/19 5:15 AM	0.25	119	119	120	12/14/19 3:30 AM	12/14/19 4:45 AM	121	120
	4a	12/17/19 5:30 AM	12/17/19 6:30 AM	1.00	81	81	120	N/A	N/A	N/A	N/A
	4b	12/17/19 7:15 AM	12/17/19 8:00 AM	0.75	88	108	120	N/A	N/A	N/A	N/A
	5	12/30/19 4:30 PM	12/30/19 7:15 PM	2.75	93	113	120	N/A	N/A	N/A	N/A
NOTES: * Potential CSO Discharge Duration was less than the 15-minute reportable interval. ** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below: *** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"). These events were reported in the Wet Weather Quarterly Report submittal.											

CY2019 Key Regulator Monitoring Report

Regulator PR-13E	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-19	1a	1/5/19 2:00 AM	1/5/19 3:45 AM	1.75	33	47	120				
	1b	1/5/19 4:30 AM	1/5/19 5:00 AM	0.50	58	64	120	N/A	N/A	N/A	N/A
	1c	1/5/19 12:15 PM	1/5/19 1:15 PM	1.00	55	62	120				
	2	1/8/19 11:45 PM	1/9/19 1:45 AM	2.00	27	85	120	N/A	N/A	N/A	N/A
	3	1/19/19 9:45 PM	1/20/19 2:45 AM	5.00	43	106	120	N/A	N/A	N/A	N/A
	4a	1/20/19 3:00 AM	1/20/19 7:15 AM	4.25	97	99	120				
	4b	1/20/19 8:15 AM	1/20/19 12:45 PM	4.50	85	90	120	N/A	N/A	N/A	N/A
	5a	1/24/19 8:45 AM	1/24/19 11:15 AM	2.50	59	88	90	1/24/19 11:30 AM	1/24/19 4:00 PM	96	93
	5b	1/24/19 4:15 PM	1/24/19 8:15 PM	4.00	89	89	90	1/24/19 11:30 AM	1/24/19 4:00 PM	96	93
6	1/29/19 7:30 PM	1/29/19 9:15 PM	1.75	42	57	90	N/A	N/A	N/A	N/A	
Feb-19	1	2/6/19 10:00 PM	2/6/19 11:00 PM	1.00	63	120	90	N/A	N/A	N/A	N/A
	2	2/7/19 12:00 AM	2/7/19 1:15 AM	1.25	86	86	90	N/A	N/A	N/A	N/A
	3	2/8/19 2:30 AM	2/8/19 3:15 AM	0.75	46	59	90	N/A	N/A	N/A	N/A
	4	2/12/19 9:30 PM	2/12/19 10:45 PM	1.25	68	83	90	N/A	N/A	N/A	N/A
	5a	2/21/19 1:30 AM	2/21/19 2:45 AM	1.25	81	81	90				
	5b	2/21/19 3:00 AM	2/21/19 3:30 AM	0.50	74	74	90	N/A	N/A	N/A	N/A
Mar-19	1a	3/4/19 12:00 PM	3/4/19 3:15 PM	3.25	64	80	90				
	1b	3/4/19 6:15 PM	3/4/19 6:45 PM	0.50	64	64	90	N/A	N/A	N/A	N/A
	2	3/10/19 5:15 AM	3/10/19 7:30 AM	2.25	36	86	90	N/A	N/A	N/A	N/A
	3	3/15/19 10:00 PM	3/15/19 11:15 PM	1.25	50	57	90	N/A	N/A	N/A	N/A
	4a	3/21/19 11:30 PM	3/22/19 12:45 AM	1.25	85	114	120				
4b	3/22/19 1:15 AM	3/22/19 4:45 AM	3.50	115	115	120	3/22/19 1:00 AM	3/22/19 1:00 AM	121	121	
Apr-19	1	4/8/19 2:45 AM	4/8/19 3:30 AM	0.75	32	43	120	N/A	N/A	N/A	N/A
	2a	4/12/19 8:45 PM	4/12/19 9:45 PM	1.00	33	47	120				
	2b	4/12/19 10:45 PM	4/12/19 11:45 PM	1.00	58	78	120	N/A	N/A	N/A	N/A
	3a	4/15/19 5:00 AM	4/15/19 5:30 AM	0.50	71	197	120				
	3b	4/15/19 11:15 AM	4/15/19 1:15 PM	1.00	55	77	120	N/A	N/A	N/A	N/A
	4	4/20/19 1:45 AM	4/20/19 2:45 AM	1.00	26	39	120	N/A	N/A	N/A	N/A
5	4/26/19 5:00 AM	4/26/19 7:00 AM	2.00	45	132	120	N/A	N/A	N/A	N/A	
May-19	1a	5/5/19 5:30 AM	5/5/19 6:30 AM	1.00	53	78	120				
	1b	5/5/19 11:30 AM	5/5/19 2:45 PM	2.00	80	88	120				
	1c	5/5/19 7:00 PM	5/5/19 9:00 PM	2.25	64	112	120	5/5/19 9:15 PM	5/5/19 9:15 PM	120	120
	1d	5/5/19 11:15 PM	5/6/19 12:15 AM	1.00	106	106	120	N/A	N/A	N/A	N/A
	2a	5/12/19 5:30 AM	5/12/19 6:45 AM	1.25	58	63	120				
	2b	5/12/19 9:30 AM	5/12/19 12:00 PM	2.50	59	82	120	N/A	N/A	N/A	N/A
	2c	5/12/19 4:45 PM	5/12/19 6:45 PM	2.00	104	104	120				
	3	5/13/19 5:45 PM	5/13/19 8:00 PM	2.25	92	96	120	N/A	N/A	N/A	N/A
	4a	5/23/19 7:30 AM	5/23/19 9:00 AM	1.50	50	87	120				
	4b	5/23/19 4:45 PM	5/23/19 5:15 PM	0.50	66	74	120	N/A	N/A	N/A	N/A
	5	5/28/19 10:15 PM	5/28/19 11:30 PM	0.75	66	91	120	N/A	N/A	N/A	N/A
	6	5/29/19 6:45 PM	5/29/19 9:00 PM	2.25	58	92	120	N/A	N/A	N/A	N/A
	7a	5/30/19 6:45 PM	5/30/19 8:45 PM	2.00	41	116	120				
7b	5/30/19 9:45 PM	5/30/19 11:00 PM	1.25	118	118	120	5/30/19 9:00 PM	5/30/19 9:30 PM	123	121	

CY2019 Key Regulator Monitoring Report

Regulator PR-13E	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Regulator PR-13E cont.											
Jun-19	1	6/6/19 1:45 AM	6/6/19 3:00 AM	1.25	25	80	120	N/A	N/A	N/A	N/A
	2	6/10/19 3:30 PM	6/10/19 4:00 PM	0.50	112	119	120	N/A	N/A	N/A	N/A
	3	6/11/19 6:00 AM	6/11/19 6:45 AM	0.75	33	50	120	N/A	N/A	N/A	N/A
	4a	6/13/19 8:30 AM	6/13/19 1:00 PM	4.50	56	93	120	N/A	N/A	N/A	N/A
	4b	6/13/19 9:45 PM	6/13/19 11:45 PM	2.00	51	88	120	N/A	N/A	N/A	N/A
	5a	6/18/19 2:15 PM	6/18/19 5:45 PM	3.50	60	100	120	N/A	N/A	N/A	N/A
	5b	6/18/19 6:30 PM	6/18/19 7:15 PM	0.75	90	96	120	N/A	N/A	N/A	N/A
	6a	6/20/19 5:45 PM	6/20/19 6:45 PM	1.00	38	66	120	N/A	N/A	N/A	N/A
6b	6/21/19 5:30 AM	6/21/19 7:00 AM	1.50	47	74	120	N/A	N/A	N/A	N/A	
6c	6/21/19 8:45 AM	6/21/19 9:15 AM	0.50	67	67	120	N/A	N/A	N/A	N/A	
	7	6/25/19 7:30 AM	6/25/19 8:30 AM	1.00	55	82	120	N/A	N/A	N/A	N/A
	8	6/29/19 6:00 PM	6/29/19 7:00 PM	1.00	54	60	120	N/A	N/A	N/A	N/A
Jul-19	1	7/6/19 1:45 PM	7/6/19 2:15 PM	0.50	42	52	120	N/A	N/A	N/A	N/A
	2	7/11/19 8:15 PM	7/11/19 11:00 PM	2.75	54	97	120	N/A	N/A	N/A	N/A
	3	7/17/19 10:45 PM	7/17/19 11:45 PM	1.00	93	107	120	N/A	N/A	N/A	N/A
	4	7/22/19 6:00 PM	7/22/19 7:00 PM	1.00	28	99	120	7/22/19 7:00 PM	7/22/19 10:45 PM	126	122
	5	7/23/19 7:00 AM	7/23/19 8:30 AM	1.50	76	94	120	N/A	N/A	N/A	N/A
	6	7/31/19 3:15 PM	7/31/19 4:00 PM	0.75	66	79	120	7/31/19 5:00 PM	7/31/19 6:15 PM	133	130
Aug-19	1	8/4/19 10:00 PM	8/4/19 11:15 PM	1.25	73	73	120	N/A	N/A	N/A	N/A
	2	8/14/19 5:00 PM	8/14/19 5:00 PM	0.00	83	83	90	8/14/19 5:15 PM	8/14/19 9:15 PM	102	95
	3	8/21/19 6:15 PM	8/21/19 7:00 PM	0.75	42	61	120	N/A	N/A	N/A	N/A
	4a	8/22/19 9:30 PM	8/22/19 10:00 PM	0.50	73	96	120	N/A	N/A	N/A	N/A
4b	8/22/19 10:15 PM	8/22/19 11:00 PM	0.75	95	95	120	N/A	N/A	N/A	N/A	
Sep-19	1a	9/2/19 1:00 PM	9/2/19 2:00 PM	1.00	104	104	120	N/A	N/A	N/A	N/A
	1b	9/2/19 3:15 PM	9/2/19 5:45 PM	2.50	99	112	120	N/A	N/A	N/A	N/A
	2	9/4/19 4:30 PM	9/4/19 5:15 PM	0.75	52	63	120	N/A	N/A	N/A	N/A
Oct-19	1	10/9/19 11:30 AM	10/9/19 2:00 PM	2.50	32	95	120	N/A	N/A	N/A	N/A
	2	10/16/19 5:45 PM	10/16/19 6:45 PM	1.00	75	115	120	10/16/19 7:00 PM	10/16/19 10:15 PM	131	127
	3a	10/20/19 6:30 PM	10/20/19 7:30 PM	1.00	84	91	120	N/A	N/A	N/A	N/A
	3b	10/20/19 8:30 PM	10/20/19 9:45 PM	1.25	91	91					
	4	10/22/19 11:45 PM	10/23/19 1:15 AM	1.50	89	91	120	N/A	N/A	N/A	N/A
5	10/27/19 11:00 AM	10/27/19 1:00 PM	3.00	98	118	120	10/27/19 1:15 PM	10/27/19 2:45 PM	128	123	

CY2019 Key Regulator Monitoring Report

Regulator PR-13E	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Regulator PR-13E cont.											
Dec-19	1	12/1/19 5:00 PM	12/1/19 7:15 PM	2.25	65	91	120	N/A	N/A	N/A	N/A
	2a	12/9/19 8:45 AM	12/9/19 9:30 AM	0.75	100	117	120	12/9/19 9:45 AM	12/9/19 10:00 AM	123	122
	2b	12/9/19 10:15 AM	12/9/19 2:00 PM	3.75	118	118	120	12/9/19 9:45 AM	12/9/19 10:00 AM	123	122
	2c	12/9/19 5:45 PM	12/9/19 6:30 PM	0.75	102	116	120	12/9/19 7:00 PM	12/9/19 9:15 PM	123	120
	2d	12/9/19 7:15 PM	12/9/19 7:45 PM	0.50	119	119	120	12/9/19 7:00 PM	12/9/19 9:15 PM	123	120
	3	12/10/19 1:15 PM	12/10/19 2:00 PM	0.75	56	56	120	N/A	N/A	N/A	N/A
	4a	12/13/19 4:30 PM	12/13/19 5:00 PM	0.50	33	33	120	N/A	N/A	N/A	N/A
	4b	12/14/19 12:00 AM	12/14/19 3:15 AM	3.25	110	119	120	12/14/19 3:30 AM	12/14/19 4:45 AM	121	120
	4c	12/14/19 5:00 AM	12/14/19 5:15 AM	0.25	119	119	120	12/14/19 3:30 AM	12/14/19 4:45 AM	121	120
	5a	12/17/19 2:30 AM	12/17/19 3:15 AM	0.75	85	85	120	N/A	N/A	N/A	N/A
	5b	12/17/19 5:15 AM	12/17/19 8:45 AM	3.50	81	108	120	N/A	N/A	N/A	N/A
	5c	12/17/19 9:00 AM	12/17/19 9:30 AM	0.50	103	104	120	N/A	N/A	N/A	N/A
	5d	12/17/19 3:30 PM	12/17/19 4:45 PM	1.25	101	101	120	N/A	N/A	N/A	N/A
	5e	12/17/19 5:00 PM	12/17/19 6:15 PM	1.25	93	93	120	N/A	N/A	N/A	N/A
	6a	12/30/19 5:45 AM	12/30/19 6:30 AM	0.75	51	56	120	N/A	N/A	N/A	N/A
	6b	12/30/19 4:15 PM	12/30/19 6:15 PM	2.00	83	113	120	N/A	N/A	N/A	N/A
<p>NOTES:</p> <p>* Potential CSO Discharge Duration was less than the 15-minute reportable interval.</p> <p>** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:</p> <p>*** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").</p> <p>These events were reported in the Wet Weather Quarterly Report submittal.</p>											

CY2019 Key Regulator Monitoring Report

Regulator RH-02	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Aug-19	1	8/22/19 9:00 PM	8/22/19 9:00 PM	0.00*	49	49	90	8/22/19 9:15 PM	8/23/19 3:45 AM	106	97
NOTES: * Potential CSO Discharge Duration was less than the 15-minute reportable interval. ** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below: *** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"). These events were reported in the Wet Weather Quarterly Report submittal.											

CY2019 Key Regulator Monitoring Report

Regulator RH-20	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jun-19	1	6/18/19 2:00 PM	6/18/19 3:00 PM	1.00	126	127	120	6/18/19 2:00 PM	6/18/19 3:00 PM	127	124
Aug-19	1	8/7/19 7:30 PM	8/7/19 8:00 PM	0.50	88	97	120	8/7/19 6:00 PM	8/7/19 6:45 PM	125	124

NOTES:
 * Potential CSO Discharge Duration was less than the 15-minute reportable interval.
 ** "WWTP Event Maximum Flow" values reported with two asterisks(**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:
 *** "WWTP Event Average Flow" values reported with three asterisks(***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"). These events were reported in the Wet Weather Quarterly Report submittal.

CY2019 Key Regulator Monitoring Report

Regulator TI-09	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-19	1a	1/20/19 12:00 AM	1/20/19 1:00 AM	1.00	121	155	160	1/20/19 1:15 AM	1/20/19 3:00 AM	162	161
	1b	1/20/19 3:15 AM	1/20/19 12:15 PM	9.00	157	157	160	1/20/19 1:15 AM	1/20/19 3:00 AM	162	161
	2a	1/24/19 10:15 AM	1/24/19 11:00 AM	0.75	132	153	160	1/24/19 11:15 AM	1/24/19 2:30 PM	170	163
	2b	1/24/19 2:45 PM	1/24/19 6:30 PM	3.75	154	154	160	1/24/19 11:15 AM	1/24/19 2:30 PM	170	163
Feb-19	1	2/6/19 11:00 PM	2/7/19 2:15 AM	3.25	158	158	160	N/A	N/A	N/A	N/A
	2	2/12/19 10:15 PM	2/13/19 2:30 AM	4.25	124	141	160	N/A	N/A	N/A	N/A
	3	2/21/19 12:30 AM	2/21/19 3:30 AM	3.00	102	159	160	N/A	N/A	N/A	N/A
	4	2/24/19 6:00 AM	2/24/19 11:00 AM	5.00	69	155	160	N/A	N/A	N/A	N/A
Mar-19	1	3/4/19 12:30 PM	3/4/19 4:30 PM	4.00	121	141	160	N/A	N/A	N/A	N/A
	2	3/10/19 9:45 AM	3/10/19 2:30 PM	4.75	129	151	160	N/A	N/A	N/A	N/A
	3a	3/22/19 12:00 AM	3/22/19 1:45 AM	1.75	123	159	160	3/22/19 2:00 AM	3/22/19 3:30 AM	164	161
	3b	3/22/19 3:45 AM	3/22/19 7:30 AM	3.75	150	152	160	N/A	N/A	N/A	N/A
Apr-19	1	4/12/19 11:30 PM	4/13/19 2:00 AM	2.50	132	147	160	N/A	N/A	N/A	N/A
	2	4/15/19 6:15 AM	4/15/19 8:00 AM	1.75	134	157	160	N/A	N/A	N/A	N/A
	3	4/20/19 8:45 AM	4/20/19 12:00 PM	3.25	129	152	160	N/A	N/A	N/A	N/A
	4	4/22/19 6:15 PM	4/22/19 7:30 PM	1.25	137	139	160	N/A	N/A	N/A	N/A
	5a	4/26/19 2:15 PM	4/26/19 4:00 PM	1.75	147	157	160	N/A	N/A	N/A	N/A
	5b	4/26/19 9:15 PM	4/26/19 11:00 PM	1.75	126	147	160	N/A	N/A	N/A	N/A
May-19	1a	5/5/19 6:15 AM	5/5/19 11:00 AM	4.75	133	149	160	N/A	N/A	N/A	N/A
	1b	5/5/19 8:45 AM	5/6/19 12:45 AM	4.00	136	158	160	N/A	N/A	N/A	N/A
	2	5/12/19 12:00 PM	5/12/19 7:00 PM	7.00	130	158	160	N/A	N/A	N/A	N/A
	3	5/13/19 5:15 PM	5/13/19 9:00 PM	3.75	132	156	160	N/A	N/A	N/A	N/A
	4	5/26/19 6:30 PM	5/26/19 8:30 PM	2.00	62	146	160	N/A	N/A	N/A	N/A
	5	5/29/19 9:30 PM	5/29/19 10:00 PM	0.50	155	155	160	5/29/19 7:45 PM	5/29/19 9:15 PM	170	166
Jun-19	6a	5/30/19 7:00 PM	5/30/19 7:45 PM	0.75	96	152	160	5/30/19 8:00 PM	5/30/19 8:15 PM	160	160
	6b	5/30/19 8:30 PM	5/30/19 10:45 PM	2.25	159	159	160	N/A	N/A	N/A	N/A
	1	6/10/19 3:00 PM	6/10/19 5:15 PM	2.25	135	156	160	N/A	N/A	N/A	N/A
	2	6/13/19 10:00 AM	6/13/19 12:00 PM	2.00	136	149	160	N/A	N/A	N/A	N/A
	3	6/18/19 2:15 PM	6/18/19 4:30 PM	2.25	103	141	160	N/A	N/A	N/A	N/A
	4a	6/20/19 4:30 PM	6/20/19 8:15 PM	3.75	71	156	160	N/A	N/A	N/A	N/A
Jul-19	4b	6/21/19 6:15 AM	6/21/19 8:15 AM	2.00	78	148	160	N/A	N/A	N/A	N/A
	4c	6/21/19 9:00 AM	6/21/19 11:00 AM	2.00	138	146	160	N/A	N/A	N/A	N/A
	5	6/25/19 8:30 AM	6/25/19 9:45 AM	1.25	124	151	160	N/A	N/A	N/A	N/A
	1	7/11/19 10:00 PM	7/12/19 12:30 AM	2.50	135	152	160	N/A	N/A	N/A	N/A
	2	7/18/19 1:45 AM	7/18/19 1:45 AM	0.00	155	155	160	7/17/19 9:00 PM	7/18/19 1:45 AM	172	164
Aug-19	3a	7/22/19 7:00 PM	7/22/19 7:15 PM	0.25	128	155	160	7/22/19 7:15 PM	7/22/19 9:45 PM	171	166
	3b	7/22/19 10:00 PM	7/22/19 10:45 PM	0.75	155	155	160	N/A	N/A	N/A	N/A
	3c	7/23/19 7:30 AM	7/23/19 7:30 AM	0.00*	123	123	160	7/23/19 7:45 AM	7/23/19 8:30 AM	159**	158***
	3d	7/23/19 8:45 AM	7/23/19 9:45 AM	1.00	158	158	160	N/A	N/A	N/A	N/A
Sep-19	1	8/7/19 7:00 PM	8/7/19 10:30 PM	3.50	155	158	160	N/A	N/A	N/A	N/A
	2	8/22/19 9:30 PM	8/23/19 2:30 AM	5.00	76	152	160	N/A	N/A	N/A	N/A

CY2019 Key Regulator Monitoring Report

Regulator TI-09	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Regulator TI-09 cont.											
Oct-19	1a	10/9/19 11:30 AM	10/9/19 12:30 PM	1.00	117	156	160	10/9/19 12:45 PM	10/9/19 1:15 PM	165	163
	1b	10/9/19 1:30 PM	10/9/19 2:45 PM	1.25	159	159					
	2a	10/16/19 6:00 PM	10/16/19 6:30 PM	0.50	122	143	160	10/16/19 6:45 PM	10/16/19 9:45 PM	171	167
	2c	10/16/19 10:00 PM	10/16/19 11:45 PM	1.75	157	157					
	3	10/22/19 11:00 PM	10/23/19 2:45 AM	3.75	73	73	160	N/A	N/A	N/A	N/A
	4a	10/27/19 11:15 AM	10/27/19 12:00 PM	0.75	125	157					
	4b	10/27/19 4:15 PM	10/27/19 4:15 PM	0.00*	141	141		10/27/19 12:15 PM	10/27/19 4:00 PM	168	163
Nov-19	1a	11/18/19 11:45 PM	11/19/19 1:45 AM	2.00	138	138	160	N/A	N/A	N/A	N/A
	1b	11/19/19 2:45 AM	11/19/19 3:30 AM	0.75	132	135		N/A	N/A	N/A	N/A
	2	11/24/19 5:30 AM	11/24/19 7:15 AM	1.75	132	143		N/A	N/A	N/A	N/A
Dec-19	1	12/1/19 5:30 PM	12/1/19 9:00 PM	3.50	133	159	160	N/A	N/A	N/A	N/A
	2a	12/9/19 8:15 AM	12/9/19 9:30 AM	1.25	133	159		12/9/19 9:45 AM	12/9/19 11:00 AM	167	162
	2b	12/9/19 11:15 AM	12/9/19 12:30 PM	1.25	150	157	160	12/9/19 9:45 AM	12/9/19 11:00 AM	167	162
	2c	12/9/19 5:45 PM	12/9/19 6:30 PM	0.75	119	157		12/9/19 6:45 PM	12/9/19 10:30 PM	164	161
	3a	12/13/19 8:15 PM	12/13/19 10:15 PM	2.00	142	156	160	12/13/19 10:30 PM	12/14/19 6:30 AM	164	161
	3b	12/14/19 6:45 AM	12/14/19 7:15 AM	0.50	155	155		12/13/19 10:30 PM	12/14/19 6:30 AM	164	161
	4a	12/17/19 3:00 AM	12/17/19 7:15 AM	4.25	131	142	160	N/A	N/A	N/A	N/A
	4b	12/17/19 7:45 AM	12/17/19 6:15 PM	11.50	137	149		N/A	N/A	N/A	N/A
NOTES:											
* Potential CSO Discharge Duration was less than the 15-minute reportable interval.											
** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:											
*** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"). These events were reported in the Wet Weather Quarterly Report submittal.											

CY2019 Key Regulator Monitoring Report

Regulator TI-10A	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)

Regulator TI-10A has had no potential discharges outside the period of a critical wet weather event.

CY2019 Key Regulator Monitoring Report

Regulator WIB-53	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Regulator WIB-53 has had no potential discharges outside the period of a critical wet weather event.											

CY2019 Key Regulator Monitoring Report

Regulator WIB-67	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-19	1a	1/20/19 10:00 AM	1/20/19 1:30 PM	3.50	475	475	480	N/A	N/A	N/A	N/A
	1b	1/20/19 2:15 PM	1/20/19 2:45 PM	0.50	303	303	480	1/20/19 9:15 AM	5/15/01 9:45 AM	498	n/a
	2	1/24/19 5:30 PM	1/24/19 7:00 PM	1.50	479	479	480	1/24/19 11:00 AM	8/1/01 5:15 PM	497	n/a
Feb-19	1	2/21/19 12:30 PM	2/21/19 2:15 AM	1.75	527	527	480	2/21/19 12:15 AM	2/21/19 2:15 AM	537	458***
Mar-19	1	3/10/19 2:30 PM	3/10/19 4:45 PM	2.25	337	337	480	3/10/19 2:00 PM	3/10/19 2:30 PM	487	484
	2	3/15/19 9:30 PM	3/15/19 9:30 PM	0.00*	276	276	480	3/15/19 9:45 PM	3/15/19 11:15 PM	520	468***
	3	3/22/19 12:15 PM	3/22/19 4:00 PM	3.75	282	296	480	N/A	N/A	N/A	N/A
Apr-19	1	4/13/19 7:15 AM	4/13/19 7:45 AM	0.25	454	454	480	4/13/19 6:45 AM	4/13/19 7:00 AM	565	543
	2a	4/15/19 5:15 AM	4/15/19 5:15 AM	0.00*	194	194	480	4/15/19 5:30 AM	4/15/19 7:15 AM	535	515
	2b	4/15/19 7:30 AM	4/15/19 1:00 PM	5.50	475	479	480				
3	4/20/19 11:45 AM	4/20/19 3:00 PM	3.25	406	406	480	N/A	N/A	N/A	N/A	
May-19	1a	5/5/19 2:00 PM	5/5/19 2:30 PM	0.50	335	352	480	N/A	N/A	N/A	N/A
	1b	5/5/19 11:45 PM	5/6/19 2:45 AM	3.00	381	382	480	5/12/19 1:15 PM	5/12/19 5:45 PM	571	544
	2	5/12/19 6:00 PM	5/12/19 9:00 PM	3.00	477	477	480				
	3	5/13/19 8:00 PM	5/13/19 10:15 PM	2.25	462	462	480	5/13/19 5:45 PM	5/13/19 7:45 PM	567	532
	4	5/26/19 6:45 PM	5/26/19 7:30 PM	0.75	457	464	480	N/A	N/A	N/A	N/A
	5a	5/29/19 6:30 PM	5/29/19 6:45 PM	0.25	390	472	480	5/29/19 7:00 PM	5/29/19 9:45 PM	561	527
5b	5/29/19 10:00 PM	5/29/19 10:45 PM	0.75	423	423	480					
6a	5/30/19 7:30 PM	5/30/19 9:30 PM	2.00	473	479	480	5/30/19 7:15 PM	5/30/19 7:15 PM	587	567	
6b	5/30/19 10:15 PM	5/31/19 1:15 AM	3.00	477	477	480	5/30/19 9:45 PM	5/30/19 10:00 PM	490	487	
Jul-19	1	7/11/19 11:00 PM	7/11/19 11:45 PM	0.75	479	479	480	7/11/19 9:30 PM	7/11/19 10:45 PM	565	544
	2a	7/18/19 1:45 AM	7/18/19 2:45 AM	1.00	400	400	480	7/17/19 9:00 PM	7/18/19 1:30 AM	605	526
	2b	7/18/19 1:00 PM	7/18/19 3:00 PM	2.00	387	387	480	7/18/19 8:45 AM	7/18/19 12:45 PM	589	482
	3a	7/22/19 9:15 PM	7/22/19 11:45 PM	2.50	353	404	480	7/22/19 4:30 PM	7/22/19 9:00 PM	551	480
	3b	7/23/19 5:15 AM	7/23/19 5:15 AM	0.00*	287	287	480	7/23/19 5:30 AM	7/23/19 8:15 AM	533	500
	3c	7/23/19 8:30 AM	7/23/19 12:00 PM	3.50	437	437	480				
4	7/31/19 4:00 PM	7/31/19 6:30 PM	2.50	356	479	480	N/A	N/A	N/A	N/A	
Aug-19	1	8/4/19 12:15 AM	8/4/19 2:15 AM	3.00	463	463	550	N/A	N/A	N/A	N/A
	2	8/7/19 6:45 PM	8/7/19 9:45 PM	1.75	487	487	550	N/A	N/A	N/A	N/A
	3	8/18/19 5:45 PM	8/18/19 7:15 PM	1.50	228	491	550	N/A	N/A	N/A	N/A
	4a	8/22/19 9:15 PM	8/22/19 11:45 PM	2.50	537	537	550	N/A	N/A	N/A	N/A
4b	8/23/19 1:45 AM	8/23/19 2:45 AM	1.00	511	511	550	N/A	N/A	N/A	N/A	
Oct-19	1	10/7/19 8:15 PM	10/7/19 10:15 PM	2.00	193	438	550	N/A	N/A	N/A	N/A
	2	10/16/19 10:00 PM	10/17/19 1:30 AM	3.50	546	546	550	10/16/19 6:30 PM	10/16/19 9:45 PM	574	564
Dec-19	1a	12/30/19 6:00 AM	12/30/19 7:15 AM	1.25	248	516	550	N/A	N/A	N/A	N/A
	1b	12/30/19 5:00 PM	12/30/19 7:45 PM	2.75	533	533	550	N/A	N/A	N/A	N/A

NOTES:
 * Potential CSO Discharge Duration was less than the 15-minute reportable interval.
 ** "WWTP Event Maximum Flow" values reported with two asterisks(**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below.
 *** "WWTP Event Average Flow" values reported with three asterisks(***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").
 These events were reported in the Wet Weather Quarterly Report submittal.

CY2019 Key Regulator Monitoring Report

Regulator WIM-23	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Apr-19	1	4/12/19 10:45 PM	4/12/19 11:45 PM	1.00	417	470	480	N/A	N/A	N/A	N/A
May-19	1	5/29/19 10:00 PM	5/29/19 10:00 PM	0.00*	423	423	480	5/29/19 7:00 PM	5/29/19 9:45 PM	561	527
Jun-19	1a	6/21/19 6:30 AM	6/21/19 6:45 AM	0.25	418	418	480	N/A	N/A	N/A	N/A
	1b	6/21/19 9:00 AM	6/21/19 10:00 AM	1.00	394	394	480	N/A	N/A	N/A	N/A
	2	6/25/19 7:45 AM	6/25/19 9:00 AM	1.25	240	591	480	6/25/19 8:00 AM	6/25/19 8:45 AM	591	558
Aug-19	1	8/7/19 8:15 PM	8/7/19 8:45 PM	1.50	434	449	550	N/A	N/A	N/A	N/A
	2	8/18/19 6:45 PM	8/18/19 7:30 PM	0.75	497	497	550	N/A	N/A	N/A	N/A
	3a	8/22/19 9:00 PM	8/22/19 10:00 PM	1.00	307	547	550	N/A	N/A	N/A	N/A
	3b	8/22/19 10:30 PM	8/22/19 11:15 PM	0.75	534	541	550	N/A	N/A	N/A	N/A
	3c	8/23/19 12:45 AM	8/23/19 1:15 AM	0.50	414	481	550	N/A	N/A	N/A	N/A
Oct-19	1a	10/16/19 6:15 PM	10/16/19 6:15 PM	0.00*	540	540	550	10/16/19 6:30 PM	10/16/19 9:45 PM	574	564
	1b	10/16/19 10:00 PM	10/16/19 10:00 PM	0.00*	547	547	550				
	2	10/27/19 3:00 PM	10/27/19 3:15 PM	0.25	545	545	550	10/27/19 11:45 AM	10/27/19 2:45 PM	577	561

NOTES:

* Potential CSO Discharge Duration was less than the 15-minute reportable interval.

** "WWTP Event Maximum Flow" values reported with two asterisks(**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:

*** "WWTP Event Average Flow" values reported with three asterisks(***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity").

These events were reported in the Wet Weather Quarterly Report submittal.

Appendix 3.2: WET WEATHER THROTTLING SUMMARY – CY 2019

28TH WARD - WET WEATHER THROTTLING SUMMARY													
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Plant Throttling Information					Critical Wet Weather Event						
		Did Plant Throttle? Yes/No	Influent Flow at Start of Throttling (MGD)	Throttling Avg Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.
12/31/2018	127.5	YES	135	134	134	n/a	12/31/2018	7:00 PM	1/1/2019	3:00 AM	136	134	n/a
1/9/2019	127.5	NO	n/a	n/a	n/a	n/a	1/9/2019	12:45 AM	1/9/2019	1:15 AM	134	132	n/a
1/20/2019	127.5	YES	133	133	133	n/a	1/20/2019	1:00 AM	1/20/2019	11:45 AM	138	133	n/a
1/24/2019	127.5	YES	133	132	132	n/a	1/24/2019	11:00 AM	1/24/2019	6:15 PM	137	132	n/a
2/6/2019	127.5	YES	135	131	131	n/a	2/6/2019	10:30 PM	2/7/2019	2:00 AM	135	132	n/a
2/12/2019	127.5	NO	n/a	n/a	n/a	n/a	2/12/2019	9:45 PM	2/13/2019	1:45 AM	139	134	n/a
2/21/2019	127.5	YES	135	133	133	n/a	2/21/2019	12:30 AM	2/21/2019	2:30 AM	136	133	n/a
2/24/2019	127.5	YES	136	134	134	n/a	2/24/2019	6:00 AM	2/24/2019	11:15 AM	141	134	n/a
3/4/2019	127.5	YES	129	127	127	n/a	3/4/2019	1:15 PM	3/4/2019	2:30 PM	130	128	n/a
3/10/2019	127.5	YES	130	132	132	n/a	3/10/2019	6:30 AM	3/10/2019	8:00 AM	133	132	n/a
3/10/2019	127.5	YES	134	135	135	n/a	3/10/2019	10:00 AM	3/10/2019	1:30 PM	138	134	n/a
3/15/2019	127.5	YES	135	133	133	n/a	3/15/2019	10:45 PM	3/15/2019	11:30 PM	135	133	n/a
3/21/2019	127.5	YES	136	131	131	n/a	3/21/2019	11:15 PM	3/22/2019	10:45 AM	138	131	n/a
4/8/2019	127.5	YES	133	132	132	n/a	4/8/2019	3:30 AM	4/8/2019	4:15 AM	135	133	n/a
4/13/2019	127.5	YES	134	135	135	n/a	4/13/2019	12:00 AM	4/13/2019	1:45 AM	137	135	n/a
4/13/2019	127.5	NO	n/a	n/a	n/a	n/a	4/13/2019	7:00 AM	4/13/2019	7:30 AM	133	131	n/a
4/15/2019	127.5	YES	137	132	132	n/a	4/15/2019	5:45 AM	4/15/2019	8:30 AM	144	132	n/a
4/15/2019	127.5	YES	132	131	131	n/a	4/15/2019	12:15 PM	4/15/2019	1:30 PM	132	131	n/a
4/20/2019	127.5	YES	133	132	132	n/a	4/20/2019	9:00 AM	4/20/2019	10:30 AM	135	132	n/a
4/26/2019	127.5	YES	134	131	131	n/a	4/26/2019	1:30 PM	4/26/2019	4:15 PM	135	131	n/a
4/26/2019	127.5	YES	133	131	131	n/a	4/26/2019	1:30 PM	4/26/2019	4:15 PM	135	131	n/a
4/26/2019	127.5	YES	131	131	131	n/a	4/26/2019	9:00 PM	4/26/2019	10:00 PM	135	131	n/a
5/2/2019	127.5	YES	135	133	133	n/a	5/2/2019	10:30 PM	5/3/2019	12:00 AM	136	132	n/a
5/3/2019	127.5	NO	n/a	n/a	n/a	n/a	5/3/2019	3:45 PM	5/3/2019	4:15 PM	139	137	n/a
5/5/2019	127.5	YES	134	134	134	n/a	5/5/2019	6:00 AM	5/5/2019	3:00 PM	139	132	n/a
5/5/2019	127.5	YES	133	132	132	n/a	5/5/2019	6:00 AM	5/5/2019	3:00 PM	139	132	n/a

26TH WARD - WET WEATHER THROTTLING SUMMARY													
Stoym Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Plant Throttling Information				Critical Wet Weather Event						
			Influent Flow at Start of Throttling (MGD)	Throttling Avg Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.
5/5/2019	127.5	YES	135	134	134	n/a	5/5/2019	8:15 PM	5/6/2019	12:00 AM	140	134	n/a
5/12/2019	127.5	NO	n/a	n/a	n/a	n/a	5/12/2019	10:00 AM	5/12/2019	1:15 PM	136	131	n/a
5/12/2019	127.5	YES	137	132	132	n/a	5/12/2019	4:00 PM	5/12/2019	7:00 PM	134	132	n/a
5/13/2019	127.5	YES	135	136	136	n/a	5/13/2019	5:45 PM	5/13/2019	8:00 PM	137	135	n/a
5/23/2019	127.5	YES	133	129	129	n/a	5/23/2019	8:30 AM	5/23/2019	9:15 AM	130	129	n/a
5/29/2019	127.5	YES	140	131	131	n/a	5/29/2019	7:00 PM	5/29/2019	10:00 PM	140	131	n/a
5/30/2019	127.5	YES	139	133	133	n/a	5/30/2019	7:00 PM	5/30/2019	11:00 PM	136	133	n/a
6/2/2019	127.5	YES	135	133	133	n/a	6/2/2019	6:30 PM	6/2/2019	7:45 PM	133	n/a	n/a
6/6/2019	127.5	YES	131	131	131	n/a	6/6/2019	2:15 AM	6/6/2019	3:30 AM	131	n/a	n/a
6/10/2019	127.5	YES	135	134	134	n/a	6/10/2019	2:30 PM	6/10/2019	5:00 PM	134	n/a	n/a
6/13/2019	127.5	YES	135	133	133	n/a	6/13/2019	9:15 AM	6/13/2019	11:15 AM	133	n/a	n/a
6/13/2019	127.5	YES	132	132	132	n/a	6/13/2019	9:30 AM	6/14/2019	12:00 AM	132	n/a	n/a
6/18/2019	127.5	YES	134	134	134	n/a	6/18/2019	2:30 PM	6/18/2019	5:45 PM	134	n/a	n/a
6/18/2019	127.5	YES	135	138	138	n/a	6/18/2019	7:00 PM	6/18/2019	9:45 PM	138	137	n/a
6/20/2019	127.5	YES	141	133	133	n/a	6/20/2019	6:15 PM	6/20/2019	7:30 PM	133	132	n/a
6/21/2019	127.5	YES	136	133	133	n/a	6/21/2019	6:00 AM	6/21/2019	7:30 AM	133	n/a	n/a
6/21/2019	127.5	YES	134	132	132	n/a	6/21/2019	9:00 AM	6/21/2019	11:15 AM	132	n/a	n/a
6/25/2019	127.5	NO	n/a	n/a	n/a	n/a	6/25/2019	7:45 AM	6/25/2019	9:15 AM	141	133	n/a
7/11/2019	127.5	YES	132	131	131	131	7/11/2019	9:00 PM	7/12/2019	12:00 AM	133	131	n/a
7/17/2019	127.5	YES	134	130	130	130	7/17/2019	10:15 PM	7/18/2019	1:00 AM	146	130	n/a
7/22/2019	127.5	YES	137	130	130	130	7/22/2019	6:30 PM	7/23/2019	12:30 AM	134	130	n/a
7/23/2019	127.5	YES	138	129	129	129	7/23/2019	7:00 AM	7/23/2019	9:45 AM	133	129	n/a
8/7/2019	127.5	YES	135	134	134	134	8/7/2019	6:00 PM	8/7/2019	10:30 PM	137	133	n/a
8/14/2019	127.5	YES	134	132	132	132	8/14/2019	5:45 PM	8/14/2019	7:30 PM	135	132	n/a
8/21/2019	127.5	YES	134	133	133	133	8/21/2019	6:45 PM	8/21/2019	8:00 PM	134	132	n/a
8/22/2019	127.5	YES	135	134	134	134	8/22/2019	9:30 PM	8/23/2019	3:00 AM	140	134	n/a
9/2/2019	127.5	YES	133	132	132	132	9/2/2019	1:00 PM	9/2/2019	2:15 PM	133	132	n/a
9/2/2019	127.5	YES	135	132	132	132	9/2/2019	3:45 PM	9/2/2019	5:30 PM	136	132	n/a
9/6/2019	127.5	YES	137	133	133	133	9/6/2019	2:45 PM	9/6/2019	6:15 PM	137	133	n/a
10/2/2019	127.5	NO	n/a	n/a	n/a	n/a	10/2/2019	7:15 PM	10/2/2019	8:15 PM	147	135	n/a
10/9/2019	127.5	YES	134	132	132	132	10/9/2019	11:15 AM	10/9/2019	3:00 PM	132	132	n/a
10/16/2019	127.5	YES	134	133	133	133	10/16/2019	6:15 PM	10/17/2019	12:45 AM	133	133	n/a

28TH WARD - WET WEATHER THROTTLING SUMMARY													
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Plant Throttling Information					Critical Wet Weather Event						
		Did Plant Throttle? Yes/No	Influent Flow at Start of Throttling (MGD)	Throttling Avg Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.
10/20/2019	127.5	YES	137	134	134	134	10/20/2019	7:00 PM	10/20/2019	9:45 PM	134	134	n/a
10/22/2019	127.5	YES	133	132	132	132	10/22/2019	9:00 PM	10/22/2019	11:45 PM	132	132	n/a
10/27/2019	127.5	YES	136	132	132	132	10/27/2019	11:15 AM	10/27/2019	3:30 PM	132	132	n/a
10/31/2019	127.5	YES	131	131	131	131	10/31/2019	10:00 AM	10/31/2019	11:15 AM	131	131	n/a
11/18/2019	127.5	NO	n/a	n/a	n/a	n/a	11/18/2019	10:00 PM	11/18/2019	10:30 PM	137	133	n/a
11/24/2019	127.5	NO	n/a	n/a	n/a	n/a	11/24/2019	3:45 AM	11/24/2019	4:15 AM	132	130	n/a
11/24/2019	127.5	NO	n/a	n/a	n/a	n/a	11/24/2019	5:45 AM	11/24/2019	7:00 AM	140	134	n/a
12/1/2019	127.5	YES	134	130	130	130	12/1/2019	5:15 PM	12/1/2019	9:15 PM	133	130	n/a
12/9/2019	127.5	YES	136	131	131	131	12/9/2019	7:45 AM	12/9/2019	11:45 AM	136	131	n/a
12/9/2019	127.5	YES	134	131	131	131	12/9/2019	5:30 PM	12/9/2019	10:30 PM	135	131	n/a
12/13/2019	127.5	NO	n/a	n/a	n/a	n/a	12/13/2019	5:00 PM	12/13/2019	5:30 PM	132	131	n/a
12/13/2019	127.5	YES	137	133	133	133	12/13/2019	7:45 PM	12/14/2019	8:15 AM	139	133	n/a
12/17/2020	127.5	NO	n/a	n/a	n/a	n/a	12/17/2020	3:15 AM	12/17/2020	3:30 AM	129	129	n/a
12/17/2019	127.5	YES	138	132	132	132	12/17/2019	6:45 AM	12/17/2019	6:00 PM	136	132	n/a
12/30/2019	127.5	YES	136	131	131	131	12/30/2019	5:30 PM	12/30/2019	6:30 PM	132	130	n/a

BOWERY BAY - WET WEATHER THROTTLING SUMMARY

Storm Dates	Plant Throttling Information						Critical Wet Weather Event						
	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Effluent Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time	Critical Event End Date & Time	Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.		
12/31/2018	250	YES	317	334	319	n/a	12/31/2018	7:00 PM	1/1/2019	2:45 AM	304	314	n/a
1/20/2019	300	YES	303	306	308	n/a	1/20/2019	12:30 AM	1/20/2019	11:45 AM	350	310	n/a
1/24/2019	300	YES	316	370	324	n/a	1/24/2019	10:45 AM	1/24/2019	7:00 PM	370	319	n/a
2/6/2019	300	YES	303	306	288	n/a	2/6/2019	11:00 PM	2/7/2019	1:45 AM	306	301	n/a
2/8/2019	300	NO	n/a	n/a	n/a	n/a	2/8/2019	2:30 AM	2/8/2019	4:15 AM	310	306	n/a
2/12/2019	300	NO	n/a	n/a	n/a	n/a	2/12/2019	11:30 PM	2/13/2019	2:15 AM	305	302	n/a
2/24/2019	300	YES	304	303	306	n/a	2/24/2019	6:15 AM	2/24/2019	11:00 AM	303	306	n/a
3/10/2019	300	NO	n/a	n/a	n/a	n/a	3/10/2019	7:45 AM	3/10/2019	1:00 PM	340	316	n/a
3/15/2019	300	NO	n/a	n/a	n/a	n/a	3/15/2019	10:30 PM	3/15/2019	11:30 PM	341	324	n/a
3/22/2019	300	YES	324	349	310	n/a	3/21/2019	11:45 PM	3/22/2019	9:45 AM	349	311	n/a
4/8/2019	284	NO	n/a	n/a	n/a	n/a	4/8/2019	3:45 AM	4/8/2019	5:00 AM	297	293	n/a
4/12/2019	284	NO	n/a	n/a	n/a	n/a	4/12/2019	11:15 PM	4/13/2019	3:30 AM	318	304	n/a
4/13/2019	284	NO	n/a	n/a	n/a	n/a	4/13/2019	6:45 AM	4/13/2019	8:45 AM	314	309	n/a
4/15/2019	284	NO	n/a	n/a	n/a	n/a	4/15/2019	6:00 AM	4/15/2019	10:15 AM	356	312	n/a
4/15/2019	284	NO	n/a	n/a	n/a	n/a	4/15/2019	12:45 PM	4/15/2019	2:30 PM	317	307	n/a
4/20/2019	284	NO	n/a	n/a	n/a	n/a	4/20/2019	8:30 AM	4/20/2019	1:00 PM	321	312	n/a
4/26/2019	284	NO	n/a	n/a	n/a	n/a	4/26/2019	6:00 AM	4/26/2019	6:45 AM	288	288	n/a
4/26/2019	287	YES	304	321	304	n/a	4/26/2019	1:45 PM	4/26/2019	5:30 PM	321	300	n/a
5/5/2019	284	NO	n/a	n/a	n/a	n/a	5/5/2019	4:45 AM	5/5/2019	11:45 AM	325	311	n/a
5/5/2019	284	NO	n/a	n/a	n/a	n/a	5/5/2019	6:00 PM	5/6/2019	1:00 AM	313	307	n/a
5/12/2019	284	NO	n/a	n/a	n/a	n/a	5/12/2019	12:30 PM	5/12/2019	8:00 PM	361	319	n/a
5/13/2019	284	NO	n/a	n/a	n/a	n/a	5/13/2019	5:45 PM	5/13/2019	7:45 PM	311	308	n/a
5/26/2019	284	NO	n/a	n/a	n/a	n/a	5/26/2019	7:00 PM	5/26/2019	7:15 PM	308	305	n/a
5/29/2019	284	YES	323	329	318	n/a	5/29/2019	7:30 PM	5/29/2019	10:15 PM	329	317	n/a
5/30/2019	284	NO	n/a	n/a	n/a	n/a	5/30/2019	7:15 PM	5/30/2019	11:30 PM	323	314	n/a
6/2/2019	284	NO	n/a	n/a	n/a	n/a	6/2/2019	11:00 PM	6/3/2019	12:15 AM	346	313	n/a
6/10/2019	287	YES	314	315	304	n/a	6/10/2019	2:30 PM	6/10/2019	5:30 PM	315	303	n/a
6/11/2019	284	NO	n/a	n/a	n/a	n/a	6/11/2019	6:45 AM	6/11/2019	7:45 AM	299	295	n/a
6/13/2019	284	NO	n/a	n/a	n/a	n/a	6/13/2019	10:15 AM	6/13/2019	1:45 PM	316	309	n/a
6/18/2019	284	NO	n/a	n/a	n/a	n/a	6/18/2019	2:15 PM	6/18/2019	5:45 PM	318	309	n/a
6/18/2019	284	NO	n/a	n/a	n/a	n/a	6/18/2019	7:00 PM	6/18/2019	9:30 PM	327	308	n/a

BOWERY BAY - WET WEATHER THROTTLING SUMMARY													
Storm Dates	Plant Throttling Information						Critical Wet Weather Event						
	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Effluent Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.
6/20/2019	284	YES	305	315	308	n/a	6/20/2019	4:45 PM	6/20/2019	8:45 PM	315	305	n/a
6/21/2019	284	YES	310	311	309	n/a	6/21/2019	6:30 AM	6/21/2019	12:15 PM	325	310	n/a
6/25/2019	284	NO	n/a	n/a	n/a	n/a	6/25/2019	8:15 AM	6/25/2019	11:00 AM	309	311	n/a
7/11/2019	284	NO	n/a	n/a	n/a	n/a	7/11/2019	9:30 PM	7/12/2019	12:30 AM	317	311	n/a
7/17/2019	300	YES	307	311	299	n/a	7/17/2019	9:00 PM	7/18/2019	1:45 AM	311	302	n/a
7/18/2019	284	NO	n/a	n/a	n/a	n/a	7/18/2019	11:00 AM	7/18/2019	12:15 PM	308	304	n/a
7/22/2020	284	YES	288	299	292	n/a	7/22/2019	6:45 PM	7/23/2019	11:00 PM	299	292	n/a
7/23/2019	284	NO	n/a	n/a	n/a	n/a	7/23/2019	7:00 AM	7/23/2019	8:45 AM	322	314	n/a
7/31/2019	284	NO	n/a	n/a	n/a	n/a	7/31/2019	5:30 PM	7/31/2019	6:15 PM	314	310	n/a
8/7/2019	284	NO	n/a	n/a	n/a	n/a	8/7/2019	7:00 PM	8/7/2019	11:15 PM	340	306	n/a
8/7/2019	284	YES	304	304	301	n/a	8/7/2019	7:00 PM	8/7/2019	11:15 PM	340	306	n/a
8/8/2019	284	NO	n/a	n/a	n/a	n/a	8/8/2019	9:30 PM	8/8/2019	10:30 PM	296	291	n/a
8/18/2019	284	YES	292	300	297	n/a	8/18/2019	7:00 PM	8/18/2019	8:00 PM	300	296	n/a
8/22/2019	284	NO	n/a	n/a	n/a	n/a	8/22/2019	9:30 PM	8/23/2019	3:00 AM	320	306	n/a
9/2/2019	284	YES	295	298	291	n/a	9/2/2019	1:30 PM	9/2/2019	6:45 PM	342	293	n/a
10/9/2019	284	YES	315	317	303	n/a	10/9/2019	11:45 AM	10/9/2019	3:30 PM	317	301	n/a
10/16/2019	284	YES	315	319	310	n/a	10/16/2019	5:30 PM	10/17/2019	1:45 AM	319	307	n/a
10/20/2019	284	NO	n/a	n/a	n/a	n/a	10/20/2019	5:30 PM	10/20/2019	8:45 PM	355	303	n/a
10/22/2019	284	NO	n/a	n/a	n/a	n/a	10/22/2019	10:15 PM	10/23/2019	3:15 AM	306	314	n/a
10/27/2019	284	YES	300	306	313	n/a	10/27/2019	10:45 AM	10/27/2019	5:00 PM	306	309	n/a
11/18/2019	284	NO	n/a	n/a	n/a	n/a	11/18/2019	10:00 PM	11/19/2019	4:15 AM	319	304	n/a
11/24/2019	284	YES	307	316	305	n/a	11/24/2019	3:00 AM	11/24/2019	9:00 AM	316	302	n/a
11/24/2019	284	NO	n/a	n/a	n/a	n/a	11/24/2019	12:00 PM	11/24/2019	1:30 PM	290	287	n/a
12/1/2019	284	NO	n/a	n/a	n/a	n/a	12/1/2019	5:00 PM	12/1/2019	9:45 PM	322	306	n/a
12/9/2019	234	YES	250	250	234	n/a	12/9/2019	7:30 AM	12/9/2019	2:15 PM	261	234	n/a
12/9/2019	234	YES	250	270	261	n/a	12/9/2019	4:30 PM	12/10/2019	1:15 AM	270	261	n/a
12/13/2019	234	NO	n/a	n/a	n/a	n/a	12/13/2019	8:15 PM	12/14/2019	8:00 AM	343	315	n/a
12/13/2019	234	YES	236	343	308	n/a	12/13/2019	5:30 PM	12/14/2019	8:15 AM	343	308	n/a
12/17/2019	284	NO	n/a	n/a	n/a	n/a	12/17/2019	2:45 AM	12/17/2019	5:00 AM	315	304	n/a
12/17/2019	284	NO	n/a	n/a	n/a	n/a	12/17/2019	7:45 AM	12/17/2019	4:45 PM	343	309	n/a
12/30/2019	284	NO	n/a	n/a	n/a	n/a	12/30/2019	5:15 PM	12/30/2019	6:30 PM	300	314	n/a

CONEY ISLAND - WET WEATHER THROTTLING SUMMARY

Storm Information		Plant Throttling Information					Critical Wet Weather Event						
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Influent Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.
12/31/2018	220	YES	229	230	226	n/a	12/31/2018	9:00 PM	1/1/2019	9:00 AM	230	226	n/a
1/20/2019	220	YES	223	228	224	n/a	1/20/2019	1:30 AM	1/20/2019	7:30 PM	228	224	n/a
1/24/2019	220	YES	220	230	225	n/a	1/24/2019	11:45 AM	1/25/2019	12:15 AM	230	225	n/a
2/24/2019	220	YES	225	225	221	n/a	2/24/2019	8:00 AM	2/24/2019	6:00 PM	225	221	n/a
3/10/2019	220	YES	221	231	227	n/a	3/10/2019	11:30 AM	3/10/2019	5:30 PM	231	224	n/a
4/26/2019	220	YES	223	223	222	n/a	4/26/2019	3:00 PM	4/26/2019	8:00 PM	223	222	n/a
5/5/2019	220	YES	230	n/a	n/a	n/a	5/5/2019	8:30 AM	5/5/2019	9:30 AM	226	225	n/a
5/5/2019	220	YES	231	232	230	n/a	5/5/2019	9:15 PM	5/6/2019	4:15 AM	232	193	n/a
5/12/2019	220	YES	225	230	224	n/a	5/12/2019	4:10 PM	5/12/2019	11:00 PM	252	227	n/a
5/13/2019	220	NO	n/a	n/a	n/a	n/a	5/13/2019	6:00 PM	5/13/2019	11:00 PM	252	230	n/a
5/28/2019	220	YES	222	222	221	n/a	5/29/2019	11:45 PM	5/29/2019	2:30 AM	224	213	n/a
5/29/2019	200	YES	220	244	237	n/a	5/29/2019	8:00 PM	5/30/2019	1:45 AM	248	242	n/a
5/30/2019	220	YES	220	n/a	n/a	n/a	5/30/2019	8:00 PM	5/31/2019	3:00 AM	228	225	n/a
6/6/2019	220	YES	226	n/a	n/a	n/a	6/6/2019	2:45 AM	6/6/2019	6:45 AM	249	240	n/a
6/10/2019	220	YES	221	223	219	n/a	6/10/2019	3:15 PM	6/10/2019	9:30 PM	223	219	WW1185
6/18/2019	220	YES	223	n/a	n/a	n/a	6/18/2019	7:00 PM	6/19/2019	1:00 AM	221	220	n/a
6/21/2019	220	YES	220	245	230	n/a	6/21/2019	6:45 AM	6/21/2019	7:15 PM	245	230	n/a
6/25/2019	220	YES	229	n/a	n/a	n/a	6/25/2019	9:00 AM	6/25/2019	4:00 PM	227	223	n/a
7/11/2019	220	NO	n/a	n/a	n/a	n/a	7/11/2019	10:15 PM	7/12/2019	2:15 AM	244	237	n/a
7/17/2019	220	YES	224	224	223	n/a	7/17/2019	10:45 PM	7/18/2019	8:00 AM	229	224	n/a
7/22/2019	220*	YES	192	193	170	n/a	7/22/2019	7:30 PM	7/23/2019	6:00 AM	193	170	n/a
7/23/2019	220*	YES	180	191	155	n/a	7/23/2019	7:15 AM	7/23/2019	6:45 PM	191	155	n/a
8/7/2019	220*	YES	186	186	187	n/a	8/7/2019	6:15 PM	8/8/2019	6:45 AM	186	187	n/a
8/14/2019	220*	YES	229	229	220	n/a	8/14/2019	6:00 PM	8/15/2019	12:10 AM	229	182	n/a
8/22/2019	220*	YES	197	247	212	n/a	8/22/2019	9:45 PM	8/23/2019	9:15 AM	247	212	n/a
9/2/2019	220*	YES	190	192	187	n/a	9/2/2019	2:00 PM	9/3/2019	4:45 AM	192	187	n/a
9/6/2019	220	NO	n/a	n/a	n/a	n/a	9/6/2019	4:00 PM	9/6/2019	7:00 PM	240	233	n/a
10/9/2019	220	NO	n/a	n/a	n/a	n/a	10/9/2019	2:15 PM	10/9/2019	5:45 PM	235	232	n/a
10/16/2019	220	YES	223	234	227	n/a	10/16/2019	7:00 PM	10/17/2019	5:30 AM	234	227	n/a
10/27/2019	220	YES	180	185	183	n/a	10/27/2019	12:45 PM	10/28/2019	2:00 AM	185	183	n/a
12/9/2019	220	YES	207	213	203	n/a	12/9/2019	9:45 AM	12/9/2019	4:30 AM	213	203	n/a

HUNTS POINT - WET WEATHER THROTTLING SUMMARY													
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Throttling Period				Bypass Item No.	Critical Wet Weather Event					
			Influent Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Critical Event Start Date & Time		Critical Event End Date & Time	Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.		
12/31/2018	400	YES	413	413	402	n/a	12/31/2018	7:45 PM	1/1/2019	1:00 AM	416	404	n/a
1/20/2019	400	YES	413	413	368	n/a	1/20/2019	1:15 AM	1/20/2019	4:00 AM	413	368	WW1180
1/24/2019	400	YES	418	418	405	n/a	1/24/2019	11:15 AM	1/24/2019	5:15 PM	418	405	n/a
2/21/2019	400	YES	403	407	405	n/a	2/21/2019	12:30 AM	2/21/2019	2:00 AM	407	405	n/a
3/22/2019	400	YES	413	423	407	n/a	3/22/2019	1:15 AM	3/22/2019	4:00 AM	423	409	n/a
4/26/2019	400	YES	423	423	415	n/a	4/26/2019	2:15 PM	4/26/2019	2:45 PM	430	410	n/a
5/5/2019	400	YES	205	405	353	n/a	5/5/2019	8:00 PM	5/5/2019	9:45 PM	409	366	WW1186
5/12/2019	400	NO	n/a	n/a	n/a	n/a	5/12/2019	2:00 PM	5/12/2019	6:15 PM	412	408	n/a
5/13/2019	400	NO	n/a	n/a	n/a	n/a	5/13/2019	5:45 PM	5/13/2019	7:15 PM	423	415	n/a
5/23/2019	330	YES	338	345	339	n/a	5/23/2019	6:45 AM	5/23/2019	7:15 AM	345	339	n/a
5/29/2019	400	NO	n/a	n/a	n/a	n/a	5/29/2019	7:15 PM	5/29/2019	8:45 PM	432	416	n/a
5/30/2019	400	YES	423	n/a	n/a	n/a	5/30/2019	7:00 PM	5/30/2019	10:45 PM	425	411	n/a
6/25/2019	400	YES	428	430	417	n/a	6/25/2019	8:15 AM	6/25/2019	9:00 AM	430	414	n/a
7/11/2019	400	YES	418	424	403	n/a	7/11/2019	9:45 PM	7/11/2019	11:45 PM	424	403	n/a
7/17/2019	400	YES	408	n/a	n/a	n/a	7/17/2019	9:15 PM	7/18/2019	2:00 AM	435	407	n/a
7/22/2019	400	YES	423	n/a	n/a	n/a	7/22/2019	6:45 PM	7/22/2019	8:45 PM	427	407	n/a
7/23/2019	400	YES	408	n/a	n/a	n/a	7/23/2019	5:45 AM	7/23/2019	7:15 AM	426	412	n/a
8/4/2019	400	YES	446	447	415	n/a	8/4/2019	12:30 AM	8/4/2019	2:45 AM	447	415	n/a
8/7/2019	330	YES	373	360	345	n/a	8/7/2019	7:00 PM	8/7/2019	9:30 PM	360	345	n/a
8/22/2019	400	YES	422	429	415	n/a	8/22/2019	9:15 PM	8/22/2019	10:00 PM	429	402	n/a
10/9/2019	400	NO	n/a	n/a	n/a	n/a	10/9/2019	12:15 PM	10/9/2019	1:15 PM	413	407	n/a
10/27/2019	400	NO	n/a	n/a	n/a	n/a	10/27/2019	12:00 PM	10/27/2019	12:45 PM	431	415	n/a
12/1/2019	400	NO	n/a	n/a	n/a	n/a	12/1/2019	5:45 PM	12/1/2019	6:15 PM	410	406	n/a
12/9/2019	400	NO	n/a	n/a	n/a	n/a	12/9/2019	9:45 AM	12/9/2019	10:45 AM	413	408	n/a
12/9/2019	400	NO	n/a	n/a	n/a	n/a	12/9/2019	7:15 PM	12/9/2019	8:45 PM	424	409	n/a
12/13/2019	400	NO	n/a	n/a	n/a	n/a	12/13/2019	10:30 PM	12/14/2019	12:45 AM	415	407	n/a

JAMAICA - WET WEATHER THROTTLING SUMMARY													
Storm Information		Plant Throttling Information					Critical Wet Weather Event						
Storm Date	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Effluent Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.
1/1/2019	200	NO	n/a	n/a	n/a	n/a	1/1/2019	12:00 AM	1/1/2019	2:00 AM	220	209	n/a
1/24/2019	200	NO	n/a	n/a	n/a	n/a	1/24/2019	11:45 AM	1/24/2019	2:00 PM	215	207	n/a
5/30/2019	200	NO	n/a	n/a	n/a	n/a	5/30/2019	8:30 PM	5/30/2019	10:30 PM	212	205	n/a
6/15/2019	200	NO	n/a	n/a	n/a	n/a	6/15/2019	3:00 PM	6/15/2019	5:15 PM	220	211	n/a
7/17/2019	200	NO	n/a	n/a	n/a	n/a	7/17/2019	11:30 PM	7/18/2019	12:15 AM	207	204	n/a
7/22/2019	200	NO	n/a	n/a	n/a	n/a	7/22/2019	8:00 PM	7/22/2019	9:45 PM	229	216	n/a
7/23/2019	200	NO	n/a	n/a	n/a	n/a	7/23/2019	8:15 AM	7/23/2019	9:15 AM	206	204	n/a
8/7/2019	200	NO	n/a	n/a	n/a	n/a	8/7/2019	8:00 PM	8/7/2019	9:30 PM	213	207	n/a
8/22/2019	200	NO	n/a	n/a	n/a	n/a	8/22/2019	10:30 PM	8/22/2019	11:45 PM	212	207	n/a
10/27/2019	200	NO	n/a	n/a	n/a	n/a	10/27/2019	12:30 PM	10/27/2019	3:15 PM	217	209	n/a
12/9/2019	200	NO	n/a	n/a	n/a	n/a	12/9/2019	7:45 PM	12/9/2019	9:30 PM	209	205	n/a
12/14/2019	200	NO	n/a	n/a	n/a	n/a	12/14/2019	12:15 AM	12/14/2019	8:00 AM	223	212	n/a

NEWTOWN CREEK - WET WEATHER THROTTLING SUMMARY

Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Plant Throttling Information					Critical Wet Weather Event							
		Did Plant Throttle? Yes/No	OCT Flow at Start of BQ Throttling	Flow at Start of MPS Throttling (MPS only)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Critical Event Start Date & Time	Critical Event End Date & Time	Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Bypass Barn No.	Wet Weather Barn No.		
12/1/2018	700	YES	752	n/a	n/a	n/a	12/1/2018	7:30 PM	1/1/2019	1:30 AM	817	799	n/a	n/a
	700	YES	747	391	817	808								
1/18/2019	700	YES	861	392	796	779	1/23/2019	12:30 AM	1/25/2019	5:00 AM	796	766	n/a	n/a
1/24/2019	700	YES	788	394	796	759	1/24/2019	11:15 AM	1/24/2019	3:45 PM	796	758	n/a	n/a
2/6/2019	700	YES	729	n/a	n/a	n/a	2/6/2019	10:30 PM	2/6/2019	11:30 PM	748	720	n/a	n/a
2/24/2019	700	YES	728	392	798	708	2/24/2019	6:30 AM	2/24/2019	9:00 AM	798	762	n/a	n/a
3/13/2019	700	YES	642	298	642	535	3/13/2019	7:00 AM	3/13/2019	6:30 AM	642	535	n/a	WW1194
3/19/2019	700	YES	722	334	722	635	3/19/2019	10:45 AM	3/19/2019	1:30 PM	722	635	n/a	WW1185
3/15/2019	700	YES	628	320	628	531	3/15/2019	11:30 PM	3/15/2019	11:45 PM	628	570	n/a	n/a
3/21/2019	700	YES	728	385	792	772	3/21/2019	11:30 PM	3/22/2019	4:00 AM	792	762	n/a	n/a
4/8/2019	700	YES	664	242	664	482	4/8/2019	2:15 AM	4/8/2019	5:00 AM	664	464	n/a	n/a
4/12/2019	700	NO	n/a	n/a	687	680	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4/15/2019	700	YES	751	379	776	622	4/15/2019	5:30 AM	4/15/2019	7:30 AM	776	716	n/a	n/a
4/15/2019	700	YES	725	n/a	654	624	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4/26/2019	700	YES	779	381	852	790	4/26/2019	2:15 PM	4/26/2019	3:45 PM	852	770	n/a	n/a
5/5/2019	700	YES	734	n/a	820	713	5/5/2019	6:30 AM	5/5/2019	8:30 AM	820	795	n/a	n/a
5/5/2019	700	YES	821	n/a	820	753	5/5/2019	8:30 PM	5/5/2019	10:45 PM	820	775	n/a	n/a
5/12/2019	700	NO	n/a	n/a	n/a	n/a	5/12/2019	1:45 PM	5/12/2019	2:00 PM	711	708	n/a	n/a
5/12/2019	700	YES	828	385	798	752	5/12/2019	3:30 PM	5/12/2019	5:15 PM	798	748	n/a	n/a
5/13/2019	700	NO	n/a	385	824	818	5/13/2019	6:00 PM	5/13/2019	7:45 PM	824	777	n/a	n/a
5/29/2019	700	YES	809	382	817	802	5/29/2019	7:15 PM	5/29/2019	9:30 PM	817	792	n/a	n/a
5/30/2019	700	YES	821	386	836	759	5/30/2019	7:15 PM	5/30/2019	9:45 PM	836	800	n/a	n/a
6/10/2019	700	YES	812	386	836	792	6/10/2019	2:30 PM	6/10/2019	4:45 PM	836	806	n/a	n/a
6/13/2019	700	NO	n/a	391	804	763	6/13/2019	10:15 AM	6/13/2019	12:00 PM	804	757	n/a	n/a
6/18/2019	700	NO	n/a	379	852	835	6/18/2019	1:30 PM	6/18/2019	4:15 PM	852	811	n/a	n/a
6/25/2019	700	NO	n/a	386	844	599	6/25/2019	6:30 PM	6/25/2019	7:00 PM	812	767	n/a	n/a
6/21/2019	700	NO	n/a	387	832	830	6/21/2019	6:30 AM	6/21/2019	7:15 AM	832	807	n/a	n/a
6/21/2019	700	NO	n/a	384	880	824	6/21/2019	9:00 AM	6/21/2019	10:30 AM	880	813	n/a	n/a
6/25/2019	700	NO	n/a	381	832	803	6/25/2019	8:00 AM	6/25/2019	9:30 AM	832	782	n/a	n/a
7/11/2019	700	YES	807	382	812	770	7/11/2019	9:15 PM	7/11/2019	11:45 PM	812	770	n/a	n/a
7/17-7/18/2019	700	YES	808	387	804	706	7/17/2019	10:30 PM	7/18/2019	1:00 AM	804	772	n/a	n/a
7/22/2019	700	YES	745	386	820	784	7/22/2019	6:45 PM	7/22/2019	9:30 PM	820	787	n/a	n/a
7/23/2019	700	NO	n/a	n/a	n/a	n/a	7/23/2019	7:30 AM	7/23/2019	8:30 AM	815	778	n/a	n/a

NEWTOWN CREEK - WET WEATHER THROTTLING SUMMARY															
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Plant Throttling Information							Critical Wet Weather Event						
		Did Plant Throttle? Yes/No	COT Flow at Start of B/C Throttling	Flow at Start of MPS Throttling (MPS only)	WET WEATHER PLANT CAPACITY (MGD)	Throttling Max Flow (MGD)	Bypass Item No.	Throttling Avg Flow (MGD)	Critical Event Start Date & Time	Critical Event End Date & Time	Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.		
8/4/2019	700	YES	824	382	700	820	na	790	8/4/2019	1:00 AM	8/4/2019	1:45 AM	820	790	na
8/7/2019	700	YES	798	354	700	840	na	775	8/7/2019	6:30 PM	8/7/2019	8:30 PM	840	794	na
8/23/2019	700	YES	765	390	700	792	na	773	8/23/2019	9:30 PM	8/23/2019	11:30 PM	792	762	na
8/23/2019	700	YES	807	390	700	812	na	772	8/23/2019	1:00 AM	8/23/2019	2:00 AM	812	758	na
8/23/2019	700	YES	782	389	700	820	na	796	8/23/2019	1:00 PM	8/23/2019	2:15 PM	820	796	na
8/23/2019	700	NO	na	na	700	na	na	na	8/23/2019	3:30 PM	8/23/2019	4:30 PM	844	794	na
8/6/2019	700	NO	na	na	700	na	na	na	8/6/2019	4:15 PM	8/6/2019	5:30 PM	828	798	na
10/3/2019	700	YES	474	na	700	520	5554	394	na	na	na	na	na	na	na
10/8/2019	700	YES	834	395	700	834	na	836	10/8/2019	11:45 AM	10/8/2019	2:30 PM	834	792	na
10/16/2019	700	YES	822	393	700	822	na	789	10/16/2019	6:15 PM	10/16/2019	11:45 PM	822	789	na
10/27/2019	700	YES	757	388	700	802	na	788	10/27/2019	11:30 AM	10/27/2019	3:15 PM	802	784	na
11/16/2019	518	YES	683	na	518	683	na	574	11/16/2019	9:30 PM	11/16/2019	11:45 PM	683	574	na
12/1/2019	700	YES	769	na	700	781	na	748	12/1/2019	5:30 PM	12/1/2019	7:30 PM	781	748	na
12/8/2019	700	YES	748	na	700	754	na	701	12/8/2019	8:15 AM	12/8/2019	10:45 AM	754	723	na
12/8/2019	700	YES	738	395	700	785	na	759	12/8/2019	6:00 PM	12/8/2019	9:45 PM	785	765	na
12/13/2019	700	YES	856	390	700	856	na	793	12/13/2019	10:00 PM	12/14/2019	5:15 AM	856	790	na

NORTH RIVER - WET WEATHER THROTTLING SUMMARY

Event Dates	WET WEATHER PLANT CAPACITY (MGD)	Plant Throttling Information					Critical Wet Weather Event						
		Did Plant Throttle? Yes/No	Influent Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.
12/1/2018	340	Yes	344	373	351	n/a	12/1/2018	8:15 PM	1/1/2019	2:45 AM	373	350	n/a
1/25/2019	340	Yes	273	354	348	n/a	1/25/2019	2:00 AM	1/25/2019	9:00 AM	354	348	n/a
1/24/2019	340	Yes	344	359	344	n/a	1/24/2019	11:15 AM	1/24/2019	8:30 PM	373	345	n/a
2/6/2019	340	YES	292	335	284	5534	2/6/2019	11:15 PM	2/7/2019	1:45 AM	335	284	WW1181
2/1/2019	n/a	NO	n/a	n/a	n/a	n/a	2/1/2019	1:45 AM	2/1/2019	2:30 AM	362	349	n/a
2/4/2019	340	Yes	345	354	349	n/a	2/4/2019	7:15 AM	2/4/2019	10:30 AM	362	350	n/a
3/10/2019	340	Yes	342	362	354	n/a	3/10/2019	11:15 AM	3/10/2019	1:15 PM	362	351	n/a
3/22/2019	340	Yes	342	355	347	n/a	3/22/2019	1:00 AM	3/22/2019	8:15 AM	355	347	n/a
4/13/2019	340	Yes	118.85	133	128	5545 aanol	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4/15/2019	340	Yes	383	359	357	n/a	4/15/2019	8:15 AM	4/15/2019	7:30 AM	359	350	n/a
4/26/2019	340	Yes	356	363	349	n/a	4/26/2019	2:00 PM	4/26/2019	5:00 PM	365	352	n/a
5/5/2019	n/a	NO	n/a	n/a	n/a	n/a	5/5/2019	7:00 AM	5/5/2019	8:30 AM	358	348	n/a
5/5/2019	n/a	NO	n/a	n/a	n/a	n/a	5/5/2019	8:30 PM	5/5/2019	11:15 PM	359	353	n/a
5/13/2019	n/a	NO	n/a	n/a	n/a	n/a	5/13/2019	8:00 PM	5/13/2019	8:00 PM	375	371	n/a
5/29/2019	340	Yes	345	345	331	n/a	5/29/2019	7:15 PM	5/29/2019	10:15 PM	345	330	WW1187
5/30/2019	340	Yes	354	390	337	n/a	5/30/2019	7:00 PM	5/30/2019	11:30 PM	367	348	n/a
6/10/2019	n/a	NO	n/a	n/a	n/a	n/a	6/10/2019	4:15 PM	6/10/2019	5:15 PM	372	358	n/a
6/18/2019	n/a	NO	n/a	n/a	n/a	n/a	6/18/2019	3:00 PM	6/18/2019	2:45 PM	361	356	n/a
6/21/2019	n/a	NO	n/a	n/a	n/a	n/a	6/21/2019	9:30 AM	6/21/2019	11:00 AM	361	351	n/a
6/25/2019	n/a	NO	n/a	n/a	n/a	n/a	6/25/2019	8:00 AM	6/25/2019	8:45 AM	353	347	n/a
7/17/2019	340	YES	257	351	252	n/a	7/17/2019	9:00 PM	7/18/2019	4:00 AM	351	252	n/a
7/18/2019	n/a	NO	n/a	n/a	n/a	n/a	7/18/2019	10:15 AM	7/18/2019	12:45 PM	356	345	n/a
7/22/2019	n/a	NO	n/a	n/a	n/a	n/a	7/22/2019	8:15 PM	7/22/2019	10:30 PM	357	350	n/a
7/23/2019	n/a	NO	n/a	n/a	n/a	n/a	7/23/2019	7:15 AM	7/23/2019	8:15 AM	351	347	n/a
8/7/2019	340	Yes	365	369	350	n/a	8/7/2019	8:45 PM	8/7/2019	10:00 PM	369	350	n/a
8/22/2019	n/a	NO	n/a	n/a	n/a	n/a	8/22/2019	9:45 PM	8/23/2019	12:15 AM	353	347	n/a
8/23/2019	n/a	NO	n/a	n/a	n/a	n/a	8/23/2019	1:15 AM	8/23/2019	2:30 AM	348	344	n/a
10/9/2019	340	YES	354	356	329	n/a	10/9/2019	12:15 PM	10/9/2019	4:15 PM	356	329	n/a
10/16/2019	n/a	NO	n/a	n/a	n/a	n/a	10/16/2019	7:15 PM	10/16/2019	9:45 PM	364	350	n/a
10/27/2019	n/a	NO	n/a	n/a	n/a	n/a	10/27/2019	11:30 AM	10/27/2019	2:00 PM	354	346	n/a
12/1/2019	n/a	NO	n/a	n/a	n/a	n/a	12/1/2019	5:15 PM	12/1/2019	7:15 PM	280	265	n/a
12/9/2019	255	yes	282	285	273	n/a	12/9/2019	8:30 AM	12/9/2019	10:45 AM	285	274	n/a
12/9/2019	n/a	NO	n/a	n/a	n/a	n/a	12/9/2019	5:45 PM	12/9/2019	11:30 PM	285	271	n/a
12/13/2019	n/a	NO	n/a	n/a	n/a	n/a	12/13/2019	8:30 PM	12/14/2019	5:30 AM	280	271	n/a
12/14/2019	n/a	NO	n/a	n/a	n/a	n/a	12/14/2019	9:00 AM	12/14/2019	10:00 AM	290	258	n/a
12/17/2019	255	yes	279	288	249	n/a	12/17/2019	10:30 AM	12/17/2019	7:00 PM	288	251	n/a
12/30/2019	n/a	NO	n/a	n/a	n/a	n/a	12/30/2019	8:30 PM	12/30/2019	7:15 PM	280	274	n/a

OAKWOOD BEACH - WET WEATHER THROTTLING SUMMARY

Storm Information		Plant Throttling Information						Critical Wet Weather Event						
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Effluent Flow at Start of Throttling (MGD)	WET WEATHER PLANT CAPACITY (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.
1/11/2019	79.8	NO	n/a	79.8	n/a	n/a	n/a	1/11/2019	12:00 AM	1/11/2019	12:45 AM	81	81	n/a
1/20/2019	79.8	NO	n/a	79.8	n/a	n/a	n/a	1/20/2019	2:45 AM	1/20/2019	4:00 AM	85	82	n/a
1/24/2019	79.8	NO	n/a	79.8	n/a	n/a	n/a	1/24/2019	1:45 PM	1/24/2019	2:15 PM	84	83	n/a
3/19/2019	79.8	NO	n/a	79.8	n/a	n/a	n/a	3/19/2019	1:00 PM	3/19/2019	1:45 PM	83	82	n/a
6/18/2019	79.8	NO	n/a	79.8	n/a	n/a	n/a	6/18/2019	4:00 PM	6/19/2019	12:00 AM	103	93	n/a
6/21/2019	79.8	NO	n/a	79.8	n/a	n/a	n/a	6/21/2019	9:30 AM	6/21/2019	11:00 AM	85	83	n/a
7/17/2019	79.8	NO	n/a	79.8	n/a	n/a	n/a	7/17/2019	11:00 PM	7/18/2019	1:00 AM	102	93	n/a
7/22/2019	79.8	NO	n/a	79.8	n/a	n/a	n/a	7/22/2019	8:00 PM	7/23/2019	12:00 AM	103	90	n/a
8/7/2019	79.8	NO	n/a	79.8	n/a	n/a	n/a	8/7/2019	6:30 PM	8/7/2019	11:30 PM	104	98	n/a
12/14/2019	79.8	NO	n/a	79.8	n/a	n/a	n/a	12/14/2019	1:45 AM	12/14/2019	4:00 AM	98	89	n/a

OWLS HEAD - WET WEATHER THROTTLING SUMMARY													
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Plant Throttling Information					Critical Wet Weather Event						
		Did Plant Throttle? Yes/No	Influent Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.
12/31/2018	180	YES	188	190	186	n/a	12/31/2018	5:45 PM	12/31/2018	4:45 AM	190	186	n/a
1/5/2019	180	YES	184	185	183	n/a	1/5/2019	2:45 AM	1/5/2019	6:30 AM	185	183	n/a
1/5/2019	180	NO	n/a	n/a	n/a	n/a	1/5/2019	1:00 PM	1/5/2019	2:15 PM	188	186	n/a
1/9/2019	240	YES	244	244	242	n/a	1/9/2019	12:45 AM	1/9/2019	2:00 AM	244	242	n/a
1/19/2019	240	YES	240	247	243	n/a	1/19/2019	11:15 PM	1/20/2019	11:30 AM	247	243	n/a
1/24/2019	240	YES	240	249	243	n/a	1/24/2019	10:30 AM	1/24/2019	6:45 PM	249	243	n/a
2/6/2019	240	YES	248	248	241	n/a	2/6/2019	10:15 PM	2/7/2019	2:15 AM	248	241	n/a
2/12/2019	240	YES	248	248	243	n/a	2/12/2019	9:15 PM	2/13/2019	3:15 AM	248	243	n/a
2/21/2019	240	YES	240	242	240	n/a	2/21/2019	12:00 AM	2/21/2019	4:00 AM	242	240	n/a
2/24/2019	240	YES	244	245	240	n/a	2/24/2019	5:45 AM	2/24/2019	11:00 AM	245	240	n/a
3/1/2019	240	YES	242	n/a	n/a	n/a	3/4/2019	1:15 PM	3/4/2019	3:30 PM	243	241	n/a
3/15/2019	240	YES	240	243	240	n/a	3/10/2019	6:30 AM	3/10/2019	3:00 PM	243	241	n/a
3/21/2019	240	YES	242	241	240	n/a	3/15/2019	11:00 PM	3/15/2019	12:00 AM	241	240	n/a
4/12/2019	240	YES	240	241	240	n/a	4/12/2019	11:30 PM	4/13/2019	2:30 AM	241	240	n/a
4/15/2019	240	NO	n/a	n/a	n/a	n/a	4/15/2019	5:15 AM	4/15/2019	7:00 AM	248	242	n/a
4/15/2019	240	YES	248	248	219	n/a	4/15/2019	5:15 AM	4/15/2019	1:30 AM	248	219	WW1 188
4/20/2019	240	YES	248	248	242	n/a	4/20/2019	8:30 AM	4/20/2019	12:00 PM	248	242	n/a
4/25/2019	240	YES	250	250	241	n/a	4/25/2019	1:45 PM	4/25/2019	4:45 PM	253	242	n/a
5/5/2019	240	YES	244	245	242	n/a	5/5/2019	5:45 AM	5/5/2019	3:00 PM	245	242	n/a
5/5/2019	240	YES	243	255	245	n/a	5/5/2019	7:45 PM	5/5/2019	1:00 AM	255	245	n/a
5/12/2019	240	YES	240	249	245	n/a	5/12/2019	10:00 AM	5/12/2019	7:15 PM	249	245	n/a
5/13/2019	240	YES	242	247	243	n/a	5/13/2019	2:45 PM	5/13/2019	8:30 PM	247	243	n/a
5/23/2019	240	NO	n/a	n/a	n/a	n/a	5/23/2019	9:30 AM	5/23/2019	10:45 AM	245	242	n/a
5/28/2019	240	YES	245	252	244	n/a	5/28/2019	10:30 PM	5/29/2019	12:45 AM	252	244	n/a
5/29/2019	240	YES	245	246	243	n/a	5/29/2019	7:00 PM	5/29/2019	10:15 PM	246	243	n/a
6/2/2019	240	NO	n/a	n/a	n/a	n/a	6/2/2019	2:45 AM	6/2/2019	3:45 AM	245	243	n/a
6/10/2019	240	NO	n/a	n/a	n/a	n/a	6/10/2019	2:15 PM	6/10/2019	5:00 PM	252	247	n/a
6/13/2019	240	YES	242	250	243	n/a	6/13/2019	9:15 AM	6/13/2019	12:30 PM	250	243	n/a
6/13/2019	240	NO	n/a	n/a	n/a	n/a	6/13/2019	10:30 PM	6/14/2019	12:15 AM	244	242	n/a
6/18/2019	240	YES	243	249	244	n/a	6/18/2019	5:00 PM	6/18/2019	10:00 PM	249	244	n/a
6/20/2019	240	YES	241	245	243	n/a	6/20/2019	6:30 PM	6/20/2019	8:30 PM	245	243	n/a
6/21/2019	240	YES	242	250	243	n/a	6/21/2019	6:00 AM	6/21/2019	12:15 PM	250	243	n/a

OWLS HEAD - WET WEATHER THROTTLING SUMMARY

Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Plant Throttling Information				Critical Wet Weather Event						
			Influent Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.
6/25/2019	240	YES	243	250	244	n/a	6/25/2019	8:45 AM	6/25/2019	10:00 AM	250	244	n/a
7/11/2019	240	YES	245	241	238	n/a	7/11/2019	8:45 PM	7/11/2019	11:45 PM	245	241	n/a
7/17/2019	240	NO	n/a	n/a	n/a	n/a	7/17/2019	10:15 PM	7/18/2019	12:00 AM	241	240	n/a
7/23/2019	240	YES	240	242	241	n/a	7/23/2019	7:00 AM	7/23/2019	10:00 AM	242	241	n/a
7/31/2019	240	NO	n/a	n/a	n/a	n/a	7/31/2019	5:00 PM	7/18/2019	6:45 PM	240	244	n/a
8/4/2019	240	NO	n/a	n/a	n/a	n/a	8/4/2019	10:00 PM	8/5/2019	12:00 AM	243	241	n/a
8/7/2019	240	NO	n/a	n/a	n/a	n/a	8/7/2019	6:00 PM	8/7/2019	11:00 PM	250	247	n/a
8/14/2019	240	YES	240	250	247	n/a	8/14/2019	5:00 PM	8/14/2019	9:00 PM	251	247	n/a
8/21/2019	240	YES	242	242	241	n/a	8/21/2019	6:30 PM	8/21/2019	7:45 PM	242	241	n/a
8/22/2019	240	YES	243	243	241	n/a	8/22/2019	9:15 PM	8/23/2019	2:45 AM	243	241	n/a
9/2/2019	240	YES	245	245	243	n/a	9/2/2019	12:30 PM	9/2/2019	6:45 PM	245	243	n/a
9/4/2019	240	YES	241	242	241	n/a	9/4/2019	5:00 PM	9/4/2019	5:30 PM	242	241	n/a
9/9/2019	240	YES	244	240	240	n/a	9/9/2019	4:00 PM	9/9/2019	7:30 PM	240	240	n/a
10/2/2019	240	YES	244	244	241	n/a	10/2/2019	7:00 PM	10/2/2019	9:30 PM	244	241	n/a
10/16/2019	240	YES	243	244	242	n/a	10/16/2019	5:45 PM	10/17/2019	12:00 AM	244	242	n/a
10/27/2019	240	YES	243	244	241	n/a	10/27/2019	10:00 AM	10/27/2019	2:15 PM	244	241	n/a
11/18/2019	240	YES	242	242	238	n/a	11/18/2019	9:30 PM	11/19/2019	3:45 AM	242	238	n/a
11/24/2019	240	YES	242	242	242	n/a	11/24/2019	3:00 AM	11/24/2019	6:15 AM	242	241	n/a
12/1/2019	240	YES	242	242	238	n/a	12/1/2019	2:45 PM	12/1/2019	7:45 PM	242	238	n/a
12/9/2020	240	NO	n/a	n/a	n/a	n/a	12/9/2020	7:00 AM	12/9/2020	11:00 AM	242	242	n/a
12/9/2019	240	YES	244	242	239	n/a	12/9/2019	5:15 PM	12/9/2019	9:45 PM	242	239	n/a
12/13/2019	240	NO	n/a	n/a	n/a	n/a	12/13/2019	5:45 PM	12/13/2019	10:45 PM	242	241	n/a
12/14/2019	240	NO	n/a	n/a	n/a	n/a	12/14/2019	12:45 AM	12/14/2019	6:00 AM	243	241	n/a
12/17/2019	240	NO	n/a	n/a	n/a	n/a	12/17/2019	12:15 AM	12/17/2019	3:00 PM	245	241	n/a
12/30/2019	240	NO	n/a	n/a	n/a	n/a	12/30/2019	5:00 PM	12/30/2019	6:00 PM	243	242	n/a

PORT RICHMOND - WET WEATHER THROTTLING SUMMARY													
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Plant Throttling Information					Critical Wet Weather Event						
		Did Plant Throttle? Yes/No	Effluent Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.
1/24/2019	90	YES	96	96	94	n/a	1/24/2019	11:30 AM	1/24/2019	4:00 PM	96	93	n/a
2/24/2019	90	YES	94	94	93	n/a	2/24/2019	6:30 AM	2/24/2019	1:00 PM	94	93	n/a
3/10/2019	90	NO	n/a	n/a	n/a	n/a	3/10/2019	10:00 AM	3/10/2019	1:15 PM	96	93	n/a
3/22/2019	120	NO	n/a	n/a	n/a	n/a	3/22/2019	1:00 AM	3/22/2019	1:00 AM	121	121	n/a
4/15/2019	120	NO	n/a	n/a	n/a	n/a	4/15/2019	7:00 AM	4/15/2019	7:00 AM	125	125	n/a
4/26/2019	120	NO	n/a	n/a	n/a	n/a	4/26/2019	2:45 PM	3/22/2019	3:15 PM	133	126	n/a
5/30/2019	120	NO	n/a	n/a	n/a	n/a	5/30/2019	9:00 PM	5/30/2019	9:30 PM	123	121	n/a
7/22/2019	120	YES	126	133	119	n/a	7/22/2019	7:00 PM	7/22/2019	10:45 PM	126	122	n/a
7/31/2019	120	NO	n/a	n/a	n/a	n/a	7/31/2019	5:00 PM	7/31/2019	6:15 PM	133	130	n/a
8/7/2019	120	YES	94	96	96	n/a	8/7/2019	6:15 PM	8/7/2019	11:15 PM	96	96	n/a
8/14/2019	90	YES	102	102	95	n/a	8/14/2019	5:15 PM	8/14/2019	9:15 PM	102	95	n/a
10/16/2019	120	NO	n/a	n/a	n/a	n/a	10/16/2019	7:00 PM	10/16/2019	10:15 PM	131	127	n/a
10/27/2019	120	YES	130	128	123	n/a	10/27/2019	1:15 PM	10/27/2019	2:45 PM	128	123	n/a
12/9/2019	120	NO	n/a	n/a	n/a	n/a	12/9/2019	9:45 AM	12/9/2019	10:00 AM	123	122	n/a
12/9/2019	120	yes	120	123	120	n/a	12/9/2019	7:00 PM	12/9/2019	9:15 PM	123	120	n/a
12/14/2019	120	NO	n/a	n/a	n/a	n/a	12/14/2019	3:30 AM	12/14/2019	6:00 AM	121	120	n/a

RED HOOK - WET WEATHER THROTTLING SUMMARY														
Storm Date	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Plant Throttling Information					Critical Wet Weather Event						
			Influent Flow at Start of Throttling (MGD)	WET WEATHER PLANT CAPACITY (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time	Critical Event End Date & Time	Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.		
12/31/2018	120	YES	121	120	123	121	n/a	12/31/2018	7:15 PM	12/31/2018	11:45 PM	123	121	n/a
1/1/2019	120	YES	121	120	123	121	n/a	1/1/2019	12:00 AM	1/1/2019	2:30 AM	123	121	n/a
1/20/2019	120	YES	126	120	126	122	n/a	1/20/2019	12:00 AM	1/20/2019	6:30 AM	126	122	n/a
1/24/2019	120	YES	126	120	127	123	n/a	1/24/2019	11:15 AM	1/24/2019	6:00 PM	127	123	n/a
2/6/2019	120	YES	125	120	125	123	n/a	2/6/2019	10:30 PM	2/7/2019	1:30 AM	125	123	n/a
2/21/2019	120	YES	126	120	126	122	n/a	2/21/2019	12:15 AM	2/21/2019	3:00 AM	126	122	n/a
2/24/2019	120	YES	122	120	125	121	n/a	2/24/2019	6:15 AM	2/24/2019	10:45 PM	125	121	n/a
3/10/2019	120	YES	124	120	122	121	n/a	3/10/2019	10:30 AM	3/10/2019	12:00 PM	122	121	n/a
3/21/2019	120	YES	122	120	129	122	n/a	3/21/2019	11:15 PM	3/22/2019	5:00 AM	129	122	n/a
3/22/2019	120	YES	122	120	125	122	n/a	3/22/2019	6:00 AM	3/22/2019	7:45 AM	125	122	n/a
4/8/2019	120	YES	122	120	123	120	n/a	4/8/2019	3:15 AM	4/8/2019	3:30AM	123	120	n/a
4/12/2019	120	YES	126	120	127	123	n/a	4/12/2019	11:30 PM	4/12/2019	1:00 AM	127	123	n/a
4/15/2019	120	YES	127	120	128	125	n/a	4/15/2019	5:15 AM	4/15/2019	9:00 AM	128	125	n/a
4/15/2019	120	YES	127	120	127	125	n/a	4/15/2019	12:00 PM	4/15/2019	1:00 PM	127	124	n/a
4/26/2019	120	YES	130	120	126	124	n/a	4/26/2019	2:00 PM	4/26/2019	4:30 PM	126	124	n/a
5/2/2019	120	YES	124	120	127	124	n/a	5/2/2019	10:15 PM	5/2/2019	11:45 PM	127	124	n/a
5/5/2019	120	YES	126	120	126	123	n/a	5/5/2019	6:00 AM	5/5/2019	10:15 AM	126	123	n/a
5/5/2019	120	NO	n/a	120	n/a	n/a	n/a	5/5/2019	8:00 PM	5/5/2019	11:45 PM	127	124	n/a
5/12/2019	120	NO	n/a	120	n/a	n/a	n/a	5/12/2019	3:15 PM	5/12/2019	6:45 PM	126	123	n/a
5/13/2019	120	YES	124	120	125	124	n/a	5/13/2019	5:45 PM	5/13/2019	8:15 PM	125	124	n/a
5/23/2019	120	NO	n/a	120	n/a	n/a	n/a	5/23/2019	8:15 AM	5/23/2019	9:00 AM	122	121	n/a
5/28/2019	120	YES	123	120	125	123	n/a	5/28/2019	10:15 PM	5/29/2019	12:15 AM	125	123	n/a
5/29/2019	120	YES	125	120	128	125	n/a	5/29/2019	7:00 PM	5/29/2019	10:00 PM	128	125	n/a
5/30/2019	120	YES	125	120	125	123	n/a	5/30/2019	7:00 PM	5/30/2019	11:15 PM	125	123	n/a
6/10/2019	120	YES	126	120	126	124	n/a	6/10/2019	2:00 PM	6/10/2019	5:45 PM	126	124	n/a
6/13/2019	120	YES	129	120	128	126	n/a	6/13/2019	10:15 AM	6/13/2019	12:30 PM	128	125	n/a
6/18/2019	120	YES	128	120	129	123	n/a	6/18/2019	1:00 PM	6/18/2019	5:30 PM	129	123	n/a
6/18/2019	120	YES	127	120	127	124	n/a	6/18/2019	7:00 PM	6/18/2019	8:30 PM	127	124	n/a
6/20/2019	120	YES	126	120	128	125	n/a	6/20/2019	6:30 PM	6/20/2019	7:30 PM	128	125	n/a
6/21/2019	120	YES	124	120	126	125	n/a	6/21/2019	6:00 AM	6/21/2019	7:45 AM	126	125	n/a
6/21/2019	120	YES	127	120	127	125	n/a	6/21/2019	8:45 AM	6/21/2019	11:45 AM	127	125	n/a
6/25/2019	120	YES	124	120	124	122	n/a	6/25/2019	7:45 AM	6/25/2019	9:45 AM	124	122	n/a

RED HOOK - WET WEATHER THROTTLING SUMMARY														
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Did Plant Throttle? Yes/No	Plant Throttling Information					Critical Wet Weather Event						
			Influent Flow at Start of Throttling (MGD)	WET WEATHER PLANT CAPACITY (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time	Critical Event End Date & Time	Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.		
7/11/2019	120	YES	125	120	129	123	n/a	7/11/2019	9:00 PM	7/12/2019	12:00 AM	129	123	n/a
7/17/2019	120	YES	122	120	126	122	n/a	7/17/2019	10:15 PM	7/18/2019	1:15 AM	126	122	n/a
7/22/2019	120	NO	n/a	120	n/a	n/a	n/a	7/22/2019	7:15 PM	7/22/2019	10:00 PM	125	123	n/a
7/22/2019	120	NO	n/a	120	n/a	n/a	n/a	7/22/2019	8:00 AM	7/23/2019	9:30 AM	127	126	n/a
8/4/2019	120	YES	128	120	128	124	n/a	8/4/2019	12:30 AM	8/4/2019	3:00 AM	128	124	n/a
8/14/2019	120	NO	n/a	120	n/a	n/a	n/a	8/7/2019	6:00 PM	8/7/2019	6:45 PM	125	124	n/a
8/14/2019	90	YES	99	90	101	97	n/a	8/14/2019	5:00 PM	8/14/2019	8:30 PM	101	97	n/a
8/21/2019	90	YES	96	90	96	93	n/a	8/21/2019	6:45 PM	8/21/2019	6:45 PM	96	93	n/a
9/2/2019	90	YES	96	90	96	93	n/a	9/2/2019	12:45 PM	9/2/2019	6:45 PM	96	93	n/a
9/4/2019	90	YES	97	90	99	94	n/a	9/4/2019	5:15 PM	9/4/2019	6:45 PM	99	94	n/a
9/6/2019	90	YES	96	90	96	93	n/a	9/6/2019	4:15 PM	9/6/2019	7:30 PM	96	93	n/a
10/9/2019	120	NO	n/a	120	n/a	n/a	n/a	10/9/2019	11:45 AM	10/9/2019	4:45 PM	99	95	n/a
10/16/2019	90	YES	96	90	100	96	n/a	10/16/2019	6:00 PM	10/17/2019	2:15 AM	100	96	n/a
10/20/2019	90	YES	94	90	96	94	n/a	10/20/2019	5:45 PM	10/20/2019	10:30 PM	96	93	n/a
10/22/2019	120	NO	n/a	120	n/a	n/a	n/a	10/22/2019	8:45 PM	10/23/2019	4:00 AM	98	94	n/a
10/27/2019	90	YES	93	90	102	96	n/a	10/27/2019	10:15 AM	10/27/2019	5:00 PM	102	96	n/a
11/18/2019	120	YES	122	120	123	122	n/a	11/18/2019	10:00 PM	11/18/2019	10:45 PM	123	122	n/a
12/1/2019	120	YES	126	120	127	123	n/a	12/1/2019	5:15 PM	12/1/2019	8:15 PM	127	123	n/a
12/9/2019	120	NO	n/a	120	n/a	n/a	n/a	12/9/2019	5:45 PM	12/9/2019	10:15 PM	124	122	n/a
12/9/2019	120	YES	122	120	124	121	n/a	12/9/2019	5:45 PM	12/9/2019	10:15 PM	124	122	n/a
12/13/2019	120	YES	124	120	129	125	n/a	12/13/2019	9:30 PM	12/14/2019	6:45 AM	129	125	n/a

TALLMAN ISLAND - WET WEATHER THROTTLING SUMMARY													
Storm Dates	WET WEATHER PLANT CAPACITY (MGD)	Plant Throttling Information					Critical Wet Weather Event						
		Did Plant Throttle? Yes/No	Effluent Flow at Start of Throttling (MGD)	Throttling Max Flow (MGD)	Throttling Avg Flow (MGD)	Bypass Item No.	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.
12/31/2018	160	YES	170	169	165	n/a	12/31/2018	9:15 PM	1/1/2019	1:45 AM	169	165	n/a
1/20/2019	160	YES	163	162	161	n/a	1/20/2019	1:15 AM	1/20/2019	3:00 AM	162	161	n/a
1/24/2019	160	YES	168	170	163	n/a	1/24/2019	11:15 AM	1/24/2019	2:30 PM	170	163	n/a
3/22/2019	160	YES	163	164	161	n/a	3/22/2019	2:00 AM	3/22/2019	3:30 AM	164	161	n/a
5/29/2019	160	YES	164	170	166	n/a	5/29/2019	7:30 PM	5/29/2019	9:15 PM	170	166	n/a
5/30/2019	160	NO	n/a	n/a	n/a	n/a	5/30/2019	8:00 PM	5/30/2019	8:15 PM	160	160	n/a
7/17/2019	160	YES	172	172	164	n/a	7/17/2019	9:00 PM	7/18/2019	1:45 AM	172	164	n/a
7/22/2019	160	YES	164	171	162	n/a	7/22/2019	7:15 PM	7/22/2019	9:45 PM	171	166	n/a
7/23/2019	158	YES	159	159	157	n/a	7/23/2019	7:45 AM	7/23/2019	8:30 AM	159	158	n/a
10/9/2019	160	NO	n/a	n/a	n/a	n/a	10/9/2019	12:45 PM	10/9/2019	1:15 PM	165	163	n/a
10/16/2019	160	YES	164	171	167	n/a	10/16/2019	6:45 PM	10/16/2019	9:45 PM	171	167	n/a
10/27/2019	160	YES	165	168	163	n/a	10/27/2019	12:15 PM	10/27/2019	4:00 PM	168	163	n/a
12/9/2019	160	NO	n/a	n/a	n/a	n/a	12/9/2019	9:45 AM	12/9/2019	11:00 AM	167	162	n/a
12/9/2019	160	YES	166	163	161	n/a	12/9/2019	6:45 PM	12/9/2019	10:30 PM	164	161	n/a
12/13/2019	160	YES	161	163	161	n/a	12/13/2019	10:30 PM	12/14/2019	6:30 AM	164	161	n/a

WANDS ISLAND - WET WEATHER THROTTLING SUMMARY

Item Dates	WWT WEATHER PLANT CAPACITY (MGD)	Plant Throttling Information											Critical Wet Weather Event									
		Did Plant Throttle?	Machiation Grit Chamber Throttling Start Date & Time		Machiation Grit Chamber Throttling End Date & Time		CCT Floval Start of MOC Throttling	Newco Grit Chamber Throttling Start Date & Time		Newco Grit Chamber Throttling End Date & Time		CCT Floval Start of MOC Throttling	Throttling Max Flow (MGD)	Bypass Run No.	Throttling Avg Flow (MGD)	Critical Event Start Date & Time		Critical Event End Date & Time		Critical Event Max Flow (MGD)	Critical Event Avg Flow (MGD)	Wet Weather Item No.
			Start Date	Start Time	End Date	End Time		Start Date	Start Time	End Date	End Time					Start Date	Start Time	End Date	End Time			
12/01/2019	480	YES	12/01/2019	7:30 PM	9/3/2019	1:18 AM	8/6	12/01/2019	7:50 PM	9/3/2019	1:08 AM	820	823	n/a	490	12/01/2019	7:30 PM	9/3/2019	1:18 AM	823	891	n/a
10/02/2019	480	YES	10/02/2019	12:09 AM	10/02/2019	7:18 AM	498	10/02/2019	12:02 AM	10/02/2019	8:20 AM	828	842	n/a	812	10/02/2019	12:09 AM	10/02/2019	8:18 AM	842	911	n/a
10/02/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10/02/2019	8:18 AM	10/02/2019	8:41 AM	851	898	n/a
10/02/2019	480	YES	10/02/2019	7:08 AM	10/02/2019	8:18 PM	827	10/02/2019	11:38 AM	10/02/2019	8:18 PM	871	879	n/a	496	10/02/2019	11:38 AM	10/02/2019	8:18 PM	879	897	n/a
2/6/2019	480	YES	2/6/2019	11:09 PM	2/7/2019	12:1 AM	498	2/6/2019	11:18 PM	2/7/2019	2:00 AM	498	499	830	427	2/6/2019	11:18 PM	2/7/2019	1:18 AM	499	428	WW1182
2/6/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2/6/2019	2:18 AM	2/6/2019	3:00 AM	507	535	n/a
2/10/2019	480	YES	2/10/2019	12:18 AM	2/10/2019	3:14 AM	827	2/10/2019	12:18 AM	2/10/2019	2:10 AM	827	827	n/a	498	2/10/2019	12:18 AM	2/10/2019	2:18 AM	827	498	WW1185
2/14/2019	480	YES	2/14/2019	7:08 AM	2/14/2019	9:00 AM	488	2/14/2019	8:50 AM	2/14/2019	11:11 AM	488	488	n/a	490	2/14/2019	7:08 AM	2/14/2019	10:00 AM	488	548	n/a
2/6/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2/6/2019	2:00 AM	2/6/2019	2:30 AM	490	494	n/a
3/16/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3/16/2019	10:40 AM	3/16/2019	11:00 AM	490	490	n/a
3/16/2019	480	YES	3/16/2019	9:38 PM	3/16/2019	11:18 PM	821	3/16/2019	9:38 PM	3/16/2019	11:18 PM	821	822	n/a	498	3/16/2019	9:40 PM	3/16/2019	11:18 PM	822	498	WW1186
3/22/2019	480	YES	3/22/2019	12:18 AM	3/22/2019	2:08 AM	498	3/22/2019	12:48 AM	3/22/2019	3:08 AM	498	508	n/a	508	3/22/2019	12:48 AM	3/22/2019	3:48 AM	508	504	n/a
4/13/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	4/13/2019	6:40 AM	4/13/2019	7:00 AM	505	543	n/a
4/16/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	4/16/2019	8:30 AM	4/16/2019	7:18 AM	525	518	n/a
4/26/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	4/26/2019	8:00 AM	4/26/2019	8:41 AM	538	505	n/a
4/22/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	4/22/2019	8:30 PM	4/22/2019	8:41 PM	605	542	n/a
4/26/2019	480	YES	4/26/2019	1:40 PM	4/26/2019	4:18 PM	832	4/26/2019	1:48 PM	4/26/2019	4:28 PM	832	848	n/a	492	4/26/2019	1:40 PM	4/26/2019	4:00 PM	848	494	WW1189
5/23/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5/23/2019	8:00 PM	5/23/2019	11:30 PM	851	515	n/a
5/12/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5/12/2019	10:00 PM	5/12/2019	10:30 PM	490	498	n/a
5/12/2019	412	YES	5/12/2019	4:30 PM	5/12/2019	4:30 PM	498	n/a	n/a	n/a	n/a	n/a	n/a	n/a	538	5/12/2019	1:18 PM	5/12/2019	4:41 PM	871	544	n/a
5/12/2019	480	YES	5/12/2019	8:30 PM	5/12/2019	7:12 PM	828	n/a	n/a	n/a	n/a	n/a	n/a	n/a	887	5/12/2019	8:40 PM	5/12/2019	7:41 PM	907	522	n/a
5/26/2019	480	YES	5/26/2019	7:00 PM	5/26/2019	10:00 PM	830	5/26/2019	8:41 PM	5/26/2019	8:00 PM	891	891	n/a	518	5/26/2019	7:00 PM	5/26/2019	8:41 PM	901	527	n/a
5/26/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5/26/2019	8:40 PM	5/26/2019	7:18 PM	907	907	n/a
5/26/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5/26/2019	8:40 PM	5/26/2019	10:00 PM	490	497	n/a
5/12/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5/12/2019	2:18 PM	5/12/2019	4:41 PM	848	530	n/a
5/11/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5/11/2019	8:18 AM	5/11/2019	7:00 AM	882	528	n/a
5/13/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5/13/2019	10:00 AM	5/13/2019	11:41 AM	831	518	n/a
6/26/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	6/26/2019	8:00 AM	6/26/2019	8:41 AM	901	508	n/a
7/11/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7/11/2019	8:30 PM	7/11/2019	10:41 PM	905	544	n/a
7/17/2019	480	NO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7/17/2019	8:00 PM	7/17/2019	1:30 AM	490	528	n/a
7/16/2019	480	YES	7/16/2019	8:00 PM	7/16/2019	10:40 PM	828	7/16/2019	8:00 PM	7/16/2019	1:00 AM	828	889	n/a	472	7/16/2019	8:40 AM	7/16/2019	10:40 PM	949	602	n/a
7/22/2019	388	YES						7/22/2019	8:30 PM	7/22/2019	11:00 PM	548	591	n/a	440	7/22/2019	6:30 PM	7/22/2019	8:00 PM	891	480	n/a
7/23/2019	480	YES						7/23/2019	7:30 AM	7/23/2019	8:00 AM	n/a	897	n/a	492	7/23/2019	8:30 AM	7/23/2019	8:18 AM	823	508	n/a
1/6/2019	480	YES	1/6/2019	12:18 PM	1/6/2019	2:00 PM	842	1/6/2019	12:20 PM	1/6/2019	2:00 PM	842	828	n/a	498	1/6/2019	12:18 PM	1/6/2019	2:00 PM	828	498	n/a
10/16/2019	480	YES						10/16/2019	8:30 PM	10/16/2019	10:40 PM	827	874	n/a	490	10/16/2019	8:30 PM	10/16/2019	8:41 PM	874	564	n/a
10/27/2019	480	YES	10/27/2019	12:00 PM	10/27/2019	3:00 PM	871							n/a	880	10/27/2019	11:40 AM	10/27/2019	2:41 PM	871	891	n/a
11/24/2019	480	YES	11/24/2019	3:00 AM	11/24/2019	6:00 AM	612	11/24/2019	3:00 AM	11/24/2019	6:00 AM	600	602	n/a	472	11/24/2019	6:40 AM	11/24/2019	8:41 AM	902	497	n/a
12/1/2019	420	YES	12/1/2019	8:30 PM	12/1/2019	8:18 PM	488	12/1/2019	8:38 PM	12/1/2019	8:30 PM	491	492	n/a	433	12/1/2019	8:30 PM	12/1/2019	8:30 PM	492	436	n/a

Appendix 3.3: ESTIMATION OF WET-WEATHER CAPTURE

Appendix 3.3.1: Estimation Of Wet-Weather Capture

This section provides a description of analyses used to calculate the wet-weather capture of combined-sewage (CS) flow and associated floatables at the New York City (NYC) treatment facilities (referred to as Wastewater Resource Recovery Facilities, WRRFs) during calendar year (CY) 2019. Section 3.1 describes the difference between runoff capture and combined-sewage capture. Section 3.2 discusses the scenarios used to evaluate the capture. Section 3.3 summarizes the modeling approach: InfoWorks ICM is an advanced integrated catchment modeling software used to calculate flow volume capture for CY2019 at all drainage areas served wholly or partially by combined sewers. Section 3.4 describes the CY2019 wet-weather combined-sewage percent capture results for these drainage areas. References are listed in Section 3.5.

The Environmental Protection Agency (EPA) issued the current guidance pertaining to the intent and calculation of “combined-sewage capture” in 1995. Prior to that time, a different parameter, known as “runoff capture”, was used to assess the operation of the collection/treatment system. As detailed in a subsequent section, runoff capture measured the ratio of runoff treated to runoff collected in a sewer system. For the NYC WRRFs, historically speaking, the runoff capture values were typically about 15 percentage points less than the corresponding CS capture values. The runoff capture remains a useful parameter in the calculation of floatables capture. CS capture has replaced runoff capture as the pertinent measure of flow-capture performance, and as such, runoff capture is no longer reported. However, runoff capture is used in the calculation of floatables capture.

Since 1998, capture of CS floatables has also been calculated and reported. Initially, the basis for this measurement was the floatables passing into combined sewers from the catch basins (see Figure 3-1), but because the catch basins themselves are considered part of the sewer system, an estimate of catch basin retention was added to the calculation of the floatables-capture. As a result, the basis for floatables capture is now what enters the catch basins.

Historically, capture of flow and floatables has been simulated and reported for three different scenarios. The first simulation scenario reflects actual operation of the collection/treatment system (in terms of the flow rates treated at a WRRF during wet weather) and the actual rainfall (and tides) affecting the system

during the subject, calendar-year period. The results of this simulation scenario indicate the actual capture performance for the period.

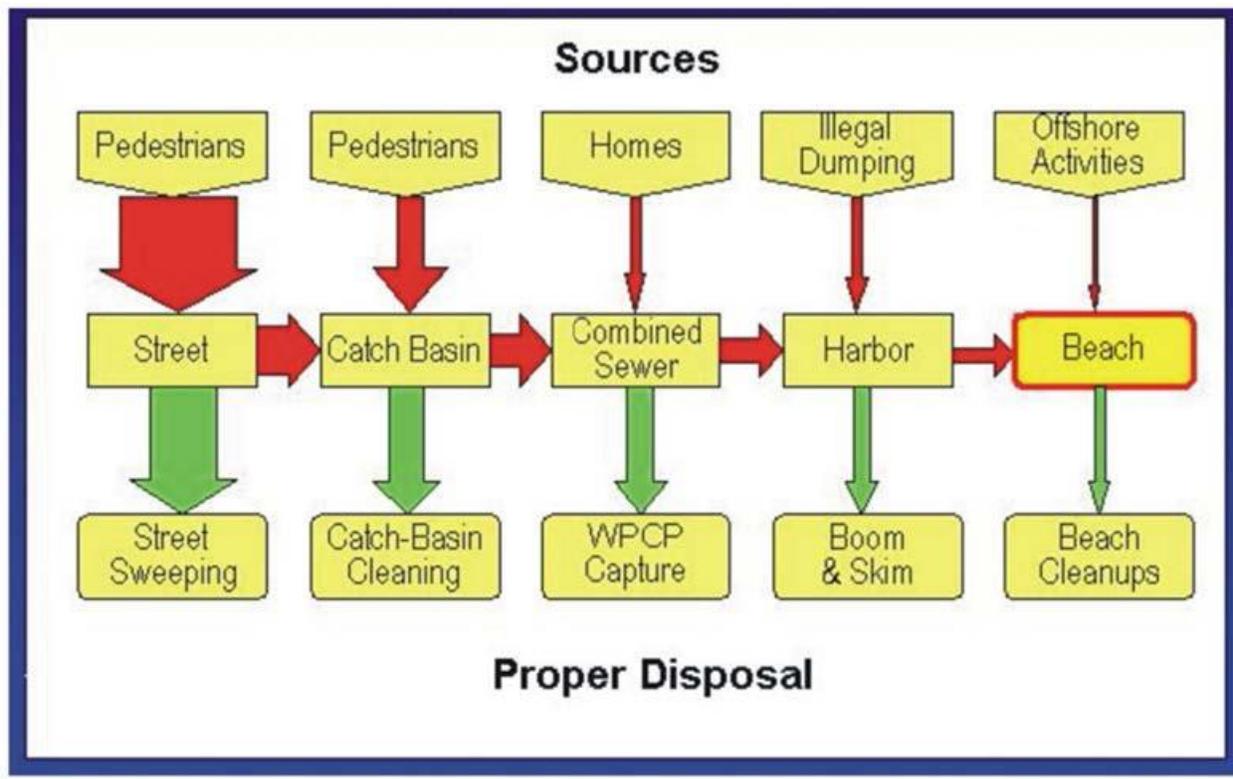


Figure 3-1. Sources and Fate of Floatables in New York City of New York DEP

The methodology for calculation of flow capture has evolved historically with the advent of improved modeling tools and increasing computing power. Initially, flow capture was estimated using the "Statistical Method" (Hydroscience, 1978), an approach relying on drainage area/runoff-coefficient information from a calibrated sewer-system rainfall-runoff model (such as the EPA's Storm Water Management Model, SWMM), but which can be used without the complicated set-up and computational runtimes associated with those models. Finally, as part of the CSO Long Term Control Plan (LTCP) project, DEP adopted an InfoWorks modeling framework to support facility-planning analyses citywide. InfoWorks is a state-of-the-art hydrology and hydraulics linked model that will provide the most sophisticated and accurate representation of the NYC drainage areas. Although model set up and calibration do require extensive effort, advancements in computing have lessened run-time requirements so that the use of these models becomes reasonable for planning and design-level analyses.

For 2019, the percent-capture analyses utilize the InfoWorks modeling framework for all drainage areas wholly or partially served by combined sewers. Section 3.3 provides a more detailed discussion of the InfoWorks model.

InfoWorks models constructed for various WRRF drainage areas have undergone a major recalibration process in the 2009-11 period and the DEP had submitted a detailed report on this recalibration effort to New York State DEC in June 2012 along with additional calibration and validation being done as part of developing the CSO Long Term Control Plans (LTCPs). DEP adopted the updated models to support the capture calculations for CY2019. Table 3-1 shows these statistics for the new typical rainfall conditions used in the current year. Based on the model updates and the use of different standard rainfall conditions, the percent capture information presented in this report may not be directly comparable with those reported in previous calendar years.

For the CY2019 analysis, a new rainfall dataset from NOAA/NSSL called Quantitative Precipitation Estimates (QPE) was used instead of DEP or NOAA rain gauges, as have been used in the past. This decision was made for several reasons. First, the NOAA rain gauges (CPK, JFK, LGA, and EWR) are often very far from the WRRFs model areas to which they are applied. Second, the DEP WRRF rain gauges frequently suffer from outages and other reporting issues, leading to incomplete or inaccurate datasets. Therefore, the new NOAA/NSSL QPE data was used, which is described below:

- The new NOAA/NSSL product provides spatially distributed, hourly estimates of precipitation is based on multiple radars, satellite and numerical weather prediction models, surface and upper air observations, lightning detection systems and rain gauges. In addition to hourly, QPE is available in other time increments (such as 3 hr, 6 hr, 12 hr, daily, 48 hr and 72 hr) and in spatial resolution of roughly 1 km x 1 km.
- Most common application of radar QPE data is to simulate or predict flash flood events using rainfall-runoff models [Willie, D. et al. 2017; Zhang et al. 2016; Rafieeiniasab et al. 2015; Chen and Chandrasekar 2015].
- Validation of the high resolution radar QPE data was made against the ground-based precipitation data obtained from the NOAA stations rain gauge data: Central Park (CPK), Newark Airport (EWR), JFK Airport (JFK) and LaGuardia Airport (LGA).
- The high resolution and broad spatial coverage of the radar QPE data provides more realistic forcing at the time scales relevant to the CY2019 wet-weather capture modeling analysis.
- Processing methodology for NOAA/NSSL QPE data:

Processing Flowchart

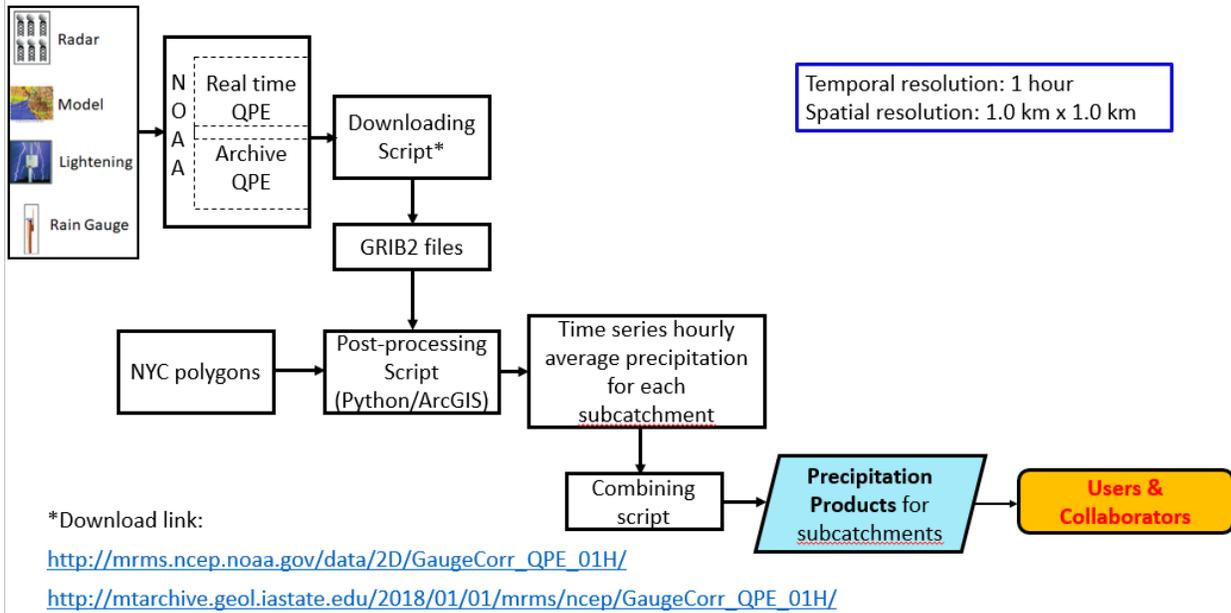


Table 3-1 Annual NYC drainage areas rainfall Statistics, 2019⁽⁴⁾

WRRF Drainage Areas ⁽¹⁾	Period	Number of Storms Avg.	Rainfall (in)			Storm Intensity (inch/hr)		Storm duration (hour)		Delta ⁽²⁾ (hour)	
			Annual total	Storm Avg.	COV ⁽³⁾	Avg.	COV ⁽³⁾	Avg.	COV ⁽³⁾	Avg.	COV ⁽³⁾
26W	2019	162	49.98	0.31	1.29	0.0426	0.86	6.38	0.96	54.2	0.94
BB	2019	168	49.07	0.29	1.32	0.0424	1.02	6.3	1.01	52.26	0.83
CI	2019	156	53.64	0.34	1.25	0.547	1.17	6.26	0.98	56.3	0.86
HP	2019	177	53.22	0.3	1.41	0.0416	1.06	6.37	1.02	49.59	0.86
JA	2019	158	49.71	0.31	1.27	0.0433	0.9	6.65	0.94	55.58	0.96
NC	2019	168	51.31	0.31	1.29	0.0492	1.17	6.14	1	52.26	0.87
NR	2019	164	48.73	0.3	1.37	0.0393	0.92	6.3	1	53.47	0.88
OH	2019	165	54.44	0.33	1.29	0.0508	1.06	6.13	1.02	53.14	0.9
PR	2019	163	59.03	0.36	1.3	0.0547	1.28	6.48	1.01	53.8	0.84
RH	2019	162	49.55	0.31	1.26	0.0471	1.03	6.3	0.99	54.13	0.9
TI	2019	169	51.78	0.31	1.36	0.0411	1.04	6.63	0.99	51.88	0.87
WI	2019	169	52.88	0.31	1.32	0.0452	1.12	6.53	1	51.95	0.85
(1)NOAA/NSSL Product - QPE data											
(2)Delta refers to time between storms midpoints											
(3)Coefficient of Variation (average/standard deviation)											
(4)Statistics calculated using EPA's SYNOP package with inputs for interevent time of 4 hours and zero minimum rainfall depth											

Table 3-1: Annual NYC Rainfall Statistics, 2018 (5)

Gage Location ⁽¹⁾	Period	Number of Storms Avg.	Liquid-Equivalent Precipitation (Rainfall) (inch)			Storm Intensity (inch/hr)		Storm Duration (hour)		Delta ⁽²⁾ (hour)	
			Annual Total	Storm Avg.	Storm COV ⁽³⁾	Avg.	COV ⁽³⁾	Avg.	COV ⁽³⁾	Avg.	COV ⁽³⁾
Central Park	2018	144	63.43	0.44	1.33	0.063	1.34	7.18	0.99	60.08	0.87
LaGuardia Airport	2018	140	57.55	0.41	1.29	0.0581	1.14	6.83	1.03	61.81	0.92
JFK Airport	2018	146	56.17	0.38	1.35	0.0654	1.66	6.56	1.13	59.26	0.91
Newark Airport	2018	148	58.18	0.39	1.39	0.0552	1.1	6.55	1.06	58.45	0.99
JFK Airport	"Standard" 2008	130	46.25	0.36	1.48	0.0565	1.14	5.86	1.06	67.90	1.02
Central Park	1955-2018	117	47.35	0.40	1.56	0.0586	1.35	6.53	1.03	75.52	1.11
LaGuardia Airport	1955-2018	116	43.15	0.37	1.56	0.0572	1.40	6.30	1.02	76.07	1.02
JFK Airport	1970-2018	115	42.37	0.37	1.52	0.0571	1.36	6.18	1.03	76.67	1.01
Newark Airport	1955-2018	118	44.33	0.37	1.58	0.0558	1.42	6.38	1.04	74.80	1.01
NYC Metro ⁽⁴⁾	Historical	-	-	-	-	0.0560	1.35	-	-	-	-

- National Oceanic and Atmospheric Administration Data Center rain gauges
- Delta refers to time between storms midpoints
- Coefficient of Variation (average/standard deviation)
- Values reported as "Typical for NYC Metropolitan Area, circa 1950 through 1976" (from Hydrosience 1978)
- Statistics calculated using EPA's SYNOP package with inputs for interevent time of 4 hours and zero minimum rainfall depth

Appendix 3.3.2: Definitions Of Combined-Sewage Capture And Runoff Capture

Previous EPA guidance defined wet-weather capture at combined-sewer treatment facilities in terms of the ratio of runoff captured to the total runoff generated. This ratio, expressed as a percentage, is herein referred to as “runoff capture”. For the purposes of this study, the runoff capture is estimated as the ratio of total treated volume of runoff from combined-sewer areas (the sum of the runoff treated by the plant and the runoff treated by any off-line storage facilities) to the total volume of runoff generated from combined-sewer areas during wet weather. More recent EPA guidance (EPA 1995) suggests an alternate definition of capture in terms of both runoff and sanitary sewage. One of the Presumptive Approach criteria is:

“The elimination or the capture for treatment of no less than 85% by volume of the combined sewage collected in the CSS [combined-sewer system] during precipitation events on a system-wide annual basis.”

This definition of capture, herein referred to as “combined-sewage capture,” is the ratio of CS volume captured at the WRRF to the total runoff and sanitary sewage entering the combined-sewer system during wet-weather periods.

Figure 3-2 presents a schematic representation of both runoff capture and CS capture. With runoff capture, WRRF flow rates exceeding average diurnal (dry-weather) sanitary flows during wet-weather periods were assumed to represent captured runoff. In reality, the flow in the sewer system is a mixture of runoff and sanitary flow, and a portion of CSOs is sanitary in nature. The combined-sewage capture definition takes into account the sanitary flow already in the sewer system during wet weather, and hence is a more realistic measure of the capture at WRRFs during wet-weather periods.

In NYC, values for CS capture are typically about 15 percent points higher than those for runoff capture. EPA's CSO guidance (EPA 1995) has established a target criterion of 85 percent CS capture for the presumptive approach to CSO control.

Appendix 3.3.3: Percent-Capture Evaluation – Two Scenarios

Wet-weather capture depends upon the particular weather patterns within the subject period, the state of a sewer system and wet-weather operation of the WRRFs. Capture values tend to increase when storm patterns produce sustained, low-level flows to the plant. Capture values also increase when sewer-system restrictions are eliminated and flows to the WRRF are maximized. If the interceptors and combined sewers are not surcharged, when the plant inflows reach 2XDDWF levels in certain drainage areas, those may provide some additional in-line

storage for wet-weather flow and, as such, can increase the wet weather capture rate. Although it is important to record the actual capture achieved at WRRFs each year, it is also useful to isolate the effect of the uncontrollable, year-to-year rainfall variations from the controllable aspects related to the operation and maintenance of the collection system and treatment plant. To address these issues, the model results presented herein represent two different scenarios:

- the “Actual” captures, reflecting the “state and operation of the collection/ treatment system” during the subject period, as well as the actual rainfall and tidal conditions during the subject period,
- the “Standardized” captures, reflecting the “state and operation of the collection/treatment system” during the subject period, but with rainfall and tide conditions representing the standardized (typical) rainfall year, and

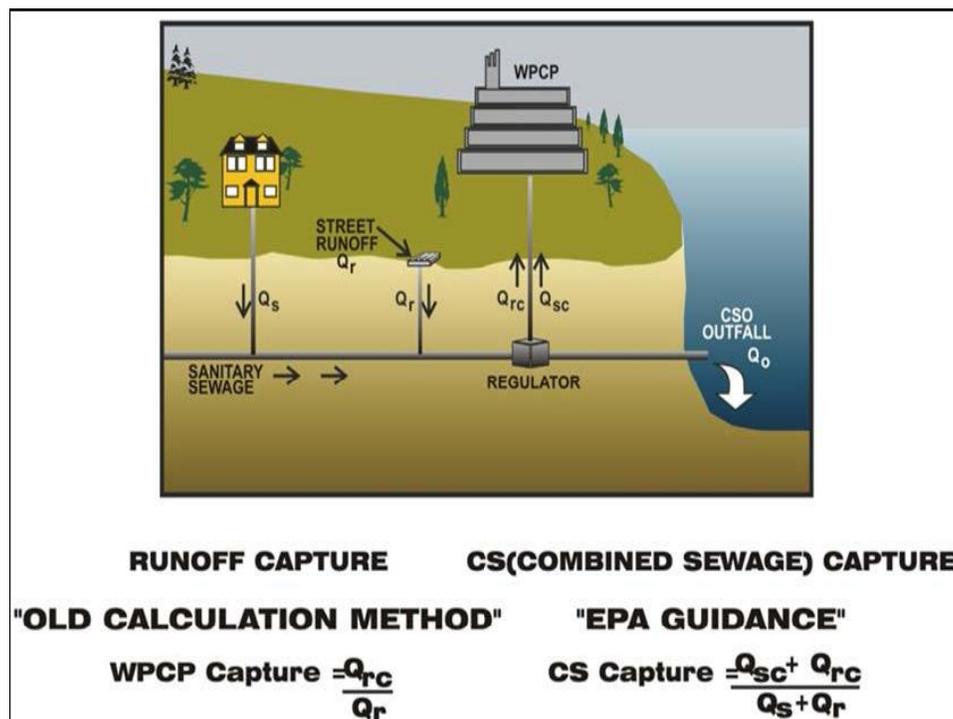


Figure 3-2. Wet Weather Flow Capture at WRRF

Appendix 3.3.4: Tools To Calculate Wet-Weather Flow Capture

Although the definitions presented in Section 3.1 and the equations on Figure 3-2 are relatively simple, actual application to calculate CS capture can be rather complicated. Because the capture must be evaluated over a long-term (annual)

period, and with hundreds of potential CSO outfalls City-wide, direct measurements of all parameters would be impractical. Furthermore, measurements of flow and rainfall distribution over a large geographical area have proved to be less than reliable. A more practical approach is to estimate the terms presented on Figure 3-2 using calibrated sewer-system models to simulate (instead of directly measuring through monitoring) system performance during the subject period. The following section describes the modeling approach applied for 2019 calculations, namely, InfoWorks ICM. As indicated earlier, InfoWorks was adopted for citywide use and has been calibrated for all service areas that are wholly or partially served by combined sewers.

Appendix 3.3.5: InfoWorks Model

The InfoWorks model, distributed by Innowyze from the U.K., has been used in DEP projects since 2001. The model engine is a FORTRAN program, linked with a front interface that contains both relational databases of the sewer network and GIS databases of the geographic attributes such as latitude, longitude, and ground elevations. Based on comparative evaluations performed in 2002-03 by the DEP and its consultants, this interface appeared to offer several advantages over other commercial models such as easy interfacing with GIS for graphical and input/output data analysis and faster computational times for annual simulations. The model utilizes an implicit finite difference-based numerical solution technique to provide more stable modeling of key elements of the sewer systems. The model incorporates full Saint-Venant's equations for continuity and momentum for hydraulic routing and, as such, is well suited for modeling of the backwater effects and reverse flow, open channels, sewers, detention ponds, complex pipe connections and complex ancillary structures such as culverts, orifices and weirs.

Similar to other urban drainage models, the InfoWorks model calculates runoff volumes first using the same algorithms used in the SWMM model and routes the runoff over sub-areas (subcatchments) to generate runoff hydrographs. The hydrographs are then applied to the channel-sewer system for hydraulic routing. Dry weather flows (DWF) are added at the respective manholes for routing towards the treatment plant. Figure 3-3 presents a schematic of the InfoWorks model linkage and outputs used to calculate the wet-weather and runoff percent captures.

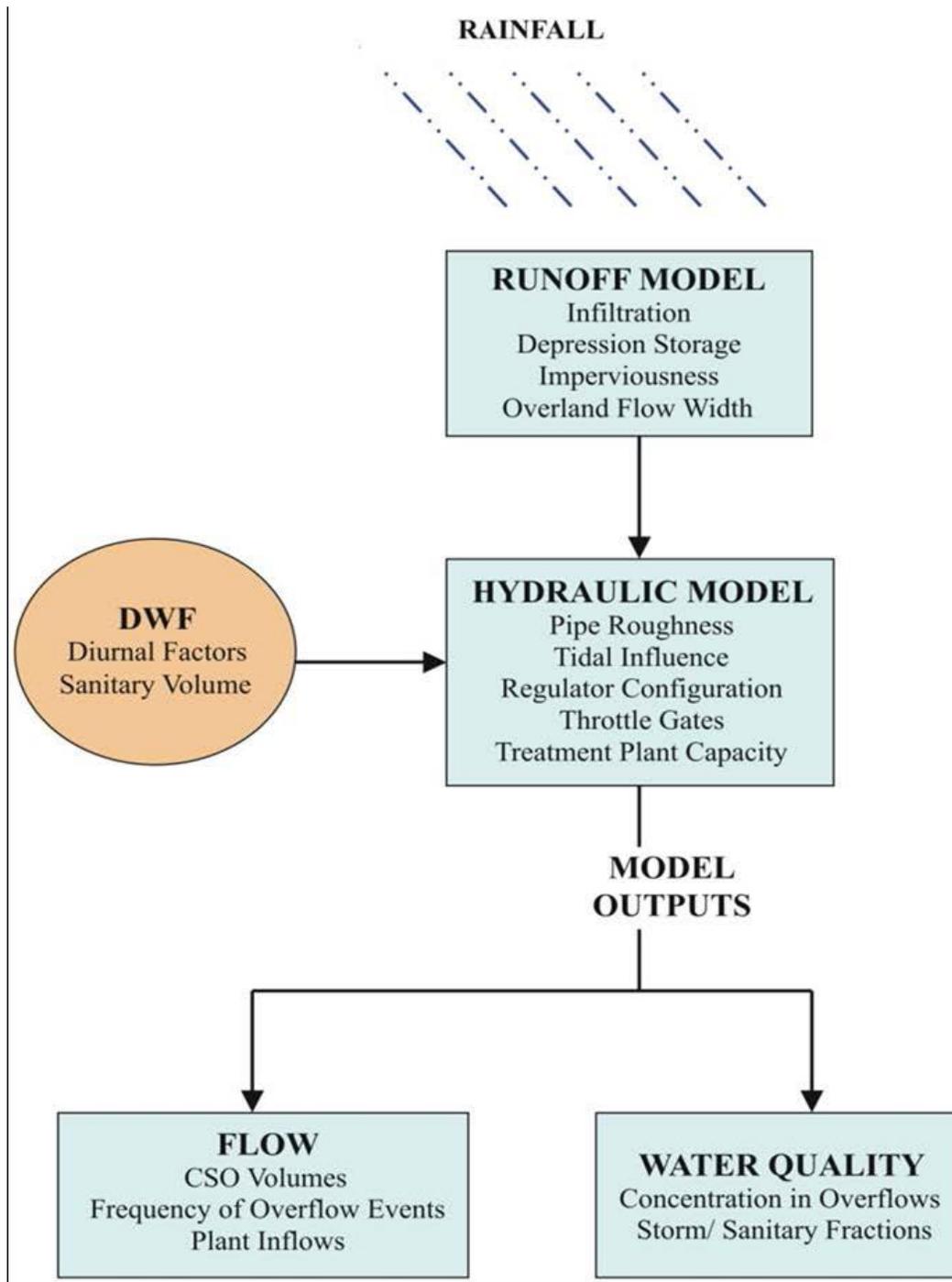


Figure 3-3. Schematic Representation of InfoWorks Model

The SWMM RUNOFF option has been chosen as the InfoWorks runoff simulation algorithm. Each WRRF drainage area was divided into component regulator drainage areas. All pipes larger than 48 inches were included in all WRRF models, and some pipes in the range of 12 to 42 inches in selected WRRF models that were expanded based on local hydraulic conditions. The pipe network was used to further divide the regulator drainage area into smaller sub-catchments that drain to individual manholes. Each sub-catchment was then divided into impervious and pervious areas, based on geographical features including rooftops,

driveways, roadways, lawns, parking lots, and parks/open spaces. An example representation of pipes, manholes and surface features is shown in Figure 3-4.

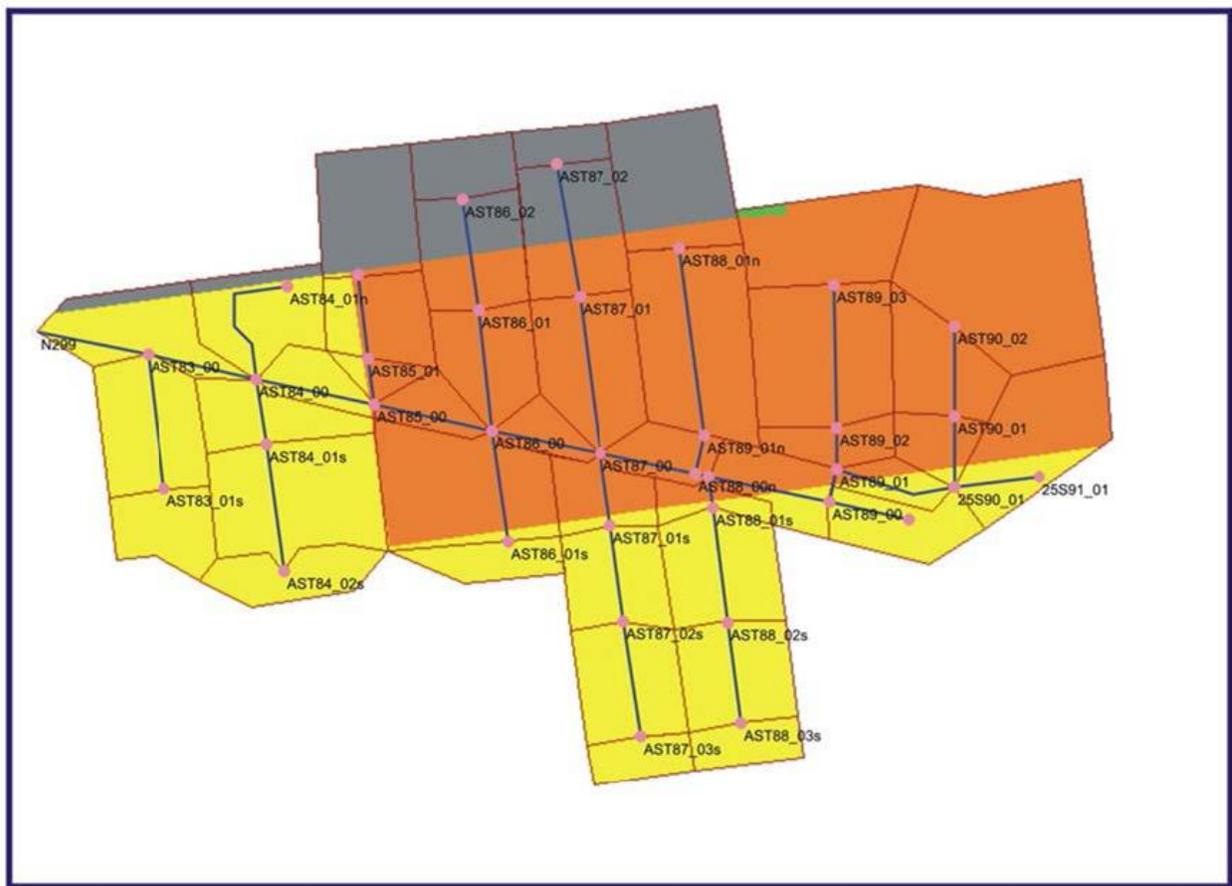


Figure 3-4. Geographical and Sewer System Data in InfoWorks Model

A major component of the 2011 InfoWorks model update was the satellite-imagery based imperviousness estimate. This process was well documented in the 2011 recalibration report submittal to the DEC. Although this estimate represents the total impervious area in each subcatchment, the flow monitoring performed by DEP confirmed that only a fraction of this area was contributing runoff directly to the sewer system. This fraction is referred to as the directly connected impervious area (DCIA) for each subcatchment, which is one of the calibration parameters. The DCIA, in essence, is equivalent to the runoff coefficient used in traditional sewer design principles with a standard rational approach. Hydrologic parameters included in the InfoWorks model for impervious surfaces are: DCIA, depression storage (initial losses), and surface roughness.

Similarly, the pervious areas were represented with the same three parameters – only difference being that the pervious areas were divided into open surfaces (parks, cemeteries or large open areas) and non-open surfaces (pervious areas in residential, commercial, industrial landuses). Soil compaction due to several

factors in these two distinct surfaces presents different runoff loss rates, which led to the explicit representation of open and non-open areas with different runoff coefficients in the InfoWorks models. Runoff is generated from each of these three surfaces within a subcatchment for a given rainfall intensity/volume. An example image and associated definition of pervious and impervious (complement of pervious areas) from the Newtown Creek WRRF drainage area is shown in Figure 3-5. The areas within red boundaries represent the catchment areas to two flow metering locations within this WRRF drainage area.

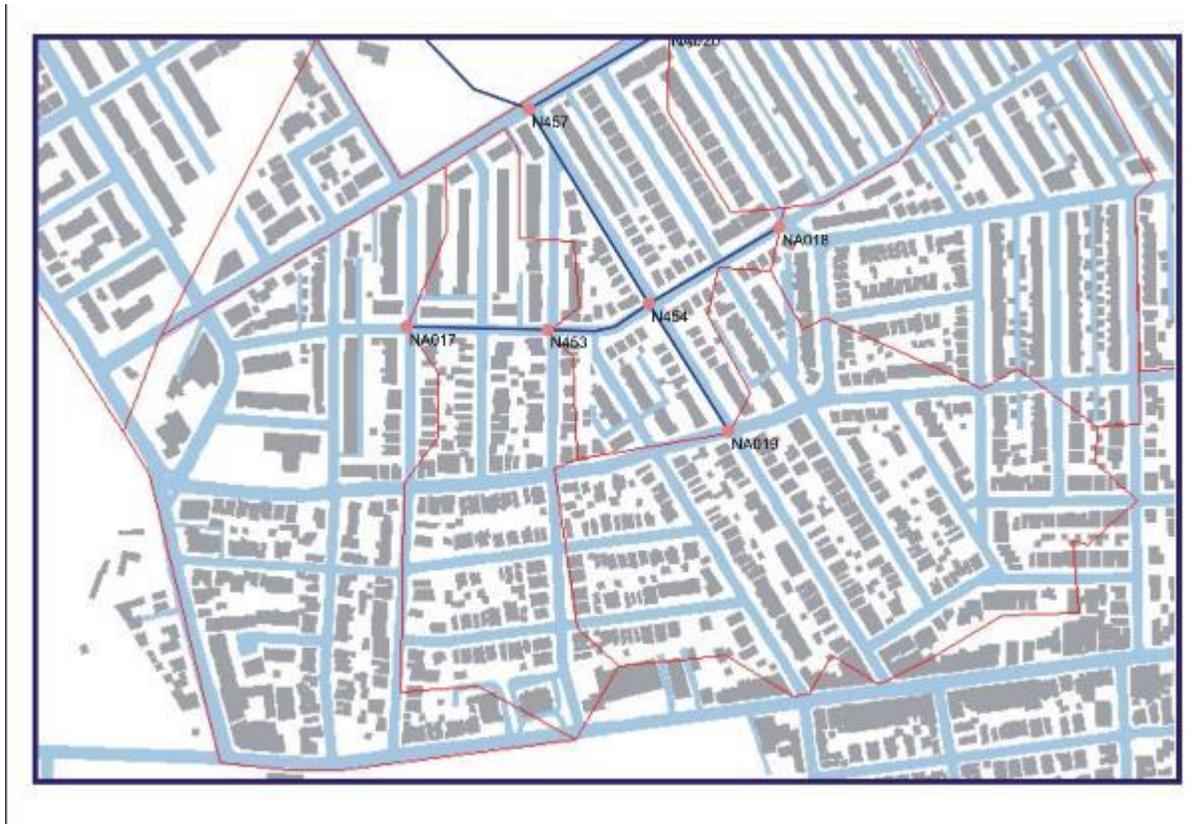


Figure 3-5. Landcover Definitions Using Remote Sensing Data

Monthly evaporation data was obtained from the Northeast Climate Center at Cornell University for all the four NOAA rain gage locations. This data was further processed based on the geographical proximity of WRRF service areas and used to develop the inputs for evaporation rates in the model.

The InfoWorks model uses the SWMM's non-linear reservoir model to route the runoff through urban landscapes to the sewer entry-point (catch basin/manhole included in the model). Sub-catchments are modeled as idealized rectangular areas with the slope of a sub-basin perpendicular to the width. The routing is performed according to the equation:

$$Q = \frac{1.486}{n} W (d - d_s)^{\frac{5}{3}} S^{\frac{1}{2}}$$

where:

Q is surface runoff (cfs);

W is width of sub-area (ft);

S is average slope of sub-area (ft/ft);

d is depth in the non-linear reservoir (ft);

d_s is the depression storage depth in the non-linear reservoir (ft); and

n is the Manning's roughness coefficients.

For hydraulic routing, the model uses the Saint-Venant equations to describe the conservation of mass and momentum:

$$\frac{\delta A}{\delta t} + \frac{\delta Q}{\delta x} = 0$$

$$\frac{\delta Q}{\delta t} + \frac{\delta}{\delta x} \left(\frac{Q^2}{A} \right) + gA \left(\cos \theta \frac{\delta g}{\delta x} - S_o + \frac{Q|Q|}{K^2} \right) = 0$$

with: Q	Discharge (m ³ /s)
A	Cross-sectional area (m ²)
g	Acceleration due to gravity (m/s ²)
θ	Angle of bed to horizontal (°)
S_o	Bed slope
K	Conveyance

With the use of the Saint Venant equations, the following complex phenomena that occur in a sewer system can be dynamically characterized:

Presence of sewer sediments

- Pump-station operations (variable, step-wise, etc.), along with wet-well controls

- Inverted siphon
- Bifurcations
- Regulator operations during tidal conditions
- Throttling at treatment plants during wet weather to limit inflows
- Behavior of in-line regulators
- Street and basement flooding
- Groundwater infiltration into combined and separately sewers.

Depending on the complexity of each WRRF drainage area, some or all of the above processes were modeled in InfoWorks. Available CSO and in-system flow and depth monitoring data compiled during development of waterbody-watershed facility planning studies and CSO LTCPs was used to update the sewer system models of the 12 WRRF drainage areas with combined sewers and the Rockaway WRRF service area with separate sewers. The system-wide calibration involved the use of flow and depth data compiled at several in-system locations, selected outfalls, DEP SCADA locations, and at the influent of a WRRF. The City has been using a grid-based radar rainfall data framework to characterize the spatial-temporal variability. Selected storms ranging in intensity and total volumes observed during the calibration period were used to calibrate the appropriate hydrologic (e.g., runoff coefficient (DCIA), depression storage, and roughness) and hydraulic (pipe roughness, pump operations, weir coefficients and gate controls) model parameters. Additional wet weather events (storms) were used to independently validate the model performance. DEP used a weight-of-evidence approach to assess the adequacy of model calibration including correlation plots between observed and modeled runoff volumes, flow rates, and water depths in sewers; and also the temporal comparisons of flows during wet events at various calibration points including the plant influent. Figure 3-6 illustrates the detailed calibration/validation approach that involves assessing correlations at different spatial scales and also using a variety of flow/depth monitoring data.

The input parameters necessary for InfoWorks application to compute percent capture include: (a) maximum WRRF capacity that can be varied on a monthly basis – represented in the form of a wet well elevation versus pump capacity curve; (b) precipitation at hourly or shorter intervals; (c) dry weather flow at each regulator and its diurnal pattern that can be varied on a monthly basis; (d) distribution of land uses within each subcatchment along with losses such as evaporation and depression storage; (e) operation of throttling/slucice gates within a system; (f) tide conditions near the various outfalls within a system. Since the model accounts for surcharging and backups within sewers, such complex aspects as in-line storage are modeled accurately.

Tide data were developed from the three permanent tide gages maintained by NOAA near New York City – namely, King's Point, The Battery, and Sandy Hook. NOAA also publishes tidal correction factors in terms of differences in time and amplitude at several locations in the NY-NJ Harbor. The correction factors were tabulated for the locations of the waterbody near each or a set of outfalls, and then the data from the nearest NOAA station were used to develop the tidal boundary conditions for each or a set of outfalls within a drainage area.

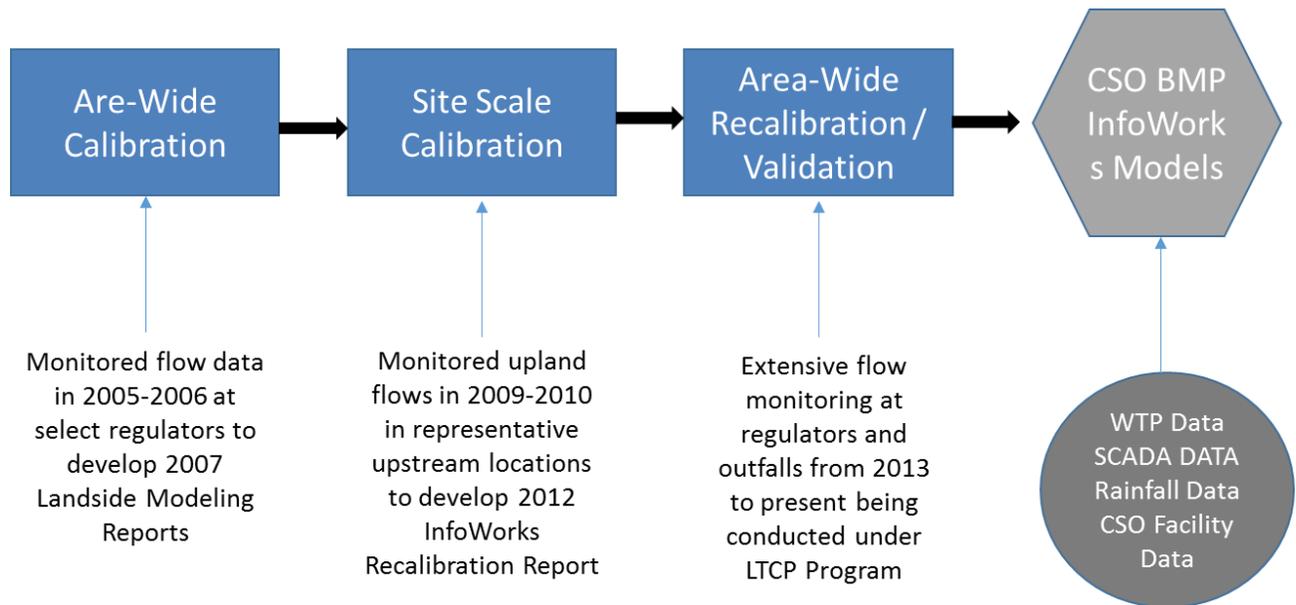


Figure 3-6. Comprehensive InfoWorks Model Calibration Approach

As a first step, the plant flow data at each WRRF was reviewed to develop the wet-well elevation versus pump discharge curves on a monthly basis. Appropriate dry weather flows and diurnal patterns were used for all regulators within the drainage area. The modeled and monitored plant flows were compared to confirm the adequacy of calibration of plant influent in the InfoWorks model for CY2019 conditions. If needed, the pump rating curves were adjusted to better match the monitored and modeled flows. Similarly, the rule curves associated with throttling gates, if appropriate, were modified to achieve better agreement between modeled and observed inflows at the plant. No other hydrologic or hydraulic model parameters were adjusted in the drainage area during this model application process. Specific hydraulic adjustments of the models have been made in select WRRF models to account for changes to the conveyance system, such as the operation of the Alley Creek, Flushing Creek, Paerdegat Basin and Spring Creek CSO retention facilities. The modeled inputs used in the InfoWorks model for all drainage areas with combined sewers are summarized in Table 3-2. Figure 3-7 shows an example correlation between measured and modeled inflows to the Bowery Bay WRRF, for CY2019.

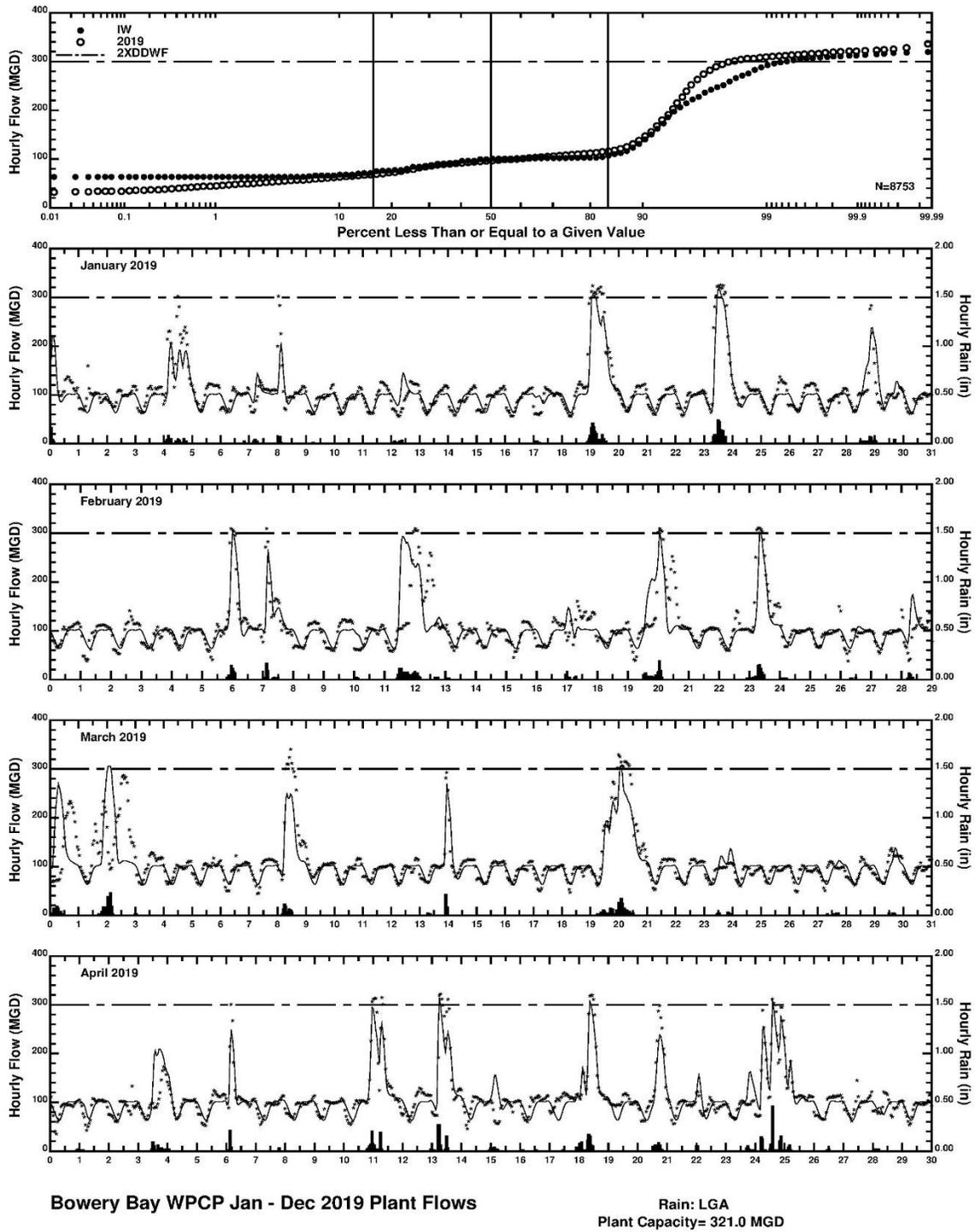


Figure 3-7. InfoWorks Sample Results 2019

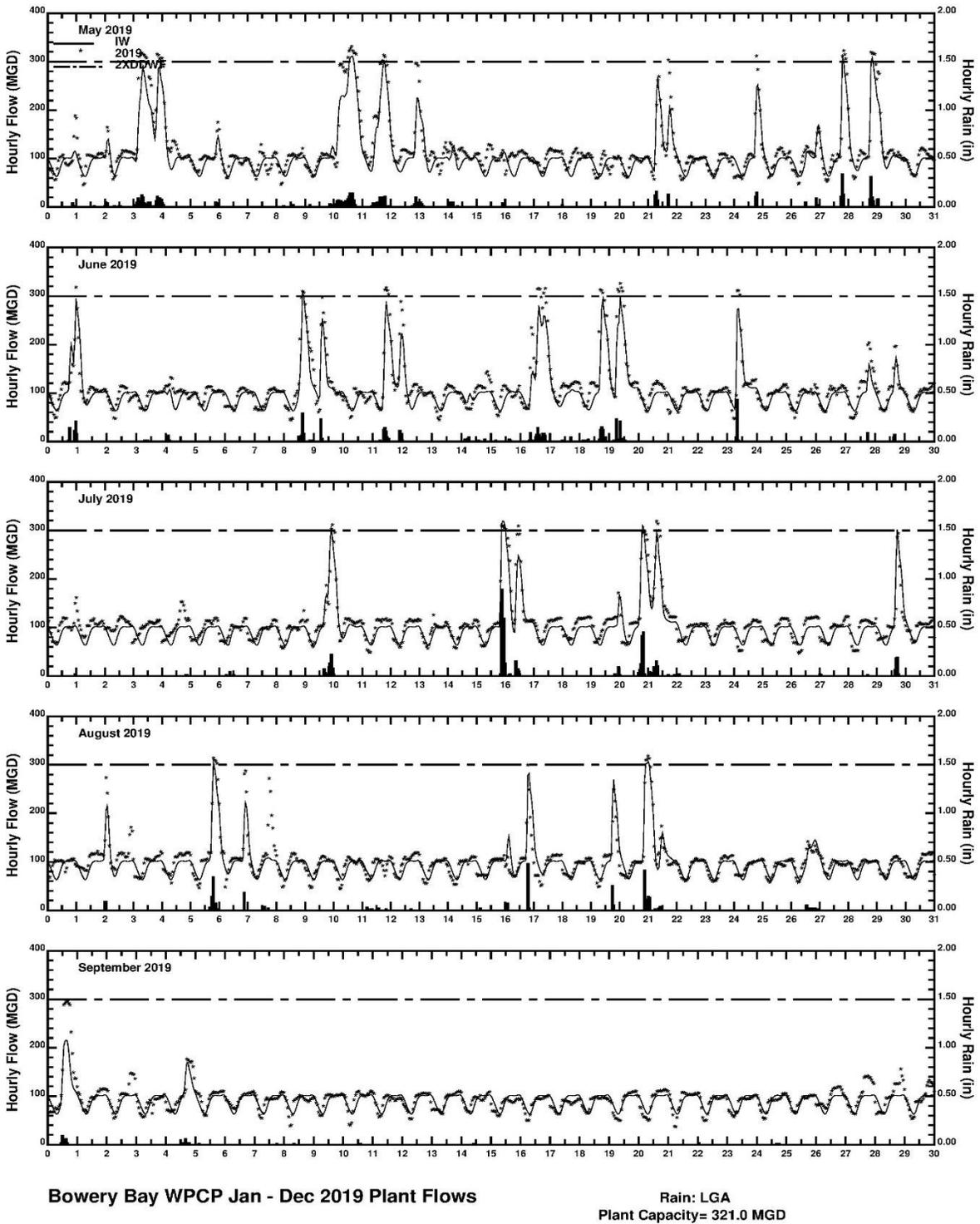


Figure 3-7. InfoWorks Sample Results 2019

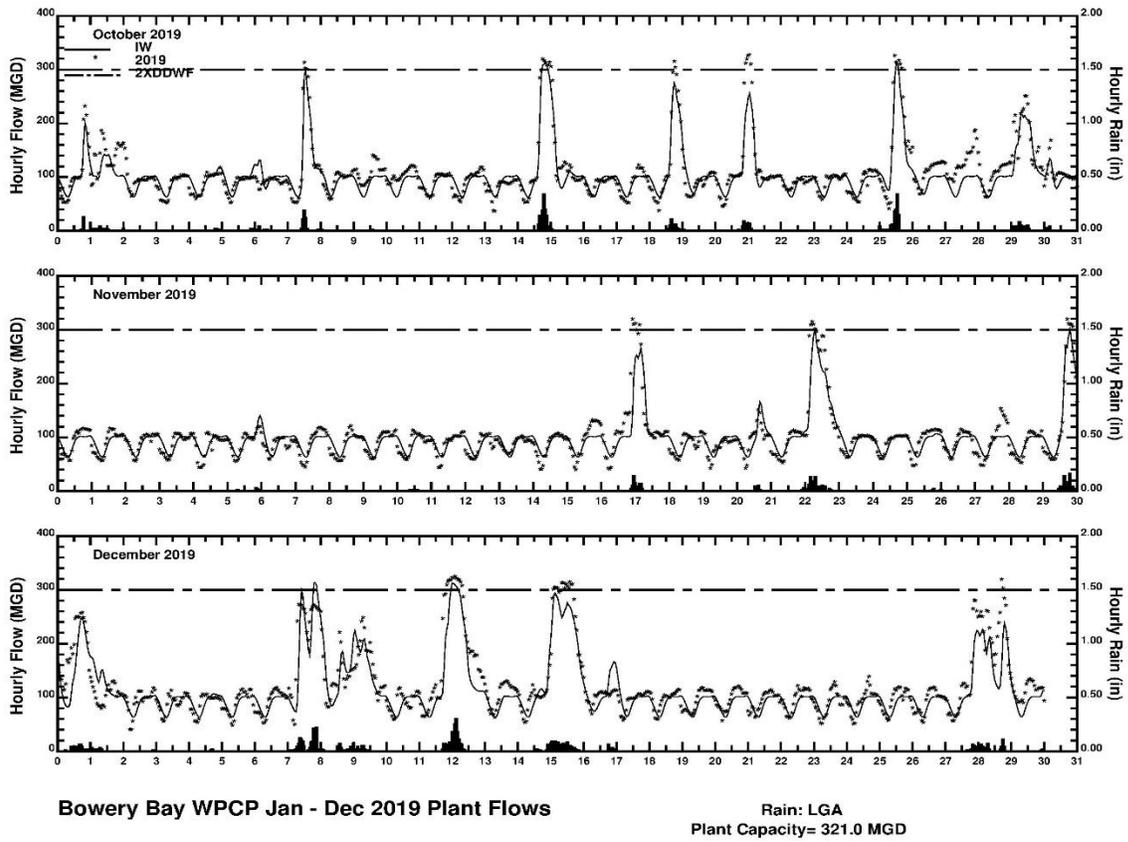


Figure 3-7. InfoWorks Sample Results 2019

Appendix 3.4: COMBINED-SEWAGE CAPTURE RESULTS - 2019 FLOW VOLUME

Table 3-2 presents the results of the combined-sewage volume percent capture evaluation performed for CY2019. The InfoWorks models were used to analyze drainage areas for the two scenarios, as discussed in Section 3.2 - "Actual" refers to the actual conveyance/treatment system performance and rainfall in 2019.

As shown in Table 3-3, the "Actual" scenario capture of combined-sewage volume in 2019 averaged 87 percent citywide. Combined-sewage capture at individual, combined area WRRFs varied from a low at Owls Head (74 percent each) to a high at North River (98 percent each). Combined-sewage flow capture is not applicable at the separately sewerred WRRFs (Oakwood Beach and Rockaway).

Table 3-2. As-Modeled WRRF Service Area Characteristics – CY 2019

WRRF	Total Drainage Area (acres)	Combined Sewage Drainage Area (acres)	Average Dry Weather Flow (MGD)	Design Dry Weather Flow (MGD)	Maximum Wet Weather Flow ⁽¹⁾ (MGD)	Permitted Wet Weather Flow ⁽²⁾ (MGD)
26W	5,787	4,358	41.6	85	136	170
BB	14,232	12,446	89.4	150	321	300
CI	6,779	6,070	95.0	110	230	220
HP	22,543	11,546	115.9	200	406	400
JA	26,421	5,451	78.9	100	199	200
NC	15,103	13,562	194.6	350	789	700
NR	5,572	4,448	102.3	170	347	340
OH	10,078	9,448	81.6	120	244	240
PR	11,541	3,575	26.2	60	124	120
RH	3,738	2,991	26.2	60	126	120
TI	18,314	8,721	58.5	80	164	160
WI	15,799	12,822	181.6	275	571	550
NYC CS Total	155,907	95,438	1,090.9	1,760	3,657	

Separate Areas						
RO	5,710	NA	20.8	45	47	90
OB ⁽³⁾	10,779	NA	30.7	40	100	80
NYC overall	172,396	95,438	1,142.4	1,845	3,804	

- The maximum 99.9th percentile wet weather flows were used to set the peak pumping capacity to be used in the InfoWorks model.
- Permitted flow is max design flow, or twice design dry-weather flow (2xDDWF), except as noted.
- Certain statistics excluded for RO and OB because these areas are separately sewered.

Table 3-3. Combined-Sewage Capture Results – Flow Volume Calendar Year 2019

WRRF	Actual ⁽¹⁾ (2019)
26W	96%
BB	79%
CI	96%
HP	84%
JA	88%
NC	93%
NR	98%
OH	74%
PR	80%
RH	92%
TI	83%
WI	89%
NYC Avg. ⁽²⁾	87%

Notes:

- The "actual" case capture results reflect the –state and operation of the collection/treatment system during the subject period, as well as the actual rainfall patterns during the subject period.
- Averages are combined sewage drainage-area weighted, and exclude separately (Oakwood Beach and Rockaway).

Appendix 3.5: REFERENCES

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<https://www.nssl.noaa.gov/projects/mrms/>

Appendix 4:

- Appendix 4.1: Table 1 - Wet Weather Operating Plan (WWOP) Submittal Schedule - WRRF's
- Appendix 4.2: Table 2 - Wet Weather Operating Plan (WWOP) Submittal Schedule - CSO Facilities

Appendix 4.1: TABLE 1 - WET WEATHER OPERATING PLAN (WWOP) SUBMITTAL SCHEDULE - WRRF'S

Facilities	Submittal Dates		Status
	Original	Revisions	
Wards Island	Jul-03	Sept. 2004, April 2007, Aug. 2007, June 2008 (submitted Sept. 2008), Dec. 2008, June 2009, Jan. 2011, Oct. 2014, Dec. 2014	Jun 2009 version Approved (Mar. 2010) Awaiting DEC approval of the Dec. 2014 version
North River	Apr-04	July 2011, Dec. 2014	April 2004 version Approved (Jan. 2006) July 2011 submittal was an <u>amendment</u> to WWOP due to fire Awaiting DEC approval of the Dec. 2014 version
Hunts Point	Jul-03	Sept. 2004, April 2010, Aug. 2010, Dec. 2014	Aug. 2010 version Approved (Oct. 2010) Awaiting DEC approval of the Dec. 2014 version
26th Ward	Jul-03	Sept. 2004, May 2007, Oct. 2007, Feb. 2009, Aug. 2009, July 2010, Dec. 2014, Oct. 2015, Mar. 2016	Mar. 2016 version Approved (Mar. 2016)
Coney Island	Apr-05	Dec. 2007, May 2010, Oct. 2010, Dec. 2014	Dec. 2007 version Approved (Mar. 2008) Awaiting DEC approval of the Dec. 2014 version
Owls Head	Apr-05	Dec. 2007, Sept. 2008, Dec. 2008, Dec. 2014	Dec. 2008 version Approved (Jan. 2009) Awaiting DEC approval of the Dec. 2014 version
Newtown Creek	Jun-03	April 2005, March 2009, April 2010, Oct. 2011, April 2013, Dec. 2014	April 2013 version Approved (Jun. 2013) Awaiting DEC approval of the Dec. 2014 version
Red Hook	Feb. 2005	Dec. 2014	WWOP Approved (Jan. 2006) Awaiting DEC approval of the Dec. 2014 version
Jamaica	Apr-05	April 2007, June 2007, Dec. 2014	June 2007 version Approved (Sept. 2007)

			Awaiting DEC approval of the Dec. 2014 version
Tallman Island	Jul-03	Sept. 2004, May 2007, Oct. 2007, Aug. 2009, April 2010, July 2010, July 2011, Dec. 2014	July 2010 version Approved (Sept. 2010) Awaiting DEC approval of the Dec. 2014 version
Bowery Bay	Jul-03	Sept. 2004, March 2009, Dec. 2014, Mar. 2016	March 2009 version Conditionally Approved (May 2009) Awaiting DEC approval of the Mar. 2016 version
Rockaway	Apr-05	Dec. 2007, Dec. 2014	Dec. 2007 version Approved (Mar. 2008) Awaiting DEC approval of the Dec. 2014 version
Oakwood Beach	Apr-05	Dec. 2007, Dec. 2014	Dec. 2007 version Approved (Mar. 2008) Awaiting DEC approval of the Dec. 2014 version
Port Richmond	Apr-05	Dec. 2007, Dec. 2014	Dec. 2007 version Approved (Mar. 2008) Awaiting DEC approval of the Dec. 2014 version

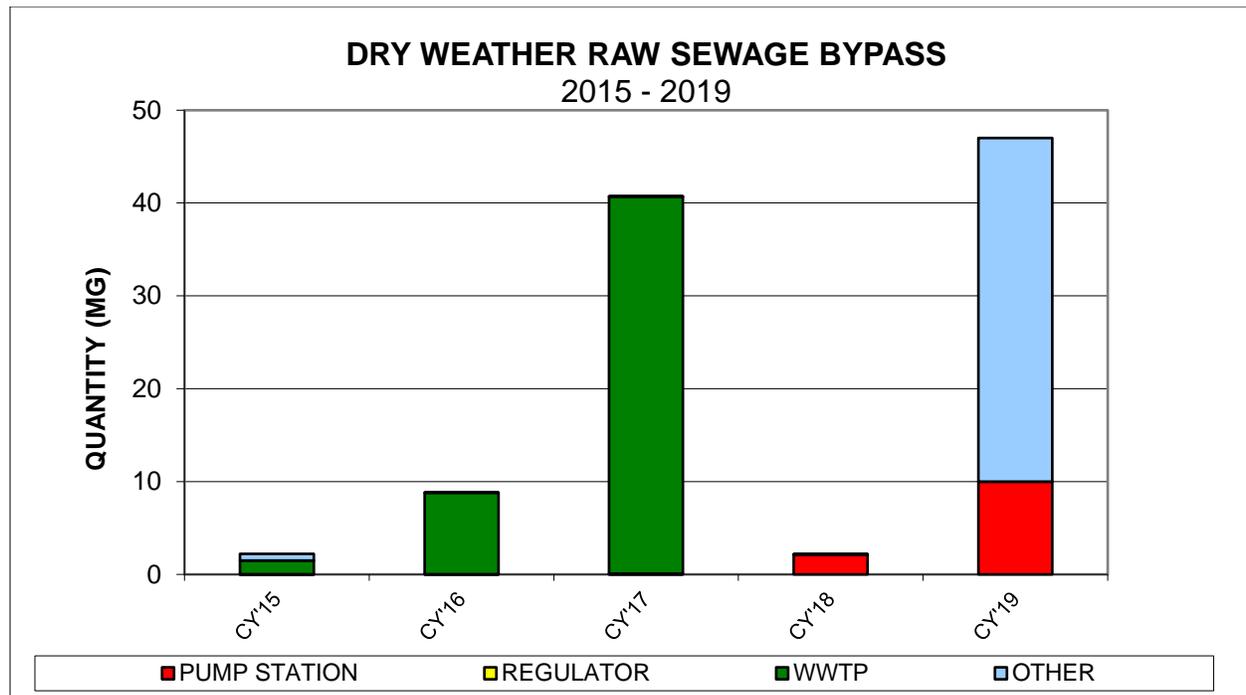
Appendix 4.2: TABLE 2 - WET WEATHER OPERATING PLAN (WWOP) SUBMITTAL SCHEDULE - CSO FACILITIES

Facilities	Submittal Dates		Status
	Original	Revisions	
Spring Creek	Jun-03	May 2007, Oct. 2007, Feb. 2009, Aug. 2009, July 2010, Dec 2014, Oct. 2015, Mar. 2016	appended to 26W WWOP
Flushing Bay	Dec. 2003	May 2007, Oct. 2007, Aug. 2009, April 2010, July 2010, July 2011, Dec-14	appended to TI WWOP
Alley Creek	Dec. 2003	May 2007, Oct. 2007, Aug. 2009, April 2010, July 2010, July 2011, Dec-14	appended to TI WWOP

Peardegat Basin	Dec. 2003	May 2010, Oct. 2010, Dec 2014	appended to CI WWOP
Corona Avenue	Dec. 2003	March 2009, Dec 2014, Mar. 2016	appended to BB WWOP

Appendix 5:

- Figure 1: Dry Weather Raw Sewage Bypass Graph (CY2013-2019)
- Table 1: Dry Weather Bypassing CY'14-CY'19
- Table 2: Dry Weather Raw Sewage Bypasses CY-2019 - Pump Station
- Table 3: Dry Weather Raw Sewage Bypasses CY-2019 - Regulator
- Table 4: Dry Weather Raw Sewage Bypasses CY-2019 - WRRF
- Table 5: Dry Weather Raw Sewage Bypasses CY-2019 - Other Location
- Table 6: Pump Station Bypassing Summary CY2019 by Location
- Table 7: Pump Station Bypassing Summary CY2019 by Cause Code
- Table 8: Regulator Bypassing Summary CY2019 by Location
- Table 9: Regulator Bypassing Summary CY2019 by Cause Code
- Table 10: WRRF Bypass Summary CY2019

Figure 1: Dry Weather Raw Sewage Bypass Graph (CY2013 – 2018)**Table 1: Dry Weather Bypassing CY'15-CY'19**

SOURCE	CY'15	CY'16	CY'17	CY'18	CY'19
PUMP STATION	0.00	0.02	0.02	2.13	10.00
REGULATOR	0.00	0.01	0.09	0.01	0.01
WWTP	1.50	8.76	40.60	n/a	0.00
OTHER	0.71	0.01	0.02	0.01	37.01
TOTAL	2.22	8.80	40.72	2.16	47.01

Other locations include: bypasses from outfalls, street locations, etc.

*In 2015, there was a Bypass during Wet Weather at Hunts Point which is included in the above totals.

*In 2015, there were two bypasses that occurred with unknown amounts and durations. These are included in the # of events but no amount is known.

*In 2015, there were bypasses that occurred from private sewers which overflowed to DEP-owned catchbasins/outfalls which are included in the above totals. Some of these events had unknown amounts and end times; these are included in the # of events but the amount and duration are unknown.

*In 2016, there were Bypasses during Wet Weather at Newtown Creek, Tallman Island and Bowery Bay which are included in the above totals.

*In 2016, there were bypasses that occurred from private sewers which overflowed to DEP-owned catchbasins/outfalls which are included in the above totals. Some of these events had unknown amounts and end times; these are included in the # of events but the amount and duration are unknown.

*In 2017, there were Bypasses during Wet Weather at Hunts Point and Bowery Bay which are included in the above totals.

*In 2019, there was a Potential Raw Sewage Bypass at Jamaica, but it was not confirmed.

Table 2: Dry Weather Raw Sewage Bypasses CY-2019 - Pump Station

Years	# Of Events	Total Bypass (MG)	Duration (Hrs)
CY2015	1	0.0002	0.42
CY2016	2	0.0221	0.67
CY2017	2	0.0153	6.50
CY2018	2	2.1320	13.33
CY2019	4	10.00	67.23

Table 3: Dry Weather Raw Sewage Bypasses CY-2019 – Regulator

Years	# Of Events	Total Bypass (MG)	Duration (Hrs)
CY2015	3	0.0048	7.17
CY2016	3	0.0072	4.50
CY2017	2	0.0861	9.08
CY2018	3	0.0127	3.83
CY2019	3	0.0092	5.92

Table 4: Dry Weather Raw Sewage Bypasses CY-2019 – WWTP

Years	# Of Events	Total Bypass (MG)	Duration (Hrs)
CY2015	2	1.50	4.5
CY2016	4	8.76	16.6
CY2017	2	40.60	19.3
CY2018	0	n/a	n/a
CY2019	1	n/a	1.4

Table 5: Dry Weather Raw Sewage Bypasses CY-2019 - Other Location

Years	# Of Events	Total Bypass (MG)	Duration (Hrs)
CY2015	11	0.71	13.48
CY2016	5	0.0063	23.58
CY2017	7	0.0186	39.48
CY2018	0	n/a	n/a
CY2019	6	37.01	395.47

Table 6: Pump Station Bypassing Summary CY2019 by Location

LOCATION	EVENTS	% EVENTS	MG	% MG	HOURS	% HOURS
RH - Gowanus Pump Station	1	25%	0.5	5%	1.98	3%
WI - W.235th Street Pump Station	1	25%	1.1	11%	16.67	25%
WI – Marble Hill Pump Station	1	25%	8.4	84%	48.42	72%
WI - 235th Street Pump Station	1	25%	0.000025	0%	0.17	0%
TOTAL	4	100%	10.0	100%	67.23	100%

Table 7: Pump Station Bypassing Summary CY20198 by Cause Code

CAUSE CODE	CODE DESCRIPTION	EVENTS	% EVENTS	M G	% MG	HOURS	% HOURS
3C	Electrical Equipment Failure: MSP Control System	1	25%	0.5	5%	1.98	3%
7A	Rupture or Collapse: Pumping Station Force Main	1	25%	1.1	11%	16.67	25%
4C	Mechanical Equipment Failure: MSP	1	25%	8.4	84%	48.42	72%
4D	Mechanical Equipment Failure: MSP Related Pipe/Valves	1	25%	0.0	0%	0.17	0%
Total		4	100%	10.0	100%	67.23	100%

Table 8: Regulator Bypassing Summary CY2019 by Location

Location	EVENTS	% EVENTS	MG	% MG	HOURS	% HOURS
HP-Reg. No. 05	1	33%	0.0035	37%	3.00	51%
NR-Reg. No. 36	1	33%	0.0057	61%	2.75	46%
NCB-Reg. No. 05A	1	33%	0.0001	1%	0.17	3%
TOTAL	3	100%	0.0093	100%	5.92	100%

Table 9: Regulator Bypassing Summary CY2019 by Cause Code

CAUSE CODE	CODE DESCRIPTION	EVENTS	% EVENTS	MG	% MG	HOURS	% HOURS
6A	Blockages: Regulator	3	100%	0.0093	100%	5.92	100%
Total		3	100%	0.0093	100%	5.92	100%

Table 10: WWTP Bypass Summary CY2019 by Location

LOCATION	EVENTS	% EVENTS	MG	% MG	HOURS	% HOURS
Jamaica WRRF*	1	100%	n/a	n/a	1.37	100%
TOTAL	1	100%	n/a	n/a	1.37	100%

*Potential raw sewage bypass

Appendix 6:

- Appendix 6.1: Exhibit 1 – Letter to Industrial Users Amending
- Appendix 6.2: Exhibit 2 – Trends in Metals Loadings to New York City WRRFs

Appendix 6.1: EXHIBIT 1 – LETTER TO INDUSTRIAL USERS AMENDING



**Department of
Environmental
Protection**

59-17 Junction Boulevard
Flushing, New York
11373-5108

**Christopher O. Ward
Commissioner**

**Alfonso R. Lopez, P.E.
Deputy Commissioner
Bureau of Wastewater
Treatment**

Tel. (718) 595-5950
(Fax (718) 595-6950
Alopez@dep.nyc.gov

September 1, 2004

**Re: Industrial Wastewater Discharge
Permit/Commissioner's Order and
Directive Amendments**

Certified Mail/Return Receipt Requested

Dear Industrial User:

This is to notify you that the New York City Department of Environmental Protection (DEP) is hereby amending the requirements of your Industrial Wastewater Discharge Permit/Commissioner's Order and Directive (Permit/Directive) as follows:

1. Your establishment is now required to hold its process wastewater and non-contact cooling water to the maximum extent practicable during heavy wet weather events.

The reason for this is that in New York City, combined sewers carry both wastewater and storm water to the City's Water Pollution Control Plants (WPCP). Combined Sewer Overflows (CSOs) can occur during heavy wet weather events, causing wastewater and storm water to be discharged to the receiving waters, without treatment at a WPCP, due to the inability of the WPCP to accept the increased flow. This has an adverse affect on New York City's waterways. DEP has made significant reductions in the size and frequency of CSO events within the City; however, this problem can still occur during heavy rainfall.

2. Part II, Section A of your Permit/Directive is hereby amended, raising the maximum civil and misdemeanor penalties from \$1,000.00 to \$10,000.00, as per an amendment to the New York City Administrative Code.

3. Part II, Section C (2) (c) is amended to require inclusion of the dates of analysis for each sample and the laboratory's sample identification for each sample in the laboratory report. Please see the amended Industrial User Self Monitoring Report Form and the Sample Laboratory Report Form enclosed for all information establishment is required to submit.

All other requirements of your Permit/Directive remain in effect.

If you have any questions regarding this matter, please telephone Ms. Frances Leung at (718) 595-4763.

Sincerely,

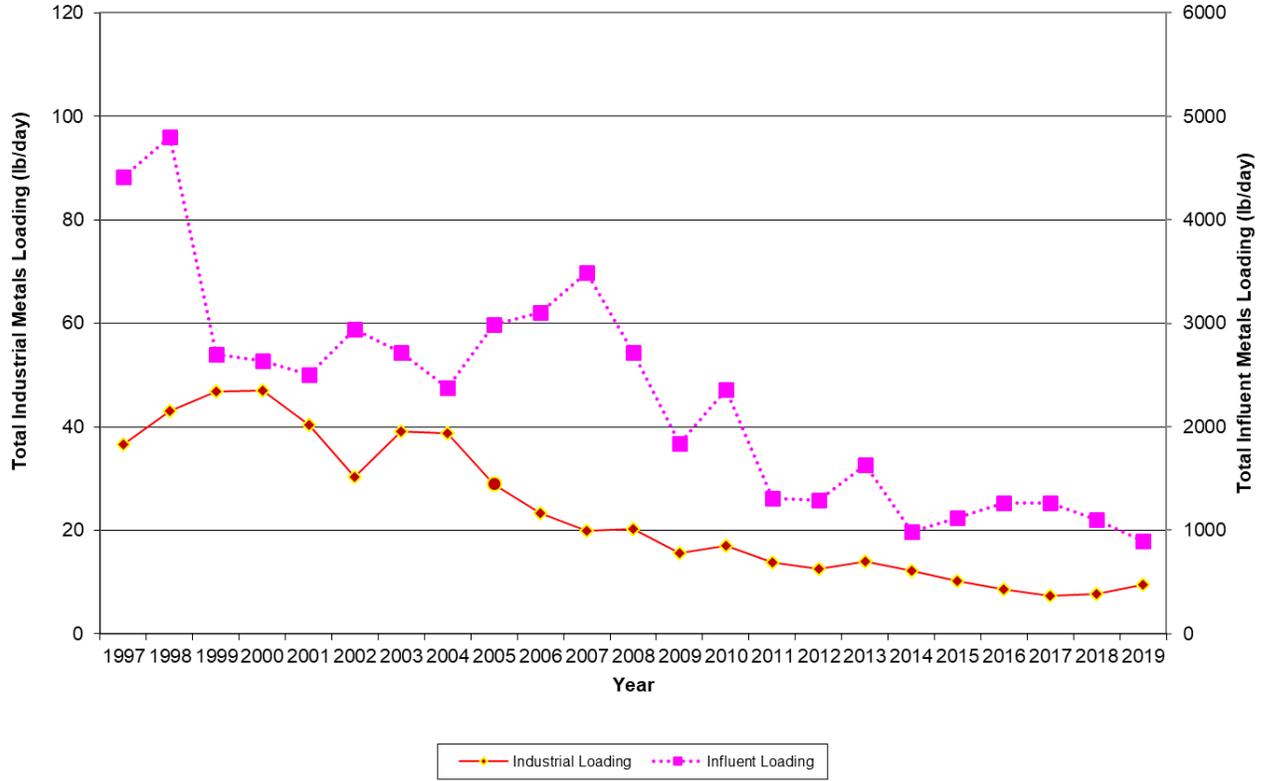
Leslie Lipton, Esq., Chief
Division of Pollution Control and Monitoring

Enc. Industrial User Self Monitoring Report Form
Sample Laboratory Report Form



Appendix 6.2: EXHIBIT 2 – TRENDS IN METALS LOADINGS TO NEW YORK CITY WRRFs

Average Daily Industrial and Influent Metals Loadings Per Year



Appendix 7:

Appendix 7.1: BWSO

- Appendix 7.1.1: Table 7.1-A - CY2019 Catch Basin Survey & Cleaning
- Appendix 7.1.2: Table 7.1-B CY2019 Catch Basin Hooding

Appendix 7.2: BWT

:

- Appendix 7.2.1: Table 7.2-A - City-Wide Floatable Material Recovery
- Appendix 7.2.2: Table 7.2-B - City-Wide Floatable Material Recovery per CSO Site
- Appendix 7.2.3: Table 7.2-C - City-Wide Floatable Material Recovery per Containment Sites
- Appendix 7.2.4: Table 7.3-D - NYC DEP CSO Floatables Removal Program via Skimmer Vessels
- Appendix 7.2.5: Figure 7.2-A - Floatables Booming, Netting, and Offloading Sites
- Appendix 7.2.6: Figure 7.2-B - City-Wide Floatables Material Recovery 2004-2018
- Appendix 7.2.7: Figure 7.2-C - NYC DSNY Scorecard 2017

Appendix 7.1:

BWSO**Appendix 7.1.1: Table 7.1-A - CY2019 Catch Basin Survey & Cleaning**

Borough	Total CB Inspections	Scheduled CB Cleanings	Complaint Based CB Cleaned	Total CB Cleaned
Bronx	16,500	4,597	514	5,111
Brooklyn	30,841	8,324	1,577	9,901
Manhattan	11,884	4,758	931	5,689
Queens	62,776	15,545	2,457	18,002
Staten Island	16,213	6,651	350	7,001
Total	138,214	39,875	5,829	45,704

Appendix 7.1.2: Table 7.1-B - CY2019 Catch Basin Hooding

Wastewater Resource Recovery Facility (WRRF) Drainage Area	Quantity
26th Ward	294
Bowery Bay	350
Coney Island	361
Hunts Point	779
Jamaica	1,142
Newtown Creek	284
North River	79
Oakwood Beach	117
Owls Head	191
Port Richmond	197
Red Hook	54
Rockaway	273
Tallman Island	397
Wards Island	323
Total	4,841

Appendix 7.2: BWT

Appendix 7.2.1: Table 7.2-A - City-Wide Floatable Material Recovery 2004-2019

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
No. Sites⁽¹⁾																
FCP ⁽²⁾ Permanent	21.00	21.00	22.00	21.00	21.00	24.00	23.00	23.00	23.00	23.00	23.00	22.00	22.00	22.00	22.00	22.00
FCP Temporary ⁽³⁾	2.00	2.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Other Sites	2.00	2.00	3.00	4.00	4.00	3.00	12.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	25.00	25.00	26.00	27.00	27.00	29.00	36.00	24.00	24.00	24.00	24.00	23.00	23.00	23.00	23.00	23.00
Volume [cy]⁽⁴⁾																
FCP Permanent	1,460.00	1,047.50	1,614.50	2,131.30	1,881.75	1,368.75	1,774.50	1,988.25	1,384.00	921.00	437.75	246.5	454.625	579.625	513.00	349.50
FCP Temporary	2.00	3.00	18.00	25.50	18.25	1.00	5.00	1.50	9.00	6.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Sites	32.00	80.25	70.50	151.50	136.50	207.50	523.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	1,494.00	1,130.75	1,703.00	2,308.30	2,036.50	1,577.25	2,302.50	1,989.75	1,393.00	927.00	437.75	246.50	454.625	579.625	513.00	349.50

⁽¹⁾ Maximum number of sites operating during calendar year period.

⁽²⁾ Floatables Containment Program.

⁽³⁾ "Temporary" status refers to sites which do not have a permanent floatables containment installation - Gowanus Canal.

⁽⁴⁾ Total volume of floatables retrieved from sites during period

Appendix 7.2.2: Table 7.2-B - City-Wide Floatable Material Recovery Per CSO Floatable Containment Sites, 2019

Month-Year	FRESH CREEK	BERGEN BASIN	THURSTON BASIN	FLUSHING BAY I	FLUSHING BAY II	FLUSHING CREEK I	FLUSHING CREEK II	BRONX RIVER	CRYDERS LANE	HENDRIX CREEK	ENGLISH KILLS	CONEY ISLAND	GOWANUS CANAL
Jan-19	0	0	0	0	0	0	0	54	0	0	0	0	0
Feb-19	0	0	0	0	0	0	0	12	0	0	0	0	0
Mar-19	0	0	0	0	0	0	0	23	0	0	0	0	0
Apr-19	0	0	0	0	0	0	0	56	0	0	0	0	0
May-19	8	27	0	0	0	0	1	54	1	0	0	0	0
Jun-19	10	12	0	0	0	0	0	12	0	0	0	0	0
Jul-19	4	0	0	0	0	0	2	16	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	28	0	0	0	0	0
Sep-19	4	0	0	0	0	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	18	0	0	0	0	0
Dec-19	2	0	0	0	0	0	0	0	0	0	0	0	0
2019 Total	28	39	0	0	0	0	3	273	1	0	0	0	0

(1) See next page for skimming activities en route to CSO containment site

Month-Year	MASPETH CREEK	BOWERY BAY	BUSHWICK INLET	EAST BRANCH	HUNTS POINT		OWLS HEAD	WALLABOUT I	WALLABOUT II	WESTCHESTER CREEK	CLASON POINT	OUTSIDE CONTAINMENT (1)	2018 Total
Jan-19	0	0	0	0	0		0	0	0	0	0	0	54
Feb-19	0	0	0	0	0		0	0	0	0	0	0	12
Mar-19	0	0	0	0	0		0	0	0	0	0	0	23
Apr-19	0	0	0	0	0		0	0	0	0	0	0	56
May-19	0	0	0	0	0		0	0	0	0	0	3	94
Jun-19	0	0	0	0	0		0	0	0	0	0	2	36
Jul-19	0	0	0	0	0		0	0	0	0	0	0	22
Aug-19	0	0	0	0	0		0	0	0	0	0	0	28
Sep-19	0	0	0	0	0		0	0	0	0	0	0.5	4.5
Oct-19	0	0	0	0	0		0	0	0	0	0	0	0
Nov-19	0	0	0	0	0		0	0	0	0	0	0	18
Dec-19	0	0	0	0	0		0	0	0	0	0	0	2
2019 Total	0	0	0	0	0		0	0	0	0	0	5.5	349.5

Appendix 7.2.3: Table 7.2-C - City-Wide Floatable Material Recovery While Navigating to Containment Sites, 2019

Month-Year	BERGEN BASIN	SHEEPSHEAD BAY	2019 Total
Jan-19	0	0	0
Feb-19	0	0	0
Mar-19	0	0	0
Apr-19	0	0	0
May-19	0	3	3
Jun-19	2	0	2
Jul-19	0	0	0
Aug-19	0	0	0
Sep-19	0	0.5	0.5
Oct-19	0	0	0
Nov-19	0	0	0
Dec-19	0	0	0
2019 Total	2	3.5	5.5

Appendix 7.2.4: Table 7.3-D - NYCDEP CSO Floatables Removal Program via Skimmer Vessels Collection Summary

MONTH	ZONE I	ZONE II/III	ZONE IV	TOTAL
January	0	0	54	54
February	0	0	12	12
March	0	0	23	23
April	0	0	56	56
May	38	0	56	94
June	24	0	12	36
July	4	0	18	22
August	0	0	28	28
September	4.5	0	0	4.5
October	0	0	0	0
November	0	0	18	18
December	2	0	0	2
2019 TOTAL YTD	72.5	0	277	349.5

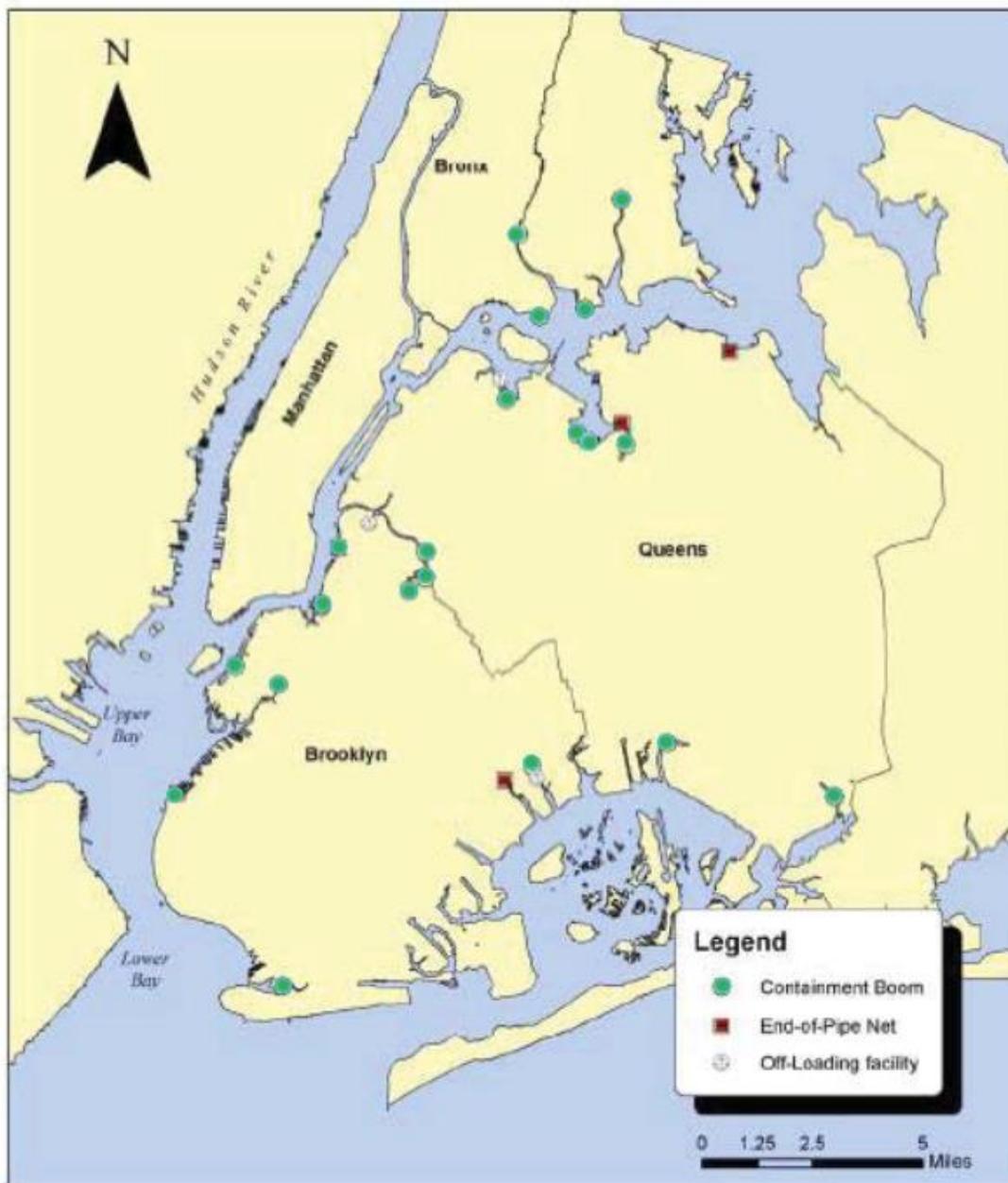
ZONE I	ZONE II/III	ZONE IV
	CONEY ISLAND	BOWERY BAY
FRESH CREEK	OWLS HEAD	FLUSHING BAY I
HENDRIX CREEK	GOWANUS CANAL	FLUSHING BAY II
BERGEN BASIN	WALLABOUT I	FLUSHING CREEK I
THURSTON BASIN	WALLABOUT II	FLUSHING CREEK II
GRAVESEND BAY	BUSHWICK INLET	WESTCHESTER CREEK
SHEEPSHEAD BAY	UPPER NY BAY	CLASON POINT
JAMAICA BAY	MASPETH CREEK	BRONX RIVER
	EAST BRANCH	HUNTS POINT
	ENGLISH KILLS	CRYDERS LANE
	WHALE CREEK	EAST RIVER
	NEWTOWN CREEK	BOWERY BAY

Red - Open Water

Blue - Temporary site

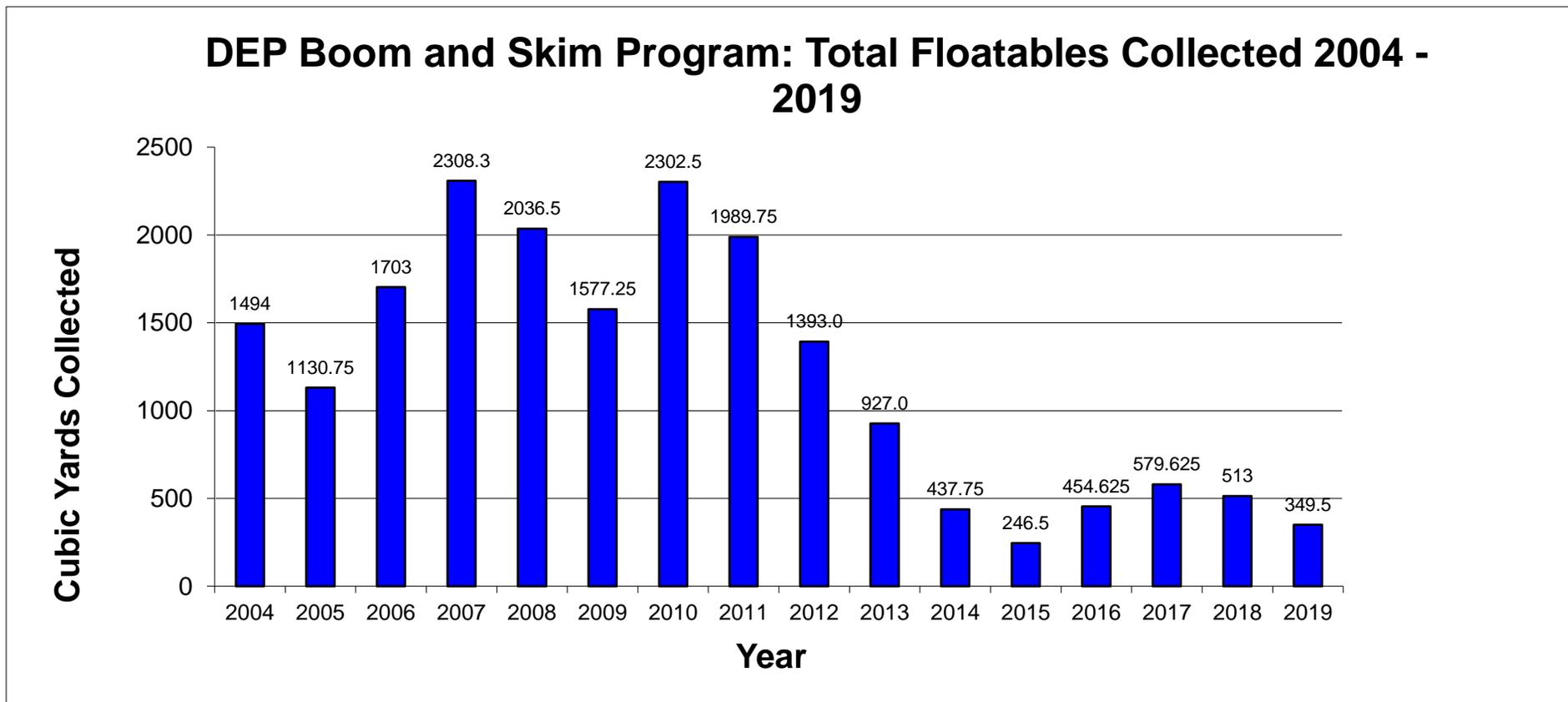
Black - CSO floatable containment

Appendix 7.2.4: Figure 7.2-A - Floatables Booming, Netting, and Offloading Sites

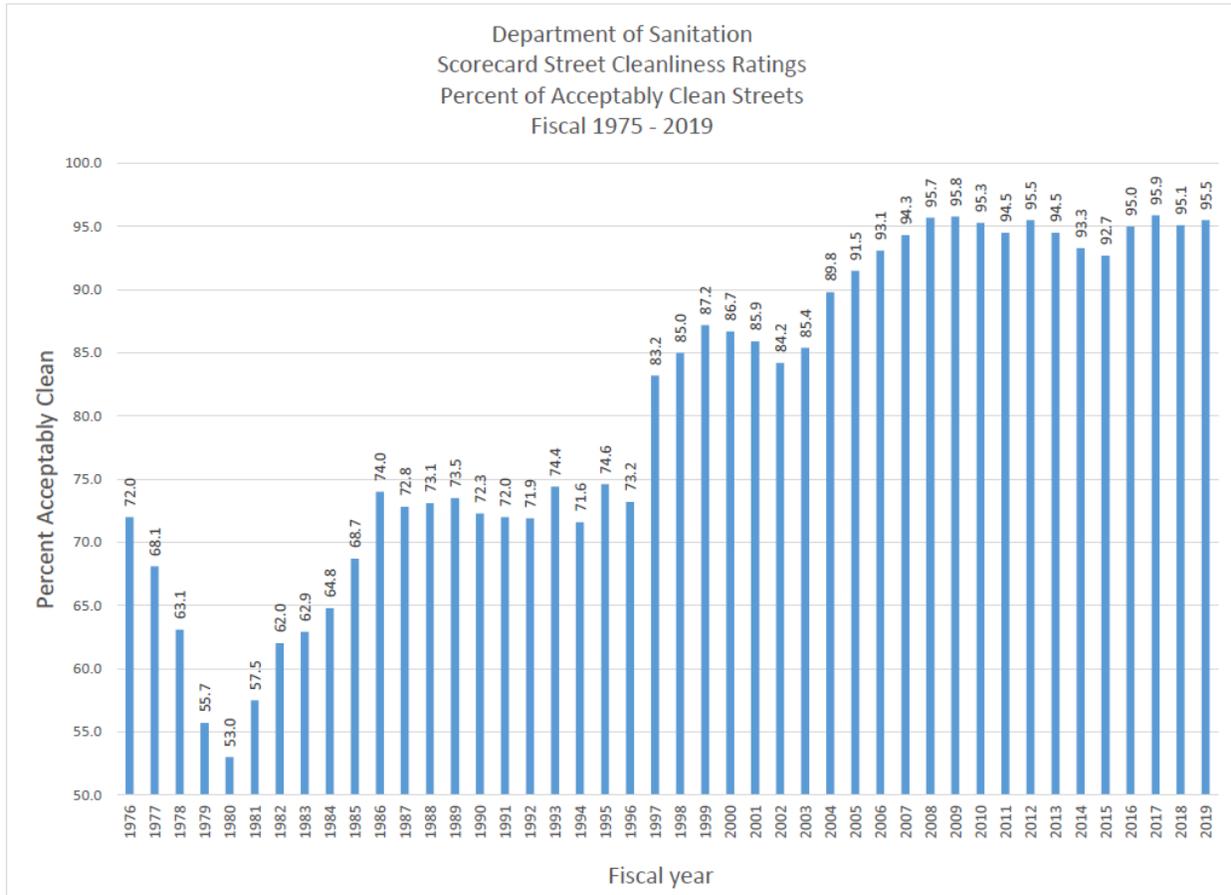


 <p>1200 MacArthur Boulevard Morristown, New Jersey 07430 (201) 526-5151 f.(201) 529-5728</p>	<p>Figure 7-2 Floatables Booming, Netting and Offloading Sites</p> <p>Annual Report on Best Management Practices for CSO's</p>	
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Appendix 7.2.5: Figure 7.2-B - City-Wide Floatables Material Recovery 2004-2019



Appendix 7.2.6: Figure 7.2-C - NYC DSNY Scorecard Fiscal 1975 - 2019

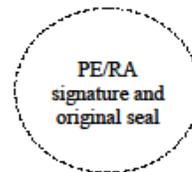


Appendix 8: SITE CONNECTION PROPOSAL FORM



DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER & SEWER OPERATIONS

SITE CONNECTION PROPOSAL FORM
VALID FOR TWO (2) YEARS
[SC /]



A. PROJECT DATA:

Borough of _____ Building Dept. No (s) _____
 Tax Block _____ Lot (s) _____ Zoning _____ Map No. _____
 Project Location _____
 Applicant _____
 Address _____ Zip _____ Phone () _____
 Owner _____
 Address _____ Zip _____ Phone () _____

B. PROJECT USE:

TYPE: 1, 2, 3, Family Multiple Dwelling Commercial _____
 Number of Buildings _____ Total Number of Dwelling Units _____
 Ownership: Fee Simple Condominium Home Owner Association Other _____

C. SITE CONNECTIONS REQUESTED:

Total Developed Site Storm Flow _____ cfs
 Allow. Storm Flow to the Sewers _____ cfs
 Detention Retention

	Sanit.	Storm	Comb.	Driveways
No. Requested	_____	_____	_____	XXXXXX
Size	_____	_____	_____	XXXXXX
Material (s)	_____	_____	_____	XXXXXX
Total Q (s)	_____	_____	_____	_____

Note: The property owner is responsible for plugging all inactive pre-existing sewer connections.

D. CONNECTION INFO:

1. Connection to existing
 Spur Riser Curb Connection
2. Proposed New Riser
3. Fold Spur in
4. Drill in
5. M.H. Conn Exist Prop
6. Reuse Plugged Connections

E. SEWER DATA:

1. P.D. Plan No. _____ Date Approved _____ Expiration Date _____
2. Date Construction Permit Was Issued _____
3. Date Sewer Was Accepted By DEP _____
4. Sanitary Discharge Tributary to: _____

	No	Yes	Location
Private Sewage Treatment Plant	<input type="checkbox"/>	<input type="checkbox"/>	_____
Private Pumping Station	<input type="checkbox"/>	<input type="checkbox"/>	_____
Private Sewer	<input type="checkbox"/>	<input type="checkbox"/>	_____

F. LOCATION PLAN:

- As shown below See Attached Location Plan Attachment "F"

G. SUPPORT DOCUMENTS:

- *1. Site Plan – 6 copies with hydraulic calculations _____
- *2. Survey – 3 copies with watercourse stamp _____
- *3. Tentative Lot Number Request Form – Attached _____ Not Applicable _____
- o4. Owners Consent for STP/PS Connection – Attached _____ Not Applicable _____
- 5. Department of Health Approval – Attached _____ Not Applicable _____
- 6. Department of Building Amendment Request – Attached _____ Not Applicable _____
- o7. Condo/HOA Prospectus or Affidavit – Attached _____ Not Applicable _____
- 8. Industrial Waste Approval – Attached _____ Not Applicable _____
- 9. Associated Mapping/Demapping Action – Attached _____ Not Applicable _____
- 10. Builders Pavement Plan – Attached _____ Not Applicable _____
- 11. Boring Logs – Attached _____ Not Applicable _____
- 12. Other (Specify) _____ Attached _____

* Requires PE/RA Stamp and Original Signature (L.S. for Survey)

o Must Be Notarized

o Must be Notarized and have Corporate Seal Imposed

SEWER INFORMATION CERTIFIED BY D.E.P.

- | | | <u>PUBLIC</u> | <u>PRIVATE</u> |
|---|-----------------------------|------------------------------|----------------|
| 1. There <u>is is not</u> a sanitary sewer fronting the property available for connections. | SIZE _____ | _____ | _____ |
| 2. There <u>is is not</u> a storm sewer fronting the property available for connections. | SIZE _____ | _____ | _____ |
| 3. There <u>is is not</u> a combined sewer fronting the property available for connections. | SIZE _____ | _____ | _____ |
| 4. Sanitary discharge tributary to:
<u>Location</u> | | | |
| City Treatment Plant - | <input type="checkbox"/> NO | <input type="checkbox"/> YES | _____ |
| Private Sewage Treatment Plant - | <input type="checkbox"/> NO | <input type="checkbox"/> YES | _____ |
| Private Pumping Station - | <input type="checkbox"/> NO | <input type="checkbox"/> YES | _____ |
| 5. Distance to, and location of nearest allowable drainage plan sewer: | | | |
| a) Sanitary Outlet _____ | | | |
| b) Storm Outlet _____ | | | |
| c) Combined Outlet _____ | | | |

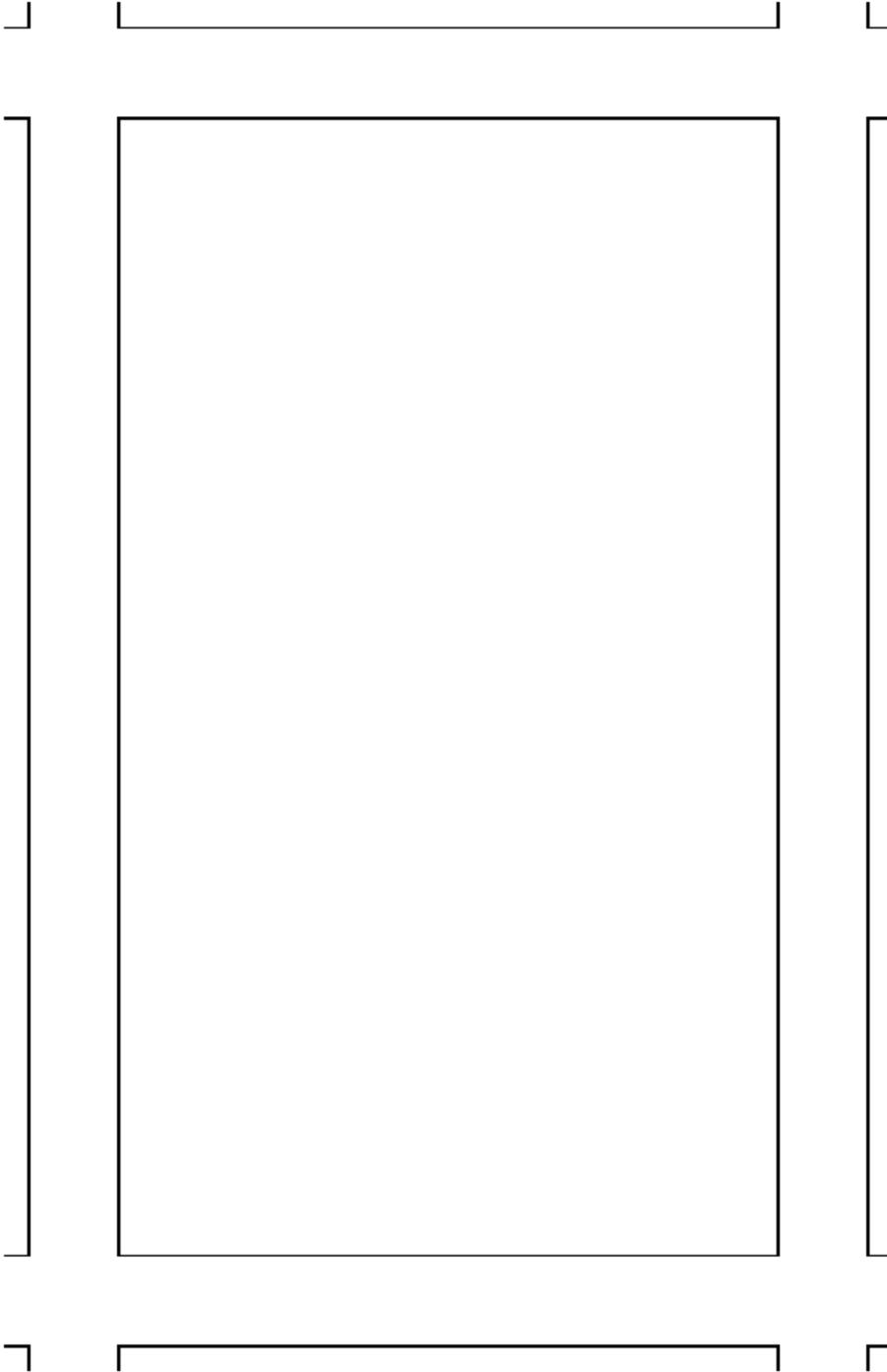
CERTIFICATION, RESTRICTIONS, SPECIAL CONDITIONS:

ADDITIONAL INFORMATION, COMMENTS BY D.E.P. OFFICE:

- 1. Topo Map No. _____ Watercourse shown: YES NO
- 2. Comments:

ATTACHMENT "F"

LOCATION PLAN:



Appendix 9:

- Appendix 9.1: CSO Sign Sample
- Appendix 9.2: Table: List of installed CSO Signs

Appendix 9.1: CSO SIGN SAMPLE

CAUTION

Wet Weather Discharge Point

THIS OUTFALL MAY DISCHARGE RAINWATER MIXED WITH UNTREATED SEWAGE DURING OR FOLLOWING RAINFALL AND CAN CONTAIN BACTERIA THAT CAN CAUSE ILLNESS

IF YOU SEE A DISCHARGE DURING DRY WEATHER:

- PLEASE CALL 311 - REFER TO CSO OUTFALL # HP-019
- For more information visit www.nyc.gov/dep
- Or Contact: New York State Department of Environmental Conservation
Division of Water Regional Office
47-40 21st St., Long Island City, NY 11101
718-482-4900
- New York State Wet Weather Discharge Point
SPDES Permit # NY0026191

New York City Department of Environmental Protection



The image contains three circular icons, each with a red border and a diagonal red line through it, indicating that the activity shown is prohibited. The top icon shows a person swimming in the water. The middle icon shows a person in a kayak. The bottom icon shows a person fishing from a boat. All icons are set against a background of rain falling into the water.

Appendix 9.2: TABLE: LIST OF INSTALLED CSO SIGNS

No	OUTFALLID	OUTFALL LOCATION	CONTRIBUTORS	STATUS/COMMENTS
1	WI - 001	Wards Island W.P.C.P. Outfall		Installed
2	WIM-002	EAST RIVER & E. 73rd STREET	REG #1	Installed
3	WIM-003	EAST RIVER & E. 74th STREET	REG #2A, 2B	Installed
4	WIM-004	EAST RIVER & E. 75th STREET	REG #3	Installed
5	WIM-005	EAST RIVER & E. 76th STREET	REG #4	Installed
6	WIM-006	EAST RIVER & E. 77th STREET	REG #5	Installed
7	WIM-007	EAST RIVER & E. 78th STREET	REG #6	Installed
8	WIM-008	EAST RIVER & E. 79th STREET	REG #7	Installed
9	WIM-009	EAST RIVER & E. 83rd STREET	REG #8	Installed
10	WIM-010	EAST RIVER & E. 84th STREET	REG #9	Installed
11	WIM-011	EAST RIVER & E. 86th STREET	REG #10	Installed
12	WIM-012	EAST RIVER & E. 89th STREET	REG #11	Installed
13	WIM-013	EAST RIVER & E. 90th STREET	REG #12	Installed
14	WIM-014	EAST RIVER & E. 91st STREET	REG #13	Installed
15	WIM-015	EAST RIVER & E. 92nd STREET	REG #14	Installed
16	WIM-016	EAST RIVER & E. 95th STREET	REG #15	Installed
17	WIM-017	EAST RIVER & E. 96th STREET	REG #16	Installed
18	WIM-018	EAST RIVER & E. 100th STREET	REG #17	Installed
19	WIM-019	EAST RIVER & E. 101st STREET	REG #18	Installed
20	WIM-020	EAST RIVER & E. 103rd STREET	REG #20	Installed
21	WIM-021	EAST RIVER & E. 104th STREET	REG #21	Installed
22	WIM-022	EAST RIVER & E. 105th STREET	REG #22	Installed
23	WIM-023	EAST RIVER & E. 106th STREET	REG #23	Installed
24	WIM-024	EAST RIVER & E. 110th STREET	REG #24	Installed
25	WIM-025	EAST RIVER & E. 114th STREET	REG #25	Installed
26	WIM-026	EAST RIVER & E. 115th STREET	REG #26	Installed
27	WIM-027	EAST RIVER & E. 116th STREET	REG #27	Installed

28	WIM-030	EAST RIVER & E. 119th STREET	REG #30	Installed
29	WIM-031	EAST RIVER & E. 120th STREET	REG #31	Installed
30	WIM-032	EAST RIVER & E. 121st STREET	REG #32	Installed
31	WIM-033	EAST RIVER & E. 122nd STREET	REG #33	Installed
No	OUTFALLID	OUTFALL LOCATION	CONTRIBUTORS	STATUS/COMMENTS
32	WIM-034	EAST RIVER & E. 124th STREET	REG #34	Installed
33	WIM-035	EAST RIVER & E. 125th STREET	REG #35	Installed
34	WIM-036	HARLEM RIVER & E. 129th STREET	REG #36	Installed
35	WIM-037	HARLEM RIVER & E. 130th STREET	REG #37	Installed
36	WIM-038	HARLEM RIVER & E. 135th STREET	REG #38	Installed
37	WIM-039	HARLEM RIVER & W. 140th STREET	REG #39	Installed
38	WIM-040	HARLEM RIVER & W. 141st STREET	REG #40	Installed
39	WIM-041	HARLEM RIVER & W. 142nd STREET	REG #41	Installed
40	WIM-042	HARLEM RIVER & W. 143rd STREET	REG #42	Installed
41	WIM-043	EAST RIVER & E. 102nd STREET	REG #19	Installed
42	WIM-044	HARLEM RIVER & W. 145th STREET	REG #44	Installed
43	WIM-045	HARLEM RIVER & W. 149th STREET	REG #45	Installed
44	WIM-046	HARLEM RIVER & W. 151st STREET	REG #46	Installed
45	WIM-047	HARLEM RIVER & W. 154th STREET	REG #47	Installed
46	WIM-048	HARLEM RIVER & W. 155th STREET	REG #48	Installed
47	WIM-050	HARLEM RIVER & W. 156th STREET	REG #50	Installed
48	WIM-051	HARLEM RIVER & W. 167th STREET	REG #51	Installed
49	WIM-052	HARLEM RIVER & W. 176th STREET	REG #52	Installed
50	WIB-053	HUDSON RIVER & W. 256th STREET	REG #R-3	Installed
51	WIB-054	HUDSON RIVER & W. 248th STREET	REG #R-2	Installed
52	WIB-055	HUDSON RIVER & W. 236th STREET	REG #R-1	Installed
53	WIB-056	HARLEM RIVER & W. 192nd STREET	REG #67	Installed
54	WIB-057	HARLEM RIVER & LANDING ROAD	REG #66	Installed
55	WIB-058	HARLEM RIVER & W. 178th STREET	REG #65	Installed
56	WIB-059	HARLEM RIVER & W. 176th STREET	REG #64	Installed

57	WIB-060	HARLEM RIVER & UNDER HIGH BRIDGE	REG #62	Installed
58	WIB-061	HARLEM RIVER & W. 167th STREET	REG #61	Installed
59	WIB-062	HARLEM RIVER & JEROME AVENUE	REG #60, 60A	Installed
60	WIB-063	HARLEM RIVER & S/O MCCOMBS DAM BRIDGE	REG #72	Installed
61	WIB-064	HARLEM RIVER & E. 149th STREET	REG #59	Installed
62	WIB-065	HARLEM RIVER & PARK AVENUE	REG #57	Installed
63	WIB-066	HARLEM RIVER & THIRD AVENUE BRIDGE	REG #56	Installed
64	WIB-067	HARLEM RIVER & LINCOLN AVENUE	REG #55	Installed
65	WIB-068	BRONX KILL & BROOK AVENUE	REG #53, 54	Installed
No	OUTFALLID	OUTFALL LOCATION	CONTRIBUTORS	STATUS/COMMENTS
66	WIB-069	BRONX KILL & CYPRESS AVENUE	REG #71	Installed
67	WIB-070	EAST RIVER & E. 134th STREET	REG #70	Installed
68	WIB-071	EAST RIVER & E. 138th STREET	REG #69	Installed
69	WIB-072	EAST RIVER & E. 149th STREET	REG #68	Installed
70	WIB-073	BRONX KILL & SAINT ANN'S AVENUE	REG #73	Installed
71	WIB-075	HARLEM RIVER & E. 138th STREET	REG #58	Installed
72	WIB-076	HARLEM RIVER & BRADLEY TERRACE	REG #MH-1	Installed
73	WIB-077	HARLEM RIVER & TEUNISSEN PLACE	REG #MH-2	Installed
74	WIB-078	HARLEM RIVER & W. BROADWAY BRIDGE	REG #MH-3	Installed
75	WIB-079	HUDSON RIVER & W. 261st STREET (MT. ST. VINCENT)	REG #R-4	Installed
76	NR - 001	North River W.P.C.P. Outfall		Installed
77	NR-002	HUDSON RIVER & W. 152nd STREET	REG #N-20,21,21A,21B	Installed
78	NR-003	HUDSON RIVER & W. 158th STREET	REG #N-19	Installed
79	NR-004	HUDSON RIVER & W. 171st STREET	REG #N-18	Installed
80	NR-005	HUDSON RIVER & W. 190th STREET	REG #N-17	Installed
81	NR-006	HUDSON RIVER & DYCKMAN STREET	REG #N-16	Installed
82	NR-007	HARLEM RIVER & W. 218th STREET	REG #N-15	Installed
83	NR-008	HARLEM RIVER & W. 216th STREET	REG #N-14	Installed
84	NR-009	HARLEM RIVER & W. 215th STREET	REG #N-13	Installed
85	NR-010	HARLEM RIVER & W. 211th STREET	REG #N-10, N-11, N-12	Installed

86	NR-011	HARLEM RIVER & W. 209th STREET	REG #N-9	Installed
87	NR-012	HARLEM RIVER & W. 207th STREET	REG #N-7	Installed
88	NR-013	HARLEM RIVER & W. 206th STREET	REG #N-6	Installed
89	NR-014	HARLEM RIVER & W. 205th STREET	REG #N-5	Installed
90	NR-016	HARLEM RIVER & W. 203rd STREET	REG #N-4	Installed
91	NR-017	HARLEM RIVER & W. 201st STREET	REG #N-3	Installed
92	NR-018	HARLEM RIVER & HIGHBRIDGE PARK	REG #N-1	Installed
93	NR-019	HUDSON RIVER & BANK STREET	REG #N-56	Installed
94	NR-020	HUDSON RIVER & JANE STREET	REG #N-55	Installed
95	NR-021	HUDSON RIVER & GANSEVOORT STREET	REG #N-54	Installed
96	NR-022	HUDSON RIVER & S/O W. 17th STREET	REG #N-51	Installed
97	NR-023	HUDSON RIVER & W. 18th STREET	REG #N-50	Installed
98	NR-024	HUDSON RIVER & W. 21st STREET	REG #N-48, N-49	Installed
99	NR-025	HUDSON RIVER & W. 24th STREET	REG #N-47	Installed
No	OUTFALLID	OUTFALL LOCATION	CONTRIBUTORS	STATUS/COMMENTS
100	NR-026	HUDSON RIVER & W. 26th STREET	REG #N-46	Installed
101	NR-027	HUDSON RIVER & W. 30th STREET	REG #N-45	Installed
102	NR-028	HUDSON RIVER & W. 36th STREET	REG #N-43	WAIVER
103	NR-029	HUDSON RIVER & W. 40th STREET	REG #N-42	Installed
104	NR-030	HUDSON RIVER & W. 43rd STREET	REG #N-39, N-40	Installed
105	NR-031	HUDSON RIVER & W. 44th STREET	REG #N-38	Installed
106	NR-032	HUDSON RIVER & W. 46th STREET	REG #N-36, N-37	Installed
107	NR-033	HUDSON RIVER & W. 48th STREET	REG #N-33, N-34	Installed
108	NR-034	HUDSON RIVER & W. 50th STREET	REG #N-32	Installed
109	NR-035	HUDSON RIVER & W. 56th STREET	REG #N-31	Installed
110	NR-036	HUDSON RIVER & W. 59th STREET	REG #N-30	Installed
111	NR-037	HUDSON RIVER & W. 72nd STREET	REG #N-29	Installed
112	NR-038	HUDSON RIVER & W. 80th STREET	REG #N-28	Installed
113	NR-039	HUDSON RIVER & W. 91st STREET	REG #N-27	Installed
114	NR-040	HUDSON RIVER & W. 96th STREET	REG #N-26, N-26A	Installed

115	NR-041	HUDSON RIVER & W. 108th STREET	REG #N-25	Installed
116	NR-042	HUDSON RIVER & W. 115th STREET	REG #N-24	Installed
117	NR-043	HUDSON RIVER & SAINT CLAIR PL	REG #N-23	Installed
118	NR-044	HUDSON RIVER & W. 138th STREET	REG #N-22	Installed
119	NR-045	HARLEM RIVER & ACADEMY STREET	REG #N-2	Installed
120	NR-046	HUDSON RIVER & W. 66th STREET	REG #N-29A	Installed
121	NR-047	HUDSON RIVER & W. 47th STREET	REG #N-35	Installed
122	NR-048	HUDSON RIVER & W. 42nd STREET	REG #N-40, N-41	Installed
123	NR-049	HUDSON RIVER & W. 14th STREET	REG #N-52	Installed
124	NR-050	HUDSON RIVER & BLOOMFIELD STREET	REG #N-53	Installed
125	NR-051	HUDSON RIVER & W. 49th STREET	N/A	Installed
126	NR-052	HUDSON RIVER & W. 34th STREET	REG #N-44	Installed
127	NR-055	HARLEM RIVER & W. 207th STREET	REG #N-7, N-8	Installed
128	NR-056	HUDSON RIVER & W. 142nd STREET	REG #N-22A	Installed
129	HP - 001	Hunt's Point W.P.C.P. Outfall		Installed
130	HP-002	EAST RIVER & TIFFANY STREET	REG #9, 9A	Installed
131	HP-003	EAST RIVER & FARRAGUT STREET	REG #10	Installed
132	HP-004	BRONX RIVER & WEST FARM ROAD	CSO-28, 28A	Installed
133	HP-005	HUTCHINSON RIVER & HOLLERS AVENUE PS	HOLLERS AVENUE P.S.	Installed
No	OUTFALLID	OUTFALL LOCATION	CONTRIBUTORS	STATUS/COMMENTS
134	HP-006	HUTCHINSON RIVER & BARTOW AVENUE	CO-OP CITY SO PS, ELY AVE PS	Installed
135	HP-007	BRONX RIVER & E. 177th STREET	CSO-27, 27A	Installed
136	HP-008	BRONX RIVER & LAFAYETTE AVENUE	CSO-26	Installed
137	HP-009	BRONX RIVER & METCALF AVENUE	REG #13	Installed
138	HP-010	BRONX RIVER & LACOMBE AVENUE	CSO-25	Installed
139	HP-011	EAST RIVER & WHITE PLAINS ROAD	REG #5, 6, 7	Installed
140	HP-012	WESTCHESTER CREEK & LAFAYETTE AVENUE	CSO-23A	Installed
141	HP-013	PUGSLEY'S CREEK & NEWMAN AVENUE	CSO-24	Installed
142	HP-014	WESTCHESTER CREEK & EAST TREMONT AVENUE	CSO-29, 29A	Installed
143	HP-015	WESTCHESTER CREEK & LATTING STREET	CSO-22	Installed

144	HP-016	WESTCHESTER CREEK & BRUCKNER EXPWY	REG #4	Installed
145	HP-017	EAST RIVER & EMERSON AVENUE	REG #11	Installed
146	HP-018	EAST RIVER & ROBINSON AVENUE	REG #12	Installed
147	HP-019	EAST RIVER & CALHOUN AVENUE	REG #3	Installed
148	HP-020	EAST RIVER & THROGS NECK BLVD	REG #2A	Installed
149	HP-021	EAST RIVER & PENNYFIELD AVENUE	REG #2	Installed
150	HP-022	EASTCHESTER BAY & E 177th STREET	REG #1	Installed
151	HP-023	HUTCHINSON RIVER & CONNER STREET	REG #15, CONNOR ST.PS	Installed
152	HP-024	HUTCHINSON RIVER & E 233rd STREET	REG #15A	Installed
153	HP-025	EAST RIVER & TRUXTON STREET	REG #8	Installed
154	HP-026	WEIR CREEK & ELLESWORTH AVENUE	REG #14	Installed
155	HP-028	EASTCHESTER BAY & OUTLOOK AVENUE	CSO-20	Installed
156	HP-029	EASTCHESTER BAY & WATT AVENUE	CSO-21	Installed
157	HP-031	HUTCHINSON RIVER & BELLAMY LOOP	CSO-32, CO-OP CITY N. P.S.	Installed
158	HP-032	EAST RIVER & RIKERS ISLAND NORTH	RIKER'S ISLAND N. P.S.	Installed
159	HP-033	WESTCHESTER CREEK & S/O BRUCKNER BLVD, E/O ZEREGA AVE	CSO-23	Installed
160	HP-034	WESTCHESTER CREEK & NEWBOLD AVENUE (CITY ISLAND)	COMMERCE AVENUE P.S.	Installed
161	HP-036	LONG ISLAND SOUND & SCHOFIELD STREET	CITY ISLAND P.S.	Installed
162	HP-037	SHORE ROAD LAGOON & ORCHARD BEACH	ORCHARD BEACH P.S.	WAIVER
163	HP-039	EAST RIVER & N/O HUNTS POINT AVE	HUNT'S PONT MARKET P.S.	Installed
164	NC - 001	Newtown Creek W.P.C.P. Outfall		Installed
165	NCB-002	WHALE CREEK & WWTP OVERFLOW	WWTP OVERFLOW	Installed
166	NCB-003	EAST RIVER & GREENPOINT AVENUE	REG #B-11	Installed
No	OUTFALLID	OUTFALL LOCATION	CONTRIBUTORS	STATUS/COMMENTS
167	NCB-004	EAST RIVER & QUAY STREET	REG #B-10	Installed
168	NCM-005	EAST RIVER & E. 63rd STREET	REG #M-51	Installed
169	NCB-006	EAST RIVER & N. 12th STREET	REG #B-9	Installed
170	NCB-007	EAST RIVER & N. 5th STREET	REG #B-8	Installed
171	NCB-008	EAST RIVER & METROPOLITAN AVENUE	REG #B-7	Installed
172	NCB-010	EAST RIVER & GRAND STREET	REG #B-6A	Installed

173	NCM-011	EAST RIVER & E. 48th STREET	REG #M-47A	Installed
174	NCB-012	EAST RIVER & S. 5th STREET	REG #B-6	Installed
175	NCB-013	WALLABOUT CHANNEL & DIVISION AVENUE	REG #B-5	Installed
176	NCB-014	WALLABOUT CHANNEL & KENT AVENUE	REG #B-3, B-4	Installed
177	NCB-015	ENGLISH KILLS & JOHNSON AVENUE	REG #B-1	Installed
178	<i>NCM-016</i>	<i>EAST RIVER & E. 46th STREET</i>	<i>REG #M-46</i>	<i>WAIVER</i>
179	NCM-017	EAST RIVER & E. 42nd STREET	REG #M-45A	Installed
180	NCM-018	EAST RIVER & E. 41st STREET	REG #M-45	Installed
181	NCB-019	NEWTOWN CREEK & METROPOLITAN AVENUE	REG #B-2	Installed
182	NCM-020	EAST RIVER & E. HOUSTON STREET	REG #M-31	Installed
183	NCB-021	NEWTOWN CREEK & MCGUINNESS BOULEVARD	CSO next to B-17	Installed
184	NCB-022	NEWTOWN CREEK & MCGUINNESS BOULEVARD	REG #B-17	Installed
185	NCB-023	NEWTOWN CREEK & FRANKLIN STREET	REG #B-16	Installed
186	NCB-024	EAST RIVER & DUPONT STREET	REG #B-15	Installed
187	NCB-025	EAST RIVER & FREEMAN STREET	REG #B-14	Installed
188	NCB-026	EAST RIVER & GREEN STREET	REG #B-13	Installed
189	NCB-027	EAST RIVER & HURON STREET	REG #B-12	Installed
190	NCM-028	EAST RIVER & DELANCEY STREET	REG #M-28	Installed
191	NCQ-029	NEWTOWN CREEK & 43rd STREET	REG #Q-2	Installed
192	NCM-030	EAST RIVER & E. 71st STREET	REG #M-51C	Installed
193	NCM-031	EAST RIVER & E. 70th STREET	REG #M-51A, M-15B	Installed
194	NCM-032	EAST RIVER & E. 61st STREET	REG #M-50	Installed
195	NCM-033	EAST RIVER & E. 57th STREET	REG #M-49	Installed
196	NCM-034	EAST RIVER & E. 54th STREET	REG #M-48	Installed
197	NCM-035	EAST RIVER & E. 53rd STREET	REG #M-48A	Installed
198	NCM-036	EAST RIVER & E. 49th STREET	REG #M-47	Installed
199	NCM-037	EAST RIVER & E. 41st STREET	REG #M-44	Installed
200	NCM-038	EAST RIVER & E. 38th STREET	REG #M-43B	Installed
No	OUTFALLID	OUTFALL LOCATION	CONTRIBUTORS	STATUS/COMMENTS
201	NCM-039	EAST RIVER & E. 37th STREET	REG #M-43A	Installed

202	NCM-040	EAST RIVER & E. 36th STREET	REG #M-43	Installed
203	NCM-041	EAST RIVER & E. 33rd STREET	REG #M-42	Installed
204	NCM-042	EAST RIVER & BROOME STREET	REG #M-27	Installed
205	NCM-043	EAST RIVER & E. 30th STREET	REG #M-41	Installed
206	<i>NCM-044</i>	<i>EAST RIVER & E. 29th STREET</i>	<i>REG #M-41A</i>	<i>WAIVER</i>
207	<i>NCM-045</i>	<i>EAST RIVER & E. 26th STREET</i>	<i>REG #M-40</i>	<i>WAIVER</i>
208	NCM-046	EAST RIVER & E. 24th STREET	REG #M-39, M-39A	Installed
209	NCM-047	EAST RIVER & E. 23rd STREET	REG #M-38B	Installed
210	NCM-048	EAST RIVER & E. 21st STREET	REG #M-38	Installed
211	NCM-049	EAST RIVER & E. 18th STREET	REG #M-37	Installed
212	NCM-051	EAST RIVER & OLD SLIP	REG #M-12	Installed
213	NCM-052	EAST RIVER & E. 14th STREET	REG #M-36	Installed
214	NCM-053	EAST RIVER & E. 11th STREET	REG #M-35	Installed
215	NCM-054	EAST RIVER & E. 8th STREET	REG #M-34	Installed
216	NCM-055	NEWTOWN CREEK & E. 6th STREET	REG #M-33	Installed
217	NCM-056	EAST RIVER & E. 3rd STREET	REG #M-32	Installed
218	NCM-057	EAST RIVER & STANTON STREET	REG #M-30	Installed
219	NCM-058	EAST RIVER & RIVINGTON STREET	REG #M-29	Installed
220	NCM-059	EAST RIVER & S/O GRAND STREET	REG #M-26	Installed
221	NCM-060	EAST RIVER & S/O CORLEARS HOOK PARK	REG #M-25	Installed
222	NCM-061	EAST RIVER & JACKSON STREET	REG #M-23	Installed
223	NCM-062	EAST RIVER & GOUVERNEUR SLIP E.	REG #M-22	Installed
224	NCM-063	EAST RIVER & JEFFERSON STREET	REG #M-21	Installed
225	NCM-064	EAST RIVER & MARKET SLIP	REG #M-20	Installed
226	NCM-065	EAST RIVER & S/O CATHERINE STREET	REG #M-18	Installed
227	NCM-066	EAST RIVER & ROBERT WAGNER SR. PLACE	REG #M-17	Installed
228	NCM-067	EAST RIVER & MAIDEN LANE	REG #M-13	Installed
229	NCM-068	EAST RIVER & COENTIES SLIP	REG #M-11	Installed
230	NCM-069	EAST RIVER & BROAD STREET	REG #M-10	Installed
231	<i>NCM-070</i>	<i>HUDSON RIVER & BATTERY PLACE</i>	<i>REG #M-9</i>	<i>WAIVER</i>

232	NCM-071	HUDSON RIVER & RECTOR STREET	REG #M-6, M-7	WAIVER
233	NCM-072	HUDSON RIVER & VESEY STREET	REG #M-5	WAIVER
234	NCM-073	HUDSON RIVER & DUANE STREET	REG #M-4	WAIVER
No	OUTFALLID	OUTFALL LOCATION	CONTRIBUTORS	STATUS/COMMENTS
235	NCM-074	HUDSON RIVER & VESTRY STREET	REG #M-3	Installed
236	NCM-075	HUDSON RIVER & WATTS STREET	REG #M-2	Installed
237	NCM-076	HUDSON RIVER & CLARKSON STREET	REG #M-1	Installed
238	NCQ-077	MASPETH CREEK & 49th STREET	REG #Q-1	Installed
239	NCM-078	EAST RIVER & N/O DOVER STREET	REG #M-16	Installed
240	NCM-080	HUDSON RIVER & N/O VANDAM STREET	REG #TG-2	Installed
241	NCM-081	HUDSON RIVER & N/O CHARLES STREET	REG #TG-1	Installed
242	NCB-082	EAST RIVER & S. 8th STREET	REG #B-5A	Installed
243	NCB-083	NEWTOWN CREEK & METROPOLITAN/SCOTT AVENUE	N/A	Installed
244	NCM-087	EAST RIVER & E 22nd STREET	REG #M-38A	Installed
245	RH - 001	Red Hook W.P.C.P. Outfall		Installed
246	RH-002	EAST RIVER & HUDSON AVENUE	REG #R-21A	Installed
247	RH-003	EAST RIVER & HUDSON AVENUE	REG #R-21	Installed
248	RH-005	EAST RIVER & GOLD STREET	REG #R-20A	Installed
249	RH-006	EAST RIVER & PEARL STREET	REG #R-19A	Installed
250	RH-007	EAST RIVER & ADAMS STREET	REG #R-19	Installed
251	RH-008	EAST RIVER & WASHINGTON STREET	REG #R-18A	Installed
252	RH-009	EAST RIVER & MAIN STREET	REG #R-18	Installed
253	RH-010	EAST RIVER & ORANGE STREET	REG #R-16	Installed
254	RH-011	EAST RIVER & MONTAGUE STREET	REG #R-15	Installed
255	RH-012	EAST RIVER & CADMAN PLAZA	REG #R-17	Installed
256	RH-013	EAST RIVER & JORALEMON STREET	REG #R-14	Installed
257	RH-014	EAST RIVER & ATLANTIC AVENUE	REG #R-13	Installed
258	RH-016	EAST RIVER & AMITY STREET	REG #R-12	Installed
259	RH-018	EAST RIVER & KANE STREET	REG #R-11	Installed
260	RH-019	BUTTERMILK CHANNEL & HAMILTON AVENUE	REG #R-9	Installed

261	RH-020	BUTTERMILK CHANNEL & DEGRAW STREET	REG #R-10	Installed
262	RH-021	BUTTERMILK CHANNEL & SACKETT STREET	REG #R-9A	Installed
263	RH-022	ATLANTIC BASIN & BOWNE STREET	REG #R-8	Installed
264	RH-023	ATLANTIC BASIN & COMMERCE STREET	REG #R-7	Installed
265	RH-024	ATLANTIC BASIN & VERONA STREET	REG #R-6	Installed
266	RH-025	ATLANTIC BASIN & PIONEER STREET	REG #R-5	Installed
267	RH-028	BUTTERMILK CHANNEL & WOLCOTT STREET	REG #R-2	Installed
268	RH-029	UPPER NEW YORK BAY & VAN BRUNT STREET	REG #R-1, VAN BLANT ST. PS	Installed
No	OUTFALLID	OUTFALL LOCATION	CONTRIBUTORS	STATUS/COMMENTS
269	RH-030	GOWANUS CANAL & HICKS STREET	CSO-2	Installed
270	RH-031	GOWANUS CANAL & CREAMER STREET	BOND-LORRAINE SWR RELIEF	Installed
271	RH-033	GOWANUS CANAL & DOUGLASS STREET (E)	REG #R-25	Installed
272	RH-034	HEAD OF GOWANUS CANAL	GOWANUS PS	Installed
273	RH-035	GOWANUS CANAL & BOND STREET	CSO-3, BOND-LORR SWR REL.	Installed
274	RH-036	GOWANUS CANAL & PRESIDENT STREET	REG #R-22	Installed
275	RH-037	GOWANUS CANAL & SACKETT STREET	REG #R-23	Installed
276	RH-038	GOWANUS CANAL & DEGRAW STREET	REG #R-24	Installed
277	RH-040	EAST RIVER & NAVY YARD	REG #R-26	Installed
278	TI - 001	Tallman Island W.P.C.P. Outfall		Installed
279	TI-003	POWELL'S COVE & N/O 7th AVENUE	REG #10A, 10B	Installed
280	TI-004	EAST RIVER & 151st STREET	REG #11	Installed
281	TI-005	EAST RIVER & 154th STREET	REG #12	Installed
282	TI-006	LITTLE NECK BAY & 24th AVENUE	24 AVENUE P.S.	Installed
283	TI-007	ALLEY CREEK & NORTHERN BLVD	OLD DOUG P.S.	Installed
284	TI-008	ALLEY CREEK & 46th AVENUE	REG #46, 47, 48, 49	Installed
285	TI-009	LITTLE NECK BASIN & DOUG. BAY P.S.	DOUG BAY P.S.	WAIVER
286	TI-010	FLUSHING RIVER & ROOSEVELT AVENUE	REG #30, 31, 40, 44	Installed
287	TI-011	FLUSHING BAY & 32nd AVENUE	REG #9, 51, 52, 53, 54	Installed
288	TI-012	FLUSHING BAY & 29th AVENUE	122ND STREET P.S.	Installed
289	TI-014	FLUSHING BAY & 23rd AVENUE	REG #7	Installed

290	TI-015	FLUSHING BAY & 22nd AVENUE	REG #6	Installed
291	TI-016	FLUSHING BAY & 20th AVENUE	REG #5	Installed
292	TI-017	FLUSHING BAY & 15th AVENUE	REG #4	Installed
293	TI-018	FLUSHING BAY & 14th AVENUE	REG #3	Installed
294	TI-019	EAST RIVER & 9th AVENUE	REG #2	Installed
295	TI-020	EAST RIVER & COLLEGE PLACE	REG #1	Installed
296	TI-022	FLUSHING RIVER & 40th ROAD	REG #55, 56, 57, 58	Installed
297	TI-023	LITTLE BAY & CRYDERS LANE	REG #13, CLEARVIEW P.S.	Installed
298	TI-024	ALLEY POND & 61st AVENUE	NEW DOUG P.S.	Installed
299	TI-025	ALLEY CREEK (W) & 400' SOUTH OF LIRR BRIDGE	Alley Creek CSO Storage Facility	Installed
300	BB - 001	Bowery Bay W.P.C.P. Outfall		Installed
301	BB-002	RIKER'S ISLAND CHANNEL & 45th STREET	REG #2	Installed
No	OUTFALLID	OUTFALL LOCATION	CONTRIBUTORS	STATUS/COMMENTS
302	BB-003	BOWERY BAY & HAZEN STREET	REG #3	Installed
303	BB-004	DUTCH KILLS & BORDEN AVENUE	REG #L-3, L-41	Installed
304	BB-005	BOWERY BAY & E/O 81st STREET	REG #4	Installed
305	BB-006	FLUSHING BAY & W/O MARINA (114th STREET)	REG #10, 12, 13	Installed
306	BB-007	FLUSHING BAY & 27th AVENUE	REG #5	Installed
307	BB-008	FLUSHING BAY & 31st DR (108th STREET)	REG #6, 7, 8, 9	Installed
308	BB-009	DUTCH KILLS & HUNTERS POINT AVE.	REG #L-3B, L-37,L-38,L-41,L-3A	Installed
309	BB-010	DUTCH KILLS & QUEENS-MIDTOWN EXPWY	REG #L-3C	Installed
310	BB-011	NEWTOWN CREEK & GREENPOINT AVENUE	REG #L-1	Installed
311	BB-012	NEWTOWN CREEK & 35th STREET	REG #L-2	Installed
312	BB-013	NEWTOWN CREEK & 11th STREET	REG #L-8	Installed
313	BB-014	NEWTOWN CREEK & VERNON BLVD	REG #L-9	Installed
314	BB-015	NEWTOWN CREEK & 5th STREET	REG #L-10	Installed
315	BB-016	EAST RIVER & 51st AVENUE	REG #L-11	Installed
316	BB-017	EAST RIVER & 50th AVENUE	REG #L-12	Installed
317	BB-018	EAST RIVER & 49th AVENUE	REG #L-12A	Installed
318	BB-021	EAST RIVER & 47th AVENUE	REG #L-15	Installed

319	BB-022	EAST RIVER & 5th STREET	REG #L-16	Installed
320	BB-023	EAST RIVER & 44th DRIVE	REG #L-17	Installed
321	BB-024	EAST RIVER & 43rd AVENUE	REG #L-18	Installed
322	BB-025	EAST RIVER & 41st AVENUE	REG #L-19	Installed
323	BB-026	DUTCH KILLS & BETW. 28th & 29th STREET	REG #L-4, L-39, L-40, L-42	Installed
324	BB-027	EAST RIVER & 38th AVENUE	REG #L-20	Installed
325	BB-028	EAST RIVER & 37th AVENUE	REG #L-21	Installed
326	BB-029	EAST RIVER & BROADWAY	REG #L-22	Installed
327	BB-030	EAST RIVER & 30th ROAD	REG #L-23	Installed
328	BB-032	EAST RIVER & MAIN AVENUE	REG #L-29, L-29A, MH-15	Installed
329	BB-033	EAST RIVER & 27th AVENUE	REG #L-27	Installed
330	BB-034	EAST RIVER & HOYT AVENUE	REG #L-30	Installed
331	BB-035	EAST RIVER & DITMARS BLVD	REG #L-31	Installed
332	BB-036	EAST RIVER & 21st AVENUE	REG #L-32	Installed
333	BB-037	EAST RIVER & 20th AVENUE	REG #L-33	Installed
334	BB-040	DUTCH KILLS & 49th AVENUE	REG #L-5	Installed
335	BB-041	LUYSTER CREEK & 19th AVENUE	REG #1	Installed
No	OUTFALLID	OUTFALL LOCATION	CONTRIBUTORS	STATUS/COMMENTS
336	BB-042	DUTCH KILLS & W/O 27th STREET	REG #L-6	Installed
337	BB-043	NEWTOWN CREEK & 11th STREET	REG #L-7	Installed
338	BB-045	EAST RIVER & 9th STREET	REG #L-25	Installed
339	BB-046	EAST RIVER & 3rd STREET	REG #L-26	Installed
340	BB-047	EAST RIVER & ASTORIA BLVD	REG #L-28	Installed
341	BB-049	NEWTOWN CREEK & 21st STREET	N/A	Installed
342	BB-053	HELL GATE & 20th AVENUE	N/A	Installed
343	26W - 001	26th Ward W.P.C.P. Outfall		Installed
344	26W-002	HENDRIX CREEK & PLANT BYPASS	PLANT BYPASS	Installed
345	26W-003	FRESH CREEK BASIN & WILLIAMS AVENUE	REG #2	Installed
346	26W-004	HENDRIX CREEK & HENDRIX STREET	REG #1	Installed
347	26W-005	SPRING CREEK & SPRING CREEK AUXILIARY WWTP	REG #3, JAM REG #2	Installed

348	CI - 001	Coney Island W.P.C.P. Outfall		Installed
349	CI - 002	Coney Island W.P.C.P. Outfall		Installed
350	CI-004	PAERDEGAT BASIN & FLATLANDS AVENUE	TG #5	Installed
351	CI-005	PAERDEGAT BASIN & FLATLANDS AVENUE	REG #1, 2, 3, 4	Installed
352	CI-006	PAERDEGAT BASIN & RALPH AVENUE	REG #6	Installed
353	OH - 001	Owls Head W.P.C.P. Outfall		Installed
354	OH-002	UPPER NEW YORK BAY & 64th STREET	REG #6A, 6B, 6C	Installed
355	OH-003	UPPER NEW YORK BAY & 49th STREET	REG #7A, 7B, 7C	Installed
356	<i>OH-004</i>	<i>UPPER NEW YORK BAY & 43rd STREET</i>	<i>REG #7D, 19th ST. PS</i>	<i>WAIVER</i>
357	OH-005	GOWANUS CANAL & CARROLL STREET	3rd AVE SEWER RELIEF	Installed
358	OH-006	GOWANUS CANAL & 19th STREET (NORTH SIDE)	3rd AVE SEWER RELIEF	Installed
359	OH-007	GOWANUS CANAL & 2nd AVENUE	2nd AVENUE P.S.	Installed
360	OH-015	GRAVESEND BAY & 17th AVENUE	REG #9A, 9B, 9C	Installed
361	OH-017	UPPER NEW YORK BAY & 92nd STREET	REG #1	Installed
362	OH-018	UPPER NEW YORK BAY & 79th STREET	REG #2, 3	Installed
363	OH-019	UPPER NEW YORK BAY & 71st STREET	REG #4	Installed
364	OH-020	UPPER NEW YORK BAY & BAY RIDGE AVENUE	REG #5	Installed
365	OH-021	CONEY ISLAND CREEK & W 15th STREET	REG #10, 11, AVE.V P.S.	Installed
366	OH-022	GOWANUS BAY & 32nd STREET (Bush Terminal Complex)	2nd AVE SEWER RELIEF	Installed
367	OH-024	GOWANUS CANAL & 23rd STREET	3rd AVE SEWER RELIEF	Installed
368	Jam - 001	Jamaica W.P.C.P. Outfall		WAIVER
369	JAM-003	BERGEN BASIN & 123rd STREET	REG #3	Installed
No	OUTFALLID	OUTFALL LOCATION	CONTRIBUTORS	STATUS/COMMENTS
370	JAM-003A	BERGEN BASIN & 123rd STREET	REG #14	Installed
371	JAM-005	HEAD OF THURSTON BASIN & JFK AIRPORT	REG #6, 7, 8, 9	Installed
372	JAM-006	HEAD OF BERGEN BASIN & JFK AIRPORT	REG #1, 4, 10, SECONDARY PLANT EFFLUENT	Installed
373	JAM-007	HEAD OF THURSTON BASIN & JFK AIRPORT (NEXT TO JA-005)	REG #6, 7, 8, 9	Installed
374	Roc - 001	Rockaway W.P.C.P. Outfall		Installed
375	ROC-003	JAMAICA BAY & PLANT BYPASS	PLANT BYPASS	Installed
376	ROC-009	JAMAICA BAY & BEACH 98th STREET	REG #D-6	Installed

377	ROC-014	JAMAICA BAY & BEACH 91st STREET	REG #D-2	Installed
378	ROC-016	NORTON BASIN & BAYSWATER AVENUE	BAYSWATER P.S.	Installed
379	ROC-017	BANNISTER CREEK & BEACH 3rd STREET	SEAGIRT AVE. P.S.	Installed
380	ROC-029	JAMAICA BAY & BEACH 106 STREET	REG #1, 2	Installed
381	ROC-031	MOTT BASIN & REDFERN AVENUE	NAMEOKE P.S.	Installed
382	ROC-032	JAMAICA BAY & BEACH 98th STREET	REG #D-7,D-8,D-9,D-10,D-11	Installed
383	ROC-033	JAMAICA BAY & BEACH 106th STREET	REG #D-12	Installed
384	OB - 001	Oakwood Beach W.P.C.P. Outfall		Installed
385	OB-001A	LOWER NEW YORK BAY & PLANT BYPASS	PLANT BYPASS	Installed
386	PR - 001	Port Richmond W.P.C.P. Outfall		Installed
387	PR-002	KILL VAN KULL & E/O TAYLOR STREET	REG #R-34	Installed
388	PR-003	KILL VAN KULL & BROADWAY	REG #R-33	Installed
389	PR-004	KILL VAN KULL & BARD AVENUE	REG #R-29	Installed
390	PR-005	KILL VAN KULL & W/O KISSEL AVENUE	REG #R-28	Installed
391	PR-006	KILL VAN KULL & CLINTON AVENUE	REG #R-23	Installed
392	PR-007	KILL VAN KULL & SAILOR SNUG HARBOR	REG #R-27	Installed
393	PR-008	KILL VAN KULL & FRANKLIN AVENUE	REG #R-21	Installed
394	PR-009	KILL VAN KULL & JERSEY STREET	REG #R-20	Installed
395	PR-010	UPPER NEW YORK BAY & ST. PETERS PLACE	REG #R-19	Installed
396	PR-011	UPPER NEW YORK BAY & HAMILTON AVENUE	REG #R-18	Installed
397	PR-013	UPPER NEW YORK BAY & VICTORY BLVD.	REG #R-17	Installed
398	PR-014	UPPER NEW YORK BAY & BALTIC STREET	REG #R-15	Installed
399	PR-015	UPPER NEW YORK BAY & S/O DOCK STREET	REG #R-11	Installed
400	PR-016	UPPER NEW YORK BAY & MARINE HOSPITAL	REG #R-10	Installed
401	PR-017	UPPER NEW YORK BAY & NORWOOD AVENUE	REG #R-9	Installed
402	PR-018	UPPER NEW YORK BAY & N/O CAMDEN STREET	REG #R-8	Installed
No	OUTFALLID	OUTFALL LOCATION	CONTRIBUTORS	STATUS/COMMENTS
403	PR-019	UPPER NEW YORK BAY & S/O LYNHURST AVENUE	REG #R-7	Installed
404	PR-020	UPPER NEW YORK BAY & N/O SYLVA LANE	REG #R-5	Installed
405	PR-021	UPPER NEW YORK BAY & HYLAN BOULEVARD	REG #R-4	Installed

406	PR-023	UPPER NEW YORK BAY & NAUTILUS STREET	REG #R-3	Installed
407	PR-023A	UPPER NEW YORK BAY & NAUTILUS STREET	REG #R-2	Installed
408	PR-023B	UPPER NEW YORK BAY & NAUTILUS STREET	REG #R-1	Installed
409	PR-024	NEWARK BAY & W/O HOLLAND AVENUE	REG #R-1W	Installed
410	PR-025	NEWARK BAY & SOUTH AVENUE	REG #R-2W	Installed
411	PR-026	NEWARK BAY & HARBOR ROAD	REG #R-3W	Installed
412	PR-027	NEWARK BAY & UNION AVENUE	REG #R-4W	Installed
413	PR-028	NEWARK BAY & HOUSEMAN AVENUE	REG #R-5W	Installed
414	PR-029	NEWARK BAY & NICHOLAS STREET	REG #R-6W	Installed
415	PR-030	UPPER NEW YORK BAY & SYLVATON TER..	REG #R-6	Installed
416	PR-031	UPPER NEW YORK BAY & CANAL STREET	REG #13	Installed
417	PR-032	UPPER NEW YORK BAY & VICTORY BOULEVARD	REG #16	Installed
418	PR-033	KILL VAN KULL & ELIZABETH AVENUE	REG #R-31	Installed
419	PR-034	KILL VAN KULL & BEMENT AVENUE	REG #R-32	Installed
420	PR-035	KILL VAN KULL & BODINE STREET	REG #R-35	Installed
421	PR-036	BODINE CREEK & RECTOR STREET	REG #R-36	Installed
422	PR-037	KILL VAN KULL & RICHMOND AVENUE	REG #R-37	Installed

**Appendix 10: NEW YORK CITY 2019 BEACH SURVEILLANCE
AND MONITORING PROGRAM**

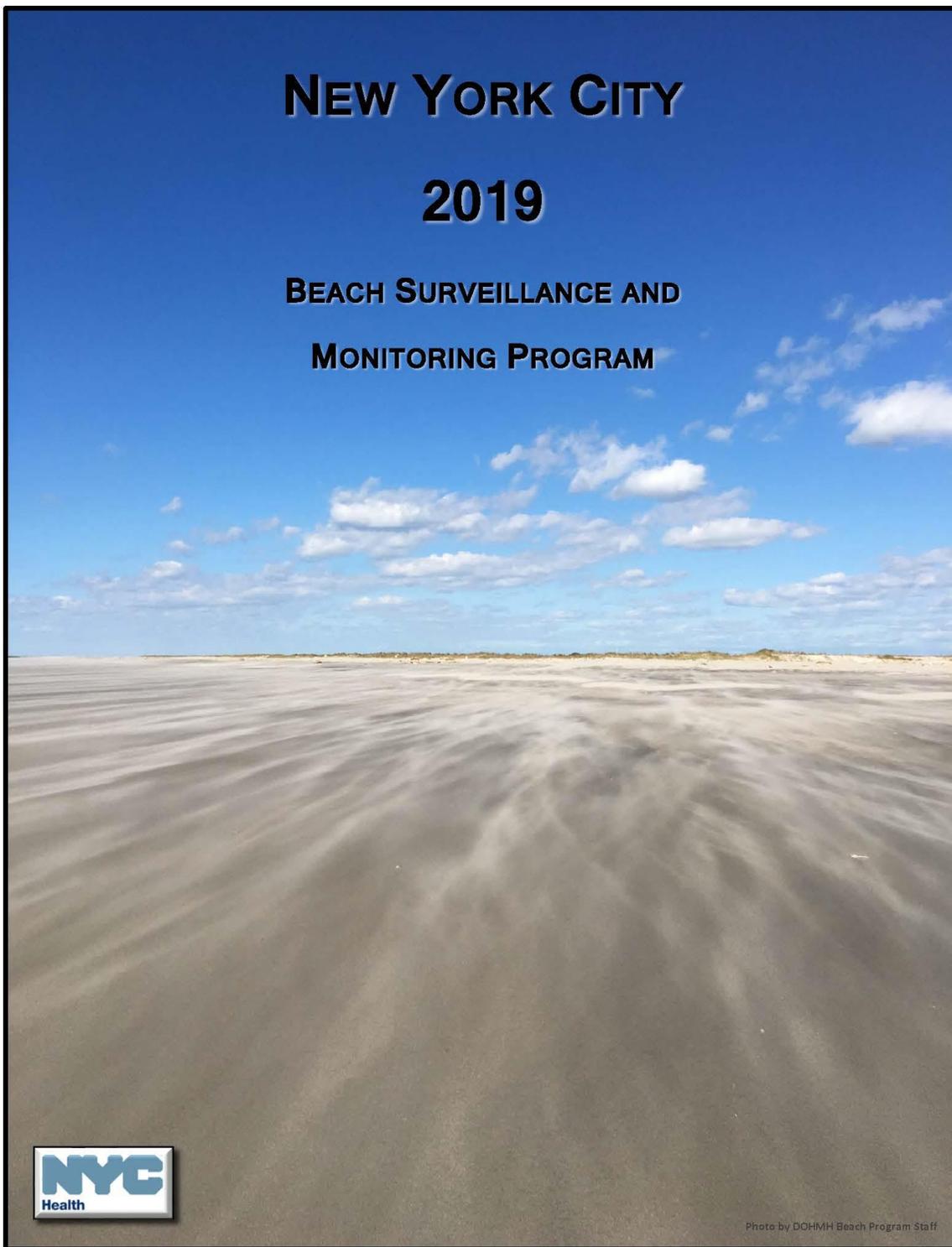


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SECTION 1

INTRODUCTION

In accordance with the New York City Administrative Code §18-131(c)(4), this annual report summarizes the 2019 New York City Beach Surveillance and Monitoring Program for beaches permitted by the Department of Health and Mental Hygiene (DOHMH or the “Department”). This law requires that the Health Commissioner “forward a combined report of the dates and results of all inspections of all beaches and the dates and reasons for any warning advisory or closure, and such other information deemed appropriate by the Commissioner of Health and Mental Hygiene, for the Friday proceeding the last Monday of May until the Friday after the first Monday of September of each year, to the mayor, the public advocate and the speaker of the council.”

With the principal goal of protecting ocean beachgoers from potential health and safety hazards, the Department closely monitors and conducts surveillance of permitted beaches in New York City. Under the regulatory directive and authority of both Article 167 of the New York City Health Code (Article 167) and Subpart 6-2 of the New York State Sanitary Code (Subpart 6-2), the Department administers the Beach Surveillance and Monitoring Program for all beaches operating within the city limits and with a permit issued by the Department. The Program responsibilities include: 1) beach monitoring and surveillance 2) public notification and communication, and 3) safety inspections.

The city’s beaches function as an important recreational resource for city residents and neighboring communities. As shown in Figure 1 (page 2) and Table 1 (page 3), there are eight public beaches operated by the Department of Parks and Recreations (the Parks Department) and 17 privately operated beaches permitted within New York City limits.

This year, public beaches remained open an additional week – until September 8th – for the 2019 beach season to coincide with the school calendar.

FIGURE 1: NEW YORK CITY PERMITTED BEACHES



 = Public Beach (NYC Dept. Parks and Recreation)

TABLE 1: NEW YORK CITY PERMITTED BEACHES AND WATER BODY IDENTIFICATION

Borough	Beaches	Water Body
Brooklyn	<i>Public:</i> Coney Island, Manhattan <i>Private:</i> Seagate, Kiddie Gerritsen, Kingsborough	Lower New York Harbor
Bronx	<i>Public:</i> Orchard Beach <i>Private:</i> American Turner, Danish American, Manhem, White Cross Fishing, Morris Yacht Club, Schuyler Hill, Trinity Danish, Locust Point Yacht Club, West Fordham Street	Eastchester Bay, Western Long Island Sound
Queens	<i>Public:</i> Rockaway <i>Private:</i> Breezy Point	Atlantic Ocean
	<i>Private:</i> Douglaston Manor, Whitestone Booster Civic Association	Western Long Island Sound
Staten Island	<i>Public:</i> South Beach, Midland, Cedar Grove, Wolfe’s Pond Park <i>Private:</i> Staten Island YMCA	Lower New York Bay

1.1 Public Risk Communication

The Department continued its effort to improve public notification and risk communication during the 2019 beach season. Easy-to-interpret signs shown in Figure 2 were used for beach closures and warnings in 2019.

FIGURE 2: BEACH WARNING AND CLOSED SIGNS



“Know Before You Go”, a free texting service introduced in 2014, was continued for the 2019 beach season. The service enables subscribers to make informed decisions before they go to a public beach by checking if the beach is open or closed or if there are any warnings due to wet weather conditions or water quality concerns. Subscribers simply text “BEACH” to 877-877 to learn the status of any of the eight public beaches in New York City. This tool also can be used by the Department to deliver notifications of high priority water quality warnings or closures, as well as safety-related messages such as warnings for high rip currents, closures for extreme weather and when beaches open and close for the season.

In 2019, the Department’s outreach strategy included promotional posts on its social media platforms (Twitter, Facebook and Instagram), examples of which are shown in Figure 3. At the beginning of the season, the texting service had 12,225 English-language subscribers and 574 Spanish-language subscribers. By the close of the beach season, there were 13,086 English-language subscribers (7% increase) and 588 Spanish-language subscribers (2% increase).

FIGURE 3: KNOW BEFORE YOU GO TEXTING PROGRAM



SECTION 2

BACKGROUND INFORMATION

This chapter provides background information on the New York City Beach Surveillance and Monitoring Program.

2.1 Water Quality Criteria

Under the New York State Sanitary Code §6-2.15, Article §167.13 of the New York City Health Code and the Federal Beaches Environmental Assessment and Coastal Health Act of 2000 (BEACH) Act, enterococcus is the indicator organism mandated for evaluating the microbiological quality of marine (saline) recreational beach water.

Under the New York State Sanitary Code and the New York City Health Code, enterococci concentrations for a single sample shall not exceed 104 Colony Forming Units (CFU's) per 100 mL (61 CFU's per 100 ml for fresh water), and the enterococci geometric mean shall not exceed 35 CFU's per 100 mL (33 CFU's per 100 ml for fresh water) for a series of five or more samples collected during a 30-day period. The geometric mean and single sample maximum are determined by analyzing samples for the presence and quantification of enterococci using membrane-filtration, EPA method 1600.

In November 2012, the Environmental Protection Agency (EPA) released revised recreational water quality criteria (RWQC). The revised criteria use a geometric mean and a statistical threshold value to indicate whether waters designated for primary contact recreation use are protective of human health. The 2012 revised criteria for marine waters are a 30-day geometric mean of 35 enterococci (CFU/100 mL) and a statistical threshold value of 130 enterococci (CFU/100 mL); the statistical threshold value is calculated as no more than 10% of samples within 30 days shall exceed the criteria. The EPA also introduced a Beach Action Value (BAV) of 70 enterococci (CFU/100 mL) to be used as a precautionary notification threshold for beach management, replacing earlier guidance that provided single sample maximum values. These water quality criteria have been adopted at the State level by the New York Department of Environmental Conservation (DEC), and become effective November 1, 2019. The New York State Department of Health (NYSDOH) plans to also promulgate equivalent bathing beach water quality standards in the State Sanitary Code, which may then be implemented by local beach programs in future seasons.

Also in the revised 2012 RWQC, EPA published criteria and standards for molecular analysis to detect and quantify *Enterococcus* spp. with rapid Polymerase Chain Reaction (qPCR) (EPA method 1609 and 1611). These are not required standards, but are optional methods of analysis which may be used by beach managers to potentially inform same-day decision making. In 2019, the Department initiated a pilot project to assess qPCR sampling and analysis implementation for

New York City beach surveillance and monitoring. The Department collected additional, paired samples from a selection of sites from July through September. These additional samples will be analyzed with methods qPCR method 1609 and Droplet Digital PCR (with use of Bio Rad's QX 200 system). Based on these results, along with an assessment of the logistical viability of implementation, a larger validation study may be performed in 2020.

2.2 Rainfall Events

Pre-emptive rainfall thresholds have been developed for New York City beaches through statistical modeling of historical precipitation and water quality data. These preemptive thresholds are used as a management tool to provide a quick and reliable indication of water quality conditions. Because the majority of the city has combined stormwater and sewer conveyance systems, high levels of precipitation may result in combined sewage and stormwater runoff bypassing the treatment system and overflowing into local waterbodies. This phenomenon, known as Combined Sewer Overflow (CSO), poses a public health threat to nearby beaches. When preemptive rainfall thresholds are met, as defined in Table 2, a public notification or warning takes effect for the predetermined duration.

TABLE 2: NEW YORK CITY PRE-EMPTIVE RAINFALL THRESHOLDS

Beach (Borough)	Rainfall Threshold (within 24 hrs)	Duration of Warning
South Beach, Midland Beach, Cedar Grove, Staten Island YMCA (Staten Island), Manhattan Beach, Kingsborough Community College (Brooklyn)	1.5 – 2.5 inches	12 hours
	> 2.5 inches	24 hours
Orchard Beach (Brooklyn)	> 2.5 inches	24 hours
Coney Island (Brooklyn)	> 2.5 inches	12 hours
Gerritsen/Kiddie Beach (Brooklyn) Whitestone Booster (Queens)	0.3 - 0.6 inches	18 hours
	> 0.6 inches	40 hours
American Turner, Danish American, Manhem, White Cross, Morris Yacht, Schuyler Hill, Trinity Danish, Locust Point Yacht Club, West Fordham Street Association (Bronx)	0.6 – 2.5 inches	36 hours
	> 2.5 inches	48 hours
Douglaston Manor (Queens)	0.3 – 0.6 inches	30 hours
	> 0.6 – 2.5 inches	60 hours
	> 2.5 inches	72 hours

2.3 Beach Classifications

There are three swimming classifications for New York City beaches which are determined by assessing water quality, rainfall and pollution events, on-site sanitary surveys, and/or historical information. Beaches, except those specifically restricted under Article §167.05, are classified as follows:

Class A: Open for Swimming and Wading. Beaches may be classified as open and approved for swimming and wading when *all* of the following conditions are met:

1. Beach water quality is in accordance with standards defined under Article §167.13;
2. Sanitary and safety surveys are satisfactory in accordance with Article §167.25; and
3. The epidemiological history is satisfactory to the Department, i.e., no repeated complaints or reports of illness/injury received from the public or from owners/operators of city beaches.

Class B: Warning – Not Recommended for Swimming and Wading. Beaches may be classified as “Not Recommended for Swimming and Wading,” resulting in notifications to the public that swimming should be avoided to prevent contracting a swimming-related illness, when *one or more* of the following conditions exists:

1. Rainfall events exceed the pre-emptive rainfall thresholds; and/or
2. A water quality sample exceeds the water quality standard or a beach notification threshold. The notification should remain in effect until resampling indicates that the beach water quality standard and/or notification thresholds are being met; and/or
3. An on-site sanitary survey or investigation reveals the presence of floatable debris, medical/infectious waste or toxic contaminants, petroleum products and/or other contamination on the beach; or evidence of sewage and wastewater discharge.

Class C: Closed – Temporarily Restricted for Swimming and Wading: Beaches may be classified as “Temporarily Restricted for Swimming and Wading” when *one or more* of the following conditions exists:

1. Sampling by bacteriological testing that finds beach water quality exceeding the statutory water quality standard for marine water beaches; and/or
2. Epidemiological data indicates a significant incidence of related illnesses or repeated complaints/reports of illness/injury received from beach patrons; and/or
3. A sanitary and safety survey or an investigation reveals the presence of potentially hazardous amounts of floatable debris, medical/infectious waste, toxic contaminants, petroleum products or other contaminants on the beach, or there is evidence of sewage and wastewater discharges in sufficient quantities that will adversely affect the quality of the beach water; and/or

4. Any other environmental factors determined to be a public health or safety hazard by the Department.

2.4 Beach Monitoring and Surveillance

Starting one month before the beach season, the Department monitors and samples each beach on a weekly basis with the exception of the Rockaway and Breezy Point beaches, which are sampled bi-weekly. In addition to routine water quality monitoring, the Department monitors on a daily basis the regional wet weather conditions and occasional Waste Water Treatment Plant (WWTP) bypasses, operational upsets and spills through interagency communication and cooperation. This information can be used to assess and make beach status determinations.

During a sample event, a routine on-site sanitary survey inspection is performed to identify any existing and/or potential sources of pollution that are likely to affect beach water quality. Water samples are collected at knee-depth (18 inches) in three feet of water, from the center, left and right of the beach. At larger beaches, such as Coney Island and Rockaway, samples are taken from multiple locations to ensure adequate representation and reliable results. The collected samples are delivered to the Department's Public Health Laboratory for analysis. The analytical turnaround time for enterococci is 24 hours.

The water quality of the samples analyzed is reviewed and assessed for conformance to applicable standards. If the regulatory limit for enterococci is exceeded or conditions exist that may pose a threat to the health and/or safety of the public, the Department initiates one of the following actions: conducts immediate re-sampling; issues a warning and conducts re-sampling; and/or closes the beach and conducts re-sampling. The determining factors for additional sampling may include: proximity to suspected pollution sources; extent of pollution; beach use; historical water quality data; and other health risk factors.

2.5 Public Notification and Risk Communication

When beach status changes based upon evaluation and assessment of beach water quality as specified above, the Department notifies the public through on-site beach signage, website postings, 311 non-emergency government service hotline, Notify NYC (via Twitter, RSS feed, e-mail, and SMS), "Know Before You Go" texting service, and Department press releases when necessary. Beach operators are notified by phone, email and/or text as to the necessary on-site postings. The specific notification procedures and requirements for each of the above conditions are as follows:

On-Site Signage: When notified by the Department, the permittee is required to post or remove the warning or closure signs in designated areas visible to beach users such as beach entrances, bulletin boards, comfort stations or the general vicinity of the common swimming areas.

“Know Before You Go” Texting Service: Subscribers text “BEACH” to 877-877 to learn the beach status for any of the eight public beaches in New York City.

Website Postings: The Department has developed an easily accessible website with up-to-date information for all permitted beaches: www.nyc.gov/health/beach. The website contains background information on the beach program, explains the causes and sources of surface water pollution, and summarizes the beach classification system, including the different types of warnings. A list of city beaches by borough, along with their respective status (Open, Closed, or Warning) and sample results are promptly updated on the website.

Notify NYC: When notified by the Department of status changes relating to public beaches, the Office of Emergency Management will share this information with members of the public who have signed up for Notify NYC status information via Twitter, RSS feed, e-mail and SMS.

311: The 311 telephone operators monitor the Department’s website for updates on warning or closure information, as described above, and convey that information to 311 callers. The public can also report a swimming-related illness via 311.

NYC Press Release: Press releases are disseminated to various types of media (newspaper, radio, website, television), as well as elected officials.

2.6 Inspections

The Department conducts annual safety inspections and complaint inspections at bathing beaches to assure that (1) all staff, especially lifeguards and supervisors, have proper certificates and coverage, including CPR certification; (2) all required life-saving equipment is available, including rescue tubes, spine boards, first aid kits, and resuscitation equipment; (3) there is proper signage posted on site. Direct observations of conditions are supplemented by interviews with lifeguards and other personnel. The inspections also evaluate beach facility hygiene.

SECTION 3

FINDINGS

3.1 Water Quality and Illness Reporting

Routine water quality monitoring and sample collection was performed at all 25 permitted beaches. Between April and September 2019, 1584 samples were collected and analyzed from these beaches. In 2019, the Department received two complaints in July regarding a potential illness caused by beach recreation activity at the Bronx private beach, Schuyler Hill Civic Association. These complaints were referred to the Bureau of Communicable Disease epidemiologists for follow-up investigation. After multiple attempts the respondents could not be contacted, and so the exposure and/or cause could not be verified.

Water quality sample results, including 30-day geometric mean and daily averages and any associated criteria exceedances can be found in Appendix A (pages 12 to 18). Warnings and closures issued by the Department throughout the season are summarized in Appendix B (pages 19 to 23).

In general, for private beaches, Douglaston Manor had the highest daily exceedance rate (25.8%), while Breezy Point 219, Breezy Point Reid, Sea Gate Beach Club, and West Fordham had no exceedances. Among public beaches, Cedar Grove, Manhattan, and Midland had the highest daily exceedance rates (5.0%), while Orchard, Rockaway, and South Beaches had no exceedances.

These exceedances may be due, in part, to particular precipitation and temperature patterns this year, which are consistent with recent increases in the summer heat index, as well as increases in total precipitation in the Northeast United States. According to the National Oceanic and Atmospheric Administration's National Climate Report (NOAA, 2019), average temperatures and precipitation in the lower regions of New York State were much above average and at record highs from June to August 2019.

3.2 Public Notification for Warnings and Closures

There are 8 public beaches, all of which were issued at least one swimming advisory warning notice during the 2019 bathing season. However, there were no warnings or closures issued as a result of a water quality exceedances; all 22 notification days were a result of preemptive wet weather or tropical storm conditions. The length of notification ranged from 1 to 2 days.

There are 17 private beaches, of which 13 were issued at least one swimming advisory warning notice during the 2019 bathing season. Of the private beaches that were issued notifications, there were 517 total warning days (153 of which were a result of preemptive wet weather conditions). The length of the notifications ranged from 1 to 35 days, most of which ranged between 1 and 3 days. Douglaston Manor and Whitestone Booster had 74 and 70 notification days, respectively. The specific warning dates for each beach are shown in Appendix B (pages 19 to 23).

Due to storm warnings from the National Weather Service, all eight public beaches were preemptively closed to swimming on Friday September 6th through September 7th ahead of the landfall of Hurricane Dorian. On September 8th, all city beaches except Cedar Gove and Wolfe's Pond beaches, reopened until the end of the day for the season.

3.3 Inspections

During the 2019 beach season, inspections of all 25 public and private beaches were successfully conducted by the Department. Four facilities were cited for violations at the time of inspection as detailed in Appendix C (page 24).

APPENDIX A: 2019 WATER QUALITY RESULTS AND EXCEEDANCE

Table A1-1: Brooklyn Beaches Water Quality Results

Enterococci 30 Day Geometric Mean/Daily Average (Count/100m)

Water Quality Standards: 30-day geomean limit: 35cfu/100ml, Daily average limit: 104cfu/100ml

Date of Week Ending	CONEY ISLAND BEACH (public)		MANHATTAN BEACH (public)		GERRITSEN/ KIDDIE BEACH (private)		KINGSBOROUGH COMMUNITY COLLEGE (private)		SEA GATE 42 ND (private)		SEA GATE BEACH CLUB (private)	
	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily
5/25/2019	6	5	12	15	35	13	12	11	12	7	7	4
6/1/2019	7	9	12	8	41	20	9	4	10	7	7	4
6/8/2019	6	4	17	20	63	77	14	92	14	66	8	11
6/15/2019	5	5	21	12	47	25	19	59	15	7	9	5
6/22/2019	5	5	10	5	21	15	16	12	8	4	5	4
6/29/2019	6	11	8	5	19	7	15	7	7	4	5	4
7/6/2019	5	5	7	4	16	11	15	4	6	4	5	7
7/13/2019	6	11	8	43	12	17	13	52	4	4	5	9
7/20/2019	6	7	7	4	8	4	8	4	4	5	5	4
7/27/2019	11	17	7	4	7	8	8	8	5	17	6	17
8/3/2019	10	37	6	4	7	5	8	8	8	39	7	8
8/10/2019	11	12	10	40	12	143	10	16	11	23	7	4
8/17/2019	10	4	6	4	10	4	6	4	11	4	7	16
8/24/2019	10	5	8	19	11	11	8	15	11	5	8	8
8/31/2019	6	5	11	23	12	11	15	395	16	79	7	5
9/7/2019	5	6	12	5	25	230	23	89	15	43		

Values highlighted in red indicate exceedance of recreational water quality criteria.

Table A1-2: Bronx Beaches Water Quality Results

Enterococci 30 Day Geometric Mean/Daily Average (Count/100m)

Water Quality Standards: 30-day geometric limit: 35cfu/100ml, Daily average limit: 104cfu/100ml

Date of Week Ending	ORCHARD BEACH (public)		AMERICAN TURNER (private)		DANISH AMERICAN BEACH CLUB (private)		LOCUST POINT YACHT CLUB (private)		MANHEM CLUB (private)		MORRIS YACHT AND BEACH CLUB (private)		SCHUYLER HILL CIVIC ASSOC. (private)		TRINITY DANISH (private)		WEST FORDHAM STREET ASSOC. (private)		WHITE CROSS FISHING CLUB (private)	
	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily
5/25/2019	5	4	15	20	18	5	9	5	15	4	6	7	10	7	29	7	7	12	12	5
6/1/2019	7	29	23	39	33	128	12	17	26	65	7	17	11	11	49	59	9	21	21	64
6/8/2019	6	4	27	13	26	15	12	4	22	12	7	4	11	4	25	13	10	7	24	12
6/15/2019	6	4	52	100	72	747	26	380	49	243	10	25	20	97	50	265	14	25	46	113
6/22/2019	7	16	57	747	29	4	14	4	21	7	11	24	9	4	32	48	11	9	23	20
6/29/2019	8	12	139	2087	56	162	19	25	30	24	12	13	30	2533	56	103	14	28	45	159
7/6/2019	6	5	108	17	33	8	22	39	18	5	13	31	37	36	41	16	11	7	32	12
7/13/2019	6	4	90	5	26	4	22	4	14	4	13	4	37	4	34	4	11	4	30	9
7/20/2019	6	4	51	7	14	59	9	4	6	4	9	4	21	5	15	4	8	7	15	4
7/27/2019 *	8	29	20	7	25	12	14	49	17	16	10	29	45	197	21	12	11	33	21	5
8/3/2019	7	9	15	4	22	17	11	7	15	9	10	11	22	87	19	20	8	8	23	36
8/10/2019	8	15	17	21	25	15	8	9	16	15	8	13	18	16	25	65	8	7	21	8
8/17/2019	8	4	17	5	27	7	10	12	18	7	8	4	22	13	26	5	10	12	19	4
8/24/2019	8	4	27	99	35	200	10	7	31	113	12	25	28	23	45	104	10	7	35	160
8/31/2019	6	4	13	9	21	28	6	4	13	12	8	4	15	9	21	13	7	5	17	21
9/7/2019	5	4	13	4	17	5	6	7	11	4	16	240	14	40	17	4	7	8	11	4
9/14/2019							5	4			14	7					6	4		
9/21/2019											14	4					5	4		
9/28/2019											10	4								

* mid-week sample result on 7/27/2019 at American Turner, Danish American, Manhem, Trinity Danish and White Cross Beaches resulted in water quality exceedance and not indicated in end-of-week table due to subsequent resample, indicated by shaded cells, see appendix B for description.
 Values highlighted in red indicate exceedance of recreational water quality criteria.

Table A1-3: Queens Beaches Water Quality Results

Enterococci 30 Day Geometric Mean/Daily Average (Count/100m)

Water Quality Standards- 30-day geomean limit: 35cfu/100ml, Daily Average limit: 104cfu/100ml

Date of Week Ending	ROCKAWAY BEACH* (public)		BREEZY POINT 219 (private)		BREEZY POINT Reid Ave (private)		WHITESTONE BOOSTER CIVIC ASSOCIATION (private)		DOUGLSTON MANOR ASSOCIATION (private)	
	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily
5/25/2019	4	5	4	4	4	4	37	24	67	183
6/1/2019							76	260	113	1633
6/8/2019	4	4	4	4	4	4	49	5	104	35
6/15/2019							59	147	253	427
6/22/2019	4	4	4	4	5	8	48	109	131	13
6/29/2019							58	57	100	48
7/6/2019	4	4	4	4	5	4	29	8	36	11
7/13/2019							34	23	28	13
7/20/2019	4	5	4	4	5	4	27	59	12	7
7/27/2019 *							38	460	24	13
8/3/2019	4	5	4	4	4	4	34	35	24	29
8/10/2019							36	12	30	47
8/17/2019	5	7	4	4	4	4	35	12	35	28
8/24/2019	5	14					26	9	46	32
8/31/2019							13	32	29	32
9/7/2019	6	8	6	12	4	4	12	33	28	27
9/14/2019									20	7

* mid-week sample result on 7/27/2019 at Douglaston Beaches resulted in water quality exceedance and not indicated in end-of-week table due to subsequent resample, indicated by shaded cells, see appendix B for description.
 Values highlighted in red indicate exceedance of recreational water quality criteria.

Table A1-4: Staten Island Beaches Water Quality Results**Enterococci 30 Day Geometric Mean/Daily Average (Count/100m)***Water Quality Standards- 30 day Geomean limit: 35cfu/100ml, Daily Average limit: 104cfu/100ml**Fresh Water Standards- 30 day Geomean limit: 33cfu/100ml, Daily Average limit: 61cfu/100ml*

Date of Week Ending	SOUTH BEACH (public)		MIDLAND BEACH (public)		CEDAR GROVE BEACH (public)		WOLFE'S POND BEACH (public)	
	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily
5/25/2019	9	7	10	4	15	4	10	4
6/1/2019	9	4	10	4	14	5	10	5
6/8/2019	9	5	11	7	15	12	11	7
6/15/2019	7	4	9	4	13	16	9	5
6/22/2019	4	4	4	4	6	5	5	4
6/29/2019	4	4	4	4	6	4	5	4
7/6/2019	4	4	4	4	6	4	4	4
7/13/2019	4	8	4	8	6	9	5	11
7/20/2019	4	4	4	4	5	4	5	4
7/27/2019	5	35	4	4	5	9	5	5
8/3/2019	5	4	4	4	6	5	6	9
8/10/2019	7	20	4	4	6	4	6	4
8/17/2019	7	9	4	4	5	5	5	4
8/24/2019	7	5	4	4	7	21	5	4
8/31/2019	6	4	4	4	6	8	6	21
9/7/2019	9	47	4	8	11	81	6	12

Table A2-1: 2019 Summary of Beach Samples and Single-Sample Exceedances

Beach	Sample Location	Total # of Samples	# of Sample exceed 104	% of Sample exceed 104
ALL Beaches TOTAL		1584	149	9.4%
Public Beaches TOTAL		568	13	2.3%
Private Beaches TOTAL		1016	136	13.4%

Table A2-2: 2019 Public Beaches Samples and Single-Sample Exceedances

Beach	Sample Location		Total # of Samples	# of Sample exceed 104	% of Sample exceed 104 (Location)	% of Sample exceed 104 (Beach)
CEDAR GROVE	CEDAR GROVE	Left	20	0	0.0%	5.0%
	CEDAR GROVE	Center	20	1	5.0%	
	CEDAR GROVE	Right	20	2	10.0%	
CONEY ISLAND	CONEY ISLAND BR. 15TH - 6TH	Center	20	1	5.0%	1.7%
	CONEY ISLAND BR. 6TH - OCEAN PKWY	Center	20	0	0.0%	
	CONEY ISLAND OCEAN PKWY - WEST 8TH	Center	20	0	0.0%	
	CONEY ISLAND WEST 8TH - PIER	Center	20	0	5.0%	
	CONEY ISLAND WEST 16TH - WEST 27TH	Center	20	0	0.0%	
	CONEY ISLAND WEST 28TH - WEST 37TH	Center	20	1	5.0%	
MANHATTAN BEACH	MANHATTAN BEACH	Left	20	1	5.0%	5.0%
	MANHATTAN BEACH	Center	20	1	5.0%	
	MANHATTAN BEACH	Right	20	1	5.0%	
MIDLAND BEACH	MIDLAND BEACH	Left	20	1	5.0%	5.0%
	MIDLAND BEACH	Center	20	1	5.0%	
	MIDLAND BEACH	Right	20	1	5.0%	
ORCHARD BEACH	ORCHARD BEACH	Left	20	0	0.0%	0.0%
	ORCHARD BEACH	Center	20	0	0.0%	
	ORCHARD BEACH	Right	20	0	0.0%	
ROCKAWAY BEACH	ROCKAWAY BEACH 9TH - 13TH	Center	11	0	0.0%	0.0%
	ROCKAWAY BEACH 15TH - 22TH	Center	11	0	0.0%	
	ROCKAWAY BEACH 23RD - 59TH	Center	11	0	0.0%	
	ROCKAWAY BEACH 59TH - 80TH	Center	11	0	0.0%	
	ROCKAWAY BEACH 80TH - 95TH	Center	11	0	0.0%	
	ROCKAWAY BEACH 95TH - 116TH	Center	11	0	0.0%	
	ROCKAWAY BEACH 116TH - 126TH	Center	11	0	0.0%	
ROCKAWAY BEACH 126TH - 149TH	Center	11	0	0.0%		
SOUTH BEACH	SOUTH BEACH	Left	20	0	0.0%	0.0%
	SOUTH BEACH	Center	20	0	0.0%	
	SOUTH BEACH	Right	20	0	0.0%	
WOLFE'S POND BEACH	WOLFE'S POND BEACH	Left	20	0	0.0%	3.3%
	WOLFE'S POND BEACH	Center	20	1	5.0%	
	WOLFE'S POND BEACH	Right	20	1	5.0%	
Public Beaches (Locations) Total			568	13	2.3%	

Table A2-3: 2019 Private Beaches Samples and Single-Sample Exceedances

Beach	Sample Location		Total # of Samples	# of Sample exceed 104	% of Sample exceed 104 (Location)	% of Sample exceed 104 (Beach)
AMERICAN TURNER	AMERICAN TURNER	Left	21	5	23.8%	20.6%
	AMERICAN TURNER	Center	21	4	19.0%	
	AMERICAN TURNER	Right	21	4	19.0%	
BREEZY POINT 219	BREEZY POINT 219	Center	10	0	0.0%	0.0%
BREEZY POINT Reid	BREEZY POINT Reid Ave	Center	10	0	0.0%	0.0%
DANISH AMERICAN BEACH CLUB	DANISH AMERICAN BEACH CLUB	Left	21	5	23.8%	22.2%
	DANISH AMERICAN BEACH CLUB	Center	21	4	19.0%	
	DANISH AMERICAN BEACH CLUB	Right	21	5	23.8%	
DOUGLSTON MANOR ASSOCIATION	DOUGLSTON MANOR ASSOCIATION	Left	22	7	31.8%	25.8%
	DOUGLSTON MANOR ASSOCIATION	Center	22	5	22.7%	
	DOUGLSTON MANOR ASSOCIATION	Right	22	5	22.7%	
GERRITSEN/KIDDIE BEACH	GERRITSEN/KIDDIE BEACH	Left	20	4	20.0%	18.3%
	GERRITSEN/KIDDIE BEACH	Center	20	4	20.0%	
	GERRITSEN/KIDDIE BEACH	Right	20	3	15.0%	
KINGSBOROUGH COMMUNITY COLLEGE	KINGSBOROUGH COMMUNITY COLLEGE	Left	20	3	15.0%	10.0%
	KINGSBOROUGH COMMUNITY COLLEGE	Center	20	1	5.0%	
	KINGSBOROUGH COMMUNITY COLLEGE	Right	20	2	10.0%	
LOCUST POINT YACHT CLUB	LOCUST POINT YACHT CLUB	Left	21	1	4.8%	4.8%
	LOCUST POINT YACHT CLUB	Center	21	1	4.8%	
	LOCUST POINT YACHT CLUB	Right	21	1	4.8%	
MANHEM CLUB	MANHEM CLUB	Left	21	4	19.0%	17.5%
	MANHEM CLUB	Center	21	3	14.3%	
	MANHEM CLUB	Right	21	4	19.0%	
MORRIS YACHT AND BEACH CLUB	MORRIS YACHT AND BEACH CLUB	Left	23	1	4.3%	4.3%
	MORRIS YACHT AND BEACH CLUB	Center	23	1	4.3%	
	MORRIS YACHT AND BEACH CLUB	Right	23	1	4.3%	
SCHUYLER HILL CIVIC ASSOCIATION	SCHUYLER HILL CIVIC ASSOCIATION	Left	20	4	20.0%	20.0%
	SCHUYLER HILL CIVIC ASSOCIATION	Center	20	4	20.0%	
	SCHUYLER HILL CIVIC ASSOCIATION	Right	20	4	20.0%	
SEA GATE 42ND	SEA GATE 42ND	Left	20	0	0.0%	3.3%
	SEA GATE 42ND	Center	20	1	5.0%	
	SEA GATE 42ND	Right	20	1	5.0%	
SEA GATE BEACH CLUB	SEA GATE BEACH CLUB	Left	19	0	0.0%	0.0%
	SEA GATE BEACH CLUB	Center	19	0	0.0%	
	SEA GATE BEACH CLUB	Right	19	0	0.0%	
TRINITY DANISH	TRINITY DANISH	Left	21	3	14.3%	22.2%
	TRINITY DANISH	Center	21	5	23.8%	
	TRINITY DANISH	Right	21	6	28.6%	
WEST FORDHAM STREET ASSOCIATION	WEST FORDHAM STREET ASSOCIATION	Left	22	0	0.0%	0.0%
	WEST FORDHAM STREET ASSOCIATION	Center	22	0	0.0%	
	WEST FORDHAM STREET ASSOCIATION	Right	22	0	0.0%	
WHITE CROSS FISHING CLUB	WHITE CROSS FISHING CLUB	Left	21	5	23.8%	20.6%
	WHITE CROSS FISHING CLUB	Center	21	4	19.0%	
	WHITE CROSS FISHING CLUB	Right	21	4	19.0%	
WHITESTONE BOOSTER CIVIC ASSOCIATION	WHITESTONE BOOSTER CIVIC ASSOCIATION	Left	20	5	25.0%	23.3%
	WHITESTONE BOOSTER CIVIC ASSOCIATION	Center	20	4	20.0%	
	WHITESTONE BOOSTER CIVIC ASSOCIATION	Right	20	5	25.0%	
Private Beaches (Locations) Total			956	133	13.9%	

Table A2-3: 2019 Private Freshwater Beach Samples and Single-Sample Exceedances (continued)

Beach	Sample Location		Total # of Samples	# of Sample exceed 61	% of Sample exceed 61 (Location)	% of Sample exceed 61 (Beach)
Staten Island YMCA	Staten Island YMCA	Left	20	2	10.0%	6.7%
	Staten Island YMCA	Center	20	1	5.0%	
	Staten Island YMCA	Right	20	1	5.0%	
Private Freshwater Beaches (Locations) Total			60	4	6.7%	

APPENDIX B: 2019 WARNINGS AND CLOSURES

Table B-1: Summary of Beach Warnings and Closure

Beach	Types	Reason	Start Date	End Date	Beach Open Days	# of Beach-Specific Days	Notification (Beach Specific Days)		
							Warning	Closure	Total
NYC ALL Beaches (N=25)	Warning or Closure	Enterococci Exceedance or Rainfall Event	5/25/2019	9/08/2019	2136	539	497	42	539

Table B-2 Public Beaches Warnings and Closures

Beach	Types	Reason	Start Date	End Date	Beach Open Days	# of Beach-Specific Days	Notification (Beach Specific Days)		
							Warning	Closure	Total
CEDAR GROVE	Warning	Rainfall Event	07/23/2019	07/23/2019	104	1	1	2	3
	Closure	Tropical Storm	09/06/2019	09/07/2019		2			
CONEY ISLAND	Warning	Rainfall Event	07/23/2019	07/23/2019	104	1	1	2	3
	Closure	Tropical Storm	09/06/2019	09/07/2019		2			
MANHATTAN BEACH	Warning	Rainfall Event	07/23/2019	07/23/2019	104	1	1	2	3
	Closure	Tropical Storm	09/06/2019	09/07/2019		2			
MIDLAND BEACH	Warning	Rainfall Event	07/23/2019	07/23/2019	104	1	1	2	3
	Closure	Tropical Storm	09/06/2019	09/07/2019		2			
ROCKAWAY BEACH	Closure	Tropical Storm	09/06/2019	09/07/2019	105	2	0	2	2
ORCHARD BEACH	Warning	Rainfall Event	07/18/2019	07/18/2019	104	1	1	2	3
	Closure	Tropical Storm	09/06/2019	09/07/2019		2			
SOUTH BEACH	Warning	Rainfall Event	07/23/2019	07/23/2019	104	1	1	2	3
	Closure	Tropical Storm	09/06/2019	09/07/2019		2			
WOLFE'S POND PARK	Closure	Tropical Storm	09/06/2019	09/07/2019	105	2	0	2	2
Public Beaches TOTAL					834	22	6	16	22

Table B-3 Private Beaches Warnings and Closures

Beach	Types	Reason	Start Date	End Date	Beach Open Days	# of Beach-Specific Days	Notification (Beach Specific Days)		
							Warning	Closure	Total
AMERICAN TURNER	Warning	Rainfall Event	05/30/2019	05/31/2019	51	2	47	9	56
	Warning	Rainfall Event	06/11/2019	06/12/2019		2			
	Warning	Enterococci Exceedance	06/13/2019	06/26/2019		14			
	Closure	Enterococci Exceedance	06/27/2019	07/03/2019		7			
	Warning	Enterococci Exceedance	07/04/2019	07/24/2019		21			
	Closure	Enterococci Exceedance	07/25/2019	07/26/2019		2			
	Warning	Enterococci Exceedance	07/27/2019	07/31/2019		5			
	Warning	Rainfall Event	08/08/2019	08/08/2019		1			
	Warning	Rainfall Event	08/23/2019	08/24/2019		2			
BREEZY POINT 219					107	0	0	0	0
BREEZY POINT REID					107	0	0	0	0
DANISH AMERICAN BEACH CLUB	Warning	Rainfall Event	05/30/2019	05/30/2019	61	1	44	2	46
	Warning	Enterococci Exceedance	05/31/2019	06/05/2019		6			
	Warning	Rainfall Event	06/11/2019	06/12/2019		2			
	Warning	Enterococci Exceedance	06/13/2019	06/19/2019		7			
	Warning	Rainfall Event	06/20/2019	06/22/2019		3			
	Warning	Enterococci Exceedance	06/27/2019	07/03/2019		7			
	Warning	Rainfall Event	07/12/2019	07/12/2019		1			
	Warning	Rainfall Event	07/18/2019	07/19/2019		2			
	Warning	Rainfall Event	07/23/2019	07/24/2019		2			
	Closure	Enterococci Exceedance	07/25/2019	07/26/2019		2			
	Warning	Enterococci Exceedance	07/27/2019	07/31/2019		5			
	Warning	Rainfall Event	08/08/2019	08/08/2019		1			
	Warning	Enterococci Exceedance	08/22/2019	08/28/2019		7			
DOUGLASTON MANOR ASSOCIATION	Warning	Enterococci Exceedance	05/25/2019	05/30/2019	33	6	68	6	74
	Closure	Enterococci Exceedance	05/31/2019	06/05/2019		6			
	Warning	Enterococci Exceedance	06/06/2019	07/10/2019		35			
	Warning	Rainfall Event	07/12/2019	07/13/2019		2			
	Warning	Rainfall Event	07/18/2019	07/20/2019		3			
	Warning	Rainfall Event	07/23/2019	07/24/2019		2			
	Warning	Enterococci Exceedance	07/25/2019	07/26/2019		2			
	Warning	Rainfall Event	08/01/2019	08/01/2019		1			
	Warning	Rainfall Event	08/08/2019	08/09/2019		2			
	Warning	Enterococci Exceedance	08/15/2019	08/28/2019		14			
	Warning	Rainfall Event	09/03/2019	09/03/2019		1			

Table B-3 Private Beaches Warnings and Closures (continued)

Beach	Types	Reason	Start Date	End Date	Beach Open Days	# of Beach-Specific Days	Notification (Beach Specific Days)		
							Warning	Closure	Total
GERRITSEN/ KIDDIE BEACH	Warning	Enterococci Exceedance	05/30/2019	06/18/2019	63	20	44	0	44
	Warning	Rainfall Event	06/19/2019	06/22/2019		4			
	Warning	Rainfall Event	07/12/2019	07/13/2019		2			
	Warning	Rainfall Event	07/18/2019	07/19/2019		2			
	Warning	Rainfall Event	07/23/2019	07/24/2019		2			
	Warning	Enterococci Exceedance	08/07/2019	08/13/2019		7			
	Warning	Rainfall Event	08/23/2019	08/24/2019		2			
	Warning	Rainfall Event	09/03/2019	09/03/2019		1			
	Warning	Enterococci Exceedance	09/05/2019	09/08/2019		4			
KINGSBOROUGH COMMUNITY COLLEGE	Warning	Rainfall Event	07/23/2019	07/23/2019	98	1	9	0	9
	Warning	Enterococci Exceedance	08/28/2019	09/04/2019		8			
LOCUST POINT YACHT CLUB	Warning	Rainfall Event	05/30/2019	05/31/2019	85	2	22	0	22
	Warning	Rainfall Event	06/11/2019	06/12/2019		2			
	Warning	Enterococci Exceedance	06/13/2019	06/19/2019		7			
	Warning	Rainfall Event	06/20/2019	06/22/2019		3			
	Warning	Rainfall Event	07/12/2019	07/12/2019		1			
	Warning	Rainfall Event	07/18/2019	07/19/2019		2			
	Warning	Rainfall Event	07/23/2019	07/24/2019		2			
	Warning	Rainfall Event	08/08/2019	08/08/2019		1			
Warning	Rainfall Event	08/23/2019	08/24/2019	2					
MANHEM BEACH CLUB	Warning	Rainfall Event	05/30/2019	05/31/2019	78	2	29	0	29
	Warning	Rainfall Event	06/11/2019	06/12/2019		2			
	Warning	Enterococci Exceedance	06/13/2019	06/19/2019		7			
	Warning	Rainfall Event	06/20/2019	06/22/2019		3			
	Warning	Rainfall Event	07/12/2019	07/12/2019		1			
	Warning	Rainfall Event	07/18/2019	07/19/2019		2			
	Warning	Rainfall Event	07/23/2019	07/24/2019		2			
	Warning	Enterococci Exceedance	07/25/2019	07/26/2019		2			
	Warning	Rainfall Event	08/08/2019	08/08/2019		1			
Warning	Enterococci Exceedance	08/22/2019	08/28/2019	7					

Table B-3 Private Beaches Warnings and Closures (continued)

Beach	Types	Reason	Start Date	End Date	Beach Open Days	# of Beach-Specific Days	Notification (Beach Specific Days)		
							Warning	Closure	Total
MORRIS YACHT AND BEACH CLUB	Warning	Rainfall Event	05/30/2019	05/31/2019	88	2	19	0	19
	Warning	Rainfall Event	06/11/2019	06/12/2019		2			
	Warning	Rainfall Event	06/19/2019	06/22/2019		4			
	Warning	Rainfall Event	07/12/2019	07/12/2019		1			
	Warning	Rainfall Event	07/18/2019	07/19/2019		2			
	Warning	Rainfall Event	07/23/2019	07/24/2019		2			
	Warning	Rainfall Event	08/08/2019	08/08/2019		1			
	Warning	Rainfall Event	08/23/2019	08/24/2019		2			
SCHUYLER HILL CIVIC ASSOCIATION	Warning	Enterococci Exceedance	09/06/2019	09/08/2019	64	3	43	0	43
	Warning	Rainfall Event	05/30/2019	05/31/2019		2			
	Warning	Rainfall Event	06/11/2019	06/12/2019		2			
	Warning	Rainfall Event	06/19/2019	06/22/2019		4			
	Warning	Enterococci Exceedance	06/27/2019	07/17/2019		21			
	Warning	Rainfall Event	07/18/2019	07/19/2019		2			
	Warning	Rainfall Event	07/23/2019	07/24/2019		2			
	Warning	Enterococci Exceedance	07/25/2019	07/31/2019		7			
Warning	Rainfall Event	08/08/2019	08/08/2019	1					
SEAGATE 42nd					107	0	0	0	0
SEAGATE BEACH CLUB					107	0	0	0	0
TRINITY DANISH YOUNG PEOPLE'S SOCIETY	Warning	Rainfall Event	05/30/2019	05/30/2019	59	1	48	0	48
	Warning	Enterococci Exceedance	05/31/2019	06/05/2019		6			
	Warning	Rainfall Event	06/11/2019	06/12/2019		2			
	Warning	Enterococci Exceedance	06/13/2019	06/19/2019		7			
	Warning	Rainfall Event	06/20/2019	06/22/2019		3			
	Warning	Enterococci Exceedance	06/27/2019	07/10/2019		14			
	Warning	Rainfall Event	07/12/2019	07/12/2019		1			
	Warning	Rainfall Event	07/18/2019	07/19/2019		2			
	Warning	Rainfall Event	07/23/2019	07/24/2019		2			
	Warning	Enterococci Exceedance	07/25/2019	07/26/2019		2			
	Warning	Rainfall Event	08/08/2019	08/08/2019		1			
Warning	Enterococci Exceedance	08/22/2019	08/28/2019	7					

Table B-3 Private Beaches Warnings and Closures (continued)

Beach	Types	Reason	Start Date	End Date	Beach Open Days	# of Beach-Specific Days	Notification (Beach Specific Days)		
							Warning	Closure	Total
WEST FORDHAM STREET ASSOCIATION	Warning	Rainfall Event	05/30/2019	05/31/2019	91	2	16	0	16
	Warning	Rainfall Event	06/11/2019	06/12/2019		2			
	Warning	Rainfall Event	06/19/2019	06/22/2019		4			
	Warning	Rainfall Event	07/12/2019	07/12/2019		1			
	Warning	Rainfall Event	07/18/2019	07/19/2019		2			
	Warning	Rainfall Event	07/23/2019	07/24/2019		2			
	Warning	Rainfall Event	08/08/2019	08/08/2019		1			
WHITE CROSS FISHING CLUB	Warning	Rainfall Event	05/30/2019	05/31/2019	66	2	39	2	41
	Warning	Rainfall Event	06/11/2019	06/12/2019		2			
	Warning	Enterococci Exceedance	06/13/2019	06/19/2019		7			
	Warning	Rainfall Event	06/20/2019	06/22/2019		3			
	Warning	Enterococci Exceedance	06/27/2019	07/03/2019		7			
	Warning	Rainfall Event	07/12/2019	07/12/2019		1			
	Warning	Rainfall Event	07/18/2019	07/19/2019		2			
	Warning	Rainfall Event	07/23/2019	07/24/2019		2			
	Closure	Enterococci Exceedance	07/25/2019	07/26/2019		2			
	Warning	Enterococci Exceedance	07/27/2019	07/31/2019		5			
	Warning	Rainfall Event	08/08/2019	08/08/2019		1			
	Warning	Enterococci Exceedance	08/22/2019	08/28/2019		7			
WHITESTONE BOOSTER CIVIC ASSOCIATION	Warning	Enterococci Exceedance	05/25/2019	06/19/2019	37	26	63	7	70
	Closure	Enterococci Exceedance	06/20/2019	06/26/2019		7			
	Warning	Enterococci Exceedance	06/27/2019	07/03/2019		7			
	Warning	Rainfall Event	07/12/2019	07/13/2019		2			
	Warning	Rainfall Event	07/18/2019	07/19/2019		2			
	Warning	Rainfall Event	07/23/2019	07/24/2019		2			
	Warning	Enterococci Exceedance	07/25/2019	07/31/2019		7			
	Warning	Rainfall Event	08/01/2019	08/01/2019		1			
	Warning	Enterococci Exceedance	08/08/2019	08/21/2019		14			
Warning	Rainfall Event	08/23/2019	08/24/2019	2					
Private Beaches TOTAL					1302	517	491	26	517

APPENDIX C: 2019 INSPECTION SUMMARY

Table C-1: Inspection Non-Compliance Summary *

Beach Name	Public Health Hazard Violations**	General Violations***		
	167.19(c)(1)	167.09(b)	167.29(b)(12)	167.09 (13)
DOUGLASTON MANOR ASSOCIATION	√			
LOCUST POINT YACHT CLUB	√	√		
ORCHARD BEACH			√	
CONEY ISLAND BEACH			√	√

* All other beaches were in full compliance of the regulations at the time of inspection.

**** Public Health Hazard Violations:**

§167.19(c)(1) Failure to provide required qualifications and certificates.

***** General Violations:**

§167.09(b) Most recent inspection report is not readily available at facility for inspection.

§167.29(b)(12) Presence of glass container on the beach.

§167.09(13) Any other condition determined to be a Public Health Hazard by the department (e.g. sewage/ wastewater, medical waste, petroleum or other hazardous materials in beach area).

Appendix 11:

- Appendix 11.1: Combined Sewer Overflow Annual Report Checklist
- Appendix 11.2: Table: Upcoming CSO milestones
- Appendix 11.3: Table: Reports to be submitted
- Appendix 11.4: CSO Discharges for CY2018 Checklist

Appendix 11.1: COMBINED SEWER OVERFLOW ANNUAL REPORT CHECKLIST



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
COMBINED SEWER OVERFLOWS ANNUAL REPORT

PART I. GENERAL INSTRUCTIONS: The Combined Sewer Overflows (CSO) Annual Report is consistent with the EPA CSO Long-Term Control Policy requiring permitting authorities to report “Measures of Success” of the policy implementation. Hence, the goal of this report is to obtain information regarding:

1. Compliance with the 15 CSO Best Management Practices;
2. The condition and operation of the combine sewer system (CSS) components. Most importantly, the end-of-pipe measures that show trends in the discharge of CSS flows to the receiving water body, such as reduction of pollutant loadings, the frequency of CSOs, and the duration of CSOs;
3. Receiving water body measures that show trends of the conditions in the water body to which the CSO occurs;
4. Overall status of the CSO LTCP, if applicable;
5. Key CSO control accomplishments and design and construction progress in the previous year

Permittee must complete ALL parts of the form and must attach all supporting documents. Please be aware that this annual report form template highlights the minimum requirement a permittee is expected to submit. Permittee is obligated to complete abatement activities to ensure compliance with the Clean Water Act. This report is also consistent with NYS 6 NYCRR 750-2.1(i).

Special Instructions:

1. Multiple permittees (for instance NYC and Albany Pool) responsible to develop a single LTCP can submit one form and also complete Section D of this form.
2. **ALL SECTIONS OF THIS REPORT MUST BE COMPLETED.**

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below PAGE | 1

Part II - CSO LTCP Control Information

CSO Facility: NY-0026212: Spring Creek; NY-0026182: Paerdegat Basin; NY-0026239: Alley Creek	Flow: MGD
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SECTION A: CSO LTCP GENERAL INFORMATION

LTCP Development/Implementation:

Check all that apply:		<i>Describe other controls currently being used or planned. Also describe how the objectives of the CSO Control Policy have been met.</i>
In Development	<input checked="" type="checkbox"/>	DEP has submitted ten (10) CSO LTCPs to date and nine (9) have been approved by the DEC including the Alley Creek, Bronx River, Coney Island Creek, Gowanus Canal, Hutchinson River, Flushing Bay, Flushing Creek, Newtown Creek, and Westchester Creek CSO LTCPs. The Jamaica Bay LTCP was submitted and the Citywide/Open Waters LTCP is due on May 30, 2020.
Submitted	<input checked="" type="checkbox"/>	
Approved	<input checked="" type="checkbox"/>	
In Progress	<input checked="" type="checkbox"/>	
Completed	<input checked="" type="checkbox"/>	
Not Required	<input type="checkbox"/>	

CSO Controls:

Check all that apply:		<i>Describe other controls currently being used or planned. Also describe how the objectives of the CSO Control Policy have been met under the selected controls</i>
Source Controls	<input checked="" type="checkbox"/>	Completed Projects (1995 - 2019): Four (4) CSO Storage Tanks (118 MG); Pumping Station Expansion (Ave V and Gowanus); Bronx River Nets and Screens; Sewer Improvements (26th Ward and Jamaica); Green Infrastructure; Gowanus Canal Flushing Tunnel; Environmental Dredging (Hendrix Creek and Paerdegat Basin); English Kills Instream Aeration; Bending Weirs Installations (Bergen Basin, Thurston Basin, and Newtown Creek), Flushing Bay Environmental Dredging; Flushing Bay Weir Modifications; and Wet Weather Improvements at Wards island; Phase 1 of Fresh Creek High Level Storm Sewers.
Collection System Controls	<input checked="" type="checkbox"/>	
Storage Technologies	<input checked="" type="checkbox"/>	
Treatment Technologies	<input checked="" type="checkbox"/>	
Floatable Controls	<input checked="" type="checkbox"/>	
Disinfection	<input checked="" type="checkbox"/>	
Type:		Planned Projects: Newtown Creek CSO Storage Tunnel and Borden Avenue Pump Station

Post-Construction Compliance Monitoring (PCCM) Program:

Check all that apply:		<i>Describe PCCM findings, status, updates, and future plan. Attach a separate sheet if necessary and describe if the PCCM confirms that LTCP is meeting the objectives of the CSO Control Policy</i>
In Development	<input checked="" type="checkbox"/>	DEP has been conducting PCCM in various water bodies including Alley Creek, Paerdegat Basin, Gowanus Canal, Flushing Bay, Flushing Creek, Spring Creek, Coney Island Creek, and Newtown Creek as required under its previously approved Waterbody Watershed Facility Plans. PCCM has been completed in Flushing Bay, Flushing Creek, and Spring Creek. A targeted interim PCCM was also completed and approved for Newtown Creek and Coney Island Creek required for approval of CSO LTCP.
Submitted	<input checked="" type="checkbox"/>	
Approved	<input checked="" type="checkbox"/>	
In Progress	<input checked="" type="checkbox"/>	
Completed	<input checked="" type="checkbox"/>	
Not Required	<input type="checkbox"/>	
		Upon completion of proposed LTCP projects DEP will be conducting additional PCCM to assess efficacy of the LTCP recommended controls.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below PAGE | **1**

Part II - CSO LTCP Control Information

SECTION D: Collection System Information

	Baseline	After CSO BMP and/or LTCP Implementation	Current
Percentage of the collection system owned by the permittee that is combined.		60%	60%
Approximate no. of miles of combined sewers in the permittee owned system		3,337	3,337
Number of combined sewer outfalls in the permittee owned system	404	408	408
Average annual no. of CSO events in the permittee owned system	38	TBD	25
Average annual CSO volume discharged from the permittee owned system (MG)	29,566	TBD	16,389
Population served by the permittee's owned system	8,000,000	TBD	8,600,000
Number of satellite system connections	N/A	N/A	N/A

Use the space below to provide any further relevant information on the collection system. This should include a description of any unique ownership, operation and maintenance agreements or further explanation and description of satellite system connections.
(Attach extra sheets, if necessary):

(1) Baseline is taken from the 2007 Waterbody Watershed Facility Plans (WWFP) baseline conditions that was selected as the most appropriate pre CSO BMP Baseline Condition. The baseline condition uses projected 2040 sanitary flows at the time of the WWFP submittals, JFK 1988 annual precipitation data, and 2003 WWTP wet weather operating conditions.
(2) Percentage of system that is combined is based on the 2012 NYCDEP State of the Sewers Report.
(3) Current is based on the 2012 InfoWork Recalibration Report and other refinements made to the InfoWork models as part of the LTCP development in conjunction with 2019 sanitary flows, precipitation data, and WWTP wet weather operations.

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below PAGE | 2

Part II - CSO LTCP Control Information

SECTION F: Use this section to describe how the implementation of the LTCP development and implementation have met the water quality standards of the receiving stream(s) and also objectives of the EPA CSO Control Policy (attach extra sheets as necessary):

DEP has been conducting or completed PCCM in eight (8) waterbodies and have been attaining primary contact criteria for bacteria in both Spring Creek and Paerdegat Basin. DEP also conducts an extensive Harbor Monitoring Program and the Open Waters including vast majority of East River, Hudson River, Harlem River, Inner and Outer Bay, and Jamaica Bay are attaining primary contact standards.

DEP has also submitted ten (10) CSO LTCPs in accordance with EPA CSO Policy and nine (9) of these LTCPs have been approved. Upon implementation of these additional controls DEP anticipates further improvements in the tributaries and embayments but will likely not be able to fully attain primary contact standards due to man-made alterations and poor circulation.

SECTION G: Use the following space to summarize other planned CSO control projects (attach extra sheets as necessary):

Upcoming CSO Milestones:

Design Completion of Phase 3 High Level Storm Sewers
 Completion of Phase 2 and Phase 3 High Level Storm Sewers
 Submit the Open Waters and East River CSO LTCP - March 2020
 Pugsley Creek Parallel Sewer - January 2020
 Construction Completion of 26W Wet Weather Improvements
 Bergen Basin Lateral Sewer

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Keith Mahoney	Official Title: Director of WIP&M	Phone: 718-595-5972
Signature: <i>Keith Mahoney</i>	Date Signed: 4/24/2020	Email: Kmahoney@dep.nyc.gov

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES*Check N/A if not required in the permit, consent order, or LTCP:*

1. CSO Maintenance/Inspection 6 NYCRR 750-2.8(a)(2) (EPA NMC: Proper Operation and Maintenance)	YES	NO	N/A
Is there a written program for the operation, inspection and maintenance of the CSS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Does the program include procedures for ALL outfalls in the permit?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Does the program include procedures for ALL regulators in the permit?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are inspections conducted at least as frequently as required in the permit (weekly or monthly)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are inspections conducted during dry and wet weather?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Do the inspection reports indicate visual inspection, any observed flows, incidence of rain or snowmelt, condition of equipment, and any work required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are inspection reports submitted to the DEC regional office with the monthly operating reports?	<input type="checkbox"/>	<input type="checkbox"/>	
Is the written program sufficiently detailed? Indicate which of the following additional components are included in the plan.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pump Stations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sewer cleaning	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sewer Manholes and Catch Basins	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Outfalls	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CSO Controls	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are there inter-municipal agreements which require inspection and maintenance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are any changes planned in the upcoming year for the agreements to make them more effective?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is the collection system mapped using GIS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entire system, including manholes and catch basins?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In the past year, was significant mapping progress accomplished?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In the upcoming year, is GIS mapping planned?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the collection system monitored using a SCADA system?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the past year, was significant progress accomplished in installing or expanding monitoring with a SCADA system?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In the upcoming year, is installation of a SCADA system planned or being expanded?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the municipality have an asset management plan that includes the collection system?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are funds available to carry out the BMP requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are any major equipment purchases planned or expected in the next five years related to the BMP requirements? If yes, describe below	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is the pump inventory, including spare parts, adequate for the upcoming year?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is sufficient staff training available?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

BMP 2 /CSO Maintenance & Inspections

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

Is funding for training adequate and available?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	YES	NO	N/A	
Is sufficient staff training available?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is funding for training adequate and available?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Have any work efforts or problems in the past year resulted in changes in overflows? If yes, describe below	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Fewer events	<input type="checkbox"/>	<input type="checkbox"/>		
Less volume	<input type="checkbox"/>	<input type="checkbox"/>		
Reduction in floatables, settleable solids or oil and grease discharged	<input type="checkbox"/>	<input type="checkbox"/>		
Reduction in industrial pollutants (chemicals)	<input type="checkbox"/>	<input type="checkbox"/>		
Improvement in water quality of receiving waterbody	<input type="checkbox"/>	<input type="checkbox"/>		
In the past year, was the inspection and maintenance program mostly:				
Reactive (responding to problems)	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>
Proactive (focusing on preventative maintenance to avoid problems)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If the program is mostly reactive, describe below any plans to shift the emphasis to prevention	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)				
<p>Completed Projects (1995 - 2019): Four (4) CSO Storage Tanks (118 MG); Pumping Station Expansion (Ave V and Gowanus); Bronx River Nets and Screens; Sewer Improvements (26th Ward and Jamaica); Green Infrastructure; Gowanus Canal Flushing Tunnel; Environmental Dredging (Hendrix Creek and Paerdegat Basin); English Kills Instream Aeration; Bending Weirs Installations (Bergen Basin, Thurston Basin, and Newtown Creek), Flushing Bay Environmental Dredging; Flushing Bay Weir Modifications; and Wet Weather Improvements at Wards island; Phase 1 of Fresh Creek High Level Storm Sewers.</p> <p>Ongoing Projects: Phase 2 and 3 of Fresh Creek High Level Storm Sewers; Sewer Improvements in Jamaica; and Wet Weather Improvements at 26th Ward WWTPs.</p> <p>Planned Projects: Newtown Creek CSO Storage Tunnel and Borden Avenue Pump Station Expansion; Flushing Bay CSO Storage Tunnel; Disinfection/Floatables at Alley Creek and Flushing Creek; New Outfall and Disinfection at Hutchinson River; Sewer and Regulator Improvements in Bronx River; Flushing Bay CSO Storage Tunnel.</p> <p>See CSO BMP Report for more details.</p>				

PERMITTEE NAME: NYC Department of Environmental Protection SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

2. Maximum Use of Collection System for Storage 6 NYCRR 750-2.7(f), 750-2.8(a)(2), 750-2.8(a)(5) (EPA NMC: Maximum Use of Collection System for Storage)	Yes	No	N/A
Are CSOs minimized, and flow to the treatment plant maximized?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the hydraulic capacity of the system been evaluated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there a continuous program of flushing and cleaning to prevent deposition of solids?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have regulators and weirs been adjusted to maximize storage without causing service backups?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the past year or the upcoming year, have any changes to structures or procedures been made or planned that will improve use of the collection system for storage? Describe below	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tidegates maintenance/repairs/replacement	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FOG program	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Removal of small systems bottlenecks	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sewer cleaning and sediment removal	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Removal of flow obstructions	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Regulator or weir adjustment - list locations below	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-line storage: Inflatable dams or sluice gates	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wet Weather Operating Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do the municipalities within the combined sewer system have a water conservation program for homeowners?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the upcoming year are there any studies, work, or projects planned (other than routine activities) to improve use of collection system for storage? Describe below.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)</p> <p>Work has recently been completed in Newtown Creek and Bergen/Thurston Basin to install 7 bending weirs to convey more wet weather flow to the WWTPs. Weir modifications were also made in the Flushing Bay High Level to maximize conveyance and storage in the collection system. Sewer improvement and regulator modification projects are also underway in Westchester Creek, Jamaica Bay and Tributaries, and planned Bronx River that will also maximize storage and enable more wet weather flow to be conveyed to the treatment plants.</p> <p>See CSO BMP Report for more details.</p>			

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

3. Industrial Pretreatment 6 NYCRR 750-2.7(f) and 2.9(a)(4) (EPA NMC: Review and Modify Pretreatment Requirements) <input type="checkbox"/> N/A	YES	NO	N/A
Has the impact on CSOs from nondomestic users that discharge toxic pollutants been evaluated, and steps taken to minimize such impacts?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there an approved pretreatment or mini-pretreatment program?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If there is no pretreatment or min-pretreatment program, are there any nondomestic users? If No to both of the previous questions, go to BMP 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there an inventory of industrial dischargers? Is the following information included?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volume of discharge?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pollutants in discharge?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are any pollutants classified as "persistent toxics" or bioaccumulative?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the location included on the collection system map?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are there any industrial discharges that could reach CSO outfalls?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, have any industrial dischargers been identified as contributing to a water quality impairment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, does the industry have a holding tank or EQ tank to store wastewater prior to discharge to the collection system?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If yes, does the industry have a written plan to store or hold discharges during rain events?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If yes, has the industry been asked to prepare a written plan to store or hold discharges?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In the past year, have there been negotiations or changes to agreements with industrial dischargers which will potentially reduce impacts during CSO events? Describe below.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
In the upcoming year, are any negotiations or changes to agreements with industrial dischargers planned which will potentially reduce impacts during CSO events? Describe below.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary) See CSO BMP Report for details.			

BMP 3 Industrial Pretreatment

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

4. Maximize Flow to POTW 6 NYCRR 750-2.7(f), 2.8(a)(2), and 2.8(a)(5) (EPA NMC: Maximum Flow to POTW for Treatment) N/A	<input type="checkbox"/>	YES	NO	N/A
In the past year, were the headworks, primary treatment works and disinfection works able to pass the flows specified in the permit for all wet weather flows?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
In the past year, was the secondary treatment works able to treat the flows specified in the permit for all wet weather flows?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
If the answer to either of the above questions was No, has a plan and schedule to accomplish this been submitted to the Department?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
In the past year have there been any physical modifications to the collection system which have allowed more flow to reach the POTW? Describe below.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are any physical modifications planned for the upcoming year?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are there areas of the collection system, including pump stations that need additional study to evaluate capacity, condition, or to determine if illegal connections (i.e. inflow) exist? List below	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
In the past year, have any new problem areas been identified that restrict flow to the plant? List locations below	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
In the upcoming year, are there plans to address hydraulic restrictions or bottlenecks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pipe replacement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Construction of relief sewer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Construction of overflow tank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Pump station improvements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pump replacement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Weir adjustment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Smoke testing, dye testing to identify illicit connections	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)				
<p>Work has recently been completed in Newtown Creek and Bergen/Thurston Basin to install 7 bending weirs to convey more wet weather flow to the WWTPs. Weir modifications were also made in the Flushing Bay High Level to maximize conveyance and storage in the collection system. Sewer improvement and regulator modification projects are also underway in Westchester Creek, Jamaica Bay and Tributaries, and planned Bronx River that will also enable more wet weather flow to be conveyed to the treatment plants. DEP also expanded capacity of certain pump stations as part of the CSO Program including Gowanus Canal and Avenue V; and will be expanding the capacity of the Borden Avenue Pump Station as part of the approved Newtown Creek CSO LTCP.</p>				
<p>DEP also performs routine upgrades to its pipes and pump stations but these aren't linked to any bottlenecks, just state of good repair.</p>				
<p>See CSO BMP Report for more details.</p>				

BMP 4 Maximize Flow to POTW

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

5. Wet Weather Operating Plan (WWOP) 6 NYCRR 750-2.8(a) (EPA NMC: None) <input type="checkbox"/> N/A	YES	NO	N/A
Has a WWOP been developed, specifying procedures for unit operations, to maximize treatment during wet weather events while not diminishing effluent quality or destabilizing treatment upon return to dry weather operation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the past year, did treatment of wet weather flows cause any effluent violations or destabilize treatment upon return to normal service?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the WWOP been developed in accordance with the DEC guidance, "Wet Weather Operating Practices for POTWs with Combined Sewers"? If no, describe changes needed.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the WWOP been submitted to the Regional Office and Bureau of Water Permits (Albany) for review and approval?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If the collection system or plant has been modified or upgraded, has the WWOP been modified to reflect new flow rates or new procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, has the revised plan been submitted to the Regional Office for approval?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the plan identify the maximum flows through preliminary, primary, secondary treatment, tertiary, and disinfection units?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the upcoming year, are changes to the plan expected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)</p> <p>See CSO BMP Report for details.</p>			

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

6. Prohibition of Dry Weather Overflows 6 NYCRR 750-2.7 and 2.8(b)(2) (EPA NMC: Eliminate Dry Weather Overflows) <input type="checkbox"/> N/A	YES	NO	N/A
In the past year, were there any dry weather overflows? If no, skip to BMP 7.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were all dry weather overflows reported in accordance with 6 NYCRR Part 750-2.7 (incident reporting)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If dry weather overflows occurred, indicate which procedures or equipment have been improved or replaced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Schedule for routine inspections	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Management, operation and maintenance program	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Modification of existing or issuance of new inter-municipal agreements	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
FOG program	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Removal of illicit connections	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I/I Control program	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Leaky tidegates	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Adjustment and/or repair of regulators	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pumps	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Auxiliary power	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Elimination of hydraulic bottlenecks	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Adequate dry weather flow capacity at the treatment plant	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other, list below	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Has additional staff training been provided?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Has the likelihood of future dry weather overflows been eliminated? If not, describe additional information below.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)</p> <p>See CSO BMP Report narrative for details.</p>			

BMP 6 Prohibition of Dry Weather Overflows

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

7. Control of Floatables and Settleable Solids 6 NYCRR 750-2.8(a)(4) (EPA NMC: Control of Solid and Floatable Materials in CSOs)	<input type="checkbox"/> N/A	YES	NO	N/A
In the past year, were did any outfalls discharge floating solids, oil and grease, or solids of sewage origin?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have BMPs been implemented to eliminate or minimize the discharge of floatables and settleable solids?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have any of the following measures been implemented (either existing from previous years, in the past year) or will any be implemented in the upcoming year? If significant progress has been made in implementing these, or if significant improvements have occurred, describe below.		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floatables quantification		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Booming and skimming of open waters		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Source controls (street cleaning, public education, household hazardous waste collection, solid waste collection, recycling, and/or composting of lawn/leaf/roadkill deer)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-line netting		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Screens		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Catch basin hoods		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other:		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are any changes needed or planned for the upcoming year? Describe additional information below.		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)				
See CSO BMP Report narrative for details.				

BMP 7 Control of Floatable and Settleable Solids

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

8. Combined Sewer System Replacement 6 NYCRR 750-2.10(i) (EPA NMC: None) <input type="checkbox"/> N/A	YES	NO	N/A
In the past year, were any combined sewers designed or constructed that were not approved by DEC?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, was the combined sewer replaced by separate sanitary and storm sewers to the greatest extent possible?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If yes, were the separate sanitary and storm sewers designed and constructed simultaneously but without interconnections to the maximum extent practicable?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is the combined portion of the collection system completely identified on maps or GIS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there any plans or current projects to separate combined sewers into sanitary and storm sewers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there an approved engineering plan for this project?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the past year, how many areas of combined sewer were separated? acres			
In the upcoming year, how many areas of combined sewer are scheduled to be separated? acres			
Are the sewer replacement projects on schedule? If no, describe below.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Overall, has the implementation of this BMP resulted in fewer overflow events and/or less volume discharged? Describe below.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)</p>			
<p>There are many ongoing sewer separation projects that are ongoing throughout NYC and these are long term projects to improve drainage in certain areas and not typically done for CSO reductions with the exception of a high level storm sewer project underway in the 26th Ward WWTP drainage area.</p>			
<p>See CSO BMP Report for more details.</p>			

BMP 8 Combined Sewer System Replacement

PERMITTEE NAME: _____

SPDES PERMIT No.: NY- see below**PART III - CSO BEST MANAGEMENT PRACTICES**

9. Combined Sewer Extension 6 NYCRR 750-2.10(i) (EPA NMC: None) <input type="checkbox"/> N/A	YES	NO	N/A
In the past year, were any combined sewers extended not using separate sewers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were sanitary and storm sewers extensions designed and constructed simultaneously but without interconnections?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Were any new sources of stormwater added to a separate sewer anywhere in the collection system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If separate sewers were extended from combined sewers, was it demonstrated that the sewerage system had the ability to convey, and the treatment plant had the ability to adequately treat, the increased dry-weather flows?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If determined necessary by the Regional Water Engineer, was an assessment made of the effects of the increased flow of sanitary sewage or industrial waste on the strength of CSOs and their frequency of occurrence, including the impacts upon best usage of the receiving water?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Has a recent combined sewer extension resulted in increased discharge from a CSO?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Has a recent combined sewer extension resulted in increased flow to the POTW? Describe any CSO impacts below.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is any development planned upstream of a combined sewer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, has a sewer extension plan been submitted for review and approval?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If the approval contained a flow credit requiring removal of 1/1, what was the requirement or ratio?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the plan include any flow retention structures?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)			
See CSO BMP Report for more details.			

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

10. Connection Prohibitions 6 NYCRR750-2.9(a)(5) (EPA NMC: None) <input type="checkbox"/> N/A	YES	NO	N/A
In the past year, were any sewer connections approved, in spite of a notice from DEC to prohibit further connections due to documented, recurrent instances of sewage backing up into house(s) or discharges of raw sewage onto the ground surface from surcharging manholes?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are new connections prohibited by the DEC? If no, skip to BMP 11.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is this due to basement backups?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is this due to surcharging manholes?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In the upcoming year, is any work planned to either increase capacity or reduce hydraulic loading? Describe below.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)</p> <p>See CSO BMP Report for more details.</p>			

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

11. Septage and Hauled Waste 6 NYCRR 750-2.7(f) and 2.8(a)(1) (EPA NMC: None) <input type="checkbox"/> N/A	YES	NO	N/A
In the past year, has there been any discharge or release of septage or hauled waste into the collection system upstream of a CSO?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Does the facility have authorization from DEC to accept hauled waste or septage at a location other than the POTW? Describe below.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are any of these locations upstream of a CSO?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are there any agreements with haulers to accept waste at a location other than at the POTW?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In the past year, was any hauled waste or septage accepted at a location other than at the POTW?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
What was the total volume received at locations other than the POTW?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is there a dedicated location to discharge septage at the POTW?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there restrictions on when the plant accepts hauled waste or septage?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have there been any changes to the POTW's policy on septage and hauled waste in the past year? Are any changes needed or planned in the upcoming year?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)</p> <p>See CSO BMP Report for details.</p>			

BMP 11 Septage & Hauled Waste

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

12. Control of Run-off 6 NYCRR750- 2.1(e) (EPA NMC: None) <input type="checkbox"/> N/A	YES	NO	N/A
Is sediment in runoff from construction zones entering catch basins in the combined sewer system?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is there adequate communication between the local municipal department that enforces local stormwater codes and ordinances and the collection system staff regarding stormwater runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Do the municipalities within the combined sewer system have adequate storm water pollution prevention programs to reduce pollutants in stormwater?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Annual household hazardous waste collection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Autumn leaf collection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lawn clippings	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Christmas tree pickup	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roadkill deer composting	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fertilizer and pesticide management	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Enforcement of litter laws	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public education programs on composting	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are any changes needed in the implementation of this BMP to reduce the number of CSO events, the volume discharged, or pollutants in the discharge? If yes, describe below.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<p>DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)</p>			
<p>See CSO BMP Report for details.</p>			

BMP 12 Control of Runoff

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

13. Public Notification 6 NYCRR 750-1.12 (EPA NMC: Public Notification) <input type="checkbox"/> N/A	YES	NO	N/A
Have identification signs been installed and maintained at all CSO outfalls owned and operated by the permittee?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are all signs placed at or near the outfall?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the signs easily readable by the public?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the signs a minimum size of 18" by 24"?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do the signs have white letters on a green background?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do all the signs contain the following information:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPDES permit number	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outfall number	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Permittee name, contact name and phone number at business office or NYSDEC Division of Water regional contact address and phone number	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
For waters that are Class B or higher, is a public notification program implemented to inform citizens of the location and occurrence of CSO events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does this program include a mechanism (public media broadcast, standing beach advisories, newspaper notice, etc) to alert potential users of the receiving waters affected by CSOs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does this program include a system to determine the nature and duration of conditions that are potentially harmful to users of these receiving waters due to CSOs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were there any problems in the past year with missing or damaged signs? Describe below.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there a written public notification plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the plan list all methods used to notify the public of CSO events?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the plan list outfalls where signs are posted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)			
See CSO BMP Report for details.			

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

14. Characterization and Monitoring (6 NYCRR 750-1.11(a), 2.5(a) and 2.7(g)) (EPA NMC: Monitoring)	YES	NO	N/A
If required in the permit, has the combined sewer system been characterized to determine the frequency of overflows, and identify CSO impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Was a baseline sampling program established as part of the LTCP development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are all outfalls monitored during discharge events for:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flow Volume:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Frequency:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Duration:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If all outfalls are not monitored, explain how sufficient data is obtained to document the success of the BMPs.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
List locations of rain gauges or the source of data, below.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Has a Post Construction Modeling and Monitoring plan been submitted to the Department for review and approval?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the Department approved the Post Construction Modeling and Monitoring plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has post construction monitoring and modeling of the receiving water begun? Attach results if this has not already been provided.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>DESCRIBE BELOW HOW THIS BMP IMPLEMENTATION HAS MET THE REQUIREMENTS OF THE SPDES PERMIT, AND THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS. (Attach extra sheet if necessary)</p> <p>DEP has too many regulator structures with very complex geometry and that are tidally influenced that make it not viable to monitor all CSO outfalls. However, DEP does have a SCADA system that helps provide some information pertaining to water levels in the regulator structures that provide some indication on whether or not a CSO is occurring but its not a direct flow measurement and is influenced by other factors such as tidal elevations. DEP has also conducted some very comprehensive and intense interim flow monitoring using specialized vendors at a number of representative locations to calibrate and validate the InfoWork models. These calibrated InfoWork models are then used to estimate this CSO annual volume and frequency for all the CSO outfalls.</p>			

BMP 14 Characterization & Monitoring

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

<i>15. Annual report 6 NYCRR 750-2.1(i)</i> <input type="checkbox"/> N/A (EPA NMC: None; Required in LTCP permit)	YES	NO	N/A
Is this report being used to satisfy BMP 15, Annual report, and the BMP checklist?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is existing documentation of implementation of the BMPs included?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is this annual report submitted by January 31 to the Regional Office and the Bureau of Water Permits (Albany)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Attach any additional information necessary to document the implementation of BMPs in the past year or list plans for the upcoming year.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall, was implementation of the BMPs effective in controlling and minimizing CSO discharges?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, list any improvements needed that have not been described elsewhere	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
See CSO BMP Report for details.			

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

ADDITIONAL INFORMATION:

DESCRIBE BELOW IN DETAIL OTHER "MEASURE OF SUCCESS" ABOVE AND BEYOND THE REQUIREMENTS OF THE SPDES PERMIT. DESCRIBE HOW ADDITIONAL PROJECT(S) HAS HELPED TO MEET THE OBJECTIVES OF THE EPA NINE MINIMUM CONTROLS POLICY. (Attach extra sheet if necessary)

[Empty box for providing additional information]

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below**PART III - CSO BEST MANAGEMENT PRACTICES****SECTION E: GLOSSARY/ACCRONYMS**For the purposes of this annual report, the following terms and acronyms are described below:**Baseline:** Conditions before the development and/or implementation of CSO BMPs and/or LTCP.**Best Management Practice (BMP):** Permit condition used in place of or in conjunction with effluent limitations to prevent or control the discharge of pollutants. May include schedule of activities, prohibition of practices, maintenance procedure, or other management practice. BMPs may include, but are not limited to, treatment requirements, operating procedures, or practices to control plant site runoff, spillage, leaks, sludge or waste disposal, or drainage from raw material storage.**Bypass:** A discharge of wastewater, stormwater, or combination of both, around a treatment unit designed for the removal of pollutants.**Catch Basin:** A chamber usually built at the curblin of a street, which admits surface water for discharge into a storm drain**Collection System:** A wastewater collection system which conveys sanitary wastewaters (domestic, commercial and industrial wastewaters) and stormwater through a single pipe to a publicly owned treatment works for treatment prior to discharge to surface waters.**Combined Sewer:** A sewer designed to carry wastewater and stormwater runoff.**Combined Sewer Overflows (CSO):** A discharge of untreated wastewater from a combined sewer system at a point prior to the headworks of a publicly owned treatment works. CSOs generally occur during wet weather (rainfall or snowmelt). During periods of wet weather, these systems become overloaded, bypass treatment works, and discharge directly to receiving waters.**Combined Sewer System (CSS):** A wastewater collection system that conveys sanitary wastewaters and storm water through a single pipe to a publicly owned treatment works for treatment prior to discharge to surface waters.**Demonstrative Regulatory Approach:** Control approach where a permittee develops and implement an LTCP that meets the state water quality standards. A permittee could develop an LTCP that would provide for attainment of water quality standards, or it could use a total maximum daily load (TMDL) to *demonstrate* that water quality standards can be attained through a combination of CSO controls and other controls.**EPA:** Environmental Protection Agency**EQ Tank:** Equalization Tank often used to smooth hydraulic peaks to a POTW or WWTP.**Fats Oil & Grease (FOG)****Geographic Information System (GIS)** is a computer-based tool for mapping and analyzing features in the environment. GIS support a wide range of activities including water quality modeling, watershed planning, and wetlands permitting and mitigation.**GI:** Green" Infrastructure**Infiltration/Inflow (I/I):** Rainwater, snowmelt, or groundwater flowing into separate sanitary or combined sewers, typically introduced via connected roof downspouts and/or building footing drains or infiltrating into the pipe through cracks in the pipe walls or joints.**This Period:** Period covering the last 12 months from January to December**Last Period:** Activities covering the 12 calendar months prior to the end of the current period

PERMITTEE NAME: NYC Department of Environmental Protection

SPDES PERMIT No.: NY- see below

PART III - CSO BEST MANAGEMENT PRACTICES

Long Term Control Plan (LTCP): An engineering document that characterizes and assesses CSO discharge to a receiving waterbody. The goal of the Plan is to comply with the water quality standards of the receiving waterbody.

Million Gallons per Day (MGD) is a unit of flow commonly used for wastewater discharges. One mgd is equivalent to 1.547 cubic feet per second.

Multiple Permittees here is described as when a group of permittees (e.g. Albany Pool) is responsible to develop a single LTCP or when a single LTCP is required for multiple SPDES permit under a single permittee (e.g. NYC).

Nine Minimum Controls (NMC) provide information on nine minimum technology-based controls that permittees are expected to use to address CSO problems, without extensive engineering studies or significant construction costs, before long-term measures are taken.

NYSDC: New State Department of Environmental Conservation (interchangeably uses as DEC)

Publicly Owned Treatment Works (POTW): Also commonly referred to as "treatment facility, WWTP (Wastewater Treatment Plant)

SPDES Permit: State Pollutant Discharge Elimination System Permit. A permit issued by DEC, authorized under the federal Clean Water Act, to discharge treated wastewater to waters of the United States.

Overflow Events: An event starts once an overflow starts from an outfall, and ends once the overflow stops and the pumpback to treatment facility have ended.

Presumptive Approach: The presumption approach is based on the assumption that an LTCP that meets certain minimum defined performance criteria. The "presumption approach," under which achievement of certain performance criteria (i.e., 4-6 untreated overflow events or 85 percent by volume capture) would be presumed to provide an adequate level of control to attain water quality standards

Raw Sewage: Untreated sanitary sewage.

Sanitary Sewer Overflow (SSO) is an untreated or partially treated sewage discharge from the sanitary sewer collection system.

Separate Sewer (SS): A pipe or conduit intended to convey only sanitary sewage to a wastewater treatment facility.

SPDES: State Pollutant Discharge Elimination System

Sewer System: A public or privately owned wastewater collection facility designed and used to convey or treat sanitary sewage or sanitary sewage and storm water. Sewer system does not include an on-site wastewater treatment system serving one residential unit or duplex.

Supervisory Control and Data Acquisition (SCADA) is a complex computer system that provides automatic control of stormwater storage and overflows at various locations within the sewer system.

Volume Discharged: Total discharge volume for the event (in millions of gallons) from each CSO outfall within this reporting period.

Volume Captured: Total discharge volume for the event (in millions of gallons) that were either captured via an offline treatment facility before discharge or diverted to the WWTP for treatment.

WWOP: Wet Weather Operating Plan

Water Quality Standards (WQS) are regulations that establish the uses for which surface waters of the state are protected and include numeric and narrative criteria to protect those uses.

Appendix 11.2: TABLE - UPCOMING CSO MILESTONES

	Milestone	Item	Action	Projected Completion	Status
1	Jan 2016	JB: Primary Settling Tank Work	Construction NTP	Jan 2016	Certified by DEP 1/27/2016
2	Feb 2016	Early Tippers Report	Submit Report	Feb 2016	Submitted 2/2/2016
3	Mar 2016	JB: 26 th Ward HLSS	Construction NTP – Phase I	Mar 2016	Approved by DEC 3/31/2016
4	<i>Sept 2016</i>	FB: Environmental Dredging of Flushing Bay	NTP	<i>Sept 2016</i>	Bids Received. DEP/DEC agreed to new milestone date Sept 2016
5	Jun 2016	JT: Bending Weirs	Construction Complete	Jun 2016	On schedule
6	Jun 2016	CIC: Coney Island Creek LTCP	Submit Approvable LTCP	Jun 2016	On schedule
7	Jun 2016	FB: Flushing Bay LTCP	Submit Approvable LTCP	Jun 2016	On schedule
8	Dec 2016	FB: Low Lying Sewers/ Raise Weir at BB-R02	Construction Completion	Dec 2016	On schedule
9	Dec 2016	WC: Pugsley Creek Parallel Interceptor	Construction NTP	Dec 2016	Mod Request Submitted to DEC

Appendix 11.3: TABLE - REPORTS TO BE SUBMITTED:

	Milestone	Item	Action	Projected Completion	Status
1	Apr 30, 2016	GI Annual Report	Submit Annual Report	Apr 2016	On schedule
2	Apr 30, 2016	1 st Quarterly Report	Submit Report	April 2016	On schedule
3	May 1, 2016	BMP Report	Submit Report	May 2016	On schedule
4	Jun 30, 2016	GI CSO Performance Metrics	Submit Report	June 2016	On schedule
5	Jun 30, 2016	GI Contingency Plans	Submit Report	June 2016	Mod request
6	Jun 30, 2016	PCM Report	Submit Annual Report	June 2016	On schedule

Appendix 11.4: CSO DISCHARGES FOR CY2019 CHECKLIST

WWTPs	Waterbody	CSO Outfalls	Pre-WWFP			CY2017			CY2018			CY2019 - QPE		
			CSO Events (Count)	Annual CSO Volume (MGY)	Total Annual Flow Treated at WWTP (MGY)	CSO Events (Count)	Annual CSO Volume (MGY)	Total Annual Flow Treated at WWTP (MGY)	CSO Events (Count)	Annual CSO Volume (MGY)	Total Annual Flow Treated at WWTP (MGY)	CSO Events (Count)	Annual CSO Volume (MGY)	Total Annual Flow Treated at WWTP (MGY)
						20								
26th Ward		ALL	23	628		18	481	18,795	24	689	21,208	16	251	20,901
26th Ward	HC	26-003	47	494		17	248		25	348		16	154	
26th Ward	HC	26-004	16	36		33	112	18,795	42	125	21,208	31	80	20,901
26th Ward	HC	26-005	5	98		5	121		6	217		1	16	
Bowery Bay		ALL	33	6,083		24	4,472	39,638	40	4,191	39,404	39	2,649	37,947
Bowery Bay	OW	BB-002	NA	988		52	434		68	379		88	167	
Bowery Bay	OW	BB-003	NA	54		24	78		44	41		48	19	
Bowery Bay	OW	BB-005	NA	1,520		41	763		52	464		66	238	
Bowery Bay	FB	BB-006L	NA	1,434		19	220		35	242		23	110	
Bowery Bay	FB	BB-006U	NA			49	1,191		63	811		73	560	
Bowery Bay	FB	BB-007	NA	3		53	241		65	183		80	142	
Bowery Bay	FB	BB-008	NA	534		51	686		63	1,097		77	867	
Bowery Bay	NC	BB-004	NA	0		2	0		3	0		1	0	
Bowery Bay	NC	BB-041	NA	126		49	79		70	106		93	65	
Bowery Bay	NC	BB-009	35	35		28	54		43	50		41	25	
Bowery Bay	NC	BB-010	16	2		9	1		10	1		4	0	
Bowery Bay	NC	BB-011	24	3		13	2		20	2		14	1	
Bowery Bay	NC	BB-012	NA	0		4	0		5	0		1	0	
Bowery Bay	NC	BB-013	44	39		24	14		44	19		44	9	
Bowery Bay	NC	BB-014	35	3		17	2		42	2		36	1	
Bowery Bay	NC	BB-015	39	3		15	1		43	1		39	1	
Bowery Bay	OW	BB-016	NA	2		15	2		41	2		33	1	
Bowery Bay	OW	BB-017	NA	2		17	2		35	1		32	1	
Bowery Bay	OW	BB-018	NA	2		13	1		29	1		20	0	
Bowery Bay	OW	BB-021	NA	31		27	19		44	21		41	11	
Bowery Bay	OW	BB-022	NA	2		11	1		38	1		31	0	
Bowery Bay	OW	BB-023	NA	27		21	15		43	16		35	7	
Bowery Bay	OW	BB-024	NA	97		22	33	39,638	45	32	39,404	40	15	37,947
Bowery Bay	OW	BB-025	NA	18		21	10		48	9		35	4	
Bowery Bay	NC	BB-026	47	187		34	104		50	134		50	80	
Bowery Bay	OW	BB-027	NA	8		18	6		41	5		31	2	
Bowery Bay	OW	BB-028	NA	456		31	168		48	182		53	96	
Bowery Bay	OW	BB-029	NA	180		22	99		47	86		40	36	
Bowery Bay	OW	BB-030	NA	19		41	23		63	29		86	18	
Bowery Bay	OW	BB-031	NA	22		15	3		45	4		46	2	
Bowery Bay	OW	BB-032	NA	3		13	2		17	2		13	1	
Bowery Bay	OW	BB-033	NA	9		23	6		41	5		31	3	
Bowery Bay	OW	BB-034	NA	223		54	178		73	227		100	151	
Bowery Bay	OW	BB-035	NA	4		24	4		48	4		46	2	
Bowery Bay	OW	BB-036	NA	10		23	9		47	8		39	4	
Bowery Bay	OW	BB-037	NA	1		9	1		12	1		4	0	
Bowery Bay	OW	BB-038	NA	10					0	0		0	0	
Bowery Bay	NC	BB-040	21	1		17	2		27	2		22	1	
Bowery Bay	NC	BB-042	29	2		20	2		39	2		37	1	
Bowery Bay	OW	BB-043	40	14		25	9		43	10		41	6	
Bowery Bay	OW	BB-045	NA	0		0	0		0	0		0	0	
Bowery Bay	OW	BB-046	NA	8		25	6		48	7		40	4	
Bowery Bay	OW	BB-047	NA	2		18	2		31	1		21	1	
Bowery Bay	NC	BB-049	NA											
Bowery Bay	NC	BB-053	NA											
Coney Island		ALL	61	2,749		4	464	34,396	17	89	37,450	10	336	43,055
Coney Island	PB	CI-004	61	1,210		4	30							
Coney Island	PB	CI-005	61	973		5	41							
Coney Island	PB	CI-006	NA	566		5	22							
Coney Island	PB	Tank	NA			11	372		15	84		17	233	
Coney Island	PB	Tank	NA			5	93	34,396	18	5	37,450	2	103	43,055
Coney Island	PB	Tank	NA			11	372		15	84		17	233	
Hunts Point		ALL	29	4,199		22	2,154	49,410	41	3,382	53,410	33	2,344	37,615
Hunts Point	OW	HP-002	NA	119		34	42		62	52		56	26	
Hunts Point	OW	HP-003	NA	359		35	167		56	180		40	107	
Hunts Point	BR	HP-004	56	100		18	23		32	24		23	11	
Hunts Point	HR	HP-005	NA	0		0	0		6	0		0	0	
Hunts Point	NR	HP-006	NA	0		0	0		0	0		0	0	
Hunts Point	BR	HP-007	21	88		10	36		20	43		10	17	
Hunts Point	BR	HP-008	17	4		3	1		3	3		1	0	
Hunts Point	BR	HP-009	51	814		34	288		56	418		77	682	
Hunts Point	BR	HP-010	1	1		0	0		2	2		0	0	
Hunts Point	OW	HP-011	NA	828		49	211		82	481		62	235	
Hunts Point	WC	HP-012	NA	27		11	32		13	30		7	14	
Hunts Point	WC	HP-013	54	144		20	138		45	237		28	98	
Hunts Point	WC	HP-014	NA	516		44	404		57	563		50	346	
Hunts Point	WC	HP-015	NA	0		3	0		3	1		1	0	
Hunts Point	WC	HP-016	24	72		23	55		54	78		43	41	
Hunts Point	OW	HP-017	NA	35		32	37		56	70		47	40	

Hunts Point	OW	HP-018	NA	2	17	3		49	4	30	2	37614.513 97		
Hunts Point	OW	HP-019	NA	18	26	12		56	19	46	10			
Hunts Point	OW	HP-020	NA	0	0	0	49,410	19	0	15	0			
Hunts Point	OW	HP-021	NA	298	40	202		69	407	59	269			
Hunts Point	OW	HP-022	NA	31	24	25		53	45	41	24			
Hunts Point	HR	HP-023	NA	115	42	140		63	215	57	138			
Hunts Point	HR	HP-024	NA	254	33	163		57	229	51	132			
Hunts Point	OW	HP-025	NA	130	46	78		82	142	73	89			
Hunts Point	OW	HP-026	NA	79	23	57		48	85	31	36			
Hunts Point	OW	HP-027	NA	0										
Hunts Point	OW	HP-028	NA	0										
Hunts Point	OW	HP-029	NA	4	24	9		49	15	33	8			
Hunts Point	OW	HP-030	NA	0										
Hunts Point	HR	HP-031	NA	83	32	16		58	22	46	14			
Hunts Point	OW	HP-032	NA	0										
Hunts Point	WC	HP-033	5	78	6	16		5	16	2	4			
Hunts Point	WC	HP-034	NA	0										
Hunts Point	OW	HP-036	NA	0										
Hunts Point	OW	HP-037	NA	0										
Hunts Point	OW	HP-038	NA	0										
Hunts Point	OW	HP-039	NA	0										
Jamaica	ALL		55	1,557	28	676	28,467	52	1,324	29,975	45		849	27,312
Jamaica	BB	JA-003	47	319	51	524		60	690		65		478	
Jamaica	BB	JA-003A	57	300				46	194		36		108	
Jamaica	TB	JA-005	55	908	11	3	28,467	37	270	29,975	30		143	27,312
Jamaica	TB	JA-007						86	168		83		119	
Jamaica	TB	JA-006	61	30	23	149		32	3		13		1	
Newtown Creek	ALL		49	2,974	14	2,674	75,212	19	3,670	85,240	13		1,863	81,092
Newtown Creek	NC	NC-002	NA											
Newtown Creek	OW	NC-003	NA	1	10	1		8	1		3		0	
Newtown Creek	OW	NC-004	NA	18	30	16		49	21		44		10	
Newtown Creek	OW	NC-005	NA	79	28	37		49	47		40		23	
Newtown Creek	OW	NC-006	NA	104	14	76		21	98		17		35	
Newtown Creek	OW	NC-007	NA	9	22	8		40	9		30	4		
Newtown Creek	OW	NC-008	NA	27	23	20		40	25		31	11		
Newtown Creek	OW	NC-009	NA	0										
Newtown Creek	OW	NC-010	NA	0	0	0		0	0		0	0		
Newtown Creek	OW	NC-011	NA	0	0	0		0	0		0	0		
Newtown Creek	OW	NC-012	NA	27	20	37		33	41		24	15		
Newtown Creek	OW	NC-013	NA	42	21	48		41	77		30	28		
Newtown Creek	OW	NC-014	NA	337	22	615		46	952		33	462		
Newtown Creek	NC	NC-015	33	308	25	265		41	314		30	143		
Newtown Creek	OW	NC-016	NA	4	8	2		9	2		5	0		
Newtown Creek	OW	NC-017	NA	0	8	1		8	1		2	0		
Newtown Creek	OW	NC-018	NA	14	24	10		46	13		38	7		
Newtown Creek	NC	NC-019	NA	0	19	3		22	3		15	1		
Newtown Creek	OW	NC-020	NA	4	16	7		14	7		7	2		
Newtown Creek	NC	NC-021	NA	0	2	0		2	1		0	0		
Newtown Creek	NC	NC-022	42	8	21	7		41	8		25	3		
Newtown Creek	NC	NC-023	NA	0	8	1		8	1		2	0		
Newtown Creek	OW	NC-024	NA	0	0	0		0	0		0	0		
Newtown Creek	OW	NC-025	NA	1	10	1		8	1		3	0		
Newtown Creek	OW	NC-026	NA	0	8	0		7	0		2	0		
Newtown Creek	OW	NC-027	NA	24	23	12		41	15		29	5		
Newtown Creek	OW	NC-028	NA	0	0	0		0	0					
Newtown Creek	NC	NC-029	48	18	37	20		56	28		54	15		
Newtown Creek	OW	NC-030	NA	0	7	0		9	0		3	0		
Newtown Creek	OW	NC-031	NA	1	21	3		25	3		18	1		
Newtown Creek	OW	NC-032	NA	6	8	4		7	3		3	1		
Newtown Creek	OW	NC-033	NA	1	8	1		7	1		2	0		
Newtown Creek	OW	NC-034	NA	0	9	1		8	2		2	0		
Newtown Creek	OW	NC-035	NA	5	14	3		13	2		7	1		
Newtown Creek	OW	NC-036	NA	81	15	61		15	63		7	22		
Newtown Creek	OW	NC-037	NA	0	4	1		6	3		1	0		
Newtown Creek	OW	NC-038	NA	9	15	8		15	8		9	3		
Newtown Creek	OW	NC-039	NA	5	4	1		6	0		3	0		
Newtown Creek	OW	NC-040	NA	1	0	0		0	0		0	0		
Newtown Creek	OW	NC-041	NA	45	15	20		17	21		8	7		
Newtown Creek	OW	NC-042	NA	0	5	1		6	2		2	0		
Newtown Creek	OW	NC-043	NA	4	13	3	75,212	12	3	85,240	8	1	81,092	
Newtown Creek	OW	NC-044	NA	1	1	0		1	0		0	0		
Newtown Creek	OW	NC-045	NA	34	15	17		16	18		9	6		
Newtown Creek	OW	NC-046	NA	13	0	0		33	11		20	5		
Newtown Creek	OW	NC-047	NA	1	10	2		8	2		0	0		
Newtown Creek	OW	NC-048	NA	24	14	6		16	6		11	2		
Newtown Creek	OW	NC-049	NA	26	14	17		15	18		10	5		
Newtown Creek	OW	NC-050	NA	53	15	26		23	29		18	11		
Newtown Creek	OW	NC-051	NA	0	5	0		8	1		2	0		
Newtown Creek	OW	NC-052	NA	41	14	24		23	26		17	12		
Newtown Creek	OW	NC-053	NA	3	10	8		8	10		2	2		
Newtown Creek	OW	NC-054	NA	3	8	2		9	5		3	1		
Newtown Creek	OW	NC-055	NA	2	13	1		15	1		7	0		
Newtown Creek	OW	NC-056	NA	72	19	19		32	25		27	13		
Newtown Creek	OW	NC-057	NA	11	12	4		11	5		7	1		
Newtown Creek	OW	NC-058	NA	37	16	15		23	16		18	6		
Newtown Creek	OW	NC-059	NA	44	14	8		18	8		15	3		

Newtown Creek	OW	NC-060	NA	4	3	0	6	0	2	0	
Newtown Creek	OW	NC-061	NA	2	14	2	14	2	13	1	
Newtown Creek	OW	NC-062	NA	17	27	11	50	14	39	8	
Newtown Creek	OW	NC-063	NA	45	14	11	11	12	7	4	
Newtown Creek	OW	NC-064	NA	9	15	7	15	7	8	2	
Newtown Creek	OW	NC-065	NA	0	4	0	4	1	2	0	
Newtown Creek	OW	NC-066	NA	38	10	4	10	4	4	1	
Newtown Creek	OW	NC-067	NA	6	8	3	10	4	4	1	
Newtown Creek	OW	NC-068	NA	0	3	0	3	0	0	0	
Newtown Creek	OW	NC-069	NA	8	10	6	10	7	4	2	
Newtown Creek	OW	NC-070	NA	1	18	3	22	4	13	2	
Newtown Creek	OW	NC-071	NA	10	18	2	20	5	12	2	
Newtown Creek	OW	NC-072	NA	9	14	6	14	7	8	3	
Newtown Creek	OW	NC-073	NA	29	18	23	22	24	19	10	
Newtown Creek	OW	NC-074	NA	13	14	8	14	9	8	3	
Newtown Creek	OW	NC-075	NA	81	19	66	28	69	16	28	
Newtown Creek	OW	NC-076	NA	292	35	180	53	240	47	122	
Newtown Creek	NC	NC-077	49	262	55	468	67	698	69	478	
Newtown Creek	OW	NC-078	NA	11	3	1	4	1	1	0	
Newtown Creek	OW	NC-079	NA	1	13	1	19	1	12	1	
Newtown Creek	OW	NC-080	NA	2	10	1	17	1	6	0	
Newtown Creek	OW	NC-081	NA	2	14	1	20	1	12	0	
Newtown Creek	OW	NC-082	NA	0	10	1	8	1	3	0	
Newtown Creek	NC	NC-083	71	586	43	426	61	596	63	324	
Newtown Creek	OW	NC-087	NA	1	10	3	6	4	2	1	
North River	ALL			806	13	569	14	593	8	179	40,204
North River	OW	NR-002	NA	54	42	27	56	42	47	19	
North River	OW	NR-003	NA	9	9	6	11	8	6	1	
North River	OW	NR-004	NA	7	12	8	12	10	6	1	
North River	OW	NR-005	NA	0	1	0	1	0	0	0	
North River	OW	NR-006	NA	76	16	38	30	46	15	15	
North River	OW	NR-007	NA	2	9	1	9	2	5	0	
North River	OW	NR-008	NA	27	31	17	52	26	37	13	
North River	OW	NR-009	NA	3	17	1	27	2	12	1	
North River	OW	NR-010	NA	14	15	10	17	10	11	3	
North River	OW	NR-011	NA	3	8	2	7	2	4	0	
North River	OW	NR-012	NA	2	6	1	6	1	4	0	
North River	OW	NR-013	NA	1	6	0	5	0	4	0	
North River	OW	NR-014	NA	3	8	1	8	1	5	0	
North River	OW	NR-016	NA	3	7	1	7	1	4	0	
North River	OW	NR-017	NA	67	16	22	30	30	13	12	
North River	OW	NR-018	NA	0	2	0	3	0	0	0	
North River	OW	NR-019	NA	5	15	4	20	4	10	1	
North River	OW	NR-020	NA	18	18	12	31	14	16	5	
North River	OW	NR-021	NA	6	15	3	14	4	8	1	
North River	OW	NR-022	NA	16	9	5	13	7	7	3	
North River	OW	NR-023	NA	41	8	19	12	24	7	7	
North River	OW	NR-024	NA	18	12	8	12	10	7	3	
North River	OW	NR-025	NA	19	10	8	12	9	7	3	
North River	OW	NR-026	NA	26	18	14	31	18	15	6	
North River	OW	NR-027	NA	72	83	92	12	79	7	28	
North River	OW	NR-028	NA	13	6	2	6	2	5	1	40,204
North River	OW	NR-029	NA	7	11	3	12	4	7	1	
North River	OW	NR-030	NA	3	6	1	5	1	4	0	
North River	OW	NR-031	NA	4	8	2	10	2	6	1	
North River	OW	NR-032	NA	2	5	1	4	1	3	0	
North River	OW	NR-033	NA	24	9	32	12	39	6	6	
North River	OW	NR-034	NA	8	14	4	17	6	8	2	
North River	OW	NR-035	NA	10	15	6	21	7	11	2	
North River	OW	NR-036	NA	20	12	10	17	12	8	4	
North River	OW	NR-037	NA	1	5	3	4	5	0	0	
North River	OW	NR-038	NA	6	9	9	10	13	4	2	
North River	OW	NR-039	NA	0	0	0	1	0	0	0	
North River	OW	NR-040	NA	33	9	21	12	26	6	5	
North River	OW	NR-041	NA	3	10	2	10	3	4	0	
North River	OW	NR-042	NA	4	14	3	12	4	7	1	
North River	OW	NR-043	NA	132	24	129	27	70	14	19	
North River	OW	NR-044	NA	2	12	2	12	2	5	0	
North River	OW	NR-045	NA	17	14	16	14	15	9	4	
North River	OW	NR-046	NA	8	14	10	16	13	9	3	
North River	OW	NR-047	NA	0	4	0	3	0	0	0	
North River	OW	NR-048	NA	4	13	3	16	4	8	1	
North River	OW	NR-049	NA	14	26	10	24	11	12	3	
North River	OW	NR-050	NA	0	5	0	3	0	0	0	
North River	OW	NR-051	NA	0	0	0					
North River	OW	NR-052	NA	2	6	1	4	1	2	0	
North River	OW	NR-055	NA	1	8	1	6	1	5	0	
North River	OW	NR-056	NA	0	0	0					
Owls Head	OW	ALL	30	2,791	26	2,455	44	3,303	48	3,279	40,651
Owls Head	OW	OH-002	NA	413	37	461	45	471	50	427	
Owls Head	OW	OH-003	NA	397	42	300	86	422	111	408	
Owls Head	OW	OH-004	NA	1	16	10	21	6	19	5	
Owls Head	GC	OH-005	5	1	3	1	4	0	3	2	
Owls Head	GC	OH-006	33	13	24	19	45	26	48	22	
Owls Head	GC	OH-007	47	69	42	61	59	83	66	81	
Owls Head	OW	OH-015	NA	1,140	23	989	85	1,408	90	1,453	

Wards Island	OW	WI-069	NA	0	51	861	5	0	0	0
Wards Island	OW	WI-070	NA	11	48	147	43	14	35	5
Wards Island	OW	WI-071	NA	29	32	51	44	29	31	10
Wards Island	OW	WI-072	NA	46	19	10	44	53	36	20
Wards Island	OW	WI-073	NA	11	27	35	42	3	16	0
Wards Island	OW	WI-074	NA	0						
Wards Island	OW	WI-075	NA	123	30	22	46	121	43	44
Wards Island	OW	WI-076	NA	43	27	13	56	72	58	55
Wards Island	OW	WI-077	NA	77	3	0	58	100	57	70
Wards Island	OW	WI-078	NA	0	26	16	55	41	56	29
Wards Island	OW	WI-079	NA	0						

Average			38	73	20	52	36,168	31	63	39,253	25	43	37,654
Total			1,692	29,564	7,652	19,626	434,014	11,889	24,316	471,035	9,803	16,389	451,853

Appendix 12: NON-KEY REGULATORS AND TELEMETERED REGULATOR CSO MONITORING

Appendix 12.1: NON-KEY REGULATOR(S) WITH CSO MONITORING EQUIPMENT IDENTIFICATION PROGRAM REPORTING

Regulator BBH-03	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-19	1a	1/5/19 2:30 AM	1/5/19 3:30 AM	1.00	86	254	300				
	1b	1/5/19 4:45 AM	1/5/19 5:30 AM	0.75	223	225	300				
	1c	1/5/19 10:15 AM	1/5/19 12:45 PM	2.50	136	298	300	N/A	N/A	N/A	N/A
	1d	1/5/19 3:30 PM	1/5/19 4:15 PM	0.75	202	209	300				
	2	1/9/19 12:00 AM	1/9/19 1:45 AM	1.75	106	299	300	N/A	N/A	N/A	N/A
	3	1/19/19 10:00 PM	1/20/19 12:15 AM	2.25	113	298	300	N/A	N/A	N/A	N/A
	4a	1/24/19 7:00 AM	1/24/19 8:30 AM	1.50	57	243	300	1/24/2019 10:45	1/24/2019 18:00	370	319
4b	1/24/19 8:45 AM	1/24/19 10:30 AM	1.75	240	296	300					
5	1/29/19 7:15 PM	1/29/19 8:45 PM	1.50	109	281	300	N/A	N/A	N/A	N/A	
Feb-19	1	2/6/19 9:30 PM	2/6/19 9:45 PM	0.25	131	134	300	2/6/2019 10:00 PM	2/7/2019 1:45 AM	306	301
	2	2/7/19 2:00 AM	2/7/19 2:15 AM	0.25	294	294	300	N/A	N/A	N/A	N/A
	3	2/8/19 1:30 AM	2/8/19 2:15 AM	0.75	92	205	300	2/8/2019 2:30 AM	2/8/2019 3:30 AM	310	306
	4	2/12/19 9:15 PM	2/12/19 11:15 PM	2.00	183	299	300	2/12/2019 11:30 PM	2/13/2019 2:15 AM	305	302
	5	2/13/19 10:00 AM	2/13/19 12:00 PM	2.00	189	257	300	N/A	N/A	N/A	N/A
	6	2/18/19 5:45 AM	2/18/19 6:15 AM	0.50	57	61	300	N/A	N/A	N/A	N/A
	7	2/20/19 11:45 PM	2/21/19 12:15 AM	0.50	209	293	300	2/21/2019 12:30 AM	2/21/2019 3:45 AM	311	304
	8	2/21/19 9:15 AM	2/21/19 11:00 AM	1.75	154	268	300	N/A	N/A	N/A	N/A
9a	2/24/19 4:15 AM	2/24/19 5:15 AM	1.00	128	223	300					
9b	2/24/19 5:45 AM	2/24/19 6:00 AM	0.25	266	283	300	2/24/2019 6:15 AM	2/24/2019 10:15 AM	333	306	
Mar-19	1	3/3/19 7:30 PM	3/3/19 8:15 PM	0.75	142	173	300	N/A	N/A	N/A	N/A
	2	3/4/19 11:15 AM	3/4/19 4:45 PM	5.50	207	285	300	N/A	N/A	N/A	N/A
	3	3/10/19 3:15 AM	3/10/19 7:30 AM	2.25	69	299	300	3/10/2019 7:45 AM	3/10/2019 1:00 PM	340	316
	4	3/10/19 1:15 PM	3/10/19 2:00 PM	0.75	299	299	300	N/A	N/A	N/A	N/A
	5	3/15/19 9:30 PM	3/15/19 10:15 PM	0.75	105	239	300	3/15/2019 10:30 PM	3/15/2019 11:15 PM	341	324
	6a	3/21/19 10:45 AM	3/21/19 11:15 AM	0.50	147	167	300				
6b	3/21/19 5:00 PM	3/21/19 5:45 PM	0.75	182	200	300					
6c	3/21/19 6:15 PM	3/21/19 7:45 PM	1.50	220	268	300					
6d	3/21/19 9:45 PM	3/21/19 11:30 PM	1.75	224	288	300	3/21/2019 11:45 PM	3/22/2019 9:30 AM	349	311	
Apr-19	1	4/6/19 12:30 AM	4/6/19 1:00 AM	0.50	136	142	284	N/A	N/A	N/A	N/A
	2	4/8/19 2:45 AM	4/8/19 3:30 AM	0.75	78	192	284	4/8/2019 3:45 AM	4/8/2019 4:00 AM	297	293
	3	4/12/19 10:30 PM	4/12/19 11:00 PM	0.50	214	276	284	4/12/2019 11:15 PM	4/13/2019 1:45 AM	318	304
	4	4/13/19 5:45 AM	4/13/19 6:30 AM	0.75	122	239	284	4/13/2019 6:45 AM	4/13/2019 7:30 AM	314	309
	5a	4/15/19 5:00 AM	4/15/19 5:45 AM	0.75	93	242	284	4/15/2019 6:00 AM	4/15/2019 8:45 AM	356	312
	5b	4/15/19 11:30 AM	4/15/19 12:30 PM	1.00	222	281	284	4/15/2019 12:45 PM	4/15/2019 1:30 PM	317	307
	6	4/19/19 9:30 PM	4/19/19 10:00 PM	0.50	103	113	284	N/A	N/A	N/A	N/A
	7a	4/20/19 2:00 AM	4/20/19 2:45 AM	0.75	104	117	284				
	7b	4/20/19 6:30 AM	4/20/19 7:00 AM	0.50	121	121	284	N/A	N/A	N/A	N/A
	7c	4/20/19 7:15 AM	4/20/19 8:15 AM	1.00	121	230	284				
	8a	4/22/19 2:15 PM	4/22/19 2:45 PM	0.50	114	118	284				
	8b	4/22/19 4:00 PM	4/22/19 6:00 PM	2.00	227	276	284	N/A	N/A	N/A	N/A
	8c	4/22/19 6:15 PM	4/22/19 7:00 PM	0.75	277	278	284				
	9	4/24/19 12:30 AM	4/24/19 1:00 AM	0.50	116	117	284	N/A	N/A	N/A	N/A
	10a	4/26/19 5:00 AM	4/26/19 5:45 AM	0.75	70	209	284	4/26/2019 6:00 AM	4/26/2019 6:15 AM	288	286
10b	4/26/19 1:00 PM	4/26/19 1:30 PM	0.50	107	218	284	4/26/2019 1:45 PM	4/26/2019 4:00 PM	331	300	
10c	4/26/19 7:45 PM	4/26/19 9:00 PM	1.25	133	225	284	4/26/2019 9:15 PM	4/26/2019 10:00 PM	296	291	
11	4/27/19 3:15 AM	4/27/19 4:15 AM	1.00	126	156	284	N/A	N/A	N/A	N/A	

Regulator BBH-03	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
May-19	1	5/4/19 12:45 AM	5/4/19 1:15 AM	0.50	97	102	300	N/A	N/A	N/A	N/A
	2a	5/5/19 2:45 AM	5/5/19 3:30 AM	0.75	91	101	300	N/A	N/A	N/A	N/A
	2b	5/5/19 4:00 AM	5/5/19 4:30 AM	0.50	150	292	300	5/5/2019 4:45 AM	5/5/2019 10:45 AM	N/A	N/A
	2c	5/5/19 1:30 PM	5/5/19 2:45 PM	1.25	264	264	300	N/A	N/A	N/A	N/A
	2d	5/5/19 7:15 PM	5/5/19 7:45 PM	0.50	151	221	300	5/5/2019 8:00 PM	5/6/2019 12:30 AM	N/A	N/A
	3a	5/12/19 3:30 AM	5/12/19 7:00 AM	3.50	87	297	300	5/12/2019 12:30 PM	5/12/2019 6:45 PM	361	319
	3b	5/12/19 7:45 AM	5/12/19 8:45 AM	1.00	290	290	300				
	3c	5/12/19 9:45 AM	5/12/19 10:45 AM	1.00	276	276	300				
	3d	5/12/19 11:15 AM	5/12/19 12:15 PM	1.00	276	297	300				
	4a	5/13/19 2:00 PM	5/13/19 3:45 PM	1.75	178	287	300	5/13/2019 5:45 PM	5/13/2019 7:45 PM	311	308
	4b	5/13/19 4:45 PM	5/13/19 5:30 PM	0.75	294	297	300				
	5	5/14/19 7:45 PM	5/14/19 10:30 PM	2.75	111	298	300	N/A	N/A	N/A	N/A
	6a	5/23/19 6:15 AM	5/23/19 7:30 AM	1.25	54	197	300	N/A	N/A	N/A	N/A
	6b	5/23/19 8:00 AM	5/23/19 8:45 AM	0.75	236	278	300				
	6c	5/23/19 4:30 PM	5/23/19 5:30 PM	1.00	96	240	300				
	7a	5/26/19 6:15 PM	5/26/19 6:45 PM	0.50	158	258	300	5/26/2019 7:00 PM	5/26/2019 7:15 PM	308	305
	7b	5/26/19 7:30 PM	5/26/19 8:00 PM	0.50	294	294	300	5/26/2019 7:00 PM	5/26/2019 7:15 PM		
	8	5/28/19 9:00 PM	5/28/19 9:45 PM	0.75	109	134	300	N/A	N/A	N/A	N/A
	9	5/29/19 6:15 PM	5/29/19 7:15 PM	1.00	107	262	300	5/29/2019 7:30 PM	5/29/2019 9:45 PM	329	317
	10	5/30/19 6:15 PM	5/30/19 7:00 PM	0.75	104	219	300	5/30/2019 7:15 PM	5/30/2019 9:30 PM	323	314
Jun-19	1	6/2/19 10:30 PM	6/2/19 10:45 PM	0.25	168	217	284	6/2/2019 11:00 PM	6/2/2019 11:15 PM	346	313
	2a	6/10/19 12:30 PM	6/10/19 1:15 PM	0.75	105	177	284	6/10/2019 2:30 PM	6/10/2019 5:30 PM	315	303
	2b	6/10/19 1:45 PM	6/10/19 2:15 PM	0.50	225	269	284				
	2c	6/10/19 5:45 PM	6/10/19 6:00 PM	0.25	262	262	284				
	3a	6/11/19 6:00 AM	6/11/19 6:30 AM	0.50	92	264	284	6/11/2019 6:45 AM	6/11/2019 7:45 AM	299	295
	3b	6/11/19 8:00 AM	6/11/19 8:15 AM	0.25	262	265	284				
	4a	6/13/19 9:00 AM	6/13/19 10:00 AM	1.00	106	267	284	6/13/2019 10:15 AM	6/13/2019 1:15 PM		
	4b	6/13/19 10:00 PM	6/13/19 11:30 PM	1.50	148	281	284	N/A	N/A	N/A	N/A
	5a	6/18/19 7:45 AM	6/18/19 8:45 AM	1.00	73	169	284	N/A	N/A	N/A	N/A
	5b	6/18/19 1:15 PM	6/18/19 2:00 PM	0.75	131	225	284	6/18/2019 2:15 PM	6/18/2019 4:15 PM	318	309
	5c	6/18/19 6:15 PM	6/18/19 6:45 PM	0.50	267	267	284	6/18/2019 7:00 PM	6/18/2019 7:30 PM	337	308
	6	6/20/19 4:15 PM	6/20/19 4:30 PM	0.25	116	202	284	6/20/2019 4:45 PM	6/20/2019 7:45 PM	315	305
	7	6/21/19 6:00 AM	6/21/19 6:15 AM	0.25	92	161	284	6/21/2019 6:30 AM	6/21/2019 7:45 AM	325	310
8	6/25/19 7:30 AM	6/25/19 8:00 AM	0.50	59	200	284	6/25/2019 8:15 AM	6/25/2019 9:30 AM	369	311	
9	6/30/19 3:30 PM	6/30/19 4:00 PM	0.50	136	181	284	N/A	N/A	N/A	N/A	
Jul-19	1a	7/11/19 4:15 PM	7/11/19 5:00 PM	0.75	108	141	300	7/11/2019 9:30 PM	7/12/2019 12:15 AM	317	311
	1b	7/11/19 8:00 PM	7/11/19 9:15 PM	1.25	143	265	300				
	2	7/17/19 8:30 PM	7/17/19 8:45 PM	0.25	139	241	300	7/17/2019 9:00 PM	7/18/2019 1:30 AM	311	302
	3	7/18/19 9:00 AM	7/18/19 10:45 AM	1.75	121	294	300	7/18/2019 11:00 AM	7/18/2019 11:45 AM	308	304
	4	7/22/19 6:00 PM	7/22/19 9:30 PM	3.50	110	299	300	N/A	N/A	N/A	N/A
	5	7/23/19 4:30 AM	7/23/19 6:00 AM	1.50	148	206	300	N/A	N/A	N/A	N/A
	6	7/23/19 6:30 AM	7/23/19 6:45 AM	0.25	217	246	300	7/23/2019 7:00 AM	7/23/2019 8:45 AM	322	314
7	7/31/19 5:00 PM	7/31/19 5:15 PM	0.25	144	224	300	7/31/2019 5:30 PM	7/31/2019 6:15 PM	314	310	
Aug-19	1	8/4/19 12:30 AM	8/4/19 1:00 AM	0.50	113	227	284	N/A	N/A	N/A	N/A
	2	8/7/19 6:15 PM	8/7/19 6:45 PM	0.50	126	269	284	8/7/2019 7:00 PM	8/7/2019 10:00 PM	340	306
	3	8/8/19 8:30 PM	8/8/19 9:15 PM	0.75	111	247	284	N/A	N/A	N/A	N/A
	4a	8/18/19 1:30 AM	8/18/19 2:00 AM	0.50	80	111	284	N/A	N/A	N/A	N/A
	4b	8/18/19 6:30 PM	8/18/19 6:45 PM	0.25	119	207	284	8/18/2019 7:00 PM	8/18/2019 7:45 PM	300	296
	5	8/21/19 6:00 PM	8/21/19 7:15 PM	1.25	122	251	284	N/A	N/A	N/A	N/A
	6	8/22/19 9:00 PM	8/22/19 9:15 PM	0.25	136	174	284	8/22/2019 9:30 PM	8/23/2019 2:45 AM	320	306
7	8/28/19 1:15 PM	8/28/19 1:45 PM	0.50	112	188	284	N/A	N/A	N/A	N/A	

Regulator BBH-03	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Sep-19	1	9/2/19 12:00 PM	9/2/19 1:15 PM	1.25	112	279	284	9/2/2019 1:30 PM	9/2/2019 3:00 PM	342	293
Oct-19	1	10/2/19 7:00 PM	10/2/19 7:45 PM	0.75	128	239	284	N/A	N/A	N/A	N/A
	2	10/3/19 6:45 AM	10/3/19 7:30 AM	0.75	102	144	284	N/A	N/A	N/A	N/A
	3	10/9/19 11:00 AM	10/9/19 11:30 AM	0.30	108	267	284	10/9/2019 11:45 AM	10/9/2019 2:30 PM	317	301
	4	10/16/19 3:30 PM	10/16/19 5:15 PM	1.75	131	280	284	10/16/2019 5:30 PM	10/17/2019 12:15 AM	319	307
	5	10/20/19 4:15 PM	10/20/19 5:15 PM	1.00	172	283	284	10/20/2019 5:30 PM	10/20/2019 7:30 PM	335	303
	6a	10/22/19 8:30 PM	10/22/19 9:30 PM	1.00	119	277	284	10/22/2019 10:15 PM	10/23/2019 2:45 AM	326	314
	6b	10/22/19 10:00 PM	10/22/19 10:00 PM	0.00*	280	280	284				
	7	10/27/19 9:15 AM	10/27/19 10:15 AM	1.00	100	232	284	N/A	N/A	N/A	N/A
	8a	10/31/19 1:30 AM	10/31/19 3:00 AM	1.30	121	215	284				
8b	10/31/19 5:45 AM	10/31/19 7:15 AM	1.30	121	202	284	N/A	N/A	N/A	N/A	
8c	10/31/19 9:15 AM	10/31/19 10:30 AM	1.25	215	242	284					
Nov-19	1a	11/1/19 1:45 AM	11/1/19 2:15 AM	0.30	98	101	284				
	1b	11/1/19 3:45 AM	11/1/19 4:15 AM	0.30	125	128	284	N/A	N/A	N/A	N/A
	2	11/18/19 9:00 PM	11/18/19 9:45 PM	0.75	140	239	284	11/18/2019 10:00 PM	11/18/2019 11:45 PM	319	304
	3a	11/24/19 2:00 AM	11/24/19 2:45 AM	0.75	101	157	284				
	3b	11/24/19 9:15 AM	11/24/19 11:30 AM	2.25	283	283	284	11/24/2019 12:00 PM	11/24/2019 12:30 PM	290	287
3c	11/24/19 11:45 AM	11/24/19 11:45 AM	0.00*	260	260	284					
Dec-19	1	12/1/19 4:30 PM	12/1/19 4:45 PM	0.25	271	288	300	12/1/2019 5:00 PM	12/1/2019 5:30 PM	322	308
	2a	12/2/19 3:45 AM	12/2/19 4:45 AM	1.00	130	130	300				
	2b	12/2/19 12:15 PM	12/2/19 2:15 PM	2.00	175	209	300	N/A	N/A	N/A	N/A
	2c	12/2/19 3:00 PM	12/2/19 5:00 PM	2.00	247	247	300				
	3a	12/9/19 6:00 AM	12/9/19 12:00 PM	6.00	72	187	300				
	3b	12/9/19 3:45 PM	12/9/19 10:30 PM	6.75	203	251	300	N/A	N/A	N/A	N/A
	4	12/10/19 1:30 PM	12/10/19 2:15 PM	0.75	122	208	300	N/A	N/A	N/A	N/A
	5a	12/11/19 2:15 AM	12/11/19 3:00 AM	0.75	156	161	300	N/A	N/A	N/A	N/A
	5b	12/11/19 4:45 AM	12/11/19 6:45 AM	2.00	172	240	300				
	6	12/13/19 4:30 PM	12/13/19 8:00 PM	3.30	110	269	300	N/A	N/A	N/A	N/A
	7	12/17/19 12:30 AM	12/17/19 4:30 AM	4.00	162	270	300	N/A	N/A	N/A	N/A
	8a	12/29/19 7:15 PM	12/29/19 8:15 PM	1.00	118	246	300	N/A	N/A	N/A	N/A
	8b	12/29/19 9:00 PM	12/29/19 10:30 PM	1.30	273	275	300				
	9a	12/30/19 1:00 AM	12/30/19 2:00 AM	1.00	240	260	300				
9b	12/30/19 2:15 AM	12/30/19 3:00 AM	0.75	253	259	300					
9c	12/30/19 5:30 AM	12/30/19 6:30 AM	1.00	199	257	300	N/A	N/A	N/A	N/A	
9d	12/30/19 1:00 PM	12/30/19 7:00 PM	6.00	170	219	300					

NOTES:

* Potential CSO Discharge Duration was less than the 15-minute reportable interval.

** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:

*** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"). These events were reported in the Wet Weather Quarterly Report submittal.

Regulator BBH-09	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Feb-19	1	2/8/19 2:45 AM	2/8/19 3:30 AM	0.75	308	310	300	2/8/2019 2:45 AM	2/8/2019 3:30 AM	310	306
	2	2/24/19 6:00 AM	2/24/19 6:15 AM	0.25	283	300	300	2/24/2019 6:15 AM	2/24/2019 11:00 AM	333	306
Apr-19	1	4/15/19 5:30 AM	4/15/19 5:45 AM	0.25	172	242	284	4/15/2019 6:00 AM	4/15/2019 8:30 AM	356	312
May-19	1	5/26/19 6:30 PM	5/26/19 6:45 PM	0.25	208	238	300	N/A	N/A	N/A	N/A
	2	5/29/19 7:00 PM	5/29/19 7:15 PM	0.25	221	262	300	5/29/2019 7:30 PM	5/29/2019 10:00 PM	329	317
	3	5/30/19 7:00 PM	5/30/19 7:00 PM	0.00*	219	219	300	5/30/2019 7:15 PM	5/30/2019 11:00 PM	323	314
Jun-19	1	6/10/19 2:30 PM	6/10/19 3:15 PM	2.75	296	315	284	6/10/2019 2:30 PM	6/10/2019 3:15 PM	315	303
	2	6/13/19 12:45 PM	6/13/19 1:15 PM	0.50	309	311	284	6/13/2019 12:45 PM	6/13/2019 1:15 PM	316	309
	3	6/20/19 4:15 PM	6/20/19 4:30 PM	0.25	116	202	284	6/20/2019 4:45 PM	6/20/2019 8:00 PM	315	305
	4	6/21/19 6:15 AM	6/21/19 6:15 AM	0.00*	161	161	284	6/21/2019 6:30 AM	6/21/2019 10:45 AM	325	310
Jul-19	1	7/17/19 8:30 PM	7/17/19 8:45 PM	0.25	139	241	300	7/17/2019 9:00 PM	7/18/2019 1:15 AM	311	302
	2	7/18/19 10:45 AM	7/18/19 10:45 AM	0.00	289	289	300	7/18/2019 11:00 AM	7/18/2019 11:15 AM	308	304
	3	7/22/19 7:00 PM	7/22/19 8:15 PM	1.25	290	299	300	N/A	N/A	N/A	N/A
Aug-19	1	8/7/19 6:30 PM	8/7/19 6:45 PM	0.25	186	269	284	8/7/2019 7:00 PM	8/7/2019 10:30 PM	340	306
	2	8/22/19 9:15 PM	8/22/19 9:15 PM	0.00*	174	174	284	8/22/2019 9:30 PM	8/23/2019 2:15 AM	320	306
Sep-19	1a	9/2/19 1:00 PM	9/2/19 1:15 PM	0.25	210	279	284	9/2/2019 1:30 PM	9/2/2019 6:45 PM	342	293
	1b	9/2/19 3:15 PM	9/2/19 5:45 PM	2.50	286	296	284				
Oct-19	1	10/16/19 5:30 PM	10/16/19 11:45 PM	6.25	292	319	284	10/16/2019 5:30 PM	10/16/2019 11:45 PM	319	307
Nov-19	1	11/19/19 2:15 AM	11/19/19 3:45 AM	1.50	288	319	284	11/19/2019 2:15 AM	11/19/2019 3:45 AM	319	304
	2	11/24/19 3:30 AM	11/24/19 7:15 AM	3.75	297	318	284	11/24/2019 3:30 AM	11/24/2019 7:15 AM	318	302
Dec-19	1a	12/9/19 9:00 AM	12/9/19 9:30 PM	0.50	270	270	300	N/A	N/A	N/A	N/A
	1b	12/9/19 5:45 PM	12/9/19 8:30 PM	2.75	262	270	300				

NOTES:

* Potential CSO Discharge Duration was less than the 15-minute reportable interval.

** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:

*** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"). These events were reported in the Wet Weather Quarterly Report submittal.

Regulator BBH-21	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event				
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)	
Jan-19	1	1/5/19 3:15 AM	1/5/19 3:45 AM	0.30	199	229	300	N/A	N/A	N/A	N/A	
	2	1/20/19 12:00 AM	1/20/19 12:15 AM	0.25	294	298	300	1/20/2019 12:30 AM	1/20/2019 5:30 AM	350	310	
	3	1/29/19 8:15 PM	1/29/19 9:00 PM	0.75	267	283	300	N/A	N/A	N/A	N/A	
Feb-19	1	2/7/19 12:45 AM	2/7/19 1:45 AM	1.00	303	303	300	2/7/2019 12:45 AM	2/7/2019 1:45 AM	306	301	
	2	2/21/19 3:30 AM	2/21/19 3:30 AM	0.00*	291	291	300	2/21/2019 12:45 AM	2/21/2019 3:15 AM	311	304	
Mar-19	1	3/4/19 2:00 PM	3/4/19 2:30 PM	0.30	284	284	300	N/A	N/A	N/A	N/A	
	2	3/10/19 6:30 AM	3/10/19 7:30 AM	1.00	205	299	300	3/10/2019 7:45 AM	3/10/2019 8:00 AM	340	316	
	3	3/15/19 10:00 PM	3/15/19 10:15 PM	0.25	220	239	300	3/15/2019 10:30 PM	3/15/2019 11:30 PM	341	324	
Apr-19	1	4/8/19 3:15 AM	4/8/19 3:30 AM	0.25	113	192	284	4/8/2019 3:45 AM	4/8/2019 4:45 AM	297	293	
	2	4/12/19 10:45 PM	4/12/19 11:00 PM	0.25	276	276	284	4/12/2019 11:15 PM	4/13/2019 3:30 AM	318	304	
	3	4/13/19 6:30 AM	4/13/19 8:00 AM	1.50	239	314	284	4/13/2019 6:45 AM	4/13/2019 8:45 AM	314	309	
	4	4/15/19 11:45 AM	4/15/19 12:30 PM	0.75	219	281	284	4/15/2019 12:45 PM	4/15/2019 2:30 PM	317	307	
	5	4/22/19 5:00 PM	4/22/19 6:15 PM	1.25	248	277	284	N/A	N/A	N/A	N/A	
	6	4/26/19 7:00 AM	4/26/19 7:00 AM	0.00*	277	277	284	4/26/2019 6:00 AM	4/26/2019 6:45 AM	288	286	
May-19	1	5/5/19 4:15 AM	5/5/19 4:30 AM	0.25	208	292	300	5/5/2019 4:45 AM	5/5/2019 6:45 AM	335	311	
	2	5/13/19 8:00 PM	5/13/19 9:00 PM	1.00	254	291	300	5/13/2019 7:00 PM	5/13/2019 7:45 PM	311	308	
	3	5/14/19 9:15 PM	5/14/19 11:30 PM	2.25	296	298	300	N/A	N/A	N/A	N/A	
	4a	5/23/19 7:00 AM	5/23/19 7:30 AM	0.50	163	197	300	N/A	N/A	N/A	N/A	
	4b	5/23/19 4:45 PM	5/23/19 6:30 PM	1.75	136	291	300	N/A	N/A	N/A	N/A	
	5a	5/26/19 6:45 PM	5/26/19 6:45 PM	0.00*	258	258	300	5/26/2019 7:00 PM	5/26/2019 7:15 PM	308	305	
	5b	5/26/19 7:30 PM	5/26/19 8:15 PM	0.75	294	294	300					
	6	5/29/19 7:15 PM	5/29/19 7:15 PM	0.00*	262	262	300	5/29/2019 7:30 PM	5/29/2019 10:30 PM	329	317	
	7a	5/30/19 7:00 PM	5/30/19 7:00 PM	0.00*	219	219	300	5/30/2019 7:15 PM	5/30/2019 11:30 PM	323	314	
	7b	5/30/19 11:45 PM	5/31/19 12:00 AM	0.25	283	283	300					
Jun-19	1a	6/11/19 6:15 AM	6/11/19 6:30 AM	0.25	109	264	284	6/11/2019 6:45 AM	6/11/2019 7:45 AM	299	295	
	1b	6/11/19 8:00 AM	6/11/19 8:45 AM	0.75	262	266	284					
	2a	6/13/19 10:00 AM	6/13/19 10:00 AM	0.00*	267	267	284	6/13/2019 10:15 AM	6/13/2019 1:30 PM	N/A	N/A	
	2b	6/13/19 10:45 PM	6/14/19 12:30 AM	1.75	257	283	284	N/A	N/A	N/A	N/A	
	3	6/18/19 1:45 PM	6/18/19 2:00 PM	0.25	164	225	284	6/18/2019 2:15 PM	6/18/2019 4:45 PM	318	309	
	4	6/20/19 4:15 PM	6/20/19 4:30 PM	0.25	116	202	284	6/20/2019 4:45 PM	6/20/2019 6:00 PM	315	305	
Jul-19	1	7/11/19 9:15 PM	7/11/19 9:15 PM	0.00*	285	285	300	7/11/2019 9:30 PM	7/12/2019 12:30 AM	317	311	
	2	7/18/19 2:00 AM	7/18/19 2:45 AM	0.75	297	297	300	N/A	N/A	N/A	N/A	
	3	7/22/19 6:30 PM	7/22/19 9:30 PM	3.00	246	299	300	N/A	N/A	N/A	N/A	
	4	7/23/19 9:00 AM	7/23/19 9:00 AM	0.00*	297	297	300	7/23/2019 7:00 AM	7/23/2019 8:45 AM	322	314	
	5	7/31/19 5:00 PM	7/31/19 5:15 PM	0.25	144	224	300	7/31/2019 5:30 PM	7/31/2019 6:00 PM	314	310	
	Aug-19	1	8/7/19 6:30 PM	8/7/19 6:45 PM	0.25	186	269	284	8/7/2019 7:00 PM	8/7/2019 10:00 PM	340	306
		2	8/8/19 9:00 PM	8/8/19 9:15 PM	0.25	149	247	284	8/8/2019 9:30 PM	8/8/2019 10:00 PM	296	291
		3	8/18/19 6:30 PM	8/18/19 6:45 PM	0.25	119	207	284	8/18/2019 7:00 PM	8/18/2019 7:45 PM	300	296
		4	8/21/19 6:30 PM	8/21/19 7:45 PM	1.25	157	264	284	N/A	N/A	N/A	N/A
		5	8/22/19 9:15 PM	8/22/19 9:15 PM	0.00*	174	174	284	8/22/2019 9:30 PM	8/22/2019 11:15 PM	300	296
6		8/23/19 12:15 AM	8/23/19 1:00 AM	0.75	306	319	284	8/23/2019 12:15 AM	8/23/2019 1:00 AM	320	306	
Sep-19	1	9/2/19 1:15 PM	9/2/19 1:15 PM	0.00*	279	279	284	9/2/2019 1:30 PM	9/2/2019 5:30 PM	342	293	
Oct-19	1	10/9/19 11:30 AM	10/9/19 11:30 AM	0.00*	267	267	284	10/9/2019 11:45 AM	10/9/2019 12:45 PM	317	301	
	2	10/16/19 4:00 PM	10/16/19 5:15 PM	1.25	209	280	284	10/16/2019 5:30 PM	10/16/2019 7:15 PM	319	307	
Dec-19	1	12/13/19 5:30 PM	12/13/19 7:00 PM	1.50	247	289	300	N/A	N/A	N/A	N/A	
	2a	12/17/19 4:15 AM	12/17/19 4:15 AM	0.00*	289	289	300	12/17/2019 4:30 AM	12/17/2019 5:00 AM	315	304	
	2b	12/17/19 5:15 AM	12/17/19 7:15 AM	2.00	297	299	300					
	3a	12/30/19 5:00 PM	12/30/19 5:00 PM	0.00*	294	294	300	12/30/2019 5:15 PM	12/30/2019 6:30 PM	320	314	
	3b	12/30/19 6:45 PM	12/30/19 7:45 PM	1.00	292	292	300					

NOTES:

* Potential CSO Discharge Duration was less than the 15-minute reportable interval.

** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:

*** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"). These events were reported in the Wet Weather Quarterly Report submittal.

Regulator BBL-23	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-19	1	1/20/19 12:15 AM	1/20/19 12:15 AM	0.00*	298	298	300	1/20/2019 12:30 AM	1/20/2019 3:00 AM	N/A	N/A
Feb-19	1	2/8/19 2:15 AM	2/8/19 2:15 AM	0.00*	205	205	300	2/8/2019 2:30 AM	2/8/2019 3:15 AM	310	306
Apr-19	1	4/8/19 3:00 AM	4/8/19 3:30 AM	0.50	96	192	284	N/A	N/A	N/A	N/A
	2	4/12/19 10:45 PM	4/12/19 10:45 PM	0.00	276	276	284	4/12/2019 11:15 PM	4/12/2019 11:15 PM	318	304
	3	4/13/19 6:00 AM	4/13/19 6:30 AM	0.50	124	239	284	N/A	N/A	N/A	N/A
	4a	4/15/19 3:15 AM	4/15/19 3:45 AM	0.50	77	242	284	4/15/2019 6:00 AM	4/15/2019 8:15 AM	356	312
	4b	4/15/19 11:30 AM	4/15/19 12:00 PM	0.50	222	241	284	N/A	N/A	N/A	N/A
May-19	1	5/3/19 4:00 AM	5/3/19 4:30 AM	0.50	150	292	300	N/A	N/A	N/A	N/A
	2	5/14/19 8:45 PM	5/14/19 9:30 PM	0.75	155	296	300	N/A	N/A	N/A	N/A
	3	5/23/19 4:30 PM	5/23/19 5:00 PM	0.50	96	189	300	N/A	N/A	N/A	N/A
	4	5/26/19 6:30 PM	5/26/19 6:30 PM	0.00*	208	208	300	5/26/2019 7:00 PM	5/26/2019 7:00 PM	308	305
	5	5/29/19 7:00 PM	5/29/19 7:15 PM	0.25	221	262	300	5/29/2019 7:30 PM	5/29/2019 9:30 PM	329	317
	6	5/30/19 6:15 PM	5/30/19 7:00 PM	0.75	104	219	300	5/30/2019 7:15 PM	5/30/2019 11:15 PM	323	314
Jun-19	1	6/2/19 10:30 PM	6/2/19 10:45 PM	0.25	168	217	284	6/2/2019 11:00 PM	6/2/2019 11:15 PM	346	313
	2	6/11/19 6:00 AM	6/11/19 6:30 AM	0.50	92	264	284	6/11/2019 6:45 AM	6/11/2019 7:30 AM	299	295
	3	6/21/19 6:00 AM	6/21/19 6:15 AM	0.25	92	161	284	6/21/2019 6:30 AM	6/21/2019 7:00 AM	325	310
	4	6/25/19 7:30 AM	6/25/19 8:00 AM	0.50	59	200	284	6/25/2019 8:15 AM	6/25/2019 9:00 AM	369	311
	5	6/30/19 3:15 PM	6/30/19 3:45 PM	0.50	111	173	284	N/A	N/A	N/A	N/A
Jul-19	1	7/11/19 9:15 PM	7/11/19 9:15 PM	0.00*	265	265	300	7/11/2019 9:30 PM	7/11/2019 10:45 PM	317	311
	2	7/17/19 8:45 PM	7/17/19 8:45 PM	0.00*	241	241	300	7/17/2019 9:00 PM	7/18/2019 1:45 AM	311	302
	3	7/18/19 9:00 AM	7/18/19 9:45 AM	0.75	121	294	300	N/A	N/A	N/A	N/A
	4a	7/22/19 6:15 PM	7/22/19 6:45 PM	0.50	170	288	300	N/A	N/A	N/A	N/A
	4b	7/22/19 7:00 PM	7/22/19 10:15 PM	3.25	290	299	300	N/A	N/A	N/A	N/A
	5	7/31/19 5:00 PM	7/31/19 5:15 PM	0.25	144	224	300	7/31/2019 5:30 PM	7/31/2019 5:45 PM	314	310
Aug-19	1	8/7/19 6:15 PM	8/7/19 6:45 PM	0.50	126	269	284	8/7/2019 7:00 PM	8/7/2019 8:15 PM	340	306
	2	8/8/19 8:30 PM	8/8/19 9:00 PM	0.50	111	149	284	N/A	N/A	N/A	N/A
	3	8/18/19 6:30 PM	8/18/19 6:45 PM	0.25	119	207	284	8/18/2019 7:00 PM	8/18/2019 7:30 PM	300	296
	4	8/21/19 6:15 PM	8/21/19 6:45 PM	0.50	125	204	284	N/A	N/A	N/A	N/A
	5	8/22/19 9:00 PM	8/22/19 9:15 PM	0.25	136	174	284	8/22/2019 9:30 PM	8/22/2019 9:45 PM	320	306
Sep-19	1	9/2/19 1:00 PM	9/2/19 1:15 PM	0.25	210	279	284	9/2/2019 1:30 PM	9/2/2019 2:45 PM	342	293
Oct-19	1	10/9/19 11:30 AM	10/9/19 11:30 AM	0.00*	267	267	284	10/9/2019 11:45 AM	10/9/2019 2:00 PM	317	301
Dec-19	1a	12/9/19 7:45 AM	12/9/19 12:30 PM	4.75	252	270	300	N/A	N/A	N/A	N/A
	1b	12/9/19 3:00 PM	12/9/19 11:45 PM	6.75	257	270	300	N/A	N/A	N/A	N/A
	2	12/13/19 7:45 PM	12/13/19 8:00 PM	0.25	289	296	300	12/13/2019 8:15 PM	12/14/2019 6:15 AM	343	315
	3	12/30/19 5:00 PM	12/30/19 5:00 PM	0.00*	294	294	300	12/30/2019 5:30 PM	12/30/2019 5:30 PM	320	314

NOTES:

* Potential CSO Discharge Duration was less than the 15-minute reportable interval.

** "WWTP Event Maximum Flow" values reported with two asterisks (**) had a maximum flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"), see below:

*** "WWTP Event Average Flow" values reported with three asterisks (***) had an average flow during the critical wet weather event that was less than the wet weather flow requirement ("WWTP Event Capacity"). These events were reported in the Wet Weather Quarterly Report submittal.

Regulator BBL-30	Potential CSO Discharges Outside the Period of a Critical Wet Weather Event						WWTP Event Capacity (MGD)	Critical Wet Weather Event			
	Event #	Start Time	End Time	Duration (hrs)	WWTP Flow at Start (MGD)	WWTP Max Flow (MGD)		Start Time	End Time	WWTP Event Max Flow (MGD)	WWTP Event Avg Flow (MGD)
Jan-19	1	1/5/19 11:00 AM	1/5/19 12:30 PM	1.50	196	298	300	N/A	N/A	N/A	N/A
	2	1/9/19 12:30 AM	1/9/19 1:00 AM	0.50	156	298	300	N/A	N/A	N/A	N/A
	3	1/19/19 11:00 PM	1/20/19 12:15 AM	1.25	283	298	300	1/20/2019 12:30 AM	1/20/2019 1:45 AM	350	310
	4	1/29/19 7:15 PM	1/29/19 8:30 PM	1.25	109	281	300	N/A	N/A	N/A	N/A
Feb-19	1	2/8/19 1:45 AM	2/8/19 2:15 AM	0.50	93	205	300	2/8/2019 2:30 AM	2/8/2019 3:00 AM	310	306
	2	2/21/19 12:15 AM	2/21/19 12:15 AM	0.00*	293	293	300	2/21/2019 12:30 AM	2/21/2019 3:45 AM	311	304
	3	2/24/19 6:00 AM	2/24/19 6:00 AM	0.00*	283	283	300	2/24/2019 6:15 AM	2/24/2019 7:15 AM	333	306
Mar-19	1	3/4/19 11:15 AM	3/4/19 12:15 PM	1.00	207	266	300	N/A	N/A	N/A	N/A
	2	3/15/19 9:30 PM	3/15/19 10:15 PM	0.75	105	239	300	3/15/2019 10:30 PM	3/15/2019 10:30 PM	341	324
Apr-19	1	4/8/19 2:45 AM	4/8/19 3:30 AM	0.75	78	192	284	4/8/2019 3:45 AM	4/8/2019 3:45 AM	297	293
	2	4/12/19 10:30 PM	4/12/19 11:00 PM	0.50	214	276	284	4/12/2019 11:15 PM	4/12/2019 11:30 PM	318	304
	3	4/13/19 6:00 AM	4/13/19 6:30 AM	0.50	124	239	284	4/13/2019 6:45 AM	4/13/2019 7:00 AM	314	309
	4	4/15/19 11:30 AM	4/15/19 12:00 PM	0.50	222	241	284	N/A	N/A	N/A	N/A
	5a	4/20/19 2:00 AM	4/20/19 2:45 AM	0.75	104	117	284	N/A	N/A	N/A	N/A
	5b	4/20/19 7:30 AM	4/20/19 8:00 AM	0.50	143	190	284	N/A	N/A	N/A	N/A
	6a	4/22/19 2:15 PM	4/22/19 3:00 PM	0.75	114	175	284	N/A	N/A	N/A	N/A
	6b	4/22/19 4:00 PM	4/22/19 4:45 PM	0.75	227	227	284	N/A	N/A	N/A	N/A
7a	4/26/19 5:00 AM	4/26/19 5:45 AM	0.75	70	209	284	4/26/2019 6:00 AM	4/26/2019 6:45 AM	288	286	
7b	4/26/19 8:00 PM	4/26/19 9:00 PM	1.00	145	225	284	4/26/2019 9:15 PM	4/26/2019 9:15 PM	285	285	
May-19	1	5/4/19 12:45 AM	5/4/19 1:15 AM	0.50	97	102	300	N/A	N/A	N/A	N/A
	2a	5/5/19 4:00 AM	5/5/19 4:30 AM	0.50	150	292	300	N/A	N/A	N/A	N/A
	2b	5/5/19 1:00 PM	5/5/19 2:45 PM	1.75	283	283	300	N/A	N/A	N/A	N/A
	3a	5/12/19 5:15 AM	5/12/19 6:00 AM	0.75	286	297	300	N/A	N/A	N/A	N/A
	3b	5/12/19 6:15 AM	5/12/19 7:00 AM	0.75	294	294	300	N/A	N/A	N/A	N/A
	3c	5/12/19 8:00 AM	5/12/19 8:30 AM	0.50	288	288	300	N/A	N/A	N/A	N/A
	4a	5/14/19 7:45 PM	5/14/19 8:15 PM	0.50	111	112	300	N/A	N/A	N/A	N/A
	4b	5/14/19 8:30 PM	5/14/19 10:00 PM	1.50	139	298	300	N/A	N/A	N/A	N/A
	5	5/23/19 4:30 PM	5/23/19 5:15 PM	0.75	96	214	300	N/A	N/A	N/A	N/A
6	5/26/19 6:15 PM	5/26/19 6:45 PM	0.50	158	258	300	5/26/2019 7:00 PM	5/26/2019 7:15 PM	308	305	
7	5/28/19 9:15 PM	5/28/19 10:00 PM	0.75	114	143	300	N/A	N/A	N/A	N/A	
8	5/29/19 6:15 PM	5/29/19 7:15 PM	1.00	107	262	300	5/29/2019 7:30 PM	5/29/2019 8:45 PM	329	317	
9	5/30/19 6:15 PM	5/30/19 7:00 PM	0.75	104	219	300	5/30/2019 7:15 PM	5/30/2019 9:45 PM	323	314	

Appendix 12.2: STATUS OF ALL TELEMETERED REGULATORS WITH POTENTIAL CSO DISCHARGES OUTSIDE OF A CRITICAL WET WEATHER EVENT

No.	WWTP	Reg No.	Outfall SPDES No.	Key Regulator	2015 BMP Report	2016 BMP Report	2017 BMP Report	2018 BMP Report	2019 BMP Report	Monitoring Status in 2018 BMP Report	Monitoring Status in 2019 BMP Report	Additional Notes
					Original Category	Updated Category	Updated Category	Updated Category	Updated Category (Current)			
1	26W	01	004	Key	A	A	A	A	A	monthly monitoring (key) 12-month analysis upon construction completion	monthly monitoring (key) 12-month analysis upon construction completion	Capital Improvements: 5th PST construction at 26W - May 2021 (delayed due to Force Majeure)
2	26W	02	003	Key	A	A	A	A	A	monthly monitoring (key) 12-month analysis upon construction completion	monthly monitoring (key) 12-month analysis upon construction completion	Capital Improvements: HLSS - Dec 2022 (delayed due to Force Majeure) & 5th PST construction at 26W - May 2021 (delayed due to Force Majeure)
3	26W	03	005		E	E	E	E	E	no further monitoring	no further monitoring	Does not directly discharge to a waterbody
1	BBL	L-04	026	Key	A	A	A	A	C	monthly monitoring (key) 12-month analysis being performed	monthly monitoring (key) 12-month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) NC LTCP recommends diverting this flow to an expanded Borden Ave Pump Station
2	BBL	L-21	028		A	A	A	A	C	12-month analysis being performed	12-month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
3	BBL	L-22	029	Key	A	A	A	A	C	monthly monitoring (key) 12-month analysis being performed	monthly monitoring (key) 12-month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
4	BBL	L-23	030		A	A	A	A	C	12-month analysis being performed	12-month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
5	BBL	L-30	034		A	A	A	A	C	12-month analysis being performed	12-month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
6	BBH	02	002	Key	A	A	A	A	B	monthly monitoring (key) 12-month analysis being performed	monthly monitoring (key) 12-month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) Key regulator that averaged one or fewer events per month
7	BBH	03	003		A	A	A	A	C	12-month analysis being performed	12-month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
8	BBH	06	008	Key	A	A	A	A	C	monthly monitoring (key) 12-month analysis being performed	monthly monitoring (key) 12-month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) FB LTCP recommends a CSO Storage Tunnel for outfalls BB-006 & BB-008
9	BBH	09	008		A	A	A	A	C	12-month analysis being performed	12-month analysis was performed	Capital Improvements: MSP & forcemain work at BB - Dec 2018 (COMPLETE) FB LTCP recommends a CSO Storage Tunnel for outfalls BB-006 & BB-008

1	HP	01	022		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
2	HP	02	023		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
3	HP	03	019		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
4	HP	04	016		C	C	A	A	A	LTCP consideration	LTCP consideration	Capital Improvements: installation of Pugsley Parallel Interceptor (CS-ER-WCP) - Feb 2020 (COMPLETE)
5	HP	05	011	Key	A	A	A	A	A	monthly monitoring (key) 12-month analysis upon construction completion	monthly monitoring (key) 12-month analysis upon construction completion	Capital Improvements: installation of Pugsley Parallel Interceptor (CS-ER-WCP) - Feb 2020 (COMPLETE) Bronx River LTCP recommended modifications to this regulator to mitigate floatables
6	HP	06	011		E	E	E	E	E	no further monitoring	no further monitoring	Does not directly discharge to a waterbody
7	HP	08	025		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
8	HP	09	002		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
9	HP	10	003	Key	C	C	C	C	C	monthly monitoring (key) LTCP consideration	monthly monitoring (key) LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
10	HP	11	017		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
11	HP	12	018		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
12	HP	13	009	Key	B	C	C	C	C	monthly monitoring (key) LTCP consideration	monthly monitoring (key) LTCP consideration	Bronx River LTCP recommended weir modification and parallel sewer at this regulator
13	HP	14	026		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
1	JA	01	006		D	D	D	D	D	12-month analysis once equipment available	12-month analysis once equipment available	Absence of power to operate telemetry
2	JA	02	26W-005		E	E	E	E	E	no further monitoring	no further monitoring	Does not directly discharge to a waterbody
3	JA	03	003	Key	A	A	A	A	A	monthly monitoring (key) 12-month analysis upon construction completion	monthly monitoring (key) 12-month analysis upon construction completion	Capital Improvements: installation of bending weirs, parallel interceptor, & new lateral sanitary sewer - (June 2020)
4	JA	09	005		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
5	JA	14	003a		A	A	A	A	A	12-month analysis upon construction completion	12-month analysis upon construction completion	Capital Improvements: installation of bending weirs, parallel interceptor, & new lateral sanitary sewer - (June 2020)

No.	WWTP	Reg No.	Outfall SPDES No.	Key Regulator	2015 BMP Report	2016 BMP Report	2017 BMP Report	2018 BMP Report	2019 BMP Report	Monitoring Status in 2018 BMP Report	Monitoring Status in 2019 BMP Report	Additional Notes
					Original Category	Updated Category	Updated Category	Updated Category	Updated Category (Current)			
1	NC(Q)	Q-01	077		A	A	A	C	C	12-month analysis was performed	LTCP consideration	Newtown Creek LTCP recommends storage tunnel for outfalls NC-077,NC-015, & NC-083
2	NC(B)	B-01	015	Key	A	A	A	C	C	monthly monitoring (key) 12-month analysis was performed	monthly monitoring (key) LTCP consideration	Newtown Creek LTCP recommends storage tunnel for outfalls NC-077,NC-015, & NC-083
3	NC(B)	B-04	014	Key	B	C	C	C	C	monthly monitoring (key) LTCP consideration	monthly monitoring (key) LTCP consideration	Was evaluated under the Citywide / Open Water LTCP
4	NC(B)	B-05	013		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Water LTCP
5	NC(B)	B-06	012		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
6	NC(B)	B-09	006		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
7	NC(M)	M-01	076		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
8	NC(M)	M-02	075		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
9	NC(M)	M-10	069		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
10	NC(M)	M-16	078		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
11	NC(M)	M-17	066		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
12	NC(M)	M-19	050		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
13	NC(M)	M-21	063		D	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
14	NC(M)	M-36	052		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
15	NC(M)	M-37	049		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
16	NC(M)	M-40	045		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
17	NC(M)	M-42	041		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
18	NC(M)	M-44	037		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
19	NC(M)	M-47	036	Key	B	B	B	C	B	monthly monitoring (key)	monthly monitoring (key)	Was evaluated under the Citywide / Open Waters LTCP
20	NC(M)	M-50	032		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
1	NR	N-03	017		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
2	NR	N-16	006	Key	B	C	B / C	C	C	monthly monitoring (key) LTCP consideration	monthly monitoring (key) LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
3	NR	N-18	004		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
4	NR	N-23	043	Key	B	B	B	C	C	monthly monitoring (key)	monthly monitoring (key) LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
5	NR	N-26	040		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
6	NR	N-28	038		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
7	NR	N-29A	046		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
8	NR	N-33	033	Key	B	B	B	B	B	monthly monitoring (key)	monthly monitoring (key)	Key regulator that averaged one or fewer events per month
9	NR	N-45	027		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
10	NR	N-50	023		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month

1	OH	01	017	Key	C	B / C	B / C	B	C	monthly monitoring (key) LTCP consideration	monthly monitoring (key) LTCP consideration	Was evaluated under the Citywide / Open Waters LTCP
2	OH	03	018		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
3	OH	04	019		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
4	OH	06	002	Key	C	C	B / C	B	B	monthly monitoring (key) LTCP consideration	monthly monitoring (key) LTCP consideration	Was evaluated under the Citywide / Open Water LTCP
5	OH	07	003		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Water LTCP
6	OH	10			A	C	C	C	C	LTCP consideration	LTCP consideration	
7	OH	11			A	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
8	OH	7D	004		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
9	OH	9A	015		A	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
10	OH	9B	015		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
1	PR	R-13E	031	Key	C	C	C	C	C	monthly monitoring (key) LTCP consideration	monthly monitoring (key) LTCP consideration	Was evaluated under the Citywide / Open Water LTCP
2	PR	R-35W	035		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
3	PR	R-06W	029	Key	C	C	C	C	C	monthly monitoring (key) LTCP consideration	monthly monitoring (key) LTCP consideration	Was evaluated under the Citywide / Open Water LTCP
1	RH	R-02	018	Key	B	B	B	B	B	monthly monitoring (key)	monthly monitoring (key)	Key regulator that averaged one or fewer events per month
2	RH	R-20	004	Key	B	B	B	B	B	monthly monitoring (key)	monthly monitoring (key)	Key regulator that averaged one or fewer events per month
3	RH	R-21	003		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month
1	RK	01	029		B	B	B	B	B	no further monitoring	no further monitoring	Non-key regulator that averaged one or fewer events per month

No.	WWTP	Reg No.	Outfall SPDES No.	Key Regulator	2015 BMP Report	2016 BMP Report	2017 BMP Report	2018 BMP Report	2019 BMP Report	Monitoring Status in 2018 BMP Report	Monitoring Status in 2019 BMP Report	Additional Notes
					Original Category	Updated Category	Updated Category	Updated Category	Updated Category (Current)			
1	TI	09	011	Key	A	C	B / C	C	C	monthly monitoring (key) LTCP consideration	monthly monitoring (key) LTCP consideration	Flushing Creek LTCP recommends floatables control and disinfection of outfalls TI-010 & TI-011
2	TI	10A	003	Key	B	B	B	B	B	monthly monitoring (key)	monthly monitoring (key)	Key regulator that averaged one or fewer events per month
3	TI	13	023		C	C	C	C	C	LTCP consideration	LTCP consideration	Was evaluated under the Citywide / Open Water LTCP
4	TI	30	010		E	E	E	E	E	no further monitoring	no further monitoring	Does not directly discharge to a waterbody
5	TI	40	010		E	E	E	E	E	no further monitoring	no further monitoring	Does not directly discharge to a waterbody
6	TI	46	008		E	E	E	E	E	no further monitoring	no further monitoring	Does not directly discharge to a waterbody
7	TI	47	008		E	E	E	E	E	no further monitoring	no further monitoring	Does not directly discharge to a waterbody
8	TI	49	008		E	E	E	E	E	no further monitoring	no further monitoring	Does not directly discharge to a waterbody
1	WI(M)	02B	003		A	A	A	A	A	12-month analysis upon construction completion	12-month analysis being performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
2	WI(M)	07	008		A	A	A	A	A	12-month analysis upon construction completion	12-month analysis being performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
3	WI(M)	23	023	Key	A	A	A	A	A	monthly monitoring (key) 12-month analysis upon construction completion	monthly monitoring (key) 12-month analysis being performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
4	WI(M)	24	024		A	A	A	A	A	12-month analysis upon construction completion	12-month analysis being performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
5	WI(M)	38	038		A	A	A	A	A	12-month analysis upon construction completion	12-month analysis being performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
6	WI(M)	45	045		A	A	A	A	A	12-month analysis upon construction completion	12-month analysis being performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
7	WI(M)	46	046		A	A	A	A	A	12-month analysis upon construction completion	12-month analysis being performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
8	WI(M)	51	051		A	A	A	A	A	12-month analysis upon construction completion	12-month analysis being performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
9	WI(M)	52	052		A	A	A	A	A	12-month analysis upon construction completion	12-month analysis being performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP

10	WI(B)	53	068	Key	A	A	A	A	A	monthly monitoring (key) 12-month analysis upon construction completion	monthly monitoring (key) 12-month analysis being performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Water LTCP
11	WI(B)	58	075		A	A	A	A	A	12-month analysis upon construction completion	12-month analysis being performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
12	WI(B)	60	062		A	A	A	A	A	12-month analysis upon construction completion	12-month analysis being performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
13	WI(B)	62	060		A	A	A	A	A	12-month analysis upon construction completion	12-month analysis being performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
14	WI(B)	66	057		E	N/A	N/A	N/A	N/A	N/A	N/A	removed from list of telemetered regulators
15	WI(B)	67	056	Key	A	A	A	A	A	monthly monitoring (key) 12-month analysis upon construction completion	monthly monitoring (key) 12-month analysis being performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP
16	WI(B)	68	072		A	A	A	A	A	12-month analysis upon construction completion	12-month analysis being performed	Capital Improvements: Bar screen replacement at WI - Jan 2017 & MSP Replacement - Aug 2019 (COMPLETE) Was evaluated under the Citywide / Open Waters LTCP

Category Definition

- A Current or future capital improvements potentially render collected data unrepresentative of future conditions
- B Averaged one or fewer potential discharges outside the period of a critical wet weather event per month
- C Averaged two or more potential discharges outside the period of a critical wet weather event per month
- D Data collection issue / data not reported
- E Telemetered regulator that does not directly discharge to a waterbody