SPDES PERMIT FOR THE 14 WASTEWATER TREATMENT PLANTS

BEST MANAGEMENT PRACTICES

ANNUAL REPORT

FOR THE PERIOD JANUARY 1, 2010 - DECEMBER 31, 2010

New York City Environmental Protection
Bureau of Wastewater Treatment
Division of Collection Facilities Planning Analysis & Engineering

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NYC Environmental Protection

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Appendices

Executive Summary

In accordance with the Section VIII of the SPDES permits for the fourteen New York City municipal wastewater treatment plants, the New York City Department of Environmental Protection (DEP) has prepared this Annual Report describing DEP's ongoing program related to the Best Management Practices (BMP's) for Combined Sewer Overflows (CSO's). The thirteen BMP's listed in the SPDES permits follow the national CSO Control Policy's Nine Minimum Control Measures.

The BMP's are designed to reduce water quality impacts from CSO's by optimizing operation and maintenance procedures, by using existing treatment facilities and the wastewater collection system to their maximum extent practicable, and to implement related sewer retrofits and replacements. Major capital investments and larger-scale drainage planning efforts to reduce CSO's are covered by related programs, including Water-body/Watershed Facility Plans and ultimately Long Term Control Plans.

This report is divided into 13 sections, one for each of the BMP's in the SPDES permit. Each section of this report describes ongoing DEP programs, provides statistics for Calendar Year 2010 initiatives, and discusses overall environmental improvements.

Also included as an attachment to this report is the Centennial New York City Harbor Survey report, which was released during 2010. The centennial report provides further data for local water-bodies, providing water quality trends over the one hundred years that DEP and its predecessor agencies have been doing monitoring. Overall, the waters surrounding New York City are cleaner than they have been in a century. Indeed, during the 2010 swimming season, the New York City Department of Health and Mental Hygiene, which samples bathing beach water quality, issued no closures or advisories for City public beaches, other than rip-current warnings for Hurricane Earl. The 2010 Beach Surveillance and Monitoring report can be found on line at

nyc.gov/html/doh/downloads/pdf/beach/beach-report-2010.pdf.

These improvements are due primarily to the significant investments made by New York City residents to reduce CSO's and to address other quality issues – more than $1.8 billion dollars in the last decade alone –and the dedication of DEP's skilled workforce. While these improvements are remarkable, there is still work to be done.

In 2010, DEP completed, began, or continued a number of initiatives to further enhance water quality. These include:

- Completion of the first phase of a Supervisory Control and Data Acquisition (SCADA) system for interceptor regulators at a cost of over $20 million dollars. SCADA gives DEP operators the ability to remotely monitor and control, in real time, the operations of key points within the wastewater collection system, to enhance conveyance and treatment of wet weather flows;

- Launching a program to use large vacuum trucks to clean sediment from all of the large intercepting sewers throughout the City at an estimated cost of $67,000 per month. Areas of sedimentation are being detected through the use of a sonar device that is pulled from manhole to manhole along the entire 137 miles of interceptors. The initial cleaning, which is expected to be completed within two years, is already resulting in increased holding capacity for storm flows.

- Launched a program to improve tide gates on CSO outfall chambers, to reduce seawater infiltration into the sewer system at an estimated cost of $79,000 per month.

These initiatives are further described in the report and are also noted in the enclosed consent agreement with the New York State Department of Environmental Conservation, which memorializes these programs and other initiatives.

BMPs and system optimization are a large component of the NYC Green Infrastructure Plan, which was launched in September 2010. The Green Infrastructure Plan models the impact of built or planned cost-effective “grey” infrastructure, BMPs, and “green” infrastructure that is intended to reduce CSOs by using street-tree pits, porous pavements, green and blue roofs, and runoff swales to prevent stormwater from reaching the system. Over the next 10 years, $870 million dollars in grey infrastructure and $730 million dollars in green infrastructure projects are planned. Using this integrated plan, and avoiding more large concrete and steel holding tanks, will reduce CSOs and improve air quality, help to cool the City, reduce energy bills and greenhouse gas emissions, increase property values, and beautify our communities. All of these benefits can be achieved for billions of dollars less than the cost of the traditional tanks and tunnels that are useful only when it rains.

DEP has been continuing discussions with the New York State Department of Environmental Conservation and the U.S. Environmental Protection Agency regarding the City’s long-term program to further improve the quality of local water bodies and watersheds. As federal and state funding for such initiatives has all but evaporated, DEP has been strategically tailoring actions that will achieve national goals while keeping water and sewer rates more affordable for City residents. Combined Sewer Overflow Best Management Practices play a major role in this effort.

1. CSO Maintenance and Inspection Program

(a) *"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 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."*

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

A summary of preventive and corrective maintenance performed during 2010 on all regulators tributary to each treatment plant is attached as Attachment A under a separate cover. The table shows the Regulator Number, the date when Preventive Maintenance (PM) was performed at that 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, diversion and tide gate chambers as well as branch interceptor or drop pipes. It also contains any exercising or lubrication of sluice gates and anything else not considered corrective.

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

During 2010, two locations were problematic for inspections: Regulator BB-LL6, Borden Avenue and 27th Street could not be inspected between January and December due to NYC-DOT reconstruction of the Borden Avenue Bridge which was adjacent to the regulator. The second location was Regulator RH-9, Hamilton and Ferry Place (inside the Container Port) and that was not inspected between January and December due to a shift in the layout of shipping containers within the container port by the Port Authority and the tenant that leased that property. Containers were placed over the manholes and access restricted. However, inspections were made of the first manhole downstream of these regulators (along the branch interceptor) to determine if any problems occurred. At both sites, DEP did not encounter any problems within those inspected manholes.

Beach Protection

During the Enhanced Beach Protection period from May 15th through September 30th, inspections of beach sensitive regulators are performed twice per day using the Bureau's

Telemetry system. Shift engineers from Collection Facilities Operations (CFO) monitor these locations at the beginning of their shift and at the end of their shift and when telemetry is inoperable, field crews perform site inspections until the telemetry is corrected. See Attachment A for locations that were inspected due to the telemetry being inoperable (designated by an ‘x’ in the column EBPP). Regulators within the Coney Island-Paerdegat Drainage area, specifically CI-1, CI-2 and CI-3, did not have telemetry due to the construction of the new Paerdegat CSO Retention Facility. As a result, these regulator locations were inspected and monitored every day for the entire duration of the beach season (designated in Attachment A as ‘Daily’ in the column EBPP).

(b) *“The permittee shall include in the maintenance and inspection program a plan to maintain CSO tidegates 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.”*

Treatment plant and process personnel notify CFO if elevated chloride levels and flow are measured at their respective treatment plants. The elevated chloride levels and flow initiate a chloride run by CFO personnel. A chloride run is defined as a visual inspection of the tide gates within the drainage area experiencing the high chlorides. Chloride inspections are performed 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 Cl).

Attachment A contains a summary of preventive and corrective maintenance performed during 2010 on all tide gates tributary to each treatment plant. The table sets forth the Regulator Numbers, the dates when PM was performed at the corresponding site (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 all tide gates 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 all hardware as well as the flap itself.

Analysis of calendar year 2010 shows that the following seven WPCPs exceeded the twelve month rolling average of influent chlorides concentrations of 400 mg/l:

Wards Island, Coney Island, Newtown Creek, Red Hook, Bowery Bay, Port Richmond and Rockaway.

Appendix 1, Exhibit 2 provides an update of Rockaway sanitary and storm sewer capital projects related to sewer separation in Rockaway drainage area to minimize tidal inflow to the plant.

For more information regarding chloride levels at all 14 WPCPs see Appendix 1, Table 1. Comparative yearly analysis of CY 2009 and CY 2010 average tidal inflow (Appendix 1, Table 2) indicates:

- A decrease in estimated tidal inflow occurred at three plants: Coney Island, Red Hook, and Tallman Island.
- An increase in estimated tidal inflow occurred at eleven plants: Hunts Point, 26th Ward, Wards Island, North River, Coney Island, Owls Head, Newtown Creek, Jamaica, Oakwood Beach, Bowery Bay, Rockaway, and Port Richmond

(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. "*

The installation of the telemetering equipment at 102 regulators was completed in May 2001 pursuant to the Compliance Schedule set for in the Omnibus IV Consent Order, DEC Case # R2-0045-93-05. At present, the system is maintained through a service contract. The contractor is responsible for all maintenance issues and 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 Collection Facilities field personnel to respond to problems in a timely manner and to reduce or prevent dry weather bypassing.

In calendar year 2010, Collections field personnel responded to a total of 105 alarms sent by the CSO Alarm System. 94 alarms were deemed to be false and 11 alarms were confirmed to be true. All bypassing events were reduced due to early warning of the telemonitoring system. See Appendix 1, Table 3.

(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 WPCP no later than 30 days following the inspection."*

The CSO maintenance and inspection program reports, log sheets and inspection forms are kept at each respective crew quarters and 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 Item 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. "*

In-line Storage in Interceptors – Interceptors that deliver wet weather flow to the WPCPs have the ability to provide in-line storage during wet weather. This storage is induced when (a) the influent wet weather flow exceeds the WPCP capacity and the facility must throttle, (b) the WPCP wet well operates above the invert of the influent sewers, and (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.

> Red Hook WWTP WWOP – During CSO Facility Planning, DEP identified excess capacity of 4 MG in the Red Hook Interceptor that provides potential storage within the interceptor simply by operating the existing manual throttling gate. The WWOP for the Red Hook WPCP submitted to DEC in February 2005 describes operations to induce such storage. The WWOP was approved by DEC in January 2006 and DEP has since been operating this WWTP in accordance with the WWOP. In addition, design was initiated for a bending weir retrofitted to regulator RH R-2 to induce additional in-line storage.

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 – This facility is under construction in accordance with the CSO Order. When complete and operational, the Paerdegat Basin CSO retention facility is projected to induce 10 MG of in-line storage in the influent sewers and another 20 MG in the upstream combined sewers. This storage will be induced when construction is complete for the CSO storage tanks and the diversion weirs across the outfall barrels. The anticipated construction completion date is May 2011.

> Gowanus Canal CSO Facilities Upgrade – This facility is also subject to the CSO Order. DEP has recently completed the design of various improvements to the Gowanus Canal flushing tunnel, pump station, force main and CSO outfall RH-034 screens. In developing the design for the outfall screens, the DEP has built into the structures a combination of fixed weirs and hydraulically operated

outfall gates that will not only direct flow through the CSO screens but will induce inline storage within the combined sewers upstream of the outfall. Using InfoWorks models, DEP estimates that this inline storage will reduce CSO by about 16 MG/yr. The Notice to Proceed to Construction for the Gowanus facilities was issued by DEP on September 14, 2009. As of December 2010, construction is 20% complete and the projected completion date is September 2014.

- Flushing Bay CSO Retention Facility – This facility became operational in May 2007 and is intended principally to capture wet weather generated flow from the Kissena Corridor sewers that is currently discharged to Flushing Creek via outfall TI-010, along with some CSO generated in the Bowery Bay WPCP service area on the east side of Willow and Meadow Lakes that is "tipped" over to the TI-010 outfall. As per the July 2010 Form NY-2A Permit Application for the Flushing Bay CSO Retention Facility, the capacity is 44.1 MG with 28.7 MG in the tank and 15.3 MG in inline storage. DEP has been operating this facility in accordance with the July 2010 WWOP approval.

- Spring Creek AWPCP – This facility was constructed in the 1970s and upgrades were completed in 2007 in accordance with the CSO Order. Designed to retain 10 to 12 million gallons of CSO, approximately 18 million gallons of theoretical in-line storage is induced in the influent combined sewers.

Other Storage Projects: The Inner Harbor In–line Storage Facilities, Port Richmond WPCP Throttling Facilities and Citywide Collection System Supervisory Control and Data Acquisition (SCADA) projects are being constructed in accordance with the CSO Order. DEP provides quarterly updates to NYSDEC on the status of these projects in the CSO Quarterly Report and at the quarterly meetings. Although these projects are considered CSO Long Term Control Planning issues, DEP references these projects as part of the BMP annual report because these collection system projects will improve conveyance and storage of wet weather flows.

Inner Harbor In-line Storage Facilities – Construction at the two inflatable dam sites was completed during 2010 in accordance with the CSO Order. The two dam sites are located upstream of regulators B-6 (Newtown Creek, Brooklyn drainage area) and R-20 (Red Hook drainage area).

Port Richmond Throttling Facilities – The throttling facility was constructed on the west interceptor of the Port Richmond WWTP and was placed into service in 2009.

Citywide Supervisory Control and Data Acquisition (SCADA) system - DEP's Bureau of Wastewater Treatment (BWT) continues to work on the overall SCADA project. The overall project involves the design and installation of instrumentation for the computerized data collection systems and design of regulator automation to control flows entering the interceptors and upgrade of existing pump station telemetry.

The Consent Order regulator automation construction work at 38 regulators in the Inner Harbor, Outer Harbor, and Jamaica Tributaries service areas was completed.

The milestone for completion of this work was June 2010; DEP requested an extension through December 2010 and completed work by that date. For the status of SCADA project, please see Appendix 2, Table 1.

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 in the process of being reconstructed:

Regulator/Tide gate report status				
Reg #	Status	Schedule	Scope	Comments
NR-34	Contract Awarded	Scheduled Completion 4/13	New Gate	REG-025L
NC(M)-48	Contract Awarded	Scheduled Completion 4/13	New Gate	REG-025L
NC(M)-21	Contract Awarded	Scheduled Completion 4/13	New Gate	REG-025L
NC(M)-23	Contract Awarded	Scheduled Completion 4/13	New Gate	REG-025L
NC(M)-24	Contract Awarded	Scheduled Completion 4/13	New Gate	REG-025L
NC(M)-33	Contract Awarded	Scheduled Completion 4/13	New Gate	REG-025L
WI(M)-24	Contract Awarded	Scheduled Completion 4/13	New pull box	REG-025L
Orchard Beach (flag gate)	Facility Plan/Design	Scheduled Construction 8/15/11	New Gate	To be completed under PS upgrade contract PS 225

PR-11 (Dock st, SI)		Estimated completion Aug 2012	New Gate	This job was awarded to the JCH Delta a JOC contractor; the contractor defaulted.
PR-8 (Edgewater St., SI)		Estimated completion Aug 2012	New Gate	This job was awarded to the JCH Delta a JOC contractor; the contractor defaulted.
Oakwood Beach Flume	In fabrication	Expected completion April 2011	New SS Pontoon	Open Market Order Job
BBLL-3	In Design	Design Completion 12/11	New Gate	BB-212
BBLL-4	In Design	Design Completion 12/11	New Gate	BB-212
BBLL-9	In Design	Design Completion 12/11	New Gate	BB-212
BBLL-17	In Design	Design Completion 12/11	New Gate	BB-212
BBLL-21	In Design	Design Completion 12/11	New Gate	BB-212
BBLL-22	In Design	Design Completion 12/11	New Gate	BB-212
BBLL-23	In Design	Design Completion 12/11	New Gate	BB-212
BBLL-30	In Design	Design Completion 12/11	New Gate	BB-212

Interceptor Improvement Program

(Bureau of Wastewater Treatment) Program Description

<u>Purpose of Inspection and Description of Activities</u>

In 2010 the Bureau of Wastewater Treatment continued with the Condition Assessment of the entire Intercepting Sewer System. This work is currently being performed under two contracts, namely, PS-267 for pipe segments longer than two thousand feet, and PS-266 for all other pipes. Only pipes with diameters of 30 inches or greater are to be inspected under these contracts. This assessment is in the initial phase of a continuing program of inspection, cleaning, repairs, rehabilitation, and replacement of the intercepting sewers. A Closed Circuit Television Camera (CCTV) and a sonar sensor (SONAR) traverses a specific pipe on either a floating platform or a tracked vehicle and simultaneously videos the pipe walls above the water surface and images the pipe profile below the surface. Any defects such as cracks, corrosion, roots, etc. and sedimentation are coded and rated according to the National Association of Sewer Service Companies' (NASSCO) Pipeline Assessment Certification Program (PACP) standards. Using these standards, each pipe defect is given a score of one to five depending on its severity. Then each pipe is given an overall structural, operational, and total (structural plus operational) condition score based upon the summation of all defects and their corresponding severity scores. Because strict application of an overall pipe score may not be the most appropriate procedure in determining what action if any, should be taken in terms of repairs, rehabilitation, and replacement, DEP is required to submit to the NYSDEC an "approvable proposal for review and approval for a final scoring system to be used to prioritize all necessary types of work". Upon completion of the inspection and assessment phase of the program this system will be used to prepare summary reports and schedules for removal of debris and deposits, repair, rehabilitation, and replacement of the sewers.

Scope of Work Completed in 2010

In 2010, 281,141 linear feet (832 pipe segments) of intercepting sewers were inspected in the 26 Ward, Bowery Bay, Coney Island, Jamaica, North River, Oakwood Beach, Port Richmond, Red Hook, Rockaway, Tallman Island, and Wards Island drainage areas. This inspected length represents 38.9% of the total citywide interceptor system to be inspected. A breakdown by drainage area is shown in Table 1 below. Map figures 1 through 11 (Appendix A) show the general layout of the inspected pipes by drainage area. Tables 1 through 11 (Appendix A) lists the inspected pipes, their dimensions, and inspected lengths. Circular (C), Cunette (CNET), Egg (EGG), Flat Top Curved Bottom (FTCB), Flat Top V Bottom (FTVB), Curved Top Curved Bottom (CTCB), and Curved Top V Bottom (CTVB) shapes were the pipe shapes inspected during 2010.

Table 1

Drainage Area	Year Built	Pipe Diameter Range (inches)	Pipe Shapes	Inspected Length (feet)
26 Ward	1952	60	Circular, FTCB	8,764
Bowery Bay	1957	54 to 96	Circular, FTCB, CTCB	28,420
Coney Island	1927	42 to 120	Circular, FTVB	25,905
Jamaica	1926	36 to 96	Circular, FTCB	9,064
North River	1967	60 to 78	Circular, CTCB	39,456
Oakwood Beach	1955	36 to 60	Circular, CNET	43,734
Port Richmond	1950	30 to 72	Circular, CNET, EGG	13,315
Red Hook	1976	66 to 98	Circular	12,252
Rockaway	1952	30 to 66	Circular	13,194
Tallman Island	1939	45 to 84	Circular, FTCB	52,210
Wards Island	1937	30 to 120	Circular, CTVB	34,828

Findings

For the purposes of this BMP report, operational conditions that affect pipe capacity, and structural conditions that need to be looked at further are summarized below. Sedimentation is covered in detail because it affects pipe flow and storage capacity. In prioritizing overall pipe condition, both sedimentation and structural defects are used in the Condition Assessment section.

In the eleven drainage areas where inspections were performed there were marked differences in the prevalence or lack of certain pipe defects. Sedimentation inspection summaries are presented by drainage area to highlight the disparity in the amount of sedimentation from one drainage area to another.

Operation and Maintenance Defects - Sediment Deposition in Pipes

Below are histograms of the sediment depth measurements and sediment blockages (Graphs 1 to 22) in each of the inspected drainage areas followed by an overall summary of volumes of sediments and percent of pipe occupied by sediment (Table 2). The Sediment Blockage Histograms show the percentage of the pipe that is occupied by sediment and give an indication of the loss in pipe capacity.

For the histograms and tables shown, Coney Island and Rockaway both contain the highest average debris depth and the highest total debris blockage percentage compared to the other drainage areas inspected in 2010.

Other Operation and Maintenance (O&M) Defects

Other O&M defects appeared as deposits in the forms of grease, encrustation, and ragging; infiltration appeared as weepers, runners, and gushers, and roots as fine and as balls.

Structural Defects

Major structural defects appeared as surface aggregate visible, visible corroded reinforcement bars, and continuous longitudinal cracks.

Table 2

Drainage Area	Total Pipe Segments Inspected	Inspected Footage (feet)	Total Pipe Volume (cu yd)	Total Debris Volume (cu yd)	Average Debris Depth (in)	Total Debris Blockage (%)
26 Ward	37	8,764	6,905.4	509.1	11.0	7.4
Bowery Bay	65	28,420	28,634.0	759.6	6.3	2.7
Coney Island	48	25,905	61,605.8	8,555.0	21.2	13.9
Jamaica	62	9,064	8,575.4	484.0	9.8	5.6

North River	33	39,456	126,488.6	539.3	6.1	0.4
Oakwood Beach	131	43,734	38,153.4	777.3	5.4	2.0
Port Richmond	19	13,315	23,121.7	246.5	10.9	1.1
Red Hook	10	12,252	20,753.1	577.0	8.9	2.8
Rockaway	91	13,194	6,122.5	1,245.4	12.3	20.3
Tallman Island	249	52,210	49,304.2	2,795.8	8.8	5.7
Wards Island	87	34,828	35,680.1	2,327.2	9.8	6.5
Totals/Weighted Average*	832	281,141	405,344.2	18,816.3	9.4*	4.64

* Weighted Average = weighted using the number of pipe segments

Condition Assessment of Pipes Inspected in 2010

A preliminary condition assessment was performed based upon the PACP pipe rating of defects and a prioritization system that the contractor performing the work recommended. The prioritization system is as follows:

Priority 1 is for pipes with Structural defects of Grade 4 (Structural 4) or Grade 5 (Structural 5). These defects could indicate an elevated risk.

Priority 2 is for pipes with O&M defects associated with excessive sedimentation that could lead to obstructed flows and possible surcharging of sewage out of the intercepting sewers into ambient waters. These observations are associated with an O&M Grade 4 (O&M 4) or Grade 5 (O&M 5).

Priority 3 is for pipes with Structural defects of Grade 3 (Structural 3) or Grade 2 (Structural 2). These are defects that should eventually be corrected or at a minimum be revisited in the near future to determine if their condition worsens.

Priority 4 is for pipes with all remaining defects that have been identified. It is assumed that the remaining defects will be of minimal structural impact on the sewer system or of an O&M issue that may be able to be addressed with in-house personnel or crews.

This prioritization system was applied to the 832 pipes that were inspected. Pipes identified as Priority 1 & 2 are tabulated in Appendix B according to drainage area. Priority 3 & 4 pipes were not listed because the defects in these pipes will not result in any problems in the pipe in the near future, however, the defects will be tracked in our inspection databases so that comparisons can be made with follow-up inspections to determine whether there was any further pipe degradation.

Cleaning and TV inspection

NOTE: DEP has substantially revised the following section of this report, devoted to sewer cleaning activities, to enhance the clarity with which sewer maintenance activities are presented for calendar year 2010 and to include a more comprehensive description of all such activities.

Introduction

DEP maintains sewers through inspections done either in person or via TV camera and by cleaning. This work is done by DEP personnel as well as with various contracts. Cleaning activities performed in 2010 are summarized below in Table 2-1.

Table 2-1: Summary of Sewers Inspected & Cleaned by BWSO

METHOD	**INSPECTED** (miles)	**CLEANED** (miles)
In-House	399	244
Survey Unit	21.87	-
City-Wide Contract	31.88	31.88
Lining	4.32	4.32
Gunniting	1.79	1.79
DDC	13.8	13.8
TOTALS	**472.67**	**295.79**

Sewer Maintenance Complaint Inspection and Response

The Bureau of Water & Sewer Operations has approximately 180 personnel, comprised of construction laborers and supervisors, assigned to the Sewer Maintenance Section of Field Operations. Their primary function is to operate and maintain the collection system, perform investigations and respond to all sewer complaints received by the City's 311 call center, including sewer back-ups, catch basin flooding, and street flooding. They also perform programmatic work involving the catch basin survey inspections and cleaning. They work in conjunction with the Bureau of Wastewater Treatment's industrial waste section to investigate grease conditions, perform programmatic degreasing to ensure proper operations and perform routine inspections with the engineering-based Sewer Analysis section. There are presently 7 yard facilities located throughout the five boroughs of New York City. They are equipped with more than 45 truck-mounted crane vehicles (catch basin cleaning trucks), 35 power jet flushing vehicles, 7 power rodding auger trucks, and 2 combined flusher/vacuum trucks.

During Calendar Year 2010, there were over 14,000 customer service requests that resulted in sewer inspections. DEP's sewer maintenance division responded to each of these with an initial inspection. This initial inspection includes opening manholes and looking for signs of surcharging, and involves the inspection of at least one sewer section, estimated to have a length of at least 150 linear feet (lf). This data can be used to estimate the length of sewers inspected using DEP's In-House forces (14,063 inspections) x estimated 150 lf (one sewer section) = 2,109,450 lf, or 399 miles of sewer inspected. Of the over 14,000 complaints, 5,453 were resolved with this initial inspection only. The remaining 8,610 were resolved by an inspection and sewer cleaning. The estimated length of sewer cleaned using DEP's in-house 8,610 cleanings x estimated 150 lf (one sewer section) = 1,291,500 lf, or over 244 miles of sewers cleaned. As indicated above, the inspections and cleanings were a result of service requests and some of these footages may overlap with requests made at different times, or completed by DEP's contractors.

Complaints Resolved Calendar Year 2010	
Total Resolved	**14,063**
BY INSPECTION	5,453
BY INSPECTION & CLEANING	8,610

When the field crews identify sewer conditions that require cleaning that is beyond their capabilities for reasons including the size and condition of the sewer or that there is a record of recent repeated cleanings, the work is transferred to DEP's Sewer Analysis Group. The Sewer Analysis Group's staff then delineates the specific needs and boundaries of the work via more robust field inspection using DEP's Sewer Analysis Survey Unit and Engineering Unit. Once the scope is defined, it can be assigned to DEP City-Wide contractors for cleaning and debris removal. Table 2-2: DEP BWSO Sewer Analysis Inspection & Cleaning for CY 2010 shows the activities of the Sewer Analysis Group for 2010. These locations are listed and shown in Appendix 2: DEP BWSO Sewer Analysis Inspected Locations. These activities have also been mapped by community board, including details of the areas and associated dates of cleaning activities.

Table 2-2: DEP BWSO Sewer Analysis Inspection & Cleaning for CY 2010

	Inspection	Cleaning	Costs
	linear feet	linear feet	
Sewer Analysis: Inspection Units	115,459	-	n/a
City-Wide Contract Inspection & Cleaning	168,313	168,313	$ 1,215,250.50
Total:	**283,772**	168,313	**$ 1,215,250.50**

Sewer Inspections

The DEP's Sewer Analysis Survey Unit and Engineering Unit are responsible for performing internal visual inspections of sewers. Approximately 90% of the areas that require inspection are identified by field crew first responders. The balance of the inspection work is identified by other agencies, such as the New York City Departments of Transportation (NYCDOT) and Design and Construction (NYCDDC), when it is required to support capital planning work. 115,459 linear feet (or 21.87 miles) of sewer at 65 locations throughout the city were inspected by the two Units during calendar year 2010. Some of this footage overlaps with areas addressed with field forces. As explained above and further below, this is true because the visual inspection occurs prior to cleaning activities as it is necessary to determine the limits of cleaning needed. Post-cleaning inspections are also conducted to verify that the contractor has completed the work in an acceptable manner.

City-Wide Sewer Cleaning Contracts

As discussed above, after DEP inspects the sewers to determine the scope of cleaning required, the work is assigned to a contractor who performs the work for DEP at locations city-wide. These contractors are able to clean sewers up to and including 84" in diameter;

however, most sewers larger than 48” are handled under a site specific sewer cleaning contract. Using the City-wide sewer cleaning contractor resources, DEP cleaned 168,313 linear feet or approximately 31.88 miles of sewers in calendar year 2010, as shown in the Table 2-2 DEP BWSO Sewer Analysis Inspection & Cleaning for CY 2010. The cost of this work was $1,215,250.50.

Site-Specific Sewer Cleaning Contracts

There was no site-specific sewer cleaning contract for DEP in Calendar Year 2010.

Sewer Cleaning for Lining and Gunniting Activities

DEP also rehabilitates sewers with the use of lining and gunniting methods. For both methods, the first step is to clean and 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 2010, the DEP lined 22,826 linear feet (or 4.32 miles) of sewer at a cost of $2,355,076.08. In 2010, the DEP gunnited 9,426 linear feet (or 1.79 miles) of sewer at a cost of $3,592,746.98. (See Table 2-1)

Sewer Cleaning and Inspection: Capital Project Design

NYCDDC also performed sewer maintenance work associated with their capital project design program. Specifically, when capital work is planned for a specific location, the sewer infrastructure in the street is inspected via TV camera and then cleaned as necessary. The NYCDDC inspected and cleaned 72,896 linear feet or 13.8 miles, as shown in detail in Appendix 2. (See Table 2-1)

3. Maximize Flow to POTW

"Factors cited in Item 2 above shall also be considered in maximizing flow to the POTW. Maximum delivery to the POTW is particularly critical in treatment of "first-flush" flows. The treatment plant shall be physically capable of receiving the peak design hydraulic loading rates for all process units. The treatment plant shall be physically capable of: receiving a minimum of 2 x DDWF (Design Dry Weather Flow) through the plant headworks; a minimum of 2 x DDWF through the primary treatment works (and disinfection works if applicable; and a minimum of 1.5 x DDWF 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, regulating devices and head works must be capable of delivering these flows during wet weather. If the wet weather operating plan (WWOP) identifies any physical limitations, such as the secondary bypass channel, the permittee shall submit a capital compliance schedule within 6 months of DEC approval of the WWOP."

In the mid-1990s, a methodology was developed to provide an assessment of the wet weather flow received at each of the NYC WWTPs through an analysis of the top ten storms. As discussed below, this analysis proves that the City's treatment plants are physically capable of receiving twice its design dry weather flow rate (2xDDWF) or, due to construction or maintenance, operate under a DEC-approved Wet Weather Operating Plan, except at Tallman Island where capital improvements to the collection system are ongoing and at Rockaway where the collection system has been sufficiently separated to prevent CSO events.

The Top Ten Storm Analysis methodology involves first identifying the storms that produced the most rainfall in a given year. The top (largest) ten storms are determined on the basis of storm volumes at the four area rain gages maintained by the National Oceanic and Atmospheric Administration (NOAA) (i.e., LaGuardia Airport (LGA), JFK Airport (JFK), Central Park (CPK) and Newark Airport (EWR)). Rainfall events observed at each gage are sorted and ranked based on storm volume (events featuring snow at any gage are removed from consideration). For each storm, the ranks at the four gages are then averaged. These average ranks are then sorted to identify the top ten storms at all gages. This methodology ensures that the selected storms are area-wide, frontal-type storms, rather than isolated thunderstorms. Table 3-1 identifies the overall top ten storms developed for 2010.

The maximum flow that can reach a particular WWTP is controlled by (1) the regulators in the drainage area, (2) the storm intensities within different areas of the collection system, and (3) by plant operators, who can restrict flow using "throttling" gates located at the WWTP entrance to protect the WWTP from flooding and process upsets. DEP's operations engineers are trained on how to maximize pumped flows without impacting the treatment process, critical infrastructure, or public safety. This is very complex, particularly when flows into the collection system quickly spike or drop during a sudden downpour. The speed at which these flows change can exceed the capability of the plant's mechanical equipment, like hydraulically-actuated gates, main sewage pump pneumatic systems, and bar screen rakes, to adjust to such rapid changes. For the Wards Island plant, where some of the operating equipment is miles away at the Bronx Grit Chamber and the Manhattan Grit Chamber, there are additional challenges for the operations engineer.

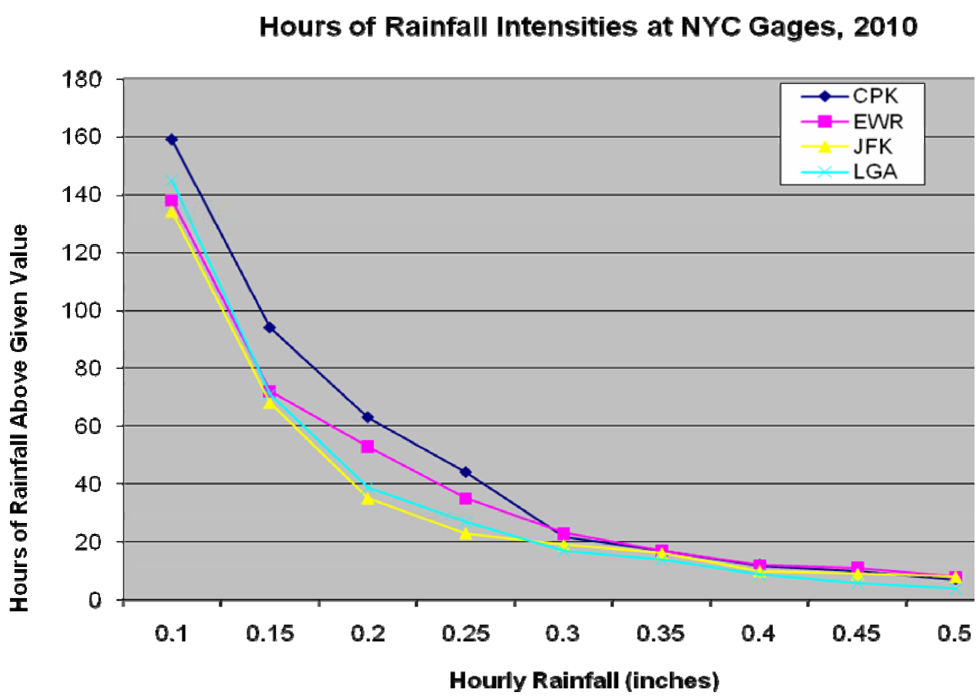
Due to the unique configuration of the collections system within individual drainage areas, the number of hours per year that each plant will receive 2xDDWF can widely vary. In addition, each drainage area has varying ability to continue delivering storm flows even after the rainfall has ended, though at a flow rate that is typically less than 2xDDWF. At Tallman Island, Coney Island and 26th Ward, pump-backs of CSO retention facilities are also performed after storms have ended.

Table 3-1: CY2010 Top ten Storms

Storm Rank	Citywide Storm Started Mo/Day/Yr Hr	Citywide Storm Ended Mo/Day/Yr Hr	4-Gage Average Rainfall (in)
1	3/28/2010 22:00	3/30/2010 21:00	4.26
2	3/12/2010 8:00	3/14/2010 3:00	4.08
3	2/25/2010 4:00	2/26/2010 16:00	3.17
4	10/1/2010 3:00	10/1/2010 18:00	2.46
5	8/22/2010 4:00	8/23/2010 1:00	1.69
6	2/22/2010 0:00	2/23/2010 8:00	1.65
7	9/27/2010 4:00	9/28/2010 15:00	1.62
8	3/22/2010 7:00	3/23/2010 5:00	1.42
9	5/23/2010 3:00	5/23/2010 11:00	1.27
10	1/25/2010 3:00	1/25/2010 19:00	1.25

* Start and End Times are based on the Central Park rain gage.

The figure below provides an overview of the hourly rainfall intensities during 2010.



There was an averaged total of 602 hours of rainfall above a 0.01 inch trace reported at the four New York City gauges in 2010. It is generally accepted that 0.01 inches per hour of rainfall will generally not generate runoff from urban surfaces. The more important number for New York City's plants is the averaged total of 144 hours of rainfall with 0.10 inch intensities. Intensities of less than 0.10 inches per hour for several hours can also result in sufficient runoff to result conveyance of peak plant flows, though that varies significantly by drainage area.

For each of the top ten storms, a graphical picture of the hourly rainfall at the nearest gage, the actual hourly WWTP flow rates, the diurnal flow rates and the wet weather capacity for the event are generated for each WWTP. A complete set of graphs for each of the top ten storms at each WWTP is provided in Attachment 1.

WWTP WET WEATHER CAPACITY

The SPDES permits require each New York City Wastewater Treatment Plant (WWTP) to be physically capable of receiving its design wet weather capacity, typically twice its design dry weather flow rate (2xDDWF), provided that the WWTP's process units are in service. Construction or operational activities can reduce the wet weather capacity of the WWTP due to equipment outages, in accordance with the WWTP's approved Wet Weather Operating Plan (WWOP). As described herein, an analysis of rainfall data and WWTP flows was performed to characterize each WWTP's actual wet weather operation relative to its permitted wet weather operation. This analysis was performed for the top ten storms of 2010.

Methodology

As noted above, the actual capacity of each WWTP is dependent upon whether construction or operational activities removed equipment or processes from service. To assess whether there were in fact restrictions to each WWTP's capacity during the top ten storms, additional information was compiled, as described below:

- WWTP SPDES permits and, as applicable, any Consent Orders mandating construction for WWTP upgrades, to determine applicable WWTP design and permitted capacities.
- Surveys of WWTP operators to determine plant capacity based on equipment in service.
- WWOPs to check capacities based on equipment in service.

The plant capacities were determined from surveys that were completed by the plants' process engineers. These surveys provided information about specific equipment out of service and the capacity of the equipment available for service. In most cases, the equipment having the greatest impacts when out of service were the influent channels/screens, main sewage pumps and/or the primary clarifiers. The plant capacities reported by the process engineers reflect the reduction in plant capacity caused by out of service equipment in accordance with each plant's WWOP and as necessary during mandated WWTP upgrades or for operational activities. Several of the WWTPs' wet weather capacities were limited due to construction or operational activities throughout the year, therefore the number of hours each WWTP reached and maintained its reported capacity based on their WWOP was reported rather than 2xDDWF.

Results

Table 3-2 presents the sustained flows calculated at each WWTP for each of the top ten storms. The flows are listed with its associated storm and the storms are sorted according to descending area-wide average rainfall depth. The average and maximum of the sustained flows determined at each WWTP during the year are provided at the bottom of the table. These statistics are useful in assessing the WWTP's wet weather operation during the year.

The sustained wet weather flow at each WWTP during each storm was calculated as the average of at least three continuous hours containing the peak flow. In cases when the WWTP operators throttled (restricted) flow, the throttling period was used as guidance. The peak flow of each storm was extracted from the hourly flows used to calculate the sustained flow.

The analysis of sustained and peak wet weather flows during the top ten storms was assessed in the context of the actual WWTP capacity during the top ten storms, as described above. Table 3-3 provides an overview of this analysis. In this table, “Permitted Capacity” represents (except as noted) the design wet weather capacity of the WWTP, typically equal to twice the design dry weather flow (2xDDWF). “Reported Capacity” represents the capacity reported by a plant during the top ten storms and is based on the number of process units in service at the plant and is in accordance with the plant’s approved WWOP. “Sustained Flow” represents the flow rate maintained at the WWTP during the top ten storms. “Peak Flow” represents the maximum hourly flow recorded at the plant during the top ten storms. Each of the above parameters is computed at each WWTP for each of the top ten storms. Whereas Table 3-2 presented the sustained flows at each WWTP for each of the top ten storms, Table 3-3 presents the maximum and the average of all sustained and peak flows at each WWTP.

During 2010, the capacity at several WWTPs was reduced for at least a portion of the year due to construction and preventive or corrective maintenance. As a result, the reported capacity at many WWTPs was less than the permitted capacity for at least one of the top ten storms. However, all WWTPs -- with the exception of Rockaway and Tallman Island -- were able to achieve and maintain flows greater or equal to their reported capacity for most of the top ten storms. The collections system at Rockaway has been significantly separated and DEP certified that there are no longer any CSO events. For the Tallman Island drainage area, conveyance improvements are underway to deliver additional wet weather flows to that plant. It should also be noted that wastewater retained by the Flushing Bay CSO Retention Facility is pumped back to Tallman Island after each wet weather event.

In summary, all WWTPs with the exception of Rockaway and Tallman Island demonstrated the ability to attain their reported capacities during the citywide top ten storms of 2010. Details on each WWTP can be found in the Discussion of Plant Specific Performance.

A comparison of the maximum and average sustained flows achieved during the top ten storms of 2010 to those achieved during the top ten storms of 2006 through 2009 is shown in Table 3-4 and the following figures.

Table 3-5 summarizes the peak hourly flows at each plant to demonstrate what the collection system is capable of delivering under certain conditions.

Table 3-6 shows the number of hours each WWTP reached a flow equal to or greater than their reported capacity throughout 2010, not only during the top ten storms. As there is an amount of uncertainty in measuring flows and flow is impacted by rainfall pattern and intensity, additional measurements are provided in Table 3-6. As noted in that table, DEP is also providing a summary of the number of hours that each WWTP treated flows greater than 80%, 90% and 95% of their reported capacity.

Table 3-6 shows that the number of hours that WWTPs treated their reported capacities ranged from 0 hours (Rockaway and Tallman Island) to a high of 306 hours (Bowery Bay) and that the number of hours of rainfall recorded at the rain gages ranged from 134 to 159. Many factors influence this trend including the following:

- the rainfall intensity in a given year and the distribution of that rainfall within the service area,
- construction activities and plant upgrades taking various portions of the facility out of service during the year and,
- the ratio of combined sewers to separate sewers within the WWTP collection system.

Table 3-2: CY2010 Top Ten Storms and Sustained Flow Rates at WWTPs

Storm Events[1]		Sustained Flow Rates (MGD) at WWTP(3)													
Start Date (Mo/Day/Yr)	Rainfall (in)[2]	26	BB	CI	HP	JA	NC	NR	OB	OH	PR	RH	RO	TI	WI
3/28/2010	4.26	130	249	212	402	171	621	322	95	197	131	121	46	132	494
3/12/2010	4.08	131	253	223	404	171	574	325	107	214	129	121	42	141	467
2/25/2010	3.17	128	237	189	351	150	551	255	61	193	89	86	34	122	429
10/1/2010	2.46	123	231	219	402	172	559	340	85	184	136	125	38	131	403
8/22/2010	1.69	133	225	223	391	173	274	348	34	197	95	125	31	122	459
2/22/2010	1.65	127	235	200	395	145	446	159	79	247	105	116	32	117	476
9/27/2010	1.62	125	239	182	344	133	521	303	33	187	80	113	26	126	432
3/22/2010	1.42	130	228	218	394	157	563	316	67	200	83	120	34	125	430
5/23/2010	1.27	124	206	221	377	153	561	321	76	206	95	121	32	126	370
1/25/2010	1.25	132	238	222	396	136	524	252	57	244	94	121	34	122	353
	Average	**128**	**234**	**211**	**386**	**156**	**519**	**294**	**69**	**207**	**104**	**117**	**35**	**126**	**431**
	Maximum	**133**	**253**	**223**	**404**	**173**	**621**	**348**	**107**	**247**	**136**	**125**	**46**	**141**	**494**

(1) Storm events and rainfall depths identified using EPA's SYNOP package using inputs for minimum inter-event time of 4 hours and minimum storm depth of 0.0 inches. Listed in order of approximate citywide total rainfall.

(2) Rainfall represents average of storm-total depths recorded at 4 metro-area rain gages: LaGuardia Airport, JFK Airport, Newark Airport, and Central Park.

(3) Sustained flow rates: The sustained wet weather flow at each WWTP during each storm was calculated as the average of at least three continuous hours containing the peak flow. In cases when the WWTP operators throttled (restricted) inflow, the throttling period was used as guidance.

Table 3-3: CY2010 Summary of WWTP Wet Weather Capacity and Treated Flows (MGD)							
Plant	Permitted Capacity(1) (MGD)	Top-Ten-Storm Maximum			Top-Ten-Storm Average		
		Reported Capacity(2)	Sustained Flow(3)	Peak Flow(4)	Reported Capacity(5)	Sustained Flow(6)	Peak Flow(7)
26th Ward	170	127.5	133	138	127.5	128	133
Bowery Bay	300	220	253	296	200 - 220	234	262
Coney Island	220	220	223	227	193 - 220	211	220
Hunts Point	400	400	404	415	400	386	404
Jamaica	200	163	173	190	150 - 163	156	168
Newtown Creek	620(8)	542	621	653	464 - 542	519	590
North River	340	340	348	356	255 - 340	294	308
Oakwood Beach	79.8	79.8	107	113	79.8	69	77
Owls Head	240	240	247	250	120 - 240	207	214
Port Richmond	120	120	136	145	90 - 120	104	111
Red Hook	120	120	125	129	120	117	121
Rockaway	90	90	46	54	60 - 90	35	41
Tallman Island	160	160	141	158	160	126	143
Wards Island	500(9)	413	494	543	325 - 413	431	490

(1) Permitted Capacity represents the design wet weather capacity of the WWTP, except as noted. The design wet weather capacity is typically equal to two times the design dry weather flow (2xDDWF). The design capacity is applicable when all process units are in service. Construction and/or operational activities can temporarily reduce capacity.

(2) Maximum Reported Capacity represents the single largest WWTP capacity reported by the WWTP for any of the top ten storms. Capacities reported by the WWTP are based on the process units in service during each storm and are in accordance with each WWTP's approved Wet Weather Operating Plan. If all process units are in service during a storm, the reported capacity equals the permitted capacity.

(3) Maximum Sustained Flow is the largest wet weather "sustained flow" that occurred during any of the top ten storms. The sustained wet weather flow at each WWTP during each storm was calculated as the average of at least three continuous hours containing the peak flow. In cases when the WWTP operators throttled (restricted) inflow, the throttling period was used as guidance.

(4) Maximum Peak Flow represents the highest hourly flow reported during the top ten storms.

(5) Average Reported Capacity represents the range of the capacities reported by the WWTP for all top ten storms. Capacities reported by the WWTP are based on the process units in service during each storm and are in accordance with each WWTP's approved Wet Weather Operating Plan. If all process units are in service during a storm, the reported capacity equals the permitted capacity.

(6) Average Sustained Flow represents the average of the wet weather "sustained flow" that occurred during each of the top ten storms. The sustained wet weather flow at each WWTP during each storm was calculated as the average of at least three continuous hours containing the peak flow. In cases when the WWTP operators throttled (restricted) inflow, the throttling period was used as guidance.

(7) Average Peak Flow represents the average of the highest hourly flows reported during each of the top ten storms.

(8) Newtown Creek's wet weather flow requirement is 620 MGD as per Third Modified Judgment on Consent, Index No. 196/88 (Sup. Ct. Kings County) (Velasquez, J.) ("Newtown Judgment"). As per the approved WWOP dated April 2010, the wet weather flow requirement is limited further during the construction of the South Battery and the upgrades of the Brooklyn-Queens and Manhattan Pump Stations by either the available pumping capacity or the number of units in operation in the North and Central Batteries.

(9) Wards Island wet weather flow requirement is 500 MGD as per Consent Judgment, Index No. 04-402174 (Sup Ct. New York Count, P. Feinman), Modification to the Judgment dated November 3, 2006. As of a January 14, 2009 letter from R. Elburn to V. Sapienza, DEC approved a WWOP with a maximum flow of 413 MGD to avoid plant flooding during rehabilitation of the grit chambers.

Table 3-4: WWTP Flow Comparisons For Top-Ten Storms for 2006 – 2010

WWTP	Permitted Capacity[1] (MGD)	Top-10-Storm Max. Sustained Flow[2] (MGD)					Top-10-Storm Avg. Sustained Flow[3] (MGD)					Top-10-Storm Max. Peak Flow[4] (MGD)					Top-10-Storm Avg. Peak Flow[5] (MGD)				
		2006	2007	2008	2009	2010	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
26th Ward	170	164	171	174	133	133	136	134	144	125	128	175	176	180	137	138	147	137	149	129	133
Bowery Bay	300	300	306	246	252	253	247	264	238	240	234	320	314	266	288	296	263	287	257	262	262
Coney Island	220	220	224	227	228	223	189	193	219	218	211	230	227	233	228	227	207	199	226	221	220
Hunts Point	400	400	405	410	410	404	366	398	393	388	386	425	415	415	417	415	405	405	405	405	404
Jamaica	200	160	206	178	176	173	150	186	170	157	156	205	206	184	179	190	177	191	175	163	168
Newtown Creek	620[6]	630	636	646	607	621	584	592	603	536	519	700	671	717	692	653	660	638	652	600	590
North River	340	340	355	348	340	348	237	339	336	303	294	360	370	366	355	356	349	355	351	328	308
Oakwood Beach	79.8	80	86	105	104	107	59	76	70	68	69	85	114	105	108	113	71	81	73	73	77
Owls Head	240	250	249	250	252	247	246	241	246	243	207	250	250	250	255	250	249	248	249	248	214
Port Richmond	120	130	133	132	126	136	97	119	108	95	104	135	140	133	132	145	110	130	116	101	111
Red Hook	120	120	137	126	124	125	120	127	123	118	117	125	137	129	125	129	125	131	124	122	121
Rockaway	90	40	51	52	47	46	32	42	42	32	35	60	61	55	50	54	41	45	44	34	41
Tallman Island	160	130	158	148	156	141	114	142	138	135	126	160	160	151	159	158	133	148	141	138	143
Wards Island	500[7]	550	565	463	518	494	475	472	417	431	431	660	611	548	548	543	574	526	474	487	490
Total NYC	**2,440**	**3,514**	**3,682**	**3,505**	**3,469**	**3,451**	**3,052**	**3,325**	**3,247**	**3,090**	**3,018**	**3,890**	**3,852**	**3,732**	**3,673**	**3,667**	**3,511**	**3,521**	**3,436**	**3,311**	**3,282**

HIGHLIGHTED VALUES DESIGNATE INCREASED FLOW FROM PRIOR YEAR

(1) Permitted Capacity represents the design wet weather capacity of the WWTP, except as noted. The design wet weather capacity is typically equal to two times the design dry weather flow (2xDDWF). The design capacity is applicable when all process units are in service. Construction and/or operational activities can temporarily reduce capacity.

(2) Maximum Sustained Flow is the largest wet weather "sustained flow" that occurred during any of the top ten storms. The sustained wet weather flow at each WWTP during each storm was calculated as the average of at least three continuous hours containing the peak flow. In cases when the WWTP operators throttled (restricted) inflow, the throttling period was used as guidance.

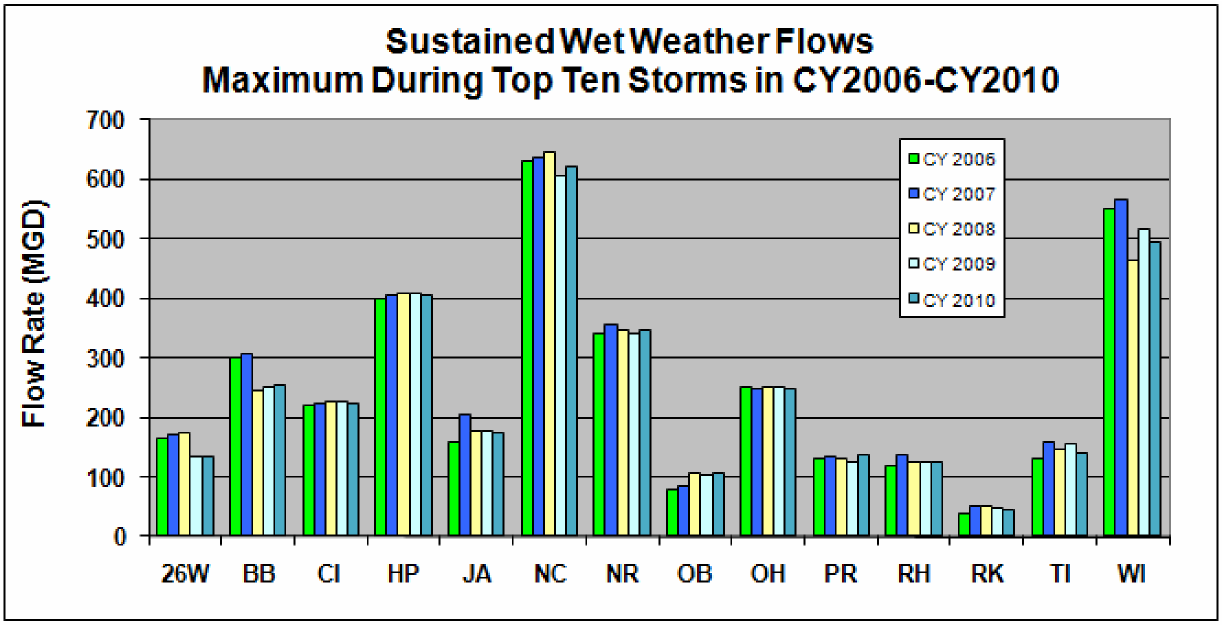
(3) Average Sustained Flow represents the average of the wet weather "sustained flow" that occurred during each of the top ten storms. The sustained wet weather flow at each WWTP during each storm was calculated as the average of at least three continuous hours containing the peak flow. In cases when the WWTP operators throttled (restricted) inflow, the throttling period was used as guidance.

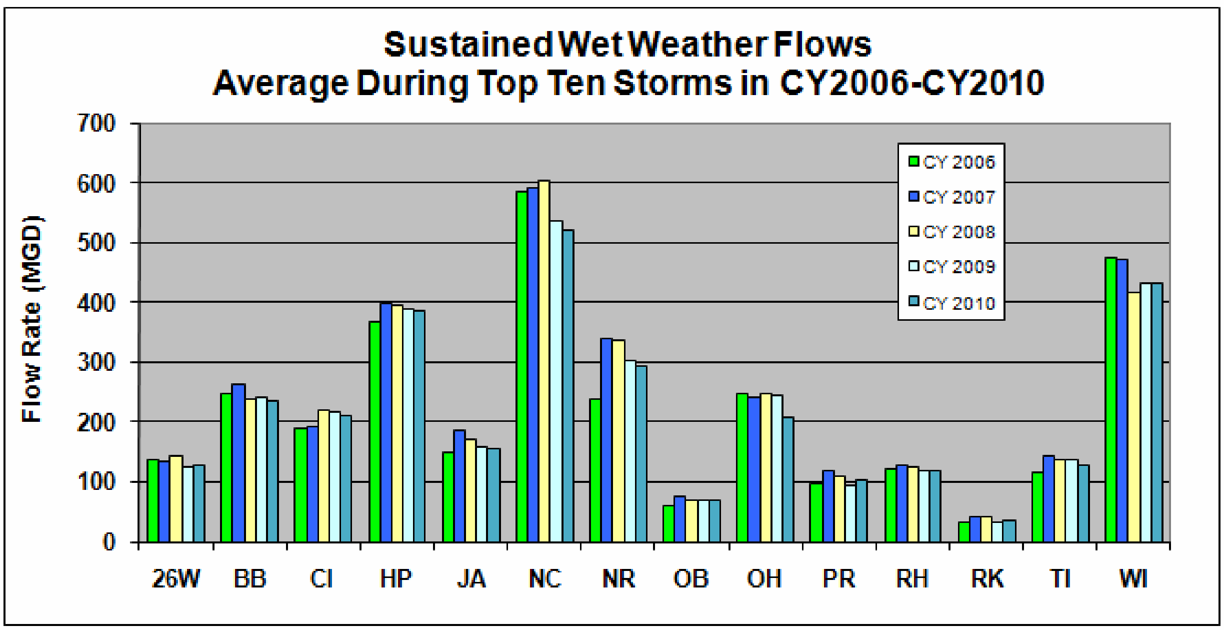
(4) Maximum Peak Flow represents the highest hourly flow reported during the top ten storms.

(5) Average Peak Flow represents the average of the highest hourly flows reported during each of the top ten storms.

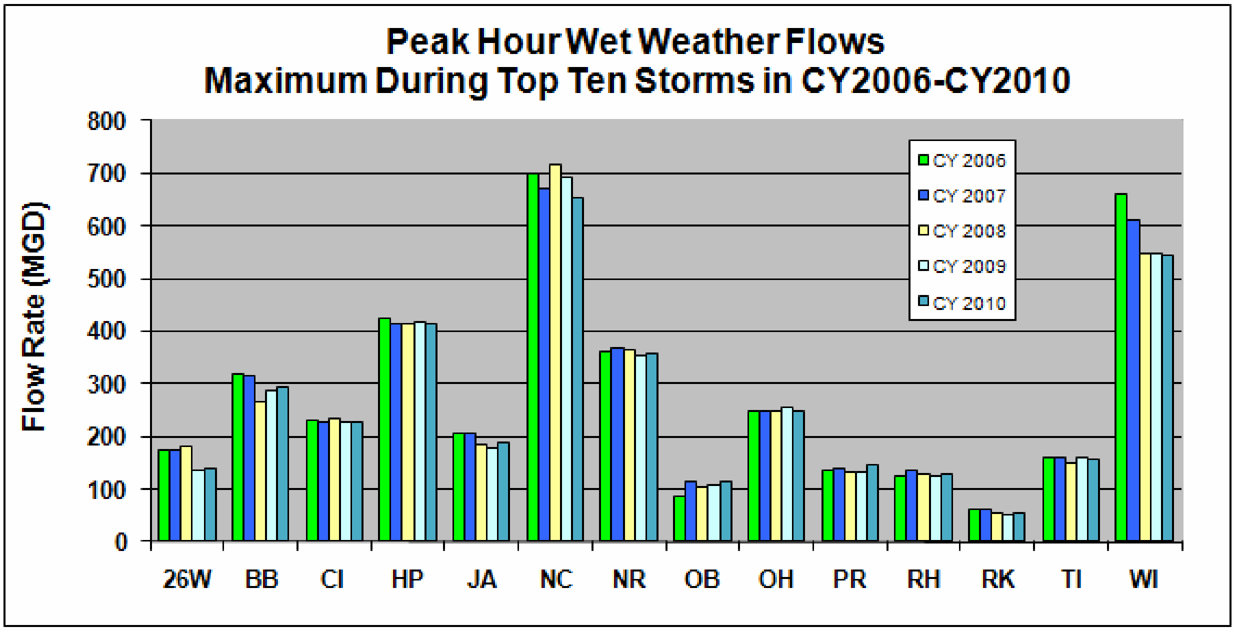
(6) Newtown Creek's wet weather flow requirement is 620 MGD as per Third Modified Judgment on Consent, Index No. 196/88 (Sup. Ct. Kings County) (Velasquez, J.) ("Newtown Judgment"). As per the approved WWOP dated April 2010, the wet weather flow requirement is limited further during the construction of the South Battery and the upgrades of the Brooklyn-Queens and Manhattan Pump Stations by either the available pumping capacity or the number of units in operation in the North and Central Batteries.

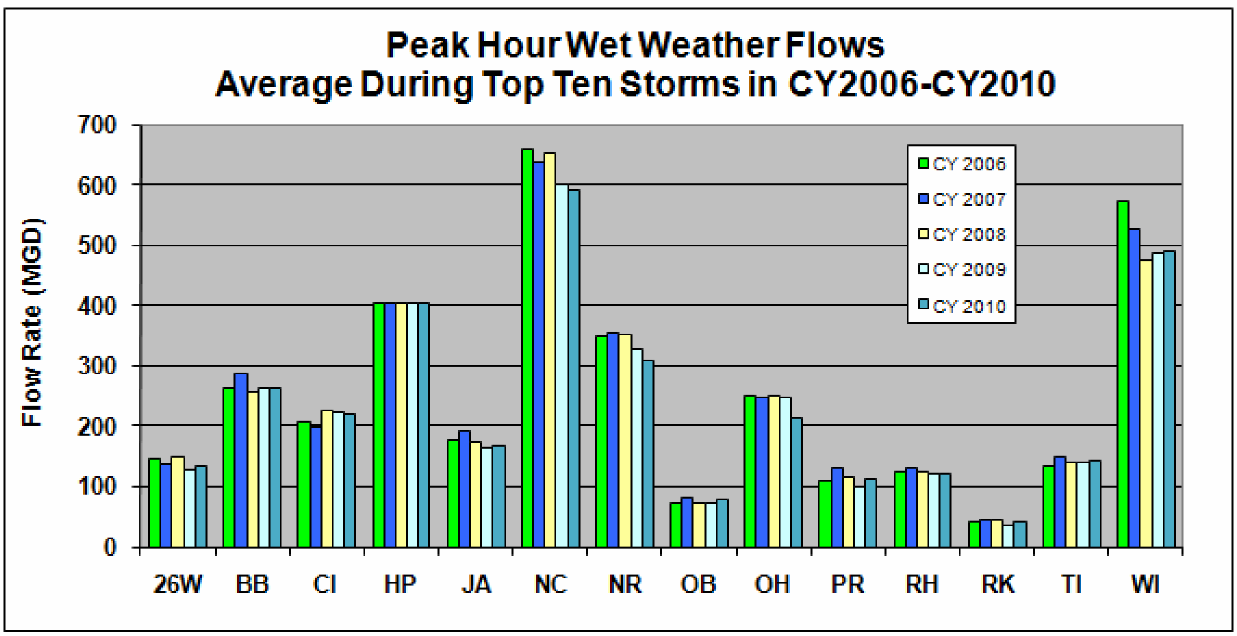
(7) Wards Island wet weather flow requirement is 500 MGD as per Consent Judgment, Index No. 04-402174 (Sup Ct. New York Count, P. Feinman), Modification to the Judgment dated November 3, 2006. As of a January 14, 2009 letter from R. Elburn to V. Sapienza, DEC approved a WWOP with a maximum flow of 413 MGD to avoid plant flooding during rehabilitation of the grit chambers.





Sustained Wet Weather Flows For CY2006-2010





Peak Hour Wet Weather Flows For CY2006-2010

Table 3-5: Number of Events Where Flow Matched or Exceeded 100, 95, and 80 Percent of the WWTP Reported Capacity During the Top Ten Storms of CY2010						
Plant	Number of Events Plant Met Reported Capacity		Number of Events Plant Met 95% Reported Capacity		Number of Events Plant Met 80% Reported Capacity	
	Sustained Flow	Peak Flow	Sustained Flow	Peak Flow	Sustained Flow	Peak Flow
26th Ward	6	9	8	10	10	10
Bowery Bay	10	10	10	10	10	10
Coney Island	3	6	4	8	8	10
Hunts Point	3	8	7	10	10	10
Jamaica	4	6	5	9	8	10
Newtown Creek	6	8	8	10	9	10
North River	2	3	3	6	7	7
Oakwood Beach	3	5	5	5	6	8
Owls Head	8	10	7	10	10	10
Port Richmond	3	3	3	4	4	8
Red Hook	7	9	8	9	9	9
Rockaway	0	0	0	0	0	1
Tallman Island	0	0	0	2	3	9
Wards Island	8	10	8	10	10	10

Table 3-6: CY2010 Number of Hours Each WWTP Treated Wet Weather Flow Thresholds

WWTP	Permitted Capacity[(1)] (MGD)	Reported Capacity[(2)] (MGD)	Number of Hours Flow ≥100% Reported Capacity	Number of Hours Flow ≥ 95% Reported Capacity	Number of Hours Flow ≥ 90% Reported Capacity	Number of Hours Flow > 80% Reported Capacity	Number of Hours[(3)] Rainfall ≥ 0.10 in
26th Ward	170	127.5	100	127	136	162	134
Bowery Bay	300	200 - 220	306	379	440	565	145
Coney Island	220	193 - 220	56	77	97	118	134
Hunts Point	400	400	63	107	138	185	145
Jamaica	200	150 - 163	44	63	86	125	134
Newtown Creek	620[(4)]	464 - 542	120	165	210	299	159
North River	340	255 - 340	36	121	150	169	159
Oakwood Beach	79.8	79.8	90	97	101	159	138
Owls Head	240	120 - 240	141	148	153	166	134
Port Richmond	120	90 - 120	25	41	62	122	138
Red Hook	120	120	113	128	138	149	159
Rockaway	90	60 - 90	0	0	0	0	134
Tallman Island	160	160	0	7	26	119	145
Wards Island	500[(5)]	325 - 413	127	159	201	295	159

Notes:

(1) Permitted Capacity represents the design wet weather capacity of the WWTP, except as noted. The design wet weather capacity is typically equal to two times the design dry weather flow (2xDDWF). The design capacity is applicable when all process units are in service. Construction and/or operational activities can temporarily reduce capacity.

(2) Reported Capacity represents the range of the capacities reported by the WWTP for all top ten storms. Capacities reported by the WWTP are based on the process units in service during each storm and are in accordance with each WWTP's approved Wet Weather Operating Plan. If all process units are in service during a storm, the reported capacity equals the permitted capacity.

(3) Number of Hours Rainfall > 0.10: represents the number of hours that it rained at a rate of 0.10 inches per hour or more at the nearest rain gage. LGA: Bowery Bay, Hunts Point, Tallman Island; JFK: 26th Ward, Coney Island, Jamaica, Owls Head, Rockaway; CPK: Newtown Creek, North River, Red Hook, Wards Island; EWR: Oakwood Beach, Port Richmond

(4) Newtown Creek's wet weather flow requirement is 620 MGD as per Third Modified Judgment on Consent, Index No. 196/88 (Sup. Ct. Kings County) (Velasquez, J.) ("Newtown Judgment"). As per the approved WWOP dated April 2010, the wet weather flow requirement is limited further during the construction of the South Battery and the upgrades of the Brooklyn-Queens and Manhattan Pump Stations by either the available pumping capacity or the number of units in operation in the North and Central Batteries.

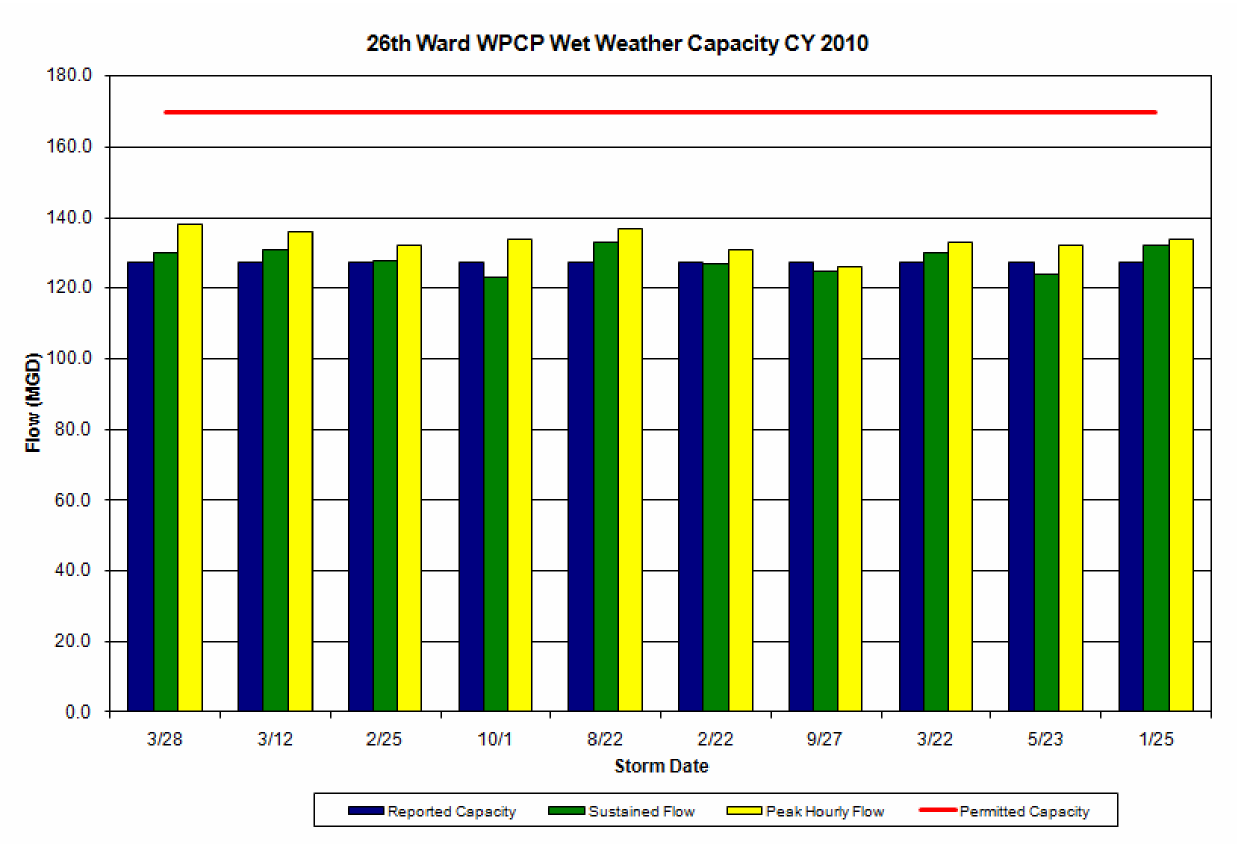
(5) Wards Island wet-weather flow requirement is 500 MGD as per Consent Judgment, Index No. 04-402174 (Sup Ct. New York Court, P. Feinman). Modification to the Judgment dated November 3, 2006. As of a January 14, 2009 letter from R. Elburn to V. Sapienza, DEC approved a WWOP with a maximum flow of 413 MGD to avoid plant flooding during rehabilitation of the grit chambers.

Discussion of Plant Specific Performance

26th Ward

The wet weather capacity requirement (2xDDWF) for the 26th Ward WWTP is 170 MGD. However, construction for BNR upgrade work proceeded in accordance with the Nitrogen Judgment Judgment, Index No. 04-402174 (Sup. Ct. New York Court, P. Feinman), and plant stabilization work occurred throughout the year and required a primary tank, an aeration tank and final tanks to be out of service for extended periods of time. As per the approved WWOP, the wet weather capacity of the facility was reduced to 127.5 MGD for most of the year due to one primary tank being out of service.

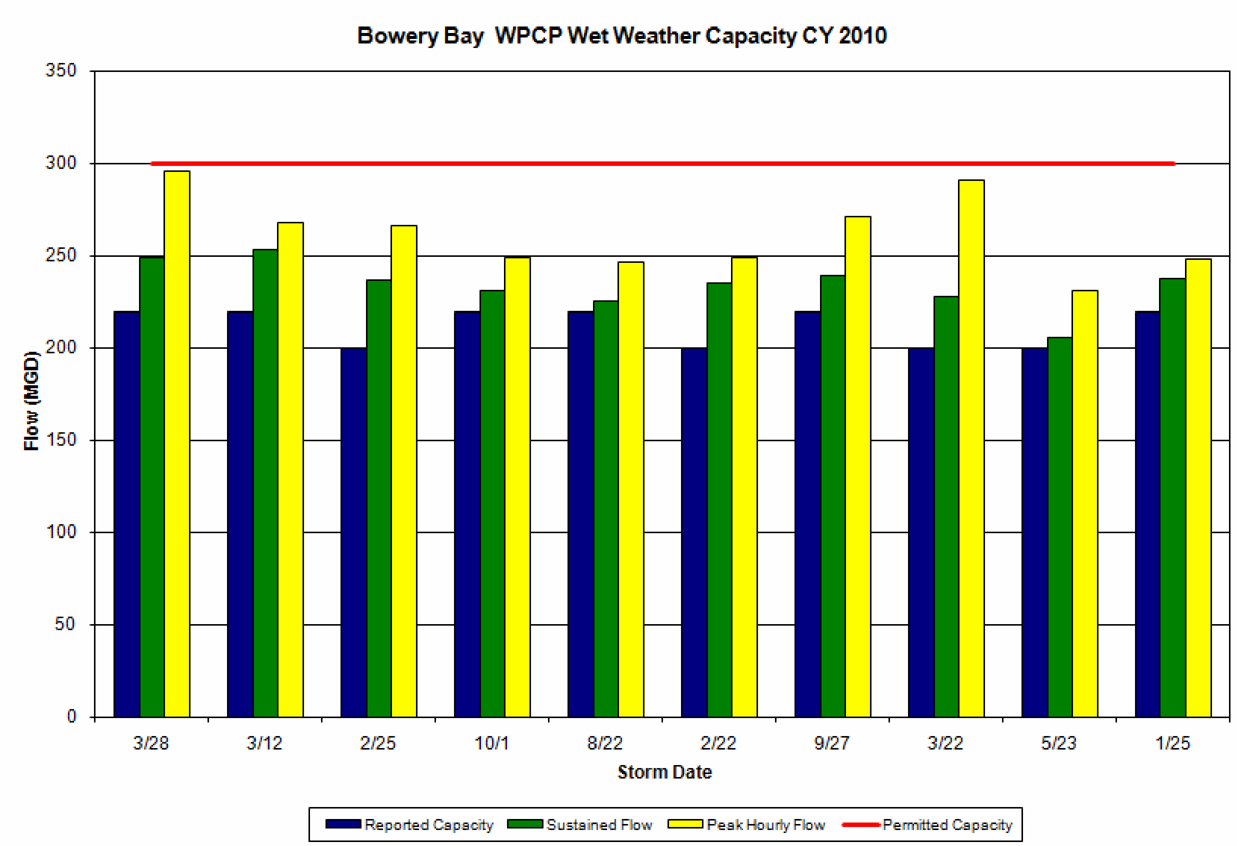
During 2010, the WWTP received its reported capacity flow for 100 hours. During the top ten storms, the average sustained wet weather flow was 128 MGD and the average peak hourly flow was 133 MGD, compared to a reported capacity of 127.5 MGD. The figure below presents the reported capacity, peak sustained and hourly peak flows for each top ten storm event.



Bowery Bay

The wet weather capacity requirement (2xDDWF) for the Bowery Bay WWTP is 300 MGD. However, the head-works and other portions of the WWTP were under construction as part of the ongoing plant stabilization projects and BNR upgrade projects. Pumps and screen upgrades on the Low Level Interceptor side of the plant limited the amount of wet weather flow that could be treated at the plant. In addition, BNR upgrades to the aeration tanks require that about 30% of the WWTP be out of service at any given time. As per the conditionally approved WWOP, the plant's wet weather capacity was controlled by either the number of main sewage pumps or primary tanks available for service. As a result, the actual plant capacity was reduced to 220 MGD or less during all of the top ten storm events.

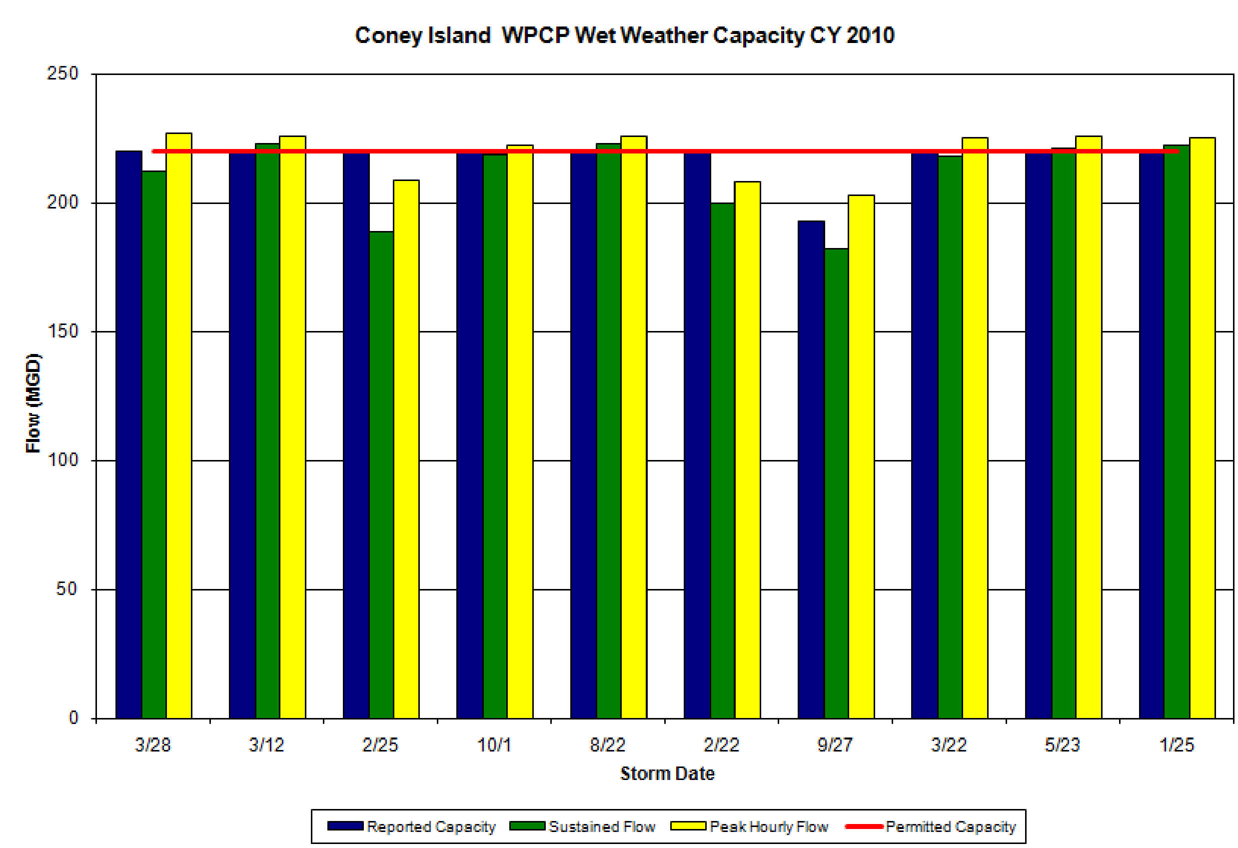
During 2010, the WWTP received its reported capacity flow for 306 hours. During the top ten storms, the average sustained wet weather flow was 234 MGD and the average peak hourly flow was 253 MGD, compared to a reported capacity range of 200 to 220 MGD. The figure below presents the reported capacity, peak sustained and hourly peak flows for each top ten storm event.



Coney Island

The wet weather capacity requirement (2xDDWF) for the Coney Island WWTP is 220 MGD. Coney Island did not have any major construction activities that limited its ability to maximize wet weather flow rates for extended periods. However, during one of the top ten storms the capacity was reduced as per the approved WWOP due to a primary tank outage.

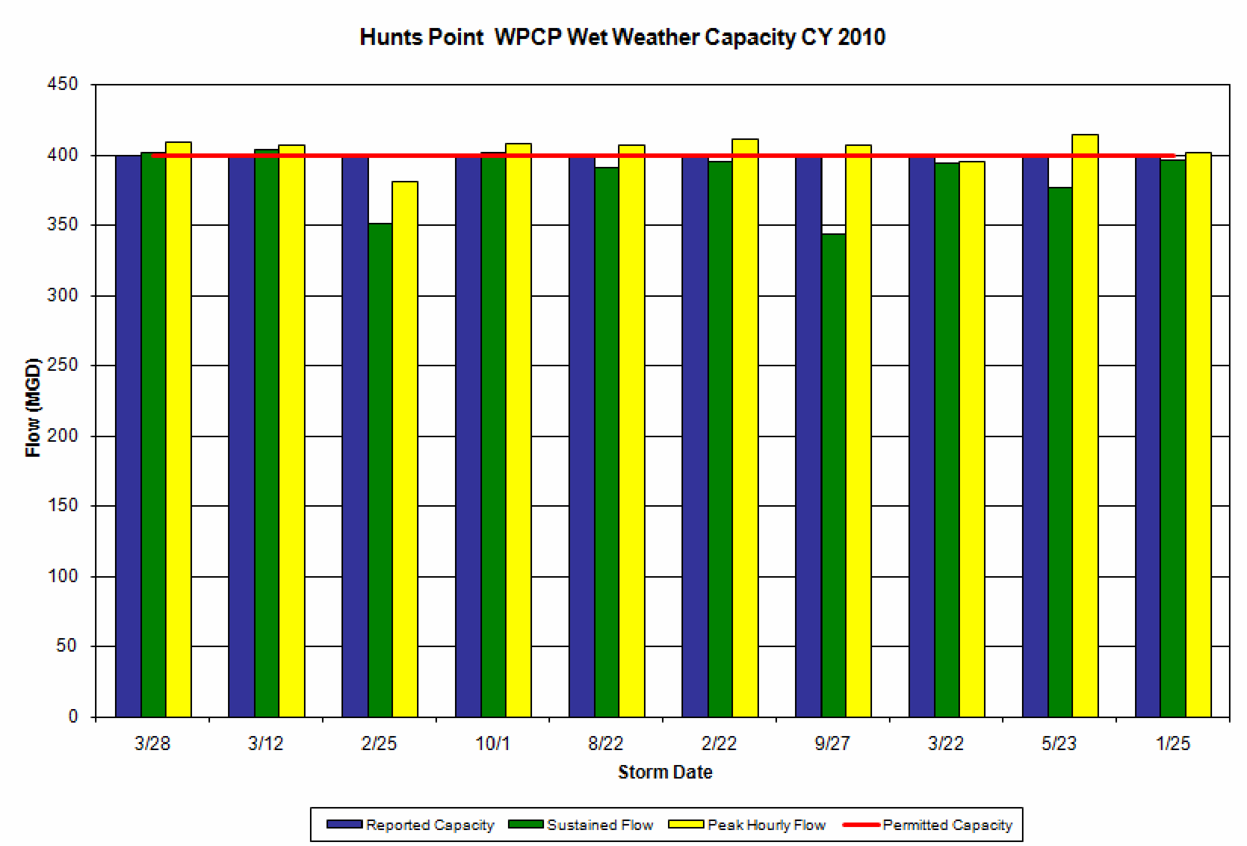
During 2010, the WWTP received flows of at least 220 MGD for 56 hours. During the top ten storms, the average sustained wet weather flow was 211 MGD and the average peak hourly flow was 223 MGD, compared to a reported capacity range of 193 to 220 MGD. The figure below presents the reported capacity, peak sustained and hourly peak flows for each top ten storm event.



Hunts Point

The wet weather capacity requirement (2xDDWF) for the Hunts Point WWTP is 400 MGD. Hunts Point did not have any major construction activities that limited its ability to maximize wet weather flow rates for extended periods.

During 2010, the WWTP received flows of at least 400 MGD for 63 hours. During the top ten storms, the average sustained wet weather flow was 386 MGD and the average peak hourly flow was 404 MGD, compared to a reported capacity of 400 MGD. The figure below presents the reported capacity, peak sustained and hourly peak flows for each top ten storm event.



Jamaica

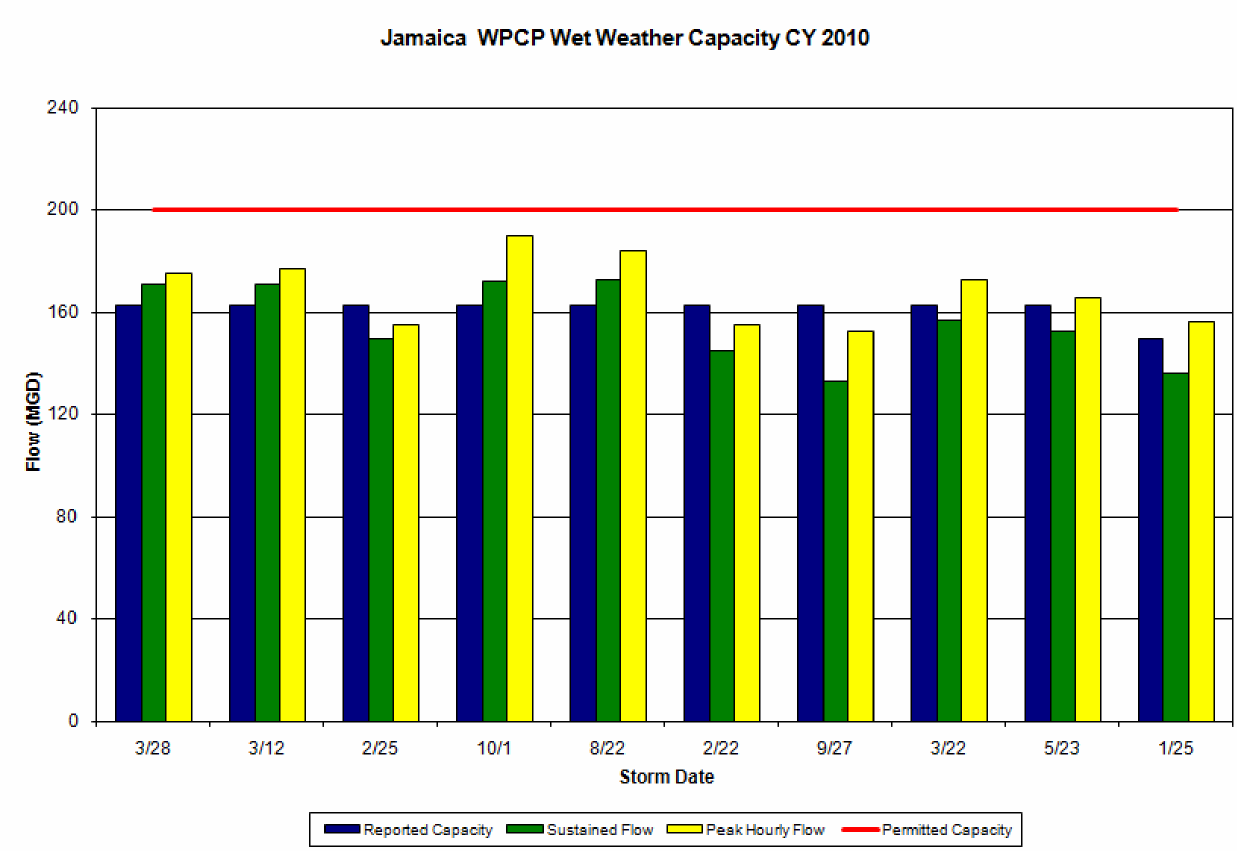
The wet weather capacity requirement (2xDDWF) for the Jamaica WWTP is 200 MGD. However, construction activities consisting of reconstruction of the aeration tanks and final tanks have required primary tanks, aeration tanks and final tanks to be out of service for extended periods of time. As per the approved WWOP, the wet weather capacity of the facility was reduced to 163 MGD for most of the year due to one aeration tank out of service. However, during one of the top ten storms the capacity was reduced as per the approved WWOP due to a bar screen out of service.

In addition as part of the LTCP project, DEP conducted sewer system hydraulic modeling studies to determine modifications that would be required to increase the frequency that the collection system can deliver 2xDDWF to the WWTP. The findings of these analyses indicate that high rainfall intensities of more than 0.25 inches are required to generate flows of 2xDDWF at the WWTP. This rainfall intensity is significantly higher than what is required at most other WWTPs, in part because the majority of the collection system is separated, not combined. For example, of the drainage area to the West Interceptor, the interceptor closest to the WWTP there are 4,080 acres of combined sewers and 1,639 acres of separate sewers. The drainage area to the East Interceptor contains about 1,160 of combined sewers and 14,371 acres of separate sewers.

The findings also indicate that the configuration of certain elements in and around Regulators No. 3 and No. 14 and the West Interceptor can be modified to increase the amount of wet weather flow that can be transported to the WWTP. Recommended alternatives to increase maximum wet weather flows appear in the Jamaica Bay Waterbody/Watershed Plan, submitted to DEC in June 2007. An omni mod request submitted to DEC in May 2010 refined and appended a 48” parallel interceptor under the Belt Parkway to the recommended alternatives.

- Conveyance enhancements associated with Regulator No. 3, 6 and 14
- Complete southeast Queens drainage plan
- Operate Regulator No. 2 in automated mode

During 2010, the WWTP received its reported capacity flow for 44 hours. During the top ten storms, the average sustained wet weather flow was 156 MGD and the average peak hourly flow was 173 MGD, compared to a reported capacity range of 150 to 163 MGD. The figure below presents the reported capacity, peak sustained and hourly peak flows for each top ten storm event.



Jamaica WPCP Wet Weather Capacity CY 2010
240
200
160
120
80
40
0
Flow (MGD)
3/28
3/12
2/25
10/1
8/22
2/22
9/27
3/22
5/23
1/25
Storm Date
Reported Capacity
Sustained Flow
Peak Hourly Flow
Permitted Capacity

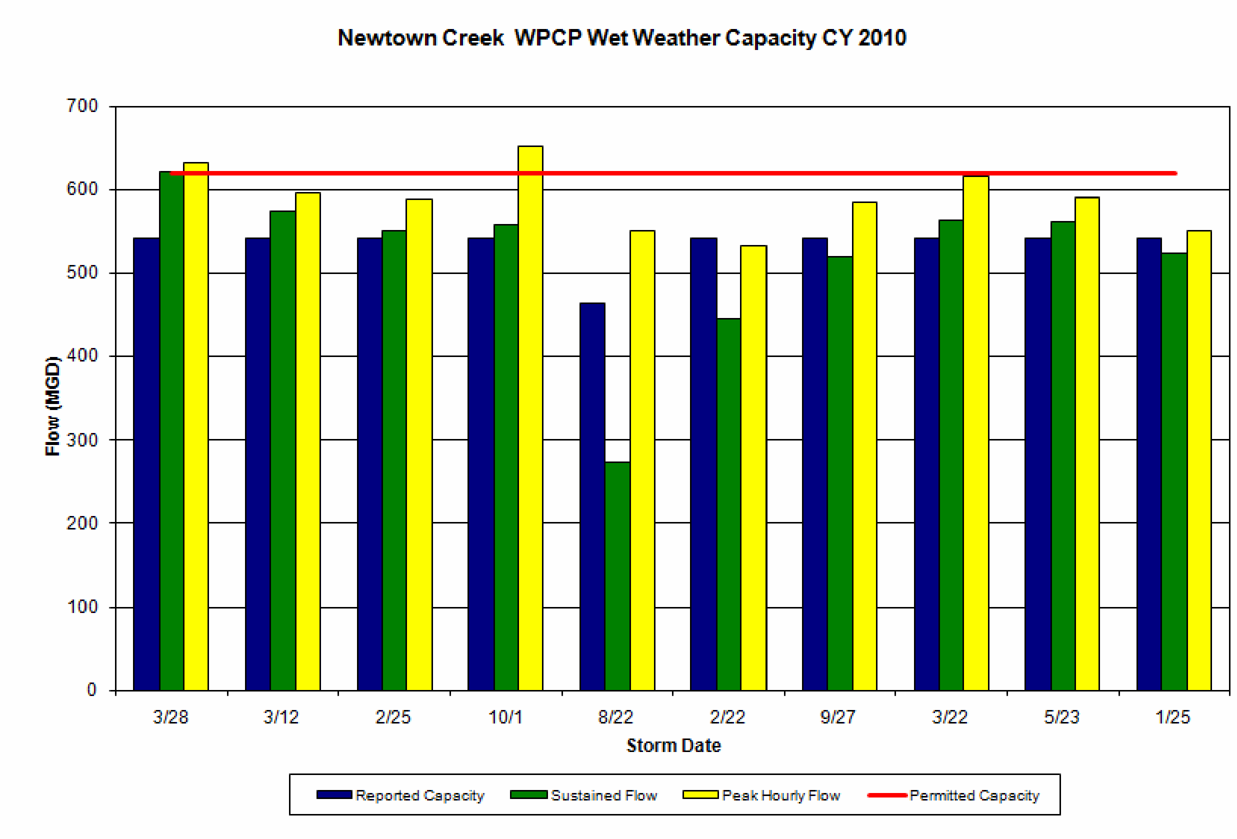
Newtown Creek

The wet weather capacity requirement (2xDDWF) for the Newtown Creek WWTP is 620 MGD. As part of the ongoing Newtown Creek WWTP upgrade pursuant to the Third Modified Judgment on Consent, Index No. 196/88 (Sup. Ct. Kings County), the WWTP is being upgraded to full secondary treatment. As part of this reconstruction, the WWTP is being expanded to provide for treatment of 700 MGD instantaneous peak wet weather when completed. Pumping is being provided for 700 MGD and WWTP throttling facilities (Manhattan P.S. and Brooklyn-Queens P.S) are being constructed to provide for better flow control to the WWTP headworks. During construction, the ability of the WWTP to handle 700 MGD is limited, as large portions of the WWTP can be out of service and under construction for long periods of time. In fact the WWTP is not required to treat 700 MGD until completion of the major reconstruction of the WWTP. Additionally, as per the approved WWOP dated April 2010, the wet weather flow requirement is limited further during the construction of the South Battery and the upgrades of the Brooklyn-Queens and Manhattan Pump Stations by either the available pumping capacity or the number of units in operation in the North and Central Batteries. During 2010, construction activities required a main sewage pump and a primary screen to be out of service. As per the approved WWOP, the wet weather capacity of the facility was reduced to 542 MGD. However, during one of the top ten storms the capacity was reduced as per the approved WWOP due to an additional bar screen went out of service.

Please note that during the periods that the 13th Street Pumping Station was not throttled, and reduced from three main sewage pumps in service to two, the reduction in plant flow was likely due to the reductions of flows from Manhattan. As stated in the WWOP, the Newtown Creek WWTP (Brooklyn/ Queens) is limited to 232 MGD due to bar screen construction.

During 2010, the WWTP received its reported capacity flow for 120 hours. During the top ten storms, the average sustained wet weather flow was 519 MGD and the average peak hourly flow was 621 MGD, compared to a reported capacity range of 464 to 542 MGD. The figure below presents the reported capacity, peak sustained and hourly peak flows for each top ten storm event.

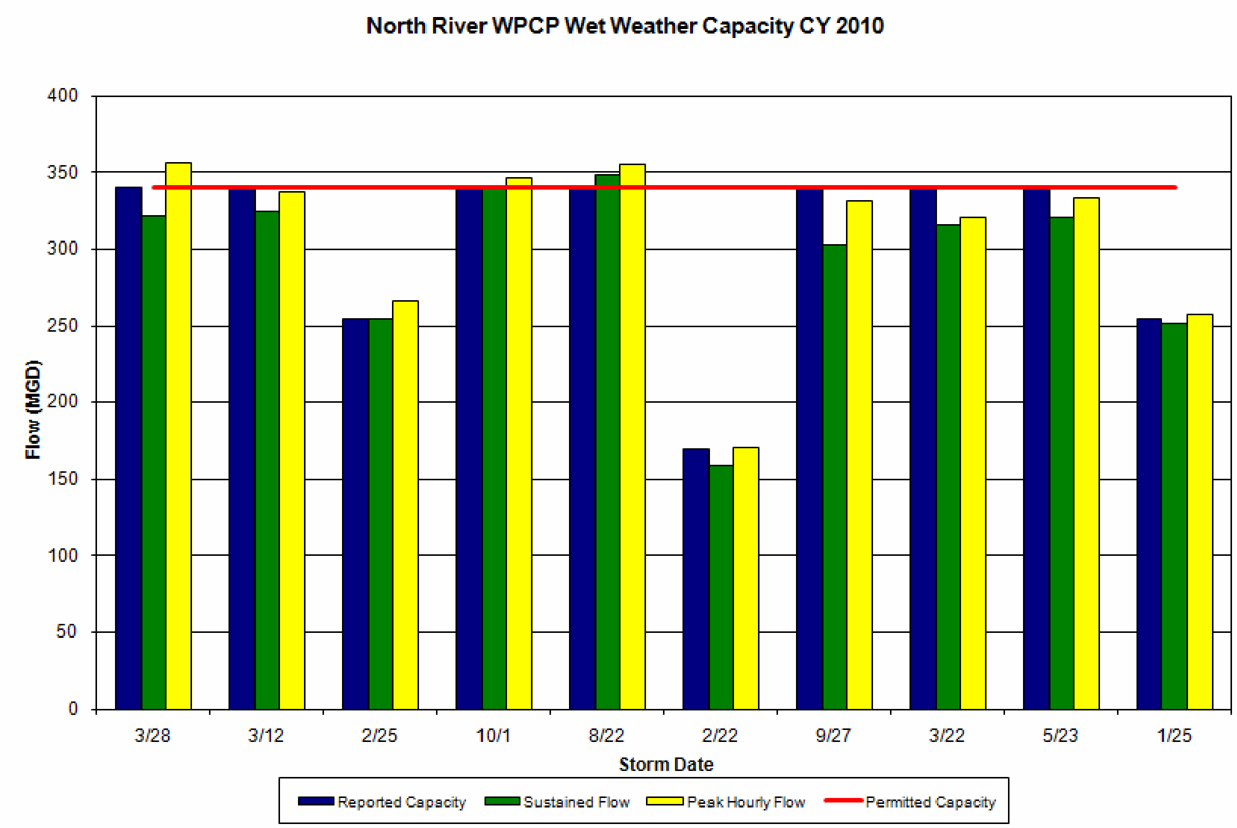
(4) Newtown Creek’s wet weather flow requirement is 620 MGD as per Third Modified Judgment on Consent, Index No. 196/88 (Sup. Ct. Kings County) (Velasquez, J.) ("Newtown Judgment").


Newtown Creek WPCP Wet Weather Capacity CY 2010
Flow (MGD)
700
600
500
400
300
200
100
0
3/28
3/12
2/25
10/1
8/22
2/22
9/27
3/22
5/23
1/25
Storm Date
Reported Capacity
Sustained Flow
Peak Hourly Flow
Permitted Capacity

North River

The wet weather capacity requirement (2xDDWF) for the North River WWTP is 340 MGD. However, the unavailability of the main sewage pumps due to the critical maintenance or necessary mechanical repair work required to be done on the main sewage pumps and their associated engines throughout the year resulted in the reduced wet weather pumping capacity. Additionally, the shutdown of the South Wet Well during the month of February and March 2010, due to pieces of broken pipe in the wet well that had damaged the impeller on one of the main sewage pumps, limited the availability of the main sewage pumps during wet weather to only two or three main sewage pumps.

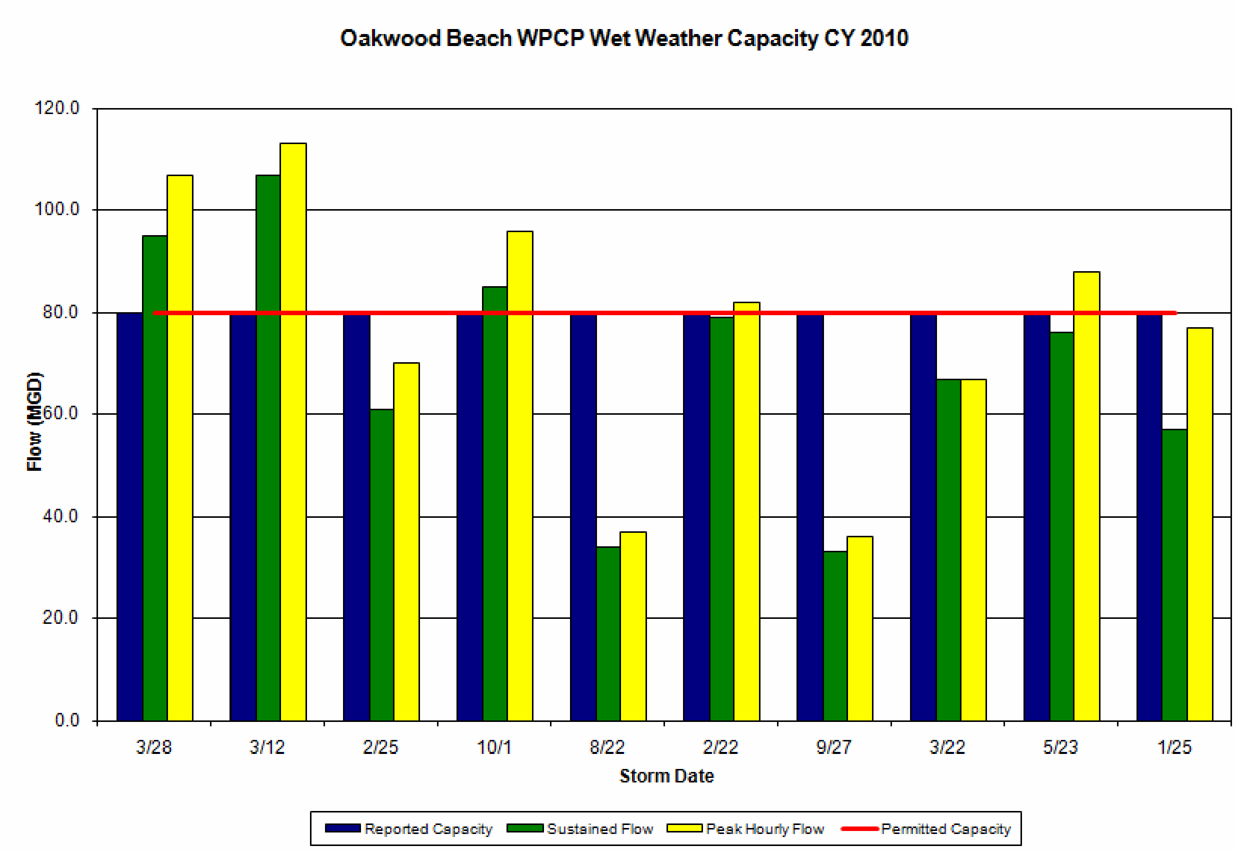
During 2010, the WWTP received its reported capacity flow for 36 hours. During the top ten storms, the average sustained wet weather flow was 294 MGD and the average peak hourly flow was 348 MGD, compared to a reported capacity range of 255 to 340 MGD. The figure below presents the reported capacity, peak sustained and hourly peak flows for each top ten storm event.



Oakwood Beach

The Oakwood Beach drainage area is separately sewered. The plant does, however, see some increases in flow during wet weather. This is due primarily to property owners who convey storm runoff from their properties into sanitary sewers, because there are no existing storm sewers in the area. As DEP builds out the sewer system in Staten Island (many areas still have septic systems), the wet weather flows into Oakwood Beach will decline.

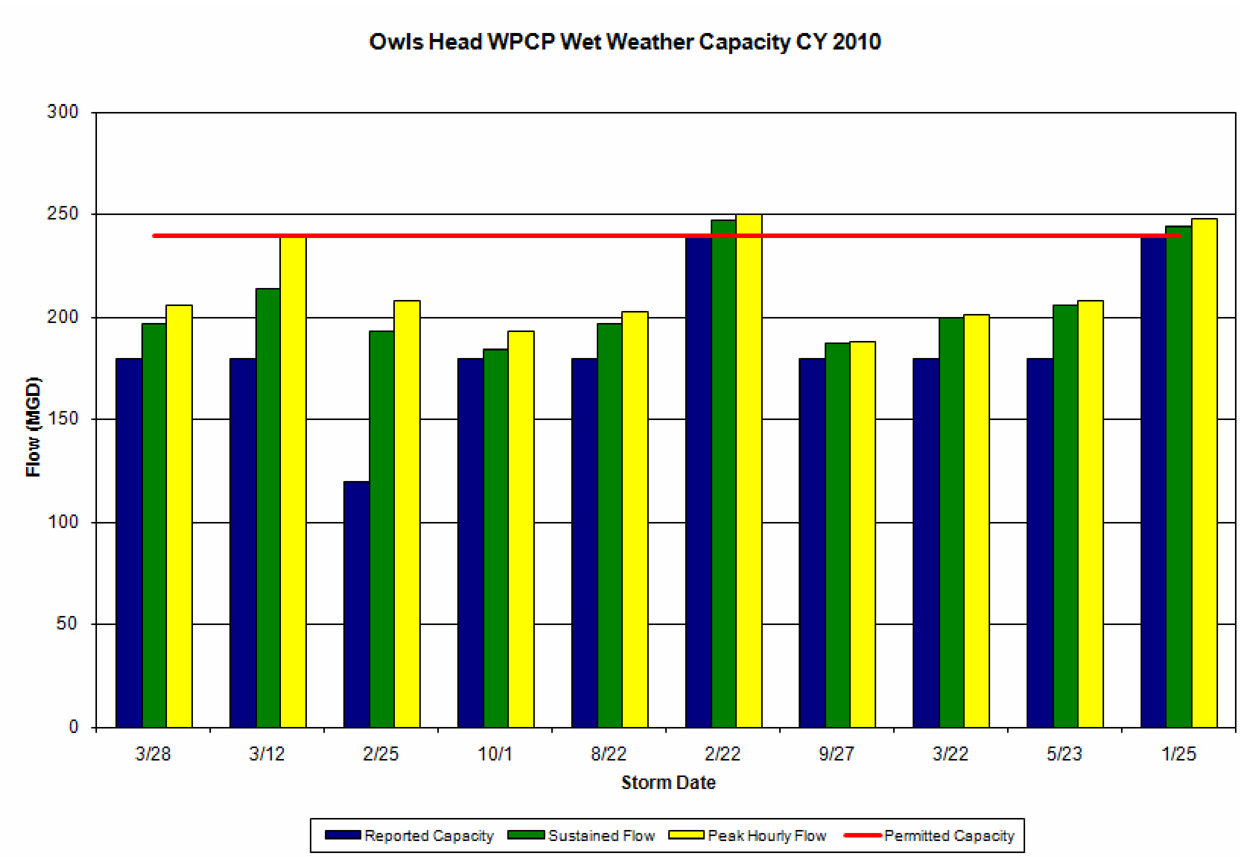
During 2010, the WWTP received flows of at least 79.8 MGD for 90 hours. During the top ten storms, the average sustained wet weather flow was 69 MGD and the average peak hourly flow was 107 MGD, compared to a reported capacity of 79.8 MGD. The figure below presents the reported capacity, peak sustained and hourly peak flows for each top ten storm event.



Owls Head

The wet weather capacity requirement (2xDDWF) for the Owls Head WWTP is 240 MGD. However, a primary tank was out of service for an extended period throughout the year due to repairs which reduced the capacity as per the approved WWOP. During one of the top storms, an additional primary tank went out of service reducing the capacity further.

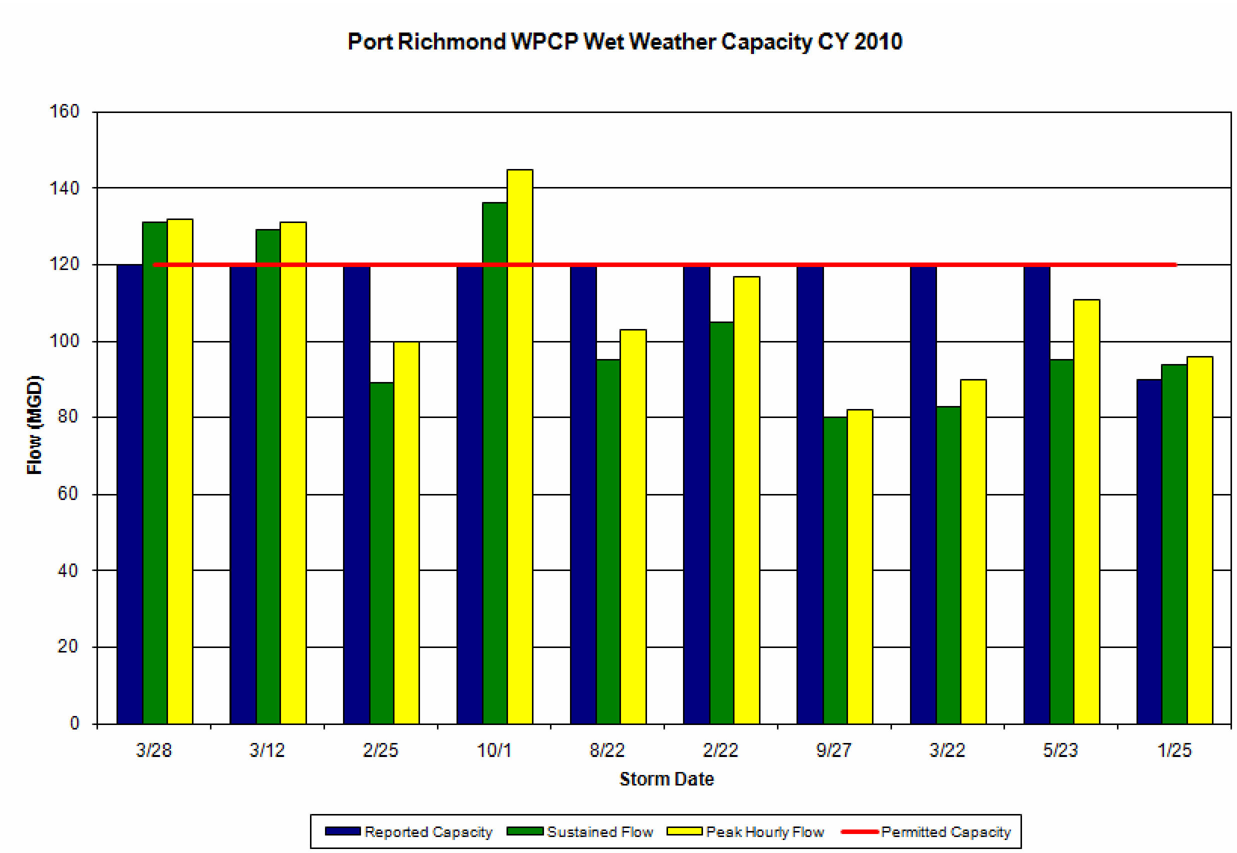
During 2010, the WWTP received its reported capacity flow for 141 hours. During the top ten storms, the average sustained wet weather flow was 207 MGD and the average peak hourly flow was 247 MGD, compared to a reported capacity range of 120 to 240 MGD. The figure below presents the reported capacity, peak sustained and hourly peak flows for each top ten storm event.



<u>**Port Richmond**</u>

The wet weather capacity requirement (2xDDWF) for the Port Richmond WWTP is 120 MGD. Port Richmond did not have any major construction activities that limited its ability to maximize wet weather flow rates for extended periods. However, during one of the top ten storms the capacity was reduced as per the approved WWOP due to a primary tank out of service.

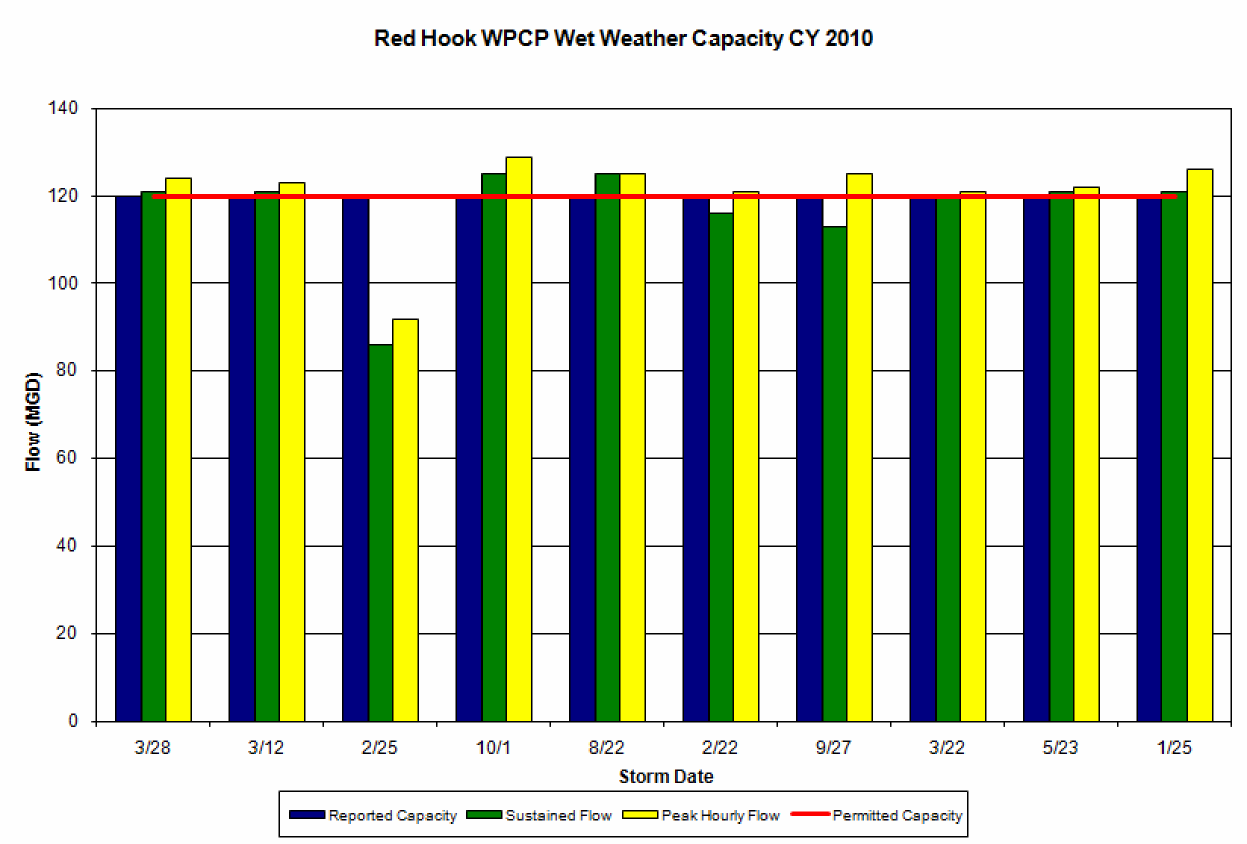
During 2010, the WWTP received its reported capacity flow for 25 hours. During the top ten storms, the average sustained wet weather flow was 104 MGD and the average peak hourly flow was 136 MGD, compared to a reported capacity range of 90 to 120 MGD. The figure below presents the reported capacity, peak sustained and hourly peak flows for each top ten storm event.



Red Hook

The wet weather capacity requirement (2xDDWF) for the Red Hook WWTP is 120 MGD. Red Hook did not have any major construction activities that limited its ability to maximize wet weather flow rates for extended periods.

During 2010, the WWTP received its reported capacity flow for 113 hours. During the top ten storms, the average sustained wet weather flow was 117 MGD and the average peak hourly flow was 125 MGD, compared to a reported capacity of 120 MGD. The figure below presents the reported capacity, peak sustained and hourly peak flows for each top ten storm event.

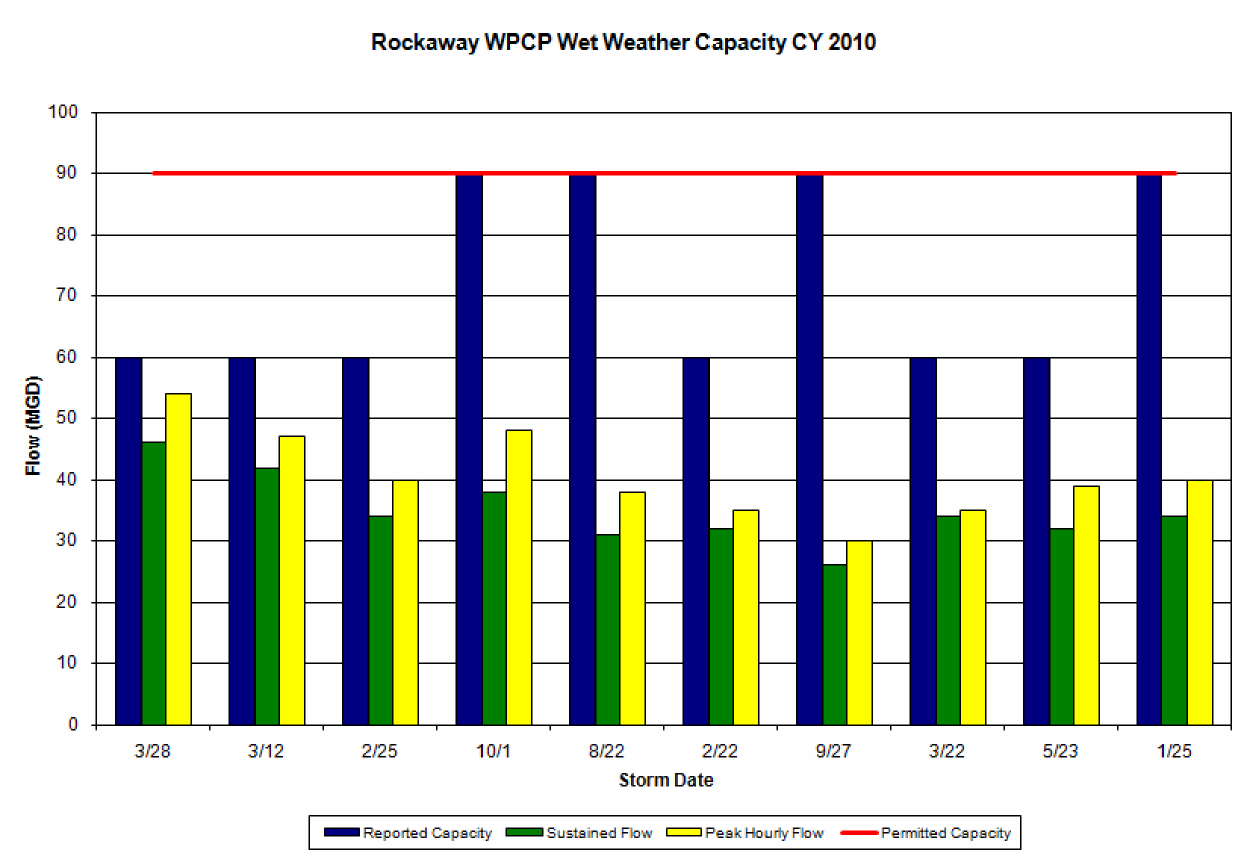


Rockaway

The wet weather capacity requirement (2xDDWF) for the Rockaway WWTP is 90 MGD. Rockaway had major construction activities that limited its ability to maximize wet weather capacity for extended periods during 2010. During six of the top ten storms the capacity was reduced as per the approved WWOP due to two primary bar screens being out of service for RO-1 Contract Work, which involved reconstruction for portions of the raw sewage influent wet well and installation of submersible pumps in the well.

Achievement of 2xDDWF at Rockaway WWTP is subject to the CSO Consent Order as reported in previous annual BMP reports. The plant did not receive inflows of 2xDDWF and did not throttle during any of the top ten events. This is the typical performance for the Rockaway WWTP, which has been undergoing sewer reconstruction and storm sewer build-out for the past few decades. As indicated in the NYCDEP Sewer Master Plan and the Jamaica Bay WB/WS Facility Plan, the plan for the Rockaway WWTP drainage area is for full build-out of the sewer system with storm sewers to fully establish the system as a separate sewer system. Therefore, it is expected that the maximum flows treated at this WWTP will continue to decline over time.

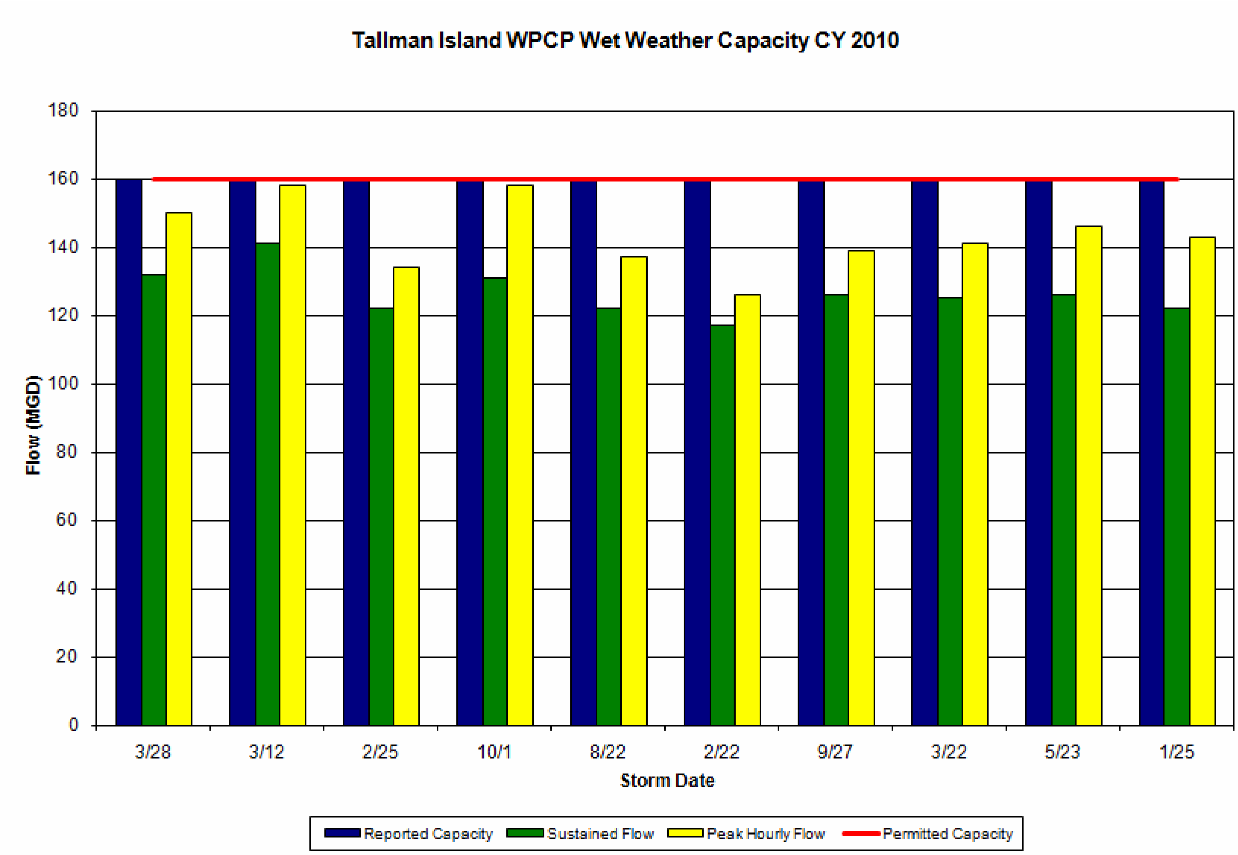
During 2010, the WWTP did not received flows of 90 MGD. During the top ten storms, the average sustained wet weather flow was 35 MGD and the average peak hourly flow was 46 MGD, compared to a reported capacity range of 60 to 90 MGD. The figure below presents the reported capacity, peak sustained and hourly peak flows for each top ten storm event.



Tallman Island

The wet weather capacity requirement (2xDDWF) for the Tallman Island WWTP is 160 MGD. Achievement of 2xDDWF at Tallman Island WWTP is subject to the CSO Order as reported in previous annual BMP reports. The WWTP has the capacity to treat flows at 2xDDWF of 160 MGD but because of conveyance system limitations these flows are only seen during very intense rainfall events. To address these limitations in accordance with the CSO Consent Order (DEC Case # CO2-200700101-1, 2007 NYC CSO Order Modification), a contract for the design of additional collection-system conveyance capacity was registered during 2007. Design work was completed in December 2010.

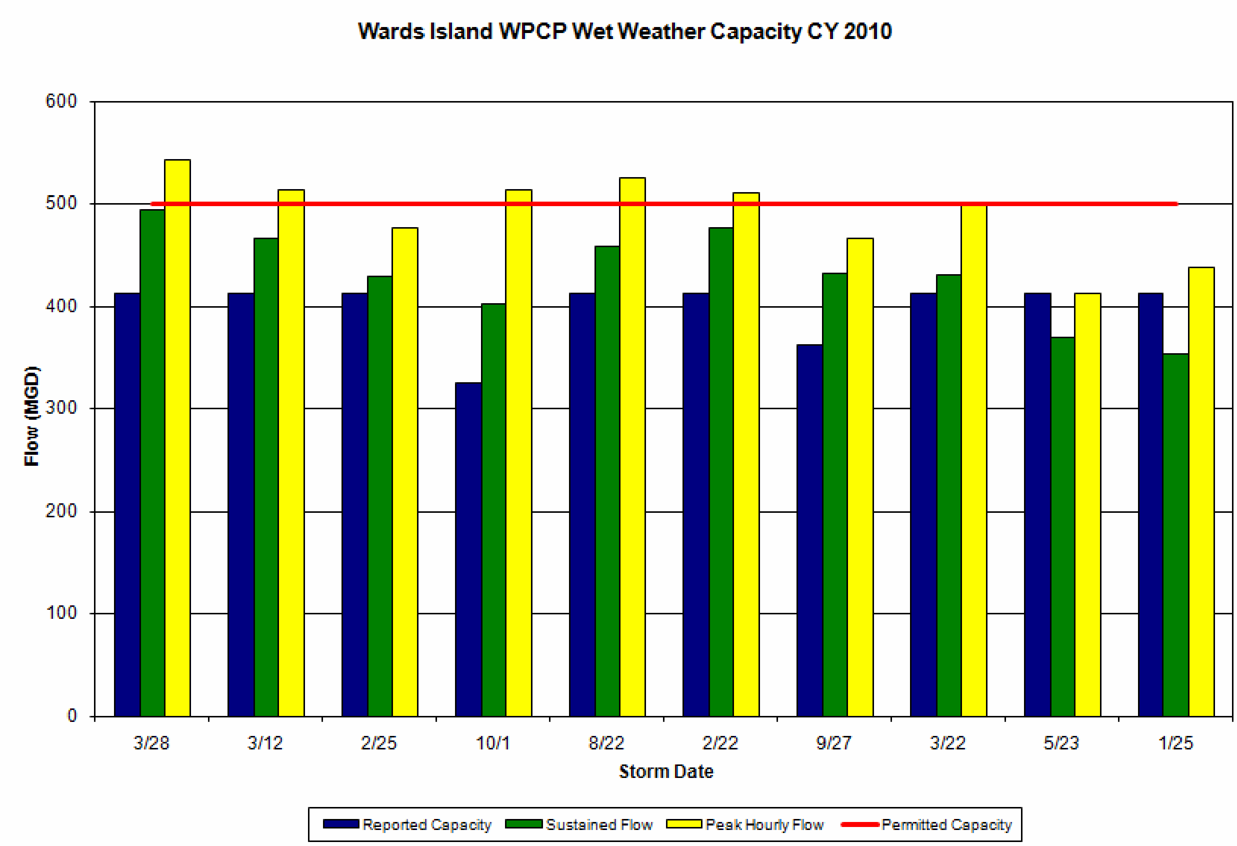
During 2010, the WWTP did not received flows of 160 MGD. During the top ten storms, the average sustained wet weather flow was 126 MGD and the average peak hourly flow was 141 MGD, compared to a reported capacity of 160 MGD. The figure below presents the reported capacity, peak sustained and hourly peak flows for each top ten storm event.



Wards Island

The wet weather capacity requirement for the Wards Island plant is 500 MGD pursuant to the Nitrogen Judgment and Modification to the Judgment dated November 3, 2006, during stabilization construction activities for the grit chambers. This limit shows a reduction of the 2xDDWF of 550 MGD and it reflects mandated construction at the Manhattan and Bronx Grit Chambers, as well as at the plant itself. In September 2008, DEP determined that during the re-construction of the Manhattan and Bronx Grit Chambers even attaining a wet weather flow level of 500 would not be possible and that a more realistic target would be 413 MGD. This was due to the fact that flows beyond 413 MGD were found to flood the construction activities within the grit chambers. DEC granted approval on January 14, 2009 for DEP to target the maximum wet weather flow of 413 MGD while the grit chambers are rehabilitated. As per the First Amended Nitrogen Consent Judgment, the wet weather requirement for Wards Island was changed to the following effective January 2011: Wards Island shall maintain the physical capability of receiving a minimum of 420 MGD to be calculated as average wet weather flow at all times the grit chamber gates are pre-positioned in accordance with the DEC approved WWOP. However, during two of the top ten storms the capacity was reduced as per the approved WWOP due to channels out of service at the Bronx Grit Chamber.

During 2010, the WWTP received its reported capacity flow for 127 hours. During the top ten storms, the average sustained wet weather flow was 431 MGD and the average peak hourly flow was 494 MGD, compared to a reported capacity range of 325 MGD to 413 MGD. The figure below presents the reported capacity, peak sustained and hourly peak flows for each top ten storm event.



Combined Sewage and Floatables Percent Capture at NYC WWTPs

Based on EPA guidance, DEP used top ten storm analysis and InfoWorks and RAINMAN model calculations to evaluate wet weather capture. A detailed report on Combined Sewage and Floatables Percent Capture at NYCDEP WWTP's is included in Appendix 3.

4. <u>Wet Weather Operating Plan</u>

> *"The permittee shall maximize treatment during wet weather events. This shall be accomplished by having a wet weather operating plan containing procedures so as to operate unit processes, including any regional CSO treatment/retention facilities listed in this permit, to treat maximum flows while not appreciably diminishing effluent quality or destabilizing treatment upon return to dry weather operation. The wet weather operating plan will establish process control procedures and set points to maintain the stability and efficiency of Biological Nitrogen Removal (BNR) process, if required, for the host WPCP<u>. The wet weather operating plan shall be written in accordance with the NYSDEC publication</u>, Wet Weather Operations & Wet Weather Operating Plan Development for Wastewater Treatment Plants, and submitted to the Region 2 Office for review and approval"*

Wet Weather Operating Plans (WWOPs) are required for each WPCP and CSO retention facility.

Appendix 4 summarizes the latest dates that the WWOP for each WWTP was submitted to NYSDEC. A total of eight revisions to previous submittals of WWOPs were submitted in 2010 for Hunts Point (2 revisions), 26^{th} Ward which includes Spring Creek, Coney Island which includes Paerdegat (2 revisions), Newtown Creek, and Tallman Island which includes Flushing Bay and Alley Creek (2 revisions).

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 the General Conditions (Part II), Section 5(b) of the SPDES permit."

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 calendar year 2010 pump station and regulator bypasses continue to remain at low levels.

The occurrence of any dry weather overflow is promptly abated and reported to the NYSDEC (to Region 2 during regular business hours and to the Spill Hotline during off hours) within 2 hours of the confirmed time of occurrence. A written report is also submitted within five (5) days of the confirmed time of occurrence.

Total of the bypasses from the New York City collection system during the reporting period was 2.59 MG, and are listed in Appendix 5.

A yearly comparison of regulators', pump stations' (PS) and WPCPs' dry weather bypassing is attached in Appendix 5.

For the period from January 1, 2010 to December 31, 2010, dry weather bypasses from PS and regulators was 0.006% (2.59 MG) of total dry flow treated by NYC's 14 Wastewater Treatment Facilities (431,197 MG).

PS and regulator failures that resulted in bypassing during the calendar year 2010 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, specific locations are being studied for improvements or modifications to reduce future bypassing.

Pump Station Dry Weather Bypassing and Analysis

An evaluation of pumping stations revealed one major cause for bypassing events.

- Electrical Utility and Equipment Failures

Electrical Utility and Equipment Failures: (Cause codes 2A, 2B)

A utility power dip at the W. 235th Street PS caused the main sewer pumps to trip and bypass into the Hudson River between the hours of 12:25 AM and 3:45 AM. According to PS-201

Telemetry, the MSP's to the pumping station were inoperable between those hours due to a power dip. The station returned to service and the bypass ended when enough power was restored to the station (around 3:45 AM). When the telemetry system was reviewed for the bypass Item #4877, it was determined that another bypass had occurred earlier in the night reported under item #4876 A utility (Con Ed) power dip was severe enough to trip both main sewage pumps at the W.235th Street PS. causing a bypass into the Hudson River. Collections Facility North (CFN) personnel arrived on-site and confirmed the station inoperable and bypassing. This incident was discovered through the PS 201 Telemetry System. A total bypass for the two incidents was 0.232 MG.

Con Edison utility power to the W.248th Street PS was lost due to fallen utility poles within the area. CFN crew arrived at the PS and confirmed the bypass. The hydraulic pump at the station was put into operation, which reduced the amount being overflowed by 75%. The incident was discovered by alarm from the PS-201 Telemetry System and caused a total bypass of 0.042 MG.

A problem with the sluice gate operator at the Hannah Street Pumping Station caused bypassing at regulators tributary to the pumping station. The sluice gate closed to the "fail-safe position" which backed up the interceptor, resulting in discharge at the Hannah Street PS, Con Edison took one feeder out so that it could perform electrical work on its feeder leading to the station. Personnel from Con Edison and Wade Electric installed new cables from the manhole in the street. The incident was discovered as a result of an alarm from the Telemetry system at Regulator PR-07 caused a total bypass of 1.302 MG.

A Con Edison feeder failed and caused a bypass at the W.254th Street PS. Communication Center received an alarm from Telemetry system and contacted CFN-SEE. The engineer began to mobilize staff at the crew quarter to respond to the alarm. When the crew arrived at the PS, the utility (feeder) power had been returned. This incident was discovered by an alarm from the PS 201 Telemetry system and caused a total bypass of 0.022 MG.

An area-wide Con Edison utility power loss/spike caused the programmable logic controller (PLC) at the Co-op South PS to fail, resulting in the closure of the sluice gate that caused a dry weather discharge of 0.379 MG into Hutchinson River. Collections Facilities North (CFN) personnel responded to the site and confirmed the sluice gate at the PS closed. The crew tried numerous ways to reopen the sluice gate but did not have any success. While performing routine scanning of all pumping stations, the engineer at Flushing Bay Communication Center noticed an issue with the pumps at Co-op South PS. He then notified an engineer from CFN who responded to the site.

There was a Con Edison power outage in the area that services the W.235th Street PS which resulted in a raw sewage bypass into the Hudson River. CFN Personnel arrived on site and confirmed the loss of power and the bypass. The CFN-SEE isolated the station equipment, notified Con Edison of the situation, and operated the Godwin Hydraulic Unit. The incident was discovered by an alarm on the PS 201 Telemetry System and caused a bypass of 0.093 MG.

A utility power outage and feeder failure at the Nevins Street PS caused a raw sewage bypass into Gowanus Canal. Collection Facility South (CFS) personnel responded to the pump station and confirmed the station was inoperable and bypassing. CFS-SEE contacted the Bureau's electricians to assist with troubleshooting the problem as well as mobilizing an emergency generator. This incident was discovered by CFS personnel during normal operation and caused a bypass of 0.024 MG.

There was a power outage at the Seagirt Avenue PS caused by a motor vehicle accident that took down the light pole feeding the station. The power outage caused the main sewage pumps (MSPs) at the pumping station to shut down. A feeder failure alarm at the Seagirt Avenue PS (from the PS201A Telemetry System) was received by the shift engineer at the BWT-Communication Center at 7:36pm. This incident was discovered by an alarm from the PS201A Telemetry System and caused a bypass of 0.153 MG.

In order to prevent future dry weather bypasses, all three Riverdale Pumping Stations (235th St, 248th St and 254th St) are currently undergoing upgrades. These upgrades include all mechanical and electrical equipment. The work on 248th St PS is expected to be completed in CY 2011. The work on 235th St and 254th St pumping station is expected to be completed in CY 2014.

The Pump Station and Regulator Telemetry System was operational during this period and effectively reduced bypasses by alarming and monitoring all pumping stations and major regulators. Potential bypasses were averted and actual bypasses were reduced in duration with this telemetry system in place.

Regulators Dry Weather Bypassing and Analysis

An evaluation of the regulator system revealed that a large percentage of total bypassing was caused by a single event, a blockage at a tide gate chamber.

A recurring reason for bypassing was blockages in regulators, but these blockages accounted for a small percentage of the total bypassing.

Regulator Dry Weather Bypassing is categorized, in order of significance, as follows:

- Blockages – Regulator, Tide gate chamber, Branch Interceptor
- Uncollected – High flows
- Electrical equipment failure

Electrical Equipment Failure: (Cause code 3B)

The inflatable dam inflated during dry weather due to a failure of the high level downstream sensor. This caused a bypass of 0.01 MG at RH Regulator No. 20.

Uncollected High Flow: (Cause code 5E)

Excessive flows due to open fire hydrants within the drainage area resulted in a bypass of 0.039 MG at the WI Regulator No. B-66.

Blockages: (Cause code 6A, 6B, 6C)

Ten separate bypass events were caused by blockages in the regulators as reported to DEC. Regulator bypassing of 0.205 MG was caused by blockages within regulators. Blockages were discovered in the regulator at OH regulator OH-10 on two occasions, Port Richmond regulator WR-4, Red Hook regulator RH-17 on two occasions, Tallman Island regulator TI-03, TI-04 and TI-52. A blockage at one of the tide gates at Wards Island regulator WI M-15 caused a bypass of 0.093 MG. This event was reported to DEC on 09/15/2010. A blockage was discovered in the branch interceptor at Wards Island regulator WI M-15 resulting in a bypass of 0.042 MG. Additional details on the events and yearly comparisons 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. "

This program is continuing as described in last year's report. Attached in Appendix 6 Exhibit 1 is the letter to industrial users amending their permits and a graph of trends in metals loading to New York City Wastewater Treatment Plants (WWTPs). In 2010 the average total metals discharged by all regulated industries to the NYC WWTPs was 17 lb/day. The total amount of metals being discharged by regulated IUs remains very low. If the same percentage of CSO bypass (1.5%) from the CSO report is applied to the current data, then on average, less than 0.25 lb/day of total metals from year 2010 regulated industries will be bypasses to CSOs. Over the years, the total amount of metals being discharged by regulated IUs has declined. It should be noted that the chart in Appendix 6 now only shows industrial metals loading and not total metals loading because plant influent is no longer sampled monthly for metals.

7. Control of Floatable and Settleable Solids

"The discharge of floating solids, oil and grease, or solids of sewage origin 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:"

7.a 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 catch basins that have been identified during the catch basin hooding program, and that shall be listed in the annual report as needing extensive repairs before a hood can be installed, the permittee shall repair the catch basin and install a hood. The permittee shall maintain a schedule of repairing and installing hoods at a minimum of 1,000 catch basins per year and all 7,000 catch basins identified as requiring repair and hoods shall be completed by January 1, 2010. 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."

7.b. Catch Basin Retrofitting -"For catch basins that have been designed without a hood or which have been identified as unsuitable for installation of a hood, the permittee shall retrofit the basin with a device to effectively reduce the incidence of street litter from entering the combined sewer. The retrofitting may include replacement of street grating, restriction or elimination of curb cuts, installation of an outlet "90 degree elbow" catch basin sieves, or other device to limit street litter from entering the combined sewer system as approved by the Department."

Catch basin hooding - an important element of New York City's CSO floatables control program and one of USEPA's Nine Minimum Controls - can significantly reduce the discharge of street litter to combined sewers, storm sewers and receiving waters. Between 1996 and 1999, DEP conducted an initial catch basin program. The program included inspection, mapping, cleaning and hooding, where possible, of all catch basins in the City. The program was required for certain areas of the City as prescribed in the 1992 CSO Consent Order but was voluntarily extended as a City-wide program by DEP. This program identified approximately 50% of catch basins as missing hoods. As a result of the program, the City's catch basin hooding coverage was increased to approximately 85% at the conclusion of the program in 1999. The City now tracks catch basin maintenance and repair activities through Hansen, a complaint and work order management system.

Many of the catch basins that remained to be hooded at the conclusion of the catch basin program in 1999 could not be hooded because of physical conditions or obstructions which precluded the installation of a hood without repair or reconstruction work. These conditions included structural deterioration, inaccessible outlet pipes and basins too shallow to permit hooding. At the conclusion of the initial hooding program in 1999 the number of catch basins found to be unhoodable due to physical conditions or obstructions was 8203. Since 1999, DEP has been addressing the need to hood these basins through various methods as described below. It should also be noted that the total number of catch basins City-wide is not static. Street work by other entities including DOT or NYC utilities may change the configuration and count of the City's catch basins. DEP is not regularly informed of all such alterations and may not discover the changes until the next inspection cycle.

As of April 30, 2010, all catch basin work described in the 2009 edition of this report as still awaiting completion was completed. Sections 7.1 and 7.2 summarize the inspections, hooding, repair, reconstruction and retrofitting completed in Calendar Year 2010. The information used to assess the reconstruction program includes Bureau of Water and Sewer Operations' (BWSO) catch basin databases, data from DEP's Hansen system, catch basin reconstruction data provided by the New York City Department of Design and Construction (DDC) and data on catch basin inspections conducted by BWSO.

7.1 CATCH BASIN POST INSPECTION AND HOODING SCHEDULE

Since the completion of the initial program in 1999, catch basin inspection and hooding continued in what is referred to as the "post-inspection" program which is conducted on a three-year cycle for all areas of the City.

Inspections and Cleaning

The provisions of the SPDES permits require that the DEP "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." As per the 2003 CSO BMP report, that schedule commenced in October 2002. As reported in the 2009 CSO BMP report, a new post inspection schedule was presented and has been in effect since July 2009. TABLE 7.1-1: Post Inspection Schedule

Catch basin maintenance and repair work is a major focus of BWSO daily activities with BWSO devoting significant resources to these tasks both as part of the programmatic three-year cycle and in response to complaints from the public. BWSO tracks inspection progress in several ways: by community board, by managing progress towards the target of inspecting one third of the catch basins annually, by reviewing the number of basins inspected and cleaned on a regular basis and by ensuring timely response to any issues reported by the public.

For the calendar year 2010, 45,760 catch basin inspections were completed at an approximate monthly average rate of 3,813 basins per month. DEP also cleaned 30,221 catch basins in 2010. Catch basin cleaning is comprised of complaint-based and programmatic (scheduled) cleaning.

Hood Replacements

The provisions of the SPDES permits require that the DEP “shall replace missing or damaged catch basin hoods within 90 days after the date of the inspection for the basins known to be hooded upon completion of the catch basin hooding program.” In 2010, 98% of the hoods were replaced within 90 days, while only the remaining 2% were not done within the 90-day time period. Overall, the average time to install a hood was fewer than 11 days - significantly fewer than the 90 days allotted in this requirement. For those that took over 90 days to replace, the time it took to do the work averaged 152 days. Reasons for failure to meet the 90-day requirement included human and computer errors or the inability of BWSO to access the basin (for example, when cars are parked on top of a basin, which happens frequently, multiple trips by BWSO staff may be necessary before access can be secured).

Tables 7.1-2: CY 2010 Catch Basin Hooding and Table 7.1-3: CY 2010 Catch Basin Cleaning present summaries of hoods replaced and catch basins cleaned as a result of the post-inspection program and other routine maintenance activities during 2010 for each WPCP drainage area and borough, respectively. These data are based on Hansen system data retrievals for repair activities that included hooding. DEP hooded 747 catch basins during the year, an average of 62 basins per month.

7.2 CATCH BASIN RETROFITTING, REPAIR AND RECONSTRUCTION

The SPDES permit provisions require that any retrofits for hooding compliance be completed by April 1, 2008. The SPDES provisions also require that catch basins requiring extensive repairs before a hood can be installed be hooded by January 2010.[1] Pursuant to the SPDES permit, BWSO has used three categories of work to achieve compliance with these requirements: retrofit, repair and reconstruction. As used in this report, these categories are defined as follows:

- Retrofit[2]: As defined in the SPDES permits and previous BMP reports, "retrofitting may include the replacement of street grating, restriction or elimination of curb cuts, installation of an outlet "90 degree elbow," catch basin sieves or other device to limit street litter from entering the combined sewer system as approved by the Department." For practical and efficiency purposes, the retrofit that DEP has used is the restriction (closure or absence) of catch basin curb cuts (curb inlet or curb piece). This is consistent with the WPCP SPDES permits which recognize that absence or closure of the catch basin curb inlet is an appropriate retrofit that minimizes the amount of street debris entering the basins.

- Repair: The repair category refers to catch basin work done by DEP in-house forces to allow a basin that can not accept a hood in its existing condition, to do so. Specifically, repairs refer to basin rehabilitation activities including brick work on portions of the basin and/or replacement or rehabilitation of particular components of the basin. In the repairs category, the existing catch basin structure and footprint remain largely unchanged

- Reconstruction: The reconstruction category refers to the complete reconstruction of the basin, including the removal of the existing basin structure, excavation or placement of fill if needed to change the elevation of the basin or reconfigure the basin's connection to the sewer and the construction of an entirely new basin structure that meets the all current design standards.

[1] "The *permittee shall maintain a schedule of repairing and installing hoods at a minimum of 1,000 per year and all 7,000 identified as requiring repair and hoods shall be completed by January 2010."*

[2] The definitions have been included to explicitly address the NYSDEC December 1, 2008 comments to "clarify" and "distinguish between retrofits, repairs and reconstruction."

Catch Basin Retrofit and Repair 2010 Work

In the 2009 report, it was disclosed that DEP had been alerted by the New York City Department of Design and Construction (DDC) that certain catch basins previously reported to have been reconstructed may not have been completed. In order to confirm the status of the 834 basins called into question by DDC's disclosure, DDC reviewed as-built drawings for the catch basins in question and was able to determine that 594 of the 834 had been reconstructed. DEP reviewed its own catch basin records to determine that 3 of the remaining 240 catch basins had been removed. Finally, DEP field inspected the remaining 237 catch basins to determine whether they had been reconstructed. Of these catch basins, 18 were found to have been removed, 12 were reconstructed or replaced, and 207 had not been reconstructed. Of these 207, 115 were retrofitted and 92 were repaired by April 30, 2010, to complete the retrofitting and repair work (work performed by DEP's BWSO repair and maintenance yards).

Table 7.2-1 presents the number of basins that were retrofitted and repaired during 2010.

7. C. **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."

The DEP maintains 23 permanent floatable containment facilities and one temporary facility for a total of 24, 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.
The offloading facility at Whale Creek is not being used due to extensive construction at Newtown Creek.

The floatable materials contained by the boom and net sites are retrieved by four City-owned skimmer vessels. Offloading currently occurs at two DEP WPCPs. The skimmer vessels are operated by a DEP contractor. The contractor also provides containment site inspection, maintenance and repair and vessel maintenance and repair services.

Skimmer vessels are dispatched to retrieve floatables from booms and nets based on inspections conducted with small vessels within 24 to 48 hours of significant rain events. The inspection vessels are also equipped with hand netting tools in order to retrieve small amounts 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 2010, 2,302.50 cubic yards of floatable material were retrieved from the 24 containment facilities and various open water sites.
Total floatable recovery per each year is provided in Figure 7-3 and in Appendix 7C, Table 7C-1. Floatable recovery totals for 2010 per each of the boom and net sites are included in Appendix 7C, Table 7C-2.

During 2010, the Cormorant was not utilized and therefore, no floatable capture by this vessel is being reported during this reporting period.

The NYCDEP purchased a new self propelled skimmer vessel (Aquarius Systems Custom Model HSTH235 - High Speed Trash Hunter) in 2009. The purchase of that vessel replaced one of the older skimmer vessels and performed a full year of service in 2010. In addition to simply being a newer vessel, the Shearwater has several design improvements relative to the old vintage models, including an aluminum hull and increased horse power. The Shearwater employs a conveyor belt system to retrieve floatables, like the older vessels, but the hull and propulsion improvements have provided increased seaworthiness and speed making the Shearwater able to traverse New York Harbor without towing.

Figure 7-4. DEP Skimmer Vessel "Shearwater"

Table 7C-3 reflects NYCDEP CSO Floatable Removal Program via Skimmer Vessels – Collection Summary (Cubic Yards).

7.d.1 KEEP NEW YORK CITY BEAUTIFUL CAMPAIGN (TRANSITIONED FROM THE STREET-LITTER WORKING GROUP)

In 2010, the Keep New York City Beautiful organization remained active, focusing on citywide community-improvement programs such as litter prevention, neighborhood clean-ups, urban greenspace initiatives, tree plantings, and other activities. For a detailed description and history of Keep New York City Beautiful, please refer to the CY2008 CSO BMP Annual Report. The following table presents a summary of Keep New York City Beautiful's activities and impacts during 2010. Through these activities and initiatives, Keep New York City Beautiful programs not only increased the public's awareness of the impact of littering, but also directly reduced litter and rainfall runoff through community cleanups and tree planting, to help reduce CSOs and their impacts on New York Harbor.

AFFILIATE KEEP AMERICA BEAUTIFUL® INC.

Keep New York City Beautiful - 2010 Activities
• Enhanced the collection of floatable litter by conducting beach and shoreline cleanups through a DEP initiative, removing approximately 598 cubic yards of debris.
• Cleaned over 4,561 vacant lots Citywide.
• Collaborated with 64 Business Improvement Districts and hundreds of their cleaners to sweep up, adopt litter baskets, and spruce up areas through a joint effort with the Departments of Sanitation and Small Business Services.
• Ticketed 510 dog walkers who failed to clean up after their dogs through a Sanitation Department public awareness campaign; bringing total number of tickets issued under program to 1,800.
• Advanced the Department of Transportation 'Public Plaza' beautification project citywide
• Removed about 78,657 illegal posters from public utility poles and fined violators who put them up
• Removed graffiti from 12,600 sites citywide through Mayor Bloomberg's Graffiti-Free NYC program
• Conducted public outreach en masse at the Great American Cleanup, NYC Earth Day Rally in Times Square on April 22, 2010
• Planted 430,790 trees since the inception of the Million Trees NYC program in 2008.
• Planted a variety of native trees, shrubs, flowers and plants throughout the city and distributed plant material to 150 beautification projects citywide through initiatives sponsored by the Council on the Environment of NYC

In April, the Keep America Beautiful - Great American Cleanup hosted the annual celebration in the heart of Times Square celebrating the 40th Anniversary of Earth Day. The Great American Cleanup Kickoff Rally marked the launch of Keep New York City Beautiful Coalition's GAC activities throughout all five boroughs of the city and put a shine on the Big Apple in preparation for Earth Week. Highlights of the event included a special presentation by the DEP contracted Blue Man Group, a popular theatrical performance group, and a viewing of the multi-media PSA entitled, "You're part of the System." The educational piece stresses a "Don't Litter" theme, showing how floatables can end up in the waterways, and reminding the public that they are "part of the system" and hence part of the solution to controlling floatables.

Students from the NY High School for Environmental Studies at the Keep NYC Beautiful Kick-Off event in Times Square.

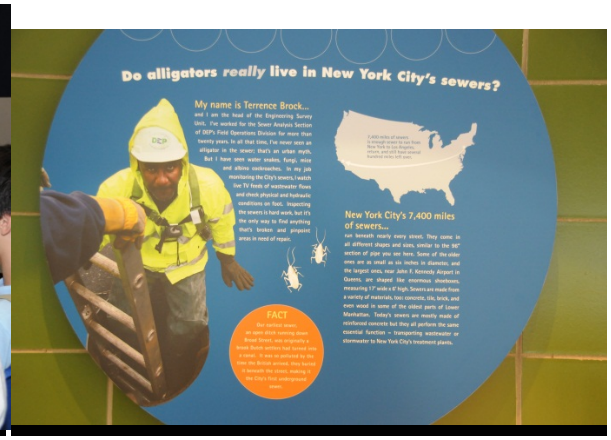
In addition to the Keep NYC Beautiful activities, DEP launched the following initiatives and programs in 2010.

DEP launched Water-On-the-Go (WOTG), providing New York City Water to the public at both regularly scheduled outreaches as well as special events throughout the five boroughs to help reduce the use of plastic bottles. As of 9/30/10 WOTG provided water to a total of 85,122 drinkers.

DEP partnered with Aveda to promote NYC tap water during Fashion Week by setting up Water on the Go" Stations in Manhattan to help reduce the use of plastic water bottles.

DEP Opened the Visitor Center at Newtown Creek in April 2010. The center chronicles the life cycle of New York City water, starting with its origins in the upstate watersheds, to its distribution through 6,300 miles of water mains, to its treatment at one of the city’s 14 wastewater treatment plants.

DEP's Education staff teaches elementary through high school students, as well as adult, about the NYC water supply and wastewater treatment systems at the Visitor Center at Newtown Creek.



7.d.2 DEVELOPMENT OF BMPS FOR THE AUTOMOTIVE AND TRANSPORTATION INDUSTRIES

DEP continued this program in 2010. For a full description of this program, please see the CY2009 CSO BMP Annual Report.

7.d.3. **DEVELOPMENT OF A NEW CREEK, SOUTH BEACH, AND OAKWOOD BEACH BLUEBELT**

In 2010, DEP continued its development of the Staten Island Bluebelt system (see Figure right) with an expansion of the Bluebelt program in the New Creek, South Beach and Oakwood Beach sections of Staten Island. For a full description of the Bluebelt programs, please see the CY2009 CSO BMP Annual Report. The following sections describe the current status of the programs.

- Adopt-a-Bluebelt – In 2010, an additional three sites were adopted and maintained by local community groups, companies, or individuals. This brings the total number of adopted sites to 123 since the program's initiation.
- Volunteer Cleanups – This program continued in 2010.
- Catch Basin Outreach and Education – DEP continued catch basin outreach and education.
- Floatable Control – Trash booms are cleaned regularly by DEP maintenance staff and have significantly reduced floatable discharges into the storm water system and Raritan Bay.
- Illegal Dumping Enforcement – This program continued in 2010.
- Youth Conservation Corps – DEP initiated a pilot program, the Staten Island Bluebelt Youth Conservation Corps (YCC). Six Staten Island High School students were selected for a six week program, which lasted from July 12 to August 19, 2010. The students participated in various activities which focused on inspection of existing BMPs and the removal of invasive and exotic plants that aggressively grow and out-compete native vegetation. As a result of the YCC program, almost 500 invasive trees were removed along with nearly 200 garbage bags of vines, brush and over 60 pounds of trash. YCC team members also participated in environmental education programs presented through the cooperation and participation of GrowNYC. GrowNYC, formerly the NYC Council on the Environment, is a privately funded citizen's organization in the office of the Mayor.

7.d.4 DEVELOPMENT OF AN EXPANDED GREASE TRAP PROGRAM

DEP continues to develop the Expanded Grease Trap Program. For a detailed description of this program, please see the CY2009 CSO BMP Annual Report. The following is a summary of activities during calendar year 2010:

- 840 initial inspections were performed
- 2,214 follow ups / maintenance inspections were performed
- 1,826 Commissioner's Orders were issued
- 717 Notices of Violation were issued,
- 2,182 new grease interceptor installations were required
- Various laminated signs ("No Grease dumping, Hand Washing Only" and "No Grease dumping, Vegetable/Fruit Washing Only") and grease Best Management Practices were printed and distributed at restaurant shows and during inspections.

In addition, three trade shows were attended by staff from the Grease Remediation Unit. These trade shows included the New York Restaurant Show, Green Building Show and the International Hotel/Motel and Restaurant Show. In addition, leaflets on residential grease disposal tips were distributed at various public outreach events. Detailed information on these events is available from the Bureau of Wastewater Treatment, Compliance Engineering Section.

7.d.5 IMPLEMENTATION OF A REQUIREMENT FOR SIGNIFICANT INDUSTRIAL USERS TO HOLD THEIR PROCESS WASTEWATER AND NON-CONTACT COOLING WATER TO THE MAXIMUM EXTENT PRACTICABLE DURING HEAVY RAINS

In 2010, 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 Section 7.d.7.3 – Industrial Pretreatment and in Appendix 6.

7.d.6. **THE EDUCATIONAL CAMPAIGN PROGRAM TO REDUCE LITTERING BEHAVIOR**

In 2010, DEP continued to educate the public and raise awareness about environmental topics such as New York City’s wastewater treatment and water supply systems, floatable reduction and water conservation. DEP developed, through its Bureau of Communications and Intergovernmental Affairs (BCIA), a comprehensive public education and outreach program featuring:

- School Programs
- Public Event-Based Programs
- Multi-Media
- Volunteer Programs
- Publications
- Promotional Items
- Website

The following sections describe the status of these programs during 2010. For a full description of these programs, please see the CY2009 CSO BMP Annual Report.

7.d.6.1 **School Programs**

BCIA’s school programs continued to reach thousands of young people and adults in 2010. For a description of the specific elements of these programs, please see the CY2008 CSO BMP Annual Report. Some specific examples of these programs that occurred in 2010 are presented below.

7.d.6.1.**1 Education**

In 2010, DEP conducted more than 100 education programs with students and adults through ongoing school visits, field trips, career days, science fairs, teacher workshops, and other

educational programs and events. Education materials, including background information about New York City's wastewater treatment and water supply systems, lesson plans and student activities, were also sent to thousands of recipients throughout New York City. Detailed information on these programs is available from BCIA's Education office.

In April, DEP opened the Visitor Center at Newtown Creek, located at the Newtown Creek Wastewater Treatment Plant in Greenpoint, Brooklyn. The Visitor Center is an important resource for young people and adults to learn about New York City's water resources, including the wastewater treatment process, underground infrastructure, green solutions to stormwater management, harbor water monitoring and stewardship. The Visitor Center is open to the public on Fridays and during the week for school groups when educators are available to conduct school programs and teacher workshops. A garden featuring native shrubs, grasses and flowers welcomes the visitors.

On May 13, 2010, DEP conducted its 24th Annual Water Resources Art & Poetry award ceremony. Held for the first time at the Frank Sinatra School in Astoria, Queens, almost 900 students, family members, teachers, and principals recognized the students' knowledge of the city's valuable water resources through their creative expression in art and poetry. Approximately 460 fourth-, fifth- and sixth-grade students from 123 public, charter, independent and parochial schools in New York City participated in the program. To celebrate the 25th Annual Water Resources Art & Poetry Program in 2011, students in grades K – 12 will be invited to participate and will be asked to submit entries online where their poetry, photographs, digital art, paintings, and crafts will be on display through DEP's Website.

In 2010, DEP continued to partner with Trout Unlimited with the Trout in the Classroom (TIC) program, a watershed environmental education initiative for elementary through high-school students. On October 15, over 150 teachers from NYC and the watershed attended the Fall TIC Teacher Conference, where they participated in workshops presented by DEP professionals and veteran TIC teachers. Trout eggs, distributed by the NYS Department of Environmental Conservation, were hatched and raised by students in more than 55 classrooms in NYC and more 50 in the East and West of Hudson watersheds. In the spring, 1,500 NYC students released their trout into watershed streams and participated in hands-on on activities focusing on water stewardship.

On June 25, 2010, 50 educators from many NYC environmental education organizations took part in a day-long bus tour of the NYC watershed visiting sites such as the Schoharie Reservoir. The purpose of the tour was for educators to learn about programs that emphasize the link between well-managed forests and water-quality protection, including water-quality monitoring, stream-and riparian-buffer management, watershed regulations, watershed forestry and agricultural programs and environmental education opportunities. In turn, they will have the knowledge and skills to develop lessons and activities for their own audiences.

On August 11, November 3, and November 17, 2010, DEP hosted professional development workshops for formal and non-formal educators through the Summer Science Discovery Institute, Bronx River Alliance, and the Queens Museum of Art. Participants learned about creative ways to incorporate the study of water resources into their curriculum using activities focusing on the NYC water-supply system and the importance of conserving water.

As part of the Jamaica Bay Watershed Protection Plan, DEP produced a Jamaica Bay Education Resource Directory. This new comprehensive resource for NYC educators will help enhance classroom lessons and raise awareness about Jamaica Bay, an important natural resource in our own backyard. The Directory includes descriptions of programs offered by almost two dozen organizations with easy to use references to find just the right programs, environmental topics and Jamaica Bay access areas so students can learn about water quality issues, ecology, stewardship opportunities and other important topics. There is also a checklist of local flora and fauna, a glossary, and bibliography.

7.d.6.2 **Publications**

In 2010, DEP published and distributed 870,000 copies of the 2009 New York City Water Supply and Quality Report, an annual mandated Consumer Confidence Report. Additional publications were updated and produced for distribution and posting on DEP’s Website for water consumers:

- Check the Facts, Follow the Tips! Save Hundreds of Gallons of Water a Day
- New York Harbor Survey Program: Celebrating 100 Years
- How Restaurants Can Lower Their Water and Energy Bills

- Safety Net Referral Program: Assistance Programs Offered to Eligible Water and Sewer Customers
- Rooftop Detention
- How to Pay Your Water and Sewer Bill
- 2009 New York Harbor Survey Report
- Newtown Creek Nature Walk brochure and Scavenger Hunt booklet
- Water Debt Assistance Program
- Important Information about Lead in Household Plumbing
- Assistance for Senior Citizen Water and Sewer Customers
- Protecting our Water: New York City's Cross Connection Control Program
- Jamaica Bay Education Resource Directory

In 2010 DEP continued its on-going education outreach efforts through its presence at highly visible Greenmarket locations throughout the city. This year, as an expansion of the Bureau of Wastewater Treatment's Summer Intern Program, the Shoreline Clean Up Interns from BWT acted as DEP Water On-the-Go Outreach Ambassadors. DEP's Water-on-the-Go summer pilot program, is a partnership with NYC Parks, DOHMH, DOT, and Grow NY and local organizations. DEP's Water On-the-Go fountains were set up daily at public plazas, greenmarkets, parks, and special events to decrease attendees drinking bottled water and reduce litter. The fountains were staffed by BWT Beach Shoreline Cleanup interns who served as Ambassadors to the public and were on site to give facts on the benefits of tap water vs. bottled water. The presence at public events and Greenmarkets gave DEP Water On-the-Go Outreach Ambassadors the opportunity to interface and facilitate questions from the public, distribute useful promotional items and educational literature that helped to reinforce the message.

The Water On-the-Go Outreach Ambassadors raised awareness of "Clean Streets = Clean Beaches" and helped reduce floatables by distributing reusable, BPA-free NYC Water bottles. They encouraged the public to fill the bottles with tap water at the Water O-the-Go fountains instead of purchasing bottled water. They were able to give a first-hand account of the environmental impact of how bottled water ends up as litter and debris on the shorelines they had cleaned. Consciousness of water conservation was raised amongst city residents through distribution of various promotional items that included sponges with a strong water conservation message. The presence at various Greenmarkets throughout the program gave Water On-the-Go Outreach Ambassadors the opportunity to interface with the public who visited the market to purchase fresh fruit, vegetables, and other locally produced products straight from regional farmers, thus keeping sustainability top of mind. The interns performed outreach with the Water-On-the-Go pilot program from July 4th through Labor Day weekend.

7.d.6.3 **Future Actions**

In 2010, DEP will continue to engage in and support programs that address CSOs and floatable-litter reduction. For a full description of the Public Education programs, please see the CY2009 CSO BMP Annual Report. The following section describes the status of these programs.

7.d.6.3.1 **Program Continuation**

In 2011, DEP plans to continue its engagement in the programs described earlier in this Section (and in the CY2009 CSO BMP Annual Report) using the successful approach engaged since 2000. The following describe specific, notable plans for 2010 for several programs:

- School Programs: In 2011, DEP will expand the Water Resources Art and Poetry Contest to include students in grades K-12 and also new media entries such as videos, digital art, photographs, and crafts. For the first time, entries will be submitted and judged online. Themes for the 2011 contest will include the importance of New York Harbor, the origins of our water , how the city's wastewater is treated, green solutions to managing stormwater, and stewardship activities such as anti-littering and water conservation.

- Publications: Specific documents that will receive updates in 2011 include the New York Harbor Water Quality Report and the Drinking Water Supply and Quality Report.

7.d.6.4 **Conclusions**

DEP currently manages an extensive public education program that targets a wide range of New York City students, teachers, residents, businesses, and visitors and internet users. The program is supported through the Visitor Center at Newtown Creek, outreach events at schools and public events, multi-media promotion, support of volunteer programs, literature and publication distribution, promotional item distribution, and the DEP website. In 2011, DEP plans to continue these programs and to expand outreach at the Visitor's Center at Newtown Creek.

7.d.7 POLLUTION PREVENTION ACTIVITIES UNDERTAKEN BY DEP AND/OR OTHER CITY ENTITIES

7.d.7.1 Pollution Prevention

In 2010, DEP continued to engage in Pollution Prevention Programs. For a full description, please see the CY2009 CSO BMP Annual Report. The following sections describe the status of the programs.

- Water Conservation
  - Metering
  - Toilet Rebate Program
  - City Codes for Low Flow Fixtures
  - Leak Detection
  - Water Restrictions
  - Fire Hydrant Caps
  - Public Education
- Water Reuse Program
- Industrial Pretreatment
- Water and Sewer Permits
- Environmental Economic Development Assistance Unit
  - Compliance Assistance
  - Pollution Prevention
  - Green Business Development
  - Financial Referrals
  - Regulatory Reform
- Business Improvement Districts
- Green Buildings
- Mayor's Office of Long Term Planning and Sustainability
- Climate Change Program
- Public Education

7.d.7.2 Water Conservation

The City's ongoing water-conservation program is motivated by a need to ensure adequate supplies of potable water for the City throughout the year as well as reduce wastewater flows. By carrying out measures to reduce the quantity of water consumed in domestic, commercial, and industrial locations, the available reserve in the City's reservoirs is increased, with the concomitant effect of reducing the volume of sanitary wastewater in the City's drainage system. With base level (dry-weather) flows thus reduced, the collection system and the wastewater treatment plants will have more capacity available during wet weather, and the frequency and volume of CSO events may be reduced.

7.d.7.2.1 **Program Description**

The City has completed or maintains a wide array of programs in place to reduce water consumption. These programs and 2010 highlights are discussed briefly below:

Metering: Approximately 98 percent of the City's water usage is now metered under a program that began in 1985 and was substantially complete by 2000. Previously, water rates were assessed on a flat-rate basis that was calculated from property characteristics such as building type, size, and street frontage. Not only did the lack of metering make system analyses difficult to perform, but this system was also undesirable because it was not use-based, meaning consumers had no incentive to monitor their own water consumption (since their rates were fixed regardless of the volume consumed). Water/sewer rates before 1985 were kept artificially low through cross subsidies with the general fund and a failure to invest in infrastructure. With the installation of meters on residential properties and the financial internalization of the water/sewer system, users see a direct connection between their water/sewer charges and their consumption. As of 2010, the water/sewer rate has increased by 650 percent since 1985, and now more accurately reflects the cost of maintaining the system.

In 2009, DEP expanded the metering effort by beginning the installation of a citywide Automatic Meter Reading ("AMR") system that has the capability to read meters remotely at least four times a day. By March 2011 the system was 75% complete and is expected to be substantially complete by January 2012. More than 98% of the meters served by the AMR system are generating actual readings.

Toilet Rebate Program: Approximately 75 percent of domestic water use occurs in the bathroom--even more in homes without lawns. Federal standards that took effect in 1994 established an efficiency standard of 1.6 gallons per flush (gpf) for toilets, 2.5 gallons per minute (gpm) for showerheads. New York City and some other municipalities created their own local standards in the late 1980s and early 1990s. DEP conducted a rebate program between 1994 and 1997 to encourage customers to replace their old 5 gpf toilets and 4-5 gpm showerheads with new products to reduce water use. The rebate program encouraged homeowners to exchange their old toilets for the newer designs by offering a rebate of as much as $240 for each fixture that is replaced. Nearly $300 million was spent for this program that replaced over 1.3 million old, water-wasting toilets with more efficient ones. A second incentive program based on vouchers is being planned for the period 2012-2015.

Changes to City Codes: City codes were amended in 1989 to require the use of low-flow fixtures in all new construction with showerhead requirements taking effect that year and toilet requirements taking effect in 1992. These local laws were effectively superseded by Federal EPACT passed in 1992. In 2009, the City Council passed and the Mayor signed new fixture standards for toilets, showerheads and faucets based on the USEPA's WaterSense efficiency standards. They will take effect July 2012. The Council also passed legislation prohibiting single-pass water-cooled refrigeration and air conditioning equipment in new construction with the exception of small icemakers.

Leak Detection: The City offers free leak-detection surveys for commercial and residential building owners. In 2010, the Water Survey program conducted leak surveys in 19,790 apartments, 4,808 private homes and 720 small commercial properties. In addition, in 2010 "Do it yourself" home water-saving kits were distributed to 846 homeowners and 577 apartment residents.

Water Restrictions: The City imposes permanent and seasonal year-round restrictions on water use, such as lawn watering, sidewalk washing and the use of once-through water-cooled refrigeration and air conditioning.

7.d.7.3 Industrial Pretreatment

7.d.7.3.1 Program Description

This program continued in 2010. In 2010, 871 inspections were performed on regulated industries, and 122 Notices of Violation were issued. In 2010 the average total metals discharged by all regulated industries to the NYC Wastewater Treatment Plants (WWTPs) was 17 lb/day. The total amount of metals being discharged by regulated IUs remains very low. If the same percentage of CSO bypass (1.5%) from the CSO report is applied to the current data, then on average, less than 0.25 lb/day of total metals from year 2010 regulated industries will be bypasses to CSOs. It should be noted that the chart in Appendix 6 now only shows industrial metals loading and not total metals loading since plant influent is no longer sampled monthly for metals.) For a complete description please see CY2009 CSO BMP Annual Report.

7.d.7.3.2 Potential for Improvement/Expansion

As an alternative means of reducing the likelihood of CSOs during storm events, DEP has required that regulated industries IUs hold their process wastewater and non-contact cooling water to the maximum extent practicable during heavy rains. In 2010, 871 IU inspections were performed, and 122 Notices of Violation were issued to IUs.

7.d.7.4 **Water and Sewer Permits**

The City continued this program in 2010. For a detailed description of the program please refer to the 2009 CSO BMP Annual Report.

7.d.7.4.1. **Program Description**

During 2010, a proposal to "reduce the release rate of storm flow 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)" is under consideration. For a detailed description of the water and sewer permit program please refer to the 2008 CSO BMP Annual Report.

7.d.7.4.2 **Program Jurisdiction**

DEP's Bureau of Water and Sewer Operations (BWSO) is responsible for overseeing the sewer permit process. The BWSO is also responsible for approving and inspecting water and sewer connections performed by licensed plumbers and/or authorized contractors.

7.d.7.4.3 **Contextual Characterization**

The water and sewer permit program is primarily a regulatory program, however, given the responsibility of the DEP to implement the program, the water and sewer permit program can be considered an institutional program, as well.

7.d.7.5 **Economic Development Unit (EDU)** - Working with and for the New York City Business Community

The EDU is the Economic Development Unit of DEP's Bureau of Sustainability. EDU's mission is to foster the joint goals of economic development and environmental protection by offering assistance in compliance and technical issues to the City's industrial and commercial establishments. For detailed descriptions of EDU's programs, please refer to the CY2008 CSO BMP Annual Report.

In 2010, EDU continued its core programs, including Compliance Assistance, Green Business Development, Financial Referrals and Incentives, and Water Bills and Infrastructure Assistance. Through these programs, EDU continued to work with primary partners including business groups such as Local Development Corporations (LDCs), Business Improvement Districts (BIDs), Chambers of Commerce, Merchant Associations, and trade associations. DEP provided assistance to these partners via several types of public outreach, including answering inquiries, conducting on-site visits, producing dedicated mailings, and presenting at workshops. In particular, in 2010 EDU administered a program to enhance compliance with DEP's grease management requirements through workshops (in conjunction with the Bureau of Wastewater

Treatment) and on-site visits to food-service establishments. The following table summarizes EDU's outreach activities during 2010.

EDU Public-Outreach Program[1] Activities During 2010

Outreach Type	Compliance Assistance	Green Business Development	Financial Referrals and Incentives	Water Bills & Infrastructure Assistance	Total Unique Events
Business Inquiries[2]	242	24	12	31	289
On-Site Visits[3]	276	276			276
Dedicated Mailings	109	109			109
Workshops[4]	18	7			18
Other Events[5]					10
Grand Total					702

(1) Events include non-water related outreach (Air Compliance, Right-to-Know, etc.)
(2) Includes 20 business inquiries counted in multiple categories (e.g., Compliance and Financial Referrals)
(3) Includes 276 on-site visits counted in two categories (Compliance & Green Business)
(4) Workshop attendance totaled 575
(5) Includes business development (9 events) & miscellaneous (1 events)

7.d.7.6 **Business Improvement Districts**

A BID is a partnership of property and business owners that contribute to the improvement of their business district through collaborative maintenance, development and promotion of the district. BIDs deliver supplemental services, such as sanitation and maintenance, capital improvements, public safety and marketing. Several of the services promote pollution prevention and control efforts, such as sidewalk and street cleaning and litter basket emptying. These efforts support the reduction of litter in the streets and assists in the reduction of floatables. Additional services include, but are not limited to, landscaping, such as open space maintenance and tree and flower plantings. In addition to the BIDs, the New York City Department of Small Business, through its NYC Clean Streets Program, offers a comprehensive sanitation and maintenance program to select qualifying organizations. Services include manual and mechanical sweeping of the sidewalks, curbs and gutters, frequent removal of bagged litter, pressure cleaning of sidewalks, graffiti removal, and additional maintenance. These programs assist in the reduction of floatables in New York City's waterways and sewers by promoting litter prevention and control.

7.d.7.7 **Green Buildings Legislation**

The NYC Department of Design and Construction's (DDC) Office of Sustainable Design continued to incorporate sustainable design and construction and target LEED certification of city buildings in 2009. In 2008, the Sustainable Urban Sites Design Manual was published with the intent to introduce to DDC project managers, DDC consultants and clients more sustainable site design practices, including controlling site disturbances, managing stormwater and other hydrological resources, and landscape planting. For a detailed description of the program, please see the CY2008 Annual Report.

In 2010 the City of New York published the High Performance Landscape Guidelines which establish standards for landscape design by the Department of Parks and Recreation. Along with other best practices these standards provide guidance on reducing impervious surfaces and managing stormwater at its source using retention, infiltration, and evapotranspiration.

7.d.7.8. **Mayor's Task Force on Sustainability**

The Mayor's Task Force on Sustainability no longer exists. It was a precursor to the creation of the Office of Long-Term Planning and Sustainability and PlaNYC. (see 7.d.7.9)

7.d.7.9 **Mayor's Office of Long-Term Planning and Sustainability / PlaNYC**

The initiatives for water quality presented in PlaNYC continued in 2010. See also responses 7.d.7.10 and 13. For a description of this plan, please see the CY2008 Annual report.

7.d.7.10 **PlaNYC Sustainable Stormwater Management Plan**

The Sustainable Stormwater Management Plan was completed in December 2008 by the Mayor's Office of Long-Term Planning and Sustainability and lays out a general implementation plan that includes BMP installations, design manuals, tracking systems, a performance standard, and others strategies. In October 2010 the Mayor's Office of Long-Term Planning and Sustainability published a Progress Report for the Sustainable Stormwater Management Plan. To view the contents of the report please go to http://www.nyc.gov/planyc2030

7.d.7.11 **Climate Change Assessment and Action Plan**

DEP contributed to national discussions on addressing climate change impacts on water and wastewater utilities. DEP also participated in the review of the New York States Sea Level Rise report. In the upcoming year, DEP will update NYC's rainfall intensity curves and coordinate with a newly formed northeast Regional Integrated Sciences and Assessment (RISA) to inform the development of better climate data for the northeast.

7.d.7.12 **Jamaica Bay Watershed Protection Plan**

On October 1, 2010, the New York City Department of Environmental Protection (DEP) submitted the second update to the Jamaica Bay Watershed Protection Plan (JBWPP), as required by Local Law 71 of 2005. Consistent with PlaNYC, the goals of the JBWPP focus on water quality improvements, ecological restoration and enhancement of valuable natural resources. Update 2010 described the commitments to upgrade wastewater treatment plants and cut nitrogen discharges into Jamaica Bay by half - a $100 million investment over the next decade. This was a historic agreement between the City, the New York State Department of Environmental Conservation, the Natural Resources Defense Council, and other environmental stakeholders. When combined with other upgrades in various stages of implementation in Jamaica Bay, these new commitments bring the total level of investment to well over $200 million. In addition, $15 million will be spent on wetland restoration projects in the interior of Jamaica Bay, in addition to $37.4 million in City funds already spent to reclaim more than 440 acres of environmentally sensitive land adjoining the bay, including critical grassland habitat built on the closed and reclaimed Fountain and Pennsylvania Avenue landfills.

This level of investment by the City, while unprecedented, requires support from federal and local sponsors as well to achieve the long-term restoration of Jamaica Bay. On July 26, 2010, Secretary of Interior Kenneth L. Salazar led a summit to explore how the Department of Interior can advance the conservation agenda for urban national parks through the adoption of the recently-completed Hudson-Raritan Estuary Comprehensive Restoration Plan, which was prepared by the U.S. Army Corps of Engineers (Corps). The summit was attended by 150 leaders from the government, business and the non-profit sectors with the goal of increased federal funding for Gateway National Park and Jamaica Bay.

The City, together with the US Army Corps of Engineers have made remarkable progress over the two-year period since the last update on marsh island restoration on a total of 83 acres for Elders East and West and Gerritsen Creek, where an additional 26 acres of wetlands and upland were restored. In addition, the National Park Service has launched a review of its general management plan for Gateway National Recreational Area, which includes Jamaica Bay. To complement that effort, Senator Schumer and Congressman Weiner, together with several civic groups, have initiated a Floyd Bennett Field Task Force to increase and improve the quality of public access to these 1,400 acres of open space. DEP, Parks, and other City agencies are actively participating in this effort.

Since Local Law 71 initiated the development of the JBWPP in 2005, Jamaica Bay has become a model for comprehensive watershed planning in drainage areas throughout the City. As a result of ongoing stormwater pilots and related analyses within the Jamaica Bay watershed, stormwater source controls are being applied to other drainage areas in the City. The NYC Green Infrastructure Plan submitted to the State DEC in Fall 2010 documents cost-effective green infrastructure alternatives to grey infrastructure for reductions in combined sewer overflows (CSOs).

Update 2010 also described DEP's ongoing efforts to develop and demonstrate cutting edge ecological improvement technologies such as pilot eelgrass plantings to increase biodiversity within Jamaica Bay. Based on monitoring data and success of two separate plantings to date, a third planting is already being planned for next year. In the past year and coming year, DEP will create several oyster beds, which may ultimately regain their critical place in the harbor ecosystem and help filter out contaminants. In addition, an Algal Turf Scrubber® pilot facility was installed at Rockaway Wastewater Treatment Plant, which will evaluate nutrient removal from wastewater and potential biofuel manufacturing. In the coming year, DEP hopes to obtain Jamaica Bay No Discharge Zone status form USEPA.

7.d.7.13 **Ecological and BMP Planning to Address CSOs**

In 2009, DEP kicked off a $15 million contract to pilot BMPs and develop a design manual, among other tasks. In addition, through EBP funding, DEP constructed additional BMP pilots. In 2010 DEP permitted and installed:

- 10 public right-of-way green infrastructure demonstration projects in Jamaica Bay Watershed– streetside swales and enhanced tree pits – the first in New York City funded through EBP
- Largest green infrastructure stormwater capture pilot project along North and South Conduit Avenue in Jamaica Bay watershed (construction start Dec 2010)
- Constructed wetland installed at MTA parking lot
- Blue/Green Roof Demonstration and Comparison Study Constructed at PS118 funded through EBP
- Blue Roof Comparison Pilot constructed at DEP Facility (Metropolitan Ave)
- Model stormwater management site at NYCHA’s Bronx River Houses - installed blue roof, infiltration swales, and parking lot infiltration system

In 2011, under the contract, DEP plans to issue Design Guidelines as a companion to the new stormwater performance standard (see Green Buildings Legislation above) and install monitoring equipment and begin collecting monitoring data at green infrastructure pilot sites.

7.d.7.14 **NYC Green Infrastructure Plan**

The NYC Green Infrastructure Plan was released in September 2010 and lays out an alternative green strategy to use green infrastructure along with cost-effective grey infrastructure to improve the quality of NYC's waterways by capturing and retaining stormwater to reduce sewer overflows. Most green infrastructure uses natural features, like green-roofs, and adds structural designs, like porous pavement and tree pits, to absorb and retain stormwater. By replacing the current grey strategy with the green strategy, the City will cut CSOs by more than 12 billion gallons per year by 2030—a 40% reduction—which is two billion gallons more per year than the under the current plan and will cost New Yorkers $2.4 billion less than the tanks and tunnels that we are currently required to build. The City is prepared to invest $1.5 billion in the green strategy through 2030 and has committed $238 million through 2015 in capital, and operations and maintenance funding for this green strategy. This plan builds upon the research and commitments of the Sustainable Stormwater Management Plan referenced in 7.d.7.10. DEP and OLTPS will be responsible for implementing the NYC Green Infrastructure Plan.

7.d.7.15 **NYC Green Infrastructure Task Force**

In order to achieve the goals of the NYC Green Infrastructure Plan the City created the Green Infrastructure Task Force led by the Mayor's Office of Long-Term Planning and Sustainability, and DEP, and comprised of over ten different City agencies. The Green Infrastructure Task Force is charged with the primary goal of working together to incorporate green infrastructure into all relevant and applicable capital projects.

7.d.7.16 **Green Infrastructure Citizens Group**

Partnerships with community groups will be necessary to build and maintain green infrastructure. To that end, and as part of the development of the NYC Green Infrastructure Plan, DEP and the Mayor's Office of Long-Term Planning and Sustainability have created the Green Infrastructure Citizens Group open to the public and led by a Steering Committee made up of active and committed stakeholders in the academic, economic development, environmental, and design communities. The Steering Committee acts as a liaison between various stakeholders across the city and with DEP in relation to the NYC Green Infrastructure Plan.

7e. **Additional Control of Floatables and Settleable Solids: Floatables Monitoring Program Progress Report**

The New York City Department of Environmental Protection (NYCDEP) has been tasked through its State Pollutant Discharge Elimination System (SPDES) permit and CSO Order on Consent (consent order) requirements to implement and maintain a host of floatables control programs 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 Workplan (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 the NYCDEP has achieved in 2010, the third year that the floatables monitoring program has been a full scale program.

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. This basic monitoring data has 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 Long Term Control Plan (LTCP) processes, provide the first steps for appropriate remediation planning where feasible.

Since 2006, the program has grown to monitor most of NYC's regional waters and their near shores and shorelines. NYC DEP Harbor Water Quality Survey and Volunteer Survey Program monitoring stations increased from 25 sites in 2006 to 92 sites in 2010. Ratings also increased from approximately 3,500 to 5,200. Over the long term, variations in monitoring sites and locations will likely occur as public participation volunteer interest waxes and wanes, 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 three monitoring sites that had the most persistent poor floatables condition ratings based on monitoring data collected in 2009 (i.e., Arthur Kill in Staten Island, 26th Street and the Hudson River and 60th Street and the Hudson River). 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 Combined Sewer Overflow (CSO) Long Term Control Plan (LTCP). The investigations provided a step toward this goal although no debris were visible at the time of the investigation.

In addition to the floatables controls listed in BMP 7a through 7d, the City engages in a street sweeping program to reduce floatable entry into catch basins and the combined sewer system. The program is administered by the Department of Sanitation 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 over the past six years with clear improvements in the percent acceptable and percent filthy ratings. Scorecard Program results for the past six years are summarized in Appendix 7 Table 7-2 and on 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).

DEP has finalized the design of a comprehensive amended Drainage Plan in southeast Queens for the 7,000-acre Springfield Boulevard watershed that lets out into Thurston basin. In accordance with the Master Plan for Sewers and Drainage, one of the components is the Drainage Plan design of a "high level" storm sewer system in the combined sewer area surrounding Montefiore Cemetery in southeast Queens. DEP has initiated the first of a series of capital projects to implement these plans. Once built, they will allow for a reduction in frequency of CSO discharges, which will improve water quality in Jamaica Bay.

A high level storm sewer (HLSS) is designed to take the street storm water flow, reducing this flow to the existing combined sewer. The original combined sewers even when supplemented by a HLSS, would still be classified as combined, since they would still take storm flow from adjacent private properties and in many cases receive combined flow from upstream combined sewers.

Listed below are the planned HLSS projects referenced above. Accompanying each listing are the figures of annual amount of storm water in million gallons per year, (MGY) which will be captured by these planned HLSS projects, will be removed from the existing combined systems. More precise schedules that can be offered at this time (from Department of Design and Construction) (DDC) and are set forth below. Note that many variables may affect this projected timing, such as budget reductions and permitting requirements

These figures are calculated considering average annual rainfall of 50.64" (year 2004-2009), 80% runoff volume (C = 0.80) and 50% of total runoff will go into HLSS.

Contract # - SEQ200483 = 29 MG per year

Contract # SEQ200483 currently projected for FY 12

Hook Creek BLVD between 128 Ave. & Merrick Blvd. (Queens)

(See Map of location in the attachment)

Projected Design Start – 12/15/10

Projected Design Completion – 12/14/11

Projected Const Start – 5/14/12

Projected Const Completion – 11/11/13

Contract # - SEQ200526 = 10.77 MG per year

Contract # SEQ200526 currently projected for FY 13

Brookville Blvd. between 121st Str. &128th Drive (Queens)

(See Map of location in the attachment)

Projected Design Start – 5/16/12

Projected Design Completion – 1/15/13

Projected Const Start – 7/16/13

Projected Const Completion – 7/15/14

Contract # - SEQ200529 =12.35 MG per year

Contract # SEQ200529 currently projected for FY 13

130th Road between 244th Str. &Brookville Blvd. (Queens)

(See Map of location in the attachment)

Projected Design Start – 1/23/12

Projected Design Completion – 1/18/13

Projected Const Start – 6/19/13

Projected Const Completion – 6/18/14

Contract # - SEX20039 = 10 MG per year

Contract # SEX20039 currently projected for FY 10

Fairfax Ave. between Waterbury Ave. & Fairmont Ave. (Bronx)

(See Map of location in the attachment)

Actual Design Start – 1/10/8

Actual Design Completion – 1/8/10

Projected Const Start – 2/14/11

Projected Const Completion – 6/12/12

In the Rockaway drainage area, the sewer system is undergoing major modifications. Storm Sewer build-out is being done in conformance with the Master Plan for Sewers and Drainage, NYCDEP, 1985. See amended table Appendix 1, Exhibit 2 shows status of all sewer projects in Rockaway WPCP drainage area.

DEP has also prepared a HLSS Drainage Plan in the Stadium Avenue area of the Bronx that will supplement the existing combined sewers and solve localized flooding problems. Based on this drainage plan, the Waterbury Avenue project, SEX20039 has been advanced for an FY-10 construction schedule.

The Coney Island amended drainage plan has been approved. DEP has scoped the first project (copy attached) to reach the first phase of the rezoning area as determined by City Hall and EDC. The first project will include West 15th Street from Hart Place to Surf Avenue and Surf Avenue between W12 and W17th Streets and is scheduled for FY 2012. Subsequent phases (see attached sketch) determined by EDC/City Hall are in the process of being scoped. Infrastructure work will include new storm sewers, a new storm sewer outfall located at Hart Place and West 15th Street, replacement of existing sanitary sewers, and replacement and upgrading of existing trunk and distribution water mains. It is projected that subsequent phases will be forecast in the budget for FY 14 and 16.

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 Region 2 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."

There were no combined sewer extension projects completed in 2010.

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 2010, no letter notification was received from DEC concerning chronic sewer backups or manhole overflows that would prompt NYCDEP to prohibit additional sewer connections or sewer extensions.

11. <u>Septage and Hauled Waste</u>

"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 2009 Annual BMP Report issued on March 31, 2010.

12. <u>Control of Run-off</u>

> *"All sewer certifications for new development shall be consistent with NYCDEP rules and regulations and shall require on-site detention or retention based on the Master Plan for Sewers and Drainage, NYCDEP, 1985, under which the sewers were designed and built. Only allowable flow will be permitted to discharge into the combined or storm sewer system."*

All sewer certification for new development must follow NYCDEP rules and regulations and must be permitted by NYCDEP.

Copies of the Sewer Certification Form and Site Connection Proposal Form that must be filed for new development are attached in Appendix 9.

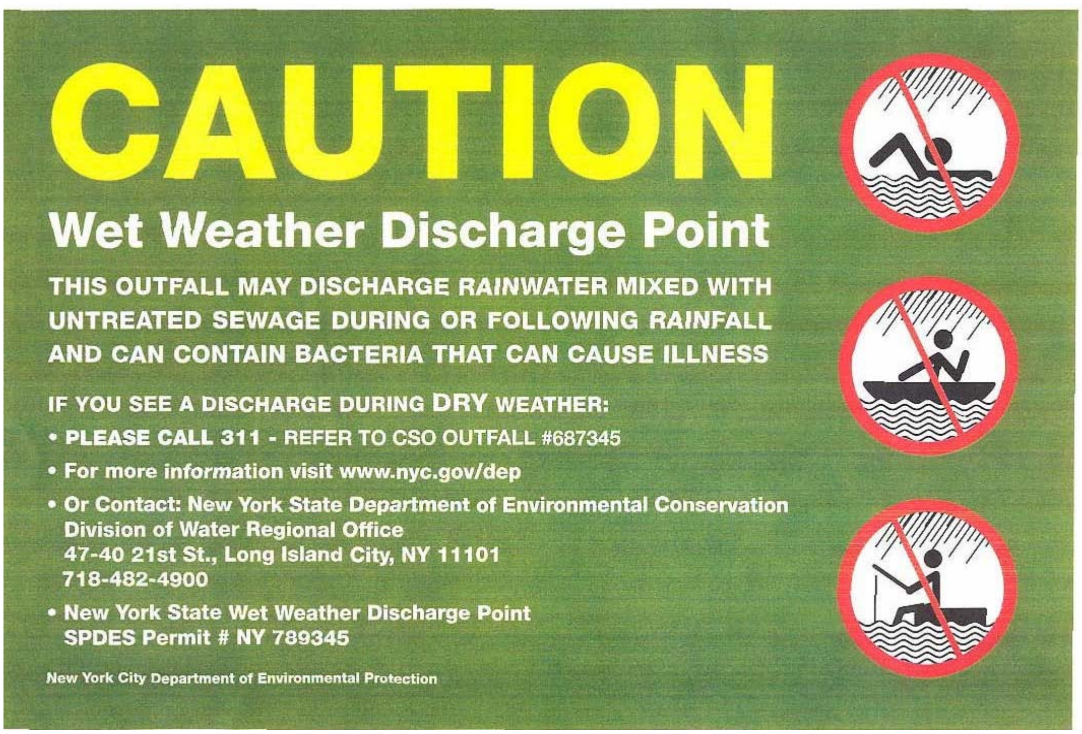
A proposal to "reduce the release rate of storm flow from new developments to 10% of the drainage plan allowable or 0.25 cfs, whichever is higher (for cases when the allowable storm flow is more than 0.25 cfs)," is under consideration.

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 WPCP 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 that the public 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 has the approval of NYS DEC, the Arts Commission and Parks Department, 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. DEP replaced all the signs that were installed in 2003 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.

“Waterwalk” Educational Signage

OUTFALL # NCM-074
SPDES Permit # NY0026204

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 provides a public notification program, the permittee may submit a summary of the DOH 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. "*

NYC DOH 2010 New York City Beach Surveillance and Monitoring report can be accessed on line http://www.nyc.gov/html/doh/downloads/pdf/beach/beach-report-2010.pdf

Summary of DOH Report:
Routine Monitoring and Surveillance Procedures
The routine beach monitoring and surveillance procedures consist of the following three major components:
(1) Routine beach water quality monitoring;
(2) Compliance inspections; and
(3) Regulatory surveillance.

NYC DOHMH monitors and samples each beach on a weekly basis with the exception of the Rockaway and Breezy Point beaches, which are sampled bi-weekly. Additional samples may be collected when necessary. The determining factors for additional sampling may include:
(1) Proximity to suspected pollution sources;
(2) Extent of pollution;
(3) Beach use;
(4) Historical water quality data; and
(5) 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.

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

During the 2010 beach season there were a total of 62 Pollution Advisory days (down from 128 days in 2009), 41 Beach Closure days (down from 86 days in 2009), and 102 Wet Weather Advisory days (down from 191 days in 2009).

The specific Advisory and Closure dates, and reasons for issuing these advisories and closures are shown in **Appendix 11** Tables B1 to B4 - 2010 Advisories & Closures.

Appendix 11, Table A, shows Public Beach Advisories and Closure comparisons for 2005 to 2010. Tables B-1 to B-4 show all Beach Advisory and Closure summaries for Public and Private Beaches.

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 www.nyc.gov (under NYC Right to Know Now).

Preemptive 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. <u>Annual Report</u>

The permittee shall submit an annual report summarizing implementation of the above best management practices (BMPs). The report shall list existing documentation of implementation of the BMPs and shall be submitted by April 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 BMPs are found in Combined Sewer Overflows, Guidance for Nine Minimum Controls, EPA, 1995. The actual documentation shall be stored at a central location and be made available to DEC upon request.

This report is the eighth annual report summarizing implementation of the Best Management Practices performed by NYC DEP.

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

Appendix 1

Exhibit 1 - CSO Maintenance Program

Exhibit 2 - Rockaway Sanitary and Storm Sewer Projects

Table 1 - CY'10 Chloride Concentrations Average Summary

Table 2 - Yearly Average Tidal Inflow Comparison for CY '09 – '10

Table 3 - CSO Alarm Summary

Exhibit 1

August 14, 2003

Mr. Robert Elburn	Re:	**NY0026131**	**NY0026115**
Regional Water Engineer		**NY0026191**	**NY0026239**
New York State Department of		**NY0026204**	**NY0026158**
Environmental Conservation, Region 2		**NY0026182**	**NY0026221**
Division of Water		**NY0026166**	**NY0026107**
47-40 21st Street - 2nd Floor		**NY0026212**	**NY0026247**
Long Island City, New York 11101		**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(e)), Red Hook (Section XIII(e)), Wards Island (Section XIII(e)) and North River (Section XII(e)).

Sincerely yours,

A. [signature]

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

SR/fk

xc: Quinn/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 twelvemonth 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 condusive 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 : ______

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

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 ! **Explanation of problem required on log sheet**
A 3):	Regulator flow O.K. No visible flow obstruction through regulator. Gate NOT OPERATIONAL ! **Explanation of problem required on log sheet**
A 4):	Partial Blockage in Regulator. When flow through regulator is partially obstructed by debris, which may result in dry weather by-passing **Explanation required**
A 5):	Blockage in Regulator causing partial or full dry weather by-passing. **Explanation of problem required on log sheet**

TIDE GATE CHAMBERS :

INSPECTIONS DURING HIGH TIDE :

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. **Explanation of problem required on log sheet**
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**

S.S.T.W. : ______ S.E.E. : ______ S.S.E.E. ______ CHIEF : ______

Appendix A

Exhibit 2

Rockaway Sanitary and Storm Sewer Projects

Project No.	Locations	Status
SE 378A/379A	B. 130th Street, etc.	Completed in March 1989
SE 378B/379B	Rockaway Beach Blvd. etc.	Completed in November 1988
SE 422A/423A	B. 121st Street, etc.	Completed in June 1989
SE 422B/423B	B. 123rd Street, etc.	Completed in April 1990
SE 422C/423C	B. 127th Street, etc.	Completed in April 1991
SE 424A/425A	B. 132nd Street, etc.	Completed in April 1993
SE 426A/427A	B. 135th Street, etc.	Completed in December 1990
SE 426B/427B	B. 138th Street, etc.	Completed in November 1990
SE 426C/427C	B. 140th Street, etc.	Completed 2003
SE 426D/427D	B. 141st Street, etc.	Completed
SE 196/372	Camp Road, etc.	Completed in June 1991
SE-772/87HW Formerly SEQ200350	Beach 71st Str.	Completed
SEQ-002355	B. 43rd Street, etc	Completed in April 1991
SEQ-200239	Rockaway Freeway, etc.	Completed
SEQ-200240	Rockaway Freeway, etc.	Completed
SEQ-002348	Rockaway Blvd., etc.	Completed in May 1997
SEQ-002363	B. 37th Street, etc.	Completed in April 1996
SEQ-002380	Rockaway Beach Blvd.	Completed in November 1996
SEQ-200251	Rockaway Beach Blvd.	Completed in July 1997

Project No.	Locations	Status
SEQ-200254	Beach 108th Street, etc.	Completed in November 1998
SEQ-002402	Beach 45th Street, etc.	Completed in September 1997
SEQ-002413/ R 200275	Collier Avenue, etc.	Completed March 2005
SEQ-002426 1998	Bay 25th Street, etc.	Completed in September,
SEQ-002427	Cold Spring Road, etc.	Completed in May, 1998
SE-424B/425B	B. 134th Street, etc.	Completed in August, 1999
SEQ-002453	B. 47th Street, etc.	Projected Construction Start 07/2011
SEQ-002428	Healy Avenue, etc.	Completed
SEQ-200305	Amstel Blvd, etc.	Completed May 2000
SEQ-002460	WestBourne Ave, etc.	Completed November 2000
SEQ-002499	B 61st St.	Completed July 2000
SEQ-200311	B 35th St.	Edgemere Project Completed April 2002
SEQ-002507/ 200356	Beach 69th St.	Canceled; Included in HWQ631
SEQ- 200358	Beach 87th St.	Completed October 2002
SEQ-002511/ 200347	Beach 36th St.	Completed April 2002
SEQ- 200324	Beach Channel Dr.	Included in Edgemere Projects HD153 series
SE-426C/427C	Beach 69th St.	Completed Jan 2003

Project No.	Locations	Status
SEQ-002571/ 200412	Hope VI Phase A	Completed
SEQ-002538/ 200371	Beach 18th St.	Completed in August 2003
SEQ- 002546/ 200425	Grandview Terrace	Completed in 2003
SEQ- 200368	Redfern Ave.	Completed
SEQ- 200381	Beach 53th St.	Scheduled for FY 2002 Cancelled due to LIPA issues
SEQ002550/ 200390	Beach 40 St. (Edgemere Phase BHD153B)	Complete
SEQ002516/ 200352	Cornaga Ave.	Part of QED965 complete
SE-795	Chandler St.	Projected Construction Start 06/2011
SEQ002511/ 200347	Beach 36 St.	Completed
SEQ200378	Seagirt Blvd.	Completed September 2002 In SEQ200358
SEQ002551/ 200398	Edgemene Phase B1. (HD153B1)	In Construction complete 6/07
SEQ-200453	Thursby Ave.	In Construction – subs comp 8/07
SE-789 / HWQ631B1	Sommerville Area	Actual Construction Start 01/2009 Projected finish -2/2012
SEQ-200407/002564	Edgemene Phase C1 and C2	Actual Construction Start 04/2009
SEQ-200426 (HWQ1126B)	Hope VI Phase B	On Hold

Project No.	Locations	Status
SEQ-02479/QED-983/SEQ-200341	Rockaway Bch. Blvd	Projected Construction Start 07/2010
SEQ-200508	BEACH 32nd St.	Projected Construction Start 08/2011
QED-982	Rockaway Beach Blvd	Projected Construction Start 06/2012
SEQ002681 (HWQ631B2)	Sommerville B2	Projected Construction Start 06/2013
SEQ200523	New Haven Avenue, etc	Projected Construction Start 07/2011
SEQ200533	Beach 42nd Street	Actual Construction Start 06/2010
QED-983	Beach 88th Street	Projected Construction Start 03/2011

TABLE 1

2010 12-Month Rolling Average Influent Chlorides (mg/L)

PLANTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
WARDS ISLAND	500	530	540	540	540	540	550	580	570	560	560	560
NORTH RIVER	316	329	332	329	330	320	322	328	330	329	330	328
HUNTS POINT	200	230	230	230	230	230	230	240	230	230	240	240
26th WARD	230	220	230	240	230	230	230	250	250	250	250	260
CONEY ISLAND	810	830	830	840	860	870	880	880	910	890	860	840
OWLS HEAD	230	250	270	280	270	260	260	250	260	260	240	230
NEWTOWN CREEK	807	783	808	824	818	835	828	847	870	863	864	873
RED HOOK	546	511	483	455	438	420	413	437	426	421	421	412
JAMAICA	240	240	240	250	230	230	230	230	230	240	230	240
TALLMAN ISLAND	240	280	270	270	280	290	290	290	290	290	260	260
BOWERY BAY	370	380	380	390	380	370	380	400	410	430	450	450
ROCKAWAY	1900	1900	1900	1900	1900	1900	2000	2000	2100	2100	2100	2100
OAKWOOD BEACH	186	190	193	202	204	208	212	219	222	224	224	223
PORT RICHMOND	402	405	374	366	364	323	328	338	353	468	481	486

(*) The chloride concentration limit for WPCP is 400mg/l.

TABLE 2 **YEARLY AVERAGE TIDAL INFLOW COMPARISON FOR CY '09-'10**

WPCP	JANUARY - DECEMBER '09		JANUARY - DECEMBER '10		VARIANCE		REMARKS*
	INFLOW (MGD)	% DWF	INFLOW (MGD)	% DWF	INFLOW (MGD)	%	
WARDS ISLAND	9.395	5.1%	11.576	6.0%	-2.18	-0.92%	18.84% INCREASE
NORTH RIVER	4.347	3.8%	4.640	4.0%	-0.29	-0.20%	6.31% INCREASE
HUNTS POINT	1.273	1.1%	1.757	1.5%	-0.48	-0.41%	27.58% INCREASE
26th WARD	0.660	1.5%	0.845	1.7%	-0.19	-0.14%	21.91% INCREASE
CONEY ISLAND	4.721	5.9%	4.528	5.7%	0.19	0.21%	4.28% DECREASE
OWLS HEAD	1.240	1.4%	1.325	1.6%	-0.09	-0.12%	6.46% INCREASE
NEWTOWN CREEK	15.348	6.6%	17.390	7.5%	-2.04	-0.93%	11.74% INCREASE
RED HOOK	0.931	4.7%	0.856	3.3%	0.07	1.46%	8.66% DECREASE
JAMAICA	1.073	1.4%	1.133	1.5%	-0.06	-0.07%	5.28% INCREASE
TALLMAN ISLAND	0.880	1.7%	0.853	1.7%	0.03	0.03%	3.18% DECREASE
BOWERY BAY	2.843	2.9%	3.406	3.4%	-0.56	-0.49%	16.54% INCREASE
ROCKAWAY	2.634	13.4%	3.207	15.1%	-0.57	-1.72%	17.88% INCREASE
OAKWOOD BEACH	0.300	1.2%	0.427	1.5%	-0.13	-0.29%	29.69% INCREASE
PORT RICHMOND	0.814	3.3%	1.033	4.3%	-0.22	-0.98%	21.24% INCREASE

Tidal Inflow (MGD) seasonal percentage change.

Table 3

CSO Alarm Summary   CY '10

Location	Date	Time of alarm	Nature of alarm	Cause of interruption	Bypassing analysis
TI-40	2/11/2010	4:00PM	CSO ALARM*	BYPASS	Reduced.
OH-7D	3/1/2010	1:40PM	CSO ALARM*	BYPASS	Reduced.
PR-7E	4/20/2010	4:06PM	CSO ALARM*	POSSIBLE BYPASS	Reduced.
WIM52	7/5/2010	5:02 PM	CSO ALARM*	BYPASS	Reduced.Reported to DEC.Item#4954
WIM#52	7/5/2010	10:56 PM	CSO ALARM*	BYPASS	Reduced.Reported to DEC.Item#4954
WIM#52	7/6/2010	2:41 PM	CSO ALARM*	BYPASS	Reduced.Reported to DEC.Item#4956
WIM52	7/12/2010	4:25 PM	CSO ALARM*	BYPASS	Reduced.Reported to DEC.Item#4962
WIM 52	7/19/2010	4:01 PM	CSO ALARM*	BYPASS	Reduced.Reported to DEC.Item#4972
RH-20	9/24/2010	5:00AM	CSO ALARM*	Dam inflated	Reduced.Reported to DEC.Item#5009
PR-4W	12/8/2010	9:20AM	CSO ALARM*	BYPASS	Reduced.Reported to DEC.Item#5055
WIB 68	10/2/2010	4:30 AM	CSO ALARM*	OPEN TIDE GATE	Reduced.

*The incident was discovered through the CSO telemetry system.

Appendix 2

DEP BWT

Table 1 - Status of Regulators under SCADA

Table 2 – BWT CY 2010 Wastewater Collection Systems Cleaning Location

Map 1 – BWT CY 2010 Wastewater Collection Systems Cleaning Location

Sediment Depth Histograms (Graph 1 – 22)

Appendix A -Inspected Pipe Summary per Drainage Area

Appendix A – WWTPs Inspected Interceptors (Map 1-11)

Appendix B –Condition Assessment Priority Tables

LIST OF REGULATORS UNDER SCADA

						UPDATED 03-11-2010				
		NYCDEP - BUREAU OF WASTEWATER POLLUTION CONTROL								
	WPCP	Reg#	Location	SPDES	BEACH SENSITIVE	Existing Telemetry System	SCADA		Expected installation date	
1	WI(M)	02A	E. 74th ST. & FDR DR.	003		DYNAC	REG-027		20-Dec-11	
2	WI(M)	02B	N/O E. 74th ST. & FDR DR.	003			REG-027		20-Dec-11	
3	WI(M)	07	E.79th ST. & FDR DR.	008		DYNAC	REG-027		20-Dec-11	
4	WI(M)	23	E.106th ST. & FDR DR.	023		DYNAC	REG-027		20-Dec-11	
5	WI(M)	24	E.110th ST. & FDR DR.	024		DYNAC	REG-027		20-Dec-11	
6	WI(M)	38	E.135th ST. & E/O HARLEM R. DR.	038		DYNAC	REG-027		20-Dec-11	
7	WI(M)	45	W.147th ST. & IRT YARD	045		TRANSDYNE	REG-027		20-Dec-11	
8	WI(M)	46	W.151 st ST. & PLAYGROUND	046		DYNAC	REG-027		20-Dec-11	
9	WI(M)	51	N/S HARLEM RIVER DR. & W.167th ST.	051		TRANSDYNE	REG-027		20-Dec-11	
10	WI(M)	52	N/S HARLEM R. DR. & W.176th ST.	052		TRANSDYNE	REG-027		20-Dec-11	
11	WI(B)	53	BRUCKNER BLVD. & BROOK AV.	068		DYNAC	REG-027		20-Dec-11	
12	WI(B)	58	MAJOR DEEGAN S/S 138th ST.	075		DYNAC	REG-027		20-Dec-11	
13	WI(B)	60	JEROME AV. & McCOMB.D PARK	062		TRANSDYNE	REG-027		20-Dec-11	
14	WI(B)	62	UNDERCLIFF & SEDGEWICK AV.	060			REG-027		20-Dec-11	
15	WI(B)	66	N/O FORDHAM RD. W/S MAJOR DEEGAN	057		TRANSDYNE	REG-027		20-Dec-11	
16	WI(B)	67	E.192nd ST. W/O BAYLEY AV.	056		DYNAC	REG-027		20-Dec-11	
17	WI(B)	68	E.149th ST. & EAST RIVER	072		DYNAC	REG-027		20-Dec-11	
18	NR	N-03	W.201st ST. & HARLEM RIVER	017		DYNAC		REG-026	25-Jul-10	
19	NR	N-16	DYKMAN ST. & HENRY HUDSON PKWY.	008		TRANSDYNE	REG-027		20-Dec-11	
20	NR	N-18	RIVERSIDE DR. & W.172nd. ST.	004		DYNAC		REG-026	25-Jul-10	
21	NR	N-23	ST.CLAIR PLACE & 12th AV.	043		DYNAC		REG-026	25-Jul-10	
22	NR	N-26	RIVERSIDE PARK @ W.96th ST.	040		TRANSDYNE		REG-026	25-Jul-10	
23	NR	N-28	RIVERSIDE PARK @ 80th ST.	038		TRANSDYNE		REG-026	25-Jul-10	
24	NR	N-29A	FREEDOM PL. @ W.66th ST.	046		DYNAC		REG-026	25-Jul-10	
25	NR	N-33	TWELFTH AV. @ W.48th ST.	033		DYNAC		REG-026	25-Jul-10	
26	NR	N-45	TWELFTH AV @ W.30th ST.	027		DYNAC		REG-026	25-Jul-10	
27	NR	N-50	ELEVENTH AV. @ W.18th ST.	023		DYNAC		REG-026	25-Jul-10	
28	HP	01	E.177th ST. E/O TIERNEY PL.	022	✔	TRANSDYNE	REG-027		20-Dec-11	
29	HP	02	SHORE DR. S/O PENNYFIELD AV.	021	✔	DYNAC	REG-027		20-Dec-11	
30	HP	03	CALHOUN AV. S/O SCHURZ AV.	019	✔	TRANSDYNE	REG-027		20-Dec-11	
31	HP	04	BRUSH AVE & BRUCKNER BLVD	016	✔	DYNAC	REG-027		20-Dec-11	
32	HP	05	WHITE PL RD. S/O RIVER AV.	011	✔	TRANSDYNE	REG-027		20-Dec-11	
33	HP	06	WHITE PL RD. & O'BRIEN AV.	011	✔	DYNAC	REG-027		20-Dec-11	
34	HP	08	TRUXTON ST. & OAKPOINT AV.	025		DYNAC	REG-027		20-Dec-11	
35	HP	09	TIFFANY ST. & EAST BAY AV.	002	✔	DYNAC	REG-027		20-Dec-11	
36	HP	10	HUNTS POINT AV. & RYAWA AVES.	003	✔	TRANSDYNE	REG-027		20-Dec-11	
37	HP	11	EMERSON AV. & SCHURZ AV.	017	✔	TRANSDYNE	REG-027		20-Dec-11	

LIST OF REGULATORS UNDER SCADA

	WPCP	Reg#	Location	SPDES	BEACH	Existing	SCADA		Expected	
					SENSITIVE	Telemetry System			Installation date	
38	HP	12	ROBINSON AV. & SCHURZ AV.	018	✔	TRANSDYNE	REG-027		20-Dec-11	
39	HP	13	METCALF AV. & SOUNDVIEW PARK	009	✔	DYNAC	REG-027		20-Dec-11	
40	HP	14	EDGEWATER PARK	026	✔	TRANSDYNE	REG-027		20-Dec-11	
41	HP	15	CONNER ST. E/O HUTCHISON AV.	023			REG-027		20-Dec-11	
42	26W	01	TIDE GATE (26 WARD WPCP)	004	✔	DYNAC	REG-027		20-Dec-11	
43	26W	02	WILLIAMS & FLATLANDS AVES.	003	✔	DYNAC	REG-027		20-Dec-11	
44	26W	03	CRESENT ST. & FLATLANDS AV.	005		DYNAC	REG-027		20-Dec-11	
45	OH	01	92nd ST. & BELT PKWY	017	✔	DYNAC		REG-026	25-Jul-10	
46	OH	03	79th ST. E/O BELT PKWY (IN PARK)	018		TRANSDYNE	REG-027		20-Dec-11	
47	OH	04	71st ST. E/O BELT PKWY (IN PARK)	019		TRANSDYNE	REG-027		20-Dec-11	
48	OH	06	64th ST. BUSH TERMINAL	002				REG-026	25-Jul-10	
49	OH	06A	64th ST. IN RR YARD	002				REG-026	25-Jul-10	
50	OH	06B	64th ST. IN RR YARD	002				REG-026	25-Jul-10	
51	OH	06C	64th ST. BUSH TERMINAL	002	✔	TRANSDYNE		REG-026	25-Jul-10	
52	OH	07	49th ST. & 1st AV.	003				REG-026	25-Jul-10	
53	OH	07A	49th ST. & 1st AV.	003	✔	DYNAC		REG-026	25-Jul-10	
54	OH	07B	49th ST. & 1st AV.	003	✔			REG-026	25-Jul-10	
55	OH	07C	49th ST. & 1st AV.	003				REG-026	25-Jul-10	
56	OH	07D	43nd ST. & 1st AV.	004	✔	TRANSDYNE	REG-027		20-Dec-11	
57	OH	09A	17th AV. & BATH AV.	015	✔	DYNAC	REG-027		20-Dec-11	
58	OH	09B	17th AV. & 72nd ST.	015	✔	TRANSDYNE	REG-027		20-Dec-11	
59	OH	10	21st AVENUE & 83rd STREET	021		TRANSDYNE	REG-027		20-Dec-11	
60	OH	11	AVE. V & W. 11th ST.	021		DYNAC	REG-027		20-Dec-11	
61	NC(Q)	Q-01	RUST & 56th ST.	077			REG-027		20-Dec-11	
62	NC(B)	B-01	JOHNSON AV. W/O PORTER AV.	015		DYNAC		REG-026	25-Jul-10	
63	NC(B)	B-04	KENT AV. & TAYLOR ST.	014		DYNAC		REG-026	25-Jul-10	
64	NC(B)	B-05	DIVISION AV. W/O KENT AV.	013		DYNAC		REG-026	25-Jul-10	
65	NC(B)	B-06	S.5th AV. W/O KENT AV.	012		DYNAC		REG-026	25-Jul-10	
66	NC(B)	B-09	N.12th ST. & KENT AV.	006		DYNAC		REG-026	25-Jul-10	
67	NC(M)	M-01	CLARKSON ST. & WEST ST.	076		DYNAC		REG-026	25-Jul-10	
68	NC(M)	M-02	N/O CANAL ST. & WEST ST.	075		DYNAC		REG-026	25-Jul-10	
69	NC(M)	M-10	SOUTH ST. N/O BROAD ST.	069		TRANSDYNE	REG-027		20-Dec-11	
70	NC(M)	M-16	SOUTH ST. N/O DOVER ST.	078		DYNAC		REG-026	25-Jul-10	
71	NC(M)	M-17	SOUTH ST. & ROBERT WAGNER ST.	066			REG-027		20-Dec-11	
72	NC(M)	M-19	SOUTH ST. S/O CATHERINE SLIP	050		DYNAC		REG-026	25-Jul-10	
73	NC(M)	M-21	SOUTH ST & JEFFERSON ST.	063		DYNAC		REG-026	25-Jul-10	
74	NC(M)	M-36	FDR DR. & E.14th ST.	052		DYNAC		REG-026	25-Jul-10	
75	NC(M)	M-37	E.18th ST. & AV.C	049		TRANSDYNE		REG-026	25-Jul-10	
76	NC(M)	M-40	FDR DR. & E.26th ST.	045		DYNAC		REG-026	25-Jul-10	

LIST OF REGULATORS UNDER SCADA

	WPCP	Reg#	Location	SPDES	BEACH SENSITIVE	Existing Telemetry System	SCADA		Expected Installation date	
77	NC(M)	M-42	E.33rd ST. E/O 1st AV.	041		DYNAC		REG-026	25-Jul-10	
78	NC(M)	M-44	E.41st ST. E/O 1st AV.	037		DYNAC		REG-026	25-Jul-10	
79	NC(M)	M-47	FDR DR. & E.49th ST.	036		DYNAC		REG-026	25-Jul-10	
80	NC(M)	M-50	FDR DR. & E.61st ST.	032		DYNAC		REG-026	25-Jul-10	
81	RH	R-02	WOLCOTT ST. & CONOVER ST.	028		DYNAC		REG-026	25-Jul-10	
82	RH	R-20	GOLD ST. @ PLYMOUTH ST.	004		DYNAC		REG-026	25-Jul-10	
83	RH	R-20A	GOLD ST. @ PLYMOUTH ST.	004				REG-026	25-Jul-10	
84	RH	R-21	HUDSON AVE. @ PLYMOUTH ST.	003		DYNAC		REG-026	25-Jul-10	
85	RH	R-21A	HUDSON AVE. @ PLYMOUTH ST.	003				REG-026	25-Jul-10	
86	JA	01	JFK AIRPORT	006		TRANSDYNE	REG-027		20-Dec-11	
87	JA	2	79TH STR.N.CONDUIT AVE	26W-005		DYNAC		REG-026	25-Jul-10	
88	JA	03	123rd. PLACE & 150th ST.	003	✔	DYNAC		REG-026	25-Jul-10	
89	JA	09	LINDEN & SPRINGFIELD BLVDS.	005		TRANSDYNE	REG-027		20-Dec-11	
90	JA	14	124th ST. & N.CONDUIT AV.	003a		TRANSDYNE		REG-026	25-Jul-10	
91	TI	09	LINDEN PL & 32nd AV.	011		TRANSDYNE	REG-027		20-Dec-11	
92	TI	10A	144th ST. & E/O MALBA AVE	003		TRANSDYNE	REG-027		20-Dec-11	
93	TI	13	15th DR. & WILLETS POINT BLVD.	023		TRANSDYNE	REG-027		20-Dec-11	
94	TI	30	QUINCE AV. & KISSENA BLVD.	010		TRANSDYNE	REG-027		20-Dec-11	
95	TI	40	FRESH MEADOW La & PECK AV.	010		TRANSDYNE	REG-027		20-Dec-11	
96	TI	46	210 th ST. & LIE (N.S)	008	✔	TRANSDYNE	REG-027		20-Dec-11	
97	TI	47	218th ST & LIE (N.S)	008	✔	TRANSDYNE	REG-027		20-Dec-11	
98	TI	49	220th PL. & 46th AV.	008	✔	TRANSDYNE	REG-027		20-Dec-11	
99	BBL	L-04	47th AV. BETW. 28th & 29th ST.	026		DYNAC	REG-027		20-Dec-11	
100	BBL	L-21	37th AV. & VERNON BLVD.	028		DYNAC	REG-027		20-Dec-11	
101	BBL	L-22	VERNON BLVD & BROADWAY	029		DYNAC	REG-027		20-Dec-11	
102	BBL	L-23	30th RD. & VERNON BLVD.	030		DYNAC	REG-027		20-Dec-11	
103	BBL	L-30	ASTORIA PARKS E/O SHORE BLVD.	034		DYNAC	REG-027		20-Dec-11	
104	BBH	02	45th ST. & PLANT	002			REG-027		20-Dec-11	
105	BBH	03	HAGEN ST. & 19th ST. AV.	003		TRANSDYNE	REG-027		20-Dec-11	
106	BBH	06	108th ST.(31st DR)& DITMARS BLVD.	008		TRANSDYNE	REG-027		20-Dec-11	
107	BBH	09	108th ST. & 43rd. AV.	008		TRANSDYNE	REG-027		20-Dec-11	
108	RK	01	B.106th ST. & BEACH CHANNEL DR.	029		DYNAC	REG-027		20-Dec-11	
109	PR	R-13E	CANAL ST. & FRONT ST	031		TRANSDYNE		REG-026	25-Jul-10	
110	PR	R-35W	BODINE ST. & RICHMOND TERR.	035		DYNAC		REG-026	25-Jul-10	
111	PR	R-06W	RICHMOND TERR. & NICHOLAS AV.	029		DYNAC		REG-026	25-Jul-10	
	REG-026	- CONSENT ORDER REGULATOR SCADA								
	REG-027	- NON-CONSENT ORDER REGULATOR SCADA								

3 of 3

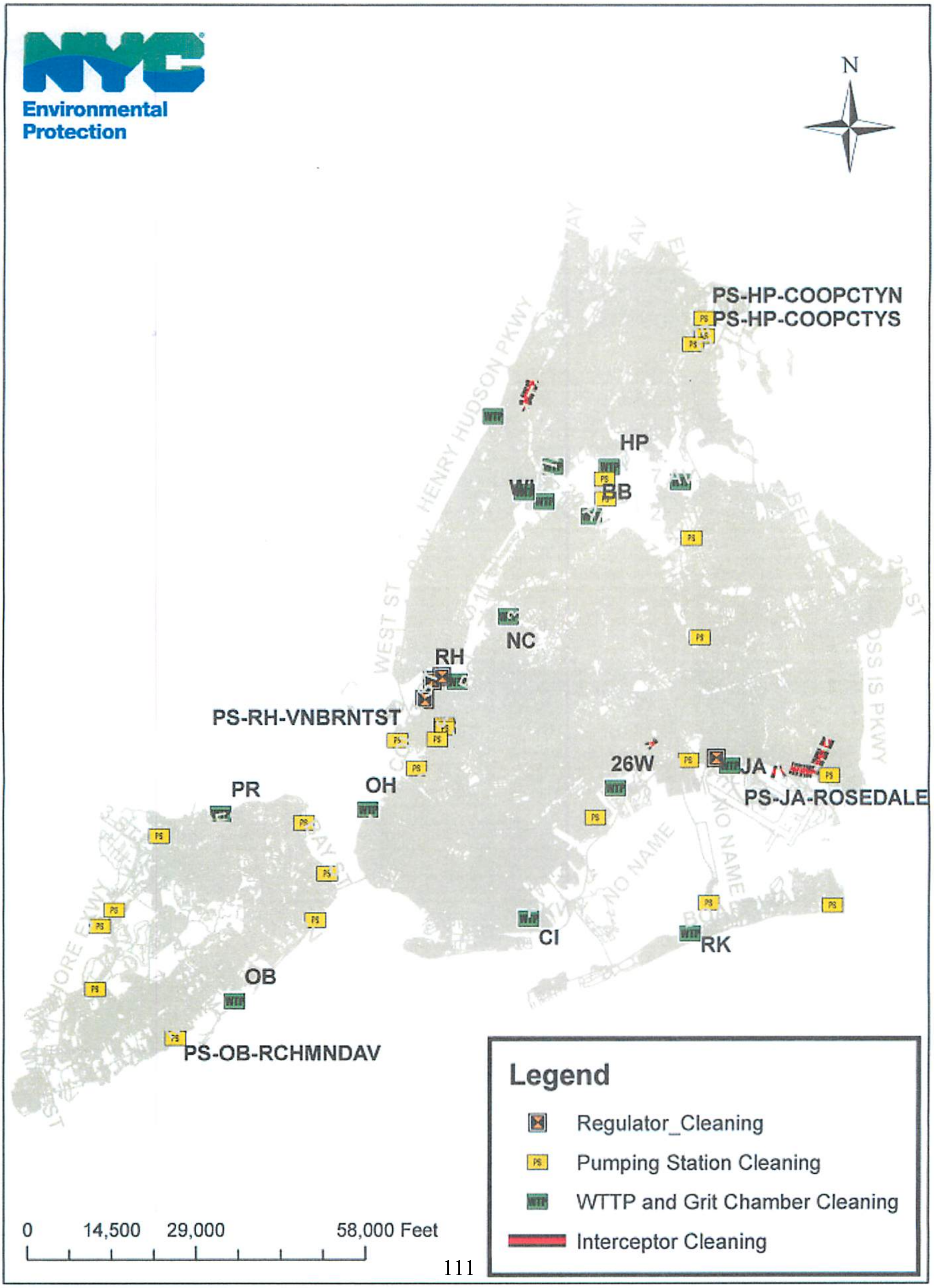
BWT CLEANING IN 2010

DESCRIPTION	SIZE (IN)	LENGTH (FT)	LOCATION
Red Hook Branch Interceptor	18”	132’	John St. & Adam St. (Regulator RH-19) to Playmouth St. & Adam St. Brooklyn, NY (Removed 5 cubic yards)
Wards Island Manhattan North Interceptor	30”& 36”	4450’	W176th St. & Harlem River Dr. to W159th St. & Harlem River Dr. Manhattan, NY (Removed 131 cubic yards)
Jamaica East Interceptor	48”x48”	741’	225th St. & South Conduit Ave. to 143rd Ave. & 225th St. Queens, NY (Removed 162 cubic yards)
Jamaica West Interceptor	54”x54”	768’	79th St. & N Conduit Ave. to S Conduit Ave. & 80th St. Queens, NY (Removed 250 cubic yards)
Red Hook Branch Interceptor	12”	600’	Regulator RH-14 to Furman St. & Joralemon St. Brooklyn, NY (Removed 10 cubic yards)
Bush Terminal PS	Various	Various	West side of 2nd Ave. between 28th & 29th St. Brooklyn, NY 11220 (Removed 71 cubic yards)
Ely Ave. PS	Various	Various	Ely Ave. & Waring Ave. Bronx, NY 10469 (Removed 10 cubic yards)
Gowanus PS	Various	Various	201 Douglass St. Brooklyn, NY 11217 (Removed 75 cubic yards)
Hannah St. PS	Various	Various	1 Murray Hulbert St. Staten Island, NY 10301 (Removed 347 cubic yards)
Mayflower Ave. PS	Various	Various	Mayflower Ave. & Arther Kill Rd. Staten Is. NY (Removed 56 cubic yards)
Mersereau Ave. PS	Various	Various	Mersereau Ave. & Netherland Ave. Staten Is. NY 10303 (Removed 81 cubic yards)
Nevins Street PS	Various	Various	Nevins St. Between Degraw St. & Douglass St. Brooklyn, NY 11217 (Removed 5 cubic yards)
2nd Ave. PS	Various	Various	2nd Ave. & 5th St. Brooklyn, NY 11215 (Removed 5 cubic yards)
Park Drive East PS	Various	Various	Park Dr. East between 77th Ave. & 73rd Terr, Flushing, NY 11367 (Removed 34 cubic yards)
Richmond Ave. PS	Various	Various	Richmond Ave. & Prol Place, Staten Is. NY 10312 (Removed 190 cubic yards)
Rikers Island North PS	Various	Various	Rikers Island, NY 10470 (Removed 137 cubic yards)
Rosedale PS	Various	Various	147th Ave. & Brookville Blvd. W., Rosdale, NY 11422 (Removed 30 cubic yards)
Seagirt Ave. PS	Various	Various	Seagirt Ave. & Beach 9th St. Far Rockaway, NY 11691 (Removed 17 cubic yards)
South Beach PS	Various	Various	Father Capodanno Blvd. & S/O of Sand Lane, SI. NY 10306 (Removed 50 cubic yards)
Van Brunt St. PS	Various	Various	Foot of Van Brunt St. near Read St. Brooklyn, NY 11231 (Removed 10 cubic yards)

Victory Blvd. PS	Various	Various	Victory Blvd. Near Con-Ed plant. S/O of W. Shore Expy, SI. NY 10314 (Removed 27 cubic yards)
Ave. M PS	Various	Various	North side of Ave. M between E99th & E100th St. Brooklyn, NY 11236 (Removed 15 cubic yards)
Broad Channel PS	Various	Various	Cross Bay Blvd. West of Toll Gate-Cross Bay Bridge, Broad Channel (Removed 12 cubic yards)
Cannon Ave. PS	Various	Various	Cannon Ave. between Prices Ln. & Glen St. Staten Is. NY 10314 (Removed 7 cubic yards)
Co-Op City South, PS	Various	Various	Hutchinson River Pkwy East & Einstein Loop, Bronx, NY 10475 (Removed 8 cubic yards)
Co-Op City North, PS	Various	Various	C0-op City Blvd. & Bellamy Loop, Bronx, NY 10475 (Removed 6 cubic yards)
Howard Beach PS	Various	Various	S-E corner of 155th Ave. & 100th St. Howard Beach, NY 11414 (Removed 9 cubic yards)
Linden Place PS	Various	Various	N-E corner of Linden Pl. & 31st Rd. Flushing, NY 11354 (Removed 14 cubic yards)
Nautilus Court PS	Various	Various	Cliff St. & Nautilus Court. SI. NY 10305 (Removed 8 cubic yards)
Rikers Is. South PS	Various	Various	Rikers Island, NY 10470 (Removed 12 cubic yards)
Bronx Grit Chamber	Various	Various	Bruckner Blvd. Between Saint Anns Pl. & Cypress Ave. Bronx, NY 10454 (Removed 129 cubic yards)
Manhattan Grit Chamber	Various	Various	E110th St. & FDR Dr. Manhattan, NY 10029 (Removed 20 cubic yards)
26th Ward WWTP	Various	Various	122-66 Flatlands Ave. Brooklyn, NY 11207 (Removed 150 cubic yards)
Bowery Bay WWTP	Various	Various	43-01 Berrian Blvd. Astoria, NY 11105 (Removed 100 cubic yards)
Jamaica WWTP	Various	Various	150-20 134 Street, Jamaica, NY 11430 (Removed 30 cubic yards)
Oakwood Beach WWTP	Various	Various	751 Mill Rd. Staten Island, NY 10306 (Removed 23 cubic yards)
Wards Island WWTP	Various	Various	Wards Island, New York, NY 10035 (Removed 1875 cubic yards)
Newtown Creek WPCP	Various	Various	329 Greenpoint Ave., Brooklyn, NY 11222 (Removed 38 cubic yards)
Regulator BBLL-9	Various	Various	54th Ave. & Vernon Blvd. Queens, NY (Removed 20 cubic yards)
Regulator J-14	Various	Various	124th St. & North Conduit Ave. Queens, NY (Removed 20 cubic yards)
Regulator RH-19	Various	Various	John St. & Adam St. Brooklyn, NY (Removed 5 cubic yards)
Regulator RH-14	Various	Various	Furman St. & Joralemon St. Brooklyn, NY (Removed 10 cubic yards)
Regulator RH-17	Various	Various	Fulton St. & Furman St. Brooklyn, NY (Removed 5 cubic yards)

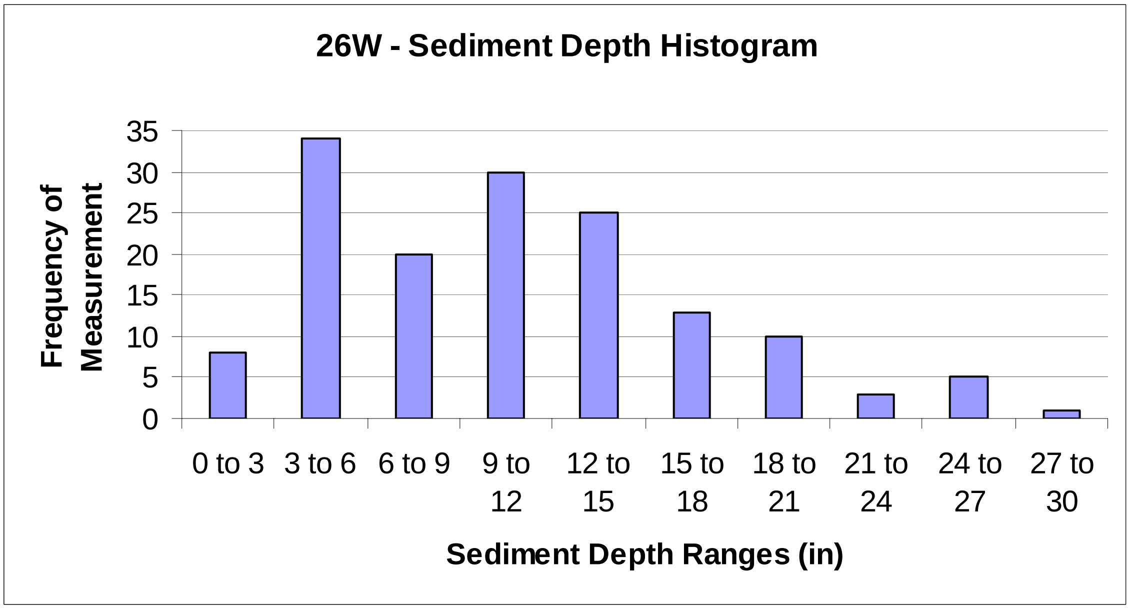
Red Hook Branch Interceptor	18”	132’	John St. & Adam St. (Regulator RH-19) to Playmouth St. & Adam St. Brooklyn, NY (132 Linear ft. TV inspection)
Wards Island Manhattan North Interceptor	30”	1475’	W176th St. & Harlem River Dr. to W167th St. & Harlem River Dr. Manhattan, NY (1475 Linear ft. SONAR inspection)
TOTAL DEBRIS REMOVED IN 2010 = 4219 Cubic Yards TOTAL SONAR INSPECTION IN 2010 = 1475 Linear ft. TOTAL TV INSPECTION IN 2010 = 132 Linear ft.			

BWT Cleaning 2010



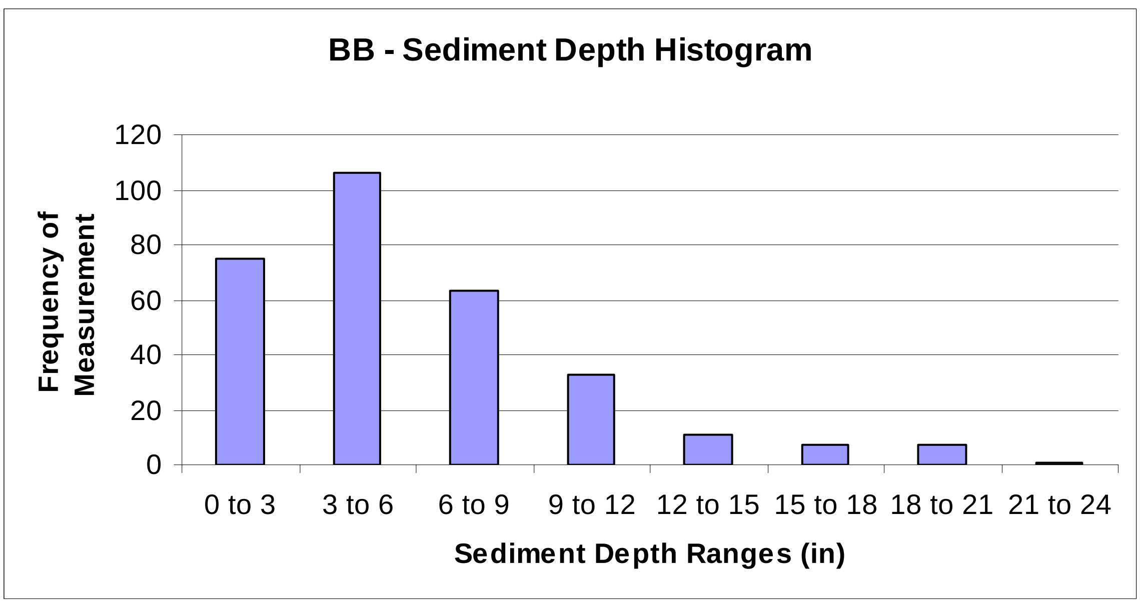
Sediment Depth Histograms

Graph 1



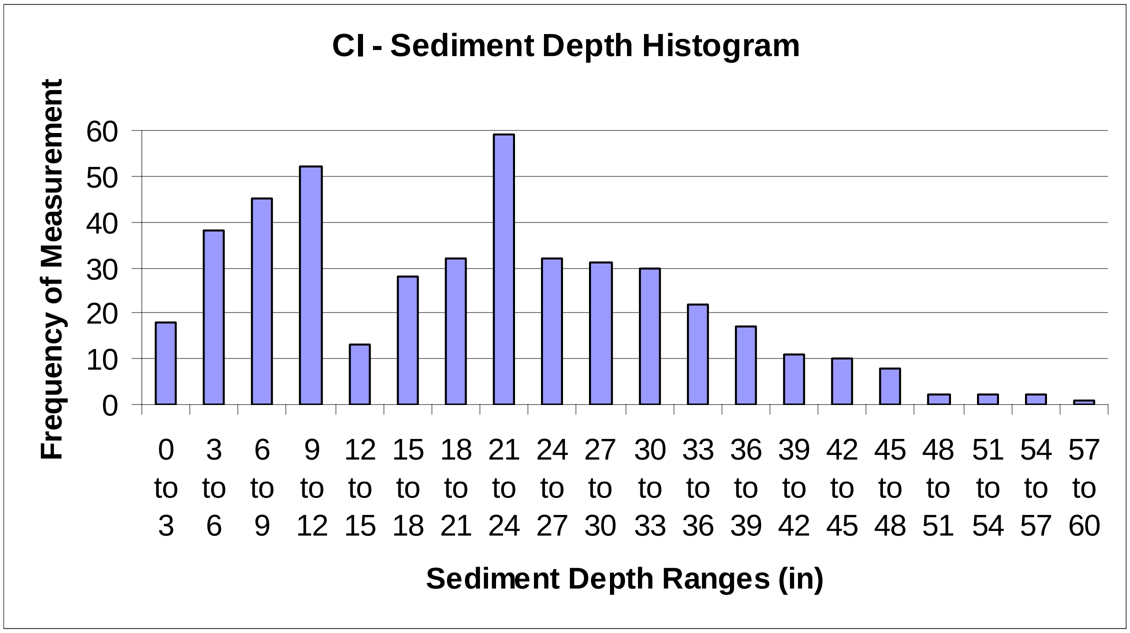
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 2



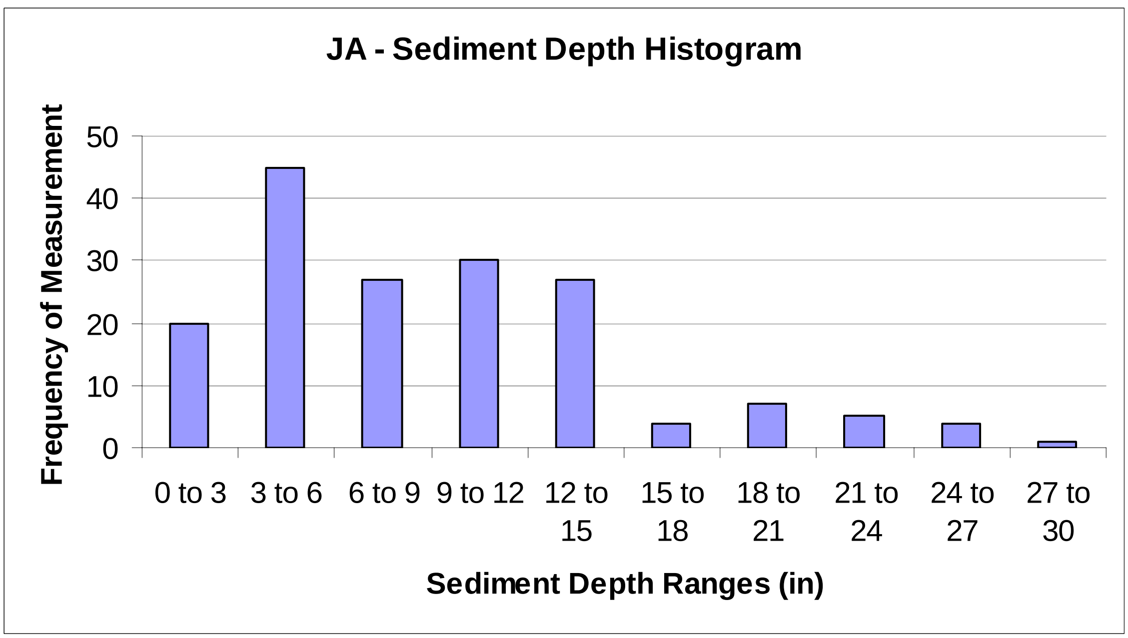
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 3



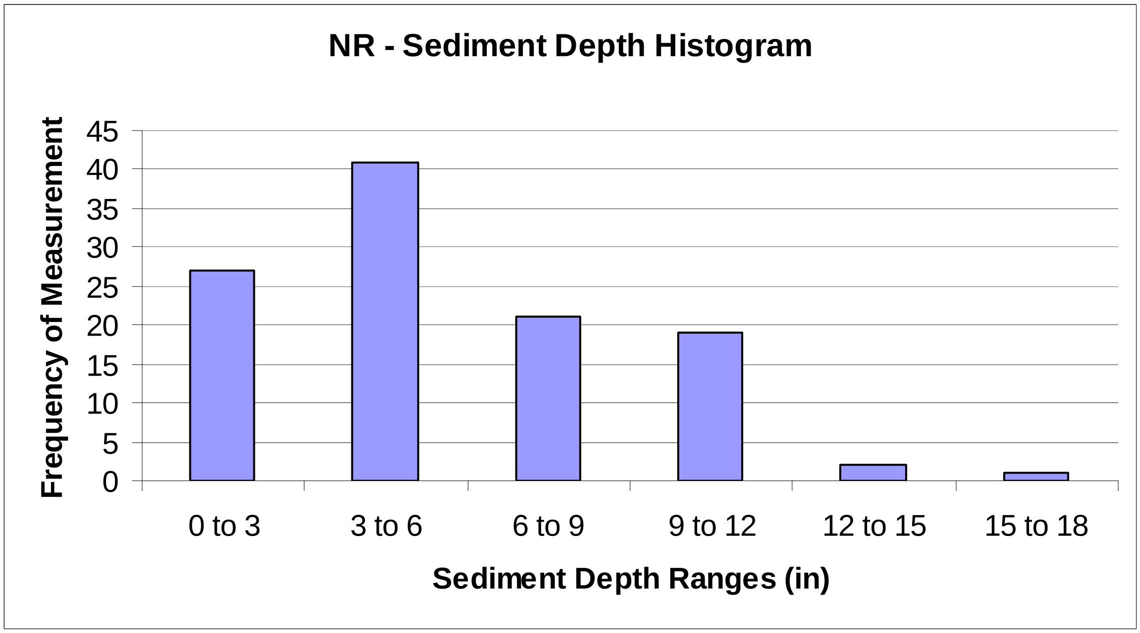
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 4



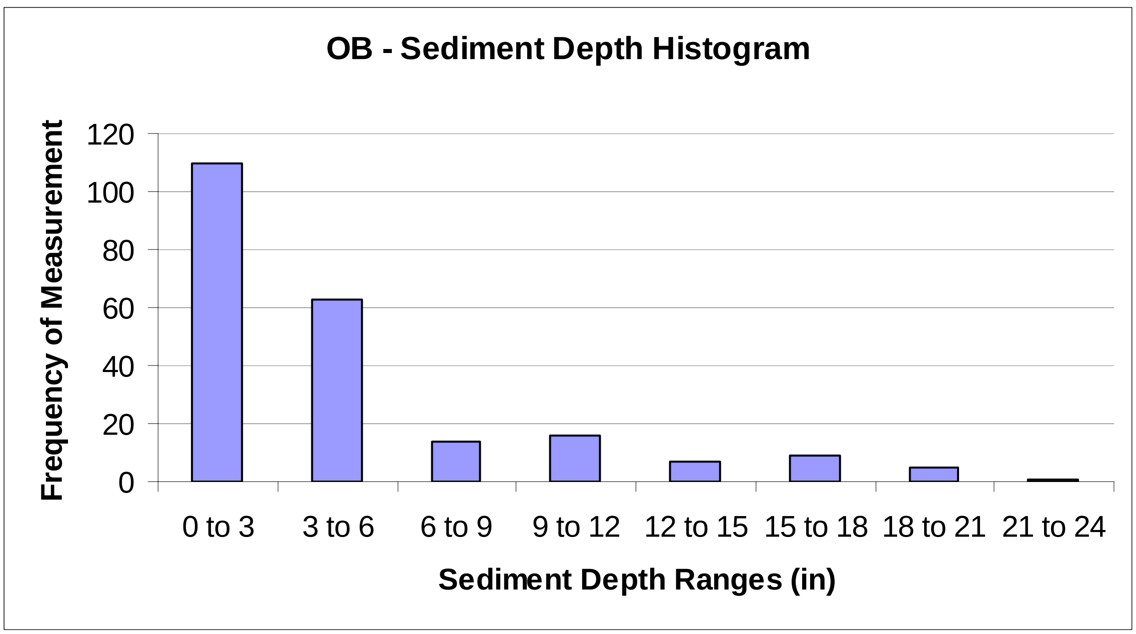
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 5



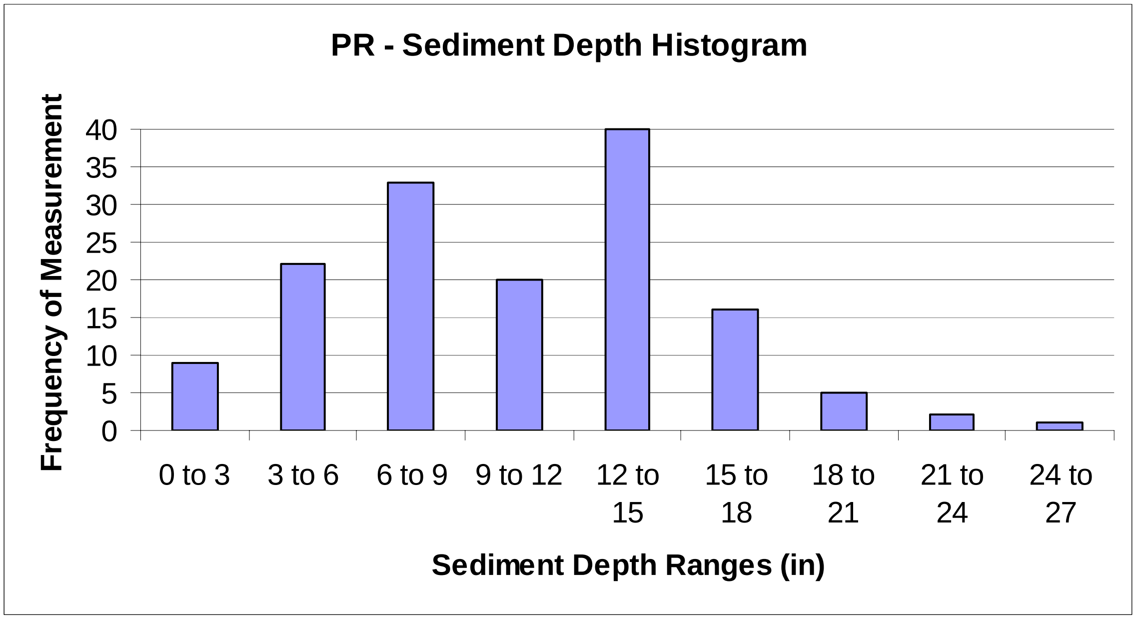
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 6



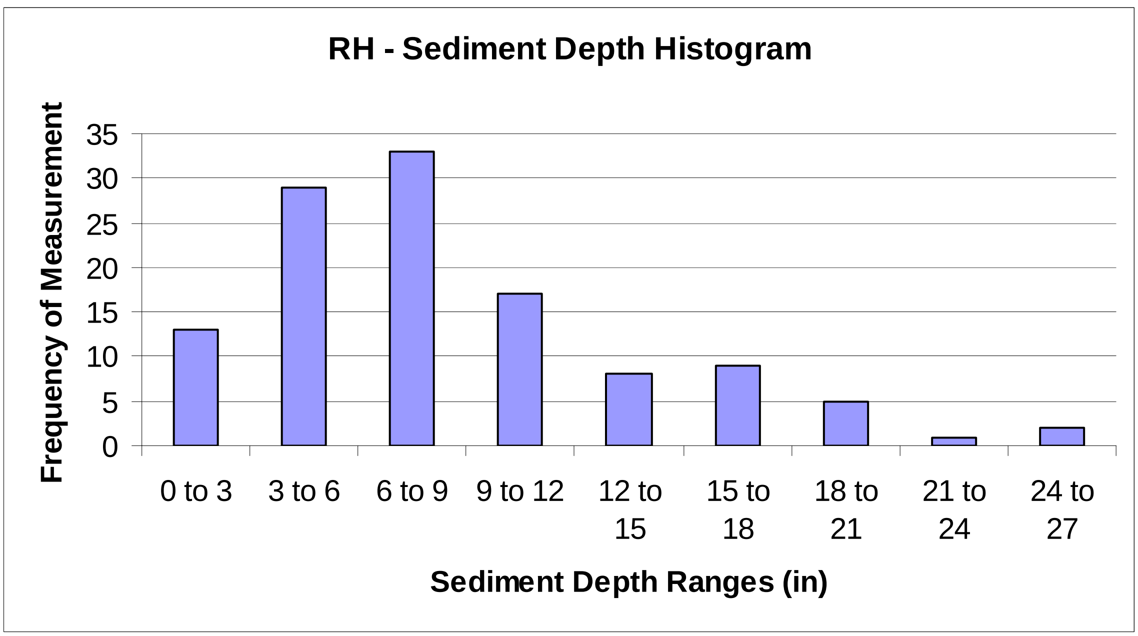
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 7



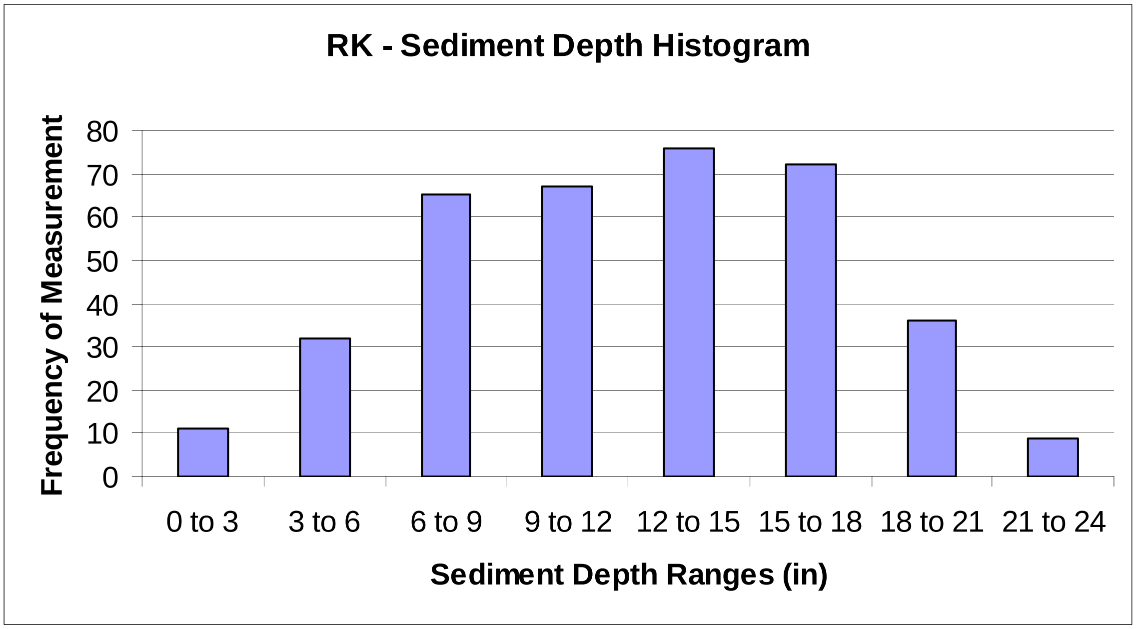
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 8



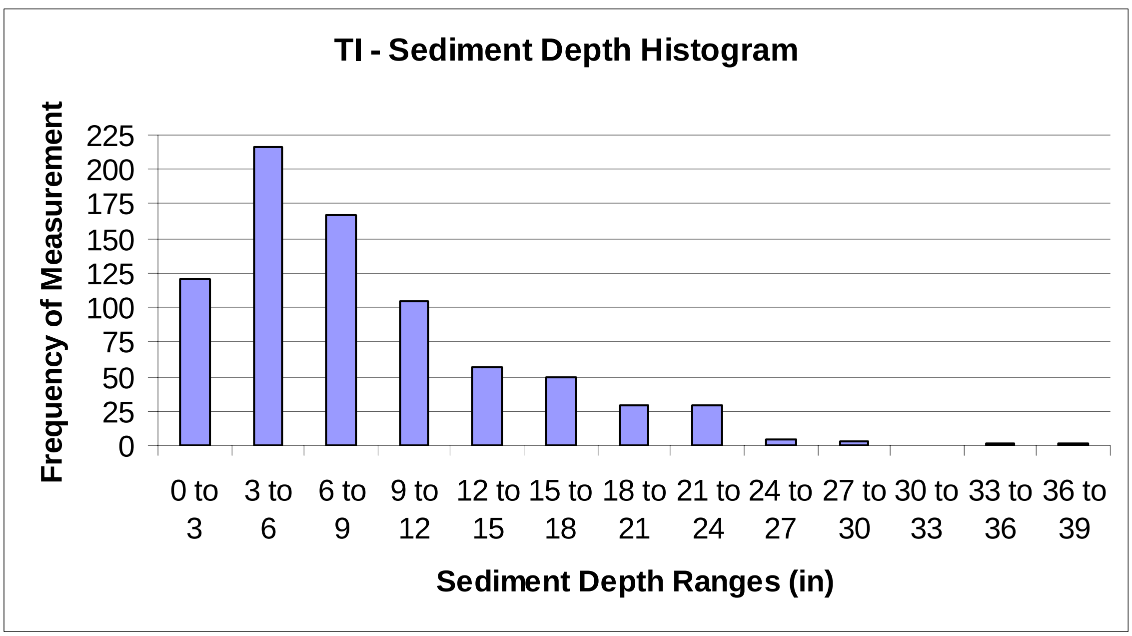
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 9



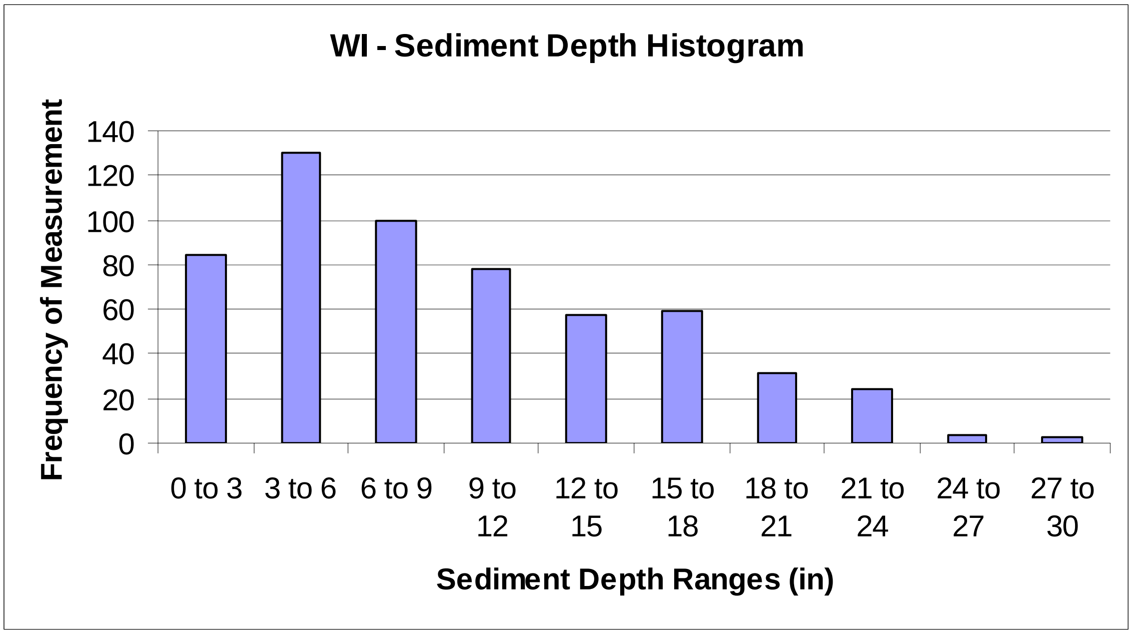
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 10



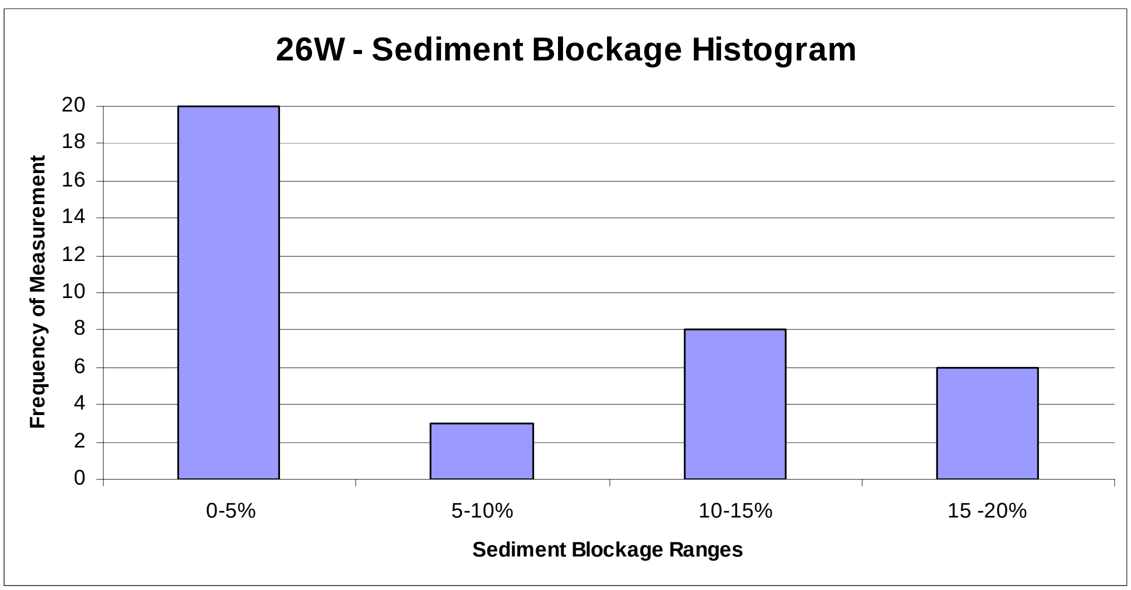
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 11



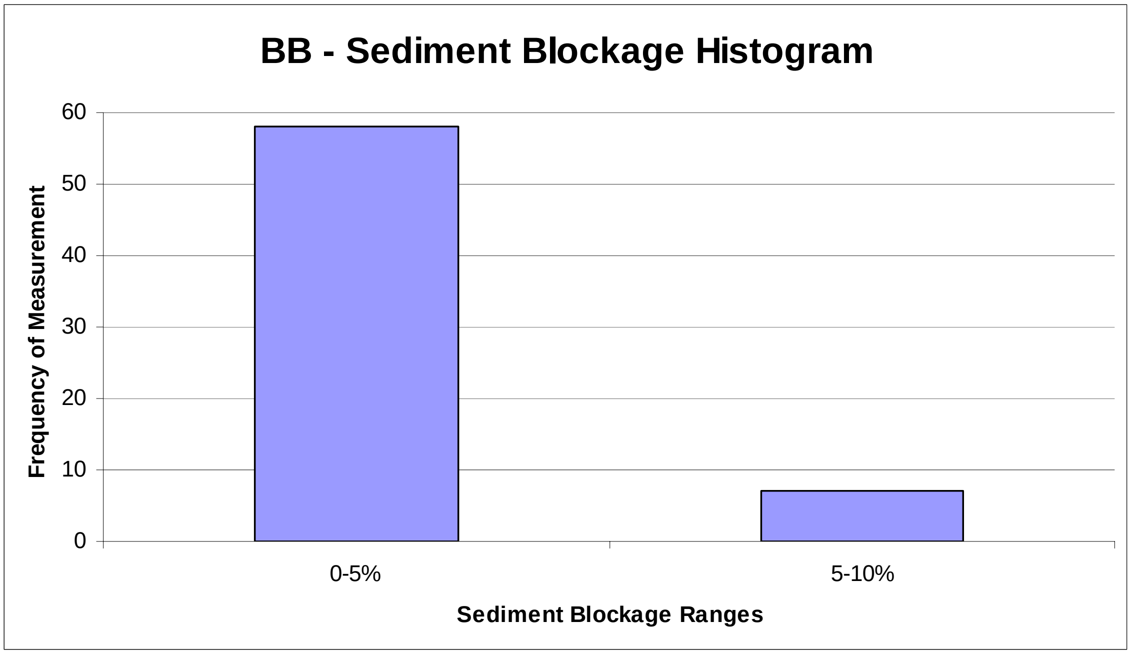
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 12



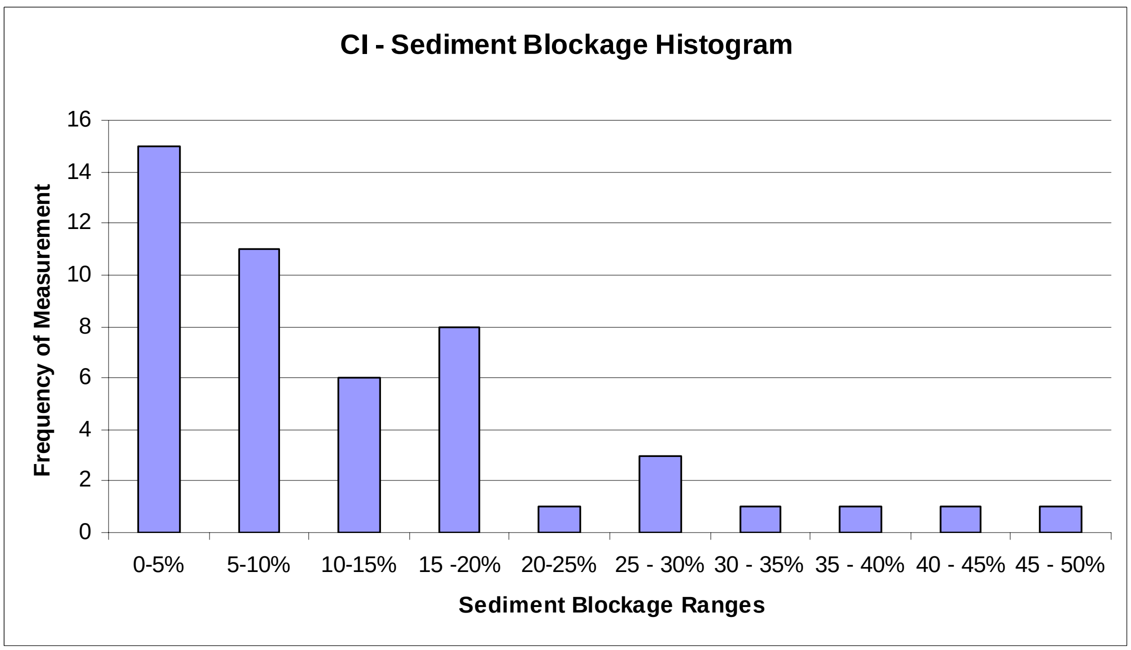
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 13



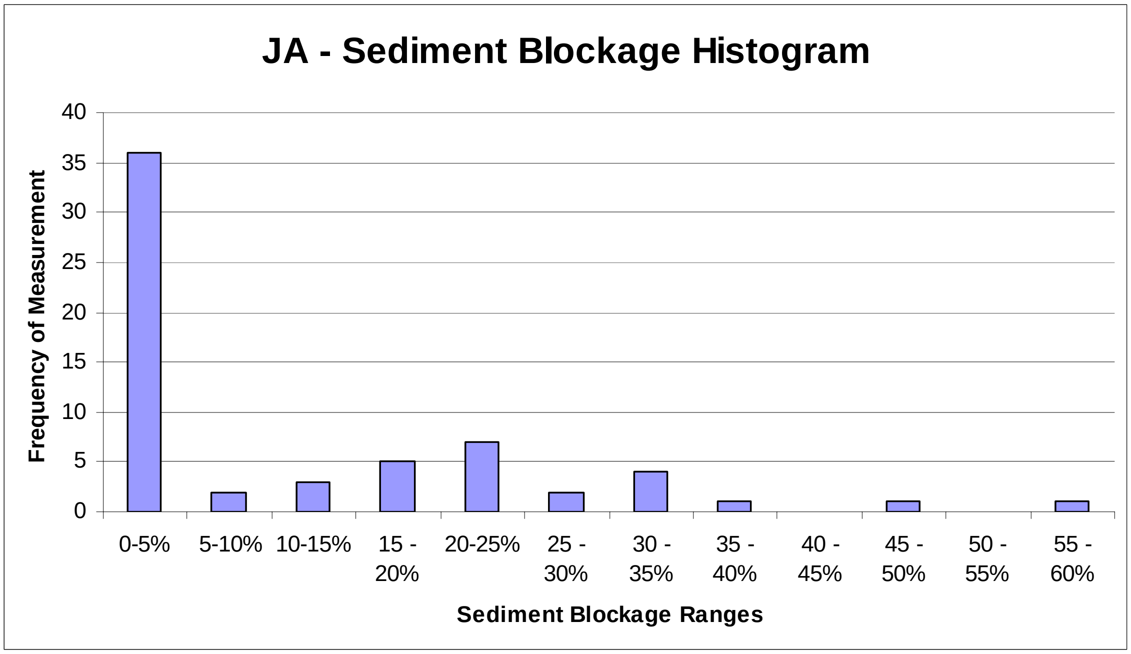
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 14



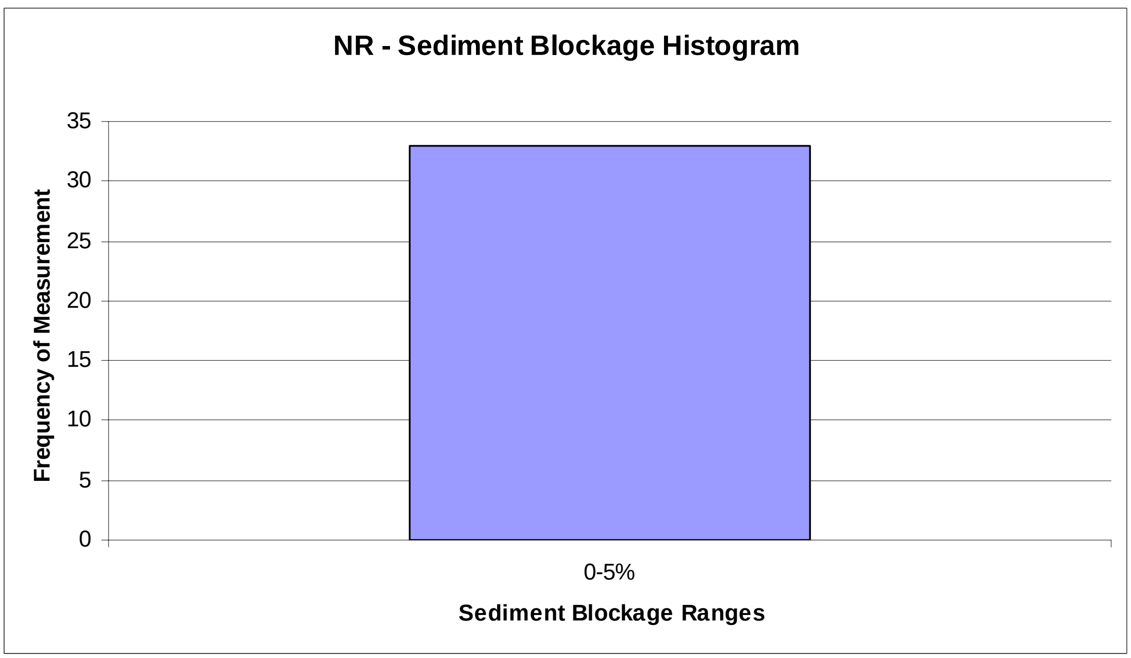
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 15



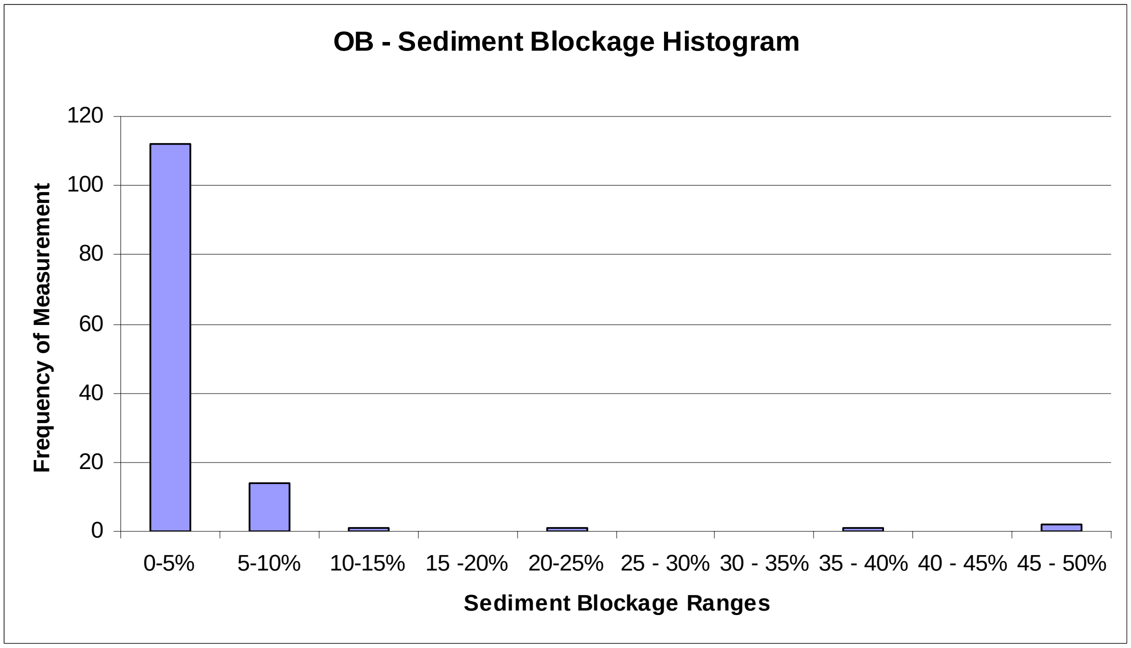
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 16



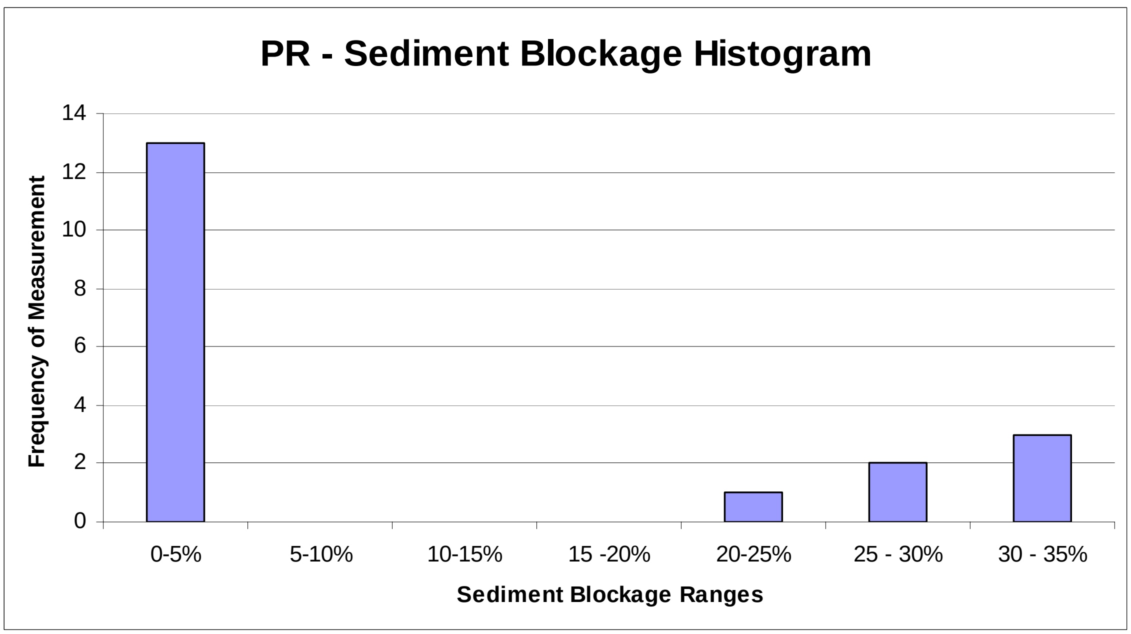
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 17



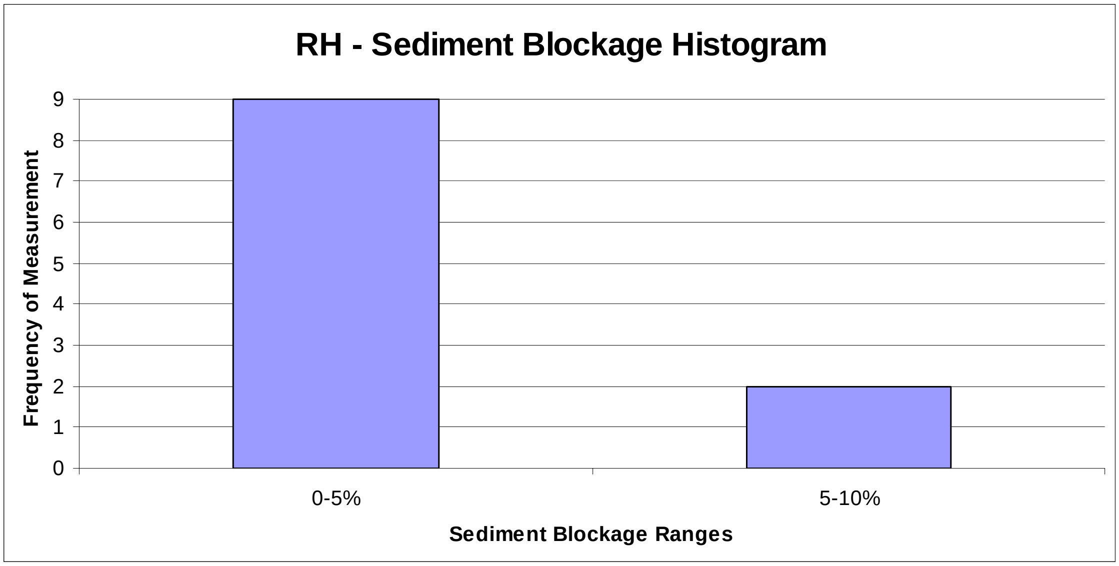
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 18



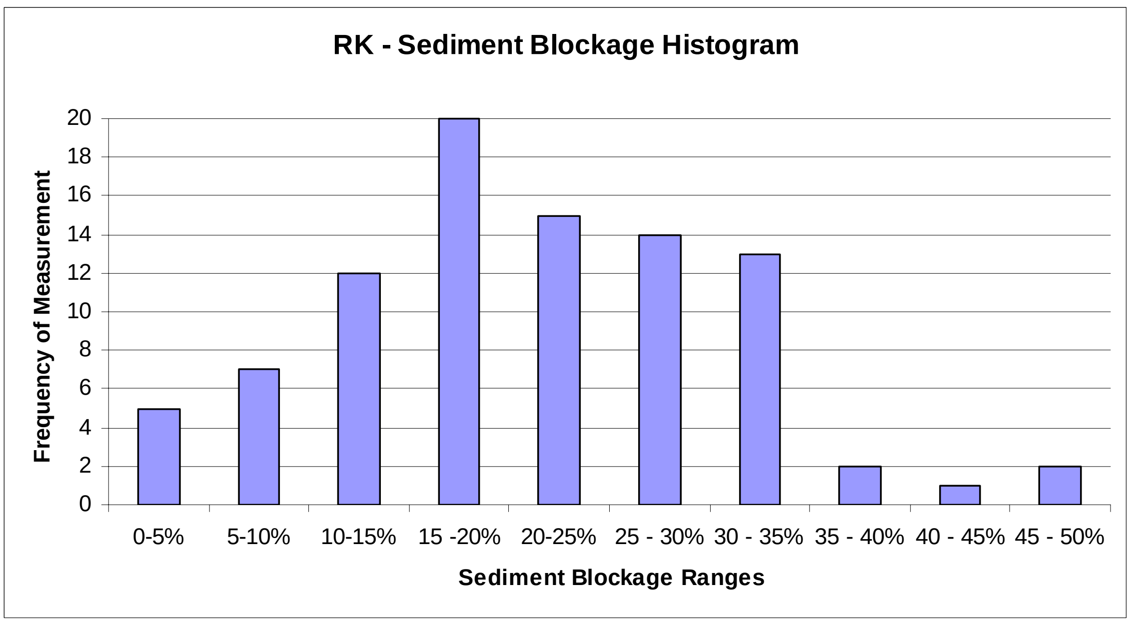
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 19



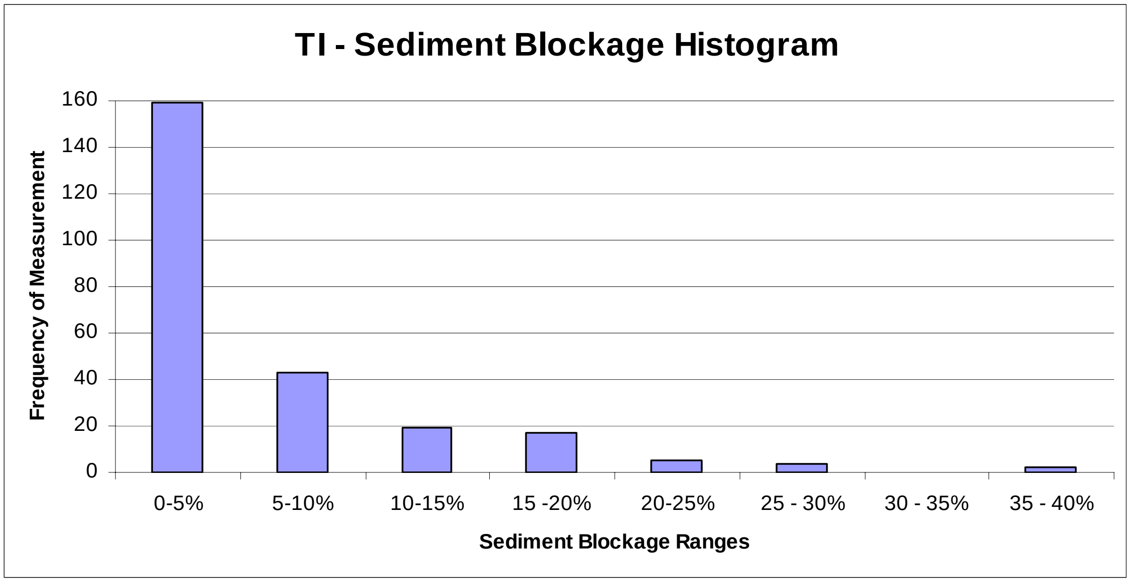
*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 20



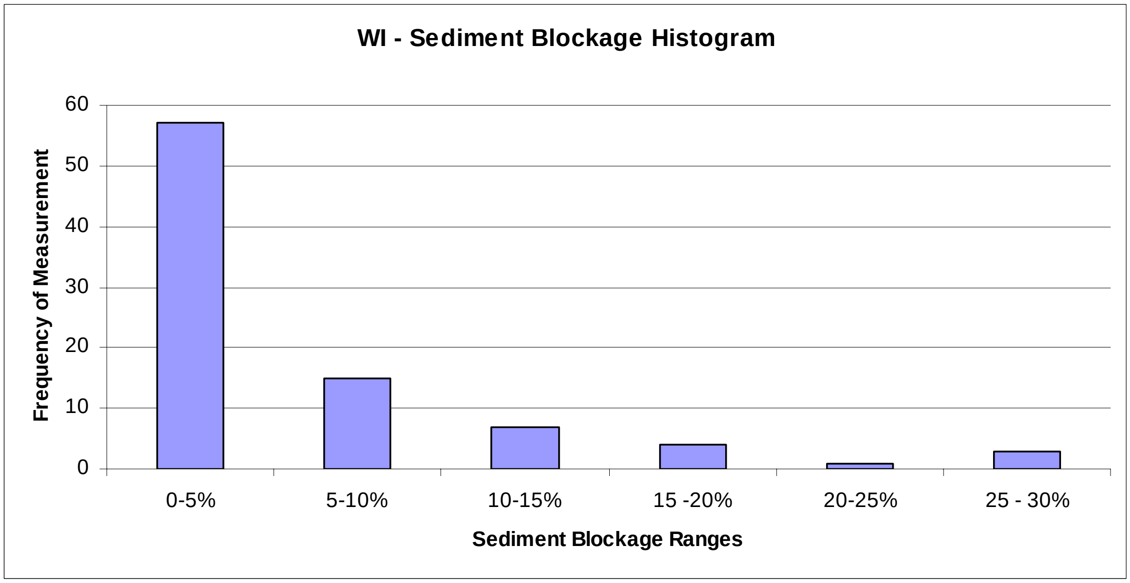
*Sedime nt Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 21



*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Graph 22



*Sediment Blockage is defined as the percent of the pipe volume occupied by sediment deposits.

Appendix A

Inspected Pipe Summary and Map Figures

Inspected Pipe Summary per Drainage Area

26 Ward

Table 1

Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)
26W_E_1	42.7	U	60	60
26W_E_10	275.0	U	60	60
26W_E_11	264.1	U	60	60
26W_E_12	248.2	U	60	60
26W_E_13	253.4	U	60	60
26W_E_14	256.2	U	60	60
26W_E_15	263.1	U	60	60
26W_E_16	258.0	U	60	60
26W_E_17	263.1	U	60	60
26W_E_18	260.8	U	60	60
26W_E_19	269.1	U	60	60
26W_E_2	526.7	U	60	60
26W_E_20	276.5	U	60	60
26W_E_21	302.9	U	60	60
26W_E_22	174.7	U	60	60
26W_E_3	182.3	U	60	60
26W_E_4	190.7	U	60	60
26W_E_5	50.5	U	60	60
26W_E_6	203.7	U	60	60
26W_E_7	265.2	U	60	60
26W_E_8	268.1	U	60	60
26W_E_9	258.0	U	60	60
26W_W_1	144.3	C	60	60
26W_W_10	258.1	C	60	60
26W_W_11	269.0	C	60	60
26W_W_12	109.5	C	60	60
26W_W_13	233.5	C	60	60
26W_W_14	237.0	C	60	60
26W_W_15	50.7	C	60	60
26W_W_2	333.4	C	60	60
26W_W_3	348.9	C	60	60
26W_W_4	350.1	C	60	60
26W_W_5	335.8	C	60	60
26W_W_6	60.9	C	60	60
26W_W_7	88.0	C	60	60
26W_W_8	333.0	C	60	60
26W_W_9	259.3	C	60	60

*Interceptor Pipes are named using the Upstream manhole ID

**C equals Circular, U equals Flat-Top Curved-Bottom

Bowery Bay

Table 2

Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)	Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)
BB_W_10	998.9	C	90	90	BB_W_53	497.2	C	54	54
BB_W_10A	391.3	C	90	90	BB_W_54	425.7	C	54	54
BB_W_11	815.2	C	90	90	BB_W_55	269.7	C	54	54
BB_W_12	1000.0	C	90	90	BB_W_55A	165.1	C	54	54
BB_W_13	1080.6	C	84	84	BB_W_56	126.1	C	54	54
BB_W_14	1136.7	C	84	84	BB_W_57	233.8	C	54	54
BB_W_15	1233.6	C	84	84	BB_W_58	280.4	C	54	54
BB_W_16	563.7	C	66	66	BB_W_59	231.2	C	54	54
BB_W_17	1376.8	C	66	66	BB_W_60	270.8	C	54	54
BB_W_18	794.8	C	66	66	BB_W_61	319.9	C	54	54
BB_W_19	1100.1	C	66	66	BB_W_62	396.3	C	54	54
BB_W_20	464.4	C	60	60	BB_W_63	280.9	C	54	54
BB_W_21	479.6	C	60	60	BB_W_64	231.2	C	54	54
BB_W_22	600.0	C	60	60	BB_W_65	55.0	U	96	54
BB_W_23	352.2	C	54	54	BB_W_65A	163.9	C	54	54
BB_W_24	479.6	C	54	54	BB_W_66	315.6	U	96	54
BB_W_25	63.9	C	54	54	BB_W_67	345.3	CTCB	72	54
BB_W_26	637.5	C	54	54	BB_W_68	342.5	CTCB	72	54
BB_W_27	298.4	C	54	54	BB_W_69	335.0	CTCB	72	54
BB_W_28	215.9	C	54	54	BB_W_8	1880.7	C	96	96
BB_W_29	255.4	C	54	54	BB_W_9	1374.1	C	90	90
BB_W_30	262.1	C	54	54					
BB_W_31	295.3	C	54	54					
BB_W_32	268.7	C	54	54					
BB_W_33	60.6	C	54	54					
BB_W_34	166.4	C	54	54					
BB_W_35	535.8	C	54	54					
BB_W_36	331.9	C	54	54					
BB_W_37	442.3	C	54	54					
BB_W_38	540.0	C	54	54					
BB_W_39	220.3	C	54	54					
BB_W_40	276.8	C	54	54					
BB_W_41	50.8	C	54	54					
BB_W_42	123.4	C	54	54					
BB_W_43	37.6	C	54	54					
BB_W_44	190.3	C	54	54					
BB_W_45	173.2	C	54	54					
BB_W_46	317.6	C	54	54					
BB_W_47	140.4	C	54	54					
BB_W_48	44.4	C	54	54					
BB_W_49	200.3	C	54	54					
BB_W_50	216.5	C	54	54					
BB_W_51	60.7	C	54	54					
BB_W_52	585.8	C	54	54					

*Interceptor Pipes are named for the Upstream manhole ID

**C equals Circular, U equals Flat-Top Curved-Bottom, CTCB equals Curved-Top Curved-Bottom

Coney Island

Table 3

Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)
CI_N_10	1620.2	C	120	120
CI_N_11	532.2	FTVB	120	120
CI_N_12	527.0	FTVB	120	120
CI_N_13	520.9	FTVB	120	120
CI_N_14	524.0	C	120	120
CI_N_15	572.4	C	120	120
CI_N_16	501.9	C	120	120
CI_N_17	530.4	C	120	120
CI_N_18	514.8	FTVB	120	120
CI_N_19	545.3	FTVB	120	120
CI_N_20	610.3	FTVB	120	120
CI_N_21	519.1	FTVB	120	120
CI_N_22	503.1	FTVB	120	120
CI_N_23	525.2	FTVB	120	120
CI_N_24	501.0	FTVB	120	120
CI_N_25	505.1	FTVB	120	120
CI_N_26	487.1	FTVB	120	120
CI_N_27	496.8	FTVB	120	120
CI_N_28	521.0	FTVB	120	120
CI_N_29	495.5	FTVB	120	120
CI_N_30	501.2	FTVB	120	120
CI_N_31	505.3	FTVB	120	120
CI_N_32	298.4	C	72	72
CI_N_33	211.1	C	72	72
CI_N_35	241.6	C	54	54
CI_N_36	275.5	C	54	54
CI_N_7	855.0	FTVB	120	120
CI_N_8	741.3	FTVB	120	120
CI_N_9	320.2	FTVB	120	120
CI_W_10	535.2	C	84	84
CI_W_11	440.2	C	78	78
CI_W_12	525.8	C	78	78
CI_W_13	515.5	C	78	78
CI_W_16	554.9	C	78	78
CI_W_19	514.9	C	78	78
CI_W_2	240.5	C	84	84
CI_W_20	560.4	C	78	78
CI_W_21	594.1	C	78	78
CI_W_24	520.3	C	72	72
CI_W_25	509.1	C	72	72
CI_W_26	496.2	C	72	72
CI_W_27	547.1	C	72	72
CI_W_28	544.0	C	72	72
CI_W_29	1315.2	C	72	72
CI_W_3	380.0	C	84	84
CI_W_4	522.1	C	84	84
CI_W_5	536.0	C	84	84
CI_W_7	550.4	C	84	84

*Interceptor Pipes are named for the Upstream manhole ID

**C equals Circular, FTVB equals Flat-Top V-Bottom

Jamaica

Table 4

Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)
JA_E_1	306.0	C	96	96
JA_E_112	17.0	C	48	48
JA_E_113	140.1	C	48	48
JA_E_114	117.7	C	48	48
JA_E_115	122.1	C	48	48
JA_E_116	148.4	C	48	48
JA_E_117	151.7	C	48	48
JA_E_118	152.4	C	48	48
JA_E_119	146.8	C	48	48
JA_E_120	115.9	C	48	48
JA_E_121	156.6	C	48	48
JA_E_122	22.7	C	48	48
JA_E_144	254.9	C	48	48
JA_E_145	31.0	C	48	48
JA_E_146	29.9	C	48	48
JA_E_147	20.1	C	48	48
JA_E_149	163.1	C	42	42
JA_E_150	158.7	C	42	42
JA_E_151	172.3	C	42	42
JA_E_152	160.0	C	42	42
JA_E_153	162.3	C	42	42
JA_E_154	160.2	C	42	42
JA_E_155	164.9	C	42	42
JA_E_156	26.0	C	42	42
JA_E_157B	156.8	U	141	96
JA_E_158B	171.7	U	141	96
JA_E_159B	161.8	U	141	96
JA_E_160B	160.0	U	141	96
JA_E_169	50.4	U	168	96
JA_E_178	223.4	U	168	96
JA_E_73	134.0	C	84	84
JA_E_79_1	197.3	C	66	66
JA_E_79_158	64.1	C	54	54
JA_E_79_49	143.6	C	60	60
JA_E_79_50	46.5	C	60	60
JA_E_79_51	92.2	C	60	60
JA_E_79_52	155.5	C	60	60
JA_E_79_53	157.0	C	60	60
JA_E_79_54	156.0	C	60	60
JA_E_79_55	481.0	C	60	60
JA_E_79_56	141.2	C	60	60
JA_E_79_57	118.8	C	60	60
JA_E_79_58	164.1	C	60	60
JA_E_79_59	151.0	C	60	60
JA_E_79_60	153.0	C	60	60
JA_E_79_61	64.5	C	60	60
JA_E_79_63	241.6	C	60	60
JA_E_79_70	111.3	C	60	60
JA_E_79_71	107.2	C	60	60
JA_E_79_72	102.0	C	60	60
JA_E_79_84	135.1	C	60	60
JA_E_79_91	141.1	C	54	54
JA_W_2	44.8	C	72	72
JA_W_21_1A	43.6	C	36	36
JA_W_42	125.0	C	60	60
JA_W_44	221.0	C	60	60
JA_W_45	260.0	C	60	60
JA_W_58	258.0	C	60	60
JA_W_59	256.0	C	54	54
JA_W_67	145.3	C	54	54
JA_W_86	213.2	C	54	54
JA_W_87	213.9	C	54	54

*Interceptor Pipes are named using the Upstream manhole ID

**C equals Circular, U equals Flat-Top Curved-Bottom

North River

Table 5

Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)
NR_N_2	2350.3	C	78	84
NR_N_3	839.1	C	84	84
NR_N_4	2880.0	C	84	84
NR_N_5	1620.0	C	84	84
NR_N_7	3016.4	C	78	78
NR_N_8	2726.5	C	78	78
NR_S_14	255.3	C	126	126
NR_S_15	686.2	C	102	102
NR_S_16	570.5	C	102	102
NR_S_17	236.6	C	102	102
NR_S_18	830.0	C	102	102
NR_S_19	1027.8	C	96	96
NR_S_20	728.1	C	96	96
NR_S_21	710.3	C	96	96
NR_S_22	1166.6	C	96	96
NR_S_23	800.7	C	84	84
NR_S_24	870.1	C	84	84
NR_S_25	738.6	C	84	84
NR_S_27	229.9	C	30	30
NR_S_28	266.1	C	30	30
NR_S_29	268.3	C	30	30
NR_S_3	1349.9	C	192	192
NR_S_30	177.5	C	30	30
NR_S_31	185.1	C	30	30
NR_S_32	187.0	C	30	30
NR_S_33	162.5	C	30	30
NR_S_34	218.2	C	30	30
NR_S_35	140.0	C	30	30
NR_S_4	2467.9	C	192	192
NR_S_6	1930.0	C	174	174
NR_S_7	5001.6	C	168	168
NR_S_8	2660.0	C	168	168
NR_S_9	2159.0	C	138	138

*Interceptor Pipes are named using the Upstream manhole ID

**C equals Circular

Oakwood Beach

Table 6

Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)	Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)
OB_EL_1	145.6	C	66	66	OB_FK_E_9	505.1	C	36	36
OB_EL_10	258.6	C	66	66	OB_FK_W_10	330.1	C	48	48
OB_EL_11	418.0	C	66	66	OB_FK_W_11	375.4	C	48	48
OB_EL_2	655.3	C	66	66	OB_FK_W_12	360.8	C	48	48
OB_EL_3	310.0	C	66	66	OB_FK_W_13	81.1	C	48	48
OB_EL_4	423.4	C	66	66	OB_FK_W_14	257.2	C	48	48
OB_EL_5	426.1	C	66	66	OB_FK_W_15	168.5	C	48	48
OB_EL_6	3795.4	CNET	98	98	OB_FK_W_16	142.7	C	48	48
OB_EL_7	2446.9	CNET	98	98	OB_FK_W_17	215.2	C	48	48
OB_EL_8	100.1	C	66	66	OB_FK_W_18	210.1	C	48	48
OB_EL_9	502.8	C	66	66	OB_FK_W_19	310.1	C	48	48
OB_FK_E_1	434.8	C	48	48	OB_FK_W_2	103.1	C	60	60
OB_FK_E_10	499.5	C	36	36	OB_FK_W_20	326.7	C	48	48
OB_FK_E_11	201.0	C	36	36	OB_FK_W_21	195.3	C	48	48
OB_FK_E_12	205.1	C	36	36	OB_FK_W_22	162.4	C	48	48
OB_FK_E_13	199.6	C	36	36	OB_FK_W_23	113.5	C	48	48
OB_FK_E_14	226.2	C	36	36	OB_FK_W_24	110.2	C	48	48
OB_FK_E_15	220.1	C	36	36	OB_FK_W_25	96.4	C	48	48
OB_FK_E_16	250.3	C	36	36	OB_FK_W_26	300.8	C	48	48
OB_FK_E_17	274.5	C	36	36	OB_FK_W_27	320.9	C	48	48
OB_FK_E_18	280.2	C	36	36	OB_FK_W_28	345.0	C	48	48
OB_FK_E_19	279.2	C	36	36	OB_FK_W_29	302.0	C	48	48
OB_FK_E_2	214.1	C	48	48	OB_FK_W_3	70.1	C	48	48
OB_FK_E_20	252.9	C	36	36	OB_FK_W_30	265.1	C	48	48
OB_FK_E_21	254.7	C	36	36	OB_FK_W_31	205.6	C	48	48
OB_FK_E_22	270.0	C	30	30	OB_FK_W_32	357.8	C	48	48
OB_FK_E_23	271.0	C	30	30	OB_FK_W_33	251.1	C	48	48
OB_FK_E_24	174.5	C	30	30	OB_FK_W_34	337.0	C	48	48
OB_FK_E_25	173.5	C	30	30	OB_FK_W_35	305.1	C	48	48
OB_FK_E_26	246.9	C	30	30	OB_FK_W_36	271.1	C	48	48
OB_FK_E_27	249.0	C	30	30	OB_FK_W_37	228.9	C	48	48
OB_FK_E_28	243.8	C	30	30	OB_FK_W_38	323.0	C	48	48
OB_FK_E_29	250.1	C	30	30	OB_FK_W_39	146.5	C	48	48
OB_FK_E_3	155.8	C	48	48	OB_FK_W_4	225.2	C	48	48
OB_FK_E_30	242.2	C	30	30	OB_FK_W_40	126.1	C	48	48
OB_FK_E_31	245.6	C	30	30	OB_FK_W_41	163.4	C	42	42
OB_FK_E_32	240.7	C	30	30	OB_FK_W_42	125.0	C	42	42
OB_FK_E_33	209.5	C	30	30	OB_FK_W_43	101.6	C	42	42
OB_FK_E_4	313.8	C	48	48	OB_FK_W_44	81.7	C	30	30
OB_FK_E_5	303.6	C	48	48	OB_FK_W_45	240.0	C	30	30
OB_FK_E_6	941.6	C	42	42	OB_FK_W_46	105.0	C	30	30
OB_FK_E_7	382.2	C	42	42	OB_FK_W_47	210.1	C	30	30
OB_FK_E_8	325.1	C	36	36	OB_FK_W_48	215.1	C	30	30
					OB_FK_W_49	255.1	C	30	30

Table 6 cont.

Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)
OB_FK_W_5	276.2	C	48	48
OB_FK_W_50	270.1	C	30	30
OB_FK_W_51	258.8	C	30	30
OB_FK_W_52	289.7	C	30	30
OB_FK_W_53	257.2	C	30	30
OB_FK_W_54	125.2	C	30	30
OB_FK_W_56	258.1	C	30	30
OB_FK_W_57	261.8	C	30	30
OB_FK_W_58	251.3	C	30	30
OB_FK_W_59	270.2	C	30	30
OB_FK_W_6	383.1	C	48	48
OB_FK_W_60	280.5	C	30	30
OB_FK_W_61	154.5	C	30	30
OB_FK_W_62	225.1	C	30	30
OB_FK_W_63	244.8	C	30	30
OB_FK_W_64	155.5	C	30	30
OB_FK_W_65	192.2	C	30	30
OB_FK_W_66	267.9	C	30	30
OB_FK_W_67	258.3	C	30	30
OB_FK_W_68	176.1	C	30	30
OB_FK_W_7	405.1	C	48	48
OB_FK_W_8	280.0	C	48	48
OB_FK_W_9	340.3	C	48	48
OB_W_10	496.0	C	96	96
OB_W_11	199.6	C	96	96
OB_W_12	553.4	C	96	96
OB_W_13	578.0	C	96	96
OB_W_14	591.8	C	96	96
OB_W_15	412.5	C	96	96
OB_W_16	183.4	C	96	96
OB_W_17	457.8	C	96	96
OB_W_18	162.4	C	96	96
OB_W_3	652.8	C	96	96
OB_W_4	994.3	C	96	96
OB_W_5	648.3	C	96	96
OB_W_6	650.0	C	96	96
OB_W_7	595.9	C	96	96
OB_W_8	784.7	C	96	96
OB_W_9	713.5	C	96	96
OB_W_90	164.3	C	36	36
OB_W_91	195.2	C	36	36
OB_W_92	227.2	C	36	36
OB_W_93	135.2	C	36	36

*Interceptor Pipes are named using the Upstream manhole ID

**C equals Circular, CNET equals Cunette

Rockaway

Table 7

Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)	Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)
RK_E_1	235.0	C	66	66	RK_E_64	125.2	C	54	54
RK_E_100	121.0	C	48	48	RK_E_65	133.9	C	54	54
RK_E_101	118.2	C	48	48	RK_E_66	145.3	C	54	54
RK_E_102	118.4	C	42	42	RK_E_67	105.8	C	54	54
RK_E_103	111.1	C	42	42	RK_E_68	117.7	C	54	54
RK_E_104	132.3	C	42	42	RK_E_69	126.0	C	54	54
RK_E_105	134.4	C	42	42	RK_E_70	120.0	C	54	54
RK_E_106	129.3	C	42	42	RK_E_71	115.6	C	54	54
RK_E_107	128.3	C	42	42	RK_E_72	94.4	C	54	54
RK_E_108	139.4	C	42	42	RK_E_73	16.7	C	54	54
RK_E_109	147.2	C	42	42	RK_E_74	152.9	C	54	54
RK_E_110	144.6	C	42	42	RK_E_75	156.0	C	54	54
RK_E_111	117.0	C	42	42	RK_E_76	141.4	C	54	54
RK_E_112	110.7	C	42	42	RK_E_77	151.0	C	54	54
RK_E_113	121.3	C	42	42	RK_E_78	155.2	C	54	54
RK_E_114	121.0	C	42	42	RK_E_79	101.1	C	54	54
RK_E_115	122.0	C	42	42	RK_E_80	125.3	C	54	54
RK_E_116	124.2	C	42	42	RK_E_81	126.7	C	54	54
RK_E_117	144.0	C	42	42	RK_E_82	125.0	C	54	54
RK_E_118	143.5	C	42	42	RK_E_83	123.5	C	54	54
RK_E_119	145.9	C	42	42	RK_E_84	129.0	C	54	54
RK_E_120	193.2	C	42	42	RK_E_85	125.7	C	54	54
RK_E_121	57.1	C	42	42	RK_E_86	126.9	C	54	54
RK_E_122	115.9	C	42	42	RK_E_87	129.5	C	54	54
RK_E_123	126.4	C	42	42	RK_E_88	126.9	C	54	54
RK_E_124	119.6	C	42	42	RK_E_89	128.0	C	54	54
RK_E_125	116.1	C	42	42	RK_E_90	126.9	C	54	54
RK_E_126	129.4	C	42	42	RK_E_91	126.2	C	54	54
RK_E_127	123.1	C	42	42	RK_E_92	133.2	C	54	54
RK_E_128	105.1	C	42	42	RK_E_93	131.0	C	48	48
RK_E_1A	230.5	C	66	66	RK_E_94	125.4	C	48	48
RK_E_2	250.4	C	66	66	RK_E_95	125.8	C	48	48
RK_E_50	120.0	C	60	60	RK_E_96	116.2	C	48	48
RK_E_51	127.3	C	60	60	RK_E_97	114.3	C	48	48
RK_E_54	138.1	C	54	54	RK_E_98	115.4	C	48	48
RK_E_55	138.7	C	54	54	RK_E_99	113.8	C	48	48
RK_E_56	145.2	C	54	54	RK_W_1	118.2	C	48	48
RK_E_57	138.6	C	54	54	RK_W_1A	408.9	C	48	48
RK_E_58	141.5	C	54	54	RK_W_2	36.8	C	48	48
RK_E_59	133.6	C	54	54	RK_W_42	304.0	C	30	30
RK_E_60	133.0	C	54	54	RK_W_43	274.0	C	30	30
RK_E_61	131.5	C	54	54	RK_W_44	289.0	C	30	30
RK_E_62	132.0	C	54	54	RK_W_45	267.7	C	30	30
RK_E_63	128.8	C	54	54	RK_W_46	274.2	C	30	30

Table 7 cont.

Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)
RK_W_47	271.2	C	30	30
RK_W_48	267.2	C	30	30
RK_W_49	246.6	C	30	30

*Interceptor Pipes are named using the Upstream manhole ID
**C equals Circular

Port Richmond

Table 8

Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)
PR_E_1	200.1	EGG	84	102
PR_E_10	709.9	CNET	78	96
PR_E_11	880.4	CNET	78	96
PR_E_12	1190.6	CNET	78	96
PR_E_13	1400.0	CNET	78	96
PR_E_2	1775.5	EGG	84	102
PR_E_27	300.0	U	60	60
PR_E_29	175.0	C	42	42
PR_E_3	1431.4	EGG	84	102
PR_E_30	324.2	C	42	42
PR_E_31	150.8	C	42	42
PR_E_32	66.1	C	42	42
PR_E_4	414.9	EGG	84	102
PR_E_48	136.3	C	30	30
PR_E_5	629.3	EGG	84	102
PR_E_6	634.8	EGG	84	102
PR_E_7	580.2	EGG	84	102
PR_E_8	1240.0	EGG	84	102
PR_E_9	1075.3	CNET	78	96

*Interceptor Pipes are named using the Upstream manhole ID
**C equals Circular, CNET equals Cunette, EGG equals Egg, U equals Flat-Top Curved-Bottom

Red Hook

Table 9

Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)
RH_10	529	C	78	78
RH_12	355	C	66	66
RH_13	438.8	C	66	66
RH_15	673	C	66	66
RH_3	2541.20	C	98	98
RH_4	1575.82	C	98	98
RH_5	1415.37	C	98	98
RH_7	3028.66	C	98	98
RH_8	600.7	C	84	84
RH_9	1093.9	C	78	78

*Interceptor Pipes are named using the Upstream manhole ID
**C equals Circular

Tallman Island

Table 10

Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)	Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)
TI_E_1	206.1	U	78	51	TI_E_66	182.9	C	54	54
TI_E_2	249.2	U	78	51	TI_E_67	269.8	C	54	54
TI_E_28	157.1	C	60	60	TI_E_68	522.1	C	54	54
TI_E_29	164.8	C	60	60	TI_E_69	510.3	C	54	54
TI_E_3	256.9	U	78	51	TI_E_7	228.5	U	78	45
TI_E_30	331.7	C	60	60	TI_E_70	547.2	C	54	54
TI_E_31	340.0	C	60	60	TI_E_8	201.2	U	78	45
TI_E_32	329.1	C	60	60	TI_S_100	150.2	U	84	84
TI_E_33	282.7	C	60	60	TI_S_101	170.2	C	84	84
TI_E_34	270.9	C	60	60	TI_S_102	170.7	C	84	84
TI_E_35	242.3	C	60	60	TI_S_103	240.6	C	84	84
TI_E_36	271.4	C	60	60	TI_S_104	258.5	C	84	84
TI_E_37	281.9	C	60	60	TI_S_105	279.9	C	84	84
TI_E_38	232.9	C	60	60	TI_S_106	176.1	C	84	84
TI_E_39	235.0	C	60	60	TI_S_107	164.3	C	84	84
TI_E_4	300.8	U	78	51	TI_S_108	204.5	C	84	84
TI_E_40	204.6	C	60	60	TI_S_109	167.0	C	84	84
TI_E_41	215.6	C	60	60	TI_S_110	177.2	C	84	84
TI_E_42	265.0	C	60	60	TI_S_111	185.3	C	84	84
TI_E_43	187.6	C	60	60	TI_S_112	248.0	C	84	84
TI_E_44	175.3	C	60	60	TI_S_113	264.0	C	84	84
TI_E_45	198.8	C	60	60	TI_S_114	25.5	C	84	84
TI_E_46	338.7	C	60	60	TI_S_114A	234.1	C	84	84
TI_E_47	261.1	C	60	60	TI_S_115	247.1	C	84	84
TI_E_48	182.5	C	60	60	TI_S_116	246.7	C	84	84
TI_E_49	189.0	C	60	60	TI_S_117	259.8	C	84	84
TI_E_5	114.1	U	78	45	TI_S_118B	251.4	C	60	60
TI_E_50	271.2	C	60	60	TI_S_119A	458.0	C	84	84
TI_E_51	265.9	C	60	60	TI_S_120B	394.7	C	60	60
TI_E_52	227.9	C	60	60	TI_S_121	408.5	C	84	84
TI_E_53	356.0	C	60	60	TI_S_122B	394.7	C	60	60
TI_E_54	285.4	C	60	60	TI_S_123A	401.2	C	60	60
TI_E_55	248.7	C	60	60	TI_S_124A	258.5	C	60	60
TI_E_56	237.5	C	60	60	TI_S_124B	450.4	C	60	60
TI_E_57	281.0	C	54	54	TI_S_125	275.6	C	84	84
TI_E_58	239.6	C	54	54	TI_S_126	268.5	C	84	84
TI_E_59	240.6	C	54	54	TI_S_127	465.5	C	84	84
TI_E_6	268.3	U	78	45	TI_S_128	468.0	C	84	84
TI_E_60	242.5	C	54	54	TI_S_129	460.4	C	84	84
TI_E_61	264.9	C	54	54	TI_S_130	330.1	C	84	84
TI_E_62	265.6	C	54	54	TI_S_130A	130.3	C	84	84
TI_E_63	286.8	C	54	54	TI_S_131	481.0	C	84	84
TI_E_64	197.5	C	54	54	TI_S_132	412.2	C	84	84
TI_E_65	171.0	C	54	54	TI_S_133	412.9	C	84	84

Table 10 cont.

Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)	Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)
TI_S_134	401.8	C	84	84	TI_S_177	153.3	C	60	60
TI_S_135	422.0	C	84	84	TI_S_178	65.8	C	60	60
TI_S_136	357.3	C	84	84	TI_S_179	161.3	C	60	60
TI_S_137	357.3	C	84	84	TI_S_180	179.1	C	60	60
TI_S_138	145.3	C	60	60	TI_S_181	115.9	C	60	60
TI_S_139	146.7	C	60	60	TI_S_182	60.3	C	60	60
TI_S_140	134.4	C	60	60	TI_S_183	119.8	C	60	60
TI_S_141	125.1	C	60	60	TI_S_184	173.9	C	60	60
TI_S_142	50.2	C	60	60	TI_S_185	165.8	C	60	60
TI_S_143	75.7	C	60	60	TI_S_186	154.9	C	60	60
TI_S_144	185.1	C	60	60	TI_S_187	193.8	C	60	60
TI_S_145	108.5	C	60	60	TI_S_188	176.7	C	60	60
TI_S_146	94.2	C	60	60	TI_S_189	186.4	C	60	60
TI_S_147	75.1	C	60	60	TI_S_190	138.8	C	60	60
TI_S_147A	113.0	C	60	60	TI_S_191	136.7	C	60	60
TI_S_148	150.2	C	60	60	TI_S_192	141.0	C	60	60
TI_S_149	220.9	C	60	60	TI_S_193	138.1	C	60	60
TI_S_150	147.8	C	60	60	TI_S_194	140.8	C	60	60
TI_S_151	154.1	C	60	60	TI_S_195	19.2	C	60	60
TI_S_152	144.7	C	60	60	TI_S_195A	124.1	C	60	60
TI_S_153	140.2	C	60	60	TI_S_196	144.3	C	60	60
TI_S_154	154.4	C	60	60	TI_S_197	132.1	C	60	60
TI_S_155	116.5	C	60	60	TI_S_198	120.7	C	60	60
TI_S_156	158.0	C	60	60	TI_S_200	8.3	C	60	60
TI_S_157	132.8	C	60	60	TI_S_206	186.5	C	54	54
TI_S_158	134.2	C	60	60	TI_S_207	190.2	C	54	54
TI_S_159	139.0	C	60	60	TI_S_208	198.5	C	54	54
TI_S_160	143.5	C	60	60	TI_S_209	182.3	C	54	54
TI_S_161	121.7	C	60	60	TI_S_210	187.3	C	54	54
TI_S_162	151.2	C	60	60	TI_S_211	261.2	C	54	54
TI_S_163	143.2	C	60	60	TI_S_212	264.2	C	54	54
TI_S_164	128.3	C	60	60	TI_S_213	260.7	C	54	54
TI_S_165	127.8	C	60	60	TI_S_214	260.3	C	54	54
TI_S_166	135.8	C	60	60	TI_S_215	21.1	C	54	54
TI_S_167	126.1	C	60	60	TI_S_215A	255.0	C	54	54
TI_S_168	132.3	C	60	60	TI_S_216	40.4	C	54	54
TI_S_169	132.6	C	60	60	TI_S_216A	25.1	C	54	54
TI_S_170	132.0	C	60	60	TI_S_216B	43.2	C	54	54
TI_S_171	128.5	C	60	60	TI_S_217	177.6	C	54	54
TI_S_172	122.1	C	60	60	TI_S_217A	11.3	C	54	54
TI_S_173	137.7	C	60	60	TI_S_217B	36.4	C	54	54
TI_S_174	122.9	C	60	60	TI_S_218	248.3	C	54	54
TI_S_175	154.9	C	60	60	TI_S_33	175.1	U	84	84
TI_S_176	145.3	C	60	60	TI_S_56A	158.5	C	96	96

Table 10 cont.

Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)	Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)
TI_S_56B	178.6	C	96	96	TI_S_96	191.0	U	84	84
TI_S_57B	159.0	C	96	96	TI_S_97	192.6	U	84	84
TI_S_58B	166.3	C	96	96	TI_S_98	280.1	U	84	84
TI_S_59B	161.5	C	96	96	TI_S_99	150.2	U	84	84
TI_S_60B	160.1	C	96	96	TI_W_10	407.6	C	33	33
TI_S_61B	165.3	C	96	96	TI_W_11	120.7	C	30	30
TI_S_62B	151.2	C	96	96	TI_W_12	283.2	C	30	30
TI_S_63B	160.1	C	96	96	TI_W_13	286.1	C	30	30
TI_S_64B	160.0	C	96	96	TI_W_14	268.0	C	30	30
TI_S_65A	150.0	C	96	96	TI_W_15	248.1	C	30	30
TI_S_65A	133.4	C	96	96	TI_W_16	250.6	C	30	30
TI_S_66B	158.2	C	96	96	TI_W_17	273.4	C	30	30
TI_S_67A	139.4	C	96	96	TI_W_18	197.1	C	30	30
TI_S_68B	198.9	C	96	96	TI_W_19	253.2	C	30	30
TI_S_69A	187.6	C	96	96	TI_W_20	133.4	C	30	30
TI_S_70	246.2	C	87	87	TI_W_20A	22.3	C	30	30
TI_S_71	511.0	C	87	87	TI_W_21	166.0	C	30	30
TI_S_72	640.0	C	87	87	TI_W_22	226.9	C	30	30
TI_S_73A	30.1	C	87	87	TI_W_23	279.6	C	30	30
TI_S_73B	53.5	C	87	87	TI_W_24	271.6	C	30	30
TI_S_73C	750.0	C	87	87	TI_W_25	212.8	C	30	30
TI_S_74	201.5	U	84	84	TI_W_26	192.2	C	30	30
TI_S_81	172.7	C	84	84	TI_W_3	275.1	C	33	33
TI_S_82	168.6	C	84	84	TI_W_4	404.1	C	33	33
TI_S_83	179.6	C	84	84	TI_W_5	160.1	C	33	33
TI_S_84	131.0	C	78	78	TI_W_6	384.3	C	33	33
TI_S_85	136.4	C	78	78	TI_W_7	363.1	C	33	33
TI_S_86	46.9	C	78	78	TI_W_8	173.0	C	33	33
TI_S_86A	146.1	C	78	78	TI_W_9	441.3	C	33	33
TI_S_89	30.5	C	84	84					
TI_S_89A	88.6	C	84	84					
TI_S_9	250.0	U	84	84					
TI_S_90	19.8	C	84	84					
TI_S_90_1	94.4	C	84	84					
TI_S_90_2	162.2	C	84	84					
TI_S_90_3	131.5	C	84	84					
TI_S_90_4	136.6	C	84	84					
TI_S_90_5	145.2	C	84	84					
TI_S_90_6	135.6	C	84	84					
TI_S_91	193.3	U	84	84					
TI_S_92	193.8	U	84	84					
TI_S_93	195.0	U	84	84					
TI_S_94	196.9	U	84	84					
TI_S_95	192.6	U	84	84					

*Interceptor Pipes are named using the Upstream manhole ID

**C equals Circular, U equals Flat-Top Curved-Bottom

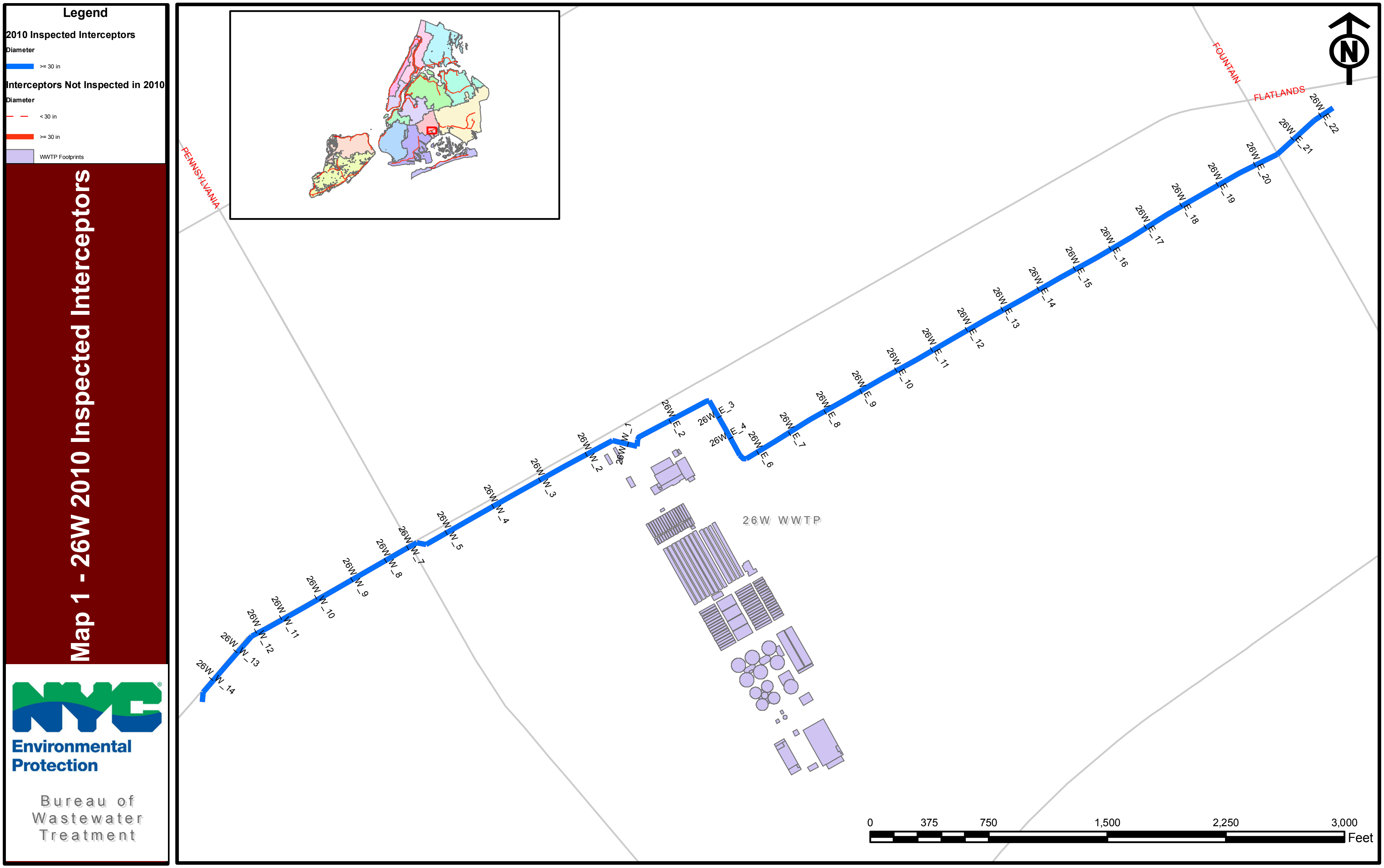
Wards Island

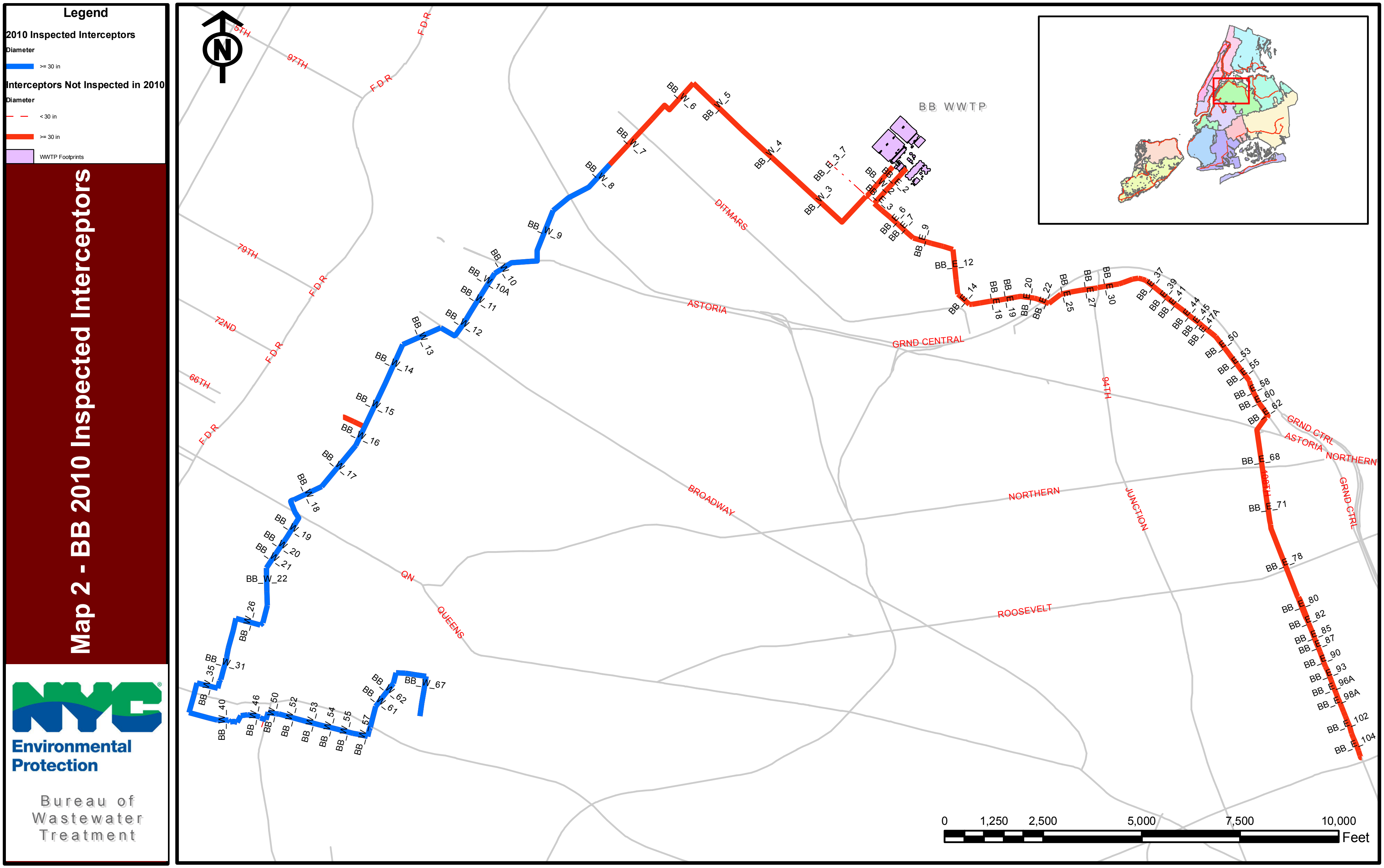
Table 11

Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)	Pipe ID*	Surveyed Length (ft)	Pipe Shape**	Width (in)	Height (in)
WIB_W_13	2889.4	C	102	102	WIM_N_46	78.3	C	36	36
WIB_W_3	2021.7	C	96	120	WIM_N_47	109.1	C	36	36
WIB_W_3	583.6	C	96	120	WIM_N_48	21.3	C	36	36
WIM_N_10	925.3	CTVB	62	80	WIM_N_49	124.1	C	36	36
WIM_N_11	478.2	CTVB	62	80	WIM_N_5	740.0	CTVB	68	87
WIM_N_12	583.5	CTVB	62	80	WIM_N_50	378.0	C	36	36
WIM_N_13	560.1	CTVB	62	80	WIM_N_51	30.1	C	36	36
WIM_N_14	514.2	CTVB	60	78	WIM_N_52	255.5	C	36	36
WIM_N_15	450.2	CTVB	60	78	WIM_N_53	211.3	C	36	36
WIM_N_15A	651.3	CTVB	60	78	WIM_N_55	224.5	C	36	36
WIM_N_16	770.0	CTVB	60	78	WIM_N_56	230.3	C	36	36
WIM_N_17	420.1	CTVB	54	75	WIM_N_57	214.7	C	36	36
WIM_N_18	557.4	CTVB	54	75	WIM_N_58	265.8	C	30	30
WIM_N_19	505.4	CTVB	54	75	WIM_N_59	275.0	C	30	30
WIM_N_2	222.0	CTVB	68	87	WIM_N_6	550.1	CTVB	68	87
WIM_N_20	730.6	CTVB	54	75	WIM_N_60	171.3	C	30	30
WIM_N_21	293.7	CTVB	54	75	WIM_N_60A	200.0	C	30	30
WIM_N_22	261.2	CTVB	54	75	WIM_N_60B	177.4	C	30	30
WIM_N_23	232.7	CTVB	54	75	WIM_N_61	188.8	C	30	30
WIM_N_24	322.0	CTVB	54	75	WIM_N_62	242.2	C	30	30
WIM_N_25	314.3	CTVB	54	75	WIM_N_62A	230.1	C	30	30
WIM_N_26	581.5	CTVB	54	72	WIM_N_63	213.3	C	30	30
WIM_N_27	515.2	CTVB	54	72	WIM_N_64	41.7	C	30	30
WIM_N_28	500.2	CTVB	54	72	WIM_N_64A	230.4	C	30	30
WIM_N_29	746.3	CTVB	54	72	WIM_N_7	516.0	CTVB	68	87
WIM_N_3	850.0	CTVB	68	87	WIM_N_8	522.0	CTVB	66	82
WIM_N_31	303.1	CTVB	39	51	WIM_N_9	251.1	CTVB	66	82
WIM_N_32	496.5	CTVB	30	45	WIM_S_12	865.5	CTVB	52	66
WIM_N_33	111.0	C	42	42	WIM_S_13	391.1	CTVB	51	63
WIM_N_33A	265.8	C	42	42	WIM_S_14	151.0	CTVB	51	63
WIM_N_34	40.0	C	42	42	WIM_S_15	400.4	CTVB	51	63
WIM_N_35	306.2	C	42	42	WIM_S_16	658.0	CTVB	51	63
WIM_N_35A	315.6	C	42	42	WIM_S_17	50.1	CTVB	51	63
WIM_N_36	45.2	C	42	42	WIM_S_18	751.2	CTVB	50	60
WIM_N_37	205.3	C	42	42	WIM_S_19	572.4	CTVB	50	60
WIM_N_38	32.1	C	42	42	WIM_S_20	278.2	CTVB	50	60
WIM_N_39	34.2	C	36	36	WIM_S_21	485.3	CTVB	50	60
WIM_N_4	852.1	CTVB	68	87	WIM_S_22	215.5	CTVB	39	51
WIM_N_40	348.9	C	36	36	WIM_S_23	467.7	CTVB	39	51
WIM_N_41	345.9	C	36	36	WIM_S_24	302.5	CTVB	34	45
WIM_N_42	83.7	C	36	36	WIM_S_25	311.5	CTVB	34	45
WIM_N_43	21.0	C	36	36	WIM_S_26	218.8	CTVB	34	45
WIM_N_44	198.3	C	36	36	WIM_S_27	265.7	CTVB	34	45
WIM_N_45	78.4	C	36	36	WIM_S_28	186.8	CTVB	34	45

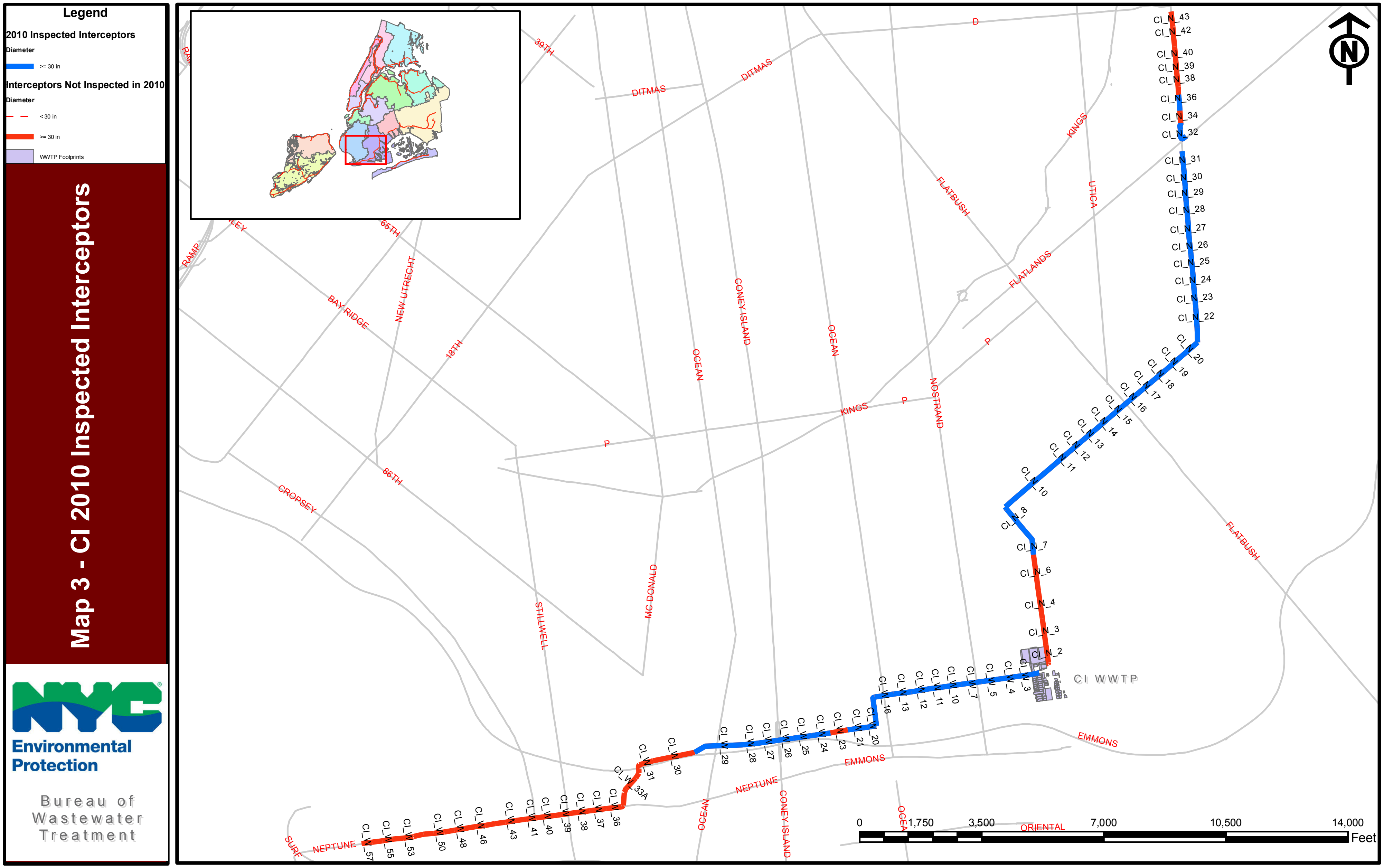
*Interceptor Pipes are named using the Upstream manhole ID

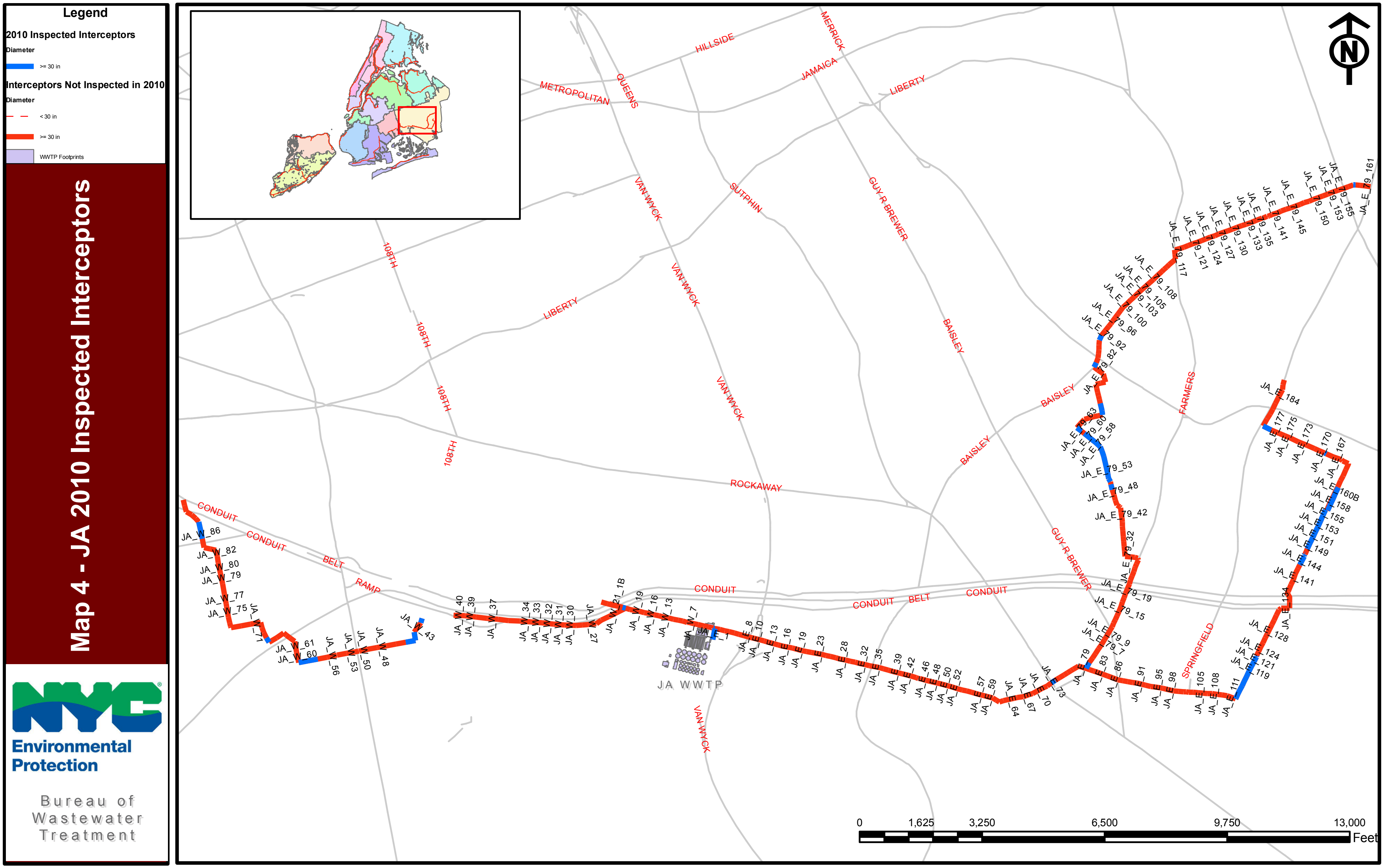
**C equals Circular, CTVB equals Curved-Top V-Bottom


Legend
2010 Inspected Interceptors
Diameter
>= 30 in
Interceptors Not Inspected in 2010
Diameter
< 30 in
>= 30 in
WWTP Footprints
Map 1 - 26W 2010 Inspected Interceptors
Environmental Protection
Bureau of Wastewater Treatment
PENNSYLVANIA
FOUNTAIN
FLATLANDS
26W WWTP
26W_W_1
26W_W_2
26W_W_3
26W_W_4
26W_W_5
26W_W_7
26W_W_8
26W_W_9
26W_W_10
26W_W_11
26W_W_12
26W_W_13
26W_W_14
26W_E_1
26W_E_2
26W_E_3
26W_E_4
26W_E_6
26W_E_7
26W_E_8
26W_E_9
26W_E_10
26W_E_11
26W_E_12
26W_E_13
26W_E_14
26W_E_15
26W_E_16
26W_E_17
26W_E_18
26W_E_19
26W_E_20
26W_E_21
26W_E_22
N
0 375 750 1,500 2,250 3,000
Feet



Legend
2010 Inspected Interceptors
Diameter
>= 30 in
Interceptors Not Inspected in 2010
Diameter
< 30 in
>= 30 in
WWTP Footprints
Map 2 - BB 2010 Inspected Interceptors
Environmental Protection
Bureau of Wastewater Treatment
N
BB WWTP
F D R
97TH
79TH
72ND
66TH
DITMARS
ASTORIA
GRND CENTRAL
BROADWAY
NORTHERN
QN
QUEENS
ROOSEVELT
94TH
JUNCTION
GRND CTRL
ASTORIA
NORTHERN
BB_W_3
BB_W_4
BB_W_5
BB_W_6
BB_W_7
BB_W_8
BB_W_9
BB_W_10
BB_W_10A
BB_W_11
BB_W_12
BB_W_13
BB_W_14
BB_W_15
BB_W_16
BB_W_17
BB_W_18
BB_W_19
BB_W_20
BB_W_21
BB_W_22
BB_W_26
BB_W_31
BB_W_35
BB_W_40
BB_W_46
BB_W_50
BB_W_52
BB_W_53
BB_W_54
BB_W_55
BB_W_57
BB_W_61
BB_W_62
BB_W_67
BB_E_3_7
BB_E_12
BB_E_14
BB_E_18
BB_E_19
BB_E_20
BB_E_22
BB_E_25
BB_E_27
BB_E_30
BB_E_37
BB_E_39
BB_E_41
BB_E_44
BB_E_45
BB_E_47A
BB_E_50
BB_E_53
BB_E_55
BB_E_58
BB_E_60
BB_E_62
BB_E_68
BB_E_71
BB_E_78
BB_E_80
BB_E_82
BB_E_85
BB_E_87
BB_E_90
BB_E_93
BB_E_96A
BB_E_98A
BB_E_102
BB_E_104
0
1,250
2,500
5,000
7,500
10,000
Feet

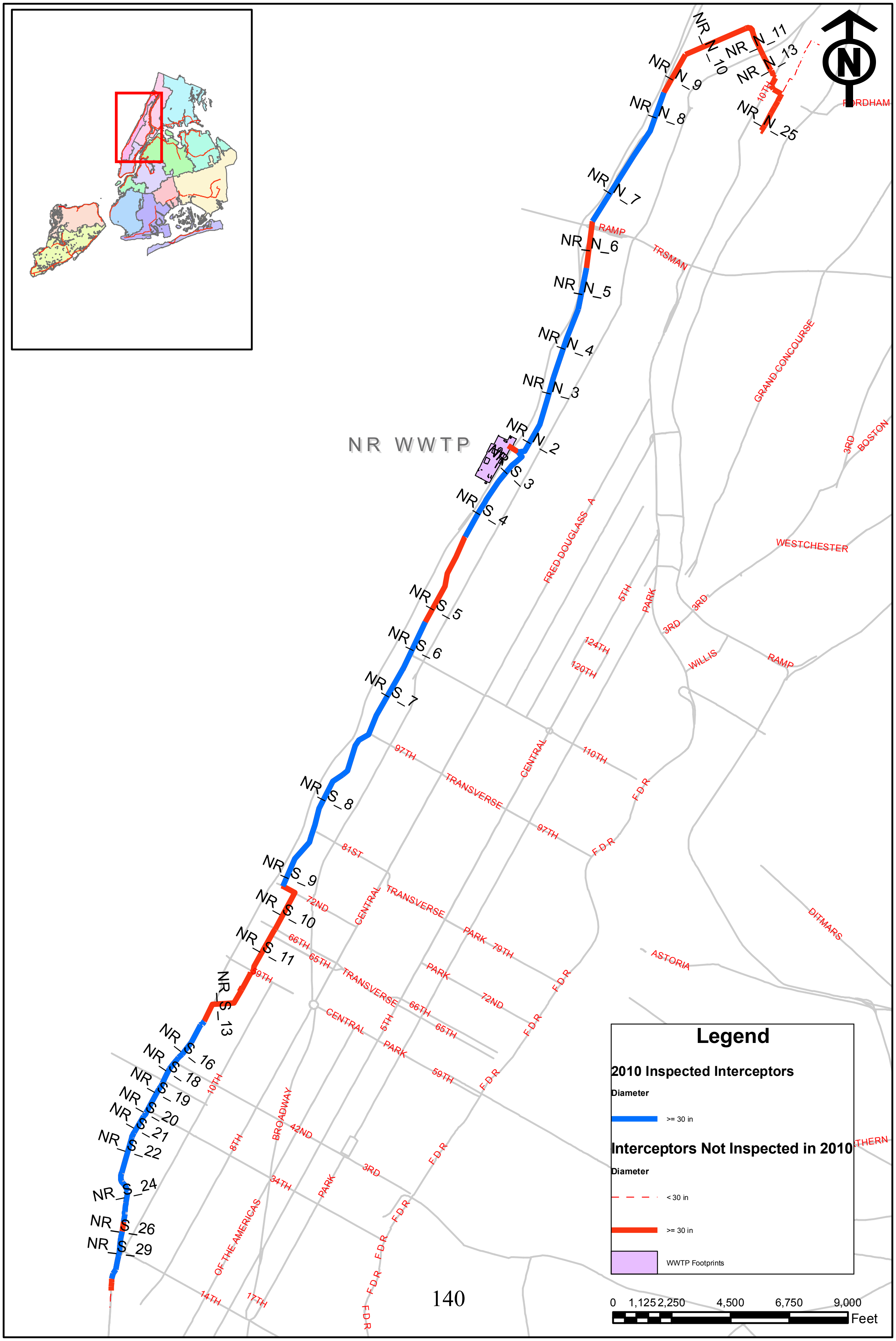

Legend
2010 Inspected Interceptors
Diameter
>= 30 in
Interceptors Not Inspected in 2010
Diameter
< 30 in
>= 30 in
WWTP Footprints
Map 3 - CI 2010 Inspected Interceptors
Environmental Protection
Bureau of Wastewater Treatment
CI WWTP
DITMAS
39TH
65TH
86TH
BAY RIDGE
NEW UTRECHT
18TH
CROPSEY
STILLWELL
MC DONALD
OCEAN
CONEY ISLAND
NOSTRAND
FLATBUSH
FLATLANDS
KINGS
UTICA
EMMONS
NEPTUNE
SURF
ORIENTAL
0 1,750 3,500 7,000 10,500 14,000
Feet



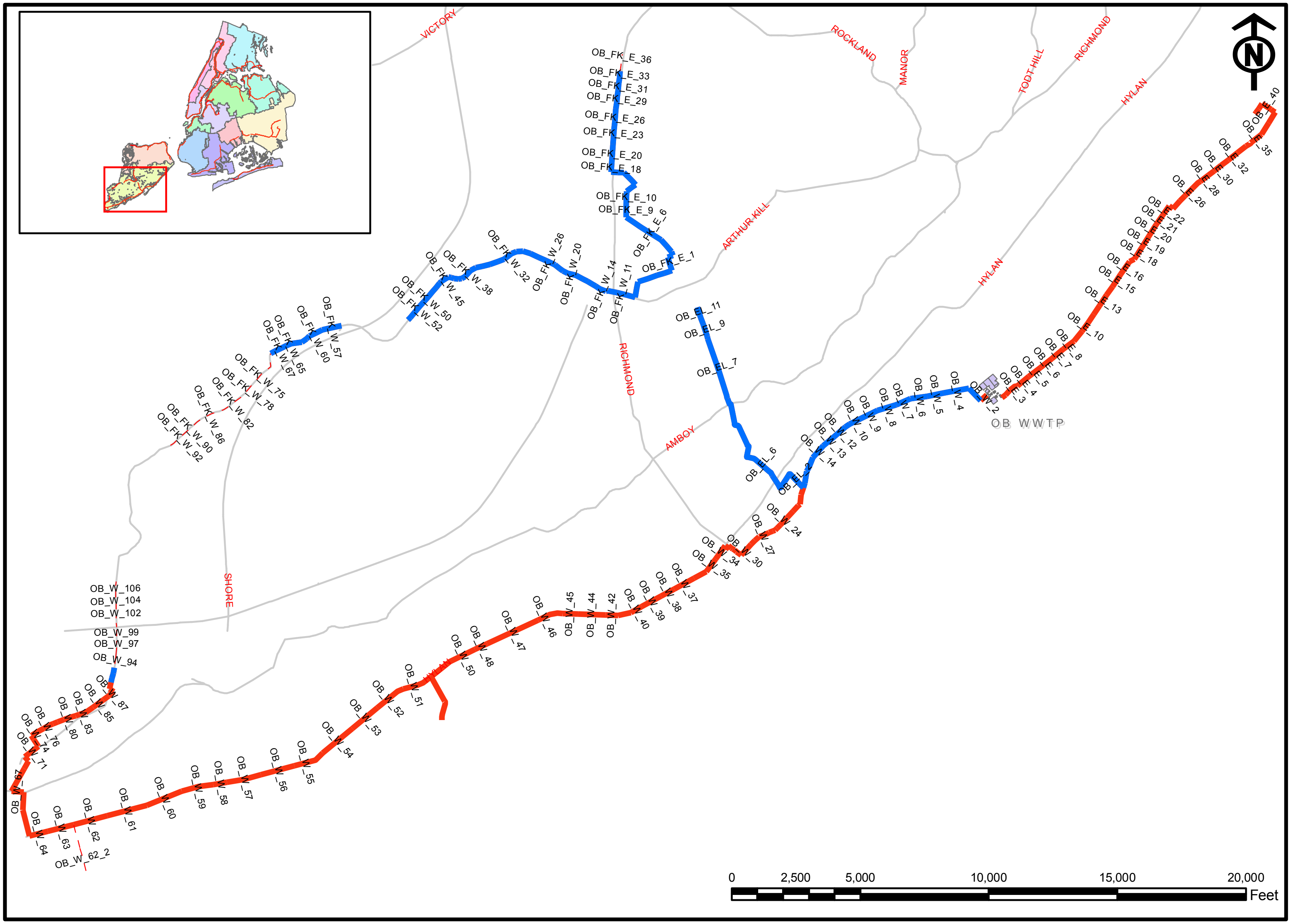
Legend
2010 Inspected Interceptors
Diameter
>= 30 in
Interceptors Not Inspected in 2010
Diameter
< 30 in
>= 30 in
WWTP Footprints
Map 4 - JA 2010 Inspected Interceptors
Environmental Protection
Bureau of Wastewater Treatment
N
HILLSIDE
MERRICK
JAMAICA
LIBERTY
METROPOLITAN
QUEENS
VAN WYCK
SUTPHIN
GUY R BREWER
BAISLEY
108TH
ROCKAWAY
FARMERS
CONDUIT
BELT
RAMP
SPRINGFIELD
JA WWTP
0
1,625
3,250
6,500
9,750
13,000
Feet

Environmental Protection
Bureau of Wastewater Treatment

Map 5 - NR 2010 Inspected Interceptors

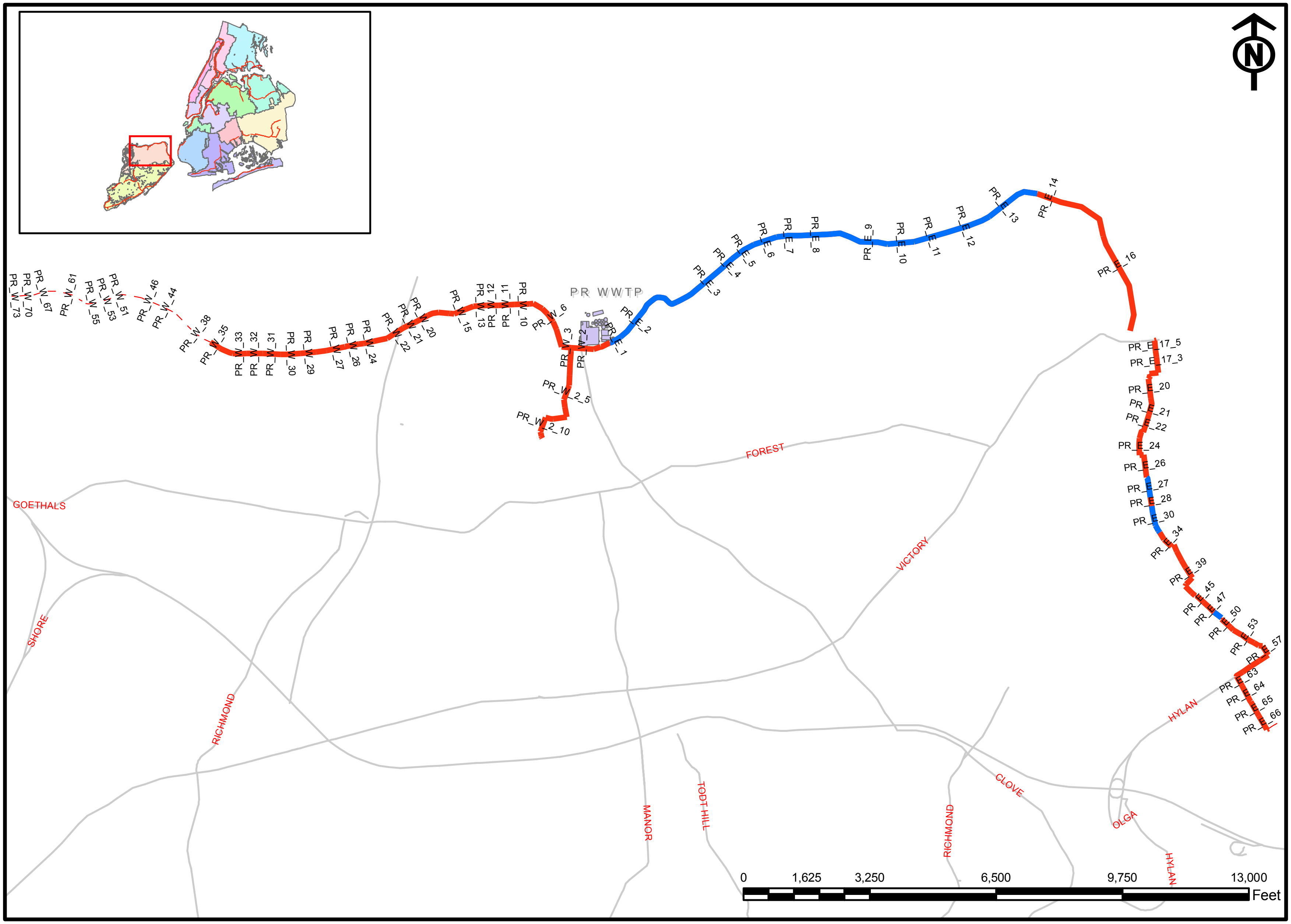


Map 6 - OB 2010 Inspected Interceptors



Environmental Protection

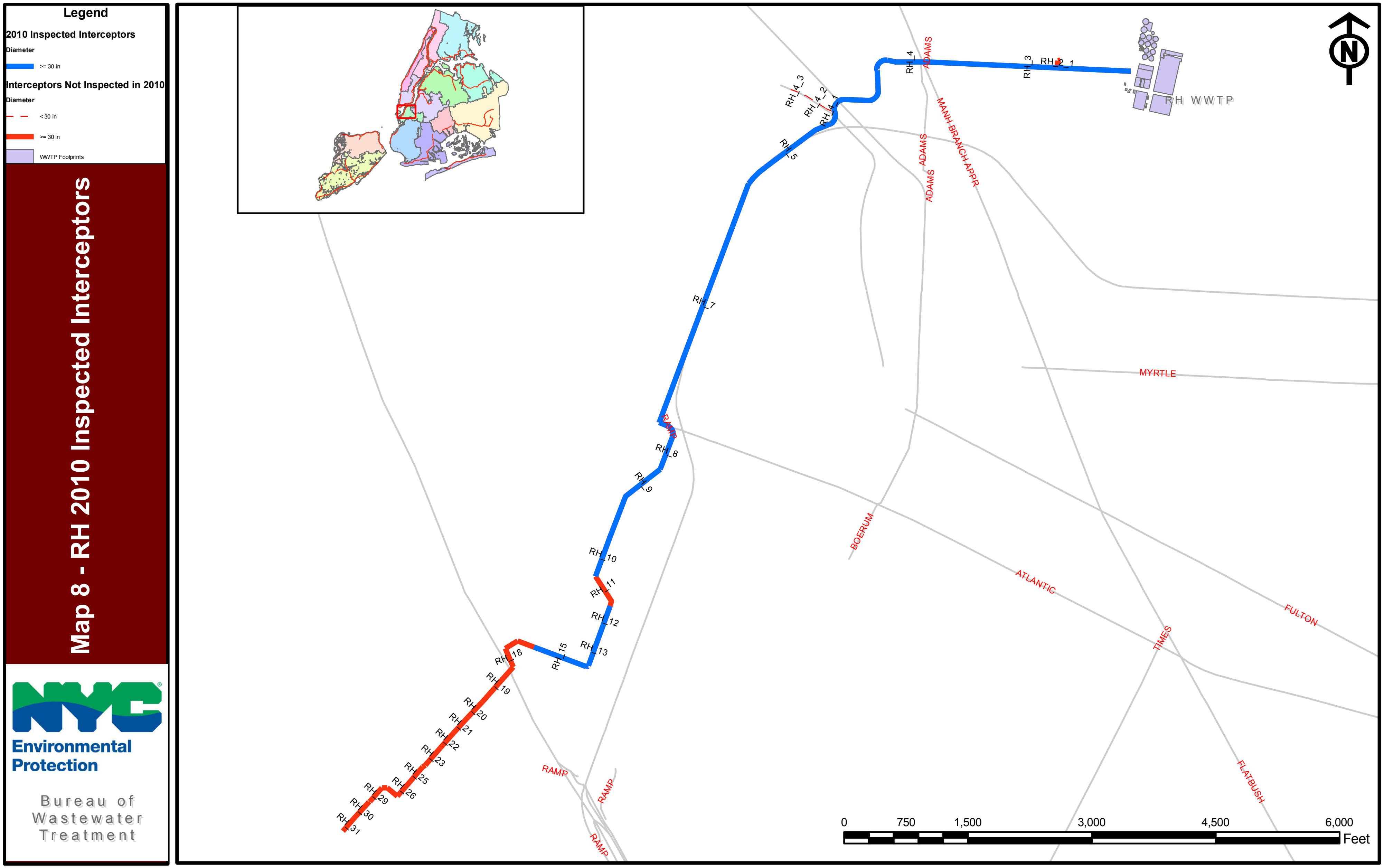
Bureau of Wastewater Treatment

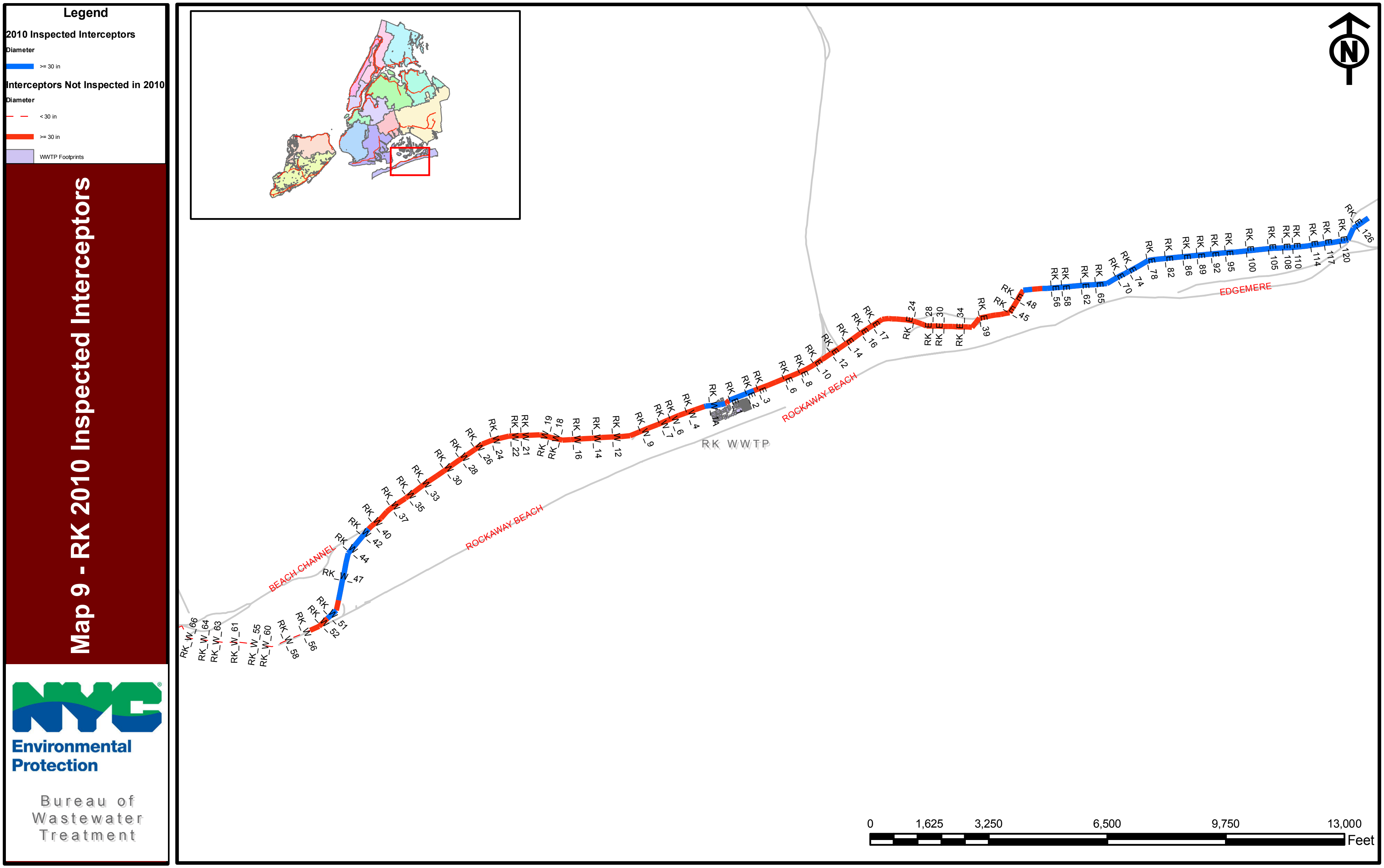


Map 7 - PR 2010 Inspected Interceptors

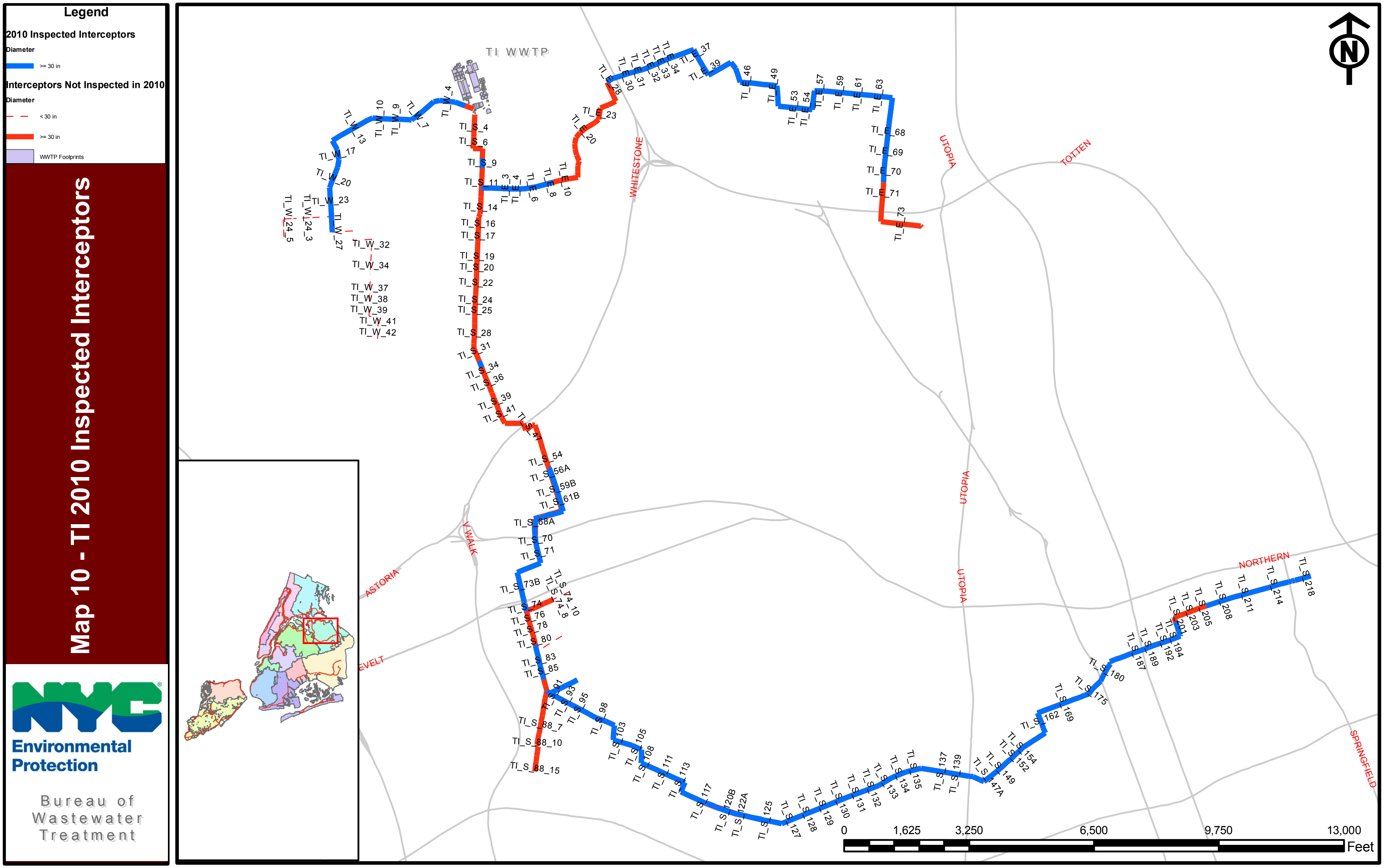
Environmental Protection

Bureau of Wastewater Treatment


Map 8 - RH 2010 Inspected Interceptors
Legend
2010 Inspected Interceptors
Diameter
>= 30 in
Interceptors Not Inspected in 2010
Diameter
< 30 in
>= 30 in
WWTP Footprints
Environmental Protection
Bureau of Wastewater Treatment
RH WWTP
RH_2_1
RH_3
RH_4
RH_4_1
RH_4_2
RH_4_3
RH_5
RH_7
RH_8
RH_9
RH_10
RH_11
RH_12
RH_13
RH_15
RH_18
RH_19
RH_20
RH_21
RH_22
RH_23
RH_25
RH_26
RH_29
RH_30
RH_31
ADAMS
MANH BRANCH APPR
MYRTLE
BOERUM
ATLANTIC
FULTON
TIMES
FLATBUSH
RAMP
N
0
750
1,500
3,000
4,500
6,000
Feet



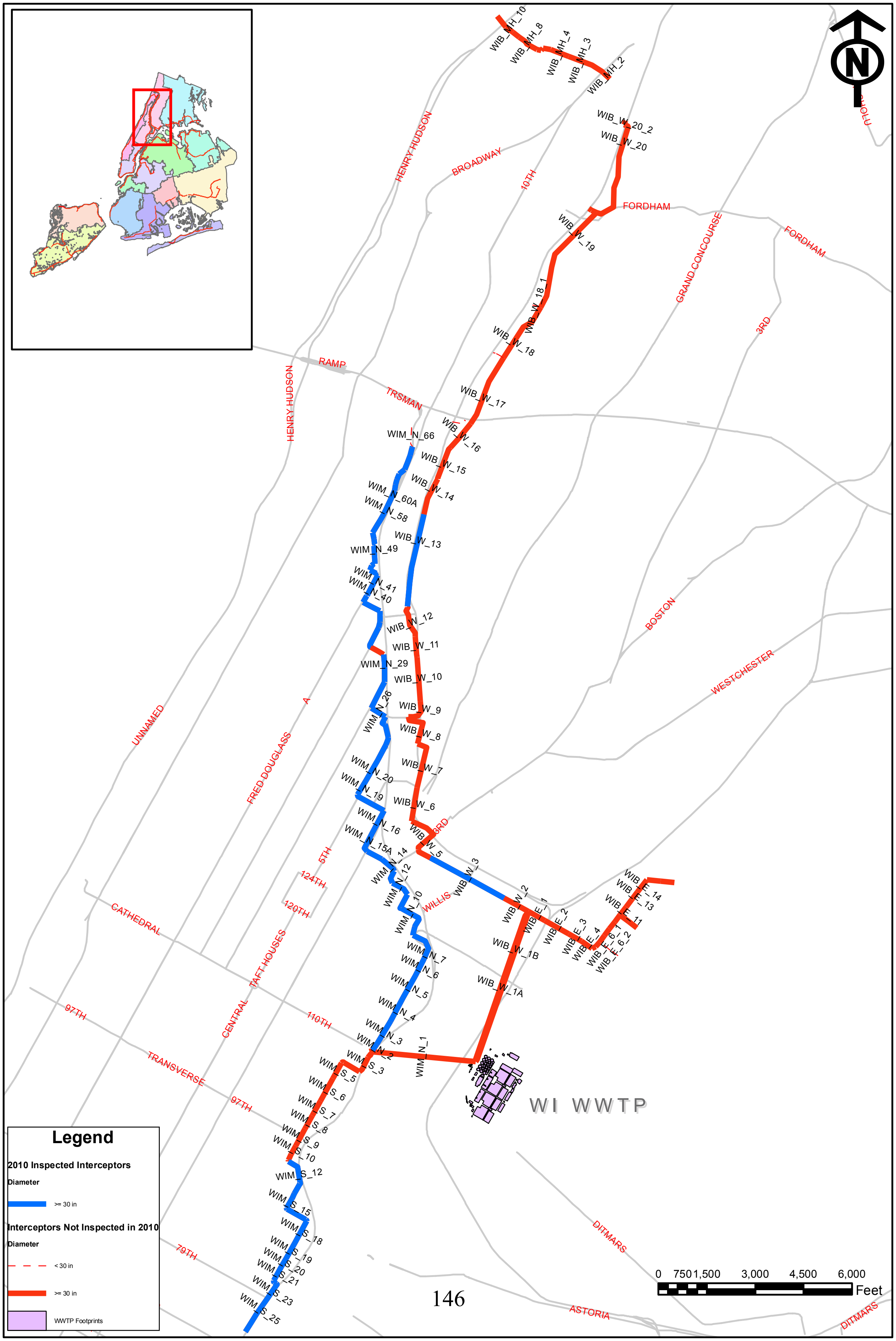
Legend
2010 Inspected Interceptors
Diameter
>= 30 in
Interceptors Not Inspected in 2010
Diameter
< 30 in
>= 30 in
WWTP Footprints
Map 9 - RK 2010 Inspected Interceptors
Environmental Protection
Bureau of Wastewater Treatment
N
BEACH CHANNEL
ROCKAWAY BEACH
ROCKAWAY BEACH
EDGEMERE
RK WWTP
RK_W_66
RK_W_64
RK_W_63
RK_W_61
RK_W_55
RK_W_60
RK_W_58
RK_W_56
RK_W_52
RK_W_51
RK_W_47
RK_W_44
RK_W_42
RK_W_40
RK_W_37
RK_W_35
RK_W_33
RK_W_30
RK_W_28
RK_W_26
RK_W_24
RK_W_22
RK_W_21
RK_W_19
RK_W_18
RK_W_16
RK_W_14
RK_W_12
RK_W_9
RK_W_7
RK_W_6
RK_W_4
RK_E_2
RK_E_3
RK_E_6
RK_E_8
RK_E_10
RK_E_12
RK_E_14
RK_E_16
RK_E_17
RK_E_24
RK_E_28
RK_E_30
RK_E_34
RK_E_39
RK_E_45
RK_E_48
RK_E_56
RK_E_58
RK_E_62
RK_E_65
RK_E_70
RK_E_74
RK_E_78
RK_E_82
RK_E_86
RK_E_89
RK_E_92
RK_E_95
RK_E_100
RK_E_105
RK_E_108
RK_E_110
RK_E_114
RK_E_117
RK_E_120
RK_E_126
0
1,625
3,250
6,500
9,750
13,000
Feet


Legend
2010 Inspected Interceptors
Diameter
>= 30 in
Interceptors Not Inspected in 2010
Diameter
< 30 in
>= 30 in
WWTP Footprints
Map 10 - TI 2010 Inspected Interceptors
Environmental Protection
Bureau of Wastewater Treatment
TI WWTP
WHITESTONE
UTOPIA
TOTTEN
ASTORIA
V WALK
EVELT
NORTHERN
SPRINGFIELD
N
0
1,625
3,250
6,500
9,750
13,000
Feet

Environmental Protection

Bureau of Wastewater Treatment

Map 11 - WI 2010 Inspected Interceptors



Appendix B
Condition Assessment Priority Tables

Priority 1 and 2 Tables by Drainage Area

26 Ward

Table 1

Priority 2	Number of Defects	
Pipeline Segment ID	O&M 5	O&M 4
26W_E_10	6	11
26W_E_11	-	18
26W_E_12	-	1
26W_E_13	1	2
26W_E_15	5	15
26W_E_18	1	11
26W_E_19	10	21
26W_E_20	21	49
26W_E_21	18	41
26W_E_5	-	10
26W_E_7	-	24
26W_W_1	-	1
26W_W_2	-	3
26W_W_3	-	1

Bowery Bay

Table 2

Priority 1	Number of Defects	
Pipeline Segment ID	Structural 5	Structural 4
BB_W_55	1	-
BB_W_55A	1	-
BB_W_66	1	-

Table 3

Priority 2	Number of Defects	
Pipeline Segment ID	O&M 5	O&M 4
BB_W_13	-	1
BB_W_15	-	15
BB_W_17	-	10
BB_W_18	-	12
BB_W_22	-	1
BB_W_28	-	1
BB_W_30	-	1
BB_W_34	-	3
BB_W_37	-	2
BB_W_57	-	1
BB_W_58	-	2
BB_W_65	1	8
BB_W_68	-	3
BB_W_69	-	1

Coney Island

Table 4

Priority 1	Number of Defects	
Pipeline Segment ID	Structural 5	Structural 4
CI_N_10	-	323
CI_N_11	-	106
CI_N_12	-	106
CI_N_13	3	103
CI_N_14	-	105
CI_N_15	-	114
CI_N_16	-	100
CI_N_17	-	106
CI_N_18	-	102
CI_N_19	-	109
CI_N_20	-	244
CI_N_21	-	199
CI_N_22	-	98
CI_N_23	-	105
CI_N_24	-	99
CI_N_25	-	101
CI_N_26	-	97
CI_N_27	-	72
CI_N_28	-	208
CI_N_29	-	99
CI_N_30	-	100
CI_N_31	-	101
CI_N_35	1	-
CI_N_7	-	2
CI_N_8	-	127
CI_N_9	-	64
CI_W_10	-	5
CI_W_11	-	20
CI_W_12	-	96
CI_W_13	-	102
CI_W_16	-	92
CI_W_19	-	77
CI_W_20	-	106
CI_W_21	-	97
CI_W_24	-	99
CI_W_25	-	96
CI_W_26	-	99
CI_W_27	-	104
CI_W_28	-	85
CI_W_29	-	262
CI_W_3	-	-
CI_W_4	-	3
CI_W_5	-	7
CI_W_7	-	4

Table 5

Priority 2	Number of Defects	
Pipeline Segment ID	O&M 5	O&M 4
CI_N_11	-	94
CI_N_12	11	66
CI_N_13	-	20
CI_N_20	-	1
CI_N_21	59	60
CI_N_22	28	71
CI_N_23	-	146
CI_N_24	-	68
CI_N_25	7	45
CI_N_26	-	114
CI_N_27	1	10
CI_N_28	-	52
CI_N_29	19	94
CI_N_30	71	40
CI_N_31	145	-
CI_N_32	62	2
CI_N_33	34	11
CI_N_35	-	1
CI_N_7	26	104
CI_N_8	-	36
CI_N_9	-	21
CI_W_11	-	1
CI_W_12	-	2
CI_W_2	-	10
CI_W_20	-	1
CI_W_25	-	1
CI_W_27	-	1
CI_W_28	-	1
CI_W_29	-	1
CI_W_3	-	1

Jamaica

Table 6

Priority 1	Number of Defects	
Pipeline Segment ID	Structural 5	Structural 4
JA_E_79_54	1	-
JA_E_79_59	2	-
JA_E_79_60	1	-
JA_E_79_61	1	-

Table 7

Priority 2	Number of Defects	
Pipeline Segment ID	O&M 5	O&M 4
JA_E_112	3	-
JA_E_113	-	9
JA_E_114	-	13
JA_E_115	-	14
JA_E_116	-	29
JA_E_117	6	1
JA_E_118	-	42
JA_E_119	-	46
JA_E_120	-	26
JA_E_121	9	30
JA_E_122	5	1
JA_E_144	47	4
JA_E_145	1	-
JA_E_147	2	-
JA_E_149	-	1
JA_E_150	-	1
JA_E_151	-	3
JA_E_152	1	-
JA_E_153	-	1
JA_E_154	1	24
JA_E_155	20	3
JA_E_160B	-	1
JA_E_79_1	-	1
JA_E_79_158	-	13
JA_E_79_54	-	1
JA_E_79_59	-	1
JA_W_21_1A	-	9
JA_W_58	8	54
JA_W_59	-	1
JA_W_67	-	1

North River

Table 8

Priority 1	Number of Defects	
Pipeline Segment ID	Structural 5	Structural 4
NR_S_25	288	-
NR_S_27	2	-
NR_S_32	25	-
NR_S_33	1	-

Table 9

Priority 2	Number of Defects	
Pipeline Segment ID	O&M 5	O&M 4
NR_N_2	-	12
NR_N_3	-	2
NR_N_4	-	5
NR_N_5	-	8
NR_N_7	-	9
NR_N_8	-	1
NR_S_29	-	1
NR_S_8	-	1
NR_S_9	-	1

Oakwood Beach

Table 10

Priority 2	Number of Defects	
Pipeline Segment ID	O&M 5	O&M 4
OB_EL_1	-	1
OB_FK_E_21	-	2
OB_FK_E_6	1	-
OB_FK_E_7	-	10
OB_W_9	-	1
OB_W_90	-	33
OB_W_91	67	-
OB_W_92	91	-
OB_W_93	54	-

Port Richmond

Table 11

Priority 2	Number of Defects	
Pipeline Segment ID	O&M 5	O&M 4
PR_E_27	49	20
PR_E_29	31	10
PR_E_30	68	1
PR_E_31	20	11
PR_E_32	-	14
PR_E_48	18	10

Red Hook

Table 12

Priority 1	Number of Defects	
Pipeline Segment ID	Structural 5	Structural 4
RH_4	-	4
RH_5	1	-

Table 13

Priority 2	Number of Defects	
Pipeline Segment ID	O&M 5	O&M 4
RH_11	1	-
RH_12	1	-
RH_7	-	2

Rockaway

Table 14

Priority 1	Number of Defects	
Pipeline Segment ID	Structural 5	Structural 4
RK_W_45	1	-
RK_W_46	2	-

Table 15

Priority 2	Number of Defects	
Pipeline Segment ID	O&M 5	O&M 4
RK_E_100	10	15
RK_E_101	20	13
RK_E_102	-	10
RK_E_103	-	11
RK_E_104	-	11
RK_E_105	6	1
RK_E_106	1	10
RK_E_107	-	11
RK_E_108	-	2
RK_E_109	-	21
RK_E_110	-	12
RK_E_111	-	21
RK_E_112	-	21
RK_E_113	-	1
RK_E_120	-	40
RK_E_121	-	9
RK_E_122	11	13
RK_E_123	11	15
RK_E_124	1	4
RK_E_125	-	10
RK_E_126	-	7
RK_E_128	-	1
RK_E_28	-	1
RK_E_50	23	1
RK_E_51	6	20
RK_E_54	7	21
RK_E_55	10	19
RK_E_56	20	10
RK_E_57	10	19
RK_E_58	8	21
RK_E_59	-	27
RK_E_60	-	27
RK_E_61	-	27
RK_E_62	-	20
RK_E_64	-	16
RK_E_65	-	18
RK_E_66	-	14
RK_E_67	10	11
RK_E_68	21	-
RK_E_69	-	26
RK_E_70	-	14
RK_E_71	-	14
RK_E_74	10	20
RK_E_75	13	21
RK_E_76	21	8
RK_E_77	21	10

Table 15 cont.

Priority 2	Number of Defects	
Pipeline Segment ID	O&M 5	O&M 4
RK_E_78	30	1
RK_E_79	18	3
RK_E_80	31	-
RK_E_81	16	20
RK_E_82	-	25
RK_E_83	-	25
RK_E_84	-	16
RK_E_85	-	12
RK_E_86	-	16
RK_E_87	-	10
RK_E_88	10	11
RK_E_89	-	25
RK_E_90	-	6
RK_E_91	-	5
RK_E_92	32	-
RK_E_93	11	10
RK_E_94	11	15
RK_E_95	6	15
RK_E_96	-	1
RK_E_97	-	5
RK_E_98	13	11
RK_E_99	14	10
RK_W_1A	32	40
RK_W_2	7	1
RK_W_42	9	52
RK_W_43	-	30
RK_W_46	56	-
RK_W_47	55	-
RK_W_48	54	-
RK_W_49	50	-
RK_W_50	1	-

Tallman Island

Table 16

Priority 1	Number of Defects	
Pipeline Segment ID	Structural 5	Structural 4
TI_E_28	1	-
TI_E_37	1	-
TI_E_43	14	-
TI_E_45	1	-
TI_E_46	46	-
TI_E_47	47	-
TI_E_48	1	-
TI_E_49	2	-
TI_E_70	-	2
TI_S_109	1	-
TI_S_113	1	-
TI_S_118B	1	-
TI_S_120B	1	-
TI_S_122B	1	-
TI_S_124B	58	-
TI_S_83	1	-

Table 17

Priority 2	Number of Defects	
Pipeline Segment ID	O&M 5	O&M 4
TI_E_2	2	-
TI_E_3	-	10
TI_E_45	-	1
TI_E_70	-	1
TI_E_8	-	1
TI_S_104	-	9
TI_S_105	-	1
TI_S_106	-	11
TI_S_109	-	10
TI_S_111	-	12
TI_S_112	-	37
TI_S_113	-	21
TI_S_114	5	1
TI_S_114A	1	47
TI_S_115	1	18
TI_S_116	-	9
TI_S_118B	-	50
TI_S_120B	-	90
TI_S_122B	-	59
TI_S_124A	33	9
TI_S_124B	-	87
TI_S_125	-	56
TI_S_126	-	47
TI_S_127	-	1
TI_S_128	1	-
TI_S_129	3	1
TI_S_135	-	4
TI_S_136	-	14
TI_S_137	-	78
TI_S_21	-	2
TI_S_69B	-	27
TI_S_74	-	19
TI_S_92	-	1
TI_S_93	-	11
TI_S_98	-	1
TI_W_10	-	42
TI_W_20	-	10
TI_W_20A	-	5
TI_W_21	-	16
TI_W_22	-	61
TI_W_23	16	42
TI_W_24	5	50
TI_W_4	-	1
TI_W_7	-	3
TI_W_8	-	2
TI_W_9	-	18

Wards Island

Table 18

Priority 1	Number of Defects	
Pipeline Segment ID	Structural 5	Structural 4
WIM_N_59	1	-

Table 19

Priority 2	Number of Defects	
Pipeline Segment ID	O&M 5	O&M 4
WIB_W_13	-	2
WIM_N_11	-	14
WIM_N_12	1	61
WIM_N_14	-	10
WIM_N_15	-	1
WIM_N_17	4	61
WIM_N_18	-	38
WIM_N_19	18	85
WIM_N_20	-	69
WIM_N_21	27	22
WIM_N_23	-	6
WIM_N_24	-	9
WIM_N_25	20	8
WIM_N_28	-	112
WIM_N_29	32	113
WIM_N_42	-	1
WIM_N_58	-	1
WIM_N_7	5	9
WIM_S_12	1	-
WIM_S_18	-	1
WIM_S_22	-	1

Appendix 2

DEP BWSO SEWER ANALYSIS

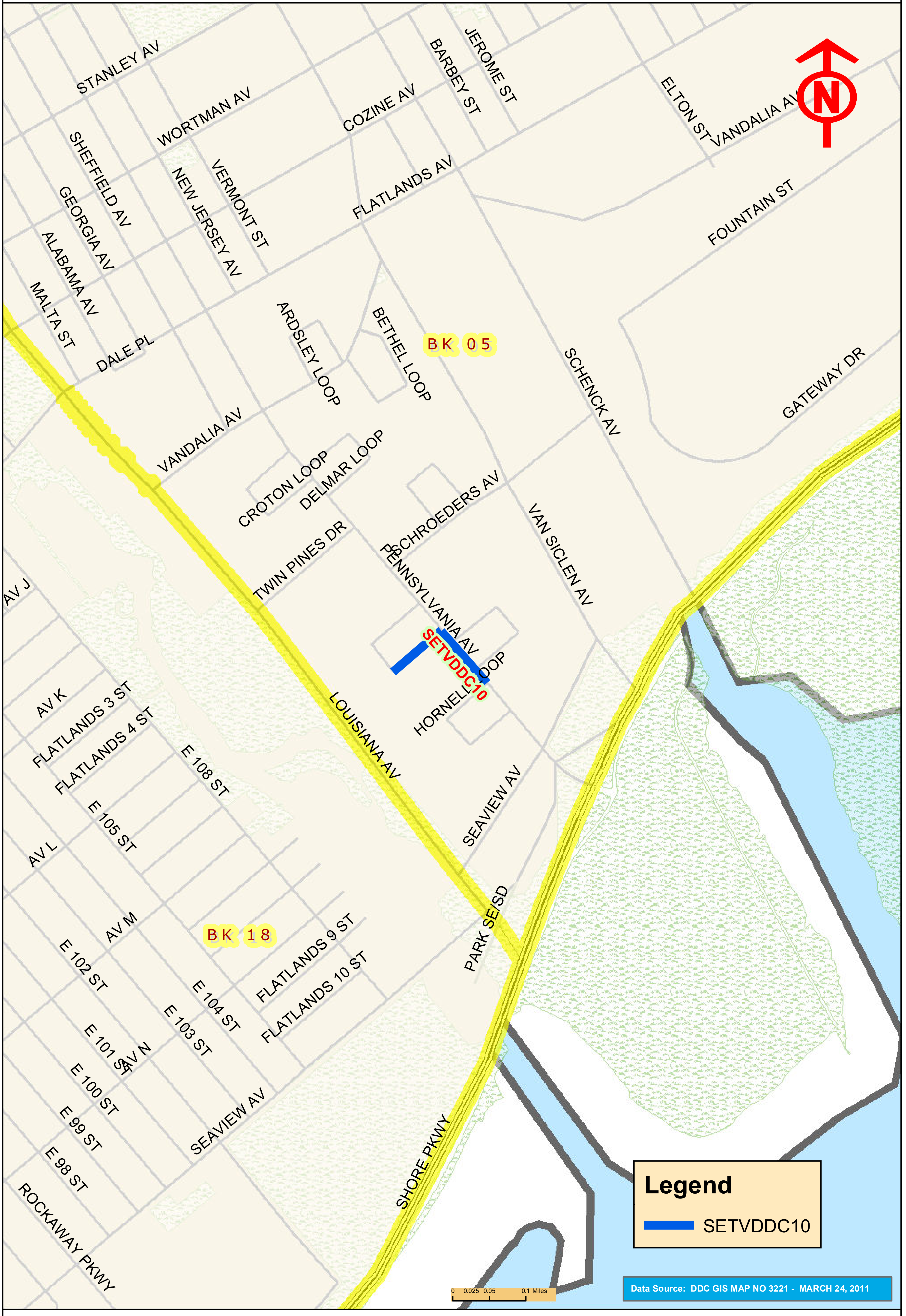
TV Inspection and Cleaning (Borough Map 1-5)

NYC Public Sewers Inspected, Cleaned or Televised in CY 2010 (Borough Map 1-5)

NYC Public Sewers Inspected, Cleaned or Televised in CY 2010 (Community Board Map 1-57)

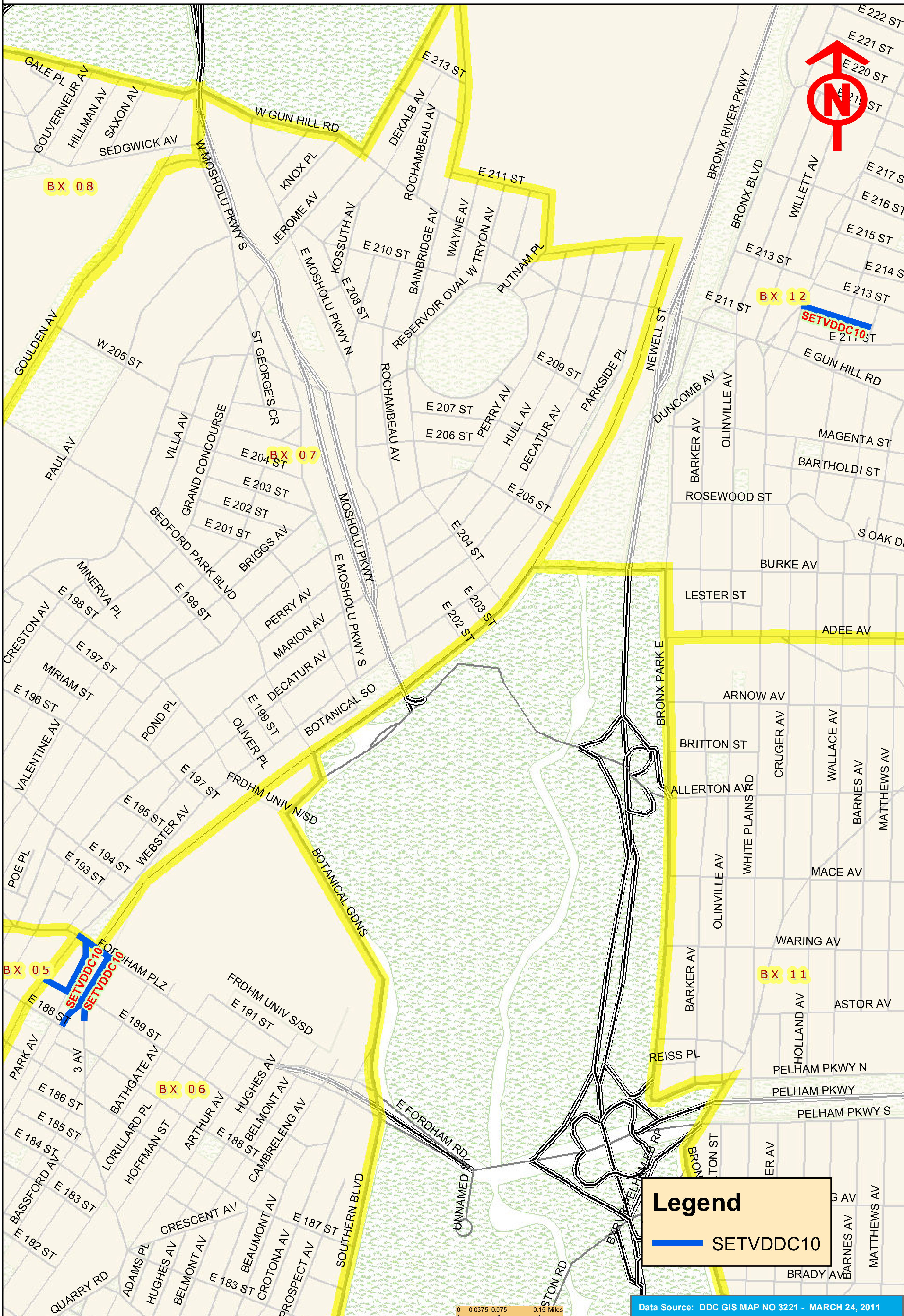
Inspected Locations

BROOKLYN - SETVDDC10
TV INSPECTION AND CLEANING



THE BRONX - SETVDDC10

TV INSPECTION AND CLEANING



MANHATTAN - SETVDDC10

TV INSPECTION AND CLEANING

Hon. Michael R. Bloomberg, Mayor

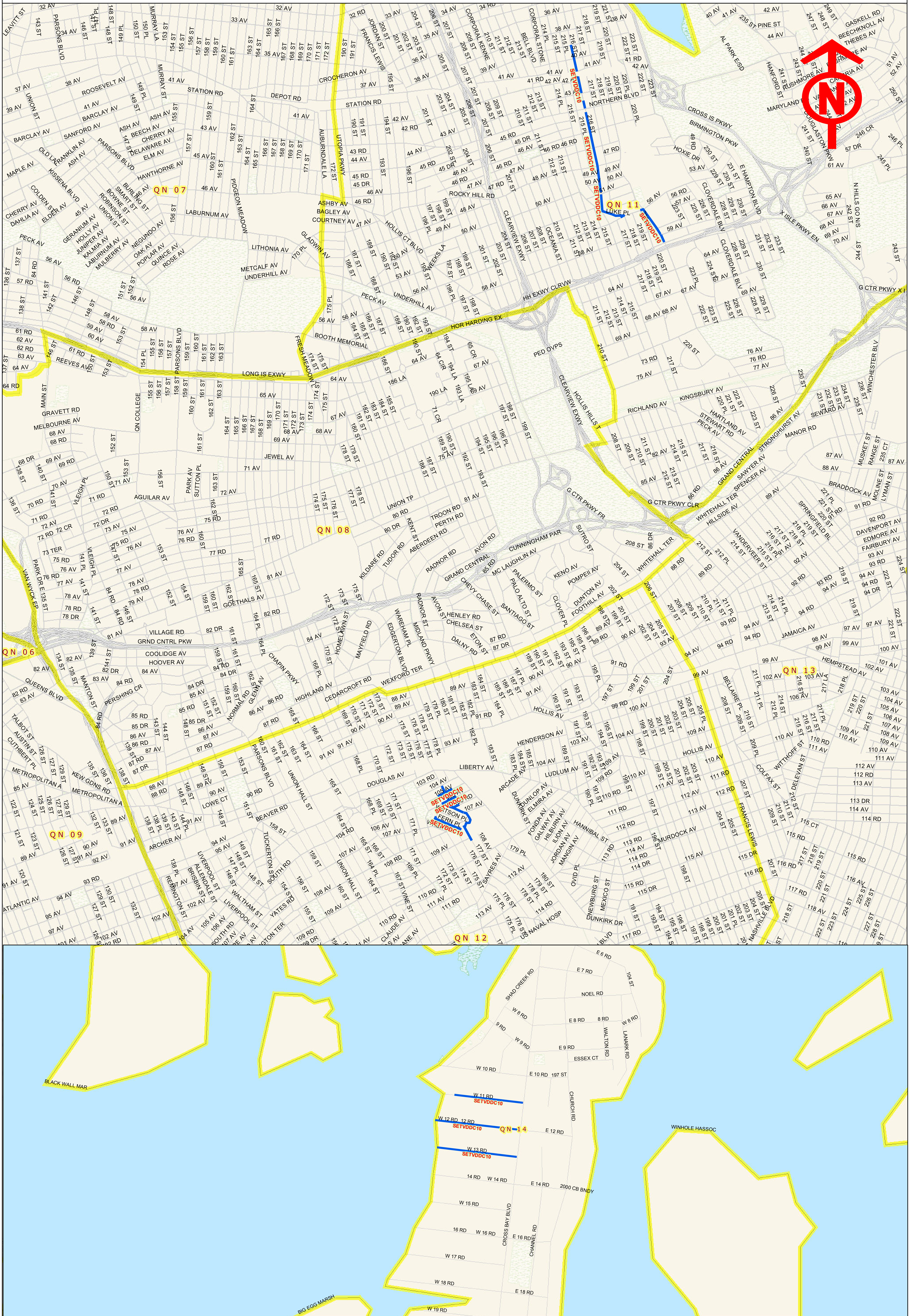
David J. Burney, FAIA, Commissioner

Janette Sadik-Khan, Commissioner

Caswell F. Holloway, Commissioner

QUEENS - SETVDDC10

TV INSPECTION AND CLEANING



Hon. Michael R. Bloomberg, Mayor

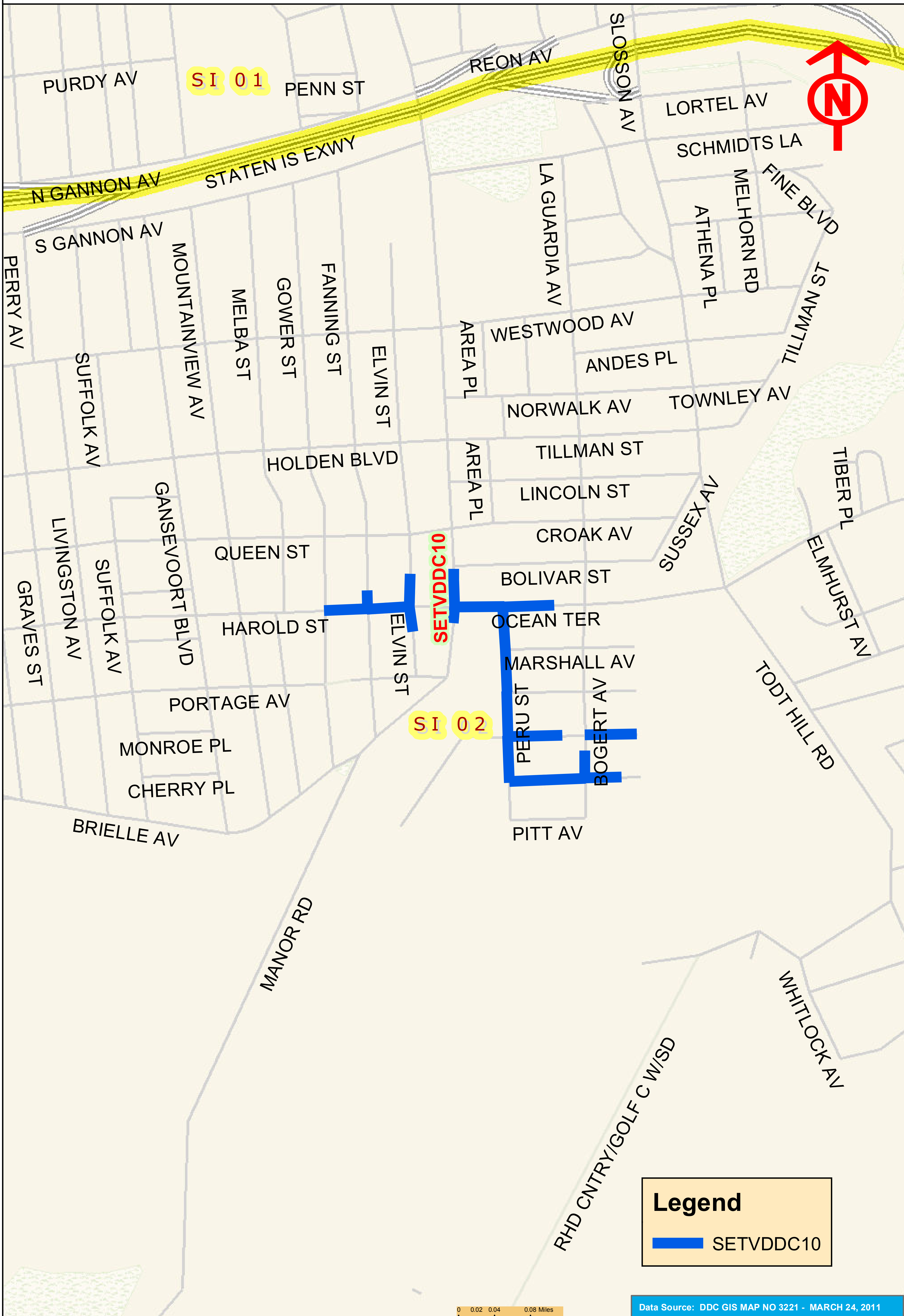
David J. Burney, FAIA, Commissioner

Janette Sadik-Khan, Commissioner

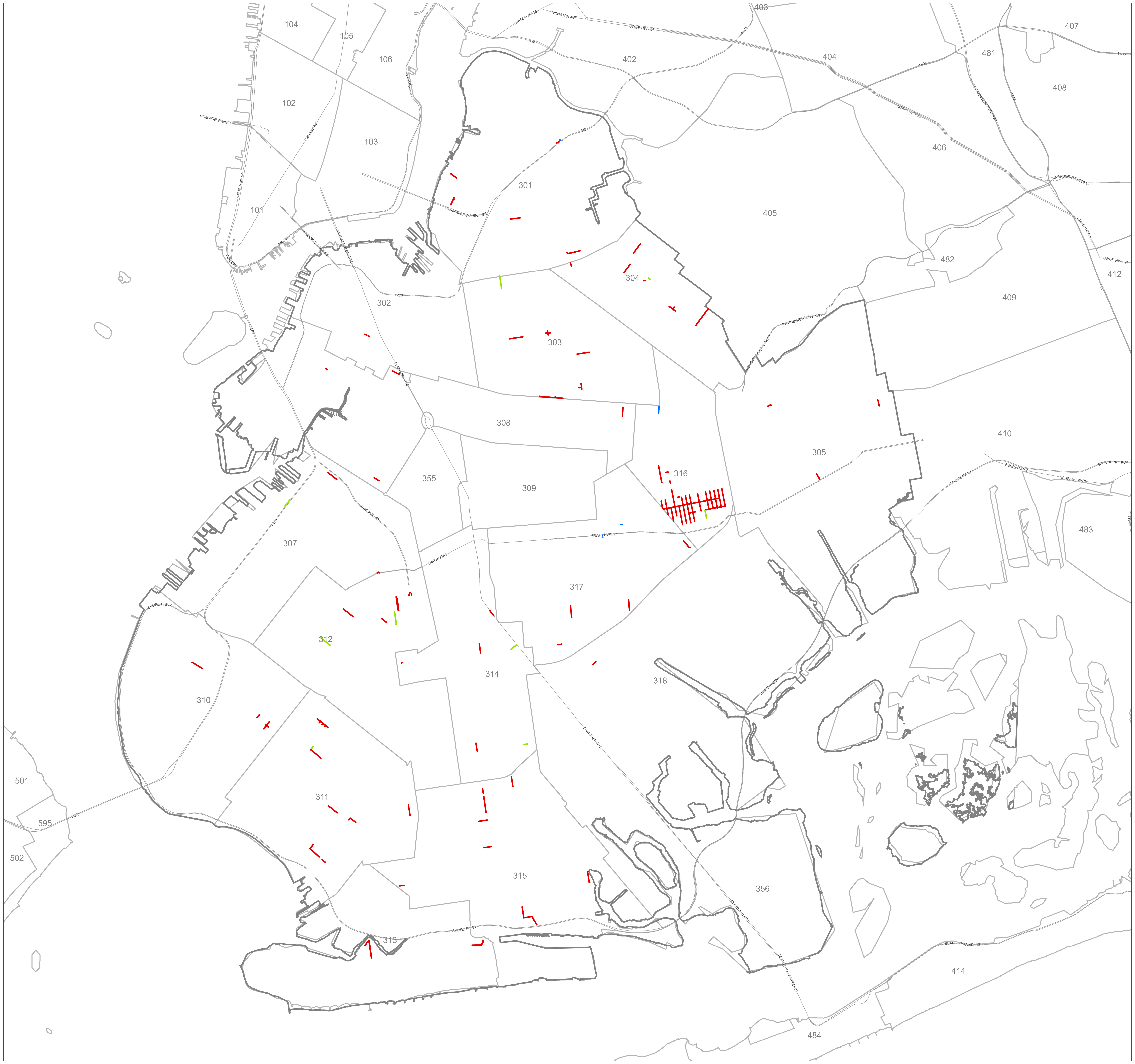
Caswell F. Holloway, Commissioner

STATEN ISLAND - SETVDDC10

TV INSPECTION AND CLEANING



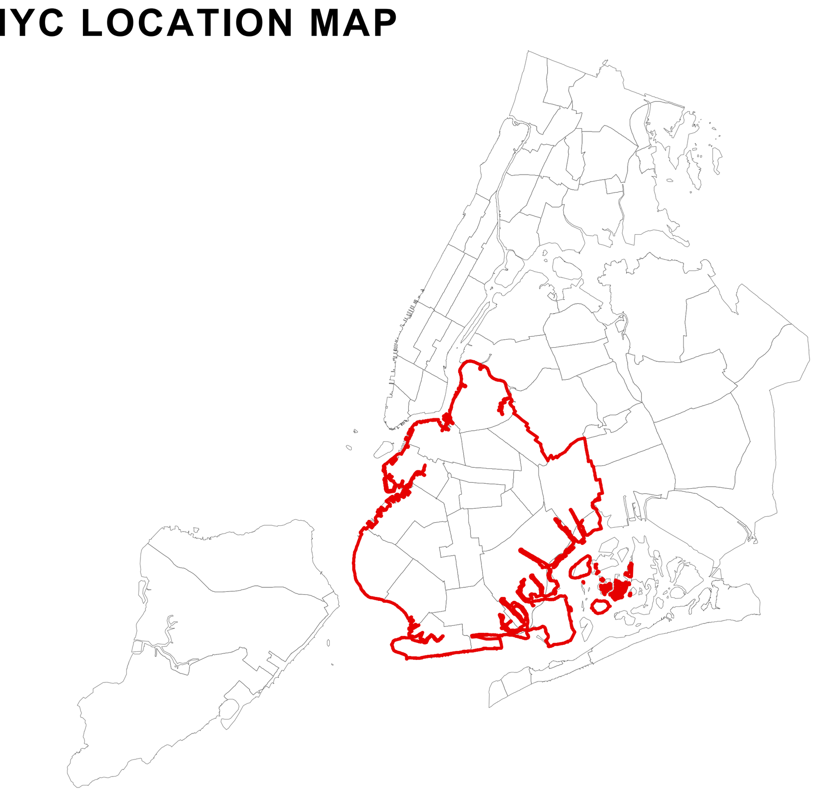
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Borough Map

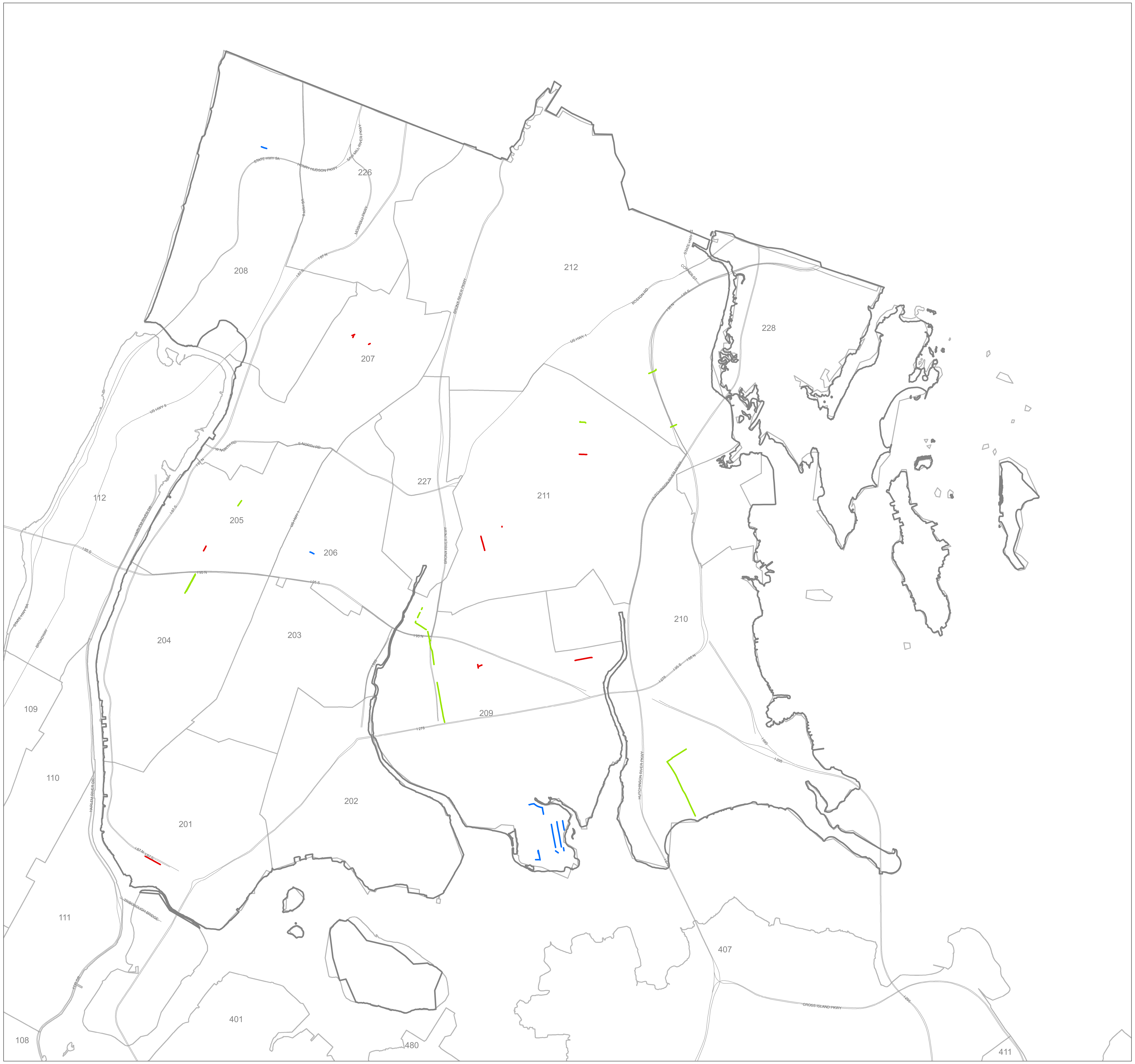
Datum and Projection:
NAD, 1983 StatePlane NY Long Island

Brooklyn

0 0.25 0.5 1 1.5 Miles

1 inch equals 2,407 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

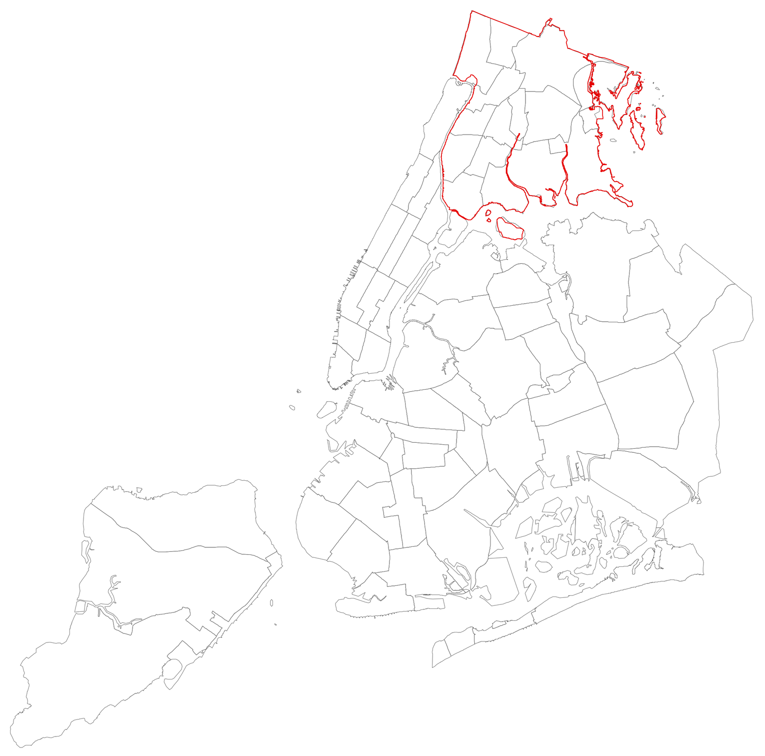


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Borough Map

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Bronx

0 0.25 0.5 1 1.5 Miles — 1 inch equals 2,407 feet

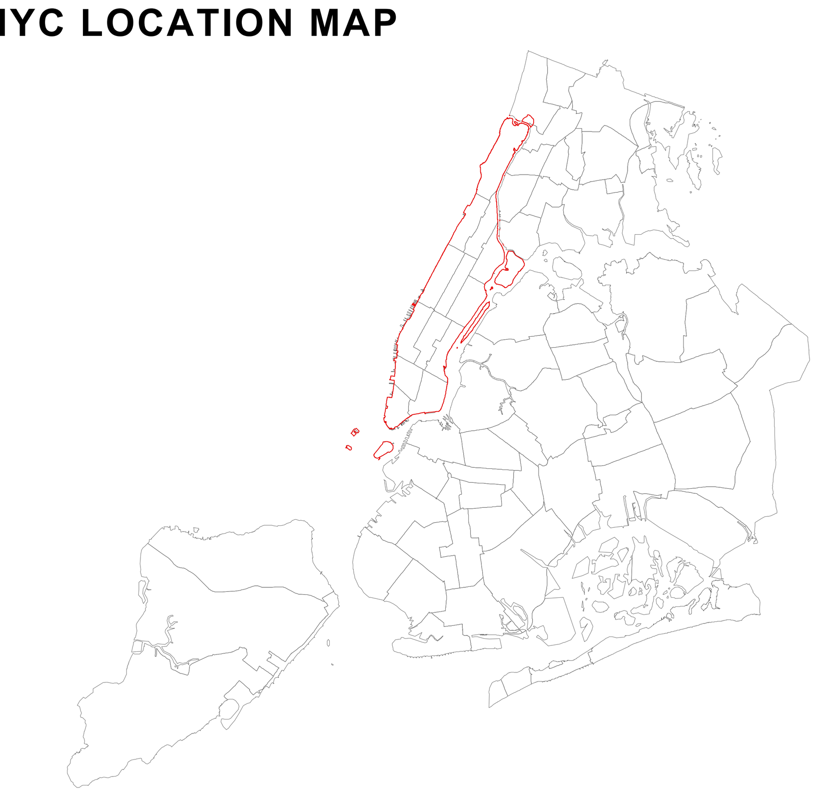
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Borough Map

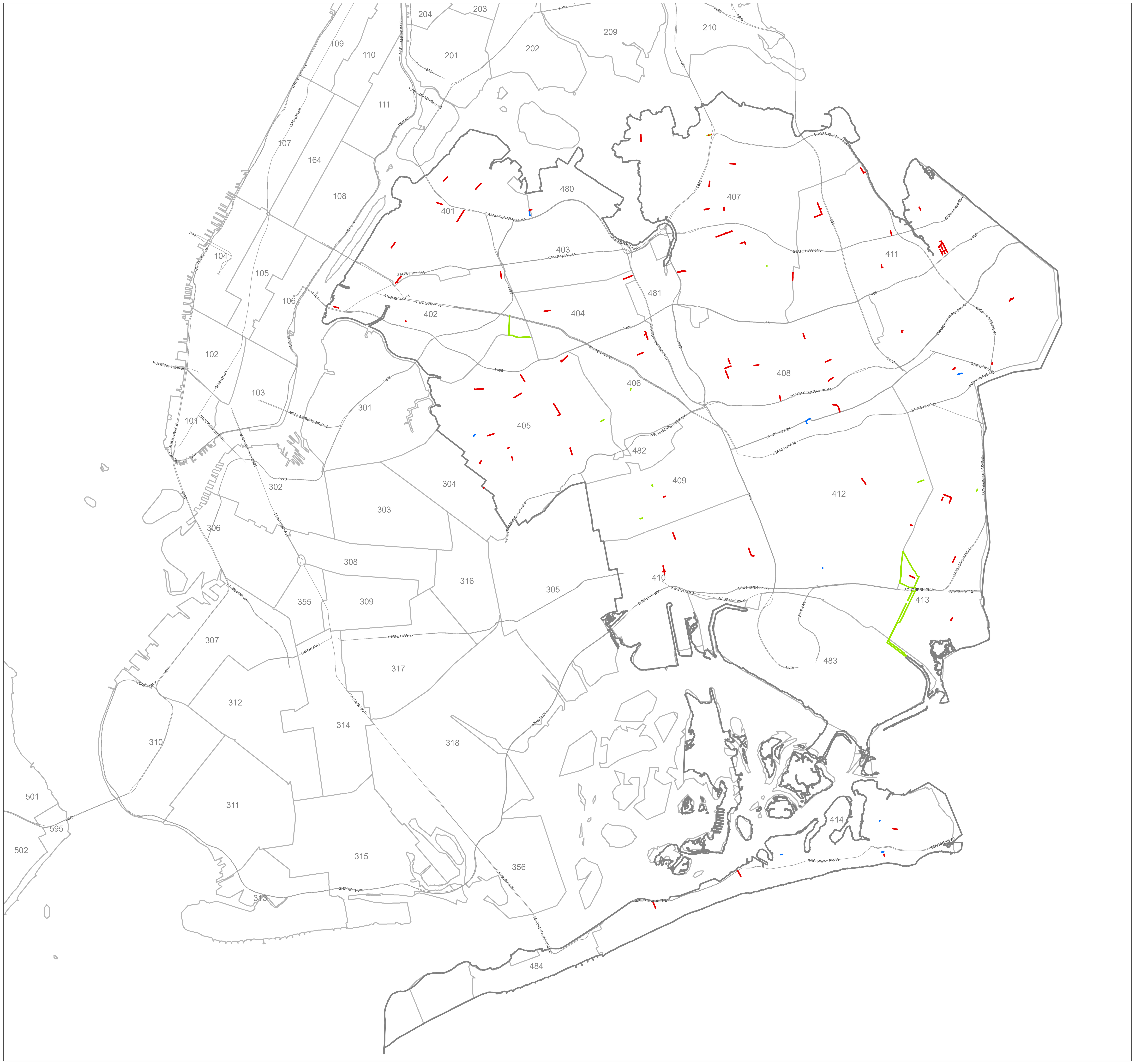
Datum and Projection:
NAD, 1983 StatePlane NY Long Island

Manhattan

0 0.25 0.5 1 1.5 Miles

1 inch equals 2,407 feet

Prepared By the Sewer Mapping Unit on 2/24/2011



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

Sewer cleaned and/or televised

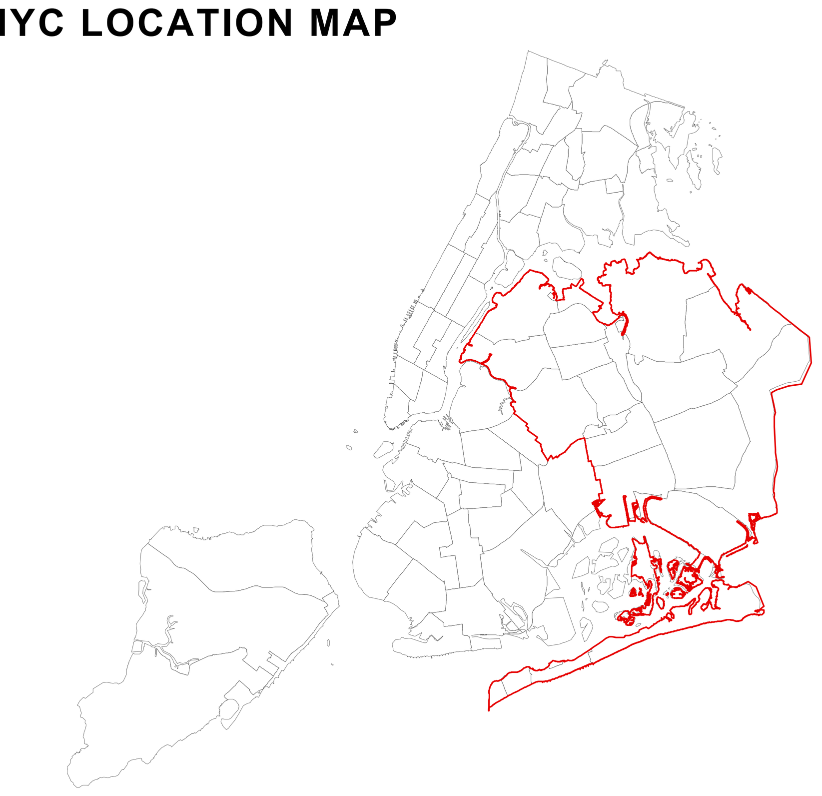
Sewer visually inspected

Sewer with preliminary inspection

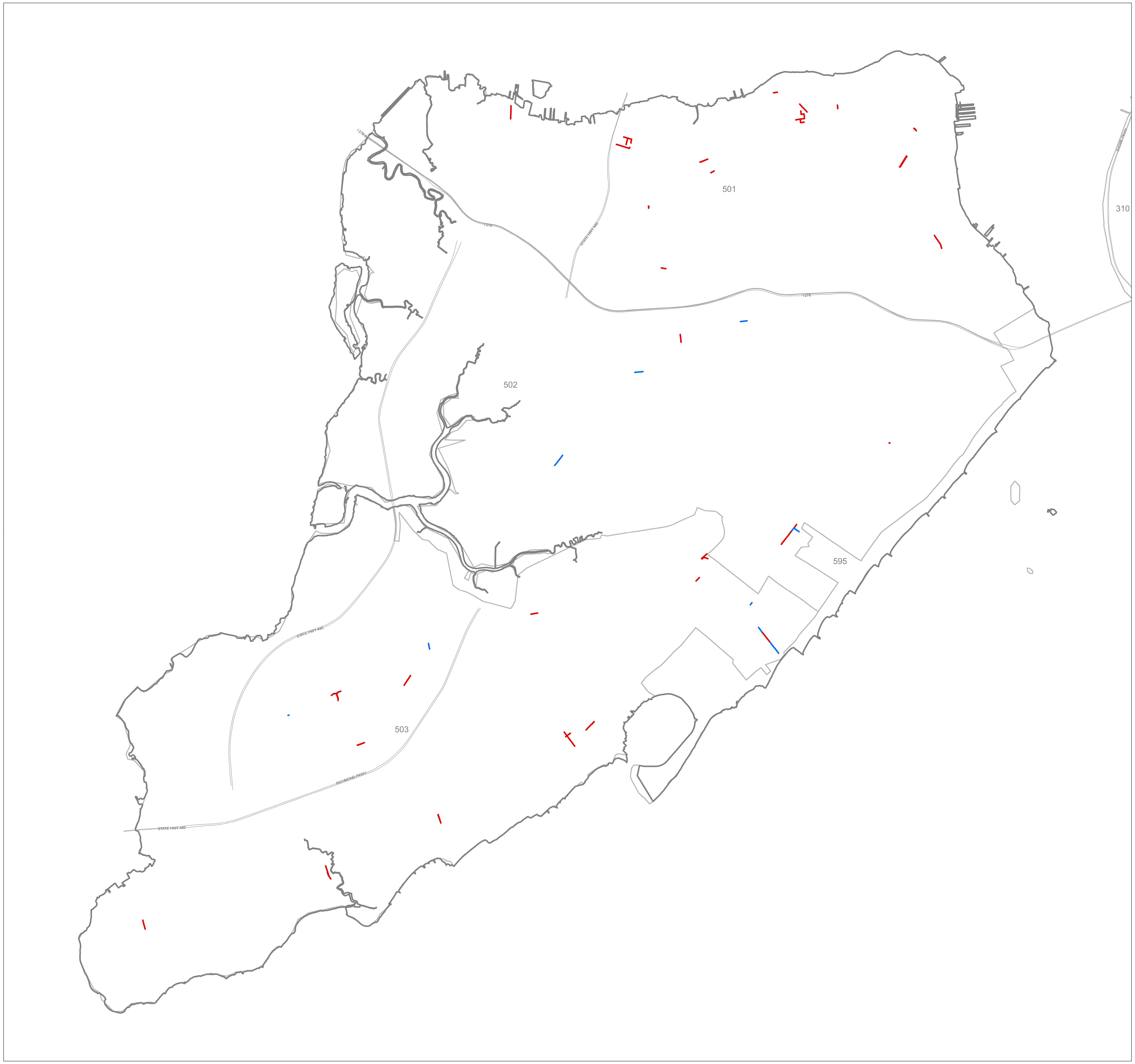
Community Boards

NYC Major Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Sewer Analysis	
Borough Map	
Datum and Projection: **NAD, 1983 StatePlane NY Long Island**	**Queens**
0 0.25 0.5 1 1.5 Miles — 1 inch equals 2,407 feet	
Prepared By the Sewer Mapping Unit on 2/24/2011	

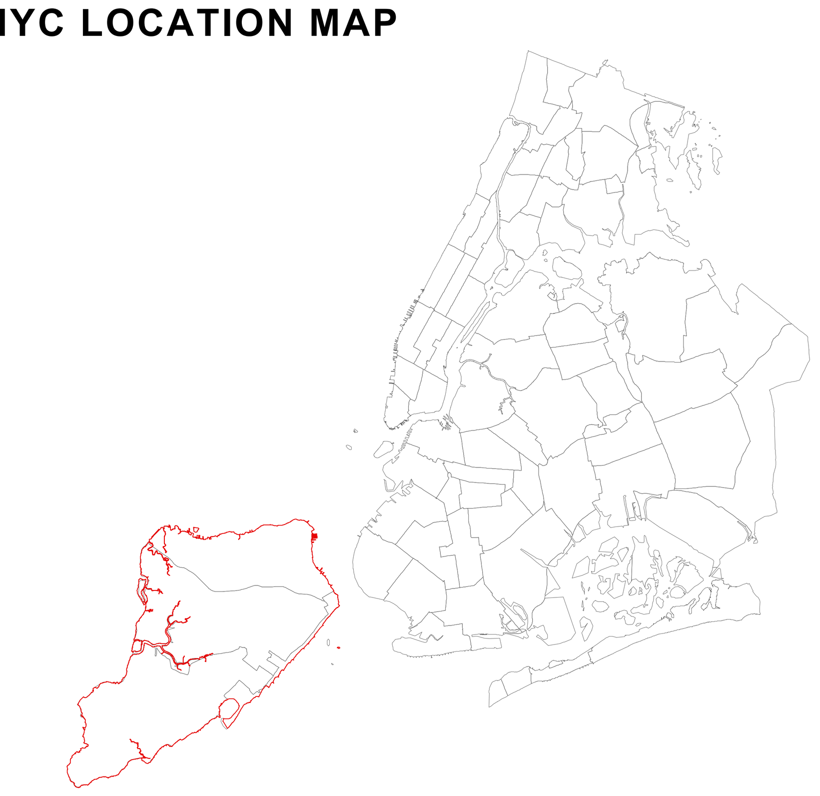


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Borough Map

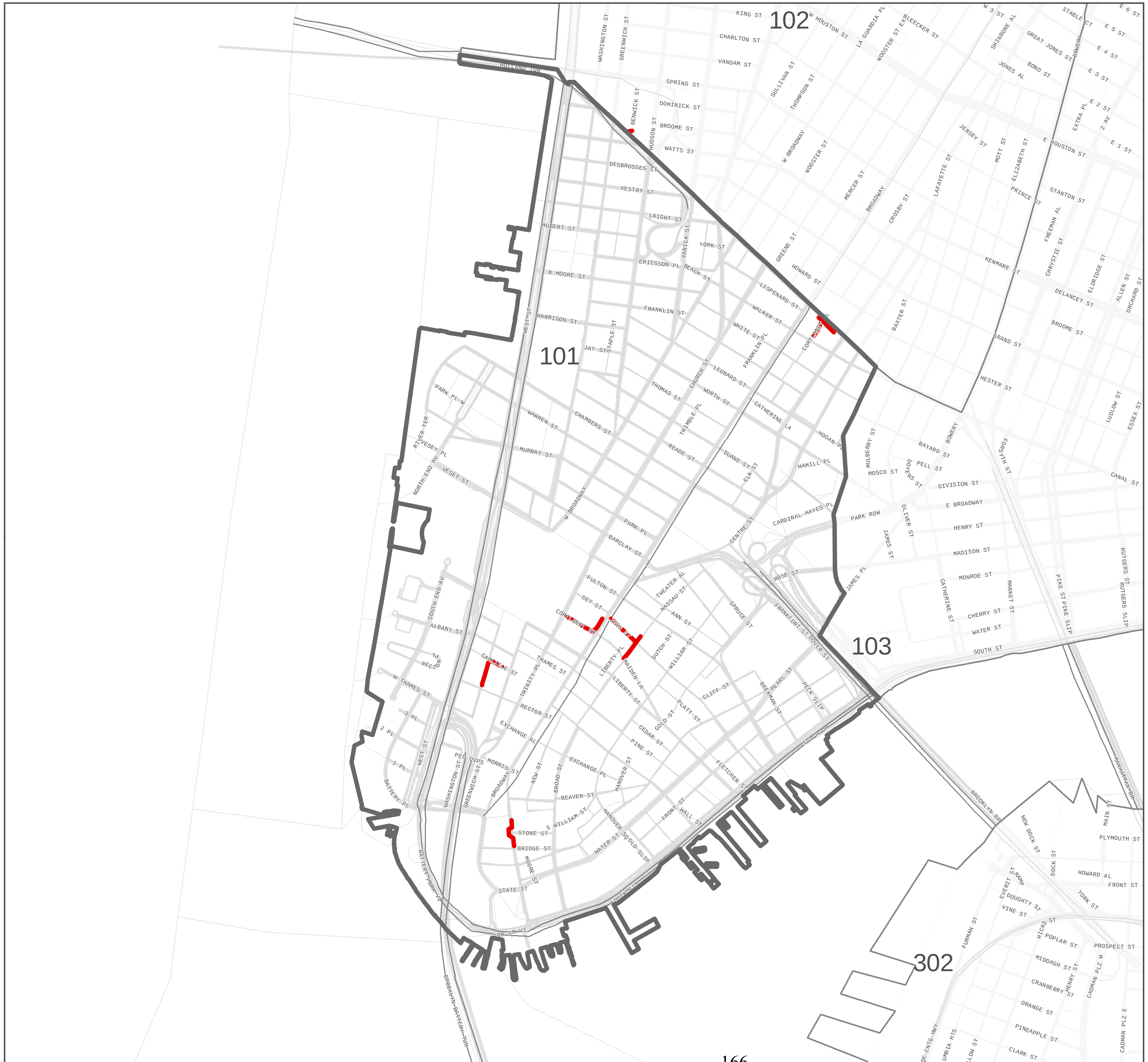
Datum and Projection:
NAD, 1983 StatePlane NY Long Island

Staten Island

0 0.25 0.5 1 1.5 Miles

1 inch equals 2,407 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

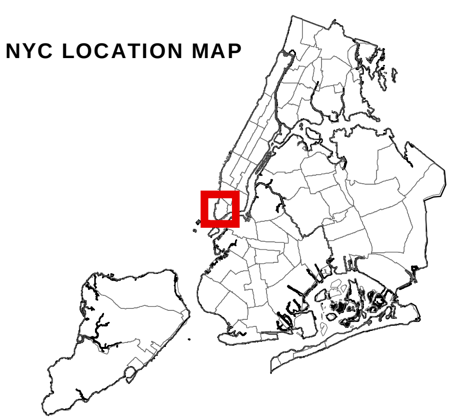


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



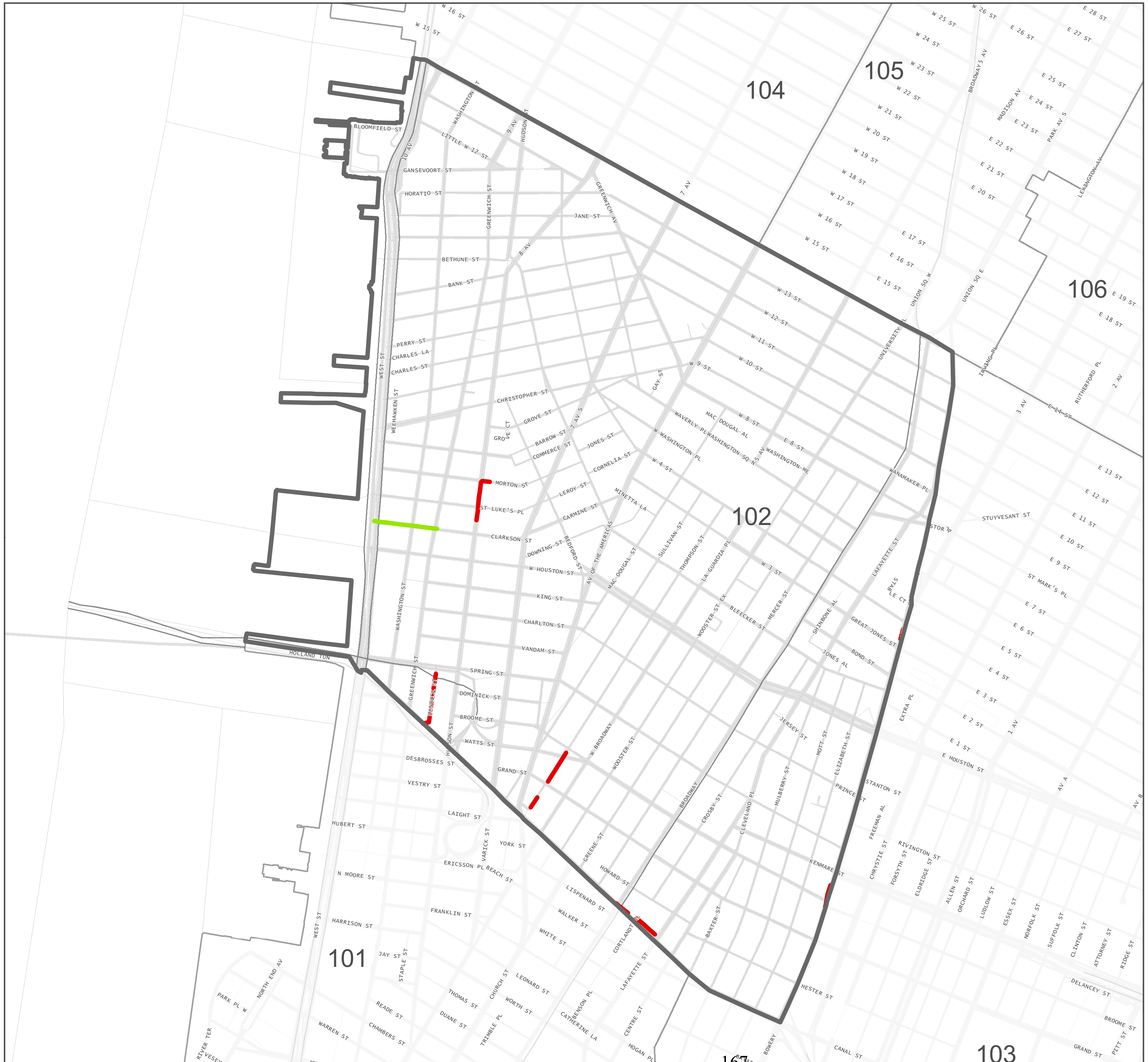
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 101

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Manhattan

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

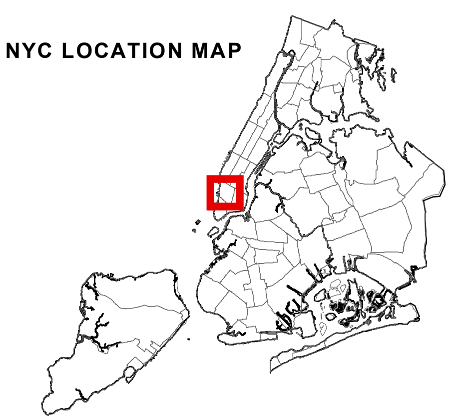


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 102

Datum and Projection:
NAD, 1983 StatePlane NY Long Island

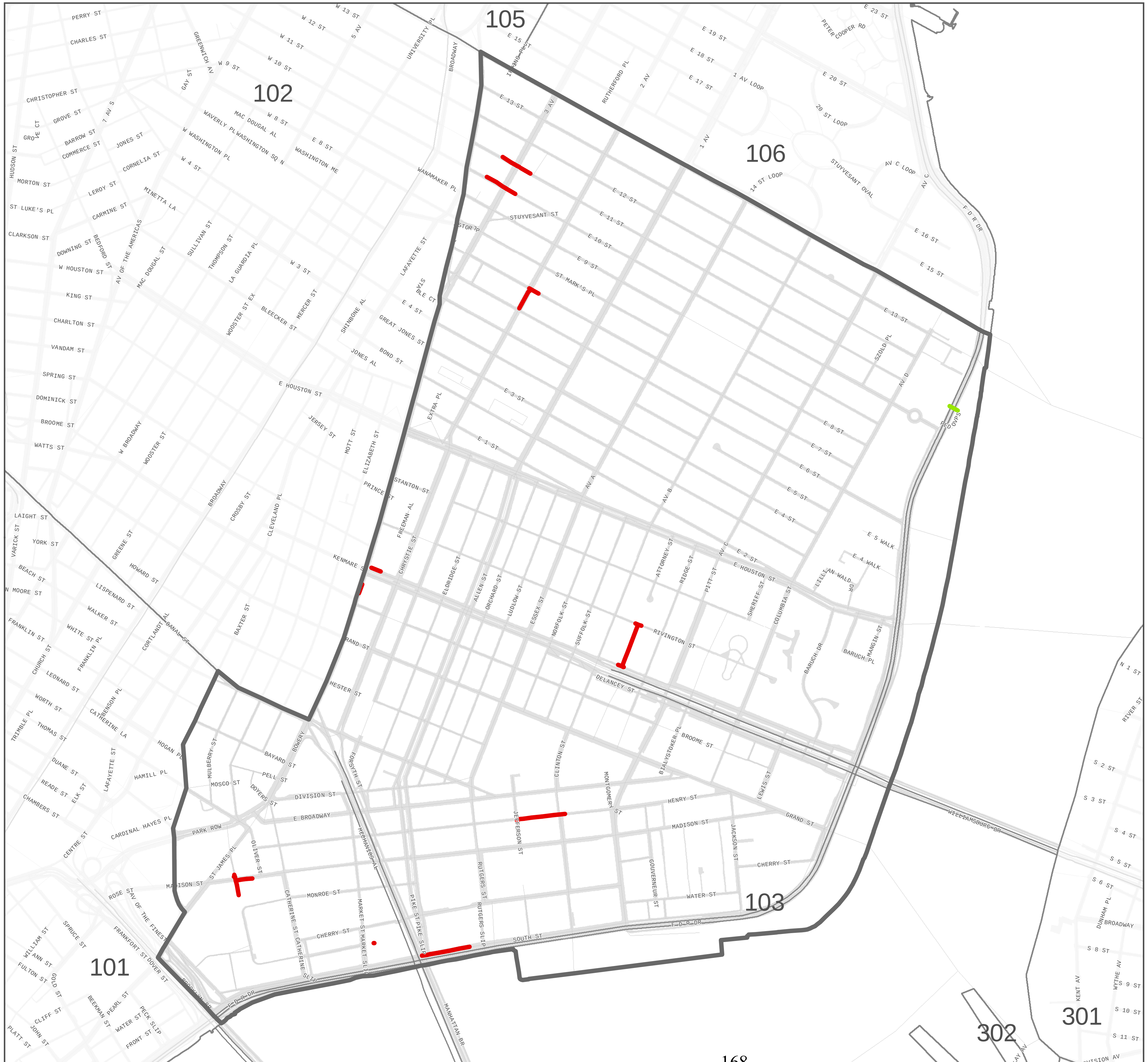
Manhattan

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

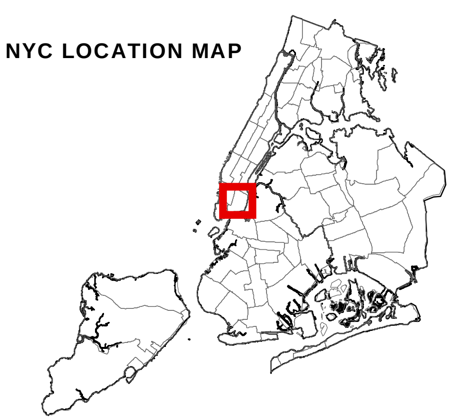
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 103

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Manhattan

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

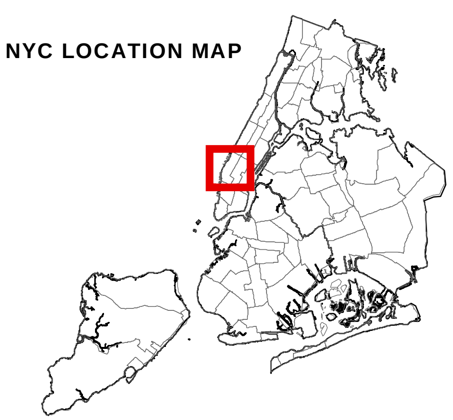
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 104

Datum and Projection:
NAD, 1983 StatePlane NY Long Island

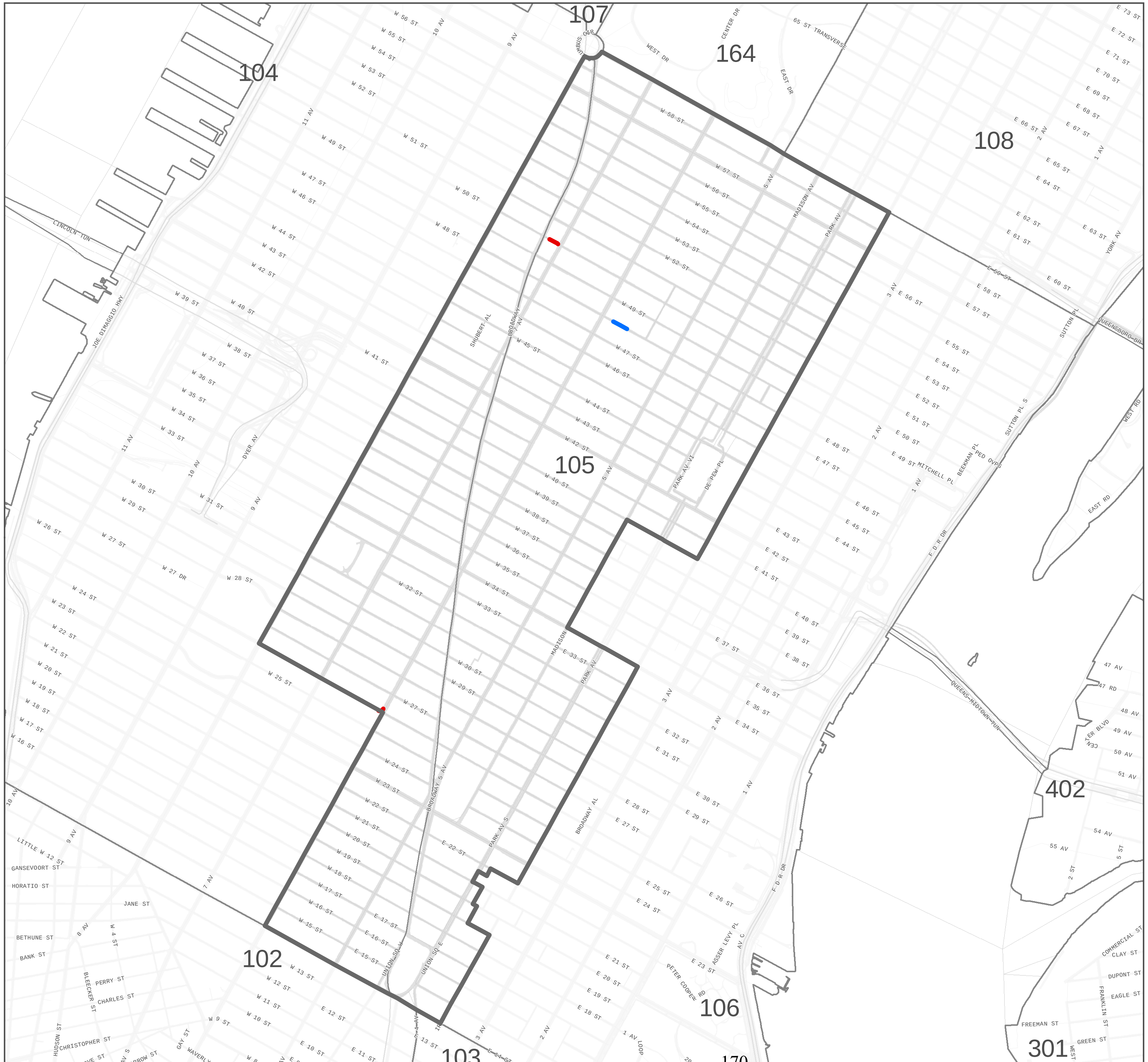
Manhattan

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

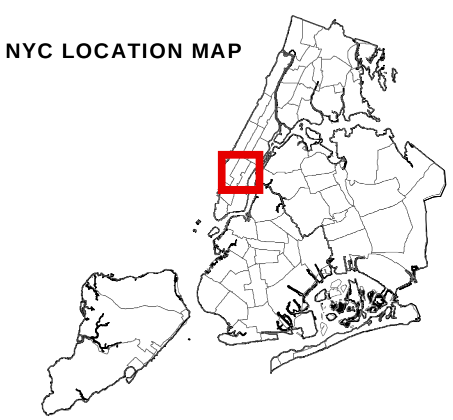
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



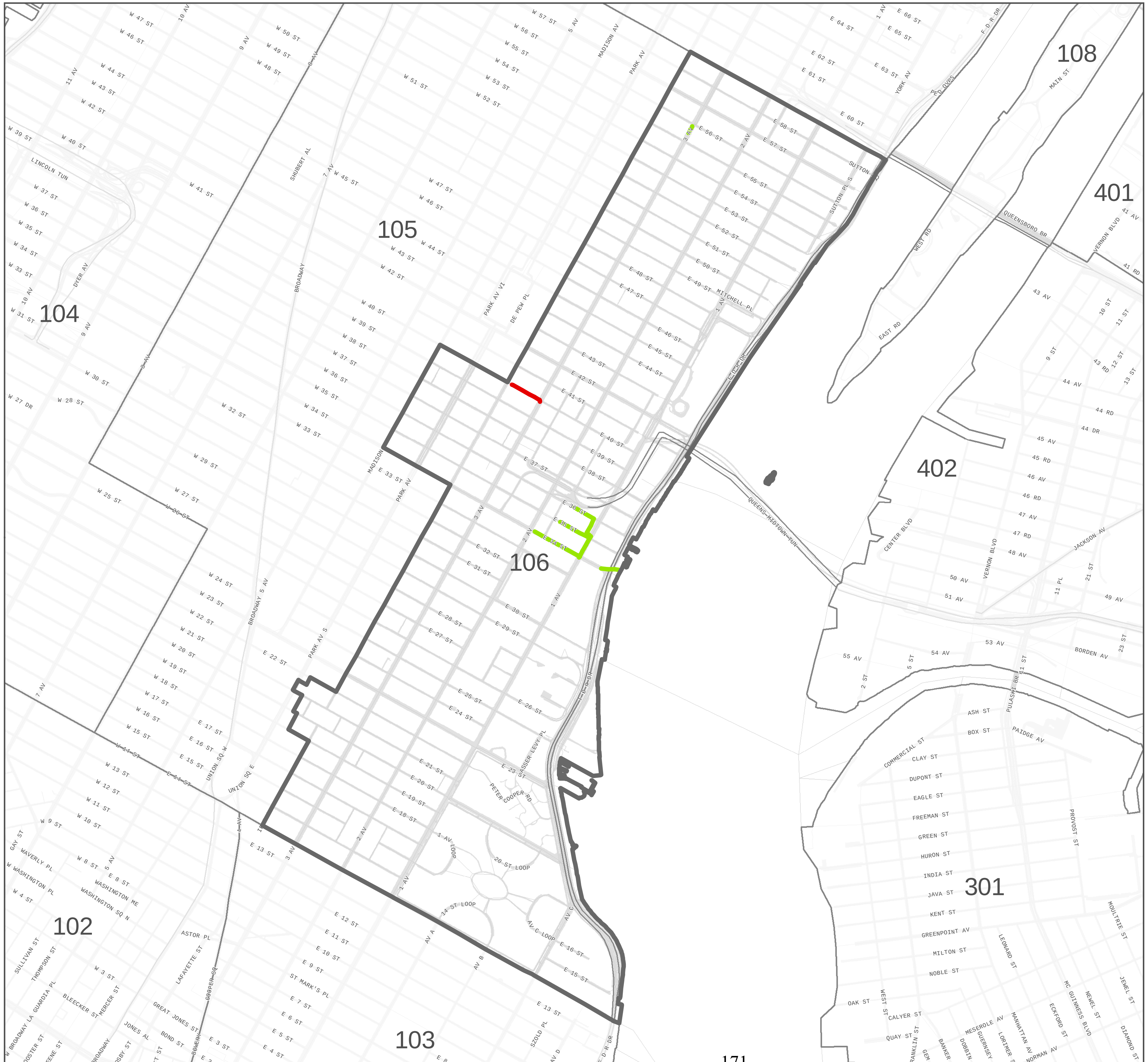
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 105

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Manhattan

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

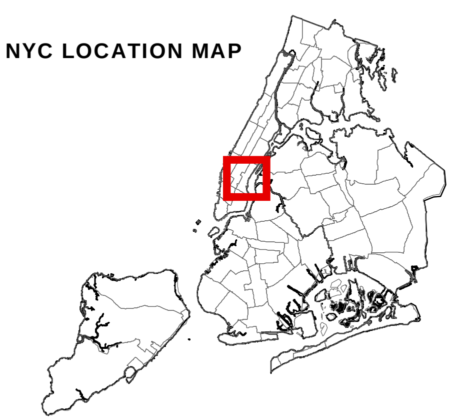


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 106

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Manhattan
0 0.04 0.08 0.16 0.24 Miles	1 inch equals 1,145 feet

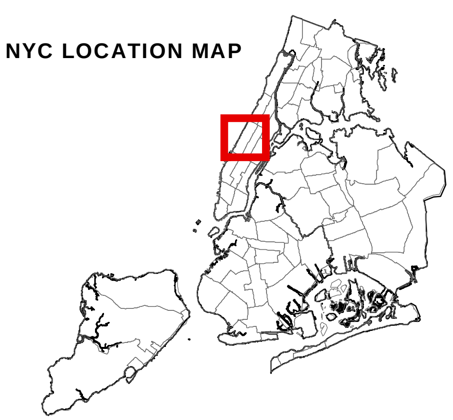
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 107

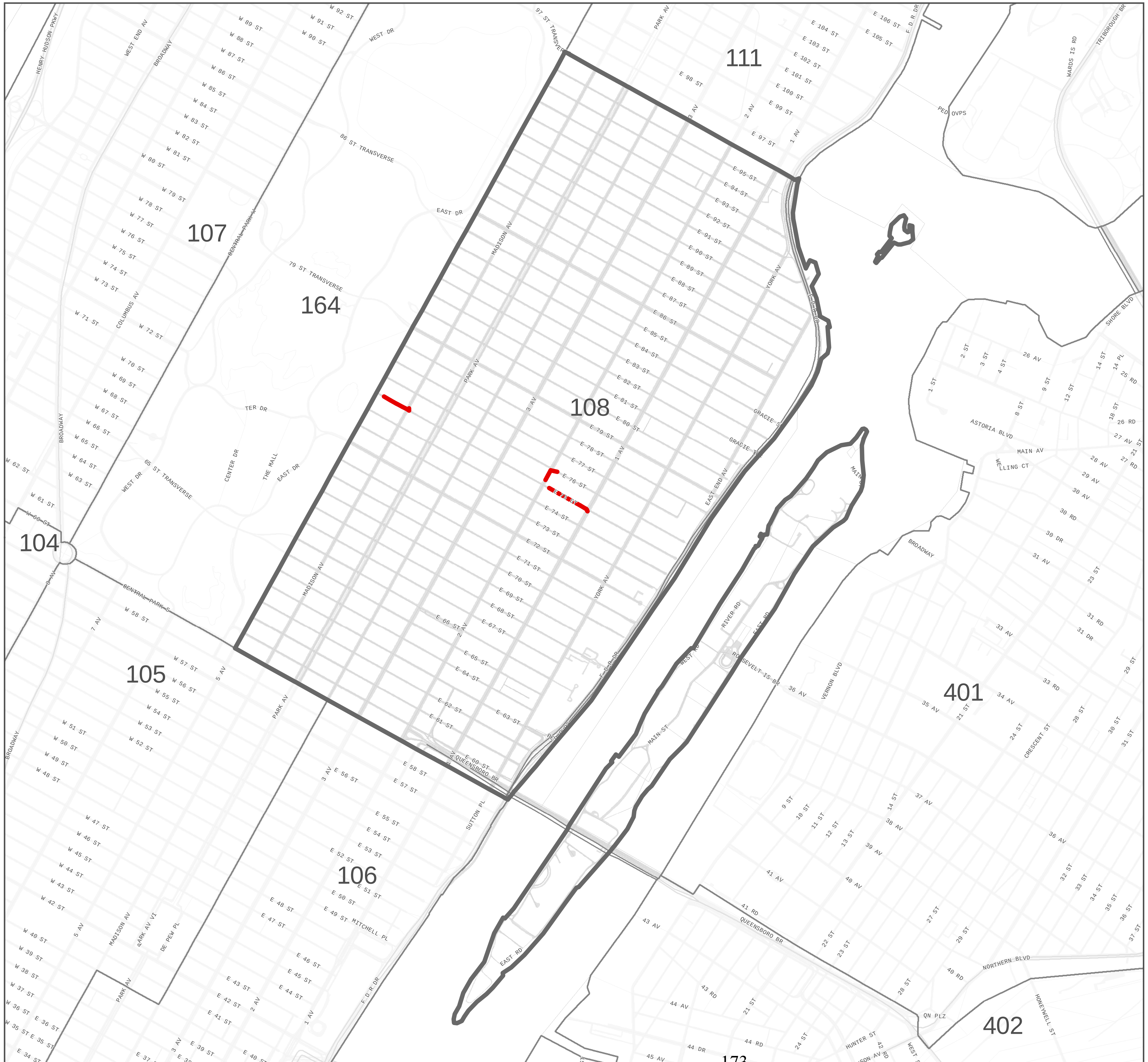
Datum and Projection:
NAD, 1983 StatePlane NY Long Island

Manhattan

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

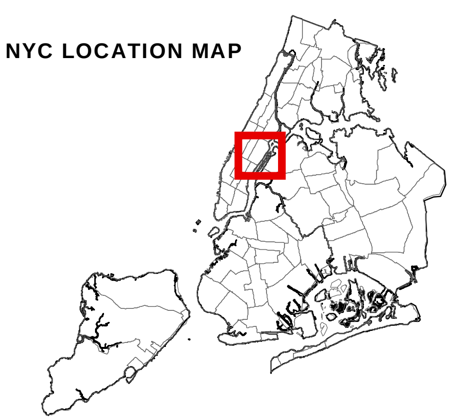


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 108

Datum and Projection:
NAD, 1983 StatePlane NY Long Island

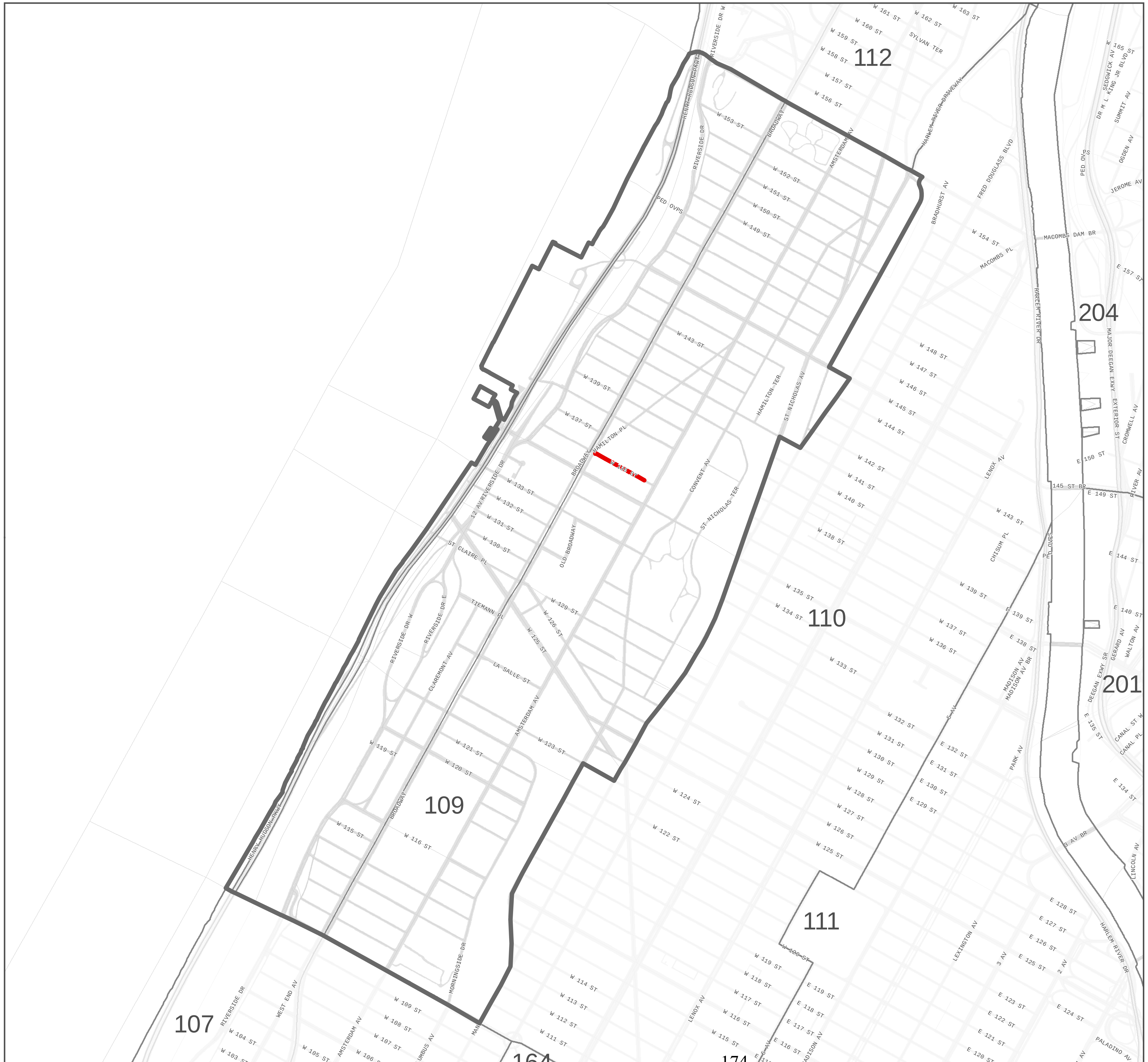
Manhattan

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

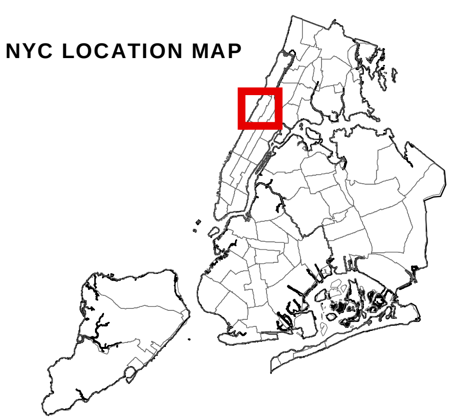
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 109

Datum and Projection:
NAD, 1983 StatePlane NY Long Island

Manhattan

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

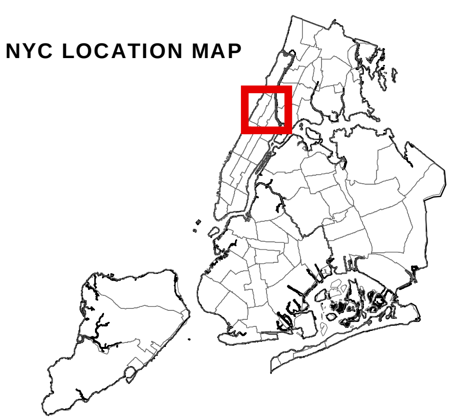
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

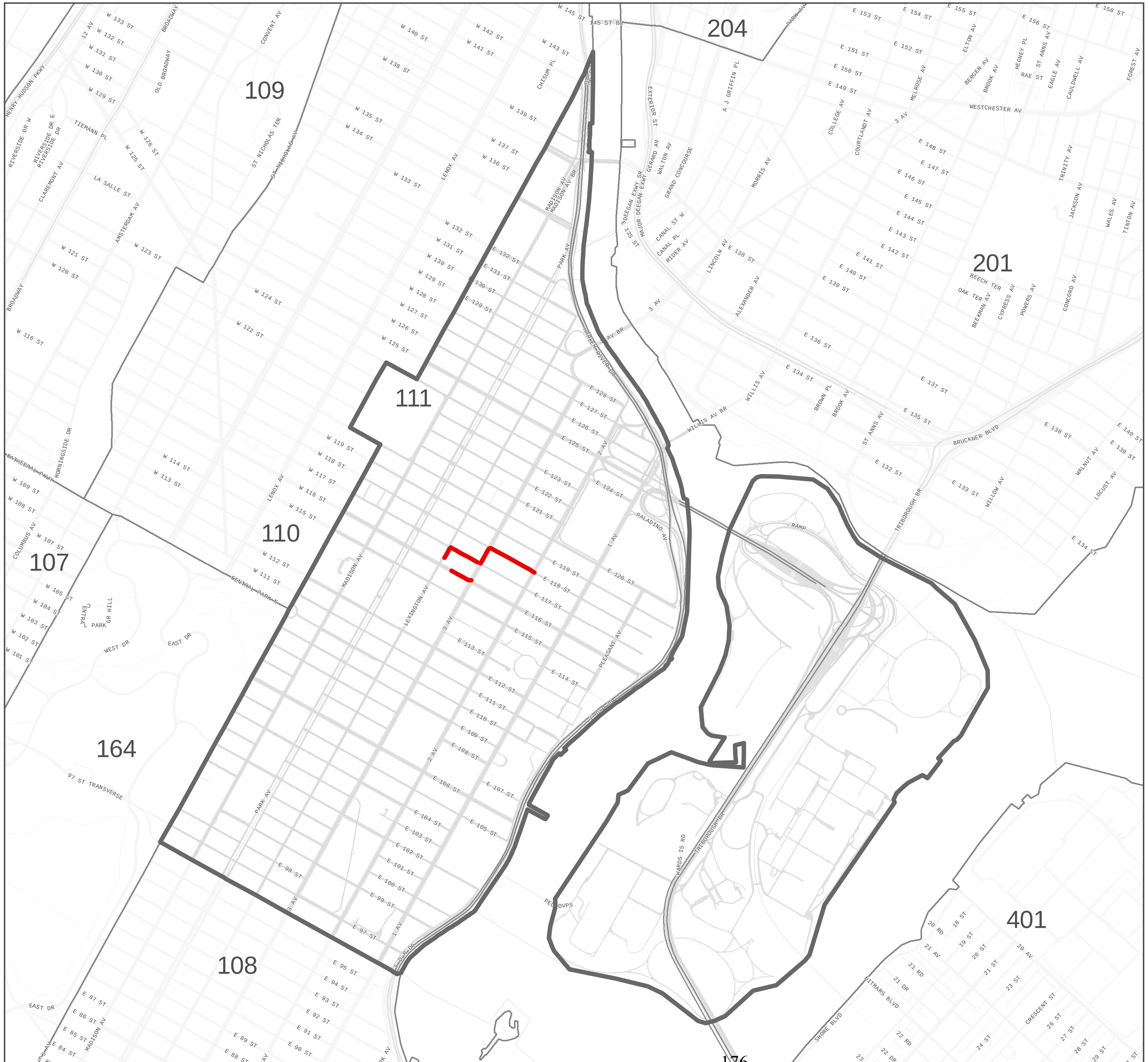
Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Sewer Analysis	
Community Board 110	
Datum and Projection: NAD, 1983 StatePlane NY Long Island	Manhattan
0 0.04 0.08 0.16 0.24 Miles	1 inch equals 1,145 feet
Prepared By the Sewer Mapping Unit on 2/24/2011	

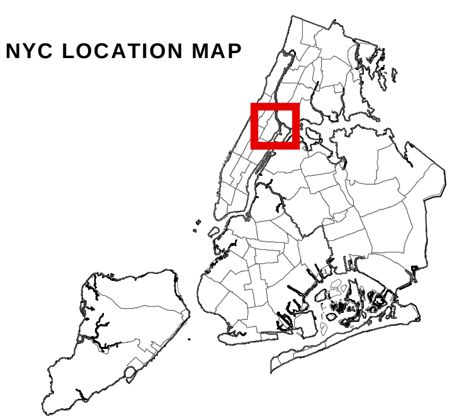


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 111

Datum and Projection:
NAD, 1983 StatePlane NY Long Island

Manhattan

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

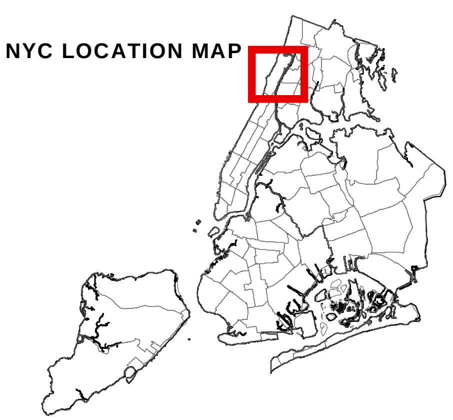
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 112

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Manhattan

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

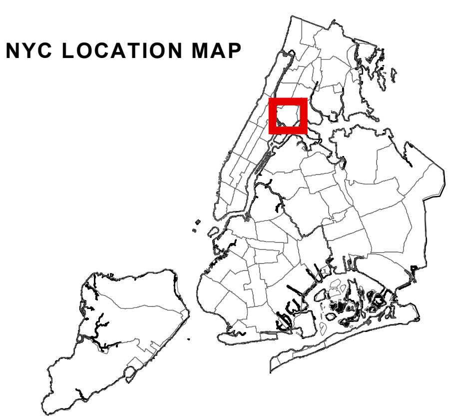
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

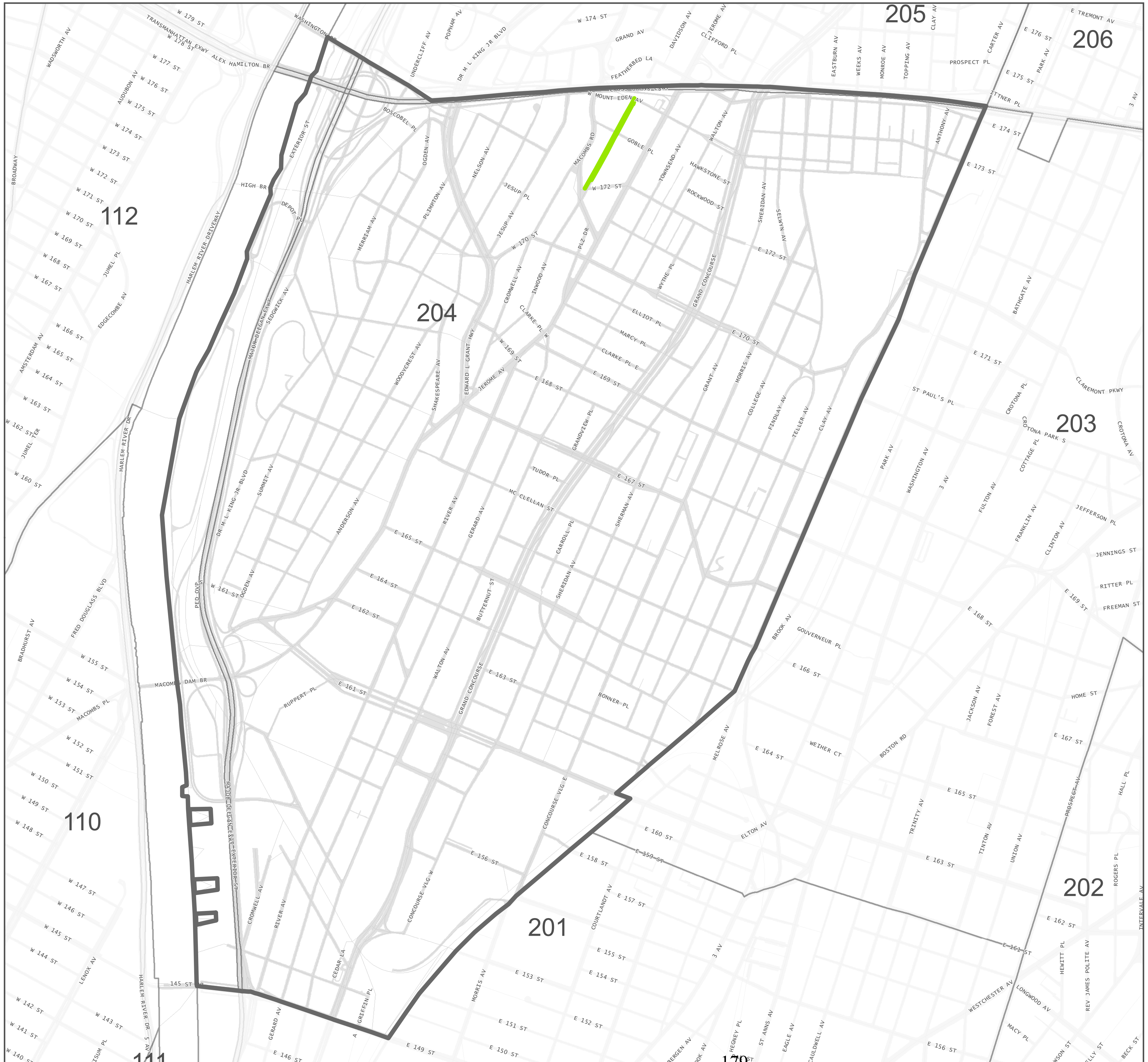
- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Sewer Analysis	
Community Board 201	
Datum and Projection: NAD, 1983 StatePlane NY Long Island	Bronx
0 0.04 0.08 0.16 0.24 Miles	1 inch equals 1,145 feet
Prepared By the Sewer Mapping Unit on 2/24/2011	

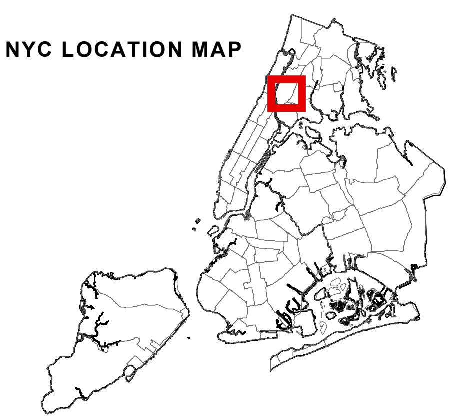
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

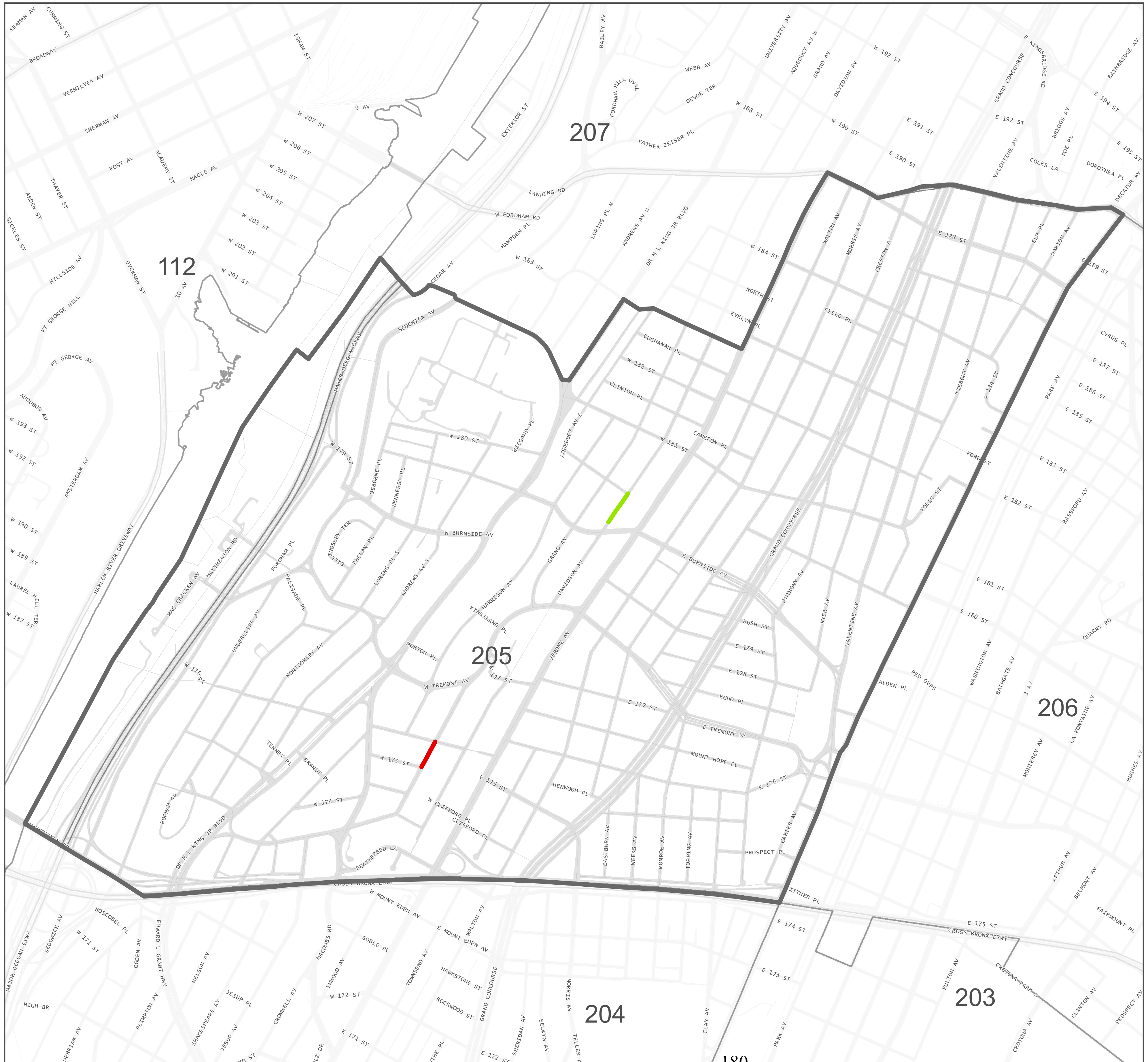
Community Board 204

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Bronx

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP

NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 205

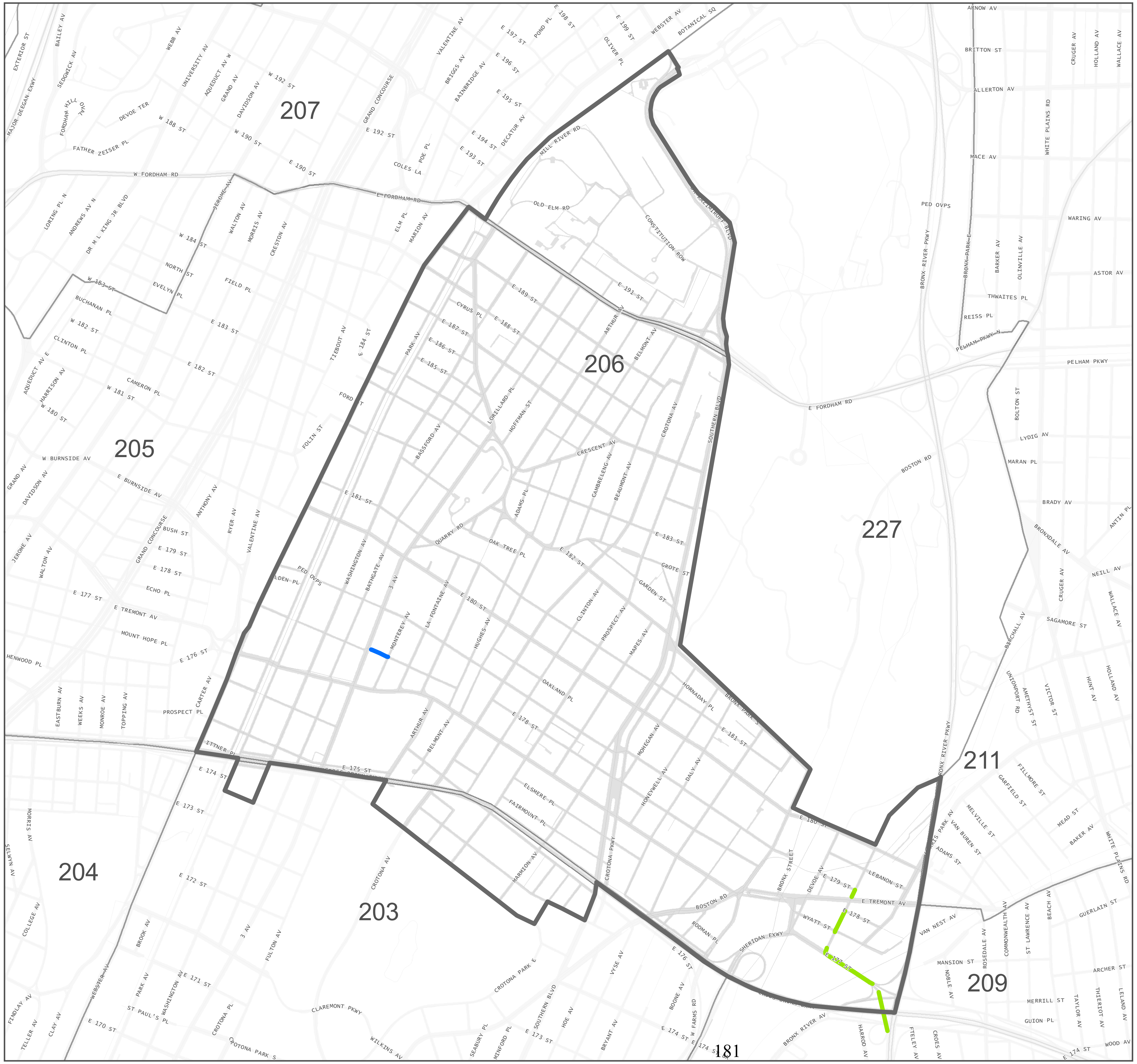
Datum and Projection: NAD, 1983 StatePlane NY Long Island

Bronx

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

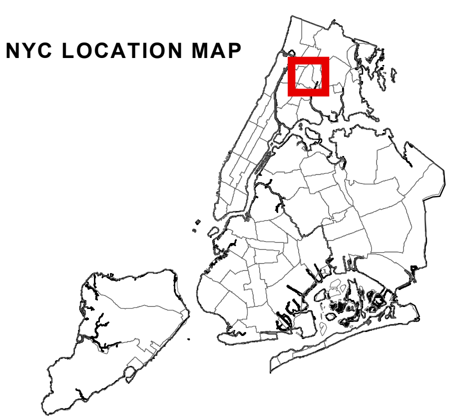


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

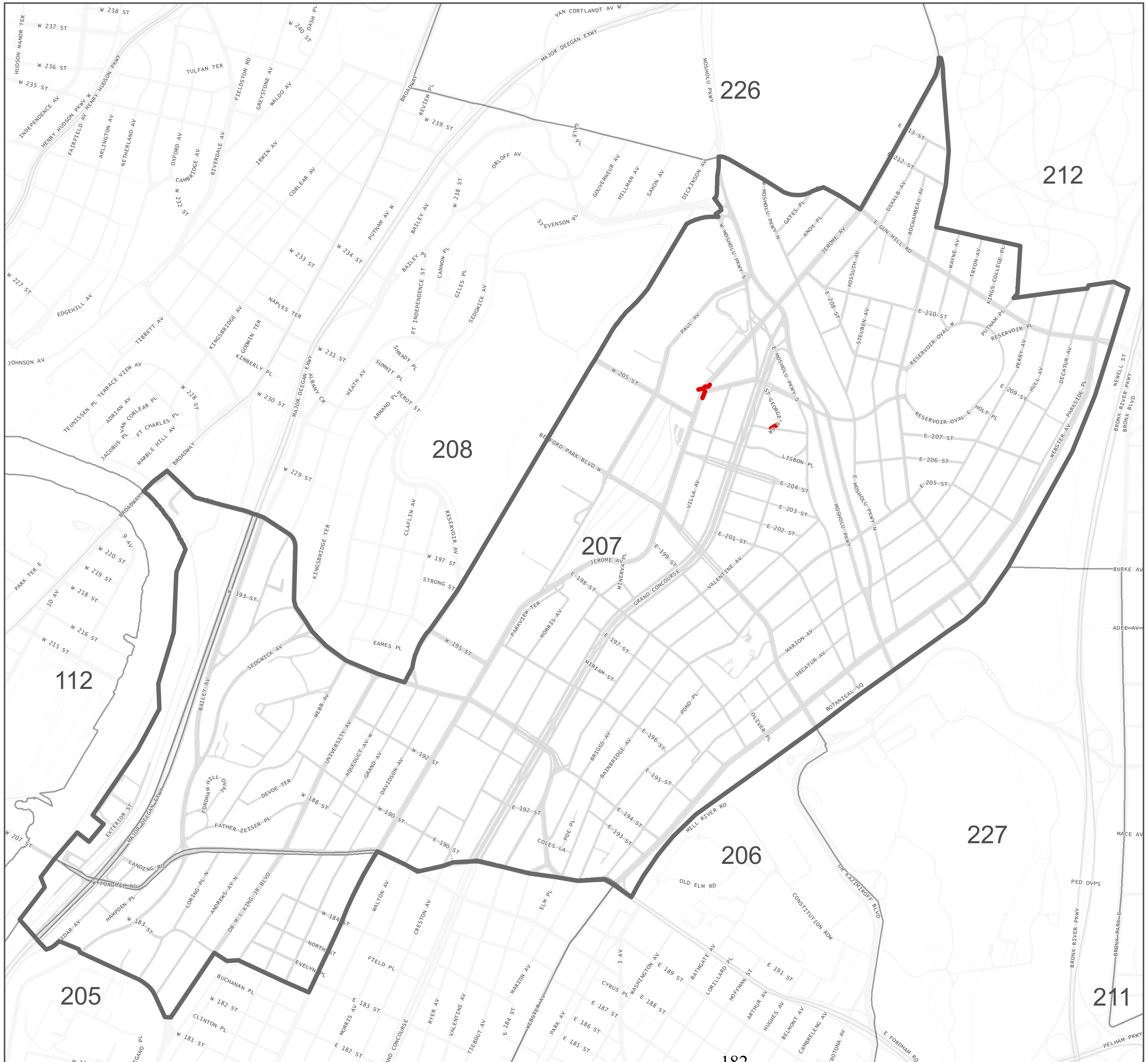
Community Board 206

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Bronx

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

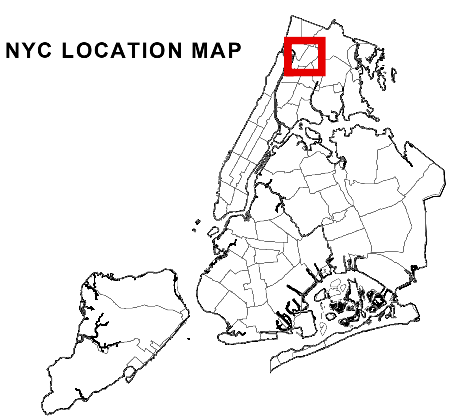


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 207

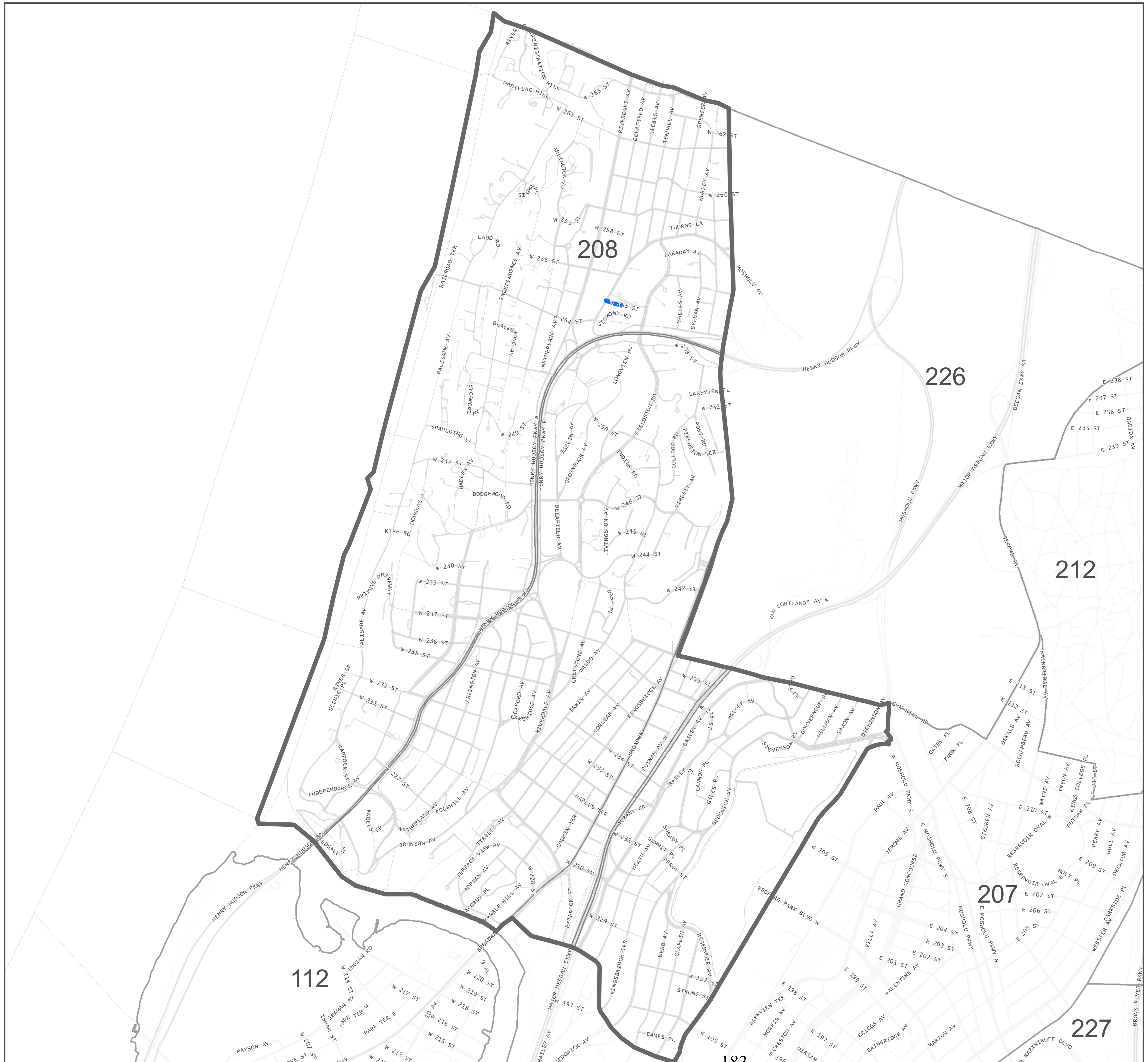
Datum and Projection:
NAD, 1983 StatePlane NY Long Island

Bronx

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

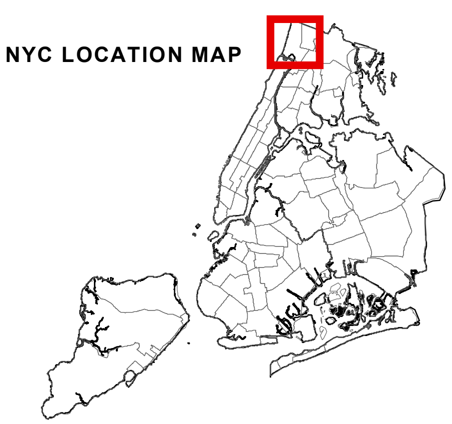


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



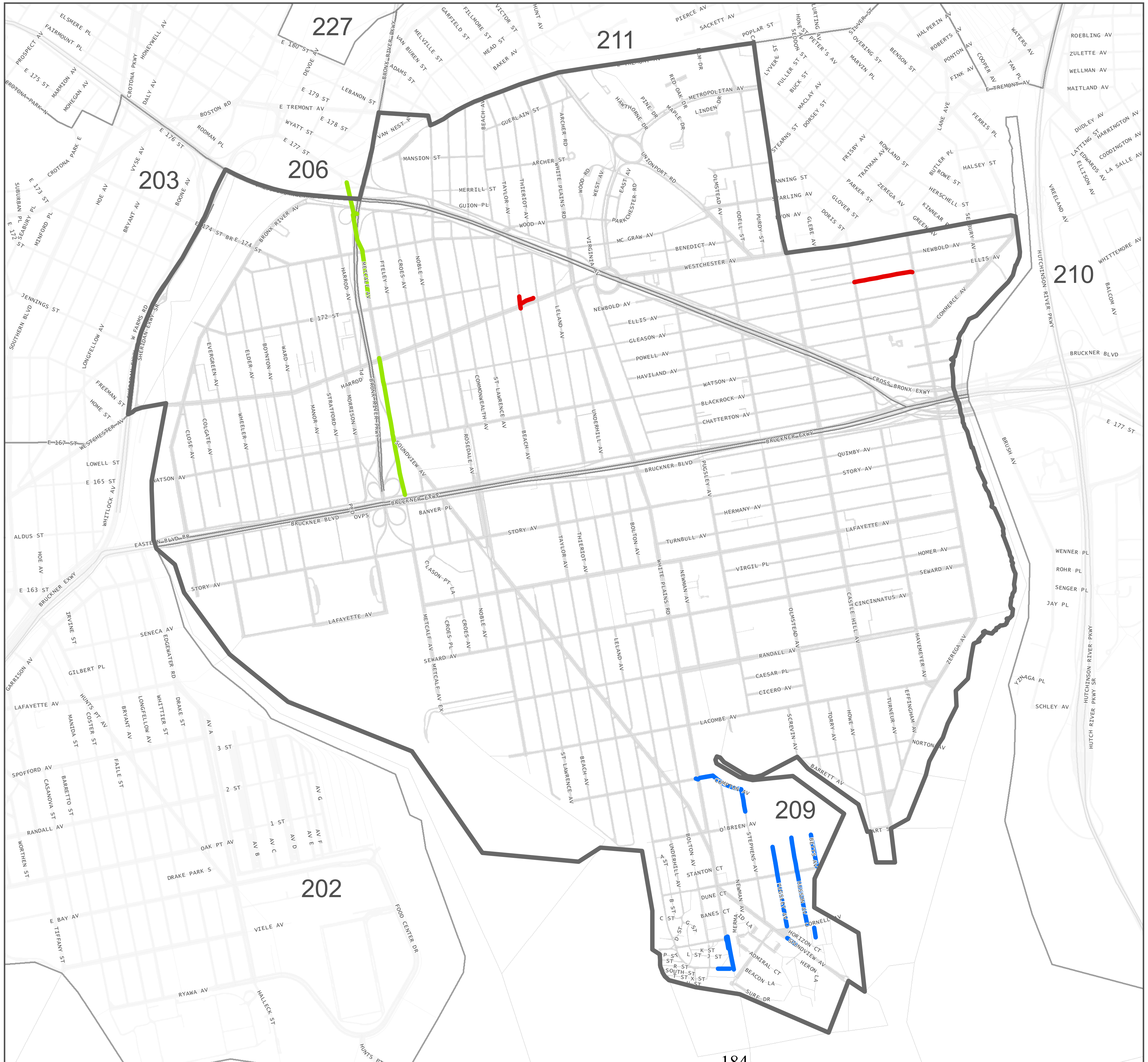
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 208

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Bronx

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

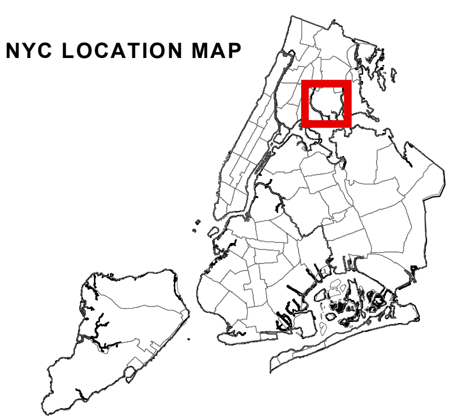


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

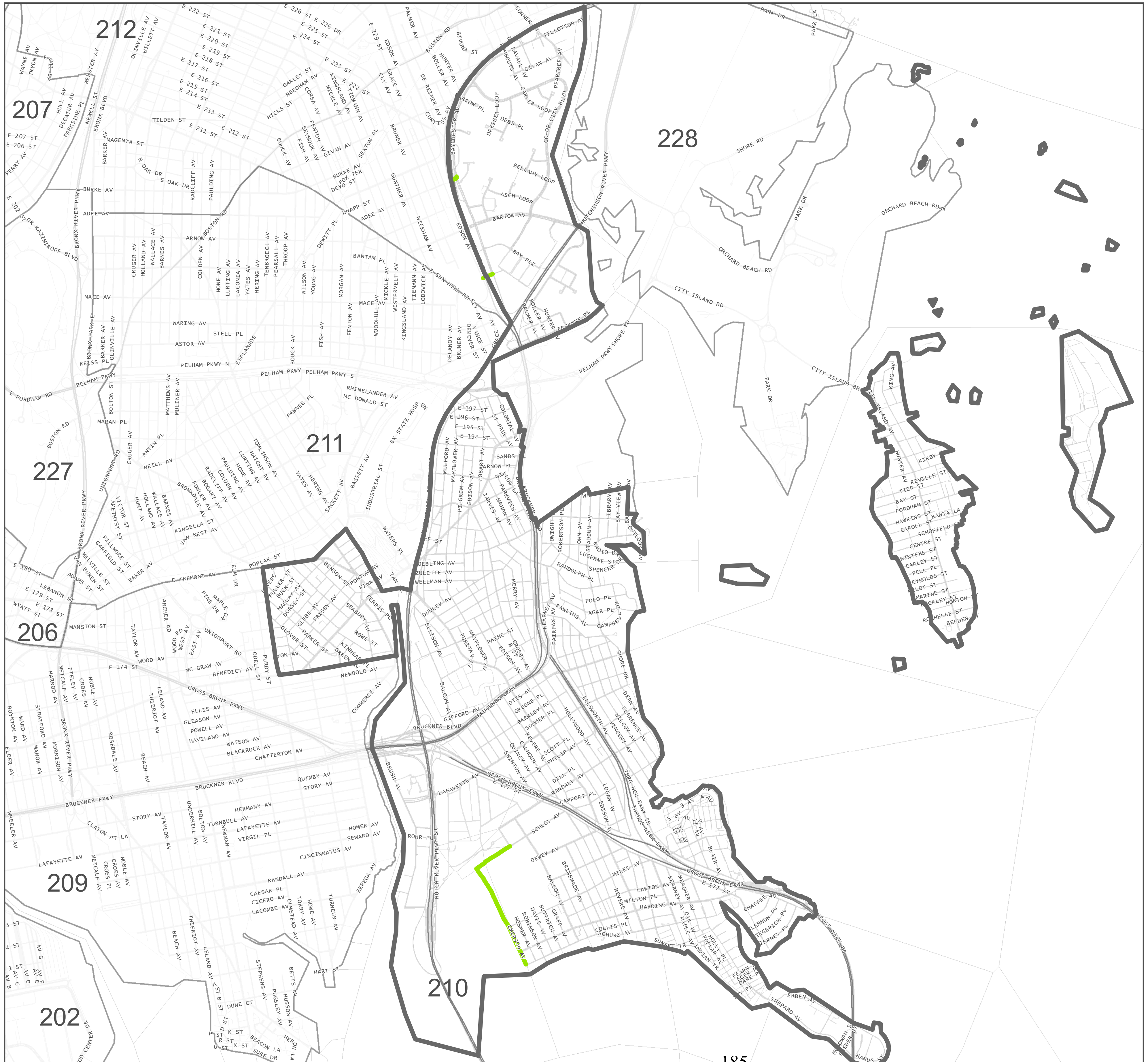
- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Sewer Analysis	
Community Board 209	
Datum and Projection: NAD, 1983 StatePlane NY Long Island	Bronx
0 0.04 0.08 0.16 0.24 Miles 1 inch equals 1,145 feet	
Prepared By the Sewer Mapping Unit on 2/24/2011	

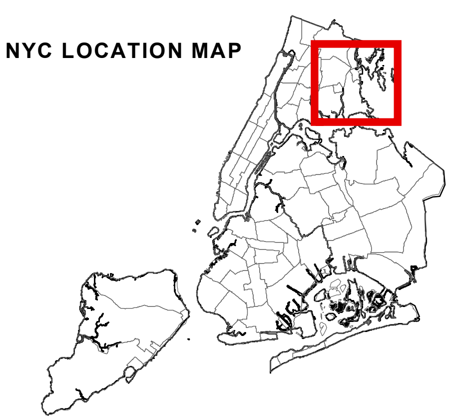
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 210

Datum and Projection:
NAD, 1983 StatePlane NY Long Island

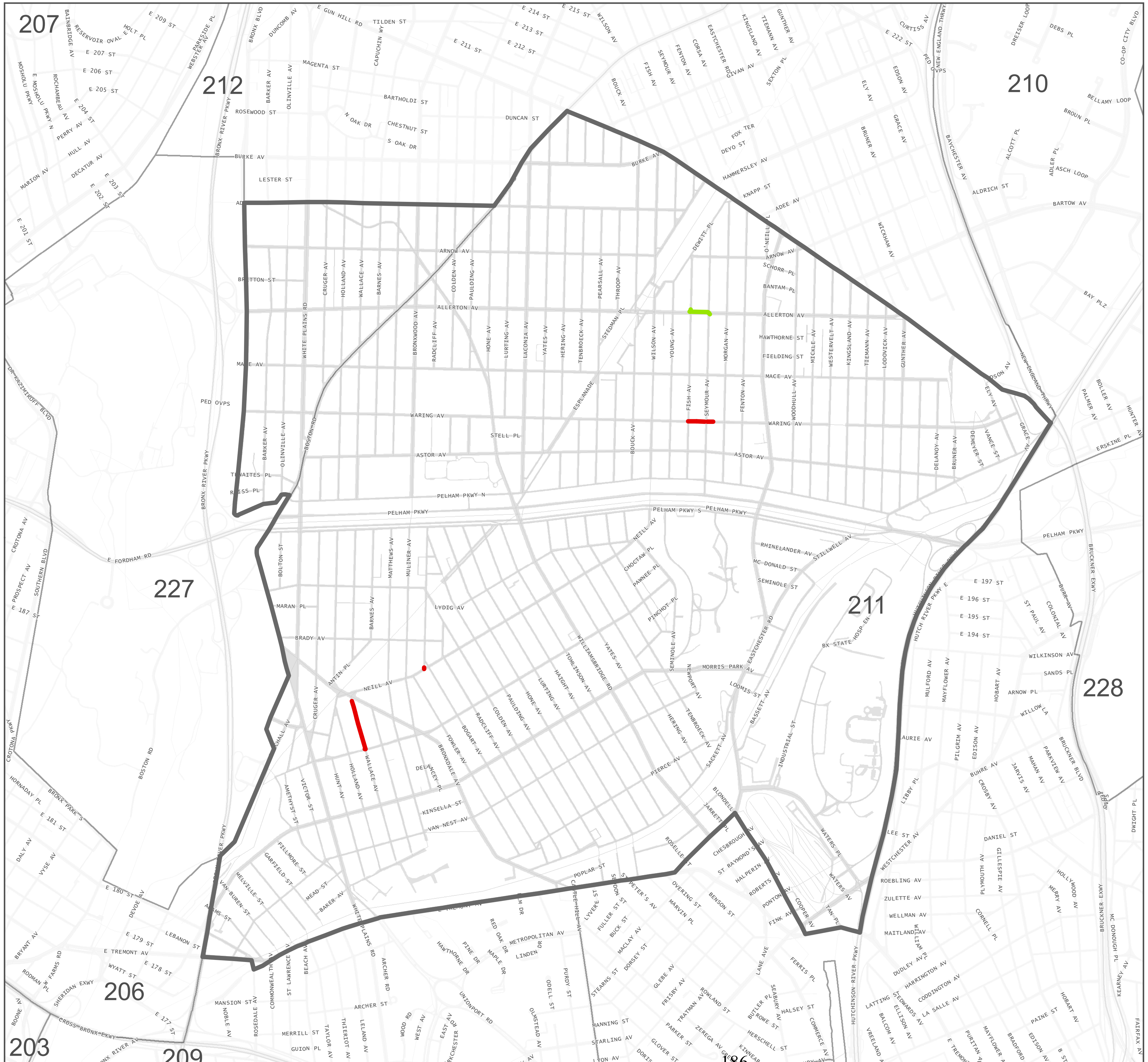
Bronx

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

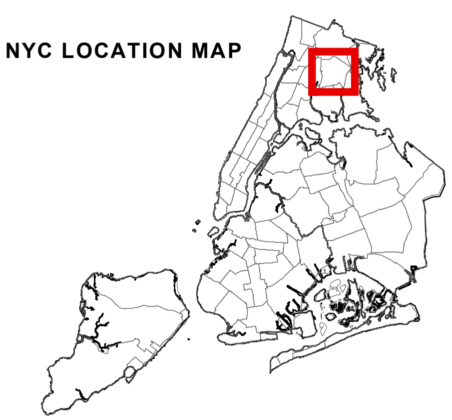
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

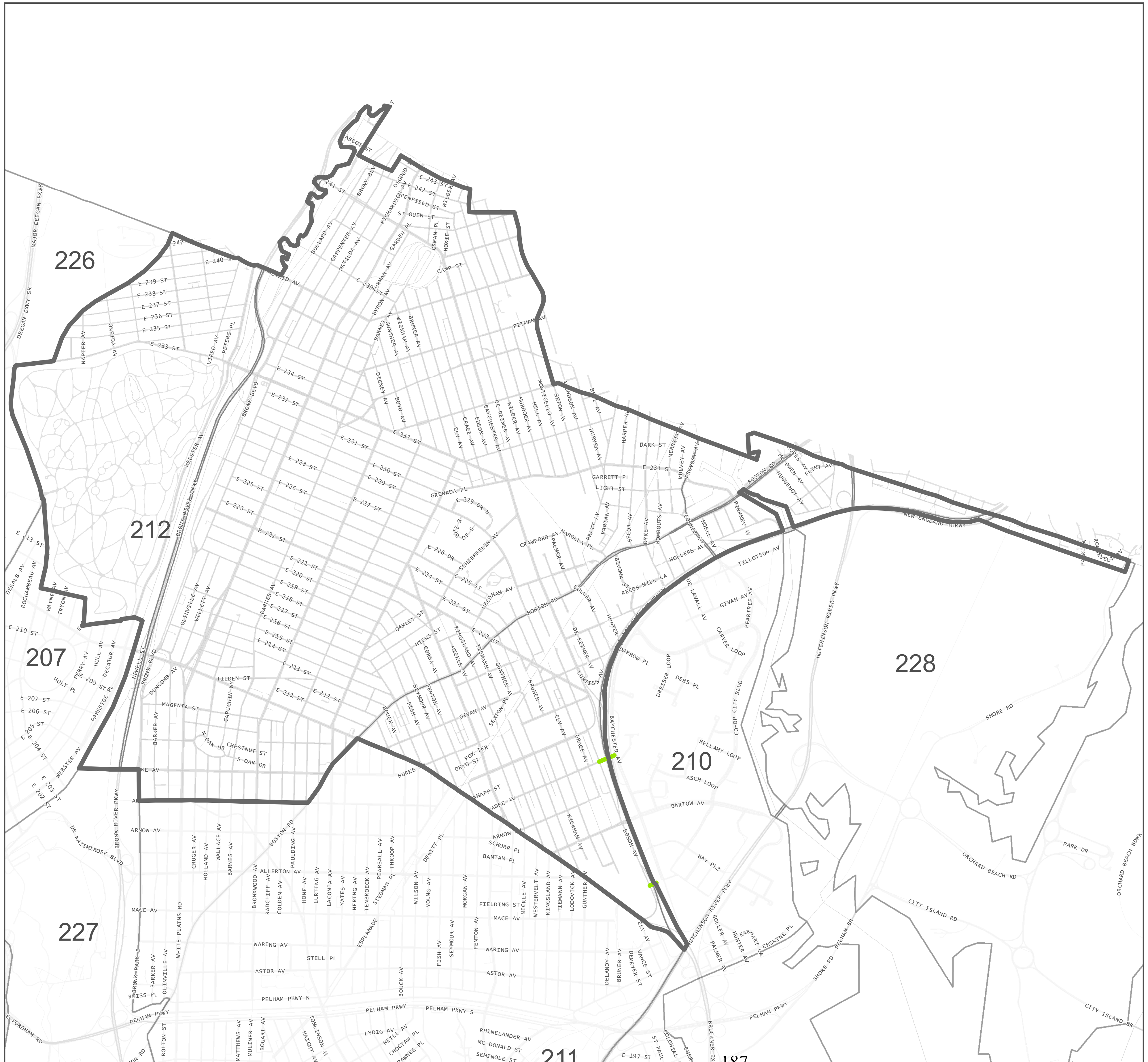
Community Board 211

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Bronx

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

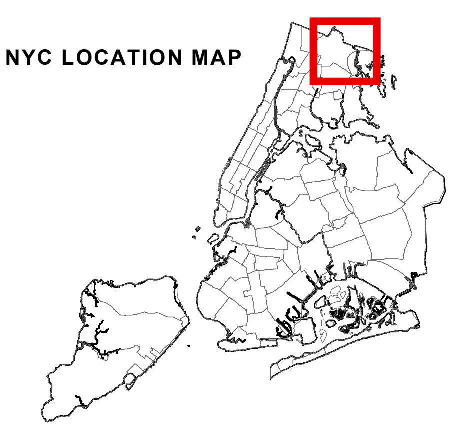


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



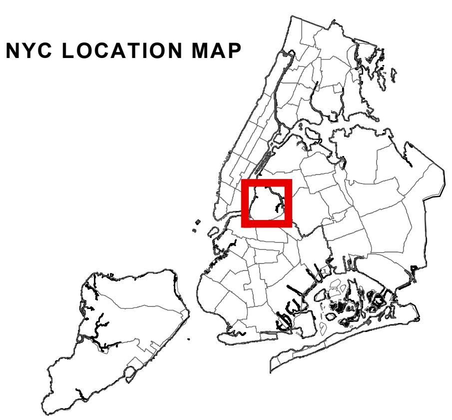
NYC Department of Environmental Protection Bureau of Water and Sewer Operations Sewer Analysis	
Community Board 212	
Datum and Projection: NAD, 1983 StatePlane NY Long Island	Bronx
0 0.04 0.08 0.16 0.24 Miles	1 inch equals 1,145 feet
Prepared By the Sewer Mapping Unit on 2/24/2011	

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 301

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Brooklyn

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

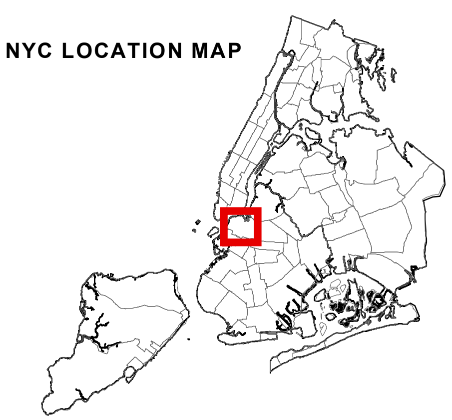
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 302

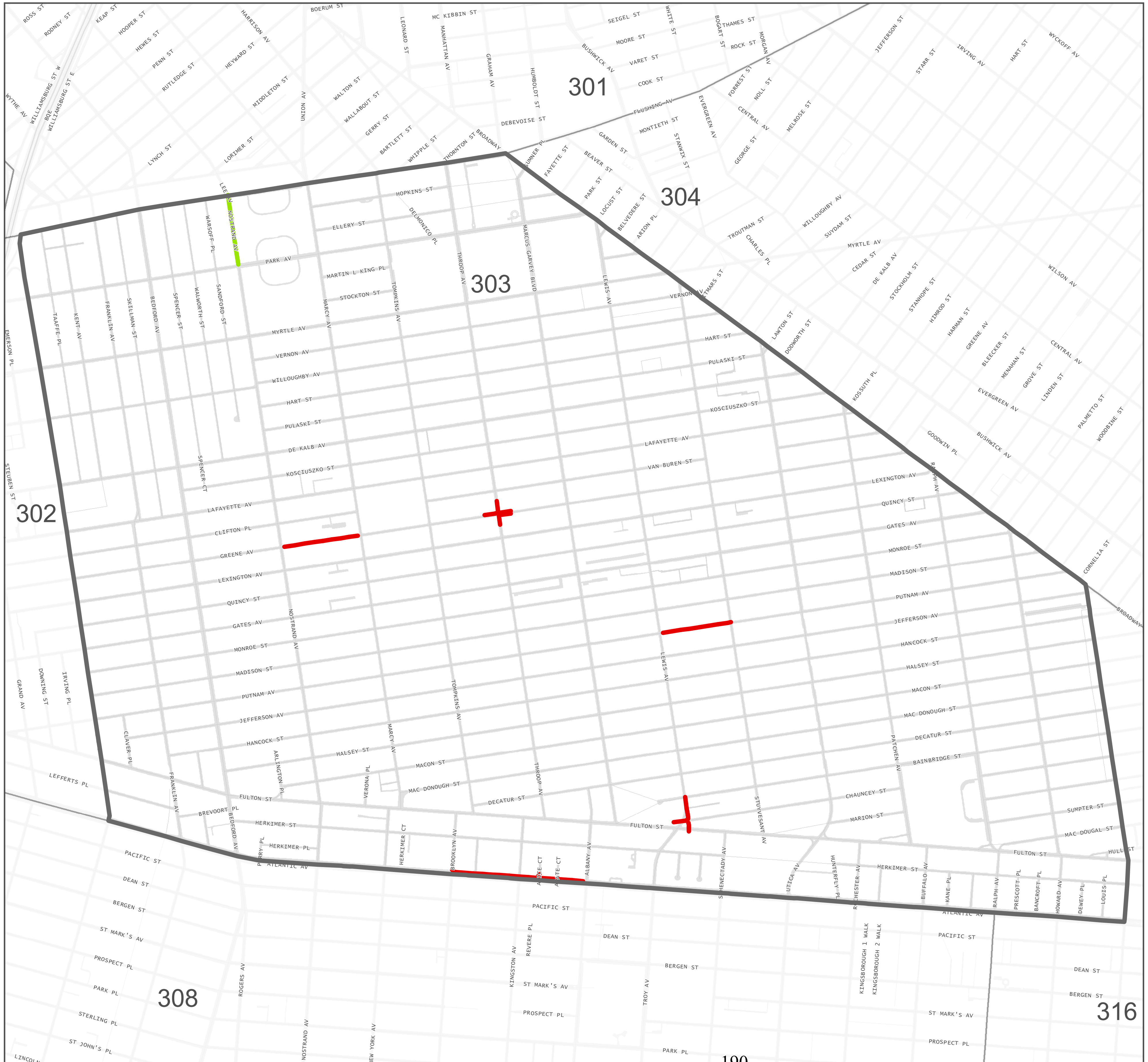
Datum and Projection:
NAD, 1983 StatePlane NY Long Island

Brooklyn

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

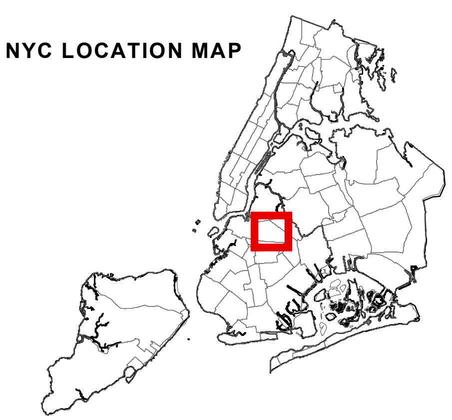


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 303

Datum and Projection: NAD, 1983 StatePlane NY Long Island

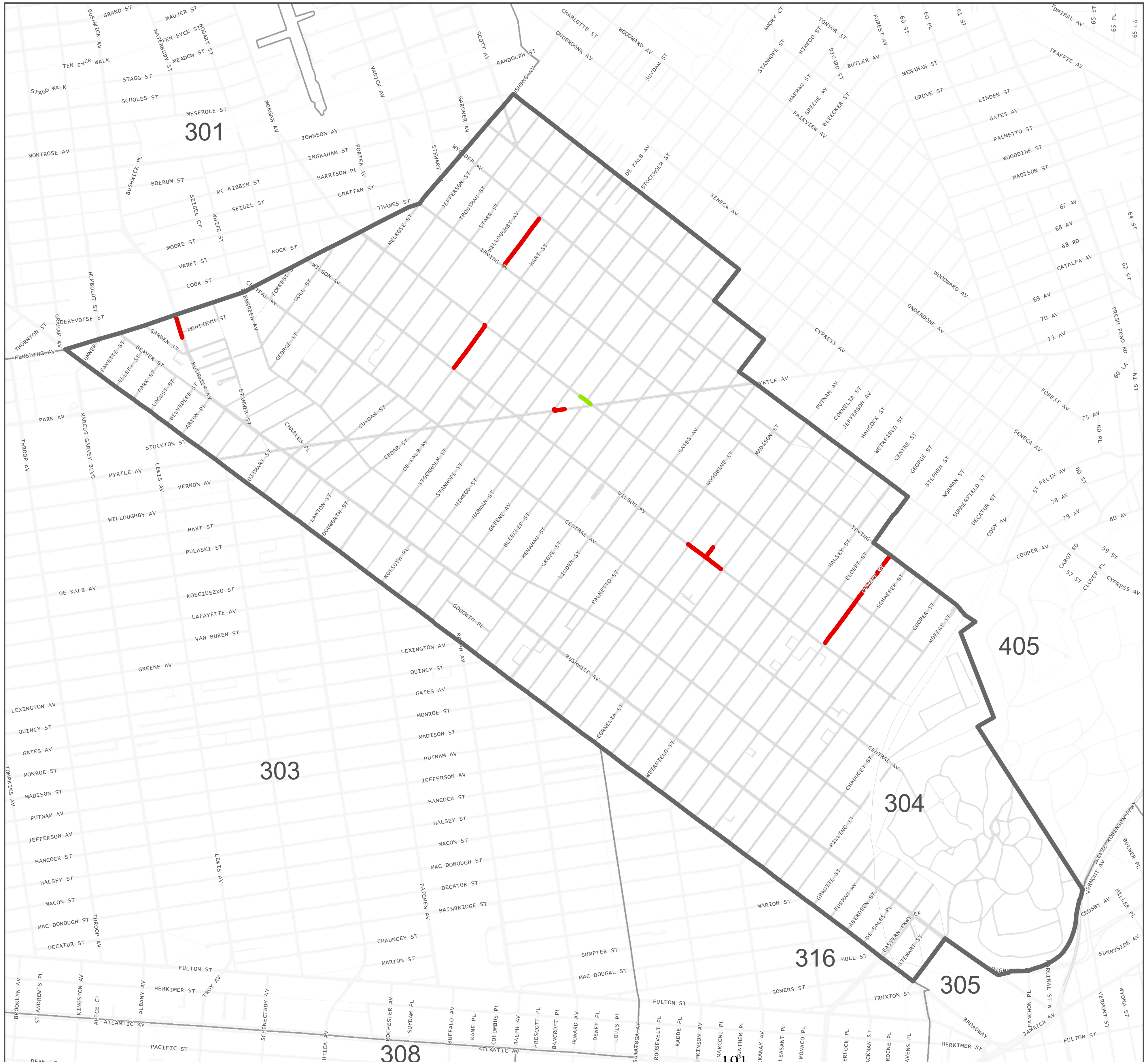
Brooklyn

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

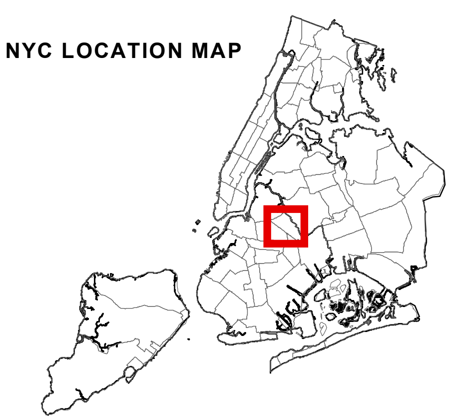
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 304

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Brooklyn

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

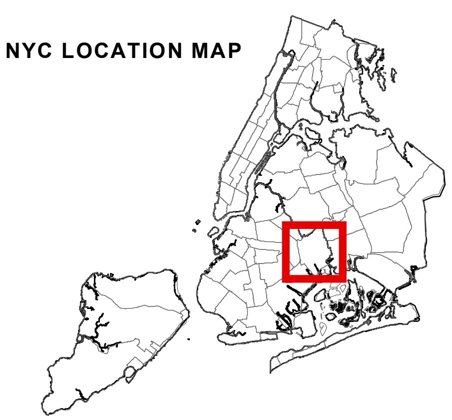
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

NYC Environmental Protection

Community Board 305

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Brooklyn

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

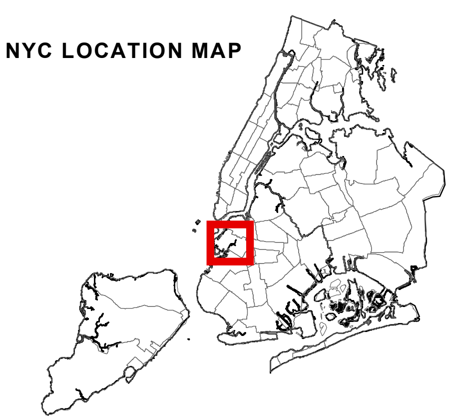
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 306

Datum and Projection: NAD, 1983 StatePlane NY Long Island

Brooklyn

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

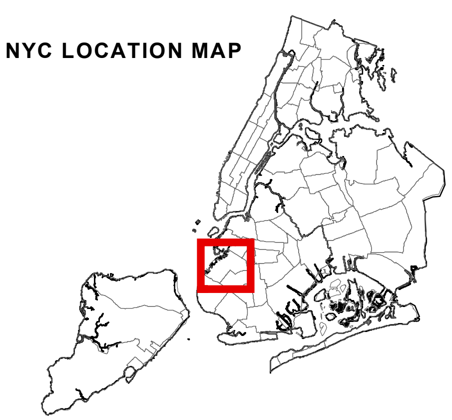
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 307

Datum and Projection: NAD, 1983 StatePlane NY Long Island

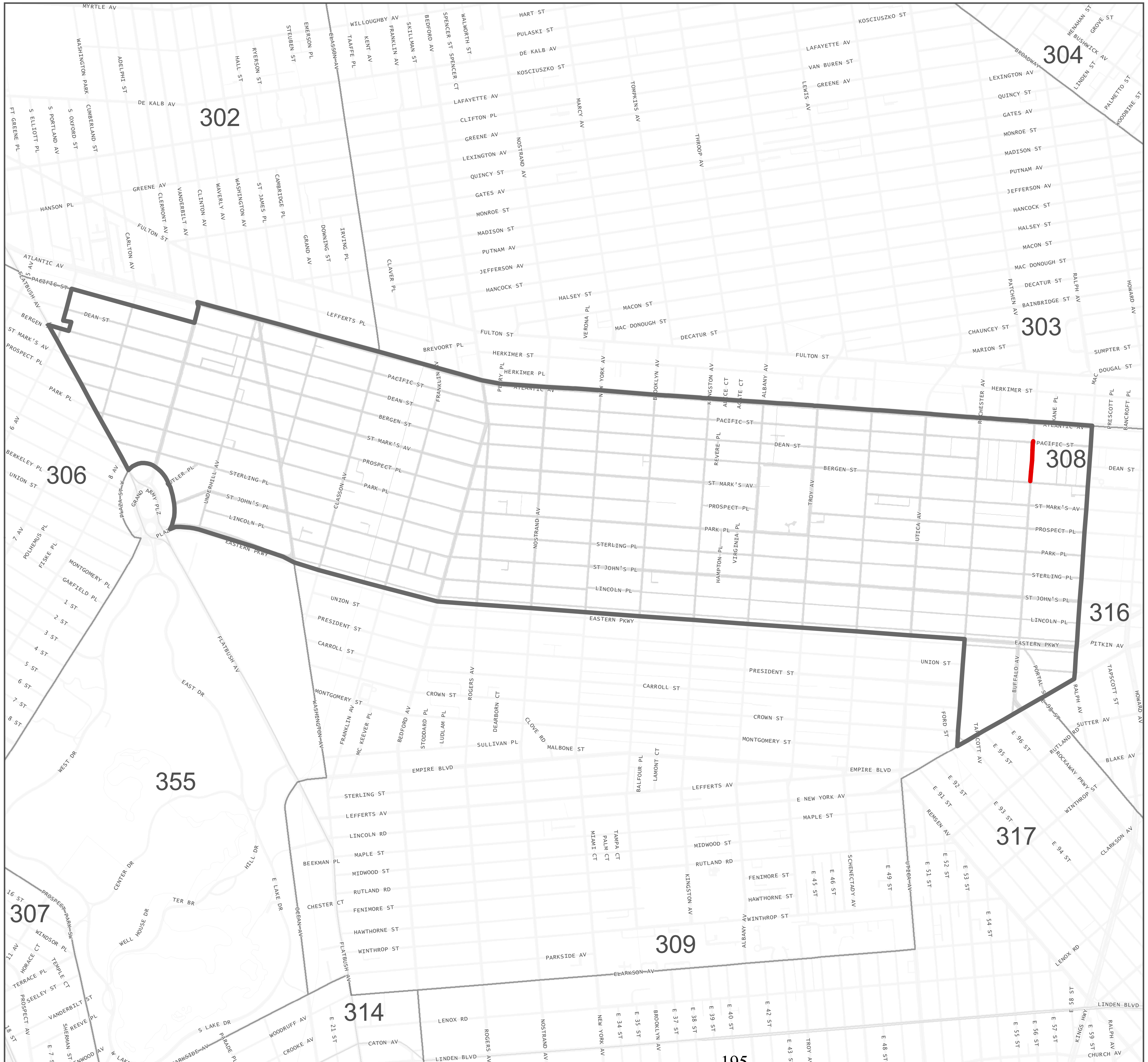
Brooklyn

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

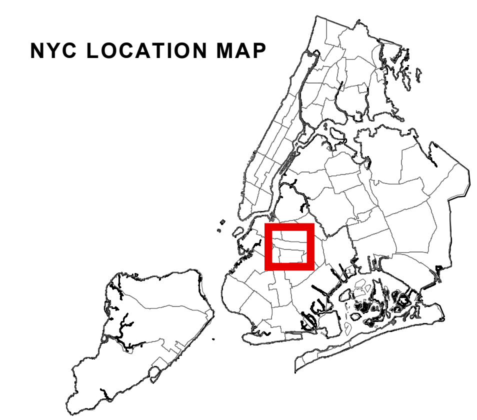
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 308

Datum and Projection:
NAD, 1983 StatePlane NY Long Island

Brooklyn

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

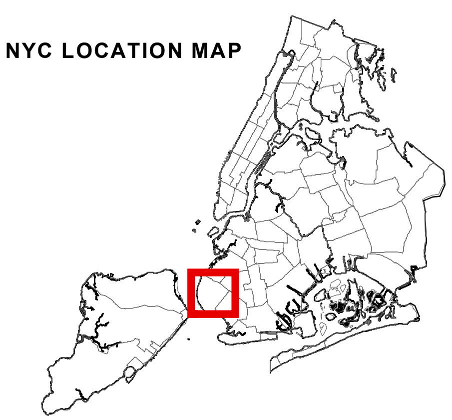
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 310

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Brooklyn
0 0.04 0.08 0.16 0.24 Miles	1 inch equals 1,145 feet

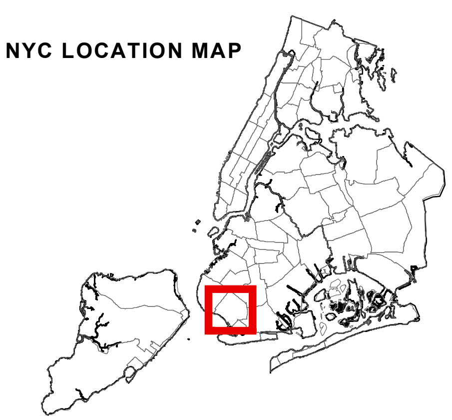
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 311

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Brooklyn

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

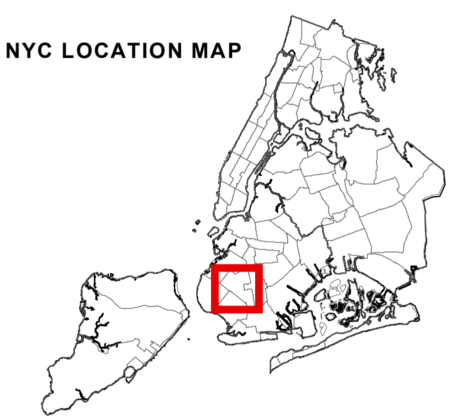
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 312

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Brooklyn

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

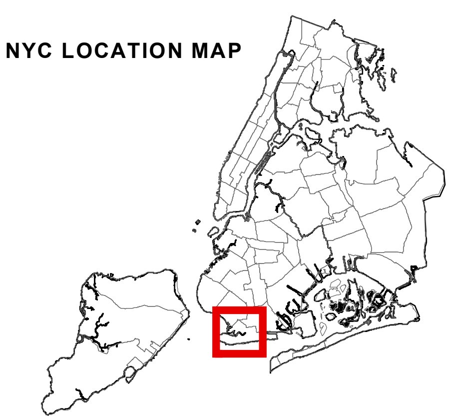
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 313

Datum and Projection: NAD, 1983 StatePlane NY Long Island

Brooklyn

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

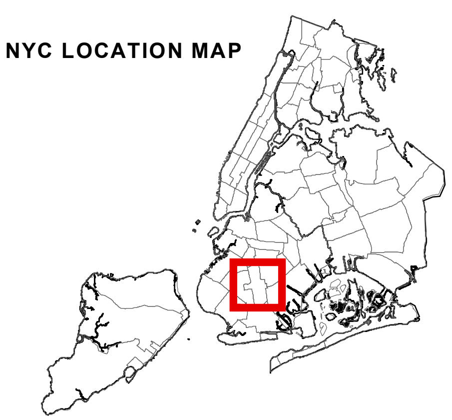
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 314

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Brooklyn

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

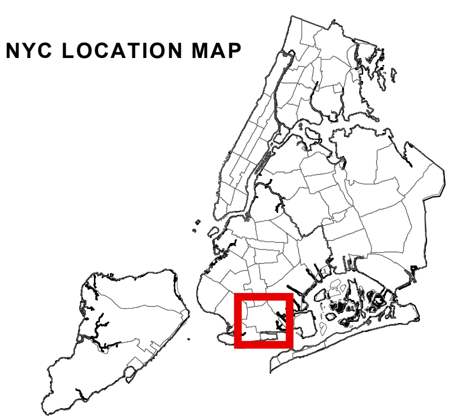
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

NYC Environmental Protection

Community Board 315

Datum and Projection:
NAD, 1983 StatePlane NY Long Island

Brooklyn

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

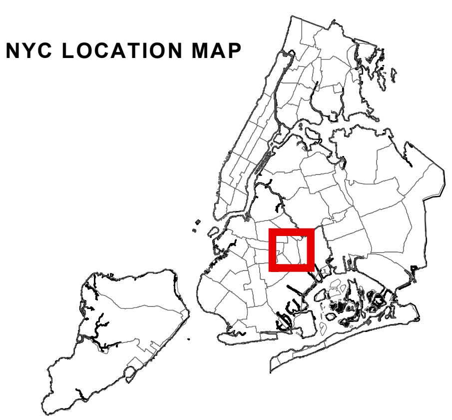
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



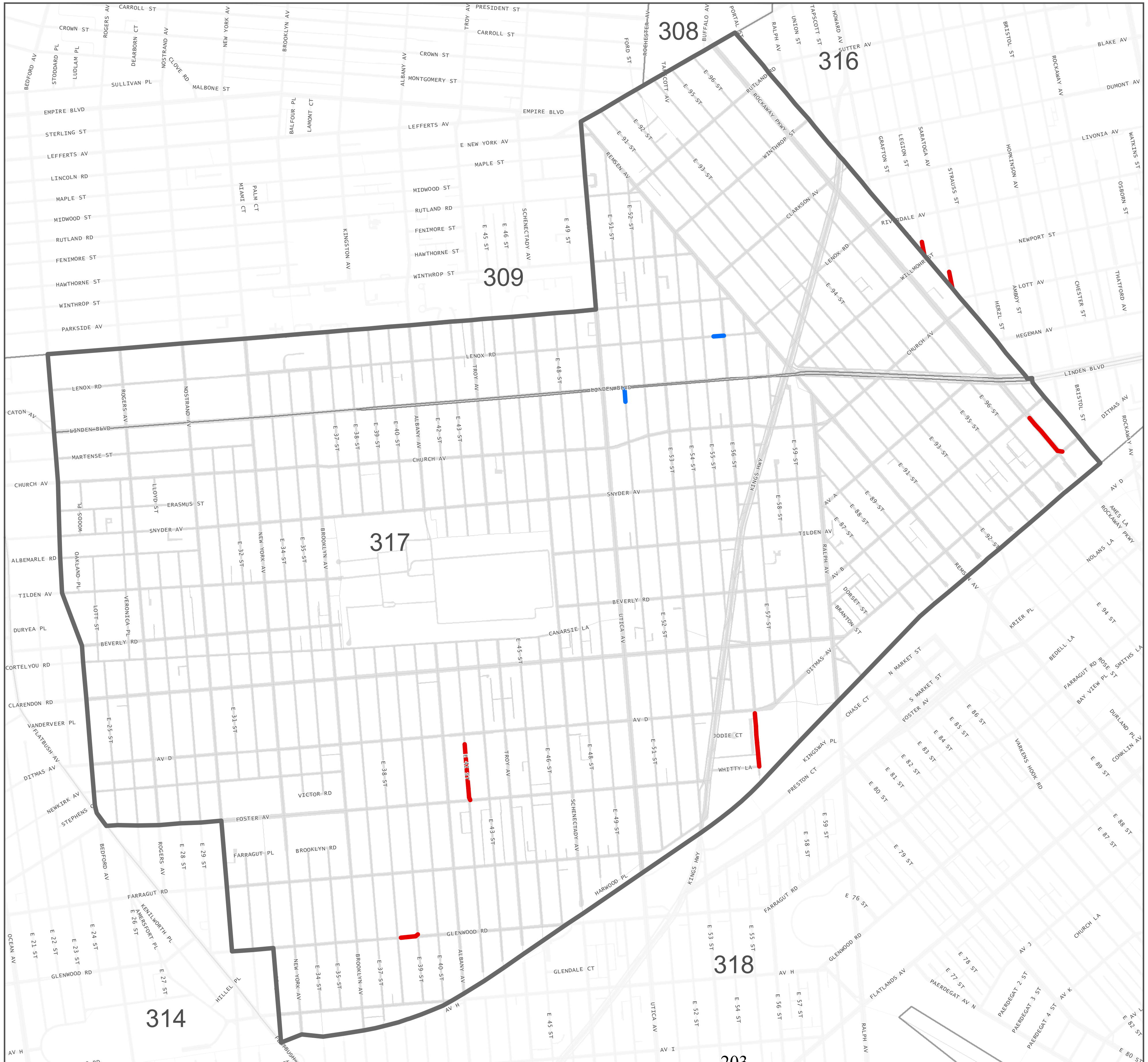
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 316

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Brooklyn
0 0.04 0.08 0.16 0.24 Miles	1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

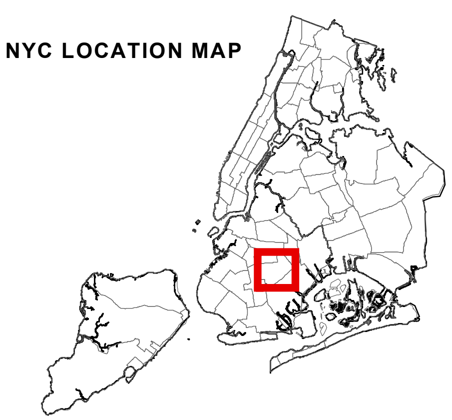
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 317

Datum and Projection: NAD, 1983 StatePlane NY Long Island

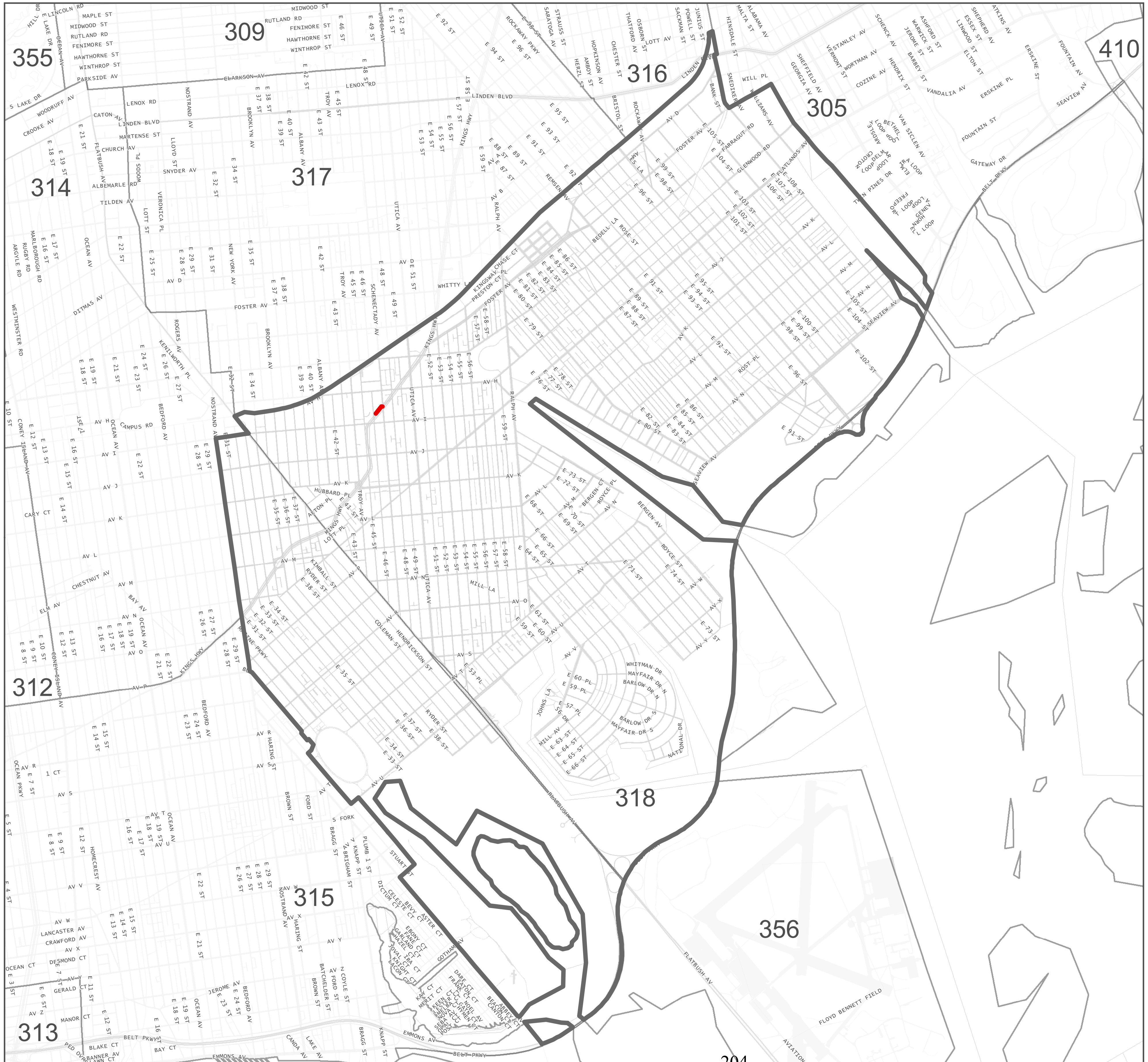
Brooklyn

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

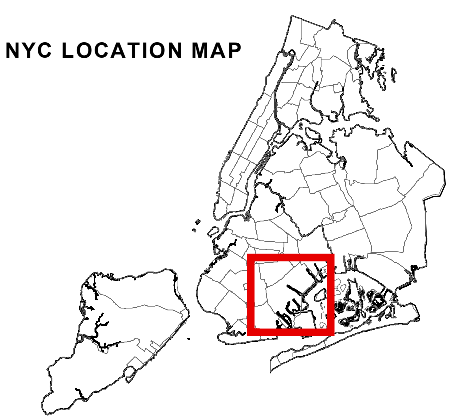
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



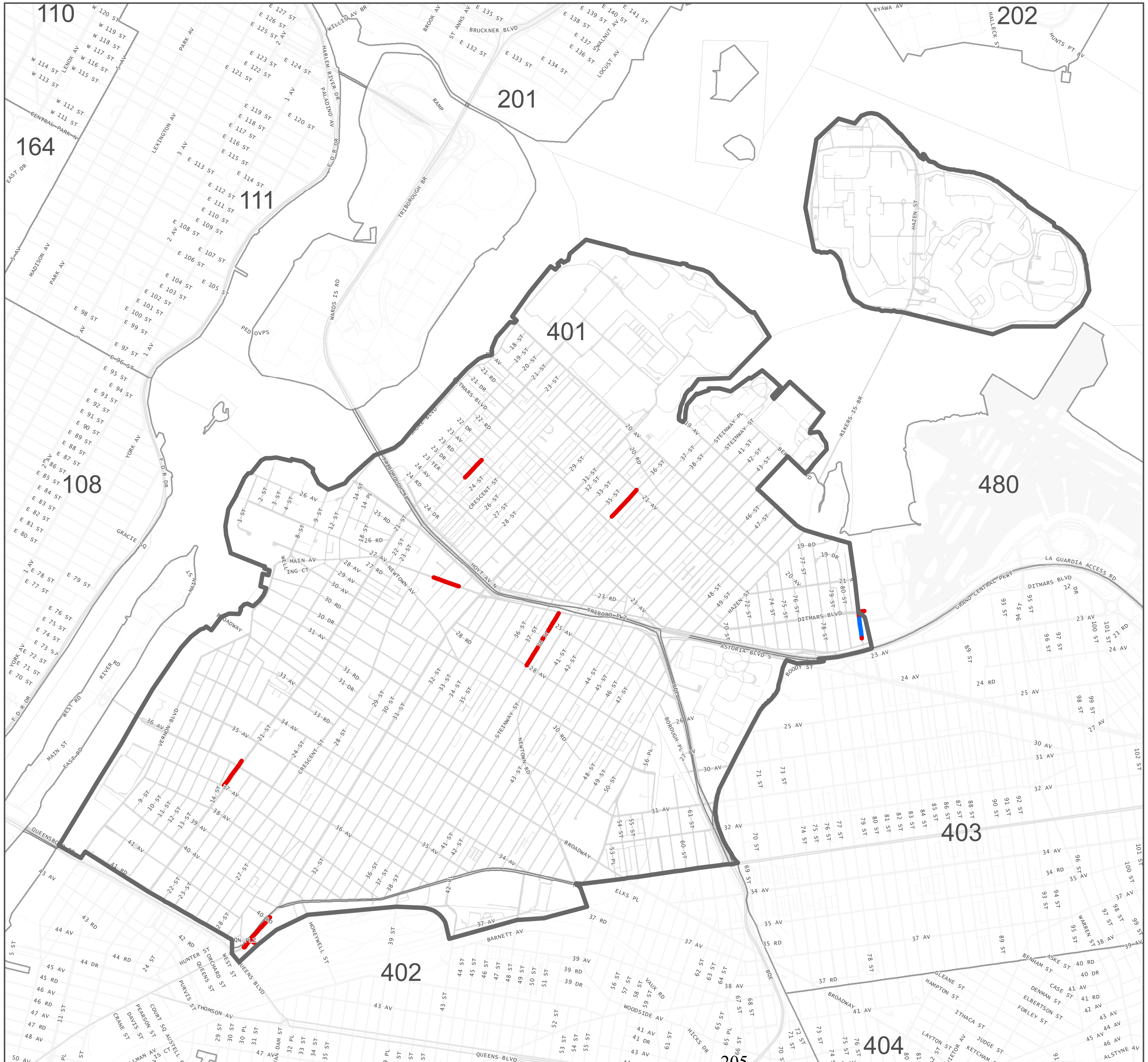
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 318

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Brooklyn

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

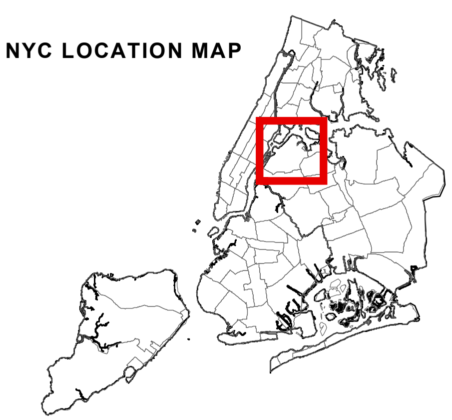


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 401

Datum and Projection:
NAD, 1983 StatePlane NY Long Island

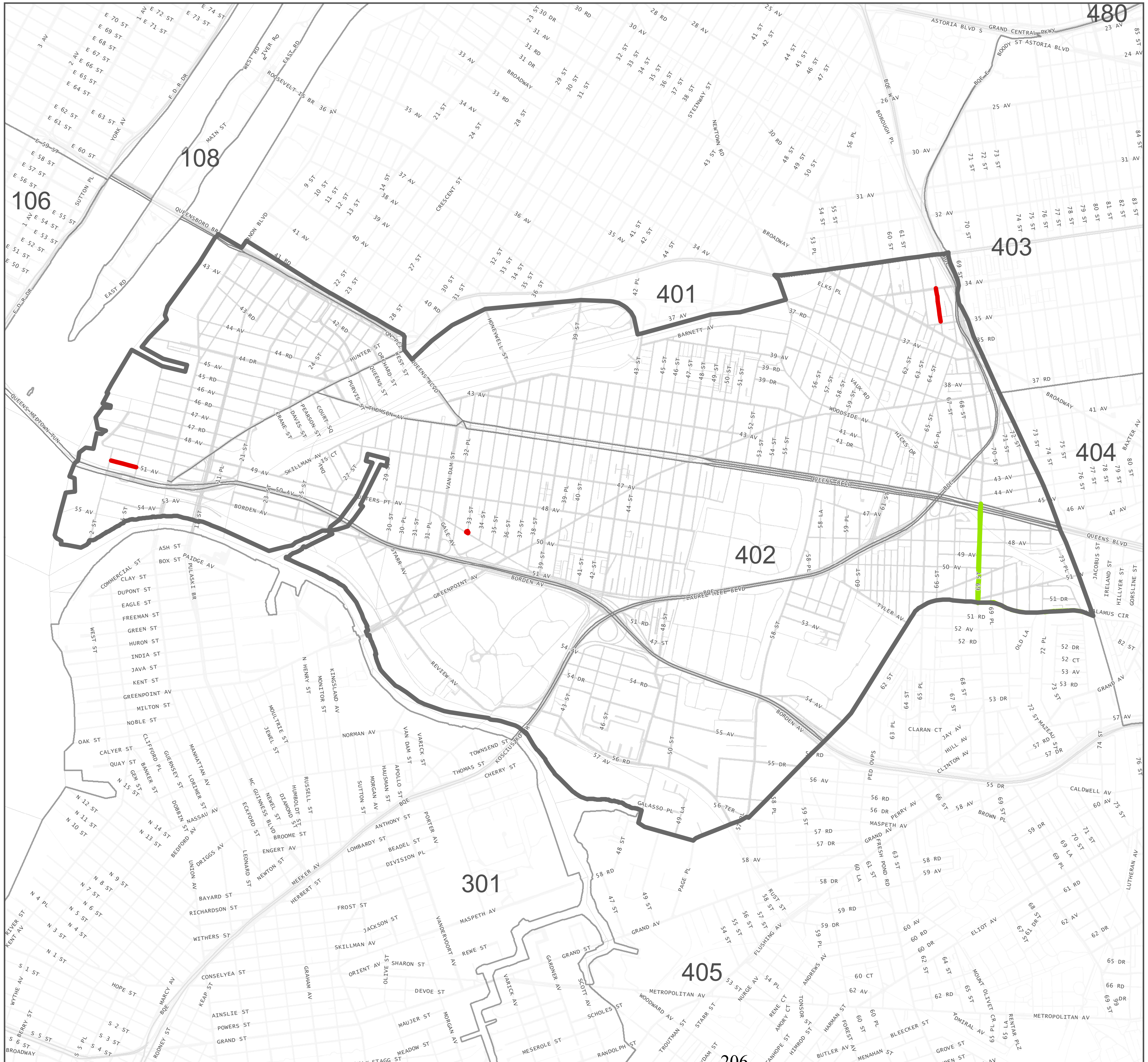
Queens

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

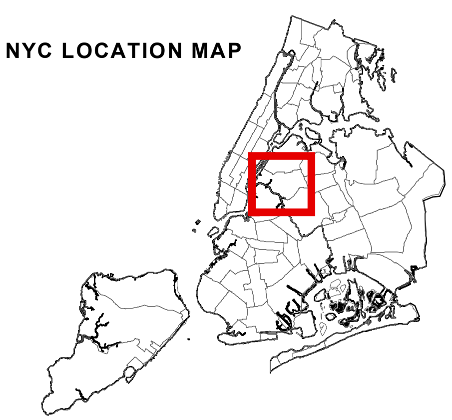
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

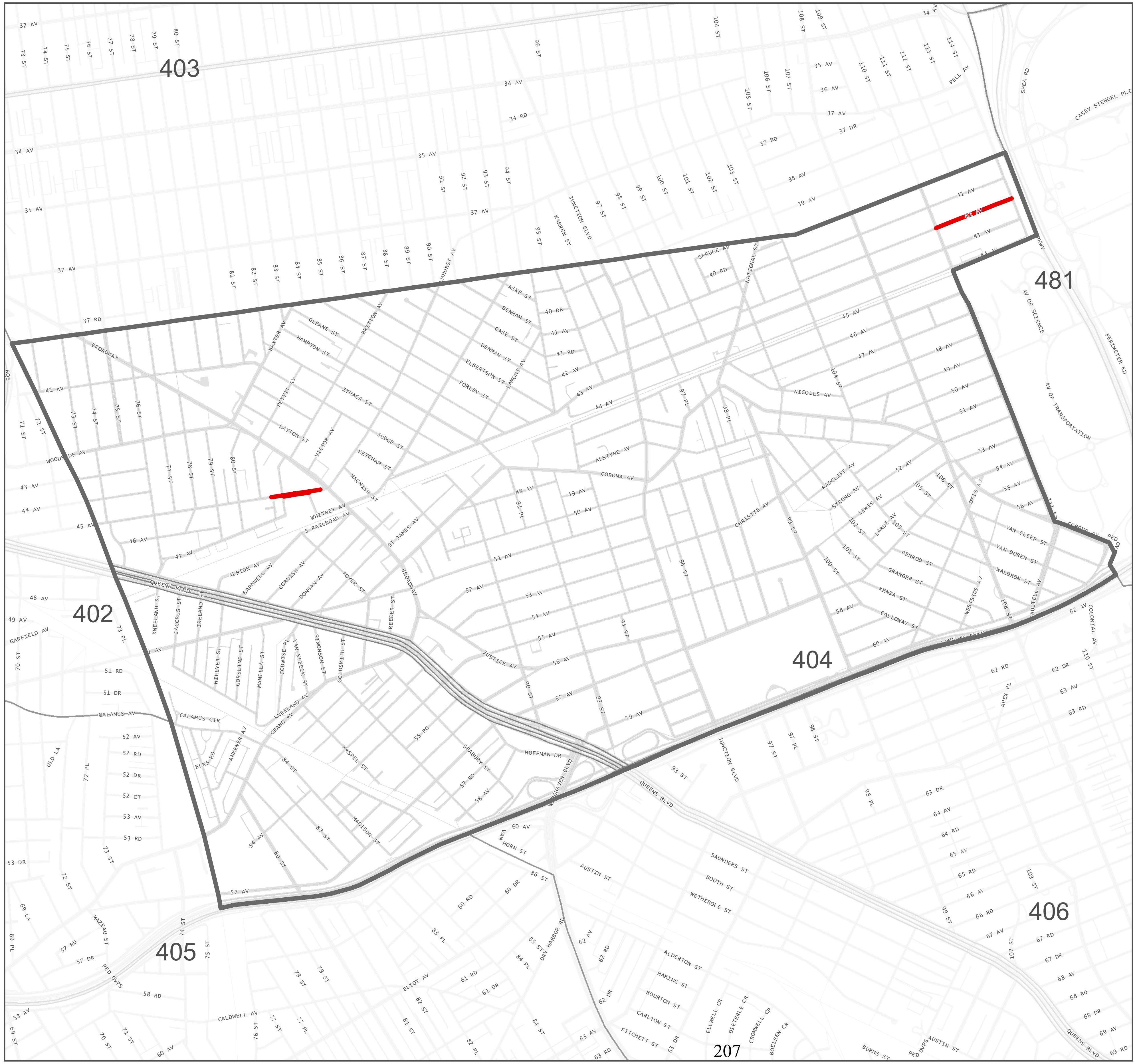
Community Board 402

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Queens

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

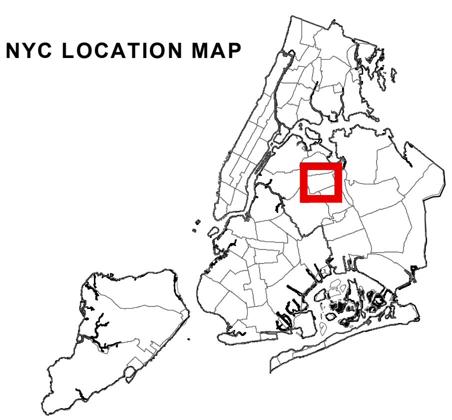
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



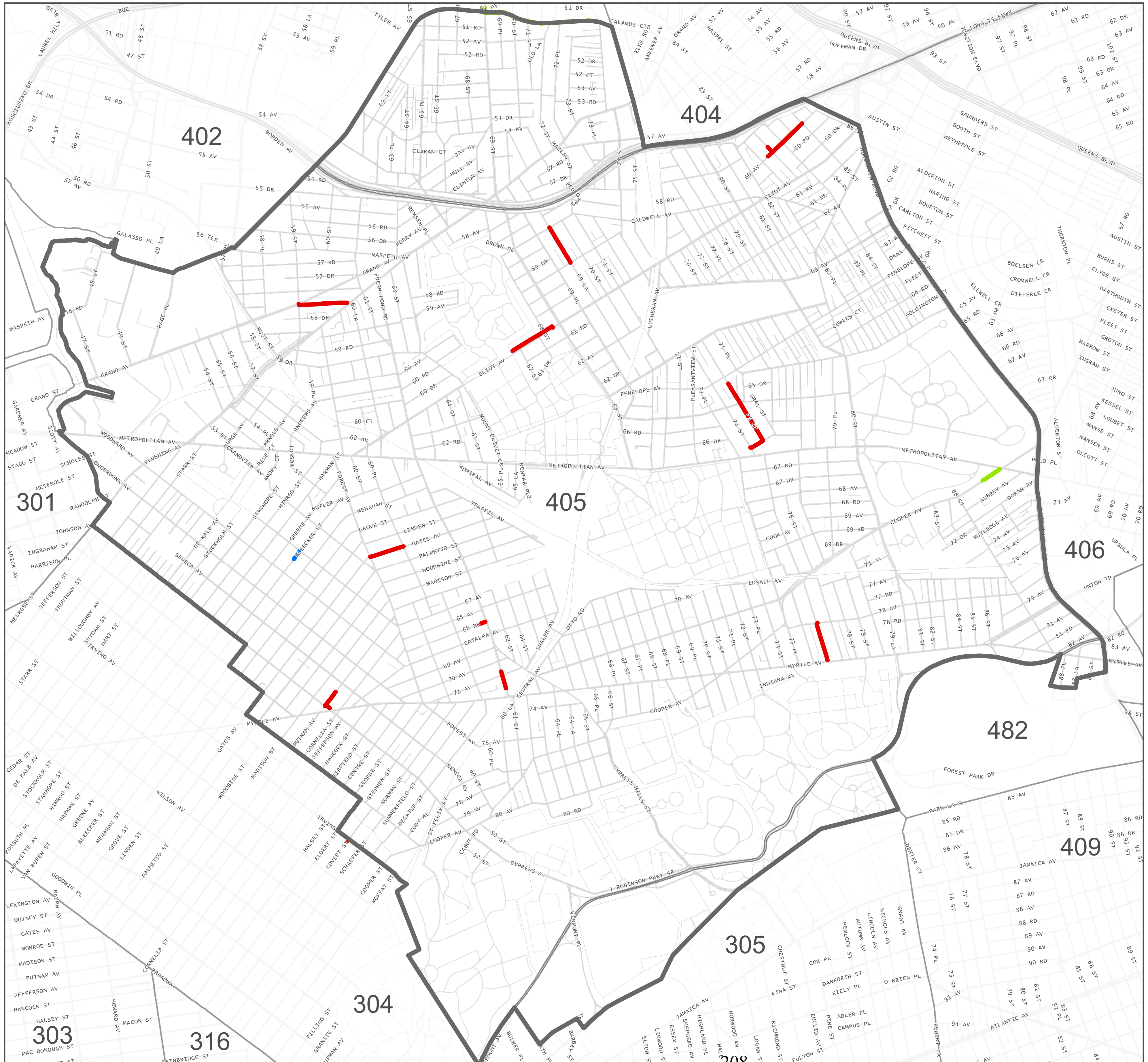
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 404

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Queens

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

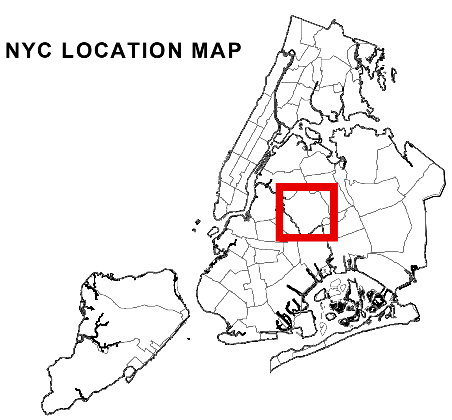


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 405

Datum and Projection:
NAD, 1983 StatePlane NY Long Island

Queens

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

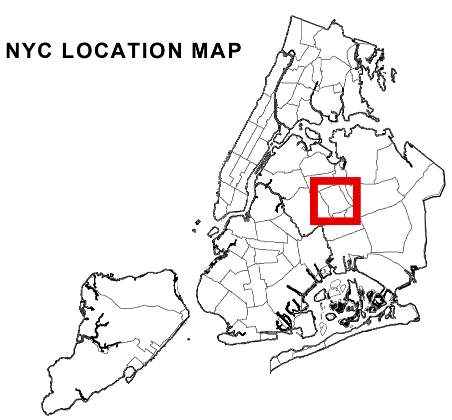
Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



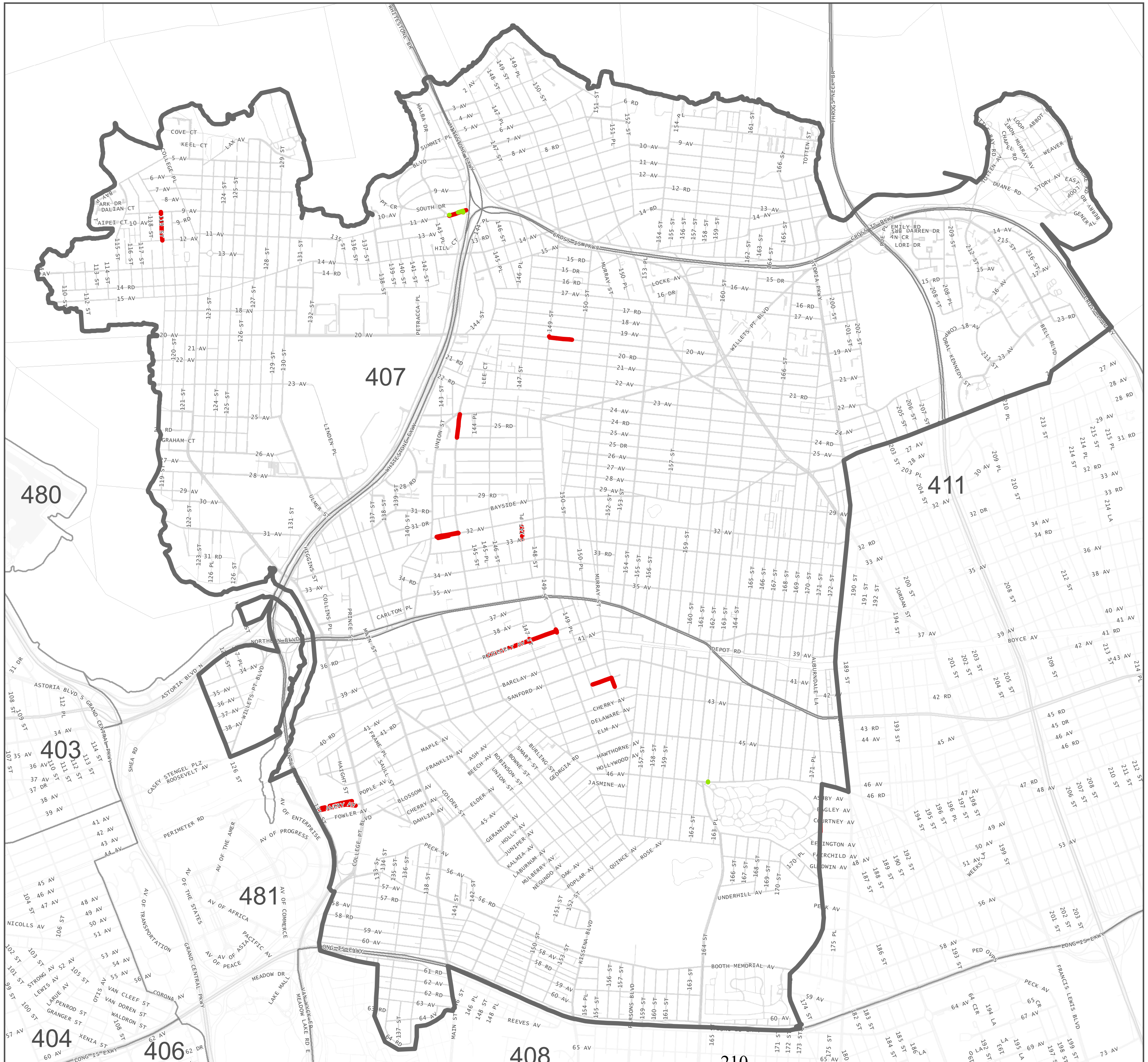
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 406

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Queens

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011



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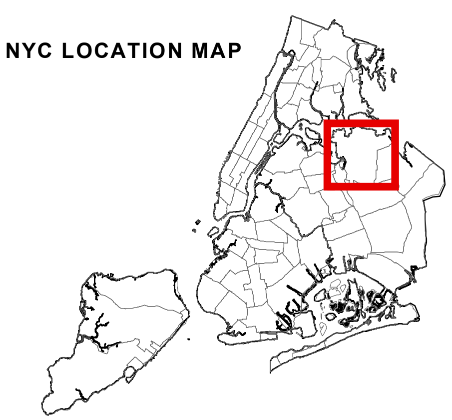
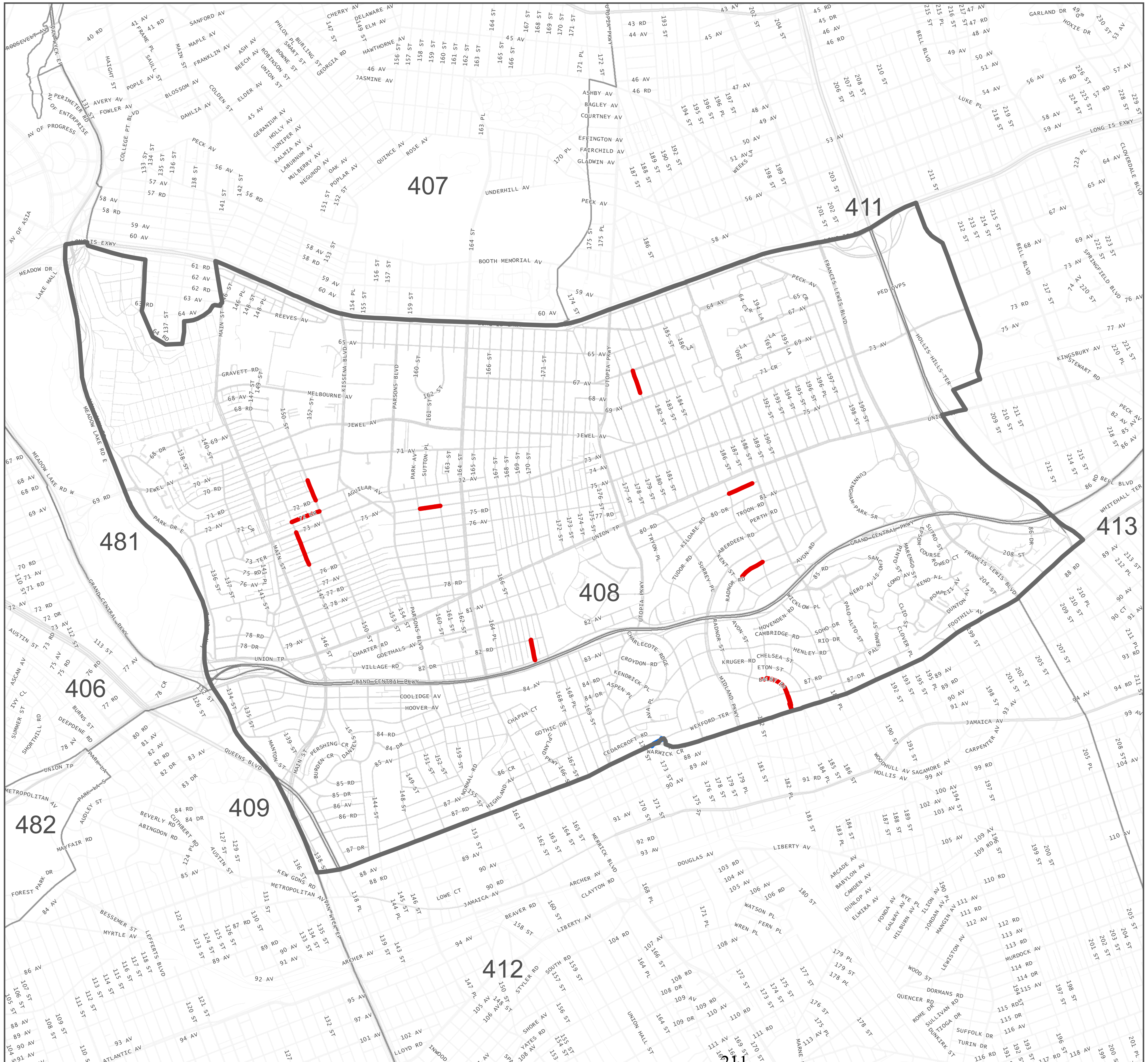
NYC LOCATION MAP



NYC Department of Environmental Protection Bureau of Water and Sewer Operations Sewer Analysis	
Community Board 407	
Datum and Projection: NAD, 1983 StatePlane NY Long Island	Queens
0 0.04 0.08 0.16 0.24 Miles	1 inch equals 1,145 feet
Prepared By the Sewer Mapping Unit on 2/24/2011	



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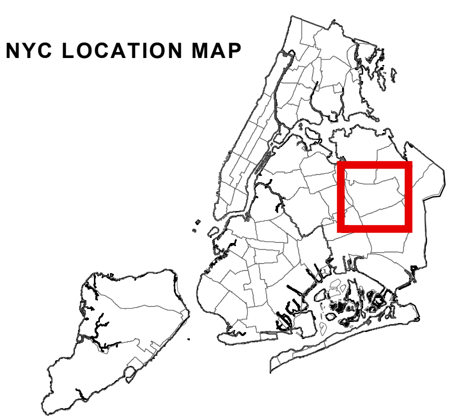
NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

NYC Environmental Protection

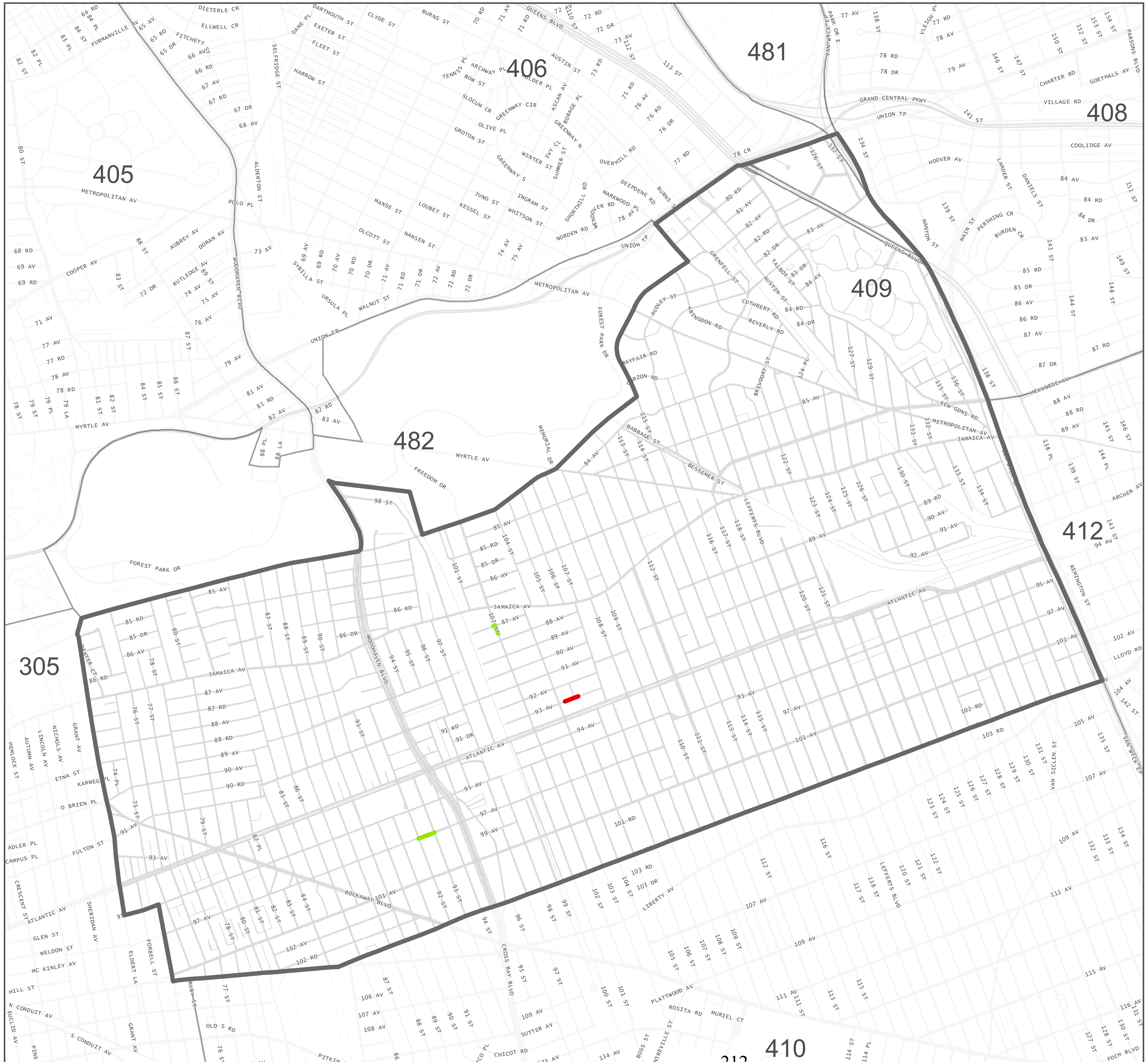
Community Board 408

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Queens

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011



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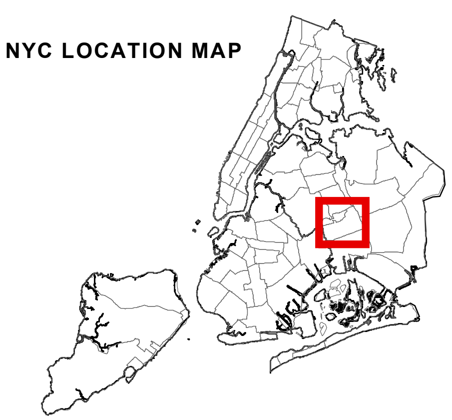


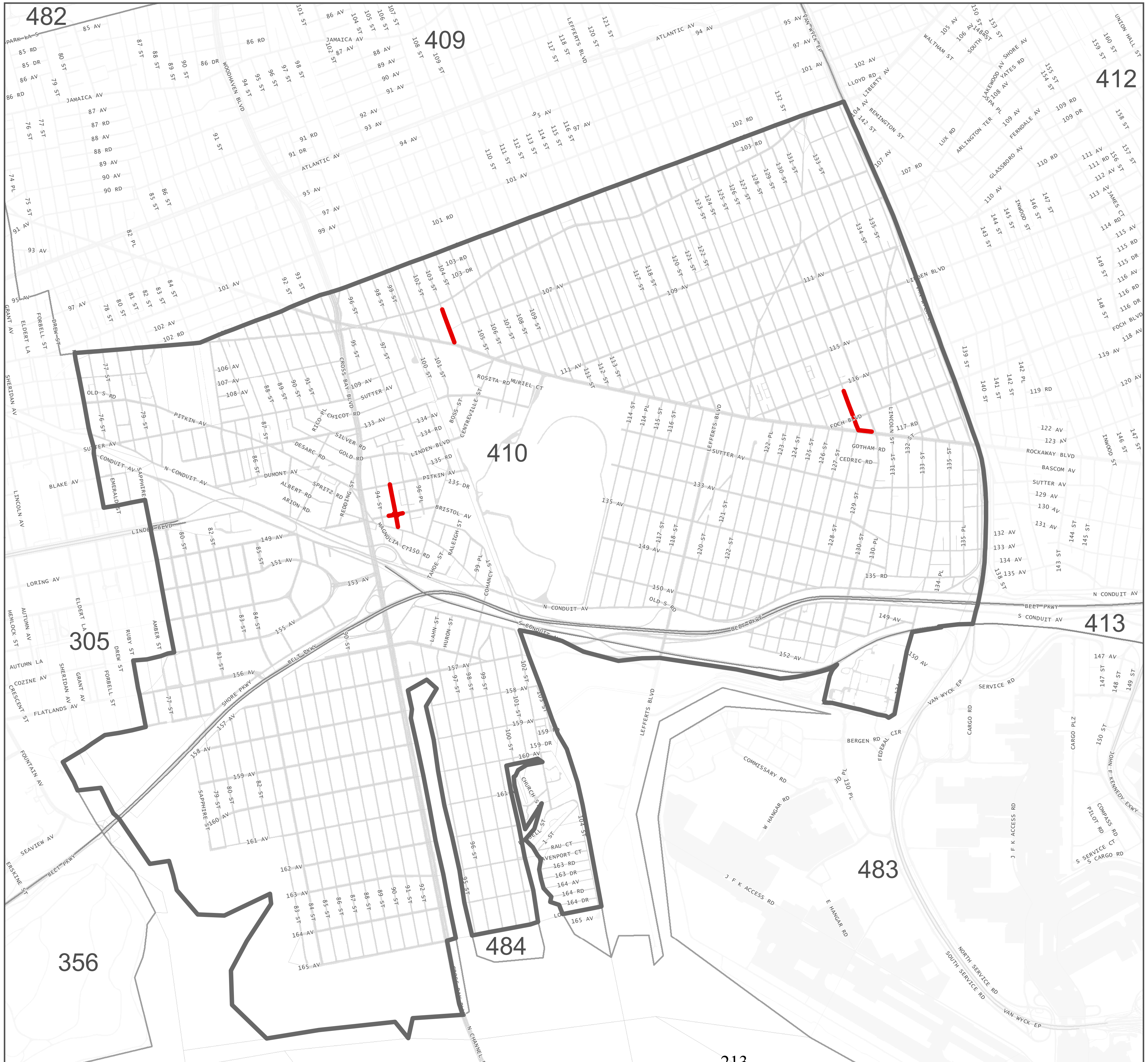
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 409

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Queens

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011



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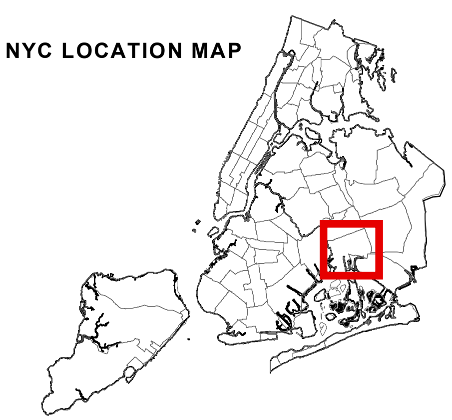
NYC LOCATION MAP

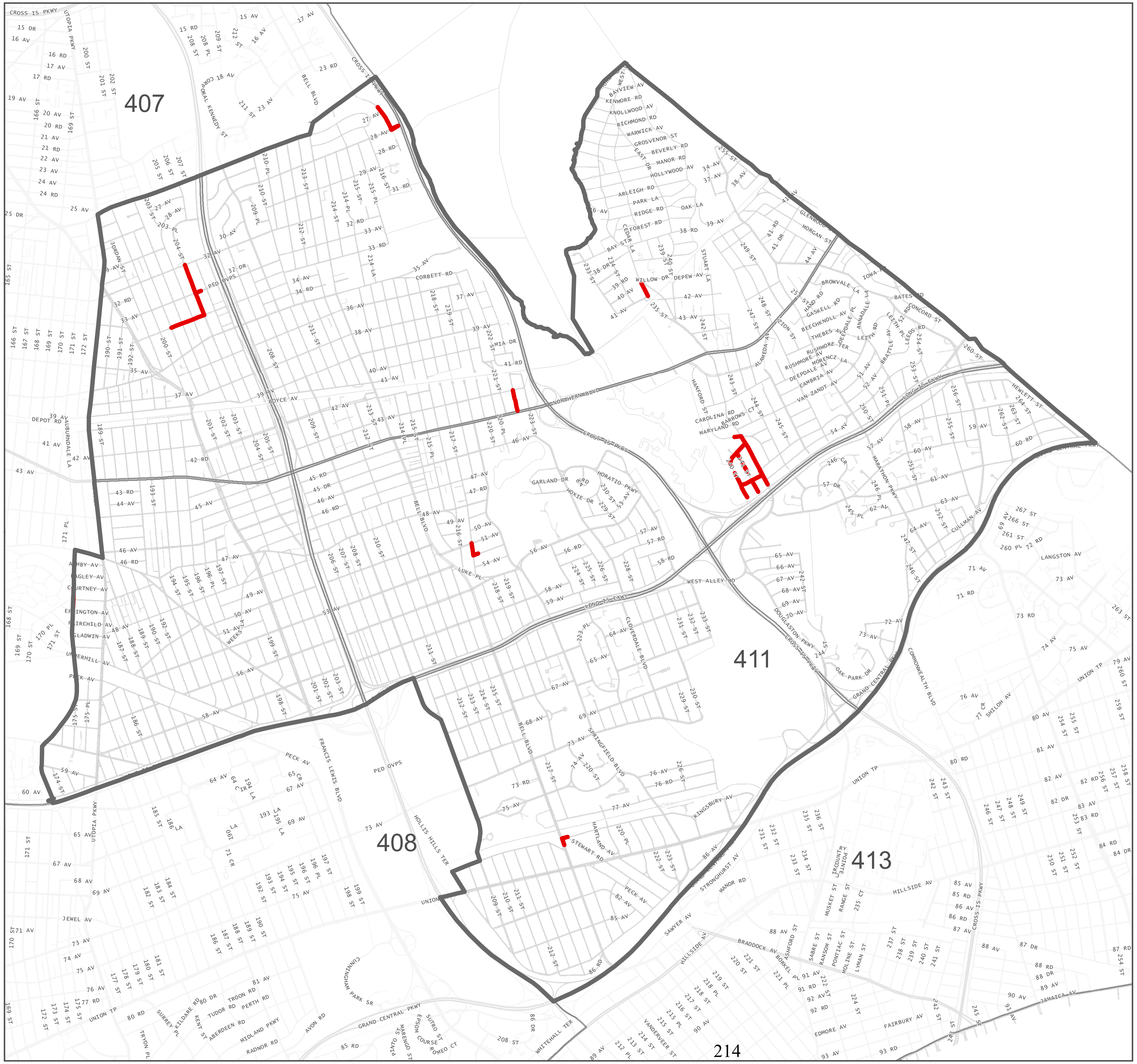


NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 410

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Queens
0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet	

Prepared By the Sewer Mapping Unit on 2/24/2011



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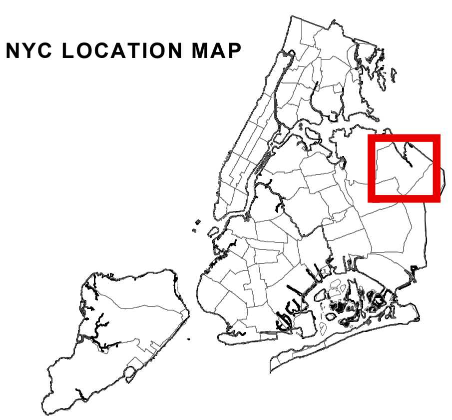

NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 411

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Queens

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Prepared By the Sewer Mapping Unit on 2/24/2011

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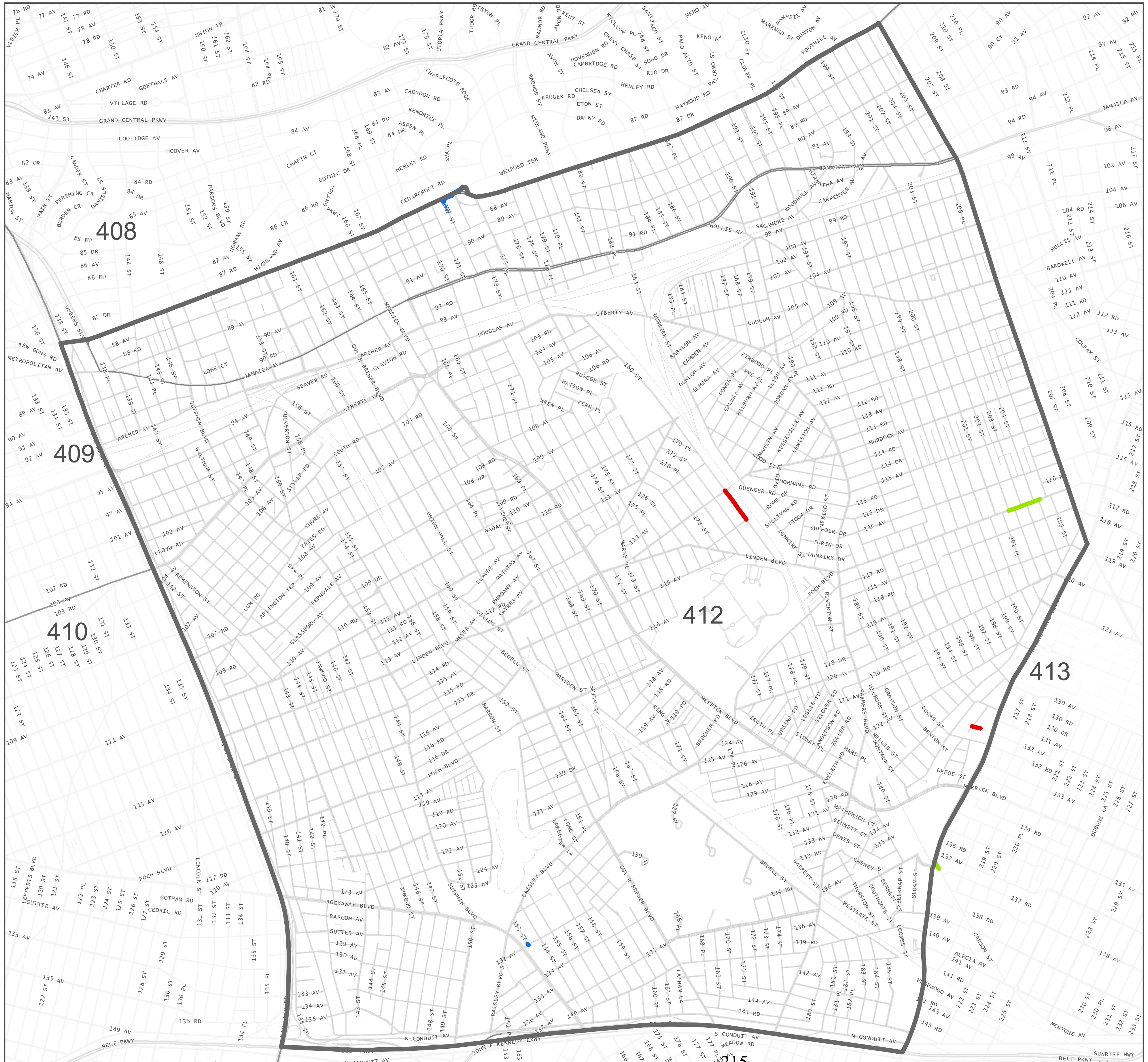

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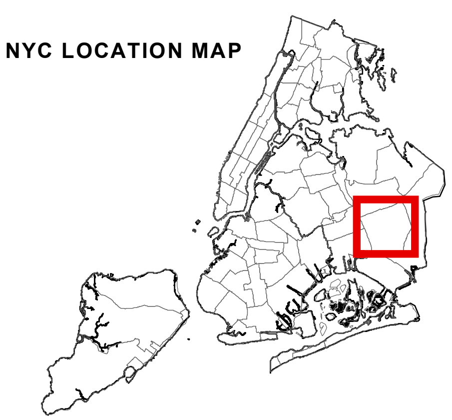


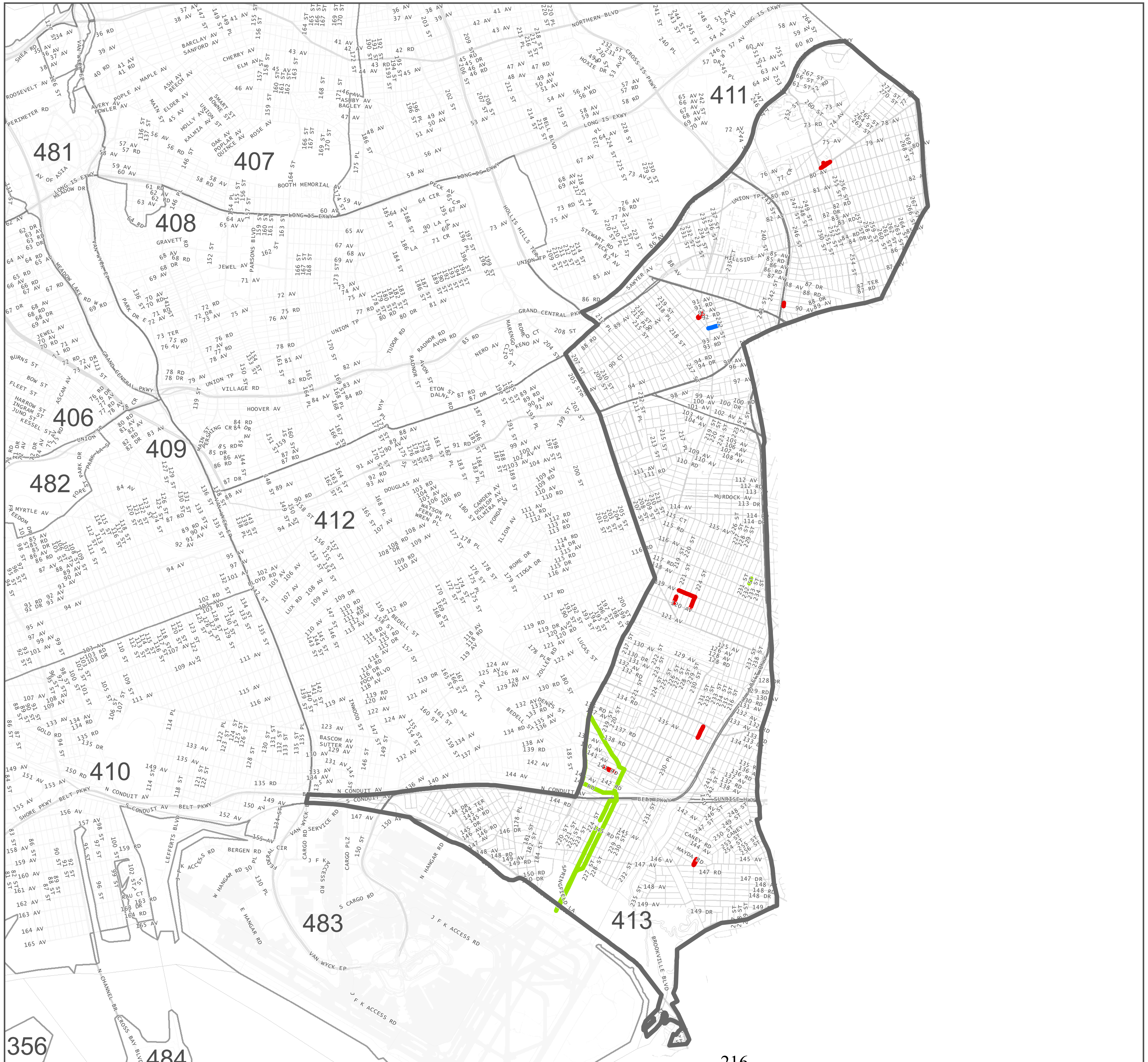
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 412

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Queens

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011



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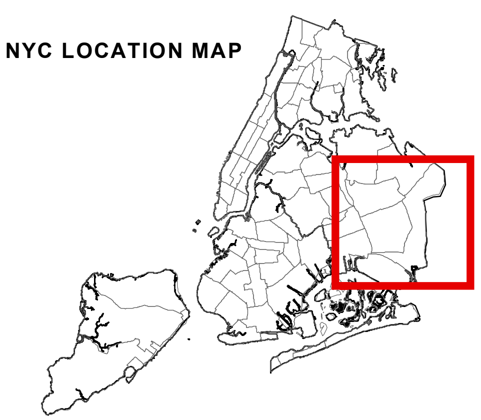

NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 413

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Queens

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

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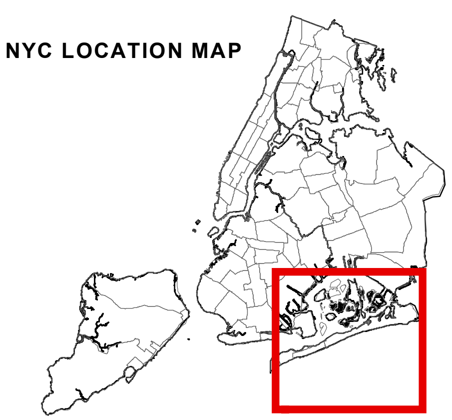

NYC LOCATION MAP

NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 414

Datum and Projection:
NAD, 1983 StatePlane NY Long Island

Queens

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

Legend

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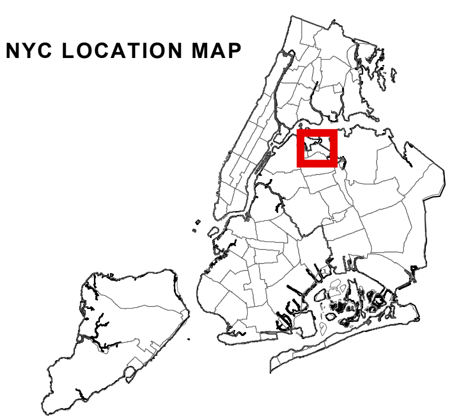
NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

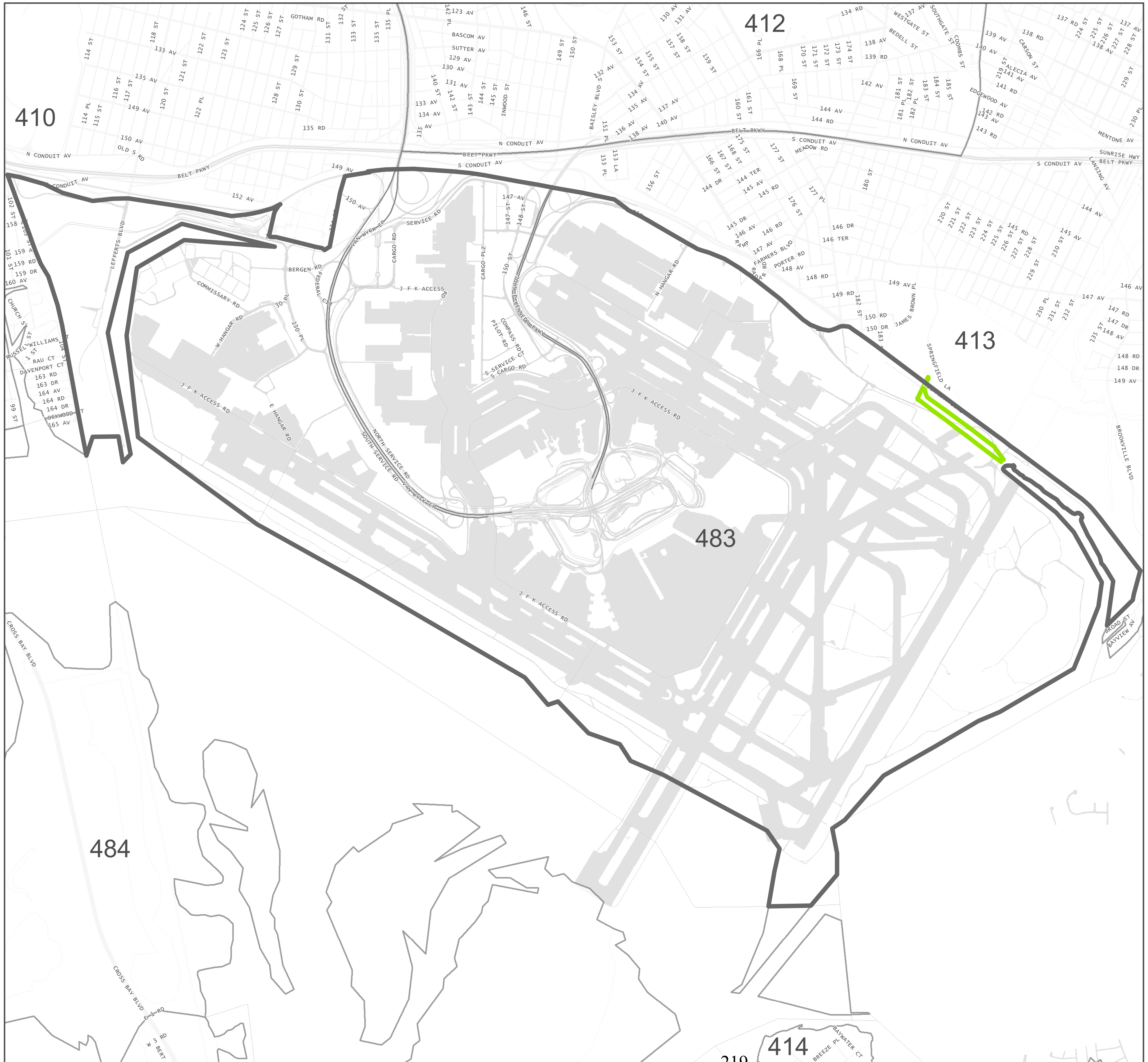
Community Board 480

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Queens

0 0.04 0.08 0.16 0.24 Miles — 1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

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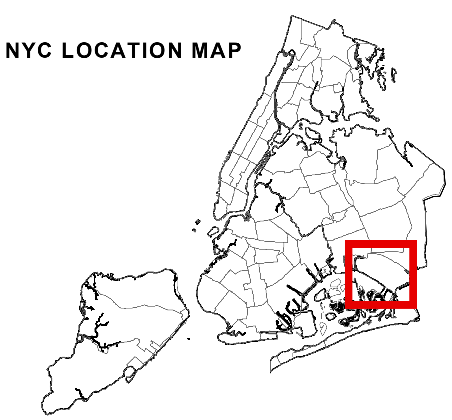
- Community Boards
- NYC Major Streets
- NYC Streets



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 483

Datum and Projection:
NAD, 1983 StatePlane NY Long Island

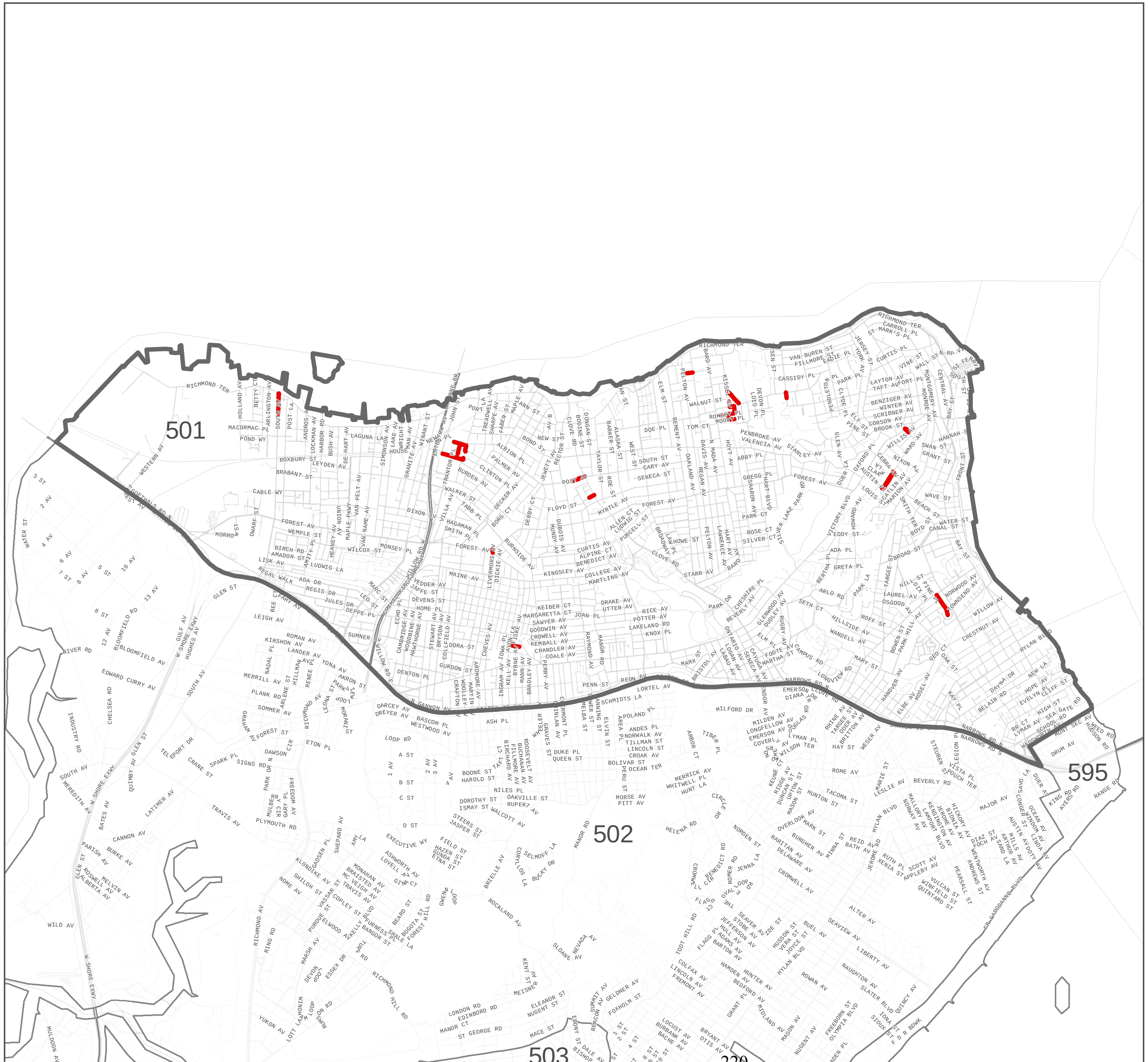
Queens

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

- Sewer cleaned and/or televised
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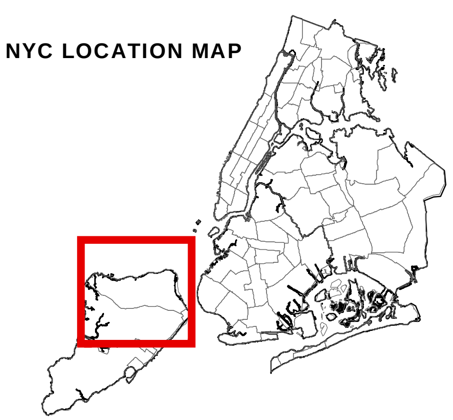
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 501

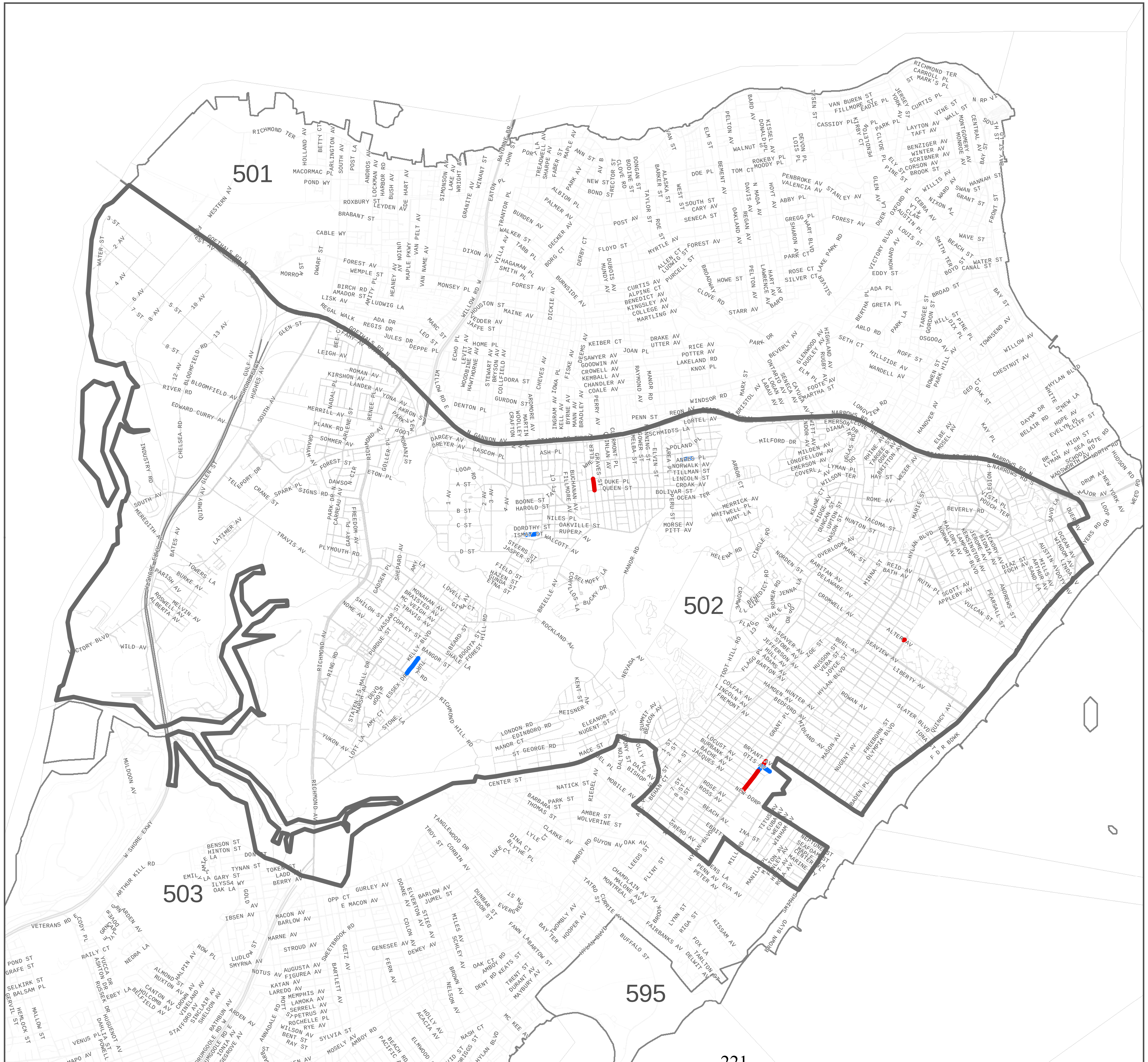
Datum and Projection: NAD, 1983 StatePlane NY Long Island	Staten Island

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010



Legend

- Sewer cleaned and/or televised
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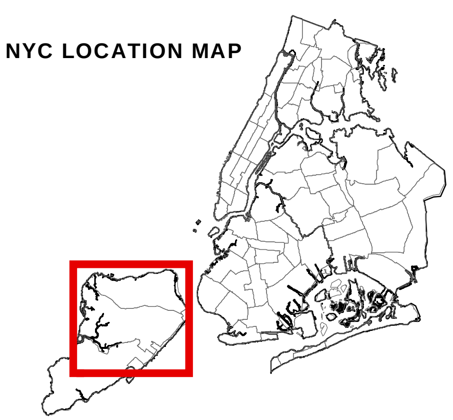
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP

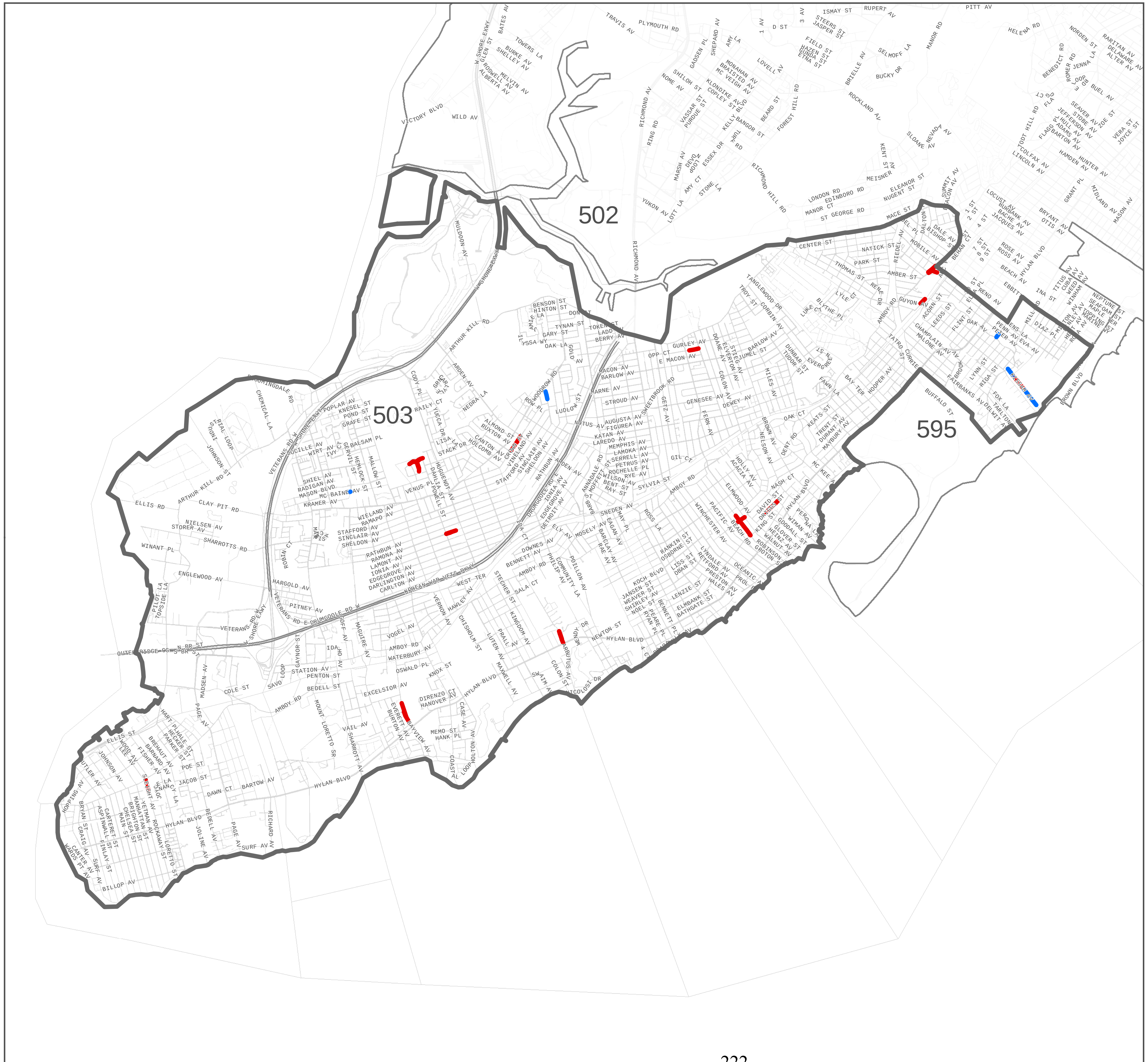


NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 502

Datum and Projection: NAD, 1983 StatePlane NY Long Island	Staten Island
0 0.04 0.08 0.16 0.24 Miles	1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2010

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- Community Boards
- NYC Major Streets
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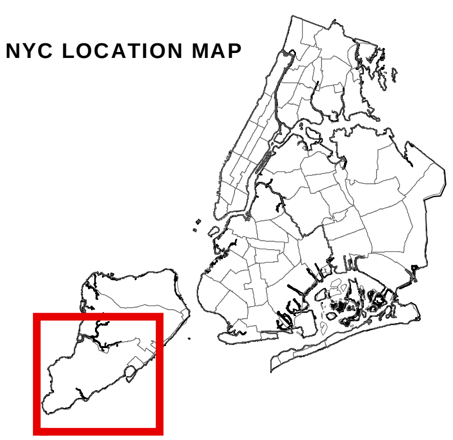
NYC LOCATION MAP



NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
Sewer Analysis

Community Board 503

Datum and Projection: NAD, 1983 StatePlane NY Long Island

Staten Island

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Sewer Mapping Unit on 2/24/2011

Inspected Locations

N	LOG	Location	Start Date	Comp Date	Cleaned / Inspected / TV-ed (LF)			
					<=24	>24 <=48	>48 <=60	>60

2010

In-House

Brooklyn

N	LOG	Location	Start Date	Comp Date	<=24	>24 <=48	>48 <=60	>60
1	07-305	Meeker Av bt Sutton St and Morgan Av	9/22/2010	9/22/2010	152			
2	09-155	Saratoga Av (293) bt Dean St and Pacific St	9/10/2009	2/9/2010	805			
3	10-024	Flatbush Av (157)	1/25/2010	1/28/2010	0			
4	10-081	Linden Blvd (772) bt E 51 St and E 52 St	5/19/2010	5/19/2010		160		
5	10-082	Lenox Rd (921) bt E 55 St and E 56 St	5/19/2010	5/19/2010	115			
6	10-113	50 St (1225) bt New Utrecht Av and 13 Av	5/11/2010	5/13/2010				810
7	10-128	Knickerbocker Av and Green Av	5/14/2010	6/14/2010				148
8	10-129	Nostrand Av bt Park Av and Flushing Av	5/25/2010	6/25/2010			838	
9	10-168	29 St and 3 Av	6/19/2010	6/30/2010	47			519
10	10-246	E 2 St (466) bt Av C and Cortelyou Rd	8/17/2010					823
11	10-247	Glenwood Rd (2722) bt Amersfort Pl and Kenilworth Pl	9/20/2010	9/24/2010				513
12	10-248	Av N (2722) bt E 27 St and E 28 St	8/20/2010	10/18/2010				279
13	10-251	15 Av bt Cropsey Av and Independence Av	8/23/2010	8/23/2010	553			
14	10-256	Flatlands Av and E 38 St	9/27/2010					80
15	10-334	17 Av (7201) bt 72 St and 73 St	11/8/2010	11/15/2010				258
16	10-357	Osburn St bt Lott Av and Hegeman Av	12/6/2010	12/6/2010				552

Manhattan

N	LOG	Location	Start Date	Comp Date	<=24	>24 <=48	>48 <=60	>60
17	10-009	E 34 St (401) bt 1 Av and FDR Dr	1/15/2010	5/25/2010			240	
18	10-023	FDR Dr bt E 11 St and E 15 St	1/19/2010	2/9/2010				50
19	10-050	W 30 St bt 10 Av and 12 Av	2/24/2010	3/12/2010	0			
20	10-064	W 48 St (62) bt Rockefeller Plza and 6 Av	3/18/2010	3/18/2010		200		
21	10-075	W 30 St bt 10 Av and 12 Av (MED-598)	4/14/2010	4/22/2010				2820
22	10-075B	W 30 St bt 10 Av and 12 Av	7/21/2010	7/22/2010				2820
23	10-076	34 St bt 1 Av and 2 Av	5/3/2010	6/14/2010		1455		690
24	10-110	W 148 St and Harlem Dr	4/20/2010	4/20/2010				85
25	10-177	9 Av and W 14 St	6/28/2010	6/29/2010				207
26	10-245	Clarkson St bt Greenwitch St and West St						643
27	10-283	3 Av and E 56 St	9/30/2010	11/22/2010				181

Queens

N	LOG	Location	Start Date	Comp Date	Cleaned / Inspected / TV-ed (LF) <=24	>24 <=48	>48 <=60	>60
28	08-173	Edmore Av (221-23) bt 221 St and 222 St	9/21/2010	9/21/2010	451			
29	09-166	Hessler Av (69-26) bt B 69 St and B 72 St	5/17/2010	5/17/2010	175			
30	10-052	Dartmouth St and 68 Av	3/1/2010	3/8/2010				298
31	10-065	Seagirt Av (30-03) bt B30 St and 31 St	3/23/2010	3/23/2010		240		
32	10-086	102 St (87-08)	5/6/2010	5/24/2010				250
33	10-088	163 St and 46 Av	5/5/2010	5/5/2010	50			
34	10-103	81 St bt Astoria Blvd and Ditmars Blvd	5/7/2010	5/7/2010	534			
35	10-109	Linden Blvd bt 202 St and 204 St	5/12/2010	5/14/2010			650	
36	10-115	Bessemund Av (25-19)	8/19/2010	8/19/2010	62			
37	10-137	Hillside Av (172-35)	7/8/2010	7/8/2010	1522			
38	10-160	Metropolitan Av bt Cooper Av and 80 St	6/2/2010	6/2/2010			372	
39	10-164	97 Av (92-01) bt 92 St and 93 St	6/22/2010	6/22/2010				260
40	10-186	153 St (129-43)	6/25/2010	6/25/2010	32			
41	10-219	Park Dr E and 72 Av	7/22/2010	7/22/2010			54	
42	10-242	Seagirt Blvd and B 32 St	9/2/2010	10/12/2010				200
43	10-263	11 Av (144-22) bt Malba Dr and DE	9/1/2010	10/15/2010				373
44	10-273	Calamus Av bt 74 St and 70 St						6925
45	10-280	Springfield Blvd and 139 Av	9/7/2010	11/3/2010				57908
46	10-301	232 St (116-20) bt 116 Av and Linden Blvd	10/5/2010	10/27/2010				234
47	10-346	Bleecker St (2011) bt Fairview Av and Grandview Av	11/16/2010	12/7/2010	0			
48	10-367	W 18 St (459) bt 9 Av and 10 Av	12/20/2010	12/20/2010				130

Staten Island

N	LOG	Location	Start Date	Comp Date	Cleaned / Inspected / TV-ed (LF) <=24	>24 <=48	>48 <=60	>60
49	09-253	Wieland Av (219) bt Maguire Av and Elks Pl	2/12/2010	2/12/2010	150			
50	10-044	Grantwood Av (376,374) bt Crown Av and Woodrow Rd	2/19/2010	2/19/2010	323			
51	10-046	Hylan Blvd (2380) bt Otis Av and Locust Av	3/14/2010	7/22/2010	614			
52	10-102	Falcon Av bt Oak Av and Isabella Av	6/6/2010	6/6/2010	157			
53	10-139	Kissam Av bt Old Mill Rd and DE	6/21/2010	6/25/2010	2016			
54	10-141	Ismay St and Forest Hill Rd	7/19/2010	7/19/2010	816			
55	10-185	Bridgetown St (176) bt Nome Av and Richmond Hill Rd	6/30/2010	6/30/2010	738			
56	10-210	Andes Pl and LaGuardia Av	8/4/2010	8/4/2010	385			
57	10-336	Schley Av from Buttrick Av to outfall S001X	11/10/2010	12/2/2010				4431

The Bronx

N	LOG	Location	Start Date	Comp Date	Cleaned / Inspected / TV-ed (LF) <=24	>24 <=48	>48 <=60	>60
58	10-048	E 178 St (538) bt E Tremont Av and E 178 St	2/19/2010	2/19/2010	100			
59	10-062	Harding Park Area Gildersleeve Stephens Pugsley Husson BettsCornell Ave	4/28/2010	5/4/2010	5464			160
60	10-066	Goble Pl and Inwood Av	4/30/2010	7/6/2010				3309
61	10-096	W 255 St (370) bt Mosholu Av and DE (Fieldston Rd)	8/5/2010	8/5/2010	699			
62	10-146	Davidson Av bt Burnside Av and W 180 St	5/26/2010	5/26/2010			416	
63	10-161	Metcalf Av						7721
64	10-169	New England Thruway and Adde Av	7/1/2010	7/5/2010				875
65	10-215	Allerton Av and Fish Av	7/26/2010	7/26/2010	50			272

	Start Date	Comp Date	<=24	>24 <=48	>48 <=60	>60
2010 In-House Total:	1/15/2010	12/20/2010	16010	2055	2570	94824

Operating Expenses, $

CITYWIDE

Brooklyn

N	LOG	Location	Start Date	Comp Date	Cleaned / Inspected / TV-ed (LF) <=24	>24 <=48	>48 <=60	>60
66	07-255	26th Ward Area	3/10/2009		19090	9428		
67	07-305	Meeker Av bt Sutton St and Morgan Av	11/3/2010	11/4/2010	278			
68	09-136	Myrtle Av bt Green Av and Harman Av	2/24/2010	2/24/2010	153			
69	09-176	Av W (194) bt W 6 St and Van Sicklen St	3/1/2010	3/2/2010	272	269		
70	09-196	Degraw St (331) bt Smith St and Court St	10/9/2009	2/12/2010	0			
71	09-226	Lewis Av and Fulton St	3/8/2010	4/1/2010		553		
72	10-004	E 15 St and Av S	2/1/2010	2/1/2010	525			
73	10-006	Voorhies Av (2222) bt Dooley St and E 23 St	1/21/2010	1/27/2010	1858			
74	10-008	Greene Av bt Van Burn St and Lexington Av (Throop Av)	3/4/2010	3/5/2010	584	267		
75	10-015	5 Av (26) bt Flatbush Av and Dean St	6/2/2010					0
76	10-016	41 St (1270) bt 12 Av and 13 Av	2/12/2010	2/12/2010	780			
77	10-017	17 St (231) and Prospect Exp E (4 Av and 5 Av)	2/22/2010	2/22/2010	725			
78	10-031	Av U (1412) bt E 14 St and E 15 St	8/17/2010	8/17/2010	491			
79	10-032	Knapp St (2450) bt Av X and Av Y	2/19/2010	2/19/2010	719			
80	10-054	18 Av and E 2 St	3/2/2010	3/2/2010	48	65		
81	10-059	Coney Island Av and Brighton 10 Ct	4/15/2010	5/14/2010	1503	311		
82	10-089	Metropolitan Av (87) bt Kent Av and Wythe Av	4/30/2010	4/30/2010	451			
83	10-089A	Metropolitan Av (87) bt Kent Av and Wythe Av	6/22/2010	6/22/2010	505			
84	10-094	Putnam Av (708) bt Lewis Av and Stuyvesant Av	4/29/2010	4/29/2010	820			
85	10-095	Livingston St (236) bt Elm Pl and Bond St	5/5/2010	5/5/2010	245			
86	10-097	Rockaway Pkwy bt Ditmas Av and Av B	4/29/2010	4/30/2010	637			
87	10-106	E 16 St (1815) bt Av R and Moore Pl	5/12/2010	5/18/2010	1537			
88	10-112	Atlantic Av (1509) bt Agate Ct and Albany Av	5/9/2010	5/16/2010	1496			
89	10-116	E 23 St (1649) bt Av P and Quentin Rd	5/6/2010	5/6/2010	644			
90	10-118	W 1 St (1754) bt Quentin Rd and Kings Hgwy	7/15/2010	7/16/2010	686			
91	10-119	37 St (1514) bt 15 Av and Dahill Rd	7/19/2010	7/19/2010		364		
92	10-120	Grant Av (545) bt Glenmore Av and Pitkin Av	7/26/2010	7/26/2010	351			
93	10-125	E 42 St (635) bt Av D and Foster Av	7/19/2010	7/21/2010	721			
94	10-132	Atlantic Av bt Van Sicilen Av and Hendrix St	5/17/2010	5/17/2010	259			
95	10-135	73 St bt 17 Av and 18 Av	5/24/2010	5/26/2010	688			
96	10-156	5 Av bt Flatbush Av and Dean St	6/7/2010	6/16/2010			114	698
97	10-172	Kings Hgwy and Schenectady Av	7/13/2010	7/13/2010	256			
98	10-190	80 St (2328) bt 23 Av and Stillwell Av	11/8/2010	11/12/2010	482	260		
99	10-193	Glenwood Rd (3801) bt E 38 St and E 39 St	7/12/2010	7/12/2010	222			
100	10-195	Greene Av (503) bt Nostrand Av and Marcy Av	8/16/2010	8/16/2010	864			
101	10-205	Ft Hamilton Pkwy and Dahill Rd	7/13/2010	7/21/2010	279	57		
102	10-223	Ocean Av (1130) bt Farragut Rd and Glenwood Rd	8/17/2010	8/18/2010	811			
103	10-234	W 30 St and Surf Av	8/20/2010	8/20/2010	71			
104	10-236	Beverly Rd and Ocean Pkwy	11/4/2010	11/4/2010	323			
105	10-237	12 Av (74-24) bt 74 St and Bay Ridge Pkwy	8/30/2010	8/30/2010		250		
106	10-238	13 Av and Bay Ridge Pkwy	8/27/2010	8/27/2010	677	270		
107	10-239	74 St (423) bt 4 Av and 5 Av	8/30/2010	8/30/2010	782			
108	10-249	E 3 St (403) bt Beverly Rd and Av C	8/31/2010	9/1/2010	1671			
109	10-266	Wilson Av bt Putnam Av and Madison Av	8/26/2010	8/26/2010	263			
110	10-272	Covert St and Knickerbocker Av	9/2/2010	9/2/2010	1365			
111	10-274	Kingsborough 4 Walk (442)	9/13/2010	9/13/2010	126	442		
112	10-281	Hart Pl and W 15 St	10/6/2010	10/12/2010	2657			
113	10-290	Varet St (198) bt Bushwick Av and White St	9/28/2010	9/29/2010	811			
114	10-291	Flatbush Av (1246) bt Av D and Newkirk Av	9/23/2010	9/24/2010	414			
115	10-292	Bushwick Av (478) bt Montieth Av and Flushing Av	9/23/2010	9/23/2010	177			
116	10-296	Bay Pkwy (8747) bt Benson Av and Bath Av	10/5/2010	10/20/2010	1582			
117	10-304	Ten Eyck St bt Union Av and Lorimer St	11/1/2010	11/3/2010	630			

N	LOG	Location	Start Date	Comp Date	Cleaned / Inspected / TV-ed (LF) <=24	>24 <=48	>48 <=60	>60
118	10-305	Putnam Av and Wilson Av	12/21/2010	12/21/2010	413			
119	10-313	13 St (435) bt 7 Av and 8 Av	10/28/2010	10/28/2010	374			
120	10-317	E 56 St bt Av D and Whitty La	10/26/2010	10/28/2010		736		
121	10-318	Knickerbocker Av (318) at Hart St	10/25/2010	10/25/2010		656		
122	10-321	E 16 St and Av N	10/27/2010	10/27/2010	524			
123	10-327	Berry St bt S 3 St and S 4 St	11/4/2010	11/5/2010	560			
124	10-351	Suydam St bt Irving Av and Wycoff Av	12/7/2010	12/7/2010	727			
125	10-362	2114 81 St bt 21 Av and Bay Pkwy	12/1/2010	12/2/2010	746			
126	10-363	66 St (1639) bt 17 Av and 16 Av	12/17/2010	12/17/2010	448	904		

Manhattan

N	LOG	Location	Start Date	Comp Date	<=24	>24 <=48	>48 <=60	>60
127	09-207	South St bt Rutgers St and Jefferson St	11/18/2009	1/31/2010		460		
128	09-213	Canal St and Courtland Ally	3/8/2010	3/28/2010	493	520		
129	09-263	W 24 St (530) bt 10 Av and 11 Av	2/1/2010	3/4/2010		837		
130	09-271	Thompson St (25) bt Grand st and Watts St	1/24/2010	1/26/2010	398			
131	10-047	W 84 St bt Riverside Dr and West St	2/24/2010	3/5/2010		1804	34	
132	10-069	Hudson St and Morton St	6/1/2010	6/2/2010		471		
133	10-074	E 75 (3) St bt 5 Av and Madison Av	3/25/2010	3/25/2010	11	413		
134	10-090	E 40 St (134) bt Lexington Av and 3 Av	5/18/2010	5/20/2010		398		
135	10-130	W 129 St bt Adam Powell Jr and Frederick Douglas Blvd	5/13/2010	5/13/2010	674			
136	10-131	E 75 St bt 2 Av and 1 Av	5/23/2010	5/25/2010	180	580		
137	10-147	Bowery (350) bt E 3 St and Cooper Sq	6/8/2010	6/8/2010		0		
138	10-148	Bowery and Broome St	6/8/2010	6/8/2010		0		
139	10-174	W 50 St (200) bt 7 Av and Broadway	7/20/2010	7/21/2010		124		
140	10-175	Delancey St and Attorney St	7/14/2010	7/14/2010		557		
141	10-180	Henry St (195) bt Jefferson St and Clinton St	7/29/2010	7/30/2010		486		
142	10-184	W 52 St (314) bt 8 Av and 9 Av	7/27/2010	7/27/2010	742			
143	10-204	Sherman Av and Isham St	7/25/2010	7/27/2010	121	409		
144	10-208	W 181 St (605) bt St Nicholas Av and Wadsworth Av	7/21/2010	7/25/2010	885	62		
145	10-209	W 56 St (401) bt 9 Av and 10 Av	7/19/2010	7/20/2010	765			
146	10-226	Renwick St (40) bt Canal St and Spring St	7/28/2010	8/19/2010	528			
147	10-228	W 82 St (32) bt Central W Park and Columbus Av	8/9/2010	8/9/2010		720		
148	10-230	Cortlandt St bt Broadway and Church St	8/9/2010	8/9/2010	7	484		
149	10-231	W 136 St (516) bt Amsterdam Av and Broadway	8/11/2010	8/11/2010	649	18		
150	10-233	Broadway (2) bt Stone St and Bowling Green	11/15/2010	11/15/2010	163	183		
151	10-278	Bowery (150) bt Broome St and Delancey St	10/20/2010	11/1/2010		291	105	
152	10-279	E 117 St (14) bt Lexington Av and 3 Av	10/8/2010	10/18/2010	164	1432		
153	10-286	2 Av and E 7 St	11/9/2010	11/9/2010		334		
154	10-288	Washington St (103) bt Rector St and Carlise St	9/26/2010	9/27/2010	58	427		
155	10-297	W 181 St (515) Amsterdam Av and Audubon Av	11/18/2010	11/19/2010		378		
156	10-310	Madison Av (39) bt James St and Oliver St	11/17/2010	1/7/2011	86	370		
157	10-311	John St bt Nassau St and Broadway	10/13/2010	10/17/2010	363	295		
158	10-322	W 26 St bt 6 Av and 7 Av	11/5/2010	11/5/2010		877		
159	10-333	3 Av (60) bt E 10 St and E 11 St	11/12/2010	11/16/2010		484		

Queens

N	LOG	Location	Start Date	Comp Date	Cleaned / Inspected / TV-ed (LF) <=24	>24 <=48	>48 <=60	>60
160	08-173	Edmore Av (221-23) bt 221 St and 222 St	10/4/2010	10/4/2010	452			
161	09-060	75 St bt Juniper Valley Rd and 66 Dr	2/4/2010	2/4/2010	808			
162	09-114	128 St (116-48) bt Foch Blvd and 116 Av	1/28/2010	1/28/2010	1038			
163	09-165	33 Av (204-04) bt 204 St and 205 St	5/10/2010	5/11/2010	1296			
164	09-255	Murray St (42-40) bt Ash Av and Beech Av	2/24/2010	2/24/2010	669			
165	09-262	62 Dr bt 110 St and Grand Central Pkwy	2/17/2010	2/18/2010	892			
166	09-274	Hunterspoint Av and 33 St	11/12/2010	11/12/2010	78			
167	09-275	Little Neck Blvd (27-15) bt 27 Av and 28 Av	1/19/2010	1/20/2010	895			
168	10-002	32 Av (143-05) bt 143 St and Parsons Blvd	1/11/2010	1/25/2010	1138			
169	10-011	222 St and 43 Av	3/1/2010	3/1/2010	421			
170	10-012	38 St (25-83) bt Astoria Blvd and 28 Av	2/23/2010	2/23/2010	1316			
171	10-030	Avery Av and 131 St	4/12/2010	4/13/2010	1740			
172	10-039	75 St (64-30) bt Juniper Valley Rd and Penelope Av	2/4/2010	2/4/2010	412			
173	10-053	Astoria Blvd (28-03) bt 28 St and 29 St	3/28/2010	3/30/2010	538			
174	10-056	Northern Blvd (29-46) bt 41 Av and 40 Rd	3/30/2010	3/31/2010	872			
175	10-057	Dalny Rd (183-19) bt Somerset St and 184 St	5/3/2010	5/5/2010	1357	0		
176	10-068	90 Av (244-09) bt Cross Island Pkwy and 247 St	4/14/2010	4/14/2010	35			
177	10-070	Auburndale La bt 47 Av and Courtney Av	3/26/2010	3/26/2010			0	
178	10-077	Douglaston Pkwy bt 51 Av and Hor Harding Exp SRN, 241 St (52-40)	4/19/2010	4/26/2010	4295	0		
179	10-087	93 Av bt 104 St and 105 St	4/28/2010	4/28/2010	250			
180	10-092	150 St bt 71 Rd and 72 Rd	4/27/2010	4/27/2010	493			
181	10-093	64 St (34-30)	4/27/2010	4/28/2010	667			
182	10-121	181 St (67-39) bt 67 Av and 69 Av	7/12/2010	7/12/2010	527			
183	10-122	Roosevelt Av bt Parsons Blvd and 149 St	6/7/2010	7/1/2010	126	1651		
184	10-123	167 St (82-59) bt 82 Rd and Grand Central Pkwy	7/13/2010	7/14/2010	423	465		
185	10-124	60 Av and 83 Pl	7/9/2010	7/15/2010	973			
186	10-136	204 St bt 32 Av and 33 Av	6/4/2010	6/16/2010	784			
187	10-138	42 Av (111-72)	6/30/2010	7/2/2010	949			
188	10-140	180 St (114-12)	7/6/2010	7/7/2010	707			
189	10-149	Fresh Pond Rd (71-32) bt 71 Av and Myrtle Av	6/22/2010	6/22/2010		0		
190	10-151	Adair St (125-26) bt Pineville La and DE	7/13/2010	7/13/2010	174			
191	10-152	Eliot Av (67-43) bt 67 St and 68 St	6/3/2010	6/4/2010	868			
192	10-162	217 St and 51 Av	7/13/2010	7/13/2010	436			
193	10-165	103 St (107-08) bt Liberty Av and Rockaway Blvd	7/14/2010	7/14/2010	640			
194	10-173	36 St (21-49) bt 21 Av and Ditmars Blvd	8/9/2010	8/10/2010	776			
195	10-181	95 St (137-26) bt Pitkin Av and 149 Av	7/27/2010	7/28/2010	1071	129		
196	10-183	Ocean Crest Blvd and Nasby Pl	8/19/2010	8/19/2010	479			
197	10-192	21 St bt 36 Av and 37 Av	8/10/2010	8/11/2010	644			
198	10-194	141 Rd (222-21) bt 222 St and 224 St	8/20/2010	8/23/2010	1023			
199	10-196	80 Rd (185-07) bt Chevy Chase St and 188 St	8/24/2010	8/24/2010	588			
200	10-197	66 Dr (74-10) bt 74 St and 75 St	8/26/2010	8/26/2010	267			
201	10-199	B 64 St (644) bt Almeda Av and De Costa Av	8/19/2010	8/19/2010	0			
202	10-200	Warnerville Pumping Station and Brookville Blvd	7/15/2010	7/29/2010	967			
203	10-201	Radnor Rd (184-45) bt Kent St and Chevy Chase St	8/11/2010	8/12/2010	712			
204	10-202	249 St (146-21) bt Mayda Rd and Newhall Av	8/19/2010	8/20/2010	646			
205	10-207	147 St (75-04) bt 75 Av and 75 Rd	8/25/2010	8/25/2010	524	265		
206	10-212	B 89 St (353) bt Gull Ct and Beach Channel Dr	8/18/2010	8/18/2010	606			
207	10-217	72 Dr (147-15,147-19)	7/20/2010	7/20/2010	662			
208	10-221	147 Pl (32-19) bt 32 Av and 33 Av	8/25/2010	8/25/2010	294			
209	10-222	92 Av (221-08) bt 221 St and 221 Pl	8/23/2010	8/23/2010	521			
210	10-229	235 St (40-20) bt 40 Av and 41 Av	8/24/2010	8/24/2010	325			
211	10-235	58 Rd (59-77) bt Bend and Flushing Av	8/19/2010	8/25/2010	894			
212	10-244	45 Av bt 82 St and 83 St	9/8/2010	9/10/2010	293	596		
213	10-258	23 St (23-39) bt 23 Rd and 23 Dr	9/17/2010	9/20/2010	522			
214	10-259	Gates Av bt 60 Pl and Forest Av	9/7/2010	9/7/2010	641			
215	10-260	20 Ave bt 150 st and 149 st	9/16/2010	9/16/2010	612			

N	LOG	Location	Start Date	Comp Date	Cleaned / Inspected / TV-ed (LF) <=24	>24 <=48	>48 <=60	>60
216	10-261	119 St (9-48) bt 9 Av and 12 Av	9/17/2010	9/17/2010	607			
217	10-263	11 Av (144-22) bt Malba Dr and DE	9/22/2010	9/22/2010	267	170		
218	10-264	Hunters Point South (51 Av bt 2 St and 5 St)	9/20/2010	9/20/2010	521			
219	10-268	75 Av bt 160 St and 162 St	9/16/2010	9/16/2010	467			
220	10-285	Cypress Av and Putnam Av	9/23/2010	9/23/2010	100	316		
221	10-287	W 52 St n(564) bt Amtrack RR and 11 Av	9/28/2010	10/6/2010		780		
222	10-300	75 St (78-56) bt 78 Av and Myrtle Av	10/1/2010	10/1/2010	713			
223	10-312	224 St bt 119 Av and 120 Av	10/20/2010	10/20/2010	581			
224	10-314	B 30 St bt Lewmay Rd and DE	10/21/2010	10/21/2010	441			
225	10-315	Union Tpke and 254 St	10/29/2010	10/29/2010	442	502		
226	10-316	B 123 St (457) bt Newport Av and Cronston Av	10/22/2010	10/22/2010	706			
227	10-319	69 La (59-53) bt Caldwell Av and 60 Av	11/3/2010	11/4/2010	754			
228	10-332	66 Av (105-30) bt Yellowstone Blvd and 108 St	11/30/2010	11/30/2010	582			
229	10-341	221 St bt 119 Av and 120 Av	11/16/2010	11/17/2010	1136	257		
230	10-344	Bell Blvd and Kingsbury Av	12/13/2010	12/13/2010	256	159		
231	10-345	233 St (134-28) bt Merrick Blvd and 135 Av	12/8/2010	12/8/2010	579			
232	10-350	81 St bt Grand Central Parkway and Ditmars Blvd	11/29/2010	11/30/2010	718			
233	10-368	Parsons Blvd (25-10) bt Willets Point Blvd and 25 Dr	12/22/2010	12/22/2010	496			

Staten Island

234	09-260	E Brandis Av (10) bt Abingdon Av and Armstrong Av	1/6/2010	1/6/2010	392			
235	09-268	Ramona Av (357) bt DE and Ellsworth Av	1/4/2010	1/4/2010	646			
236	09-270	St Joseph Av (85) bt Charles Av and Innis St	1/8/2010	1/22/2010	1987			
237	09-282	Arbutus Av bt Hylan Blvd and Bend	1/6/2010	1/7/2010	845			
238	09-283	Arlington Ct (7) bt DE and Davis Av	1/8/2010	1/8/2010	203			
239	10-007	Disosway Pl (14) bt Clove Rd and Raymond Pl	3/3/2010	3/3/2010	288			
240	10-029	Benton Av (185) bt Hurlbert St and Mason Av	6/25/2010	6/28/2010			462	
241	10-036	Guyon Av and N Railroad Av	3/3/2010	3/3/2010	265			
242	10-046	Hylan Blvd (2380) bt Otis Av and Locust Av	3/14/2010	3/15/2010	1677			
243	10-055	Amboy Rd (2831) bt Tysens La and Park St	5/20/2010	5/21/2010	797			
244	10-072	Covington Crcl and Powell St	3/30/2010	4/7/2010	1135	497		
245	10-098	Crown (233) bt Arden Av and Jefferson Av	5/19/2010	5/21/2010	676			
246	10-127	Rokeby Pl (43) bt Kissel Av and Bard Av	11/15/2010	11/22/2010	1360			
247	10-133	Driggs St (64) bt Wiman Av and Osborn Av	6/2/2010	6/2/2010	848			
248	10-150	Bayview Av (296) bt Vail Av and Bayview La	6/29/2010	6/29/2010	426	0		
249	10-159	Ward Av (225) bt Cebra Av and Austin Pl	5/26/2010	6/1/2010	1303			
250	10-163	Sleight Av (317) bt Amboy Rd and Paradise Pl	6/30/2010	6/30/2010	525			
251	10-176	Kissel Av and Walnut St	6/17/2010	6/18/2010	681			
252	10-203	Wellbrook Av (94) bt Holden Blvd and Queen St	7/23/2010	7/23/2010	445			
253	10-218	Victory Blvd and Fiedler Av	10/6/2010	10/7/2010	431	48		
254	10-225	Frederick St and Watchoque Rd	7/21/2010	7/22/2010		289		
255	10-243	Livermore Av and North Av	8/13/2010	8/13/2010		136		
256	10-257	Hillcrest St and Robinson Av	9/3/2010	9/3/2010	1312			
257	10-282	Post Av (721) bt Cary Av and Greenleaf Av	9/30/2010	9/30/2010	420	0		
258	10-303	South Av (64) bt Richmond Terr and Arlington Pl	12/17/2010	12/20/2010	1523			
259	10-306	Park Hill Ct (81) bt Vanderbilt Av and DE	10/19/2010	10/19/2010	897			

The Bronx

260	09-142	Bogart Av bt Pelham Pkwy and Neil Av	2/2/2010	2/8/2010			390	
261	10-020	Jerome Av and Courtland Av E	4/13/2010	4/13/2010	306			
262	10-035	Grand Av (168) bt W 175 St and W 176 St	4/13/2010	4/13/2010	268			
263	10-071	Waring Av and Seymour Av	4/14/2010	4/14/2010		305		
264	10-167	Wallace Av (1943) bt Rhinelander Av and Bronxdale Av	7/30/2010	8/9/2010	722			
265	10-252	E 134 St (478) bt Major Deegan Exp and Willis Av	9/21/2010	9/21/2010	406	353		
266	10-337	Ellis Av (2327) bt Havemeyer Av and Zerega Av	11/23/2010	11/29/2010	852			
267	10-340	Westchester Av (1837) Taylor Av and Thieriot Av	11/24/2010	11/29/2010	400			

N	LOG	Location	Start Date	Comp Date	Cleaned / Inspected / TV-ed (LF) <=24	>24 <=48	>48 <=60	>60
2010 CITYWIDE Total:			1/4/2010	12/23/2010	131346	35164	1105	698
Operating Expenses, $		1,215,250.50						
2010 Total, LF:		**283,772**	**1/4/2010**	**12/23/2010**	**147356**	**37219**	**3675**	**95522**
Operating Expenses, $		**1,215,250.50**						
Sewer Segments Total:		2,092			1,367	410	32	283
Average Sewer Segment, LF:		136			108	91	115	338

Appendix 3

Estimation of Wet-Weather Capture

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 New York City (NYC) treatment facilities (referred to as Water Pollution Control Plants, WPCPs) during calendar year (CY) 2010. Section 3.1 describes the difference between runoff capture and combined-sewage capture. Section 3.2 discusses the scenarios used to evaluate capture. Section 3.3 summarizes the modeling approaches – primarily InfoWorks along with RAINMAN for some drainage areas - used to calculate flow volume capture for 2010. Section 3.4 describes the 2010 wet-weather combined-sewage percent capture results for each of NYC's WPCP drainage areas. Section 3.5 summarizes the methodology used to calculate floatables capture, and provides sample floatables calculations. Section 3.6 presents the results of the floatables-capture calculations for 2010. References are listed in Section 3.7.

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 WPCPs, 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.

Beginning in 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 floatables-capture calculation. 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 WPCP during wet weather) and the actual rainfall over the system during the subject, calendar-year period. The results of

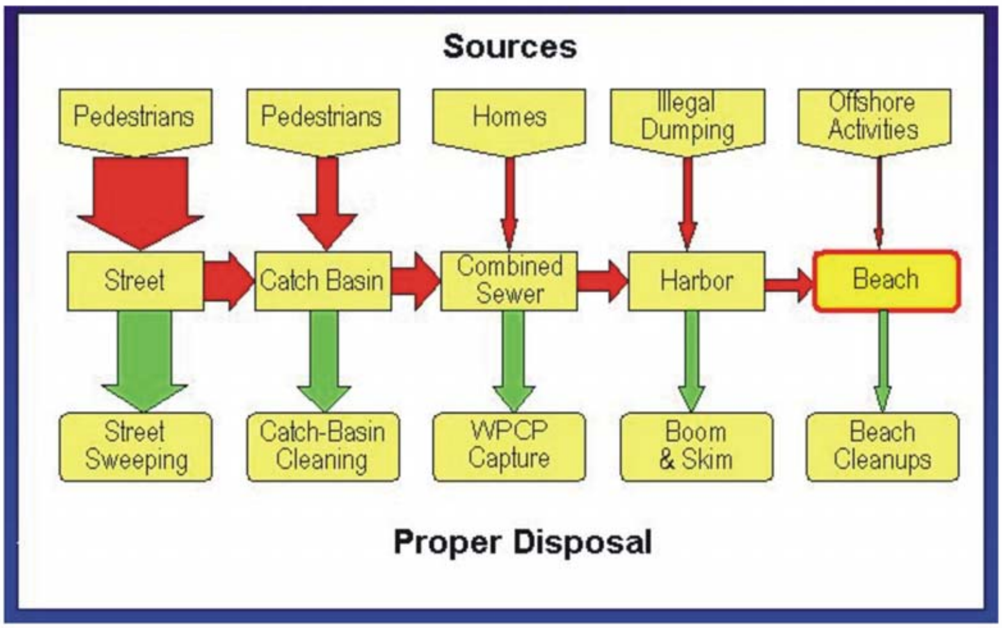


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Figure 3-1
Sources and Fate of Floatables in New York City

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NYC Environmental Protection

this simulation scenario indicate the actual capture performance for the period. However, due to natural variations in rainfall patterns, it is difficult to make year-to-year assessments of performance as it relates to the operation of the collection/treatment system. To isolate system performance from these annual rainfall variations, model simulations were also performed using a “standard” rainfall condition (observed in 1988 at the John F. Kennedy Airport, representing a typical annual precipitation condition in the NYC metropolitan area) and the associated tidal conditions (1988). Thus, the second simulation scenario reflects actual operation of the collection/treatment system and a standard rainfall/tidal condition. Finally, a third scenario was developed to provide an indication of the best possible performance of the collection/treatment systems. In this scenario, the design maximum capacity of the WPCP was used (instead of the actual observed flow rates treated at the WPCP), again with the standard rainfall/tidal condition.

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. As it became more feasible to perform capture calculations directly with sewer-system models, the use of the Statistical Method was discontinued in favor of using RAINMAN, a simplified sewer-system model that itself was cross-calibrated against a dynamic sewer system model (SWMM or one of its commercial counterparts, such as XP-SWMM or InfoWorks) available for a specific drainage area. Finally, as part of the CSO Long Term Control Plan (LTCP) project, DEP decided to adopt the InfoWorks modeling framework to support facility-planning analyses city-wide. InfoWorks is a state-of-the-art hydrology and hydraulics 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 2010, the percent-capture analyses utilize the InfoWorks modeling framework for all drainage areas except for Coney Island and Oakwood Beach, where the use of RAINMAN was necessary as the InfoWorks models are still undergoing calibration. Section 3.3 provides a more detailed discussion of the RAINMAN and InfoWorks models.

3.1 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 offline 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:

> *ii.* *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.*

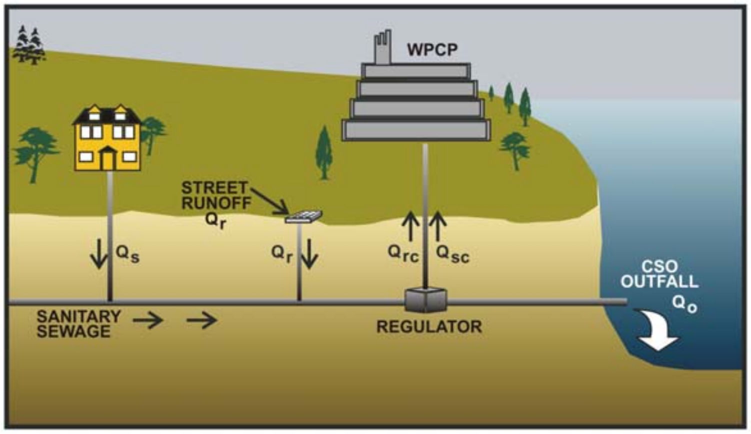
This definition of capture, herein referred to as "combined-sewage capture," is the ratio of CS volume captured at the WPCP to the total runoff and sanitary sewage entering the combined-sewer system during wet-weather periods.

Figure 3-2 presents a schematic representation of both runoff capture and CS capture. With runoff capture, WPCP 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 WPCPs 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.

3.2 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 WPCPs. 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 WPCP are



RUNOFF CAPTURE

"OLD CALCULATION METHOD"

$$\text{WPCP Capture} = \frac{Q_{rc}}{Q_r}$$

CS(COMBINED SEWAGE) CAPTURE

"EPA GUIDANCE"

$$\text{CS Capture} = \frac{Q_{sc} + Q_{rc}}{Q_s + Q_r}$$

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maximized. Interceptors and combined sewers in certain drainage areas can hold significant volumes of wet-weather flow, providing increased capture via inline storage. Although it is important to record the actual capture achieved at WPCPs 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:

1) 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,
2) 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

3.3 TOOLS TO CALCULATE WET-WEATHER FLOW CAPTURE

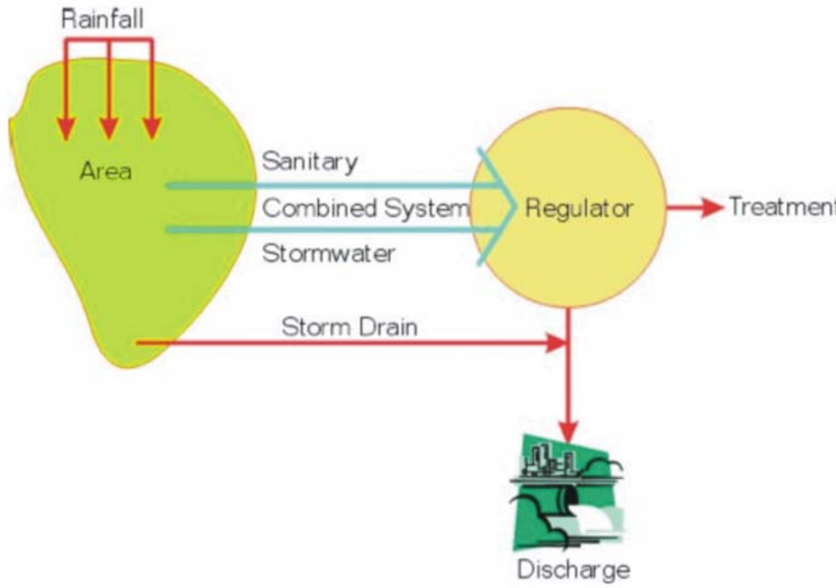
Although the definitions presented in Section 3.1 and the equations on Figure 3-2 are relatively simple, actual application to calculate CS capture can be rather complicated. Because the capture must be evaluated over a long-term (annual) period, and with hundreds of potential CSO outfalls City-wide, 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 system performance during the subject period. The following sections describe the two modeling approaches that were applied for 2010: RAINMAN and InfoWorks. As indicated earlier, InfoWorks was adopted for City-wide use, but is still being calibrated for the Coney Island and Oakwood Beach service areas. RAINMAN was used to model these areas, and a description of this approach is also provided.

3.3.1 RAINMAN Model

RAINMAN is a computer program that was originally developed and applied City-wide during the NYC 208 Study in an earlier, less sophisticated form. The model is a Fortran program that applies the "Rational Formula" (runoff flow equals the product of incident rainfall, drainage area, and characteristic runoff coefficient) to generate flows to a sewer network consisting of simple series of nominal-capacity regulators. Other than flow continuity, hydraulic considerations such as travel time and hydraulic head are ignored or addressed in simple ways (such as smoothing rainfall inputs). Time steps are typically one hour. RAINMAN performs a flow balance around a given WPCP drainage area. Individual outfall overflows are calculated hourly as is the flow to the WPCP. Calculations are based on hourly precipitation values as well as drainage areas and runoff coefficients. Since the model does not employ hydraulic calculations, it does require a higher level of model calibration and knowledge about the conveyance system (including modifications to hydraulic behavior such as throttling gates or hydraulic conditions such as inline storage) to provide reasonable estimates of flow volumes and pollutant loads. Due to its simplicity, RAINMAN can simulate long-term periods of twenty years or more, requiring only a few minutes of computational time.

RAINMAN has been applied to the Inner and Outer Harbor CSO Water Quality Facility Planning areas during the studies that led to the Track I CSO facilities. The model has also been used in the Comprehensive CSO Floatables and Settleable Solids Planning Project (Comprehensive Plan), and was used to estimate the overflow characteristics for each regulator drainage area and outfall. Its use in the Use and Standards Attainability (USA) Project was to provide estimates of hourly overflows during annual water quality simulation periods. The use of RAINMAN has also continued as the Comprehensive Plan and USA Projects have transitioned into the Long Term CSO Control Plan Project. RAINMAN is cross-calibrated against the results of the more sophisticated hydraulic models used in various City-wide wastewater treatment projects. Once the calibration is accomplished, RAINMAN is an accurate tool that can be used to develop annual CSO volumes for planning-level or water quality impact analyses.

Flow calculations in RAINMAN are based on flow balance entering and exiting CSO regulators. Figure 3-3 presents a schematic of flow entering and leaving a CSO regulator. The hydraulic capacity of a regulator applied to the flow balance determines the model's regulator control rules - how much flow is routed to the WPCP and how much is discharged to a CSO. The flow balance approach is specific to a regulator and its outfall, and therefore takes advantage of detailed information yet does not use time-consuming, dynamic hydraulic equations for flow routing. Rather, simple simulations of rainfall-to-runoff, discharge to outfalls, and volumes captured for storage/treatment can be executed for large separate and combined collection systems for long-term simulations. With proper model calibration, the simulations provide a useful and reasonably accurate tool for determining percent capture.



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The input parameters for RAINMAN include: (a) maximum WPCP capacity; (b) hourly precipitation; (c) runoff coefficients for subcatchment or tributary drainage areas to individual regulators; (d) dry weather flow at each regulator and its diurnal pattern ; and (e) capacities of individual regulators. RAINMAN also accounts for in-line storage in sewers upstream of the regulators and within interceptors, throttling at treatment works, and CSO storage/treatment facilities provided that each of these phenomena are properly included in the model features for the particular drainage areas. Each of these parameters is briefly described below.

The maximum WPCP capacity varies within a year due to operation and maintenance requirements or construction related upgrades (e.g., capacity decreases when a pump is replaced or capacity increases when upgrade construction is completed). Hourly plant flow data, as well as the actual plant capacities discussed in Section 2.3, are used as guidance to estimate the maximum plant capacity. In the calculation of percent capture, the variations in plant capacities were represented on a monthly basis.

Hourly precipitation data at the nearest National Oceanic and Atmospheric Administration (NOAA) station was used for simulating runoff and the amount of stormwater that entered the combined-sewer system within the drainage area tributary to a treatment plant. RAINMAN does not explicitly account for the time of travel through the collection system and discharges the runoff instantaneously through the regulators and to the plant. To reflect the time of travel in the Coney Island system, a 2-hour moving average of applicable precipitation data was used. Although this 2-hour moving average is subjective, previous RAINMAN calibrations have demonstrated its applicability at Coney Island and other WPCP drainage areas within New York City. To reflect the time of travel in the Oakwood Beach system, a 12-hour moving average of the precipitation was used. Again, previous calibrations have demonstrated the applicability of this method in accounting for the unique infiltration and inflow issues associated with this separated sewer system.

Runoff coefficients for subcatchment areas were determined from various sources of information such as an existing hydrologic model and/or aerial photographs. When drainage areas were precisely taken from GIS maps, runoff coefficients were considered the primary calibration parameters to match runoff volumes.

The dry weather flows assigned for model input at individual regulators were developed from various sources of information. At each WPCP, NYCDEP records hourly dry weather flows and analyzes the data to determine the average dry weather flow as well as the hourly diurnal variation of dry weather flow. The dry weather flow distribution among the different regulators in a WPCP service area was herein developed based on the flow information at the WPCP together with other available information such as the regulator drainage area. The capacities of individual regulators were obtained from Regulator Improvement Program reports. However, these are among the most important calibration parameters in RAINMAN and were varied during the calibration process.

HydroQual used RAINMAN for the 2010 calculations of percent capture of CSO and surface runoff only in the Coney Island and Oakwood Beach WPCP drainage areas. The primary reason is that the InfoWorks models of these drainage areas are still undergoing calibration and the RAINMAN models are consistently being applied for other New York City projects including the LTCP. The capture calculation for this area is automatically generated and provided in RAINMAN output following EPA guidelines from the Long-Term Control Plan for CSOs as is described earlier in Section 2.

Prior to simulating CSOs for 2010 for Coney Island and Oakwood Beach, RAINMAN was cross-calibrated against the influent flows observed at the plants. Appropriate precipitation and dry weather flow data were used, and the model parameters were adjusted to achieve a good match between monitored and modeled flows. A probability plot and time-series comparison of the plant flows for 2010 for Coney Island is shown in Figure 3-4.

3.3.2 InfoWorks Model

The InfoWorks model, developed by Wallingford Software 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. This interface has advantages over other commercial models, in terms of an integrated asset management planning and accurate representation of the sewer system elements. The model uses an implicit 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, and 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 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 are added at the respective manholes for routing towards the treatment plant. Figure 3-5 presents a schematic of the InfoWorks model linkage and outputs used to calculate the wet-weather and runoff percent captures.

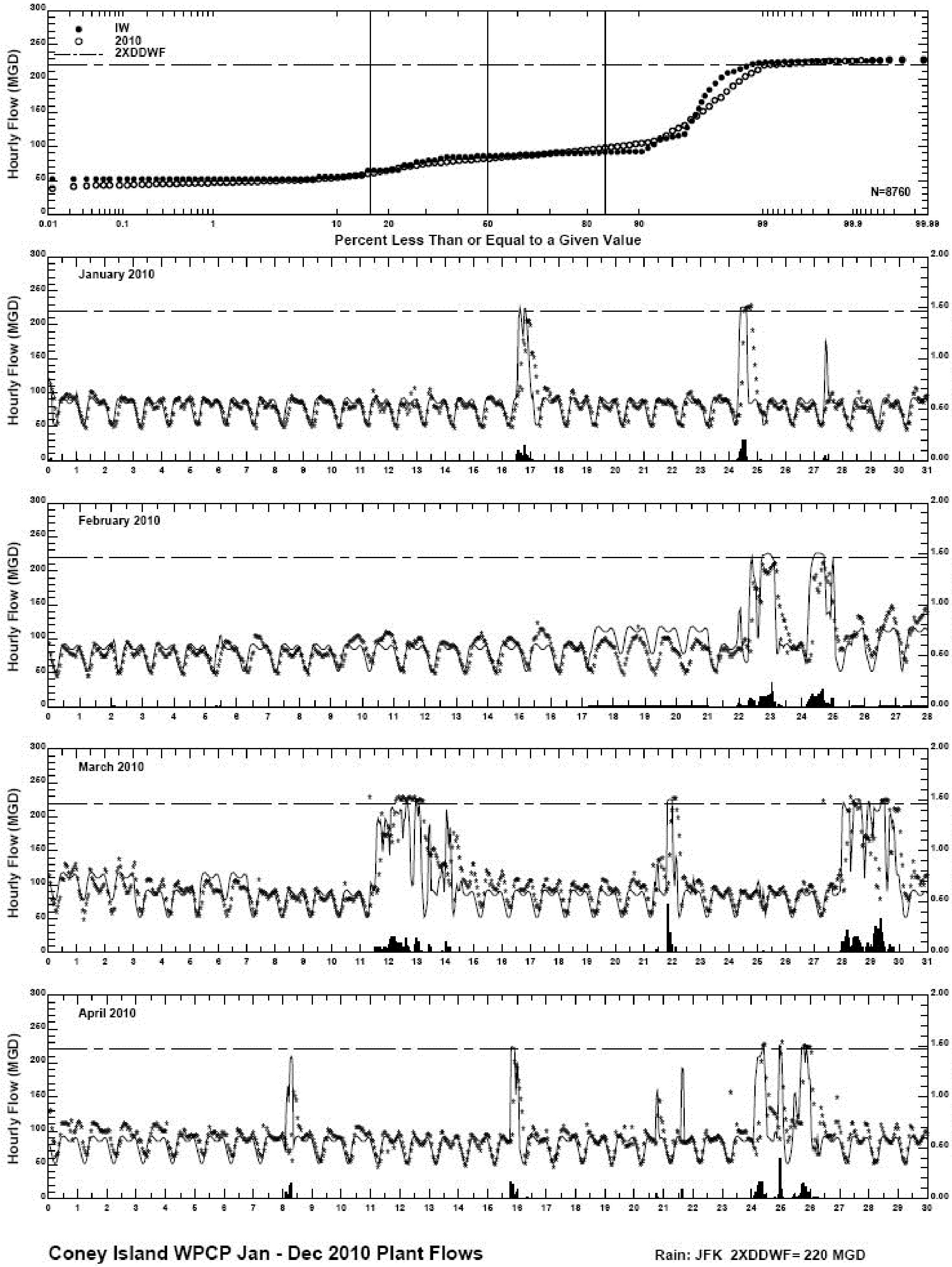

Figure 3-4
Infoworks Sample Calibration 2010

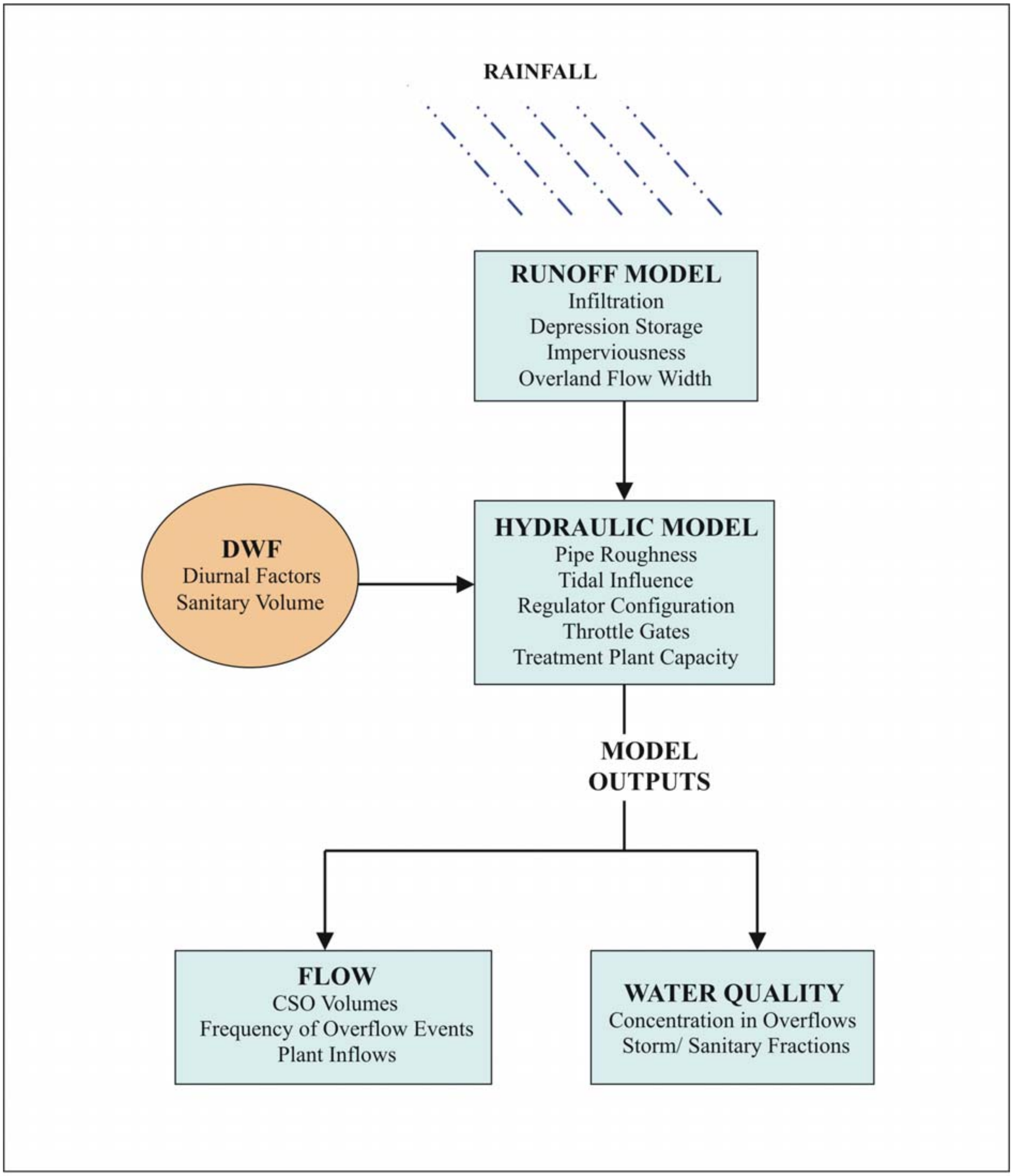

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Figure 3-5
Schematic Representation of InfoWorks Model

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The EPA SWMM RUNOFF option has been chosen as the InfoWorks runoff simulation algorithm so that the parameters developed in previous DEP WPCP studies can easily be reviewed and translated to the current InfoWorks models. Each WPCP drainage area was divided into component regulator drainage areas. All pipes larger than 60 inches, and selected pipes larger than 36 inches, were included in the model. 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 3-6.

With some evaporation, almost all of the rainfall on impervious areas resulted in runoff. In the pervious areas, evaporation and initial rainfall loss (depression storage), and infiltration processes were simulated, after which the rainfall would result in overland flow that would reach the sewer system. The Horton Equation was chosen to calculate the cumulative infiltration. The Horton equation is an empirical formula derived from infiltrometer/small catchment studies and is usually expressed as a function of time, as follows:

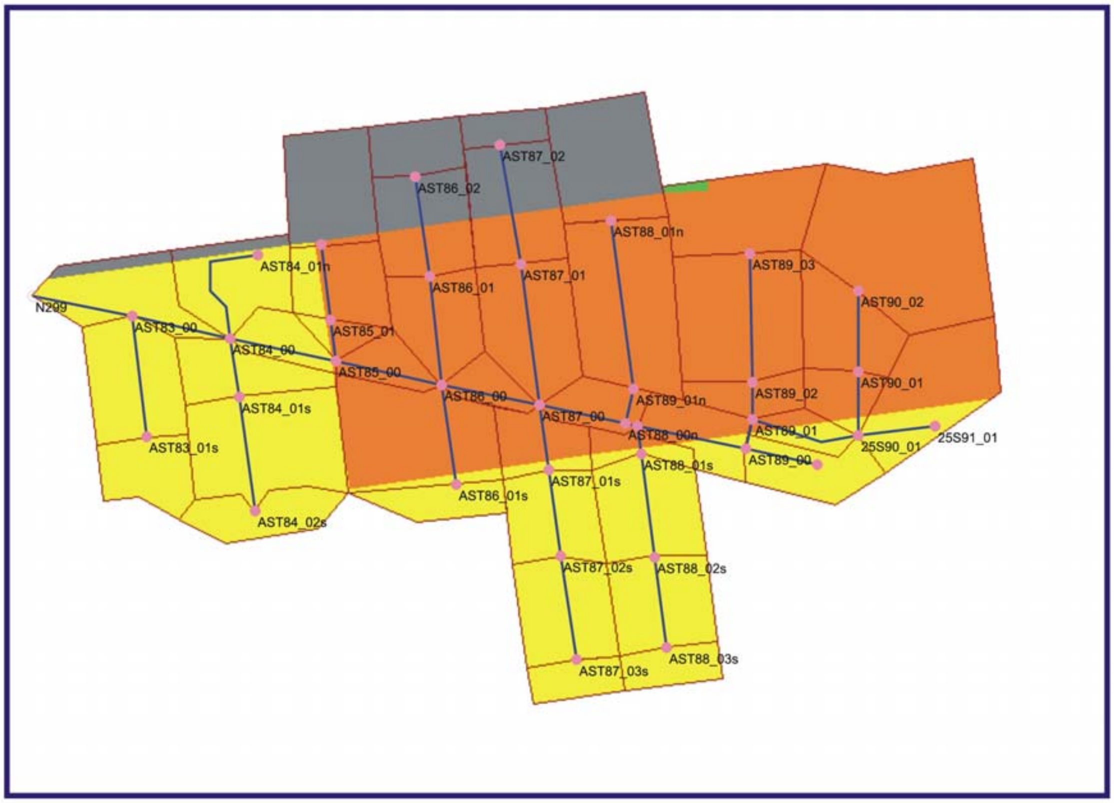
$$f = f_c + (f_o - f_c)\, e^{-kt} \qquad \text{(Horton Equation)}$$

where: f_0 is the initial infiltration rate in inches/hour,
f_c is the final (limiting) infiltration rate in inches/hour, and
k is the coefficient of the exponential term, 1/hour.

The InfoWorks model uses the SWMM's non-linear reservoir routing 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.



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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)
2 Angle of bed to horizontal (º)
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:

- Sewer blockages and collapses
- Presence of sewer sediments
- Pump-station operations (variable, step-wise, etc.), along with wet-well controls
- Inadequate sewer pipe hydraulic capacity
- Inverted siphons
- 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 WPCP drainage area, some or all of the above processes were modeled in InfoWorks. Available CSO and in-system flow and depth monitoring data compiled in previous studies such as Inner Harbor, Outer Harbor, Jamaica Bay, and East River Facility Planning studies were used to update the sewer system models of the 14 WPCP drainage areas. Many times, the data compiled during previous studies have not reflected the current system conditions such as: water conservation that has resulted in a steady decline in dry weather flows, changes in population density, increased capacities at pump stations and treatment plants, and changes in regulator/sewer configurations. Therefore, the extant InfoWorks models calibrated based on the previous studies are currently being upgraded with more recent monitoring data collected during the LTCP project. The system-wide calibration is typically undertaken with flow and depth data compiled at several in-system locations, selected outfalls (normally the frequently discharging outfalls with significant overflow volumes), and at the influent of a WPCP. The City is currently using a grid-based radar rainfall data to characterize the spatial variability. Selected storms ranging in intensity and total volumes observed during the calibration period are used to calibrate the appropriate hydrologic (e.g., depression storage, infiltration, and evaporation) and hydraulic (pipe roughness, pump operations, and gate controls) model parameters. It is important to highlight that only a few drainage areas in the City have undergone recent monitoring, and associated upgrading of the InfoWorks models. It is anticipated that the calibration of models for all drainage areas will be completed prior to next year's permit reporting process.

The input parameters necessary for InfoWorks application to compute percent capture include: (a) maximum WPCP 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, infiltration, and depression storage; (e) operation of throttling/sluice gates within a system; (f) tide conditions near the various outfalls within a system. Since the model accounts for surcharging and back ups within sewers, such complex aspects as in-line storage are modeled accurately.

The maximum capacity, hourly precipitation data, and dry weather flow inputs are used in the same context as the RAINMAN model. The percent imperviousness calculations for each subcatchment were performed using the New York City Landuse Maps, an example of which is given in Figure 3-7. The rooftops of buildings and roadways were delineated to account for impervious areas. These maps, however, did not include driveways and walkways. Therefore, a 10 percent escalation factor was applied to determine the overall impervious area within each subcatchment. A conservative evaporation rate of 0.0 inches/day was used, as in the Long Term Control Plan projects, which provides a worst-case (higher runoff) condition for CSO. The Horton infiltration parameters ranged from 1 to 3 inches/hour as maximum infiltration and 0.5 inches/hour as the minimum infiltration. Depression storage ranged from 0.02 to 0.05 inches for impervious areas and up to 0.2 inches for pervious areas.

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Figure 3-7
Percent Imperviousness Determination
Using Aerial Photographs

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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.

As a first step, the plant flow data at each WPCP 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 the InfoWorks model. 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 calibration at the plant. In general, no other hydrologic or hydraulic model parameters were adjusted in the drainage area during this calibration process. However, hydraulic adjustments of the models have been made to account for changes to the conveyance system, such as the operation of the Flushing Creek and Spring Creek tanks. The as-modeled inputs used in the InfoWorks model for all drainage areas, and those used in the RAINMAN model for Coney Island and Oakwood Beach, are summarized in Table 3-1. A sample calibration graphic for the Red Hook WPCP drainage area based on 2010 rainfall characteristics is shown in Figure 3-8.

3.4 COMBINED-SEWAGE CAPTURE RESULTS - 2010 FLOW VOLUME

Table 3-2 presents the results of the combined-sewage volume percent capture evaluation performed for 2010. The InfoWorks model was used to analyze drainage areas except for the Coney Island and Oakwood Beach WPCP areas, which were analyzed using the RAINMAN model. A total of three scenarios were considered, as discussed in Section 3.2 - "Actual" refers to the actual conveyance/treatment system performance and rainfall in 2010; "Standardized" refers to the actual conveyance/treatment system performance simulated with a "typical" rainfall condition. Finally, the "Projection" case refers to a hypothetical case wherein each WPCP is operated at its full design maximum capacity under the "typical" rainfall condition. It should however be noted that many NYC WPCPs are already operating at their full design maximum capacity.

Table 3-1. As-Modeled[5] WPCP Service Area Characteristics
Calendar Year 2010

WPCP	Combined Sewage Drainage Area (acres)	CS Area Average Runoff Coefficient/ Percent Imperviousness	Average Dry Weather Flow (MGD)	Design Dry Weather Flow (MGD)	Maximum Wet Weather Flow[1] (MGD)	Permitted Wet Weather Flow[2] (MGD)
26	4,489	0.490	50	85	136	170
BB	11,885	0.762	99	150	296	300
CI	6,062	0.680	80	110	228	220
HP	11,435	0.570	115	200	420	400
JA	5,240	0.450	76	100	175	200
NC	12,471	0.613	234	310	661	620[6]
NR	4,421	0.721	117	170	356	340
OH	9,329	0.610	85	120	260	240
PR	3,575	0.360	24	60	145	120
RH	2,991	0.600	26	60	129	120
TI	8,032	0.460	51	80	150	160
WI	9,591	0.610	193	275	543	500[7]
NYC CS Total	89,521	0.578[3]	1,176	1,720	3,567	3,390
Separate Areas						
RO[4]	NA	NA	20	45	41	90
OB[4]	NA	NA	25	40	85	80
NYC overall	NA	NA	1,176	1,805	3,567	3,560

(1) Maximum of calibrated monthly values used as InfoWorks input.
(2) Permitted flow is max design flow, or twice design dry-weather flow (2xDDWF), except as noted.
(3) Average value.
(4) Certain statistics excluded for RO and OB because these areas are separately sewered.
(5) All drainage areas modeled with InfoWorks except CI and OB, which were modeled with RAINMAN.
(6) Requirement per Second Modified Judgment on Consent, Index No. 196/88 (Newtown Creek) (Sup. Ct Kings County) (Spodek, J.).
(7) Requirement per Consent Judgment, Index No. 04-402174 (Sup. Ct. New York Court, P. Feinman), Modification to the Judgment dated November 3, 2006.

Table 3-2. Combined-Sewage Capture Results – Flow Volume Calendar Year 2010

Case Name:	"Actual"(1)	"Standardized"(2)
Rainfall Condition:(4)	Actual (2010)	Standardized (1988 JFK)
Wet Weather Flows:	Actual (2010)	Actual (2010)
26	89	88
BB	59	58
CI(6)	65	60
HP	78	76
JA	68	66
NC	84	85
NR	92	93
OH	73	71
PR	83	92
RH	78	81
TI	74	74
WI	77	81
NYC avg.(5)	77	77

Notes: (1) 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. (2) The "standardized" capture results reflect the "state and operation of the collection/treatment system" during the subject period, but with a standardized rainfall condition representing a typical rainfall/CSO year. (4) Rainfall conditions: "Standardized" refers to 1988 rainfall at JFK Airport gage, 100 storms, total 40.66 inches, average intensity = 0.0677 inch/hour, COV = 1.54. "Actual (2010)" refers to 2010 rainfall at Central Park, LaGuardia Airport, Newark International Airport, and JFK Airport, as appropriate per drainage area (see Table 2-1 NYC-Area Rainfall Statistics, 2010). (5) Averages are drainage-area weighted, and exclude separately sewered areas (Oakwood Beach and Rockaway). (6) Coney Island WPCP value calculated using RAINMAN, as InfoWorks calibration is ongoing. All other areas were modeled using InfoWorks. (7) Projection-case simulations use 620 MGD for NC and 500 MGD for WI.

As shown in Table 3-2, the "Actual" scenario capture of combined-sewage volume in 2010 averaged 80 percent City-wide. Combined-sewage capture at individual, combined area WPCPs varied from a low at Bowery Bay (59 percent) to a high at North River (92 percent). Combined-sewage flow capture is not applicable at the separately sewered WPCPs (Oakwood Beach and Rockaway).

The "Standardized" scenario reveals that flow capture under the rainfall conditions of 2010 was higher than what would be expected under more typical rainfall conditions (i.e., JFK 1988 rainfall). Under typical rainfall conditions, system operations in 2010 would have produced City-wide average combined-sewage volume captures of 77 percent. Results at individual combined-area WPCPs varied from a low at Bowery Bay of 58 percent to a high at North River of 93 percent.

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Appendix 4

WWOP Submittal Schedule

WET WEATHER OPERATING PLAN (WWOP) SUBMITTAL SCHEDULE

	Submittal Dates		
Facilities	**Original**	**Revisions**	**Status**
WPCP's			
Wards Island	July 2003	Sept. 2004, April 2007, Aug. 2007, June 2008 (submitted Sept. 2008), Dec. 2008, June 2009, Jan 2011	Jun 2009 version Approved (Mar. 2010) - awaiting DEC approval of the Jan. 2011 version
North River	April 2004		WWOP Approved (Jan. 2006)
Hunts Point	July 2003	Sept. 2004, April 2010, Aug. 2010	Aug. 2010 version Approved (Oct. 2010)
26th Ward	July 2003	Sept. 2004, May 2007, Oct. 2007, Feb. 2009, Aug. 2009, July 2010	Aug.2009 version Approved (Sept. 2009) - awaiting DEC approval of the July 2010 version
Coney Island	April 2005	Dec. 2007, May 2010, Oct. 2010	Dec. 2007 version Approved (Mar. 2008) - awaiting DEC approval of the Oct. 2010 version
Owls Head	April 2005	Dec. 2007, Sept. 2008, Dec. 2008	Dec. 2008 version Approved (Jan. 2009)
Newtown Creek	June 2003	April 2005, March 2009, April 2010	April 2010 version Approved (Jul. 2010)
Red Hook	Feb. 2005		WWOP Approved (Jan. 2006)
Jamaica	April 2005	April 2007, June 2007	June 2007 version Approved (Sept. 2007)
Tallman Island	July 2003	Sept. 2004, May 2007, Oct. 2007, Aug. 2009, April 2010, July 2010	July 2010 version Approved (Sept. 2010)
Bowery Bay	July 2003	Sept. 2004, March 2009	March 2009 version Conditionally Approved (May 2009)
Rockaway	April 2005	Dec. 2007	Dec. 2007 version Approved (Mar. 2008)
Oakwood Beach	April 2005	Dec. 2007	Dec. 2007 version Approved (Mar. 2008)
Port Richmond	April 2005	Dec. 2007	Dec. 2007 version Approved (Mar. 2008)
CSO FACILITIES			
Spring Creek	June 2003	May 2007, Oct. 2007, Feb. 2009, Aug. 2009, July 2010	appended to 26W WWOP
Flushing Bay	Dec. 2003	May 2007, Oct. 2007, Aug. 2009, April 2010, July 2010	appended to TI WWOP
Alley Creek	Dec. 2003	May 2007, Oct. 2007, Aug. 2009, April 2010, July 2010	appended to TI WWOP
Peardegat Basin	Dec. 2003		
Corona Avenue	Dec. 2003		

Appendix 5

Dry Weather Raw Sewage Bypass Graph (2005 – 2010)

Dry Weather Raw Sewage Bypasses Summary (2005 – 2010)

Bypassing Cause Codes

Pump Station Bypass Summary

Pump Station Bypass Cause Code Summary

Pump Station Bypass Summary Itemized by Cause Code & P.S.s

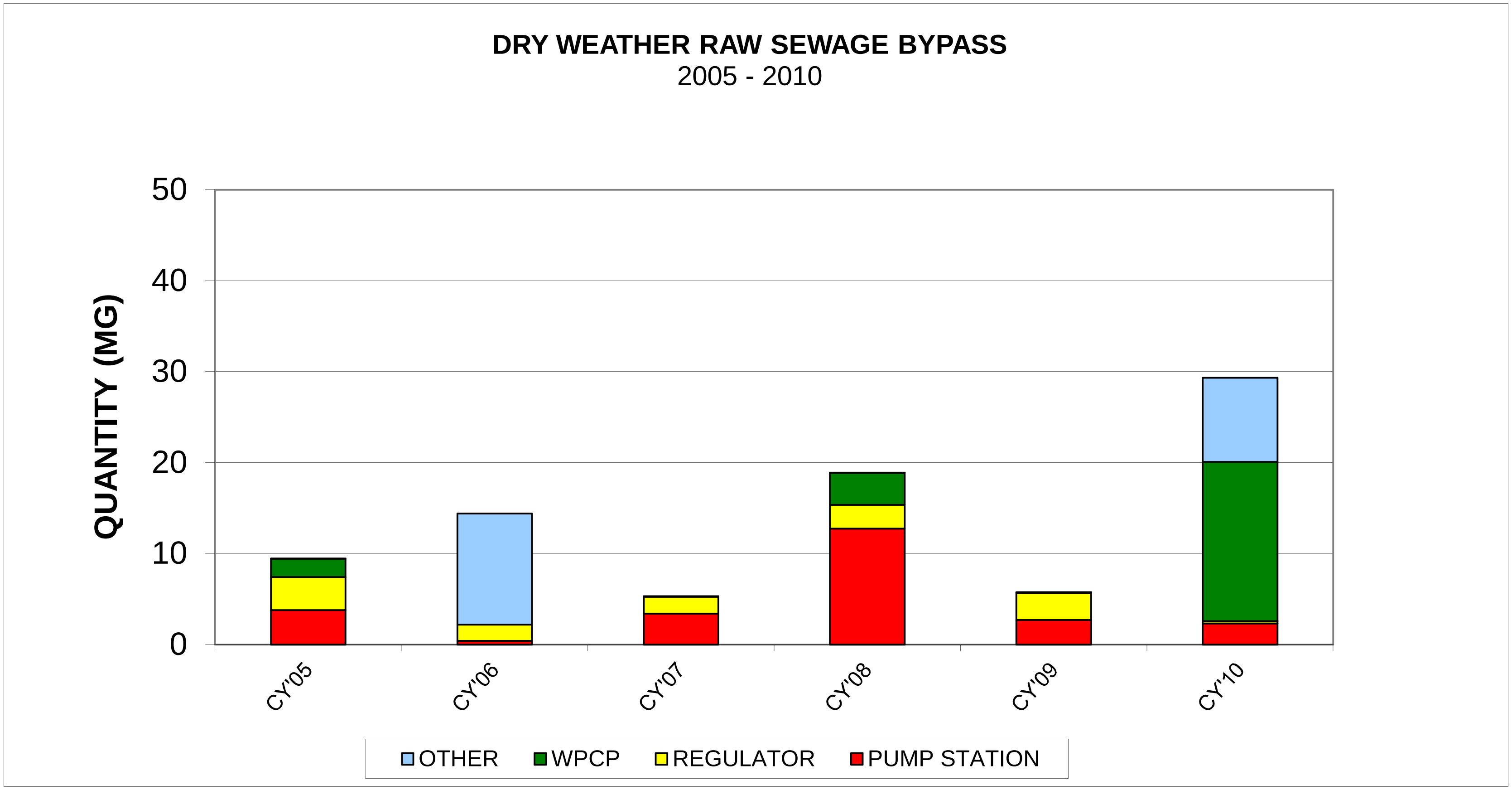
Regulator Bypass Summary

Regulator Bypass Cause Code Summary

Regulator Bypass Summary Itemized by Cause Code & Location

Regulator Bypass, Sorted by Cause Code

WWTP Bypass Summary



Dry Weather Bypassing CY'05-CY'10

SOURCE	CY'05	CY'06	CY'07	CY'08	CY'09	CY'10
PUMP STATION	3.78	0.39	3.40	12.75	2.69	2.32
REGULATOR	3.64	1.80	1.86	2.63	2.99	0.27
WPCP	2.00	0.00	n/a	3.50	0.06	17.50
OTHER	0.00	12.21	0.06	0.02	0.02	9.25
TOTAL	9.42	14.40	5.32	18.90	5.76	29.34

Other locations include: bypasses from outfalls, street locations, etc.
*In 2006, there was a Potential Raw Sewage Bypass at Bowery Bay, but it was not confirmed.
*In 2010, there was a Potential Raw Sewage Bypass at Newtown Creek, but it was not confirmed.
*In 2010, there was a Bypass during Wet Weather at Jamaica which is included in the above totals.

Note: The Blackout Citywide event (August 14-16,2003) contributed 195.86 MG to PS Bypasses and 320.03 MG to WPCP Bypasses

Dry Weather Raw Sewage Bypasses

Pump Station Bypass Summary

Years	# Of Events	Total Bypass(MG)	Duration (Hrs)
CY2005	15	3.78	47.6
CY2006	8	0.39	9.3
CY2007	8	3.40	103.0
CY2008	17	12.75	51.6
CY2009	12	2.69	27.2
CY2010	12	2.32	45.0

Regulator Bypass Summary

Years	# Of Events	Total Bypass(MG)	Duration (Hrs)
CY2005	12	3.64	14.1
CY2006	23	1.80	39.4
CY2007	16	1.86	52.3
CY2008	10	2.63	30.1
CY2009	13	2.99	76.1
CY2010	14	0.27	17.5

WPCP Bypass Summary

Years	# Of Events	Total Bypass(MG)	Duration (Hrs)
CY2005	1	2.00	1.8
CY2006 *	1	0.00	0.7
CY2007	0	n/a	n/a
CY2008	1	3.50	1.8
CY2009	1	0.06	0.8
CY2010 *	3	17.50	12.0

*In 2006, there was a Potential Raw Sewage Bypass at Bowery Bay, but it was not confirmed.
*In 2010, there was a Potential Raw Sewage Bypass at Newtown Creek, but it was not confirmed.
*In 2010, there was a Bypass during Wet Weather at Jamaica which is included in the above totals.

Other Location Bypass Summary

Years	# Of Events	Total Bypass(MG)	Duration (Hrs)
CY2005	4	0.00	8.2
CY2006	6	12.21	7.4
CY2007	7	0.06	18.7
CY2008	4	0.02	23.8
CY2009	1	0.02	5.2
CY2010	12	9.25	49.6

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

BYPASSING CAUSE CODES

1. **APPROVED SHUTDOWN**
   - A) Corrective Maintenance
   - B) Modification
   - C) Reconstruction(Capital Projects)
   - D) Others
2. **ELECTRICAL UTILITY FAILURE**
   - A) Feeder
   - B) Network (i.e. area wide blackout)
3. **ELECTRICAL EQUIPMENT FAILURE**
   - A) Distribution Equipment
   - B) Influent or Regulator Gate Control System
   - C) MSP Control System
   - D) MSP Motor
   - E) Other
4. **MECHANICAL EQUIPMENT FAILURE**
   - A) Influent or Regulator Gates
   - B) Screens
   - C) MSP
   - D) MSP Related Pipe/Valves
   - E) Major Treatment Units
   - F) Other
5. **UNCOLLECTED**
   - A) Undersized Facility
   - B) New Facility Required
   - C) Illegal Connection to Storm
   - D) Illegal Connection to Outfall
   - E) High Flows (i.e. flow reduction required)
6. **BLOCKAGES**
   - A) Regulator
   - B) Tide Gate Chamber (i.e. infiltration)
   - C) Branch Interceptor
   - D) Interceptor
   - E) Influent Gate
   - F) Screens
   - G) Pumps
7. **RUPTURE OR COLLAPSE**
   - A) Pumping Station Force Main
   - B) Interceptor or Other Main
8. **FLOODING**
   - A) Wet Well Interconnection
   - B) Pump or Pipe Failure
   - C) Other
9. **MISCELLANEOUS**
   - A) Vandalism
   - B) Contractor Error
   - C) Operations Error
   - D) Explosive or Toxic Material

PUMP STATION BYPASSING SUMMARY
CY 2010

LOCATION	EVENTS	%EVENTS	MG	%MG	HOURS	%HOURS
HP-Commerce Ave PS	1	8	0.048	2.05	6.05	13.45
HP-Co-op South PS	1	8	0.379	16.34	7.42	16.49
PR-Hanna Street P.S.	1	8	1.302	56.12	10.15	22.56
PR-Nautilus Court PS	1	8	0.002	0.06	1.78	3.96
RH-Nevins Street PS	1	8	0.024	1.05	4.33	9.62
RK-Seagirt Avenue PS	1	8	0.153	6.59	4.75	10.56
WI-235th Street PS	4	33	0.351	15.12	5.65	12.56
WI-W 248th Street PS	1	8	0.042	1.81	3.53	7.85
WI-W. 254th Street PS	1	8	0.022	0.95	1.33	2.96
TOTAL	12	100	2.32	100	44.99	100

PUMP STATION BYPASSING

CY 2010

CAUSECODE BYPASS SUMMARY

CAUSECODE	CODE DESCRIPTION	EVENTS	%EVENTS	MG	%MG	HOURS	%HOURS
2A	ELECTRICAL UTILITY FAILURE - FEEDER	8	67	1.87	80.54	29.32	65.17
2B	ELECTRICAL EQUIPMENT FAILURE -NETWORK	1	8	0.38	16.34	7.42	16.49
4C	MECHANICAL EQUIPMENT FAILURE-MSP	2	17	0.07	3.02	6.47	14.38
8C	FLOODING - OTHER	1	8	0.0015	0.06	1.78	3.96
Total		12	100	2.32	100	44.99	100

PUMP STATION BYPASSING

CY 2010

SUMMARY BY CAUSE CODE & PUMPING STATIONS

CAUSECODE: 2A ELECTRICAL UTILITY FAILURE-FEEDER

ITEM #	LOCATION	EVENTS	%EVENTS	MG	%MG	HOURS	%HOURS
4876	WI-W235th Street PS	1	8.33	0.207	8.92	3.33	7.40
4877	WI-W235th Street PS	1	8.33	0.025	1.08	0.4	0.89
4894	WI-W 248th Street PS	1	8.33	0.042	1.81	3.53	7.85
4903	PR-Hanna Street P.S.	1	8.33	1.302	56.12	10.15	22.56
4917	WI-W. 254th Street PS	1	8.33	0.022	0.95	1.33	2.96
4970	WI-W. 235th Street PS	1	8.33	0.093	4.01	1.50	3.33
5035	RH-Nevins Street PS	1	8.33	0.024	1.05	4.33	9.62
5061	RK-Seagirt Avenue PS	1	8.33	0.153	6.59	4.75	10.56
	TOTAL	8	67	1.87	80.54	29.32	65.17

CASECODE: 2B ELECTRICAL EQUIPMENT FAILURE -NETWORK

ITEM #	LOCATION	EVENTS	%EVENTS	MG	%MG	HOURS	%HOURS
4942	HP-Co-op South PS	1	8.33	0.38	16.34	7.42	16.49
	TOTAL	1	8.33	0.38	16.34	7.42	16.49

CASECODE: 4C MECHANICAL EQUIPMENT FAILURE-MSP

ITEM #	LOCATION	EVENTS	%EVENTS	MG	%MG	HOURS	%HOURS
4847	WI-W.235th Street PS	1	8.33	0.03	1.02	0.42	0.93
5010	HP-Commerce Ave PS	1	8.33	0.05	2.00	6.05	13.45
	TOTAL	2	17	0.07	3.02	6.47	14.38

CASECODE: 8C Flooding. Other

ITEM #	LOCATION	EVENTS	%EVENTS	MG	%MG	HOURS	%HOURS
4920	PR-Nautilus Court PS	1	8.33	0.002	0.06	1.78	3.96
	TOTAL	1	8.33	0.002	0.06	1.78	3.96

REGULATOR BYPASSING SUMMARY
CY 2010

LOCATION	EVENTS	%EVENTS	HOURS	%HOURS	MG	%MG
OH-Reg. No. 10	2	15.38	2.92	16.66	0.030383	11.46
PR-Reg. No. WR-04	1	7.69	0.33	1.88	0.002920	1.10
RH-Reg. No. 17	2	15.38	4.17	23.79	0.026400	9.96
RH-Reg. No. 19	1	7.69	2.17	12.38	0.011050	4.17
RH-Reg. No. 20	1	7.69	0.19	1.08	0.010000	3.77
TI-Reg. No. 03	1	7.69	0.25	1.43	0.001146	0.43
TI-Reg. No. 04	1	7.69	0.25	1.43	0.000012	0.00
TI-Reg. No. 52	1	7.69	1.50	8.56	0.009100	3.43
WI-Reg. No.M-15	2	15.38	2.67	15.23	0.135000	50.94
WI-Reg. No.B-66	1	7.69	3.08	17.57	0.039000	14.72
TOTAL	13	100	17.53	100	0.26501	100

REGULATOR BYPASSING CY2010
CAUSECODE BYPASS SUMMARY

CAUSECODE	CODE DESCRIPTION	EVENT	%EVENTS	HOURS (HRS)	%HOURS	QUANTITY (MG)	%QUANTITY
3B	ELECTRICAL EQUIPMENT FAILURE	1	7.69	0.19	1.08	0.0100	3.77
5E	UNCOLLECTED- High Flows	1	7.69	3.08	17.57	0.0390	14.71
6A	BLOCKAGES - Regulator	8	61.54	9.42	53.74	0.0700	26.41
6B	BLOCKAGES - Tide Gate Chamber	1	7.69	1.25	7.13	0.0930	35.08
6C	BLOCKAGES - Branch Interceptor	1	7.69	1.42	8.10	0.0420	15.84
9B	MISCELLANEOUS- Contractor Error	1	7.69	2.17	12.38	0.01105	4.17
	Total:	13	100	17.53	100	0.2651	100

REGULATOR BYPASSING
CY 2010

CAUSECODE: 3B ELECTRICAL EQUIPMENT FAILURE

LOCATION	STIME		SDATE	CAUSE FOR BYPASS	AMOUNT	DURATION
RH-Reg. No. 20	8:07	AM	09/24/10	The infatable dam inflated during dry weather due to a failure of the high level downstream sensor.	0.0100	0.19
				CAUSE TOTAL	0.0100	0.19

CAUSECODE: 5E UNCOLLECTED High Flow

LOCATION	STIME		SDATE	CAUSE FOR BYPASS	AMOUNT	DURATION
WI-Reg. No.B-66	7:05	PM	07/07/10	Open fire hydrants within the drainage area are believed to be the reason for excessive flows	0.0390	3.08
				CAUSE TOTAL	0.0390	3.08

CAUSECODE: 6A BLOCKAGES-REGULATOR

LOCATION	STIME		SDATE	CAUSE FOR BYPASS	AMOUNT	DURATION
OH-Reg. No. 10	10:45	AM	11/30/10	Raw sewage bypass at regulator due to blockage	0.0182	1.75
OH-Reg. No. 10	8:25	AM	12/14/10	Raw sewage bypass at regulator due to blockage	0.0122	1.17
PR-Reg No WR-4	9:20	AM	12/08/10	Blockage in the regulator gate	0.0029	0.33
RH-Reg. No. 17		Unknown		The drop pipe was discovered to be clogged	0.0198	2.50
RH-Reg. No. 17		Unknown		The drop pipe was discovered to be clogged	0.0066	1.67
TI-Reg. No. 03	9:30	AM	01/07/10	A blockage of debris was discovered in the diversion chamber	0.0011	0.25
TI-Reg. No. 04	8:55	AM	02/22/10	A blockage of debris and rags was discovered in the chamber	0.0001	0.25
TI-Reg. No. 52	9:30	AM	03/11/10	A blockage was discovered in the regulator	0.0091	1.50
				CAUSE TOTAL	0.0700	9.42

CAUSECODE: 6B BLOCKAGES - TIDEGATE CHAMBER

LOCATION	STIME		SDATE	CAUSE FOR BYPASS	AMOUNT	DURATION
WI-Reg. No.M-15	3:25	PM	09/10/10	A blockage was discovered at one of the tide gates	0.093	1.25
				CAUSE TOTAL	0.093	1.25

CAUSECODE: 6C BLOCKAGES - BRANCH INTERCEPTOR

LOCATION	STIME		SDATE	CAUSE FOR BYPASS	AMOUNT	DURATION
WI-Reg. No.M-15	11:50	AM	12/18/10	A bypass was due to a blockage at the branch interceptor	0.042	1.42
				CAUSE TOTAL	0.042	1.42

CAUSECODE: 9B MISCELLANEOUS-CONTRACTOR ERROR

LOCATION	STIME		SDATE	CAUSE FOR BYPASS	AMOUNT	DURATION
RH-Reg. No. 19		Unknown		There was a raw sewage bypass due to the contractor error	0.0111	2.17
				CAUSE TOTAL	0.0111	2.17

REGULATOR BYPASSING
CY 2010

CAUSECODE: 3B ELECTRICAL EQUIPMENT FAILURE

REGULATORS	EVENTS	%EVENTS	HOURS	%HOURS	MG	%MG
RH-Reg. No. 20	1	7.69	0.19	1.08	0.0100	3.77
TOTAL	1	7.69	0.19	1.08	0.0100	3.77

CAUSECODE: 5E UNCOLLECTED High Flow

REGULATORS	EVENTS	%EVENTS	HOURS	%HOURS	MG	%MG
WI-Reg. No.B-66	1	7.69	3.08	17.57	0.0390	14.71
TOTAL	1	7.69	3.08	17.57	0.0390	14.71

CAUSECODE: 6A BLOCKAGES - REGULATOR

REGULATORS	EVENTS	%EVENTS	HOURS	%HOURS	MG	%MG
OH-Reg. No. 10	2	15.38	2.92	16.66	0.030382	11.46
PR-Reg. No. WR-04	1	7.69	0.33	1.88	0.002920	1.10
RH-Reg. No. 17	2	15.38	4.17	23.79	0.026400	9.96
TI-Reg. No. 03	1	7.69	0.25	1.43	0.001146	0.43
TI-Reg. No. 04	1	7.69	0.25	1.43	0.000052	0.02
TI-Reg. No. 52	1	7.69	1.50	8.56	0.009100	3.43
TOTAL	8	61.54	9.42	53.74	0.0700	26.41

CAUSECODE: 6B BLOCKAGES - TIDEGATE CHAMBER

REGULATORS	EVENTS	%EVENTS	HOURS	%HOURS	MG	%MG
WI-Reg. No.M-15	1	7.69	1.25	7.13	0.0930	35.08
TOTAL	1	7.69	1.25	7.13	0.0930	35.08

CAUSECODE: 6C BLOCKAGES- BRANCH INTERCEPTOR

REGULATORS	EVENTS	%EVENTS	HOURS	%HOURS	MG	%MG
WI-Reg. No.M-15	1	7.69	1.42	8.10	0.0420	15.84
TOTAL	1	7.69	1.42	8.10	0.0420	15.84

CAUSECODE: 9B MISCELLANEOUS-Contractor Error

REGULATORS	EVENTS	%EVENTS	HOURS	%HOURS	MG	%MG
RH-Reg. No. 19	1	7.69	2.17	12.38	0.0111	4.17
TOTAL	1	7.69	2.17	12.38	0.0111	4.17

WWTP BYPASS
CY 2010

ITEM #	LOCATION	EVENTS	%EVENTS	MG	%MG	HOURS	%HOURS	TYPE
4839	NC-Newtown Creek	1	33.3%	0.00	0.0%	4.83	40.3%	Potential Dry Weather Bypass
4893	NC-Newtown Creek	1	33.3%	5.70	32.6%	2.50	20.8%	Raw Sewage Bypass
5022	JAM-Jamaica	1	33.3%	11.80	67.4%	4.67	38.9%	Bypass during wet weather
	TOTAL	3		17.50		12.00		

Appendix 6

Exhibit 1: Letter to Industrial Users amending

Trends in Metals Loadings to New York City WTTP’s

The City of New York
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) 595-5050
(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.

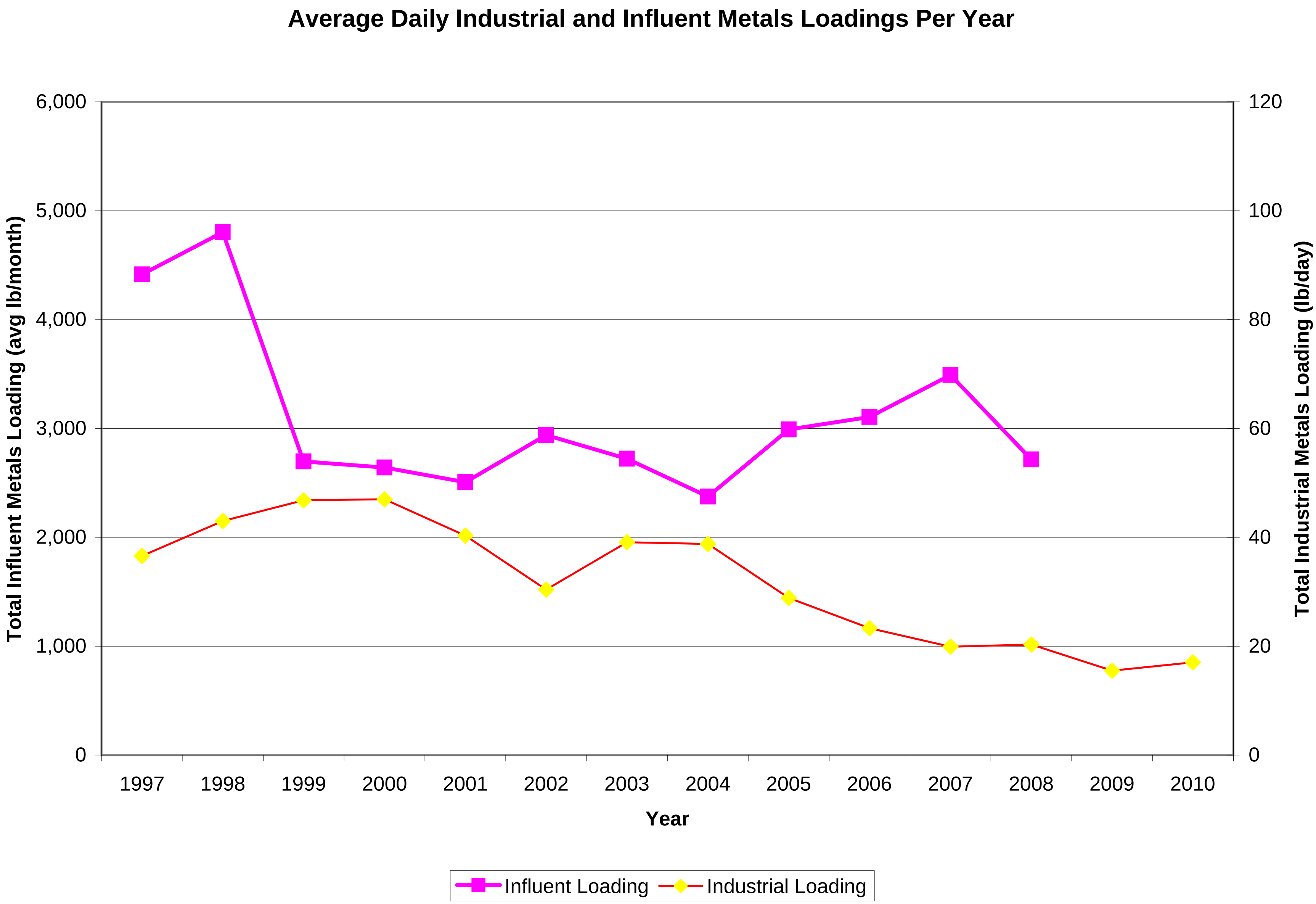
Sincerely,

Leslie Lipton

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

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

New York City Department of Environmental Protection
DEP
www.nyc.gov/dep
(718) DEP-HELP



1996 data could not be recalculated by the method used for 1997-2006 and is not included.

Appendix 7

BWSO

Table 7.1-1	**Post Inspection Schedule**
Table 7.1-2	**Catch Basin Hooding**
Table 7.1-3	**Catch Basins Cleaning**
Table 7.2-1	**Summary of Catch Basin Repair and Retrofit**

BWT

Table 7C-1	**City-Wide Floatable Material Recovery**
Table 7C-2	**City-Wide Floatable Material Recovery per CSO Site**
Table 7C-2A	**City-Wide Floatable Material Recovery per Open Water Site**
Table 7C-3	**NYC DEP CSO Floatables Removal Program Via Skimmer Vessels**
Table 7-2	**City-Wide Street Cleanliness Table and Chart**
Figure 7-2	**Floatables Booming, Netting and Offloading Sites**
Figure 7-3	**City-Wide Floatables Material Recovery**

TABLE 7.1-1: Post Inspection Schedule

PROGRAMMATIC CITYWIDE CATCH BASINS

SURVEY AND CLEANINIG SCHEDULE

Updated 5-14-09

BROOKLYN NORTH			
CB	**# BASINS**	**START DATE**	**SURVEY & CLEANING COMPLETION DUE DATE**
3	1676	October-09	February-10
8	850	December-09	May-10
1	3056	March-10	October-10
9	769	November-10	January-11
4	857	February-11	April-11
6	1640	April-11	August-11
7	1445	July-11	December-11
10	1458	November-11	March-12
2	1722	March-12	July-12
17	1877	July-12	November-12

BROOKLYN SOUTH			
CB	**# BASINS**	**START DATE**	**SURVEY & CLEANING COMPLETION DUE DATE**
16	1138	October-09	January-10
13	1585	December-09	April-10
11	1835	March-10	July-10
14	1601	July-10	November-10
15	3514	June-10	March-11
5	3512	December-10	August-11
12	2102	August-11	January-12
18	4412	July-11	June-12

STATEN ISLAND			
CB	**# BASINS**	**START DATE**	**SURVEY & CLEANING COMPLETION DUE DATE**
1	3751	July-09	May-10
2	4396	February-10	January-11
3	5471	May-11	June-12

MANHATTAN			
CB	**# BASINS**	**START DATE**	**SURVEY & CLEANING COMPLETION DUE DATE**
8	1032	October-09	January-10
7	1241	December-09	April-10
5	1131	April-09	July-10
6	974	July-10	October-10

4	1193	October-10	**January-11**
1	1092	January-11	**April-11**
3	1138	March-11	**July-11**
11	917	July-11	**October-11**
2	1373	October-11	**February-12**
9	795	March-12	**May-12**
10	876	May-12	**August-12**
12	1274	September-12	**December-12**

QUEENS NORTH			
CB	# BASINS	START DATE	SURVEY & CLEANING COMPLETION DUE DATE
3	2432	November-09	**February-10**
4	2377	March-10	**June-10**
7	6218	February-10	**September-10**
11	5006	July-10	**January-11**
6	1888	April-11	**June-11**
5	4572	May-11	**October-11**
8	3931	October-11	**February-12**
1	2968	March-12	**June-12**
2	3076	June-12	**October-12**

QUEENS SOUTH			
CB	# BASINS	START DATE	SURVEY & CLEANING COMPLETION DUE DATE
12	7844	June-09	**April-10**
9	3650	April-10	**September-10**
10	4782	July-10	**January-11**
14	3675	January-11	**June-11**
13	9718	October-11	**October-12**

BRONX			
CB	# BASINS	START DATE	SURVEY & CLEANING COMPLETION DUE DATE
5	780	November-09	**January-10**
10	2072	November-09	**April-10**
8	1107	April-10	**July-10**
11	1867	July-10	**November-10**
12	2634	August-10	**February-11**
2	797	March-11	**May-11**
1	1090	May-11	**August-11**
4	1056	July-11	**November-11**
9	2056	September-12	**February-12**
6	920	March-12	**May-12**
7	910	June-12	**August-12**
3	719	September-12	**November-12**

Table 7.1-2: CY 2010 Catch Basin Hooding (Total number of hoods replaced by drainage area)

Drainage Area	TOTAL
26th Ward	5
Bowery Bay	113
Coney Island	93
Hunts Point	113
Jamaica	82
Newtown Creek	109
North River	45
Owls Head	54
Port Richmond	35
Red Hook	7
Rockaway	5
Tallman Island	67
Wards Island	19
Total	747

Table 7.1-3: CY 2010 Catch Basin Cleaning

	Total CB SURVEYED	Surveyed Monthly Average Rate	Total Cleaning
BRONX	5,051	421	3,421
BROOKLYN	10,866	906	7,911
MANHATTAN	4,303	359	2,306
QUEENS	20,703	1,725	14,956
STATEN ISLAND	4,837	403	1,627
TOTAL:	45,760	3,814	30,221

Table 7.2-1. Summary of Catch Basin Repair and Retrofit in CY 2010

Reviewed by DDC	
Records indicated CB previously reconstructed	594
Reviewed by DEP	
Records indicated CB removed	3
Inspection found CB removed	18
Inspection found CB previously reconstructed or replaced	12
Retrofitted	115
Repaired	92
Total	834

Table 7C-1. City-Wide Floatable Material Recovery 2004-2010

	2004	2005	2006	2007	2008	2009	2010
No. Sites[(1)]							
FCP[(2)] Permanent	21.00	21.00	22.00	21.00	21.00	24.00	23.00
FCP Temporary[(3)]	2.00	2.00	1.00	2.00	2.00	2.00	1.00
Other Sites[(4)]	2.00	2.00	3.00	4.00	4.00	3.00	12.00
Total	25.00	25.00	26.00	27.00	27.00	29.00	36.00
Volume [cy][(5)]							
FCP Permanent	1,460.00	1,047.50	1,614.50	2,131.30	1,881.75	1,368.75	1774.50
FCP Temporary[(3)]	2.00	3.00	18.00	25.50	18.25	1.00	5.00
Other Sites[(4)]	32.00	80.25	70.50	151.50	136.50	207.50	523.00
Total	**1,494.00**	**1,130.75**	**1,703.00**	**2,308.30**	**2,036.50**	**1,577.25**	**2,302.50**

(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. The boom as approved by NYSDEC as a temporary installation. Temporary boom site to protect the Gawanus Canal pumps. The boom installation is at the Red Hook Inlet of the Canal.

(4) Open Water

(5) Total volume of floatables retrieved from containment sites and open water during period.

Table 7C-2. City-Wide Floatable Material Recovery Per CSO Floatable Containment Site, 2010

Month-Year	Bergen Basin	Bowery Bay	Bronx River	Bushwick Inlet	Clason Point	Coney Island Creek	Cryder's Lane	East Branch	English Kills	Flushing Bay CS1(1)	Flushing Bay CS2(2)	Flushing Creek 1	Flushing Creek 2
Jan-10	24.0		227.5			6.0	5.0						
Feb-10	20.0	12.0	85.0										
Mar-10	28.0	2.5	233.0				18.0			2.5		3.0	
Apr-10	6.0		81.0	3.0			4.0					0.5	7.0
May-10		13.0	45.0				6.0						3.0
Jun-10	12.0	4.0	21.0									7.0	
Jul-10			46.0										
Aug-10	31.0		64.0			2.0							2.0
Sep-10	6.0		31.0				7.0		10.0			12.0	
Oct-10	6.0		118.0		2.0		15.0		12.0	1.0		4.0	
Nov-10	24.0	12.0	40.0	0.0	0.0	0.0	0.0	1.0					
Dec-10	5.0	33.0	81.0						1.0			6.0	
2010 Total	**162.0**	**76.5**	**1072.5**	**3.0**	**2.0**	**8.0**	**55.0**	**1.0**	**23.0**	**3.5**		**32.5**	**12.0**

Month-Year	Fresh Creek	Gowanus Canal	Hendrix Creek	Hunts Point	Maspeth Creek	Owls Head(4)	Paerdegat Basin	Thurston Basin	Wallabout Channel 1	Wallabout Channel 2	Westchester Creek	Open Water(3)	2010 Total
Jan-10	6.0	2.0	12.0			6.0		5.0				10.5	**304.0**
Feb-10	3.0		11.0					44.0	0.5			16.5	**192.0**
Mar-10	2.0							18.0	2.0			175.0	**484.0**
Apr-10	3.0		15.0	0.5	9.0			5.0	0.5			84.0	**218.5**
May-10	6.0						8.0					16.0	**97.0**
Jun-10	11.0		10.0		5.0		1.0					27.0	**98.0**
Jul-10	5.0	3.0					13.0				7.0	4.0	**78.0**
Aug-10	8.0		12.0			3.0	7.0					63.0	**192.0**
Sep-10	14.0						3.0		3.0			37.0	**123.0**
Oct-10	12.0		2.0		6.0		7.0		4.0	5.0		26.0	**220.0**
Nov-10	6.0						1.0	2.0				64.0	**150.0**
Dec-10	8.0							12.0					**146.0**
2010 Total	**84.0**	**5.0**	**62.0**	**0.5**	**20.0**	**9.0**	**40.0**	**86.0**	**10.0**	**5.0**	**7.0**	**523.0**	**2302.5**

(1) Formerly known as Flushing Bay CS2.

(2) Formerly known as Flushing Bay CS3.

(3) See next page for open water area.

(4) Formerly known as Buttermilk Channel.

Table 7C-2A. City-Wide Floatable Material Recovery Per Open Water Site, 2010

Month-Year	Redhook Intake	Sheepshead Bay	Whale Creek	Upper NY Bay	Jamaica Bay	Bronx River	Gowanus	East River	Whitestone	Bayridge Flat	Newtown Creek	Owls Head	2010 Total
Jan-10	1.5		9.0										10.5
Feb-10	2.5				14.0								16.5
Mar-10	29.0	9.0	29.0		45.0	12.0	24.0	15.0	12.0				175.0
Apr-10	18.0		6.0	33.0		12.0				15.0			84.0
May-10	4.0							12.0					16.0
Jun-10	15.0			12.0									27.0
Jul-10	4.0												4.0
Aug-10	3.0			33.0	7.0			20.0					63.0
Sep-10			1.0	8.0	3.0	12.0		10.0			3.0		37.0
Oct-10	3.0							9.0			12.0	2.0	26.0
Nov-10		64.0											64.0
Dec-10													
2010 Total	**80.0**	**73.0**	**45.0**	**86.0**	**69.0**	**36.0**	**24.0**	**66.0**	**12.0**	**15.0**	**15.0**	**2.0**	**523.0**

Table 7C-3. NYCDEP CSO FLOATABLES REMOVAL PROGRAM VIA SKIMMER VESSELS COLLECTION SUMMARY (CUBIC YARDS)

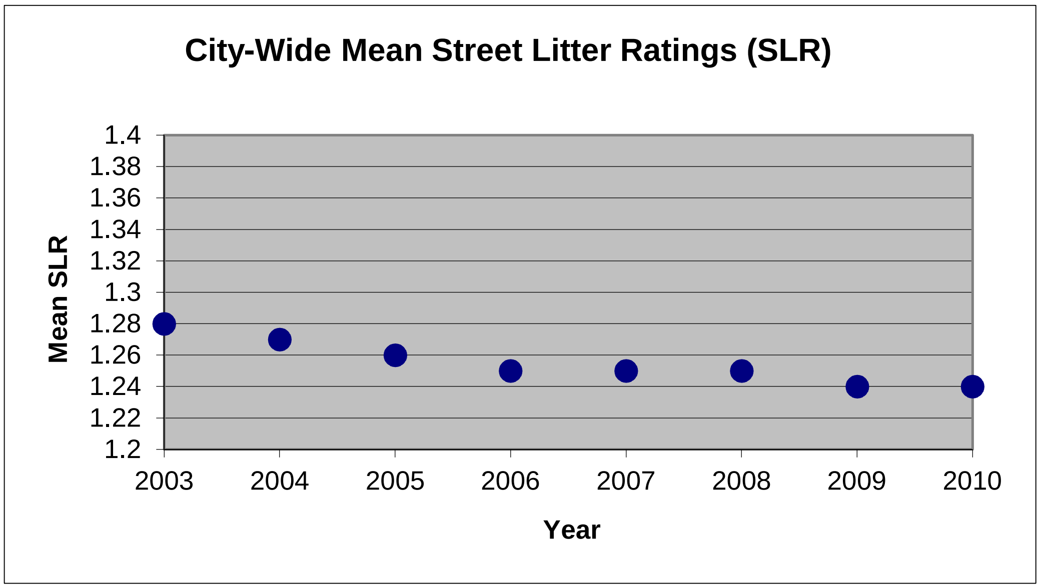
MONTH	ZONE I	ZONE II/III	ZONE IV	TOTAL
January	47	24.5	232.5	304
February	92	3	97	192
March	126	78	280	484
April	29	63.5	126	218.5
May	14	21	62	97
June	34	32	32	98
July	18	7	53	78
August	58	68	66	192
September	56	17	50	123
October	27	53	140	220
November	97	1	52	150
December	25	1	120	146
2010 TOTAL YTD	**623**	**369**	**1310.5**	**2,302.50**

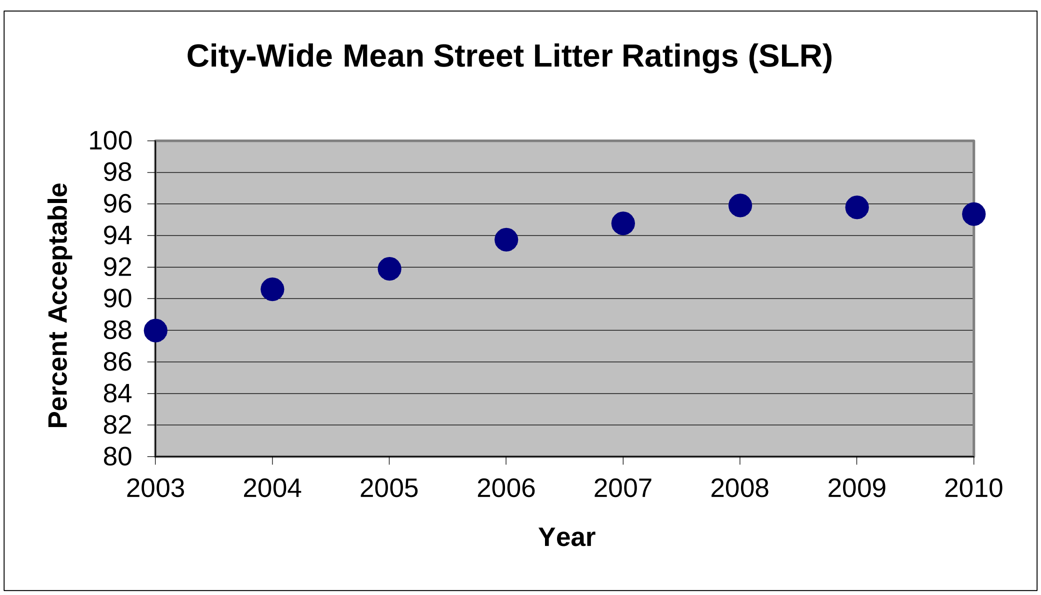
ZONE I	ZONE II/III	ZONE IV
BERGEN BASIN	BUSHWICK INLET	BOWERY BAY
FRESH CREEK	CONEY ISLAND	BRONX RIVER
HENDRIX CREEK	EAST BRANCH	CLASON POINT
PAERDEGAT BASIN	ENGLISH KILLS	CRYDERS POINT
SHEEPSHEAD BAY	GOWANUS CANAL	FLUSHING BAY I
SHELLBANK BASIN	MASPETH CREEK	FLUSHING BAY II
THURSTON BASIN	OWLS HEAD	FLUSHING CREEK I
	REDHOOK	FLUSHING CREEK II
	WALLABOUT I	HUNTS POINT
	WALLABOUT II	WESTCHESTER CREEK
	WHALE CREEK	

Table 7-2. City-Wide Street Cleanliness, 2003(1) - 2010

	Measure of Street Cleanliness Results of Scorecard Litter Ratings (SLR)							
Year	2003	2004	2005	2006	2007	2008	2009	2010
Mean SLR (2)	1.28	1.27	1.26	1.25	1.25	1.25	1.24	1.24
% Acceptable(3)	88	90.6	91.9	93.75	94.78	95.92	95.8	95.36
Filthy(4)	1.33	0.84	0.69	0.32	0.32	0.14	0.2	0.36

Notes:
(1) Scorecard Program initated in September 1994.
(2) SLRs follow a 7-point scale from 1.0 (cleanest) to 3.0 (dirtiest)
(3) Percentage of tested blockfaces with SLR less than 1.5.
(4) Percentage of tested blockfaces with SLR greater than 1.74.





1200 MacArthur Boulevard
Mahwah, New Jersey 07430
(201) 529-5151 f:(201) 529-5728

Figure 7-2
Floatables Booming, Netting and Offloading Sites

Annual Report on Best Management Practices for CSO's

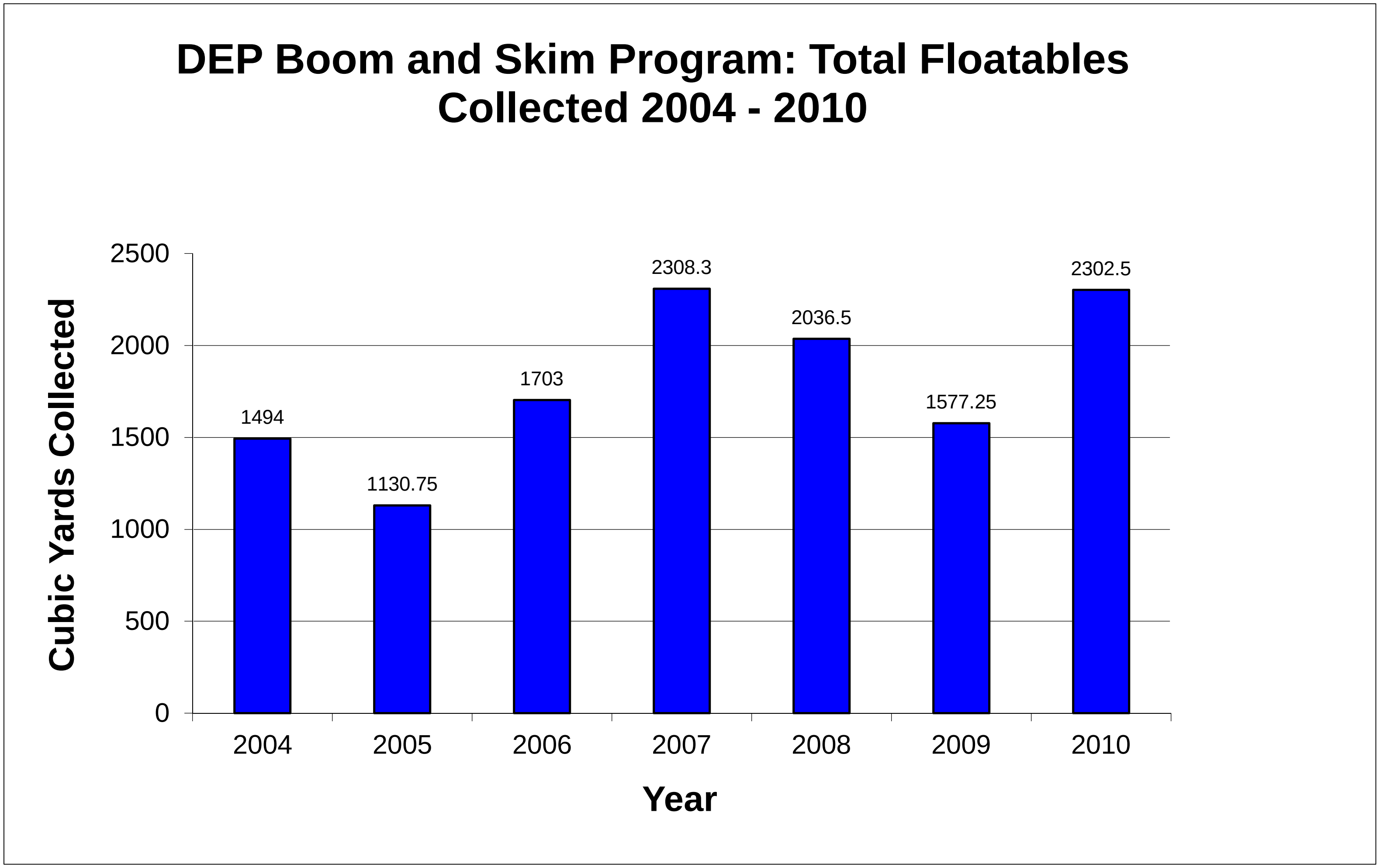


Figure7-3. City Floatable Material Recovery 2004 - 2010

Appendix 8

Sewer Certification Form

Site Connection Proposal Form

Coney Island District Infrastructure Implementation

THIS IS NOT A PERMIT.

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF SEWER REGULATION & CONTROL

PE/RA Signature and original seal

SEWER CERTIFICATION FORM
FOR 1-, 2-, or 3-Family Homes Only

VALID FOR TWO (2) YEARS

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 ( ) ______

1. **PLAN:**

2. **CONNECTIONS REQUESTED:**

Total Developed Site Storm Flow ______ cfs
Allow. Storm Flow to the Sewers ______ cfs

☐ Detention ☐ Retention

	Sanit.	Storm	Comb.	Dry Wells
No. Requested				XXXXXXX
Size				XXXXXXX
Material				XXXXXXX
Total Q (s)				

3. **CONNECTION INFO:**

a. ☐ Conn. to Exist. Spur, Riser, or Curb Connection
b. ☐ Proposed New Riser
c. ☐ Fold Spur in
d. ☐ Drill in
e. ☐ Reuse Plugged Connections

SEWER INFORMATION CERTIFIED BY D.E.P.

		PUBLIC	PRIVATE
1. There is is not a sanitary sewer fronting the property available for connections.	SIZE ______	______	______
2. There is is not a storm sewer fronting the property available for connections.	SIZE ______	______	______
3. There is is not a combined sewer fronting the property available for connections.	SIZE ______	______	______

4. Sanitary discharge tributary to:

			Location
City Treatment Plant -	☐ NO	☐ YES	______
Private Sewage Treatment Plant -	☐ NO	☐ YES	______
Private Pumping Station -	☐ NO	☐ 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:

THIS IS NOT A PERMIT

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF SEWER REGULATION & CONTROL

PE/RA signatu and origina seal

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 Dwell. ☐ Commercial __________
Number of Buildings ______ Total Number of Dwelling Units __________
Ownership: ☐ Fee Simple ☐ Condominium ☐ Home Owner Association

C. SITE CONNECTIONS REQUESTED:

Total Developed Site Storm Flow ____ cfs
Allow. Storm Flow to the Sewers ____ cfs
☐ Detention ☐ Retention

	Sanit.	Storm	Comb.	Dry Wells
No. Requested				XXXXX
Size				XXXXX
Material(s)				XXXXX
Total Q (s)				

D. CONNECTION INFO:

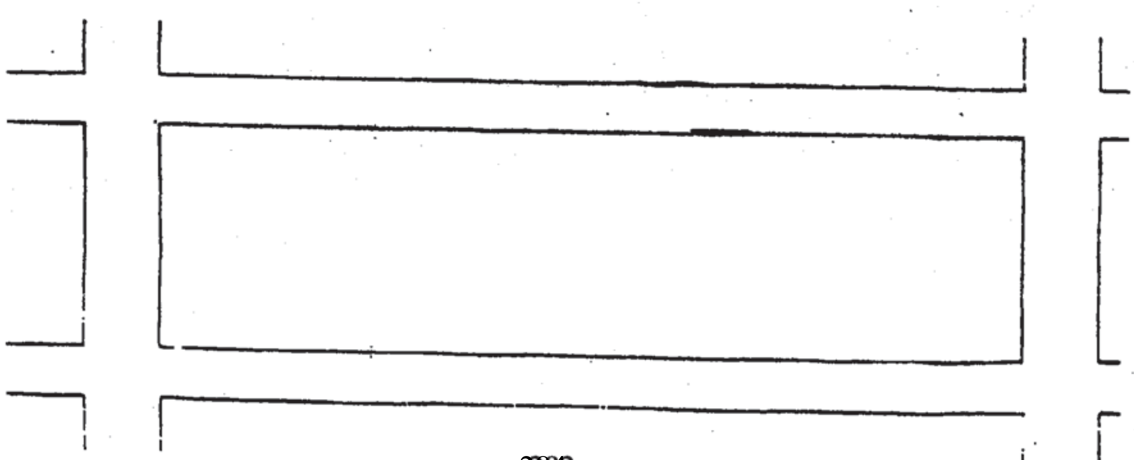
1. ☐ Conn. to Exist. Spur, Riser, or Curb Connectior
2. ☐ Proposed New Riser
3. ☐ Fold Spur in
4. ☐ Drill in
5. ☐ M.H. Conn ☐ Exist ☐ Prc
6. ☐ Reuse Plugged Connections

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:

			Location
Private Sewage Treatment Plant	☐ No	☐ Yes	__________
Private Pumping Station	☐ No	☐ Yes	__________
Private Sewer	☐ No	☐ Yes	__________

F. LOCATION PLAN: ☐ As shown below ☐ See Attached Location Plan Attachment "F"



Rev. 2/91

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 ______

α4. 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 ______

β7. 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)

α Must be Notarized

β Must be Notarized and have Corporate Seal Imposed

SEWER INFORMATION CERTIFIED BY D.E.P.

		PUBLIC	PRIVATE
1. There is ~~is not~~ a sanitary sewer fronting the property available for connections.	SIZE ______	______	______
2. There is ~~is not~~ a storm sewer fronting the property available for connections.	SIZE ______	______	______
3. There is ~~is not~~ a combined sewer fronting the property available for connections	SIZE ______	______	______

4. Sanitary discharge tributary to: **Location**

City Treatment Plant - ☐ NO ☐ YES ______________

Private Sewage Treatment Plant - ☐ NO ☐ YES ______________

Private Pumping Station - ☐ NO ☐ 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:

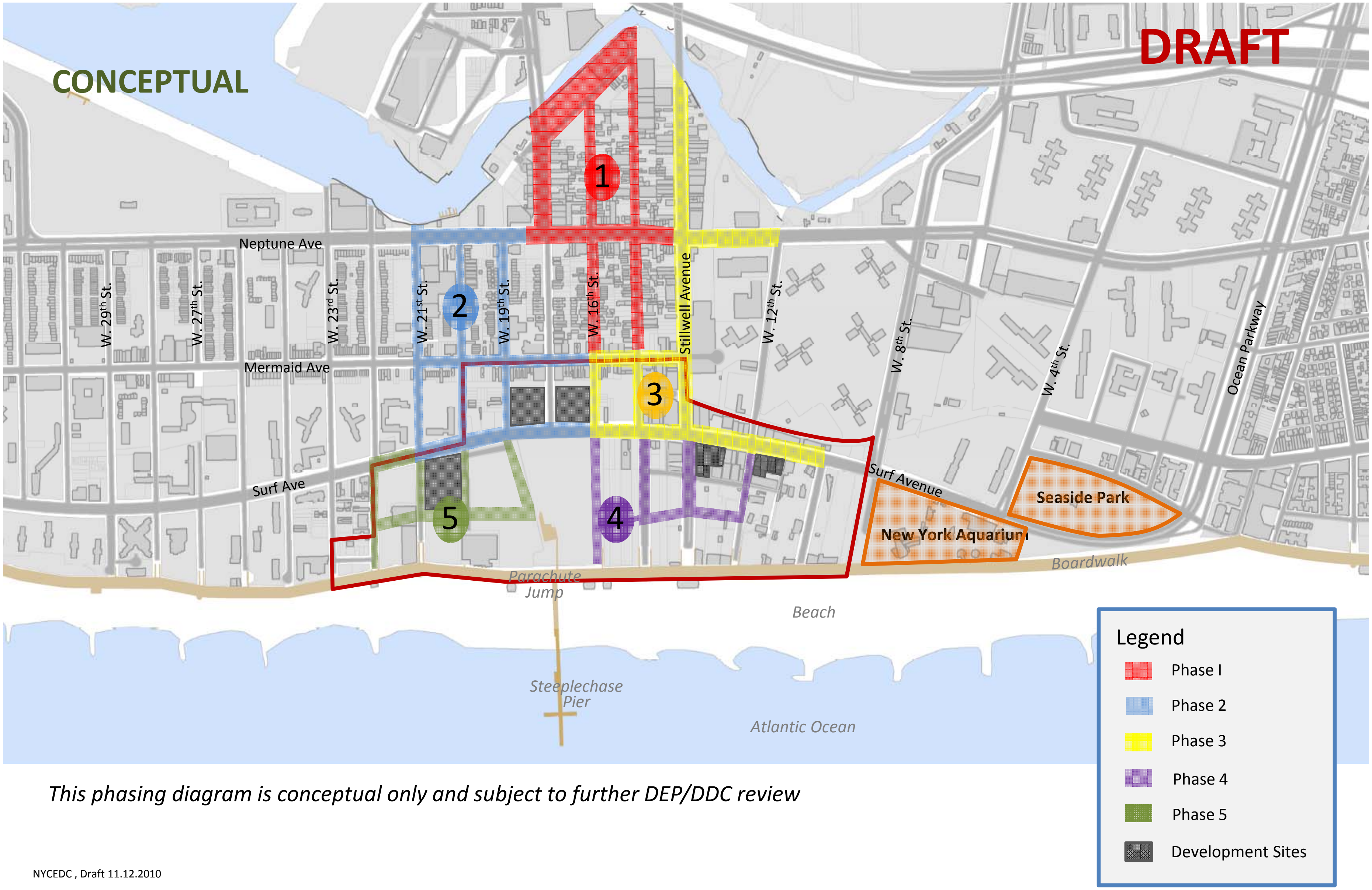
ADDITIONAL INFORMATION, COMMENTS BY D.E.P. LOCAL OFFICE:

1. Topo Map No. ______________ Watercourse shown: ☐ YES ☐ NO

2. Comments:

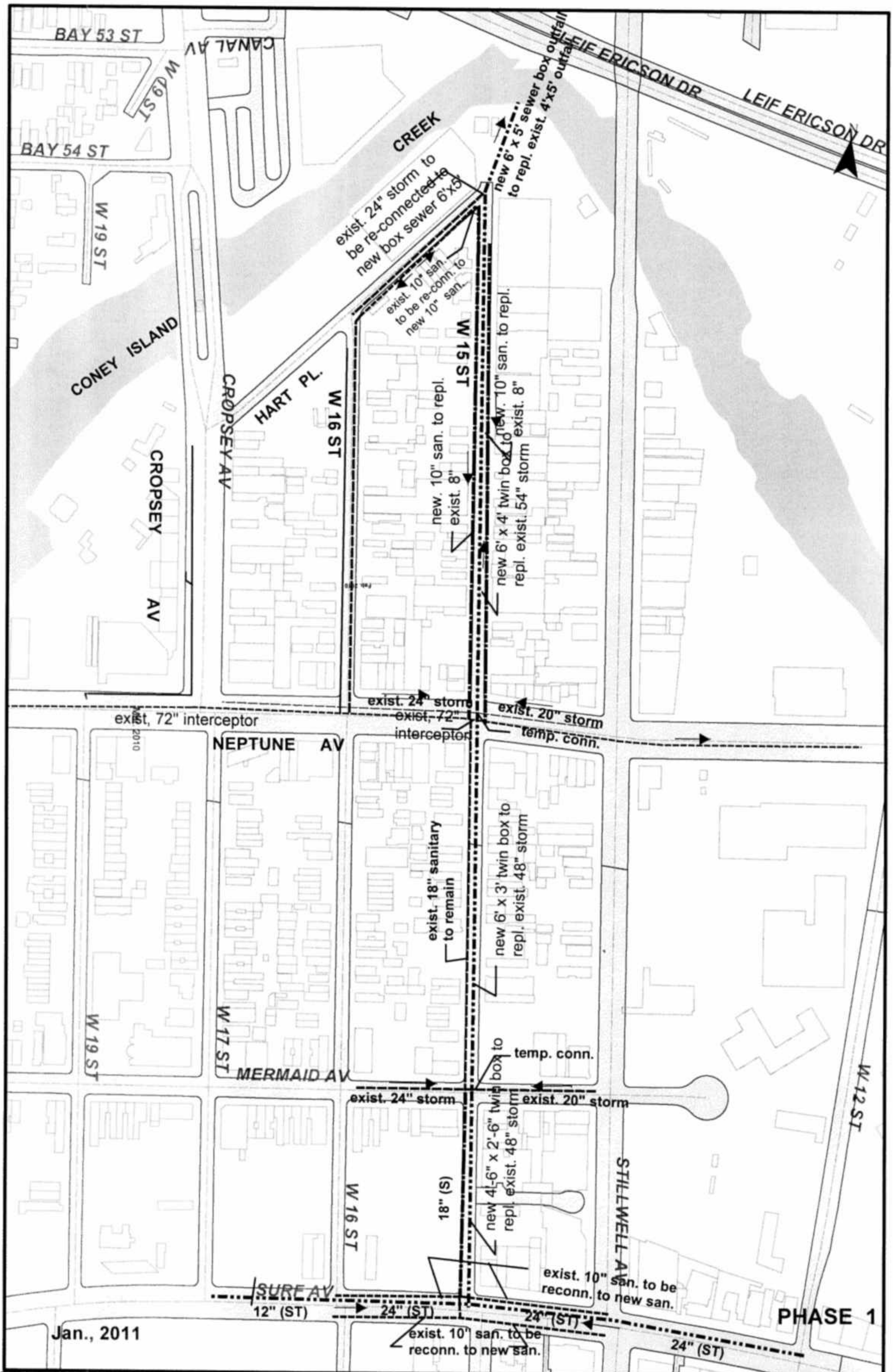
Coney Island District Infrastructure Implementation

Reference Map



This phasing diagram is conceptual only and subject to further DEP/DDC review

NYCEDC , Draft 11.12.2010



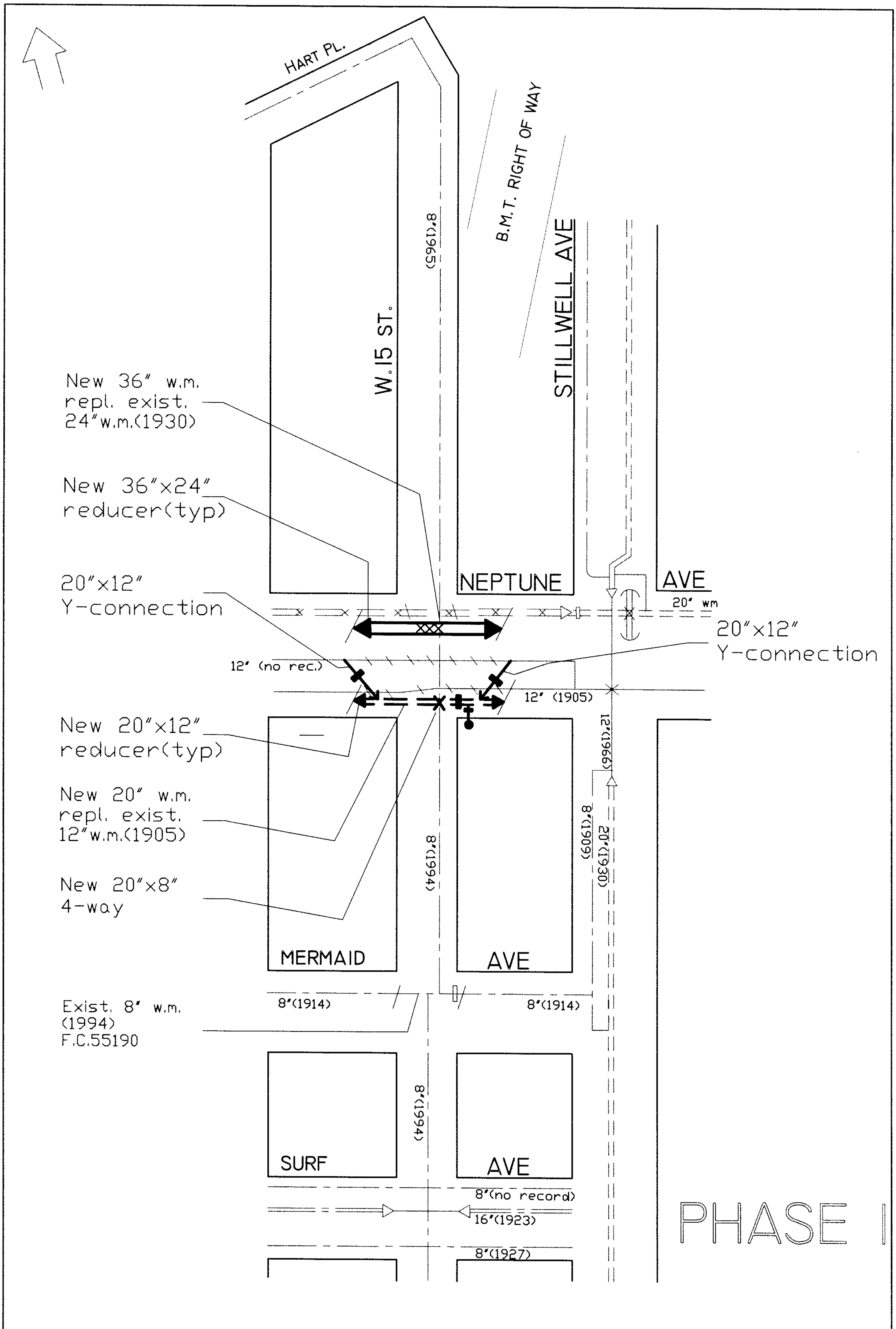
CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER AND SEWER OOPERATIONS
DIVISION OF CAPITAL PROGRAM DEVELOPMENT
AND POLANNING

CONISPH01

BOROUGH:
BROOKLYN

INSTLLATION OF STORM AND SANITARY
SEWER, TRUNK AND DISTRIBUTION WATER
MAINS IN CONEY ISLAND AREA
PHASE 1.

Sheet 1 of 1



CITY OF NEW YORK

DEPERTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF WATER AND SEWER OPERATION
DIVISION OF CAPITAL PROGRAM DEVELOPMENT AND PLANNING.

CONISPH01 BOROUGH **BROOKLYN**

TRUNK AND DISTRIBUTION WATER MAIN
IN CONEY ISLAND AREA.PHASE 1.

288 SHEET 1 OF 1

Y.NEPLOKH

JANUARY. 2011

Borough: **Brooklyn**

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER AND SEWER OPERATION
PROJECT DEVELOPMENT SECTION

Project No: CONISPH0I

Date of Estimate: Jan. 2011 (revised)

Project Location: Storm and sanitary sewer in West 15th Street. bet. Neptune Avenue and Hart Place in **Coney Island area** etc.

COST ESTIMATE

Sanitary

2,200	L.F..	10" ESVP	$ 430	$ 946,000
500	L.F.	18" ESVP	450	225,000
10	Ea	Manhole	7,500	75,000
9,000	V.F..	Piling	35	315,000
1,800	L.F.	Dewatering	75	135,000
550	L.F.	House Connection	135	74,250
1,800	L.F.	Site Maintenance	30	54,000
1,800	L.F..	Pavement Restoration	115	243,000
		Sub-Total		$ 2,067,250
		25% (Contingencies + E.W.)		$ 516,813
		Total		$ 2,584,063
				~ $ 2,584,000

Water main (WM-6)

40	L.F..	36" Water Main (junction trunk)	$ 1,500	$ 60,000
		25% (cont. + Extra Work)		15,000
		Total		**$ 75,000**

Water main (WM-1)

40	L.F.	20" RJDI	$ 255	$ 10,200
		20% (cont. + Extra Work)		$ 2,040
		Total		$ 12,200
				~ $ 12,000

Borough: **Brooklyn**

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER AND SEWER OPERATION
PROJECT DEVELOPMENT SECTION

Project No: CONISPH0I

Date of Estimate: Jan., 2011 (Revised)

Project Location: Storm sewer in West 15th Street. Bet. Neptune Ave. and Hart Place. in **Coney Island** area etc

COST ESTIMATE

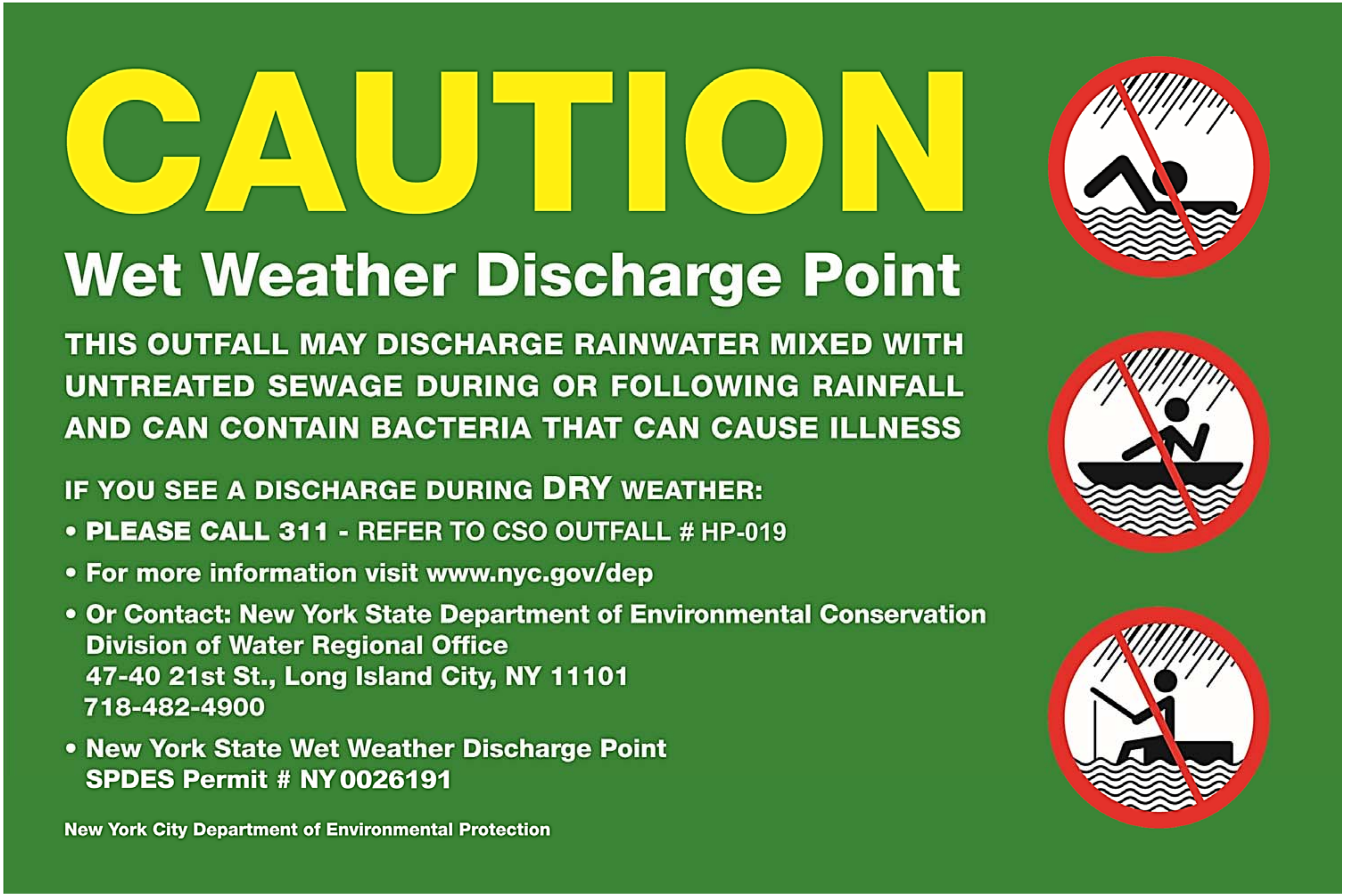
Storm

300	L.F..	6' x 5 single box	$ 2,000	$ 600,000
1,200	L.F..	6' x 4' twin box	4,000	4,800,000
850	L.F..	6' x 3' twin box	3,700	3,145,000
500	L.F..	4'-6" x 2'-6" twin box	3,200	1,600,000
1,000	L.F	24" RCP	380	380,000
300	L.F	12" ESVP	340	102,000
1	L.S.	Outfall (6'x 5')	200,000	200,000
50,000	V.F..	Piles	35	1,750,000
2,600	L.F	Dewatering	75	195,000
9	Ea.	Manhole (incl access manhole)	3,000	27,000
4	Ea.	Chamber.	100,000	400,000
28	Ea.	Catch Basin	10,000	280,000
1,000	L.F.	Basin Connection	135	135,000
2,600	L.F.	Site Maintenance	30	99,000
2,600	L.F..	Pavement Restoration	115	299,000
		Sub-Total		$ 14,012,000
		25% (Contingencies + E.W.)		$ 3,503,000
		Total		**$ 17,515,000**

Appendix 9

CSO Sign Sample

List of installed CSO Signs


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

CSO Signs

No	OUTFALL ID	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
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
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
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
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
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS/COMMENTS
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
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
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 Z	CSO-23	Installed
160	HP-034	WESTCHESTER CREEK & NEWBOLD AVENUE (CITY IS	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 & WPCP OVERFLOW	WPCP OVERFLOW	Installed
166	NCB-003	EAST RIVER & GREENPOINT AVENUE	REG #B-11	Installed
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	*NCM-016*	*EAST RIVER & E. 46th STREET*	*REG #M-46*	*WAIVER*
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
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
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	*NCM-044*	*EAST RIVER & E. 29th STREET*	*REG #M-41A*	*WAIVER*
207	*NCM-045*	*EAST RIVER & E. 26th STREET*	*REG #M-40*	*WAIVER*
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
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	*NCM-070*	*HUDSON RIVER & BATTERY PLACE*	*REG #M-9*	*WAIVER*
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*
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
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
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
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
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
334	BB-040	DUTCH KILLS & 49th AVENUE	REG #L-5	Installed
335	BB-041	LUYSTER CREEK & 19th AVENUE	REG #1	Installed
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 WPCP	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	*OH-004*	*UPPER NEW YORK BAY & 43rd STREET*	*REG #7D, 19th ST. PS*	*WAIVER*
357	OH-005	GOWANUS CANAL & CARROLL STREET	3rd AVE SEWER RELIEF	Installed
358	OH-006	GOWANUS CANAL & 19th STREET (N0RTH 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 Comple	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
370	JAM-003A	BERGEN BASIN & 123rd STREET	REG #14	Installed

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
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	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
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
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

1	**Jam - 001**	**Jamaica W.P.C.P. Outfall**		**WAIVER**
2	OH-004	UPPER NEW YORK BAY & 43rd STREET	REG #7D, 19th ST. PS	WAIVER
3	TI-009	LITTLE NECK BASIN & DOUG. BAY P.S.	DOUG BAY P.S.	WAIVER
4	NCM-070	HUDSON RIVER & BATTERY PLACE	REG #M-9	WAIVER
5	NCM-071	HUDSON RIVER & RECTOR STREET	REG #M-6, M-7	WAIVER
6	NCM-072	HUDSON RIVER & VESEY STREET	REG #M-5	WAIVER
7	NCM-073	HUDSON RIVER & DUANE STREET	REG #M-4	WAIVER
8	NCM-044	EAST RIVER & E. 29th STREET	REG #M-41A	WAIVER
9	NCM-045	EAST RIVER & E. 26th STREET	REG #M-40	WAIVER
10	NCM-016	EAST RIVER & E. 46th STREET	REG #M-46	WAIVER
11	NR-028	HUDSON RIVER & W. 36th STREET	REG #N-43	WAIVER
12	HP-037	SHORE ROAD LAGOON & ORCHARD BEACH	ORCHARD BEACH P.S.	WAIVER

Appendix 10

Department of Health (DOH) Notification Program

Figure 1	**Location of NYC Permitted Beaches**
Table A	**Beach Advisory and Closure Comparison 2005 to 2010**
Table B-1	**Advisory Summary for Public Beaches**
Table B-2	**Closure Summary for Public Beaches**
Table B-3	**Advisory Summary for Private Beaches**
Table B-4	**Closure Summary for Private Beaches**

PUBLIC NOTIFICATON

The intent of the eighth Minimum control is to ensure that the public receives adequate notification of actual CSO occurrences and impacts. Impacts may include the possible health and environmental effects of CSOs, and recreational or commercial activities (e.g. swimming and shellfish harvesting) curtailed as a result of CSOs.

A. Beach Sampling and Beach Closure Procedures

Department of Health and Mental Hygiene

The Office of Public Health Engineering (PHE) of the New York City Department of Health and Mental Hygiene (DOHMH) conducts a comprehensive beach water survey and sampling program at all of the City's permitted beaches during the beach season. The purpose of this annual seasonal program is to:

- Inspect the established beach areas for compliance with existing State Sanitary Code and City Health Code standards, and

- To collect water quality samples at permitted beach facilities throughout the City to obtain the data necessary to provide the public with information regarding the advisability of using the various public and private beachfronts.

There are 18 permitted beached by NYCDOHMH. Six permitted public bathing facilities are operated by the New York City Department of Parks and Recreation (NYCDPR), and twelve permitted beaches are private bathing facilities.

Monitoring Plan and Sampling Schedule

The City Beaches are ranked according to potential pollution sources and storm water discharges, historical water quality data, regional hydrodynamics, frequency of use, beach length, and geomorphology, as shown in Table 2. Beaches are monitored based on the following tier criteria: Tier 1 high priority, Tier 2 medium priority, and Tier 3 low priority based on their potential risk exposure factors. This three-tiered system is used to direct appropriate resources toward monitoring and notification programs. Therefore, significant resources will be devoted to Tier 1 beaches (waters of high risk), to more intensely monitor those areas.

PHE samples 23 points at the beaches as shown on Table 2. Routine water quality monitoring is performed at 17 designated Tier I and II sampling points on a weekly basis. In addition, 6 representative points of Tier III beaches in the Rockaways are sampled bi-weekly. Multiple sampling stations are included at Rockaway and Coney Island Beaches based on beach length/geomorphology.

Sample collection and Sanitary Surveys is performed between 6AM and 12 PM on Mondays (or 1st day of week), Tuesdays (or 2nd day of the week) and alternate Wednesdays (or 3rd day of the week). Before sample collections are completed, a Sanitary Survey shall be conducted with a visual inspection for the purpose of identifying any existing, and/or potential sources of pollution that are likely to affect the water quality, such as untreated sewage, petroleum oil, medical/infectious material, or other sources of contamination. Four samples are taken at each sampling point. Large beaches, such as Coney Island and the Rockaways are sampled at multiple locations to ensure

VIII. PUBLIC NOTIFICATON

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Additional Sampling Plan

Additional sampling shall be conducted when necessary. The number of samples and frequency will depend on several factors including: proximity to suspected pollution sources, extent of pollution, beach use, historical water quality data, and other health risk factors. The following is a list of scenarios that shall trigger additional sampling, including but not limited to, 1) routine sample exceedance, 2) reported sewage spills and pollution events, and 3) following a heavy rainfall event:

Routine Sample Exceedance

When the OPHE is informed of an exceedance by the laboratory from routine sampling results, resulting in conditions that may pose a threat to the health and safety of the public, a public notification and/or resample shall be initiated following proper Quality Assurance/Quality Control (QA/QC) procedures for sample results. Notification will remain in effect until:

1) A three-grab resample is taken at the sample site and at 50 feet distances
2) Resample indicates acceptable water quality
3) QA/QC requirements are met for sample accuracy

Re-samples shall be taken as soon as practical after notification.

Upon re-sampling, if the water quality standard is still in exceedance, or if the Sanitary Survey discloses any condition that may present an imminent public health hazard, the beach shall remain closed until satisfactory water quality results are met.

Reported Sewage Spills and Pollution Events

Samples may be collected following reported sewage spills or other pollution events where major pathogen contamination is plausible and City Beaches may be temporarily closed. After a closure, the beach shall not reopen until satisfactory water quality results are obtained. The Marine Science Division of NYCDEP shall be contacted to assist PHE with sample analysis.

After a Heavy Rainfall Event

Many City Beaches are under a Preemptive Wet Weather Advisory and are advised to remain closed in accordance to their classification. Beaches may reopen once the preemptive period has lapsed. Only under special circumstances shall additional sampling be conducted after heavy rainfalls to remove the Wet Weather Advisory sooner than the advised preemptive period.

Data Management

Following complete and satisfactory data result QA/QC review, results shall be analyzed to derive indicator organisms' densities for a particular sampling day. The results of each routine sampling and analysis shall be assessed on the basis of compliance or non-compliance with the State Bacteriological Bathing Beach Standards. If the results of the data assessment show that the water quality is in compliance with State Bacteriological Bathing Beach Standards, the beach shall classified as A, "Open for Bathing." Otherwise, the water shall be classified as C, "Closed" and proper beach closures and public notification must be followed as indicted below. The field and laboratory reports are entered and maintained in the beach monitoring and surveillance data base management program. Hard copies of these records shall also be filed in the office.

Beach Classifications and Water Quality Standards

Class A: Open for Bathing.
All of the following conditions are considered in order for a beach to be classified as open and approved for bathing:

1.Bathing beach water quality are in accordance the following water quality standards for marine water beaches. Both Section 6-2.15 of the New York State Sanitary Code and Article 167.03 of the New York City Health Code utilize total and fecal coliform as indicator organisms for evaluating the microbiological quality of recreational water. The standards established are as follows:

> Cumulative Sample Limits:
> The logarithmic average of total coliform densities must be less than 2,400 colony forming units (CFU) per 100 milliliters (ml) for a series of five samples or more in any 30-day period or, no more than 20 percent of the total samples collected during a 30-day period may exceed a total coliform count of 5,000 CFU per 100 ml for any given location.
>
> Single Sample Limits:
> An average total coliform result must be less than 5,000 CFU per 100 ml for any daily collected set of beach samples.

2. Sanitary and safety surveys conducted are satisfactory to the Department; and

3. The epidemiological history is satisfactory to the Department. No repeated complaints/reports of illness/injury received from the public or from owners/operators of bathing beaches.

Class B: Under Advisory - Not Recommended for Bathing
NYCDOHMH issues an advisory to warn the public against water contact recreation when conditions may contribute to possible illness. For further information, call your local beach for specific advisory information.

1. If any of the following conditions are present a beach Pollution Advisory is issued, and the beach is classified as "Not Recommended for Bathing" when a sanitary and safety survey or investigation reveals the presence of minor amounts of floatable debris, medical/infectious waste, toxic contaminants, petroleum products and/or other contamination on the beach or evidence of sewage and wastewater discharge. **(Form PHE 304)**

2. A Preemptive Standard is a threshold level of precipitation that, when exceeded, can lead to elevated levels of pathogens due to Combined Sewer Overflows (CSO's) and stormwater runoff, and pose a public health threat. Consequently, in an effort to ensure the safety of the public, affected permitted City beaches are advised to close their beach operation during heavy rainfall exceeding prescribed standards, and the public is recommended not to swim in these affected waters. The NYCDOHMH advises against *bathing in any area identified by the Department as being directly impacted* by CSO and stormwater runoff.

The Preemptive Standards/Wet Weather Advisories are indicated as follows:

1) South Beach and Midland Beach of Staten Island, and Manhattan Beach and Kingsborough Community College of Brooklyn (Form PHE 301):
"For 12 hours following a heavy or prolonged rainfall (more than 1.5 inches in 6 hours) bathing is not recommended due to possible pollution."

2) Bronx Beaches (all privately-operated beaches in the Bronx) and Douglaston,Qns (Form PHE 302):
"For 48 hours following a heavy or prolonged rainfall (more than 0.2 inches in 2 hours, or 0.4 inches in 24 hours), bathing is not recommended due to possible pollution."

3) Gerritsen/Kiddie Beach, Brooklyn (Form PHE 303):
"For 72 hours following a heavy or prolonged rainfall (more than 0.2 inches in two hours, or 0.4 inches in 24 hours), bathing is not recommended due to possible pollution."

Class C: Closed - Temporarily Restricted for Bathing (PHE 305) City Beaches will be classified as "Temporarily Restricted for Bathing" when PHE has determined that a beach is no longer safe for bathing due to any one of the following conditions:

1.Bathing beach water quality exceeds the following water quality standard for marine water beaches.

Cumulative Sample Limits:
The logarithmic average of total coliform densities must be less than 2,400 colony forming units (CFU) per 100 milliliters (ml) for a series of five samples or more in any 30-day period or, no more than 20 percent of the total samples collected during a 30-day period may exceed a total coliform count of 5,000 CFU per 100 ml for any given location.

Single Sample Limits:
An average total coliform result must be less than 5,000 CFU per 100 ml for any daily collected set of beach samples. If this standard is exceeded, beach advisories or closings could be triggered.

2. Epidemiological data indicates a significant incidence of related illnesses or repeated complaints/reports of illness/injury received from beach patrons.

3.Sanitary and Safety Survey/Investigation: 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 contamination on the beach, or there is evidence of sewage and wastewater discharge in sufficient quantities that will adversely affect the quality of the beach water.

4. Any other environmental factors determined to be a public health or safety hazard by the NYCDOHMH.

Advisory and Closure Policies

1. PHE notifies the owner/manager/operator of the determination (WWA/sewage release information) and instruct posting of PHE 301/302/303/304 (Advisory) or PHE 305 (Closure).

2. PHE instructs operators that the sign must be posted and maintained until PHE completes further investigation or additional water quality sampling analysis.

3. PHE provides the determination in a press release or on the website. A written Public Health Advisory confirmation letter along with an "Order of the Commissioner" may be issued and delivered to the facility, if practical.

Re-Opening Policies

Once investigation has determined that the water meets applicable water quality standards, the PHE shall observe the following procedures to remove advisories and reopen City Beaches:

1. Notify the owner/manager/operator of the determination and instruct the removal of notification.

2. Provide the determination in a press release.

Table 1. New York City Beaches and Water Body Identification

Borough	Beach	Area	Waterbody
Bronx Private	Danish American	*From the southeastern border of Westchester County to just below the Throgs Neck Bridge at Throgs Point*	*Eastchester Bay, Western Long Island Sound*
	American Turner		
	White Cross		
	Locust Point		
	Schuyler Hill		
	Trinity Danish		
	Golden Beach		
	Morris Yacht Club		
	Manhem		
Bronx Public	*Orchard Beach*		
Upper Queens Private	*Douglaston Manor*	*From Fort Totten to the boundary for Queens Co. and Nassau Co.*	*Little Neck Bay*
Lower Queens Private	*Breezy Point 219th Street*	*The southern side of Rockaway Peninsula*	*Atlantic Ocean Coastline*
	Breezy Point Reid Ave.		
Lower Queens Public	*Rockaway Beach 9th - 13th*		
	Rockaway Beach 15th - 22nd		
	Rockaway Beach 23rd - 59th		
	Rockaway Beach 59th - 80th		
	Rockaway Beach 80th - 95th		
	Rockaway Beach 95th - 116th		
	Rockaway Beach 116th - 126th		
	Rockaway Beach 126th - 149th (Bell Harbor)		
Brooklyn Private	Gerritsen/Kiddie Beach	From Norton's Point to Sheepshead Bay	Jamaica Bay, Lower New York Bay
	Seagate 38th		
	Seagate 42nd		
	Kingsborough Community College		
Brooklyn Public	Manhattan		
	Coney Island Brighton 15th - 6th		
	Coney Island Brighton 6th to Ocean Parkway		
	Coney Island Ocean Parkway - West 8th		
	Coney Island West 8th - Pier		
	Coney Island West 16th - West 27th		
	Coney Island West 28th - West 37th		
Staten Island Public	Midland Beach	From Page Avenue, east of Tottenville to Fort Wadsworth Reservation	Lower New York Bay, Raritan Bay
	South Beach		
	Wolfe's Pond Park		

Table 2. DOHMH – PHE Permitted Beaches Sampling Schedule

Monday/First Working Day of Week - Queens/Bronx			
Seq	**Name of Beach**	**Borough**	**Tier**
#1	Douglaston Homeowners Association	Queens	I
#2	Schuyler Hill	Bronx	I
#3	Manhem	Bronx	I
#4	Danish American Beach Club	Bronx	I
#5	American Turner	Bronx	I
#6	White Cross Fishing	Bronx	I
#7	Trinity Danish	Bronx	I
#8	Orchard Beach	Bronx	I
#9	Morris	Bronx	I
Tuesday/Second Working Day of Week: Staten Island/Brooklyn			
#1	Wolf Pond Park	SI	I
#2	Midland	SI	II
#3	South Beach	SI	II
#4	The Sea Gate Assoc./42nd Street[3]	Brooklyn	II
#5	West 24th Street, Coney Island[1]	Brooklyn	II
#6	Ocean Parkway, Coney Island[1]	Brooklyn	II
#7	Manhattan Beach/Kingsborough	Brooklyn	I
#8	Gerritsen/Kiddie Beach	Brooklyn	I
Tuesday/Second Working Day of Week: Rockaways			
#1	Breezy Point 219th Street[2]	Queens	III
#2	Breezy Point Reid Avenue[2]	Queens	III
#3	Beach 116th Street, Rockaways[1]	Queens	III
#4	Cross Bay Parkway, Rockaways[1]	Queens	III
#5	Beach 56th Street, Rockaways[1]	Queens	III
#6	Beach 9th Street, Rockaways[1]	Queens	III

Department of Environmental Protection

While DOHMH is the lead agency for public notification of health violations, DEP lends support to the Department of Health and Mental Hygiene in a variety of ways. These actions are summarized as follows:

- **Rainfall data** - DEP provides communications access to selected weather stations enabling DOH to quantify rain impacts upon given beaches for potential beach emergencies.

- **Harbor Survey Coliform Data** - DEP provides hard copies of coliform data for each year. (See Section IX).

- **Harbor Survey Sampling** - as request, DEP provides backup sampling under emergency and/or wet weather conditions.

- **"Real Time" Data** - (a) Notification of presumptive total coliform readings of greater than 5000 MPN/100 ml anywhere in the harbor. These data would be from both the Harbor Survey Program and the Sentinel Monitoring Program. These readings would be verified upon test conclusion. DOH would use this information to watch for impacts on beaches. Depending on the location of the high count, DOH would check its own sampling numbers or possibly resample at near beach locations.

- (b) Notification of discharges at plants. Either an extended discharge of 5 MGD or a one time discharge of 10 MG at any plant. DOH would use this information to keep aware of current developments and any potential beach problems.

In addition, DOH reciprocates by transmitting presumptive total coliform readings of greater than 5000 MPN/100 ml to DEP, for comparison with the most recent Harbor Survey readings for near sampling sites. DOH also transmits raw data to DEP on a monthly basis.

FIGURE 1 Location of New York City Permitted Beaches

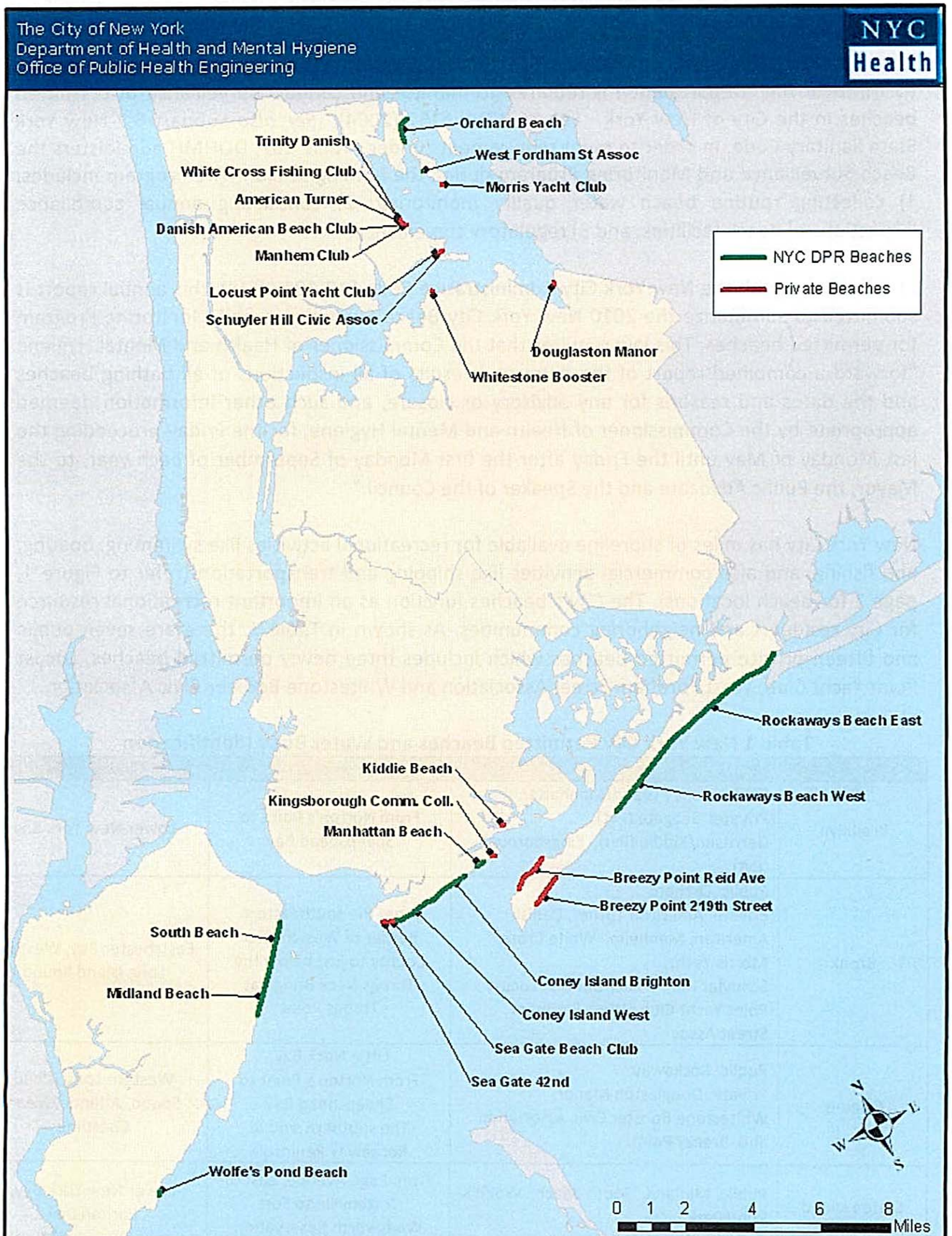

Table A

Beach	Wet Weather Advisory (days)						Pollution Advisory (days)						Closure (days)					
	2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010
American Turner, Bx	18	31	34	27	20	9	1	4	0	0	23	6	0	2	0	**0**	6	0
Danish American, Bx	18	22	34	34	20	9	1	12	0	0	19	6	0	3	0	**0**	6	0
Manhem, Bx	18	31	34	34	23	8	0	4	0	0	12	6	0	2	0	0	5	0
White Cross, Bx	18	26	26	34	16	9	0	8	0	0	0	6	0	3	0	0	15	0
Morris Yacht, Bx	18	30	33	34	20	6	2	7	0	1	14	7	0	2	0	0	6	0
Schuyler Hill, Bx	18	27	34	27	25	9	0	8	0	0	0	3	0	2	0	0	0	0
Trinity Danish, Bx	18	26	34	32	19	9	0	3	2	0	12	6	0	8	0	0	6	0
West Fordham St. Assoc., Bx	N/A	N/A	N/A	N/A	N/A	8	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A	0
Locust Point, Bx	N/A	N/A	N/A	N/A	N/A	9	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A	0
Whitestone Booster, Qn	N/A	N/A	N/A	N/A	N/A	8	N/A	N/A	N/A	N/A	N/A	14	N/A	N/A	N/A	N/A	N/A	0
Orchard Beach, Bx	0	0	0	0	0	0	0	3	0	2	4	0	0	2	0	0	0	0
Douglaston Manor, Qn	12	25	10	27	21	7	19	9	23	1	14	6	0	11	50	35	30	41
Breezy Point 219th Street, Qn	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	1	0
Breezy Point Reid, Qn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockaway, Qn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Coney Island, Bk	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0
Manhattan, Bk	0	1	0	2	0	0	0	0	0	0	7	0	0	0	0	0	1	0
Seagate, Bk	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
Gerritsen/Kiddy, Bk	29	43	47	37	27	11	11	3	2	0	2	2	7	0	0	5	1	0
Kingsborough, BK	0	1	7	2	0	0	26	7	1	0	16	0	23	19	0	0	7	0
Midland, SI	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Beach, SI	0	1	8	2	0	0	8	0	0	2	0	0	0	0	0	0	0	0
Wolfe's Pond Park, SI	0	0	0	0	0	0	2	0	4	0	0	0	8	0	0	0	0	0
Totals:	**167**	**265**	**301**	**294**	**191**	**102**	**70**	**68**	**26**	**14**	**128**	**62**	**38**	**54**	**50**	**40**	**86**	**41**

TABLE B-1 Advisory Summary for Public Beaches

Beach	Status	Start Date	End Date	Reason
None	None	None	None	None

TABLE B-2 Closure Summary for Public Beaches

Beach	Status	Start Date	End Date	Reason
None	None	None	None	None

TABLE B-3 Advisory Summary for Private Beaches

Beach	Status	Start Date	End Date	Reason
American Turners	Pollution Advisory	6/4/2010	6/9/2010	Suspected Enterococci Exceedence
American Turners	Wet Weather Advisory	6/10/2010	6/10/2010	Preemptive Advisory
American Turners	Wet Weather Advisory	7/13/2010	7/15/2010	Preemptive Advisory
American Turners	Wet Weather Advisory	7/24/2010	7/24/2010	Preemptive Advisory
American Turners	Wet Weather Advisory	8/23/2010	8/24/2010	Preemptive Advisory
American Turners	Wet Weather Advisory	8/25/2010	8/26/2010	Preemptive Advisory
Danish American Beach Club	Pollution Advisory	6/4/2010	6/9/2010	Suspected Enterococci Exceedence
Danish American Beach Club	Wet Weather Advisory	6/10/2010	6/10/2010	Preemptive Advisory

Danish American Beach Club	Wet Weather Advisory	7/13/2010	7/15/2010	Preemptive Advisory
Danish American Beach Club	Wet Weather Advisory	7/24/2010	7/24/2010	Preemptive Advisory
Danish American Beach Club	Wet Weather Advisory	8/23/2010	8/24/2010	Preemptive Advisory
Danish American Beach Club	Wet Weather Advisory	8/25/2010	8/26/2010	Preemptive Advisory
Douglaston Manor Association	Pollution Advisory	7/15/2010	7/20/2010	Suspected Enterococci Exceedence
Douglaston Manor Association	Wet Weather Advisory	7/24/2010	7/25/2010	Preemptive Advisory
Douglaston Manor Association	Wet Weather Advisory	8/23/2010	8/27/2010	Preemptive Advisory
Gerritsen/Kiddie Beach	Pollution Advisory	8/19/2010	8/20/2010	Suspected Enterococci Exceedence
Gerritsen/Kiddie Beach	Wet Weather Advisory	6/10/2010	6/10/2010	Preemptive Advisory
Gerritsen/Kiddie Beach	Wet Weather Advisory	7/13/2010	7/15/2010	Preemptive Advisory
Gerritsen/Kiddie Beach	Wet Weather Advisory	7/19/2010	7/19/2010	Preemptive Advisory
Gerritsen/Kiddie Beach	Wet Weather Advisory	7/24/2010	7/25/2010	Preemptive Advisory
Gerritsen/Kiddie Beach	Wet Weather Advisory	8/23/2010	8/24/2010	Preemptive Advisory
Gerritsen/Kiddie Beach	Wet Weather Advisory	8/25/2010	8/26/2010	Preemptive Advisory
Locust Point Yacht Club	Wet Weather Advisory	6/10/2010	6/10/2010	Preemptive Advisory
Locust Point Yacht Club	Wet Weather Advisory	7/13/2010	7/15/2010	Preemptive Advisory
Locust Point Yacht Club	Wet Weather Advisory	7/24/2010	7/24/2010	Preemptive Advisory
Locust Point Yacht Club	Wet Weather Advisory	8/23/2010	8/24/2010	Preemptive Advisory
Locust Point Yacht Club	Wet Weather Advisory	8/25/2010	8/26/2010	Preemptive Advisory

Manhem Club	Pollution Advisory	6/4/2010	6/9/2010	Preemptive Advisory
Manhem Club	Wet Weather Advisory	7/13/2010	7/15/2010	Preemptive Advisory
Manhem Club	Wet Weather Advisory	7/24/2010	7/24/2010	Preemptive Advisory
Manhem Club	Wet Weather Advisory	8/23/2010	8/24/2010	Preemptive Advisory
Manhem Club	Wet Weather Advisory	8/25/2010	8/26/2010	Preemptive Advisory
Morris Yacht and Beach Club	Pollution Advisory	6/10/2009	6/16/2009	Preemptive Advisory
Morris Yacht and Beach Club	Pollution Advisory	7/13/2009	7/15/2009	Preemptive Advisory
Morris Yacht and Beach Club	Wet Weather Advisory	7/15/2010	7/15/2010	Preemptive Advisory
Morris Yacht and Beach Club	Wet Weather Advisory	7/24/2010	7/24/2010	Preemptive Advisory
Morris Yacht and Beach Club	Wet Weather Advisory	8/23/2010	8/24/2010	Preemptive Advisory
Morris Yacht and Beach Club	Wet Weather Advisory	8/25/2010	8/26/2010	Preemptive Advisory
Schuyler Hill Civic Association	Pollution Advisory	8/18/2010	8/20/2010	Suspected Enterococci Exceedence
Schuyler Hill Civic Association	Wet Weather Advisory	6/10/2010	6/10/2010	Preemptive Advisory
Schuyler Hill Civic Association	Wet Weather Advisory	7/13/2010	7/15/2010	Preemptive Advisory
Schuyler Hill Civic Association	Wet Weather Advisory	7/24/2010	7/24/2010	Preemptive Advisory
Schuyler Hill Civic Association	Wet Weather Advisory	8/23/2010	8/24/2010	Preemptive Advisory
Schuyler Hill Civic Association	Wet Weather Advisory	8/25/2010	8/26/2010	Preemptive Advisory
Trinity Danish	Pollution Advisory	6/4/2010	6/9/2010	Suspected Enterococci Exceedence
Trinity Danish	Wet Weather Advisory	6/10/2010	6/10/2010	Preemptive Advisory
Trinity Danish	Wet Weather Advisory	7/13/2010	7/15/2010	Preemptive Advisory

Trinity Danish	Wet Weather Advisory	7/24/2010	7/24/2010	Preemptive Advisory
Trinity Danish	Wet Weather Advisory	8/23/2010	8/24/2010	Preemptive Advisory
Trinity Danish	Wet Weather Advisory	8/25/2010	8/26/2010	Preemptive Advisory
West Fordham Street Assoc	Wet Weather Advisory	7/13/2010	7/15/2010	Preemptive Advisory
West Fordham Street Assoc	Wet Weather Advisory	7/24/2010	7/24/2010	Preemptive Advisory
West Fordham Street Assoc	Wet Weather Advisory	8/23/2010	8/24/2010	Preemptive Advisory
West Fordham Street Assoc	Wet Weather Advisory	8/25/2010	8/26/2010	Preemptive Advisory
Morris Yacht and Beach Club	Wet Weather Advisory	8/23/2010	8/24/2010	Preemptive Advisory
Morris Yacht and Beach Club	Wet Weather Advisory	8/25/2010	8/26/2010	Preemptive Advisory
Schuyler Hill Civic Association	Pollution Advisory	8/18/2010	8/20/2010	Suspected Enterococci Exceedence
Schuyler Hill Civic Association	Wet Weather Advisory	6/10/2010	6/10/2010	Preemptive Advisory
Schuyler Hill Civic Association	Wet Weather Advisory	7/13/2010	7/15/2010	Preemptive Advisory
Schuyler Hill Civic Association	Wet Weather Advisory	7/24/2010	7/24/2010	Preemptive Advisory
Schuyler Hill Civic Association	Wet Weather Advisory	8/23/2010	8/24/2010	Preemptive Advisory
Schuyler Hill Civic Association	Wet Weather Advisory	8/25/2010	8/26/2010	Preemptive Advisory
Trinity Danish	Pollution Advisory	6/4/2010	6/9/2010	Suspected Enterococci Exceedence
Trinity Danish	Wet Weather Advisory	6/10/2010	6/10/2010	Preemptive Advisory
Trinity Danish	Wet Weather Advisory	7/13/2010	7/15/2010	Preemptive Advisory
Trinity Danish	Wet Weather Advisory	7/24/2010	7/24/2010	Preemptive Advisory
Trinity Danish	Wet Weather Advisory	8/23/2010	8/24/2010	Preemptive Advisory

Trinity Danish	Wet Weather Advisory	8/25/2010	8/26/2010	Preemptive Advisory
West Fordham Street Assoc	Wet Weather Advisory	7/13/2010	7/15/2010	Preemptive Advisory
West Fordham Street Assoc	Wet Weather Advisory	7/24/2010	7/24/2010	Preemptive Advisory
West Fordham Street Assoc	Wet Weather Advisory	8/23/2010	8/24/2010	Preemptive Advisory
West Fordham Street Assoc	Wet Weather Advisory	8/25/2010	8/26/2010	Preemptive Advisory

TABLE B-4 Closure Summary for Private Beaches

Beach	Status	Start Date	End Date	Reason
Douglaston Manor Association	Closed	6/4/2010	7/14/2010	Confirmed Enterococci Exceedence

Appendix 11

Annual Report Checklist

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Best Management Practices
Annual Report Checklist

SPDES PERMIT NO: NY - 0026131;0026115;

FACILITY NAME AND ADDRESS:

NAME:	NYCDEP			**CONTACT:**	Stella Rozelman
ADDRESS:	96-05 Horace Harding Expwy.			**TITLE:**	Chief, Division Harbor Water Quality & Analysis
CITY:	Corona	**STATE:** NY	**ZIP:** 11368	**PHONE:**	(718) 595-4938

Please note that the following self-evaluation checklist is intended as a guide and should not be regarded as all-inclusive. It should not be assumed that the items listed here are sufficient for a comprehensive annual report. The Department strongly recommends that permittees refer to their permit's CSO Best Management Practices, and the EPA's CSO Guidance for Nine Minimum Controls, 1995, for guidance. EPA's manual can be found at: http://www.epa.gov/npdes/pubs/owm0030.pdf. ***Also, note that the SPDES permit BMPs are listed in bold and the equivalent EPA's Nine Minimum Controls are listed in italics.***

SELF-EVALUATION CHECKLIST:

Note: Check N/A if conditions are not in the permit:

1. CSO Maintenance/Inspection *(I. Proper Operation and Maintenance)*	YES	NO	N/A
Do you have an O & M Plan?	✓		
Are the following maintenance/inspection items adequately described in the BMP report?			
- Inspection program (Regulators, Tidegates, Pump Stations Maintenance/Repairs)	✓		
- A written maintenance and inspection program?	✓		
- Periodic training for employees?	✓		
- Sewer cleaning and sediment removal?	✓		
- Operation of collection system?	✓		
- An adequate organization structure?	✓		
Overall, does the implementation of BMP #1 meet the objectives of your permit?	✓		

If no, list all deficiencies that must be resolved and when they can be resolved:

2. Maximum Use of Collection System for Storage *(II. Maximum Use of Collection System for Storage)*	YES	NO	N/A
Did the annual report identify the methods you plan to use to maximize storage in the collection system?	✓		
- Tidegates Maintenance/Repairs	✓		
- Wet Weather Operation Plan (WWOP)	✓		
- Removal of small systems bottlenecks	✓		
- Sewer cleaning and sediment removal	✓		
- Remove Flow obstructions	✓		
- Weir adjustment (Plan must list locations where weir is raised or plan to be raised).	✓		
- In-line storage: Inflatable dams or sluice gates	✓		
Overall, does the implementation of BMP #2 meet the objectives of your permit?	✓		

If no, list all deficiencies that must be resolved and when they can be resolved:

Note: Check N/A if conditions are not in the permit:

3. Industrial Pretreatment *(III. Review and Modify Pretreatment Requirements)*	YES	NO	N/A
Do you have an approved pretreatment or mini-treatment program?	✓		
Does the report list percent flow of industrial versus domestic sewage to the treatment plant?	✓		
Any industrial discharge that could reach CSO outfalls?	✓		
If yes, did you ask the industry to develop a plan to prevent industrial discharge during rain events?	✓		
Any attempt to modify pretreatment program to reduce discharge to CSO outfalls?	✓		
Overall, does the implementation BMP #3 meet the objectives of your permit?	✓		

If no, list all deficiencies that must be resolved and when they can be resolved:

4. Maximize Flow to POTW *(IV. Maximization of Flow to the POTW for Treatment)*	YES	NO	N/A
Are the following adequately addressed in the plan? If so plan should include the summary of:			
- Flow analysis of all unit processes	✓		
- How often the plant bypasses during wet weather (Permittee must keep records)	✓		
- Any available treatment units during storm events.	✓		
- The facility's capacity to receive the permitted flow.	✓		
- Sewer cleaning and sediment removal practices	✓		
- Analysis of hydraulic capacity of sewer system and pump stations	✓		
- Other:______________________________.			
Overall, does the implementation of BMP #4 meet the objectives of your permit?	✓		

If no, list all deficiencies that must be resolved and when they can be resolved:

5. Wet Weather Operating Plan (WWOP)	YES	NO	N/A
Does the plan list procedure to operate unit processes to treat maximum flows during wet weather	✓		
Does the WWOP conform to DEC's Technology Transfer Manual?	✓		
Was the plan submitted to the Regional Office and approved?	✓		
Does the plan identify the flow through primary, preliminary, and secondary treatment trains that can be accepted at the treatment plant?	✓		
If conditions have changed, was WWOP revised? *(Permittee must revise WWOP whenever the WWTF and/or sewer collection system are replaced or modified)*	✓		
Overall, does the implementation of BMP #5 meet the objectives of your permit?	✓		

If no, list all deficiencies that must be resolved and when they can be resolved:

Note: Check N/A if conditions are not in the permit:

6. Prohibition of Dry Weather Overflows *(V. Elimination of Dry Weather Overflows)*

	YES	NO	N/A
Did you report any dry weather overflows or SSO problems? If so, does the report addresses the following:		✓	
- Schedule for routine inspections	✓		
- Removal of illicit connections	✓		
- I/I Control program	✓		
- Repair of leaky tidegates, if any.	✓		
- Adjustment and/or repair of regulators	✓		
- Management, operation and maintenance program	✓		
- Adequate capacity at the treatment plant	✓		
- Eliminating small systems bottlenecks	✓		
Overall, does the implementation of BMP #6 meet the objectives of your permit?	✓		

If no, list all deficiencies that must be resolved and when they can be resolved:

Dry Weather Overflows Only, No reported SSO's

7. Control of Floatables and Settleable Solids *(VI. Control of Solid and Floatable Materials in CSO)*

	YES	NO	N/A
Have you determined whether aesthetic problems from floatables and settleable solids exist in the receiving	✓		
If so, do you plan to implement any of the following control measures?			
- Floatables quantification	✓		
- Booming and Skimming of open waters	✓		
- Source controls (Street cleaning, public education, solid waste collection and/or	✓		
- In-line netting	✓		
- Screens	✓		
- Catch basin hoods	✓		
- Others, please specify:________________.			
Overall, does the implementation of BMP #7 meet the objectives of your permit?	✓		

If no, list all deficiencies that must be resolved and when they can be resolved:

8. Combined Sewer System Replacement

	YES	NO	N/A
Do you have a master drainage plan that clearly delineates combined sewers?	✓		
Do you plan any combined sewer system replacement?	✓		
If yes, is there an approved engineering plan for this project?	✓		
Any plan for sewer separation?		✓	
Overall, does the implementation of BMP #8 meet the objectives of your permit?	✓		

If no, list all deficiencies that must be resolved and when they can be resolved:

South East Queens Drainage Plan

Note: Check N/A if conditions are not in the permit:

9. Combined Sewer/Extension

	YES	NO	N/A
Do you anticipate any future combined sewer system extensions?		✓	
If yes, is there an approved engineering plan for this project?			✓
Do you have a master drainage plan that clearly delineates combined sewers?	✓		
Any assessment of the effect of increased flow on POTW and receiving water?			✓
Any plan for flow retention?			✓
Overall, does the implementation of BMP #9 meet the objectives of your permit?	✓		

If no, list all deficiencies that must be resolved and when they can be resolved:

10. Connection Prohibitions

	YES	NO	N/A
Did you report any sewer system backup into houses or streets?		✓	
Are you within 95% of WWTP design flow?		✓	
Do you have any SSO problems?		✓	
If so, is there an I/I Control Program?			✓
Do you have an adequate management, operation and maintenance program?	✓		
Do you have adequate capacity at the treatment plant?	✓		
Other problems?______________________________.			
Overall, does the implementation of BMP #10 meet the objectives of your permit?	✓		

If no, list all deficiencies that must be resolved and when they can be resolved:

11. Septage and Hauled Waste

	YES	NO	N/A
Do you have an approved pretreatment or a mini-treatment program in SPDES permit?	✓		
Any report of discharge or release of septage or hauled waste upstream of a CSO?		✓	
If yes, any documentation of actions taken?			✓
Does the report include locations where septage and hauled waste is accepted?	✓		
If locations are upstream from CSOs, do you have a plan to prevent discharge of septage and hauled waste			✓
Do you have a dedicated location to discharge septage at the WWTP?	✓		
Overall, does the implementation of BMP #11 meet the objectives of your permit?	✓		

If no, list all deficiencies that must be resolved and when they can be resolved:

Note: Check N/A if conditions are not in the permit:

12. **Control of Run-off** *(VII. Pollution Prevention)*	YES	NO	N/A
Do you have a storm water control ordinance and NYSDEC technology standards for redevelopments and new developments in separate areas?	✓		
Do you require quantity control in accordance with the NYSDEC technology standards in combined areas?	✓		
Do the separate sewered areas comply with MS4 requirements?	✓		
Do you have an adequate pollution prevention program?	✓		
Water conservation program	✓		
Annual household hazardous waste collection			✓
Autumn leaf collection			✓
Fertilizer and pesticide management			✓
Enforcement of litter laws			✓
Overall, does the implementation of BMP #12 meet the objectives of your permit?	✓		

If no, list all deficiencies that must be resolved and when they can be resolved:

13. **Public Notification** *(VIII. Public Notification)*	YES	NO	N/A
Do you have a written public notification plan?	✓		
Does the plan list all methods use to notify the public of CSO events?	✓		
Does the plan list locations where sign are posted?	✓		
Do you comply with Discharge Notifications Act requirements at all outfalls?	✓		
Overall, does the implementation of BMP #13 meet the objectives of your permit?	✓		

If no, list all deficiencies that must be resolved and when they can be resolved:

14. **Characterization and Monitoring** *(IX Monitoring to Characterize CSO Impacts on Receiving Streams)*	YES	NO	N/A
Have you characterized the combined sewer system for CSO locations and waterbodies?	✓		
Do you have a plan to monitor outfalls for flow volume, frequency, and duration of CSOs?		✓	
Have you identified the methods of monitoring flow and other parameters at the CSOs?		✓	
Do you have:			
- Methods of measuring water quality data and designated uses of receiving water?	✓		
- Methods of monitoring CSO events at each CSO location and impact on receiving water?		✓	
Have you identified a method to measure rainfall within the municipal area?	✓		
Have you performed sampling of representative outfalls? Is the data included in the report?		✓	
Overall, does the implementation of BMP #14 meet the objectives of your permit?	✓		

If no, list all deficiencies that must be resolved and when they can be resolved:

Note: Check N/A if conditions are not in the permit:

15. Annual report:

	YES	NO	N/A
Does the plan contain the necessary information to document the implementation of the BMPs?	✓		
Were the BMPs effective in controlling and minimizing CSO discharges?	✓		

If no, list all deficiencies that must be resolved and when they can be resolved:

Go to bottom of page to finalize form.

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 and Official Title (type or print) Rozelman, P.E. Div. Chief		**Date signed:** 3/16/2011
Signature:	**Telephone Number:** 718-595-4938	**FAX Number:** 718-595-6852

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