SPDES PERMIT FOR THE 14 WASTEWATER TREATMENT PLANTS

BEST MANAGEMENT PRACTICES

ANNUAL REPORT

FOR THE PERIOD JANUARY 1, 2011 - DECEMBER 31, 2011

City of New York
Department of Environmental Protection
Bureau of Wastewater Treatment
Division of Harbor Water Quality & Analysis

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Environmental Protection

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Executive Summary

In an effort to reduce Combined Sewer Overflows (CSOs) into local waterways, the New York City Department of Environmental Protection (DEP) has been implementing several initiatives focused at reducing stormwater runoff from entering the City's combined sewer system. DEP recently introduced a Green Infrastructure program to retain stormwater using natural systems, such as swales, green roofs and porous surfaces. DEP has also been implementing Best Management Practices, or BMPs, to optimize existing facilities, in order to deliver more combined sewage to the City's wastewater treatment plants and to keep street debris out of waterways.

Section VIII of the SPDES permits for the City's plants lists thirteen specific BMPs that build upon EPA's national CSO Control Policy's Nine Minimum Control Measures. This ninth Annual Report describes DEP's ongoing CSO BMP program. The Report is divided into 13 sections, one for each of the BMPs in the SPDES permits. Each section of this Report describes ongoing DEP programs, provides statistics for Calendar Year 2011 initiatives, and discusses overall environmental improvements.

In general, implementation of the BMPs has resulted in notable improvements. In conjunction with other DEP programs, the waterways surrounding New York City are cleaner than they have been in a century. The City has also invested more than $1.8 billion in other CSO measures, such as storage tanks and inflatable dams, which are termed grey infrastructure. Additional major capital investments in green and grey infrastructure are being developed by DEP in Waterbody/Watershed Facility Plans and in Long Term Control Plans. Over the next 10 years, New York City has allocated funds totaling $953 million for grey infrastructure work and $736 million for green infrastructure projects.

Notable CSO BMP achievements during 2011 included:

- Implementation of a Citywide Collection Facilities Integrated Supervisory Control and Data Acquisition (SCADA) system for interceptor regulators. SCADA gives DEP operators the ability to remotely monitor and control, in real time, the operations of key points within the wastewater collection system, in order to enhance conveyance and treatment of wet weather flows;

- Expansion of a program to use large vacuum trucks to clean sediment from all of the intercepting sewers throughout the City. Areas of sedimentation are being detected through the use of a sonar device that is pulled from manhole to manhole along the entire 138 miles of interceptors. This initial round of interceptor cleaning, which is expected to be completed in mid 2012, is already resulting in increased holding capacity/storage for storm flows.

- Improved tide gate operability on the CSO outfall chambers, to reduce seawater infiltration into the combined sewer system, which was reducing available holding

capacity for storm flows.

During the summer months, DEP works closely with the New York City Department of Health & Metal Hygiene (DOHMH), which oversees bathing water quality at city beaches. DOHMH has an extensive beach monitoring program, through which wet-weather advisories can be posting if local waterways are affected by CSOs. DOHMH's 2011 Beach Surveillance and Monitoring report can be found online at:

***http://www.nyc.gov/html/doh/downloads/pdf/beach/beach-report-2011.pdf*.**

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 CSO program to further improve the quality of local water bodies and sewer-sheds. Many of the initiatives have been memorialized in a consent agreement. 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 manageable for most New York City residents.

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 as submitted to DEC on August 14, 2003. See Appendix 1, Exhibit 1.

A summary of preventive and corrective maintenance performed during 2011 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 each site and whether any corrective actions were completed (designated on the table by an 'x').

PM of a regulator consists of a physical inspection of the regulator, diversion and tide gate chambers as well as branch interceptor or drop pipes. It also includes 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 2011, one location was problematic for inspections: Regulator RH-9, Hamilton and Ferry Place (inside the Container Port). That location was not inspected between January and August due to a lack of access 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 was not obtained. However, inspections were made of the first manhole upstream and downstream of this regulator to determine if any problem existed. Operations' staff did not encounter any problems when inspecting those manholes. Inspection of this regulator resumed during September. As a result of the final construction of the Paerdegat CSO influent channels (early in the year), the tide gates from Coney Island Regulators #CI-1, CI-4 and CI-6 were removed.

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 Telemetry. 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).

(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 2011 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.

Pursuant to an Order on Consent (DEC File No. R2-20080312-141), BWT personnel performed the repairs of 281 tide gates tributary to the Newtown Creek, Wards Island, Port Richmond and Red Hook drainage areas (243 repaired and 38 pending capital projects).

Analysis of calendar year 2011 shows that the following seven WWTPs 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 WWTPs see Appendix 1, Table 1. Comparative yearly analysis of CY 2010 and CY 2011 average tidal inflow (Appendix 1, Table 2) indicates:

- A decrease in estimated tidal inflow occurred at eight plants: Wards Island, North River, Hunts Point, 26th Ward, Coney Island, Newtown Creek, Rockaway, and Port Richmond.

- An increase in estimated tidal inflow occurred at six plants: Owls Head, Jamaica, Oakwood Beach, Bowery Bay, Red Hook, and Tallman Island.

(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 in 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 2011, Collections field personnel responded to a total of 44 alarms sent by the CSO Alarm System. 38 alarms were deemed to be false and 6 were confirmed to be true. All bypassing events were reduced due to the early warning by the telemetering 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 WWTP 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 WWTPs have the ability to provide in-line storage during wet weather. This storage is induced when (a) the influent wet weather flow exceeds the WWTP capacity and the facility must throttle (b) the WWTP 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.

The SPDES permits also contain management practices for maximizing use of the collections system to reduce CSOs. In May 2011, a pilot program was initiated in which the SEE at Flushing Bay monitors approaching storms, and notifies the plant Operations SEEs to begin reducing their wet-well elevations immediately prior to the onset of rain. This will help to increase available capacity in the interceptor, which can reduce CSO volumes. Each plant has established low-well elevation set points for impending rain events.

Red Hook WWTP Wet Weather Operating Plan (WWOP) – During previous 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 WWTP submitted to DEC in February 2005 describes operations to induce such storage. The WWOP was approved by DEC in January 2006. DEP has been operating this WWTP in accordance with the WWOP. In addition, a bending weir is currently being retrofitted to regulator RH R-2 to enable additional in-line storage. Construction bid and award occurred in 2011, and construction is anticipated to be completed June 2012.

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 – Construction of this facility was certified complete in May 2011 in accordance with the CSO Order, and the

facility was placed into service at that time. The Paerdegat Basin CSO retention facility was projected to induce 10 MG of in-line storage in the influent sewers and another 20 MG in the upstream combined sewers.

Gowanus Canal CSO Facilities Upgrade – This facility is being upgraded pursuant to the CSO Order. The RH-034 CSO outfall screens include 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. DEP estimates, using InfoWorks models, 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 2011, construction is 42% complete and the projected completion date is September 2014.

CSO Order Projects - The Inner Harbor In–line Storage Facilities, Port Richmond WWTP Throttling Facilities and Citywide Collection System Supervisory Control and Data Acquisition (SCADA) projects were constructed in accordance with the CSO Order on Consent entered into by the City of New York and NYSDEC on January 14, 2005 as modified on April 14, 2008. DEP provides quarterly updates to NYSDEC on the status of these and other projects in the CSO Quarterly Report and at the Consent Order 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.

Flushing Creek CSO Retention Facility – 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.

SCADA Project

DEP's Bureau of Wastewater Treatment (BWT) continued to work on the SCADA project in 2011. The overall project involves the design and installation of the instrumentation for the computerized data collection systems and design of regulator automation to control flows entering the interceptors. In 2011 DEP was working on upgrading the SCADA system at all Pump Stations, key regulators, CSO Overflow facilities and is expected to have the upgrades completed by December 2012.

For the status of the regulators under the SCADA project, please see Appendix 2, Table 1.

Tide Gates

A program is in place to repair defective gates and below is an update of tide gate locations where repairs are completed or gates are 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**	**Contract REG-025L**
NC(M)-48	**Complete**	9/28/2011	**New Gate**	**Contract REG-025L**
NC(M)-21	**Complete**	9/28/2011	**New Gate**	**Contract REG-025L**
NC(M)-23	**Complete**	9/28/2011	**New Gate**	**Contract REG-025L**
NC(M)-33	**Complete**	9/28/2011	**New Gate**	**Contract REG-025L**
WI(M)-24	**Contract Awarded**	**Scheduled Completion 4/13**	**New pull box**	**Contract REG-025L**
Oakwood Beach Flume	**Canceled**			**DEC instructed not to install this gate**

BBLL-3,4,9,17,21,22,23,30	**In Design**	**Design Completion Dec 2012**	**New Gate**	**Contract BB-212**
NCB-1,6,7,9,14	**Job Order to be issued with**	**Estimated completion June 2013**	**New Gates**	**JOC Contract**
RH-9,11,15	**Job Order to be issued with a JOC contractor**	**Estimated completion June 2013**	**New Gates**	**JOC Contract**
PR-9E,11E,13E,16E,36	**Job Order to be issued with a JOC contractor**	**Estimated completion June 2013**	**New Gates**	**JOC Contract**
WIM-14,15,16,50,67	**Job Order to be issued with a JOC contractor**	**Estimated completion June 2013**	**New Gates**	**JOC Contract**
NCM-18,31,51A	**Job Order to be issued with a JOC contractor**	**Estimated completion June 2013**	**New Gates**	**JOC Contract**

Interceptor Improvement Program

(Bureau of Wastewater Treatment)

In 2011 the Bureau of Wastewater Treatment continued with the Condition Assessment of the entire Intercepting Sewer System which was being performed under two contracts, namely, PS-267 for pipe segments longer than two thousand feet, and PS-266 for all other pipes. The CCTV and Sonar work has been completed and DEP is in the process of preparing summary reports and schedules for removal of debris and deposits, repair, rehabilitation, and replacement of the sewers.

Scope of Work Completed in 2011

In 2011, 265,431 linear feet (766 pipe segments) of intercepting sewers were inspected in the Bowery Bay, Coney Island, Hunts Point, Jamaica, Newtown Creek, North River, Oakwood Beach, Owls Head, Port Richmond, Red Hook, Rockaway, Tallman Island, and

Wards Island drainage areas. This inspected length represents 36.4% of the total citywide interceptor system to be inspected. A breakdown by drainage area is shown in Table 1 below.

Table 1: Length of pipe inspected by drainage area

Drainage Area	Year Built	Pipe Diameter Range (inches)	Inspected Length (feet)
Bowery Bay	1957	36 to 108	30,577
Coney Island	1927	42 to 120	2,550
Hunts Point	1944	36 to 120	46,591
Jamaica	1926	48 to 96	4,996
Newtown Creek	1956	30 to 108	73,918
North River	1967	30 to 192	14,893
Oakwood Beach	1955	30 to 96	11,604
Owls Head	1942	72 to 108	13,643
Port Richmond	1950	30 to 96	8,316
Red Hook	1976	48 to 78	4,263
Rockaway	1952	30 to 60	1,499
Tallman Island	1939	45 to 96	13,017
Wards Island	1937	36 to 148	39,563
Total			265,431

Sewer Cleaning and Inspection

Introduction:

DEP maintains its sewers through inspections and cleaning. Inspections are done either in person or via camera (CCTV, Zoom Camera, or Pushcams). Sewer Cleaning methods include Hydraulic (flushing), Mechanical (ex. dragging, rodding, vactoring) and Chemical (degreasing) procedures. This work is done by DEP personnel as well as through various contracts. Cleaning activities performed in 2011 are summarized in Table 2-1. Maps of the cleaning activities for the CMOM Section and DDC have been printed by community board in Appendix 2.

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. The primary functions of this division are to operate and maintain the collection system, perform investigations and respond to all sewer complaints received by the City's 311 call center, including complaints about sewer back-ups, catch basin flooding, and street flooding. These personnel also perform programmatic work involving sewer cleaning, 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 CMOM section. There are presently seven maintenance yard facilities located throughout the five boroughs of New York City. They are equipped with 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 2011, there were 15,361 customer service requests that resulted in sewer inspections. Of those requests, 9686 were determined to be unrelated to the DEP infrastructure. In response to each of these requests, the sewer maintenance division performed an initial inspection. This initial inspection includes inspecting the downstream and upstream manholes nearest the complaint location and collecting all data relevant to the incident. If the manhole inspection determines that the complaint was unconfirmed, meaning the sewer was functioning as designed, crews are directed to perform hydraulic cleaning for at least two sections of sewer; this is a new directive for 2011. If the sewer complaint is confirmed, meaning there was evidence that the sewer was overtaxed, the crews are directed to initially perform hydraulic cleaning; if this does not alleviate the condition, crews perform mechanical cleaning to remove material obstructing flow in the sewer in order to resolve the condition. In response to these complaints, DEP's In-House forces cleaned over 575 miles of sewer. This number

represents actual footage; when an actual footage was not reported, an estimate of 75 linear feet was used. As indicated, the inspections and cleanings were as a result of service requests and some of these footages may overlap with requests made at different times.

Sewer Maintenance Programmatic Inspection and Response

Last year the Bureau of Water & Sewer Operations initiated a new program called Sewer Operations and Analysis Program (SOAP). Quarterly, areas of the city with recurring confirmed sewer back-up (SBU) complaints are located and assigned to each of the sewer yards for inspection. This targeted programmatic inspection led to the cleaning of 45.06 miles.

Using our Geospatial Information System, the city is segmented into 165,329 sewer segments. A sewer segment is defined as a City block, property line to property line. Our analysis has shown that approximately 1.9% of our overall sewer segments experienced confirmed sewer back-ups, while only a third of this number experienced more than 1 SBU event (0.65% of the overall system). These locations become the focal point of the SOAP program. Under the SOAP program, the CMOM section performs an in depth analysis of the sewer segments. These analyses may lead to cleaning as warranted, spot repair if necessary, or referral for capital replacement as appropriate. Cleaning footage done under this program is included in Table 2-1, “CMOM Contracts Unit”.

The Bureau of Water & Sewer Operations, working jointly with the Bureau of Wastewater Treatment, has improved its program to address Fats, Oils and Grease (FOG).A new standard operating procedure (SOP) for this activity was promulgated to formalize past practices. DEP manages FOG issues of varying severity individually to ensure effective resolution and future maintenance. Reoccurring conditions are added to our Programmatic Degreasing List. These locations are then tracked, visited and mechanically, hydraulically, or chemically cleaned according to an established programmatic schedule. During Calendar Year 2011, 77.30 miles of sewer were programmatically cleaned through this program. Some of these footages may overlap depending on the frequency warranted by the FOG condition.

CMOM Sewer Inspections

If field crews identify sewer conditions that require cleaning beyond their capabilities, for reasons that include the size and condition of the sewer or that there is a record of recent repeated cleanings, the work is transferred to DEP’s CMOM (formerly Sewer Analysis) Section. The CMOM staff then delineates the specific needs and boundaries of the work via more robust field inspection using DEP’s CMOM Investigation Unit. Once the scope

is defined, it can be assigned to DEP's City-Wide contractors for cleaning and debris removal. Table 2-2: "DEP BWSO CMOM Inspection & Cleaning for CY 2011" shows the activities of the CMOM Section for 2011. These locations are listed and shown in Appendix 2,"DEP BWSO CMOM Inspected Locations". These activities have also been mapped by community board, including details of the areas and associated dates of cleaning activities in Appendix 2.

The DEP CMOM Section is also tasked with the responsibility of 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 NYCDOT and NYCDDC, when it is required to support capital planning work. The DEP's CMOM Section inspected 91,569 linear feet (or 17.34 miles) of sewer at 79 locations throughout the city during calendar year 2011. Some of this footage overlaps with areas addressed by field crews. As explained above and further below, this happens because the visual inspection occurs prior to cleaning activities as 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 various locations city-wide. These contractors have the capability of cleaning 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 211,373 linear feet or approximately 40.03 miles of sewers in calendar year 2011, as shown in the Table 2-2, **"**DEP BWSO CMOM Inspection & Cleaning for CY 2011." The cost of this work was about $1,395,089.95.

Sewer Cleaning for Lining & Gunniting Activities

DEP also rehabilitates sewers with the use of lining and gunniting methods. For both lining and gunniting, 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 2011, DEP lined 16,632 linear feet (or 3.15 miles) of sewer at a cost of $1,071,507.00. In 2011, DEP gunnited 10,657linear feet (or 2.01 miles) of sewer at a cost of $4,702,686.00 (See Table 2-1)

Sewer Cleaning and Inspection: Capital Project Design

The New York City Department of Design and Construction (NYCDDC) also performed sewer maintenance work associated with its 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. DDC inspected and cleaned 37,916 linear feet or 7.18 miles, as shown in detail in Appendix 2. (See Table 2-1).

Table 2-1: Summary of Sewers Inspected & Cleaned by BWSO		
METHOD	**INSPECTED** (miles)	**CLEANED** (miles)
In-House (Complaint)	573.37	573.37
In-House (Programmatic)	77.30	77.30
In-House (SOAP)	45.06	45.06
CMOM (Investigations Unit)	17.34	-
CMOM (Contracts Unit)	40.03	40.03
Lining	3.15	3.15
Gunniting	2.01	2.01
DDC	7.18	7.18
TOTALS	**765.44**	**748.1**

Table 2-2: DEP BWSO CMOM Inspection & Cleaning for CY 2011			
	Inspection (miles)	**Cleaning (miles)**	**Costs ($)**
CMOM Sewer Inspections	17.34	-	n/a
City-Wide Contract Inspection & Cleaning	40.03	40.03	$ 1,395,089.95
Total:	**57.37**	**40.03**	**$1,395,089.95**

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."

For this BMP, EPA's Nine Minimum Control guidance dated May 1995 states, "Compare the current [wet weather] flows with the design capacity of the overall facility." The design capacities for New York City's WWTPs are specified by the New York State Department of Environmental Conservation in each facility's SPDES permit as a "12-month rolling average," defined as "the average of the current month with the eleven previous months." The SPDES permits also require that the plants be "physically capable of receiving" twice their design capacity during wet weather.

In the mid-1990s, DEP developed a methodology to assess the quantities of wet weather flows received at each of the NYC WWTPs through an analysis of the top ten storms. In prior CSO BMP annual reports, instantaneous wet weather flows at the treatment plants were assessed. DEP recognized that whether a plant instantaneously maintains exactly twice design flow at every second during a throttling period or it averages twice flow during the throttling period, the same quantity of CSO reaches the receiving waters. This is a simple mathematical calculation that substantiates the environmental equivalency of the two approaches. Given that New York City's plants were designed, constructed, and are permitted by DEC based upon 12-month rolling average flows, painstakingly assessing instantaneous flows is not warranted. As indicated in the attached graphs (\\Wpc-backup\process\Info_Request\Top Storms\2011\2011 Throttling Plots), all of the City's plants are physically capable of receiving a minimum of twice their permit-rated design flow through primary treatment and disinfection or their DEC-approved Wet Weather Operating plans.

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 gauges 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 gauge are sorted and ranked based on storm volume (events featuring snow at any gauge are removed from consideration). For each storm, the ranks at the four gauges are then averaged. These average ranks are then sorted to identify the top ten storms at all gauges. 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 2011. It should be noted that 2011 was the second wettest year on record and August 2011 was the wettest month ever on record.

Table 3-1: CY2011 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	8/14/2011 1:00 AM	8/14/2011 11:00 PM	7.18
2	8/27/2011 11:00 AM	8/28/2011 11:00 AM	5.36
3	9/6/2011 1:00 AM	9/8/2011 7:00 AM	5.11
4	3/6/2011 9:00 AM	3/7/2011 3:00 AM	2.61
5	4/16/2011 2:00 PM	4/17/2011 3:00 AM	2.48
6	11/22/2011 3:00 PM	11/23/2011 1:00 PM	2.31
7	10/29/2011 7:00 AM	10/30/2011 1:00 AM	2.31
8	9/23/2011 11:00 AM	9/23/2011 9:00 PM	2.08
9	5/17/2011 4:00 AM	5/19/2011 12:00 AM	1.96
10	12/7/2011 12:00 AM	12/8/2011 3:00 AM	1.97

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

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.

For guidance, DEP’s operations engineer follow their plant’s DEC-approved Wet Weather Operating Plan, which specifies the “actual process control set points,” including average flow, as per Section VIII (3) and (4) of the SPDES permits. The

systems at the treatment plants are not physically capable of responding instantaneously to changes in runoff entering the collections system. The stationary engineers monitor wet well elevations and differentials on each side of the bar screens, speed up or slow down 4,160-volt main sewage pumps - some that have a capacity of over 100 MGD each - and then adjust large, hydraulically-actuated throttling gates. Each action can take several minutes to perform. This process is even more complex at locations where there are separate high- and low-level wells, or where there are off-site facilities.

If storm flow changes suddenly, such as in the example below, it is not physically possible for 2xDDWF to be instantaneously maintained. In this instance, throttling ended (as denoted by the open diamond) after plant flows dropped below instantaneously-measured 2xDDWF, because a storm suddenly ended and flows dropped more quickly than the stationary engineer and his equipment could react. As stated in the May 1995 EPA Nine Minimum Control guidance document, "maximizing flow to the POTW entails simple modifications to the CSS and treatment plant to enable as much wet weather flow as possible to reach the treatment plant." Undertaking capital upgrades at the City's very large treatment plants in order to make them physically capable of maintaining instantaneous flow rates would certainly not constitute "simple modifications." Such major upgrades are therefore far beyond EPA's guidance related to this BMP.

As mentioned above, DEP had included assessments of short-duration flows in prior Annual CSO BMP Reports. Such reporting, however, did both the public and DEP a disservice. Based on the City's past reporting practices, reports such as the 2009 Interstate Environmental Commission Annual Report Brief for NY, NJ and Connecticut (http://www.iec-nynjct.org/reports/2010/IEC.annual.brief.2009.pdf) presented misleading results to the public. The 2009 Brief stated that, of the 200 bypasses that occurred during that year in New York State, 198 were from the five boroughs; these results directly reflect the fact that DEP had reported events that other municipalities were not required to report. However, the public was not informed that the data reported by DEP were based on different criteria than those to which other dischargers in the State are held. As a result, IEC's Brief makes it appear that DEP's performance is well below that of other wastewater operators, giving the public a false understanding of the performance of the City's wastewater treatment plants. Such misinformation can only have a negative affect when DEP must explain to the public the need to pay for the continued massive investments the City has made, and will continue to make, in its wastewater infrastructure. In addition, DEC's position that DEP should be the only entity in the state held to the higher, impossible standard that is inconsistent with the DEC-approved WWOPs, exposes DEP to a disproportionate number of potential enforcement actions.

Also of note is that an assessment of instantaneous flows conflicts with the other provision of the SPDES permits that specifically pertains to wet weather flows – the Critical Equipment provision. Critical equipment is defined in each permit as "wastewater treatment equipment required to achieve a minimum of primary treatment and disinfection **up to two times the permitted flow."** Under this permit provision, twice design capacity is set as a maximum flow level, not a minimum sustained flow.

In summary, the Top Ten Storms analyses, as shown in the Attachment 1, clearly indicate that DEP's facilities complied with this BMP during 2011.

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. Wet Weather Operating Plan

> *"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. The wet weather operating plan shall be written in accordance with the NYSDEC publication, 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 five revisions to previous submittals of WWOPs were submitted in 2011 for Newtown Creek, North River and Tallman Island which includes Flushing Bay and Alley Creek (3 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/or eliminate dry weather bypasses. As a result of DEP's continuing efforts in this regard, in calendar year 2011, pump station and regulator bypasses remained at low levels.

The occurrence of any dry weather overflows are promptly abated and reported to the NYSDEC Region 2 Office within 24 hours. A written report is also submitted within five (5) days of the confirmed time of occurrence.

Total bypasses from the New York City collection system during the reporting period was 6.142 MG, and are listed in Appendix 5.

A yearly comparison of regulators, pump stations and WWTP's dry weather bypassing is attached in Appendix 5.

For the period from January 1, 2011 to December 31, 2011, dry weather bypasses from pumping stations and regulators was less than 0.0013% (6.142 MG) of total dry flow treated by NYC's 14 Wastewater Treatment Facilities (487,515 MG).

Pump station and regulator failures that resulted in bypasses during the calendar year 2011 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 electrical utility and equipment failures as one of the major causes for bypassing events in 2011:

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

On March 4, 2011 there was a raw sewage bypass at the W. 254th Street Pumping Station in the Wards Island drainage area. This bypass was caused by an emergency loss of power from Con Edison. A call to Con Edison by BWT-Communication Center confirmed they were having problems in the area tributary to the pumping station.

A feeder failure alarm at the pumping station was generated by the Telemetry system. Shift Engineer at the Communication Center notified Collections Facility North (CFN) personnel of the alarm. CFN personnel responded to the alarm, however utility power was restored to the area by Con Edison shortly before they arrived. With the station back on utility power and operating normally, CFN personnel inspected the regulator outside the pumping station and found evidence of a prior surcharged condition (bypass). This incident was discovered by the P.S 201 Telemetry System and caused a total bypass of 0.002MG.

On July 22, 2011 there was a Con Edison power failure at the 235th Street Pumping Station in the Wards Island drainage area.CFN personnel arrived on site and confirmed the station bypassing. The hydraulic pump unit that is on site was started and the hydraulic pump took over station operations until the Con Edison power was restored. This incident was discovered by the P.S 201 Telemetry System and caused total bypass of 0.046MG.

On March 9, 2011, there was a raw sewage bypass at the Nevins Street Pumping Station. Con Edison was doing utility work nearby which resulted in a feeder failure. The feeder failure caused damage to the two main sewage pumps (MSPs) at the station; both MSPs grounded and one of the contactors burned causing a total bypass of0.072MG.

Electrical Equipment Failure: (Cause code 3A)

On January 18, 2011, a power dip on the utility feeder at the TI-Linden Place Pump Station caused the main feeder breaker to trip for two of the three main sewage pumps (MSPs) at the pumping station. CFN personnel arrived on site and confirmed the bypass. The SEE reset the main feeder breaker making those two pumps available. With all the pumps operating, the bypass was abated.
This incident set off the PS 201 Telemetry System and caused total bypass of 0.131MG.

Electrical Equipment Failure: (Cause code 3C)

On May 8, 2011 a blown fuse on the starter for the No.1 Main Sewage Pump (MSP) at the Hannah Street Pumping Station caused a PLC failure resulting in a bypass at Regulator PR-13E in the Port Richmond drainage area.
A possible power surge/dip caused the No. 1 MSP starter fuse to blow at Hannah Street Pump Station. The blown fuse resulted in a PLC failure which rendered the pump station inoperable. A non-running pump alarm was generated but not acknowledged by the BWT-Communication Shift SEE at Flushing Bay Communication Center. A high well alarm was then
generated at Regulator #PR-13E and was acknowledged by the BWT Communication Shift SEE at Flushing Bay Communication Center who contacted Collection Facilities South (CFS) personnel.
CFS personnel responded to the regulator and found it surcharged. They began investigating the possible cause of the surcharge checking manholes in the area but were unsuccessful. Subsequently an SEE determined that the pumping station was not

operating, and found that the PLC had failed. He reset the PLC and the pumps returned to service. The SEE manually turned on the other pumps and pumped down the wet well which abated the bypass at Regulator PR-13E. The start and ending times for the bypass were confirmed through the SCADA - CSO telemetry for Regulator PR-13E. This incident was discovered by P.S.- 201 Telemetry System and caused total bypass of 0.338 MG.

On October 11, 2011, an electrical outlet at the Linden Place Pump Station failed, which rendered the air compressor and bubbler system inoperable. The air compressor is part of the bubbler system that controls the pumps at the station. With the bubbler inoperable, the pumps shut down and a bypass occurred. The shift engineer at BWT-Communication Center received an alarm for a non-running pump at the Linden Place PS. The shift engineer failed to immediately contact a Collections Facilities North (CFN) engineer to respond to the station as a result of the alarm. It wasn't until 9:00 pm that a CFN engineer was contacted in response to the callout. The CFN engineer arrived on-site with his crew (around 11:00 pm) and found the station wet well flooded and the pumps not operating. He reset the bubbler system and turned the pumps on (manually) and the well was pumped down and the bypass was abated. The crew went to the overflow point but the bypass had ended so the information regarding the start and ending times came from the telemetry system. BWT-electricians repaired /changed the broken outlet.
The electricians also configured a working backup system for the station (using floats) and installed it at the station with assistance from CFN personnel, October 2011.
This incident was discovered by an alarm from the Pump Station Telemetry System and caused total bypass of 0.390 MG.

Miscellaneous: (Cause code 8C)

On 8/16/11, the contract operations of the Ave V. Pump Station caused a dry weather bypass at the Regulator No. OH-11. The incident was discovered through an alarm on the PS201 telemetry and caused total bypass of 0.131 MG.

On August 31, 2011 there was a raw sewage bypass reported in the Rockaway drainage area. The bypass occurred out of a storm drain that discharges into Jamaica Bay. A gravity sewer which is fed by the Bayswater Avenue pumping station was the cause of the bypass. When the pumping station was in operation it pumped to a gravity sewer which was experiencing a surcharged condition. Due to this surcharged condition the sewage backed up in the sewer and over flowed through a manhole into the street and into a catch basin which discharged to Jamaica Bay for a total bypass of 0.008MG. This event was intermittently ongoing. The Bayswater Avenue pumping station was operating normally during this event.

Regulators Dry Weather Bypassing and Analysis

An evaluation of the regulator system revealed that all bypasses were caused by blockages.

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

- Blockages – Regulator, Tide gate chamber, Branch Interceptor

Blockages: (Cause code 6A)

- Six separate bypass events were caused by blockages in the regulators as reported to DEC on 01/13/2011, 04/12/2011, 05/10/2011, 06/04/2011,06/06/2011 and 09/17/2011. Regulator bypassing of 0.424 MG was caused by blockages within regulators. Blockages were discovered in the regulator at Bowery Bay regulator BBLL-32A on two occasions, Port Richmond regulator and PR-03E, PR-17E and PR-31, Tallman Island regulator TI-06.

- 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 permit number and a graph of trends in metals loading to New York City Wastewater Treatment Plants (WWTPs). In 2011 the average total metals discharged by all regulated industries to the NYC WWTPs was 13.8 lb/day. The total amount of metals 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 2011 regulated industries were bypasses to CSOs. Over the years, the total amount of metals 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 since 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:

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

7b. ***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, New York City Department of Environmental Protection (DEP) conducted an initial catch basin program. The program included inspection, mapping, cleaning and hooding of, where possible, 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 NYCDEP. 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. As of April 30, 2010, all catch basin work identified during the catch basin hooding program and required extensive repairs before a hood can be installed have been completed. The City now tracks catch basin maintenance and repair activities through Hansen, a complaint and work order management system.

Sections 7.1 and 7.2 summarize the inspections, hooding, repair, reconstruction, and retrofitting completed in Calendar Year 2011. The information used to assess the reconstruction originates from DEP's Hansen system and data on catch basin inspections conducted by BWSO's crew.

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. The current post inspection schedule is presented in Table 7.1-1: "Post Inspection Schedule" in Appendix 7.

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 in: "Post Inspection Schedule" in Appendix 7.

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 the of 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 2011, 42,873 catch basin inspections were completed at an approximate monthly average rate of 3,573 basins per month. DEP also cleaned 31,957 catch basins in 2011. Catch basin cleaning is composed of complaint based and programmatic (scheduled) cleaning. Table 7.1-3: "CY 2011 Catch Basin Survey & Cleaning" presents a summary of catch basin cleaning as a result of the post-inspection program and other routine maintenance activities during 2011 for each borough. This data is based on Hansen system data retrievals for activities that included catch basin surveys and 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 2011, DEP hooded 654 catch basins during the year, with only 3 (.5%) exceeding the 90 day allotted period. Overall the average time to install a hood was 24 days - significantly lower than the 90 days allotted in this requirement. Reasons why the 90 day period could not be met for every single basin include human and computer errors or the inability for BWSO to access the basin (for example, when cars are parked on top of them which happens frequently and could require multiple trips by BWSO staff before access can be secured).

Tables 7.1-2: CY 2011 Catch Basin Hooding presents a summary of hoods replaced during 2011 for each WPCP drainage area. This data is based on Hansen system data retrievals for repair activities that included hooding. DEP hooded 654 catch basins during the year, with only 3 exceeding the 90 day allotment period.

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 of 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 for compliance with retrofitting requirement 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 to accept a hood that can not in its existing condition. 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 remains 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 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 2011 Work

In the 2010 report, it was disclosed that all of the remaining catch basins that were initially identified as requiring extensive repairs before a hood can be installed were repaired by April 30, 2010.

"For all future basins that have found by inspection to require extensive repairs before a hood can be installed, the permittee shall repair and install a hood within 24 months."

The status of these basins is carefully monitored from the DEP's HANSEN system to ensure compliance within the allotted time period.

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 1 temporary 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 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 2011, 1,989.75 cubic yards of floatable material were retrieved from the 24 containment facilities and various water bodies.

Total floatable recovery per each year is provided in **Figure 7-3** and in **Appendix 7C**, **Table 7C-1**.

Floatable recovery totals for 2011 per each of the boom and net sites are included in **Appendix 7C**, **Table 7C-2**.

During 2011, the Cormorant was not utilized and therefore, no floatable capture is being reported during this reporting period.

. DEP Skimmer Vessel "Shearwater"

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 operated a full year of service in 2011. 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.

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)

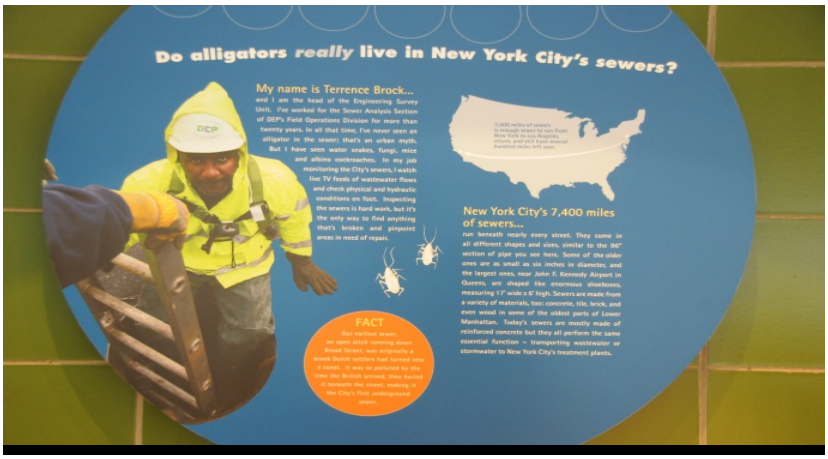
In 2011, the *Keep New York City Beautiful* organization remained active, focusing on citywide community-improvement programs such as litter prevention, neighborhood clean-ups, urban greenspace initiatives, tree plantings, and other activities. For a detailed description and history of *Keep New York City Beautiful*, please refer to the CY2008 CSO BMP Annual Report. The following table presents a summary of *Keep New York City Beautiful'* activities and impacts during 2011. 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, all of which works to reduce CSOs and their impacts on New York Harbor.

***Keep New York City Beautiful* - 2011 Activities**
Enhanced the collection of floatable litter by conducting beach and shoreline cleanups through a DEP initiative, removing approximately 298 cubic yards of debris.
Cleaned over 4,233 vacant lots citywide.
Continued to collaborate 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 and were able to sign two more BIDS into law. The two BIDS will begin providing services in 2012
Ticketed 387 dog walkers who failed to clean up after their dogs through a Sanitation Department public awareness campaign; bringing total number of tickets issued under the program to 1,800.
Advanced the Department of Transportation 'Public Plaza' beautification project and Public Art Programs citywide.
Removed approximately 43,566 illegal posters from public utility poles and fined violators who put them up.
Removed graffiti from 17,200 sites citywide through Mayor Bloomberg's Graffiti-Free NYC program.
The New York City Economic Development Corporation removed graffiti from 12, 117 properties.

NYC Parks planted a total of 1,257,701 flowers in calendar year 2011
Million Trees NYC planted 558,799 new trees along with Reforestation, 291,321, Street Trees 85,334, Other 182,144 During the Fall Volunteer Planting Week in October, 2011, over 20,000 new trees were planted throughout the five boroughs.
Since the inception of PlaNYC, have constructed 312 Greenstreets.
DEP continued to promote NYC tap water by setting up Water-On-the-Go stations throughout the city to provide water to thousands of New Yorkers and visitors, which helped reduce waste from bottled water. Water-On-the-Go served more than 200,000 drinkers from July1-September 30 2011.

The Keep America Beautiful Great American Cleanup (GAC) Times Square Kickoff, was the official launch of the Keep New York City Beautiful (KNYCB) coalition's GAC activities throughout all five boroughs of the city, and also served as the fourth anniversary of the formation of KNYCB.

DEP's Education staff teaches elementary through college students, as well as classroom teachers, non-formal educators, parents, and other adults 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 2011. For a full description of this program, please see the CY2009 CSO BMP Annual Report.

Smart Auto Body, Auto Repair, and Dismantling, - A guide to permitting requirements, environmental regulations and best management practices for the automotive industry in New York City is being edited and will be ready for distribution soon.

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

In 2011, 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 CY2010 CSO BMP Annual Report. The following sections describe the status of the programs.

- Adopt-a-Bluebelt – This program continued in 2011. The total number of adopted sites is 123 since the program's initiation.
- Volunteer Cleanups – This program continued in 2011.
- 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 2011.
- Youth Conservation Corps – This program did not continue in 2011.

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 CY2010 CSO BMP Annual Report. The following summarized activities during calendar year 2011:

- 1036 initial inspections were performed
- 2,100 follow ups / maintenance inspections were performed
- 2035 Commissioner's Orders were issued
- 744 Notices of Violation were issued,
- 2,162 new grease interceptor installations were required (this item will not be reported in future reports.)
- Numerous laminated signs ("No Grease, Hand Washing Only" and "No Grease, Vegetable/Fruit Washing Only") were printed and distributed at restaurant shows and during inspections.
- An updated and enhanced grease management information system was installed in order to increase efficiency and effectiveness of the grease program.

In addition, two trade shows were attended by staff from the Grease Remediation Unit. These trade shows are 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 2011, 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 2011, 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
- Professional Development
- Public Exhibitions
- Public Event-Based Programs
- Multi-Media
- Volunteer Programs
- Publications
- Promotional Items
- Website

The following sections describe the status of these programs during 2011. 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 2011 are presented below.

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

In 2011, DEP conducted hundreds of education programs with young people 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 and DEP's Website..

The Visitor Center at Newtown Creek, located at the Newtown Creek Wastewater Treatment Plant in Greenpoint, Brooklyn, 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 (including anti-littering). The Visitor Center is open to the public on Saturdays and during the week for school groups to conduct ongoing school programs and teacher workshops. A garden featuring native shrubs, grasses and flowers welcomes the visitors.

In June, 2011, DEP conducted its 25th Annual Water Resources Art & Poetry award ceremony, to recognize students' knowledge of the city's valuable water resources through their creative expression in art and poetry. Approximately 460 kindergarten through 12th gradegrade students from New York City and watershed public, charter, independent and parochial schools participated in the program. To celebrate the 25th Annual Water Resources Art & Poetry Program students submitted entries online where their poetry, photographs, digital art, paintings, and crafts were featured on DEP's Website.

In 2011, 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 11, over 200 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 120 classrooms (serving approximately 6,000 students) in NYC and the East and West of Hudson watersheds. In the spring, more than 1,500 NYC students released their trout into watershed streams and participated in hands-on on activities focusing on water stewardship.

Throughout the year, DEP hosted professional development workshops for formal and non-formal educators through the Summer Science Discovery Institute, New York City Department of Education, the Queens Museum of Art and other organizations. 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.

7.d.6.2 **Publications**

In 2011, DEP published and distributed 870,000 copies of the 2010 New York City Water Supply and Quality Report, an annual mandated Consumer Confidence Report. Publications that are available for distribution and posted on the DEP website include:

- 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
- 2010 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 2011 DEP continued its on-going education outreach efforts through its presences at highly visible Greenmarket locations throughout the city. 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 college 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 and encouraged the public to fill the bottles with tap water at the Water On-the-Go fountains instead of purchasing bottled water. The presence at various Greenmarkets through out 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 program from July 4th through Labor Day weekend, serving more than 200,000 thirsty New York City residents, commuters, and visitors.

7.d.6.3 **Future Actions**

In 2011, 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 2012, 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 2012 for several programs:

- School Programs: In 2012, DEP will expand the Water Resources Art and Poetry Contest to include new media entries such as videos, digital art, photographs, and

crafts. Themes for the 2012 contest will include the importance of New York Harbor, where our water comes from, how the city's wastewater is treated, green solutions to managing stormwater, and stewardship activities such as anti-littering and water conservation. School programs will increase at the Visitor Center at Newtown Creek as well as more professional development for educators.

- Publications: Specific documents that will receive updates in 2012 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 New York City students, teachers, parents, residents, community organizations, businesses, and visitors and internet users. The program is supported through the Visitor Center at Newtown Creek and the Newtown Creek Nature Walk, outreach events at schools and public events, multi-media promotion, public exhibitions, support of volunteer programs, literature and publication distribution, promotional item distribution, and the DEP website. In 2012, DEP plans to continue these programs and to expand outreach at the Visitor 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 2011, 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
- Economic Development Unit
    - Compliance Assistance
    - Pollution Prevention
    - Green Business Development
    - Business Development & Financial Referrals
    - Regulatory Reform
    - Water Bills & Infrastructure Assistance
- 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 2011 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 775 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 2012 the system was 95% complete.. More than 98% of the meters served by the AMR system are consistently 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 2013-2018.

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 2011, the Water Survey program conducted leak surveys in 680 apartments, 226 private homes and 17 small commercial properties. In addition, in 2011 "Do it yourself" home water-saving kits were distributed to 50 homeowners.

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 2011. In 2011, 882 inspections were performed on regulated industries, and 113 Notices of Violation were issued. In 2011 the average total metals discharged by all regulated industries to the NYC Wastewater Treatment Plants (WWTPs) was 13.8lb/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 0.25lb/day of total metals from year 2011 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 2011, 882 inspections were performed on regulated industries, and 113 Notices of Violation were issued.

7.d.7.4 Water and Sewer Permits

The City continued this program in 2011. For a detailed description of the program please refer to the 2009 CSO BMP Annual Report.

7.d.7.4.1**. Program Description**
During 2011, 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)" was under consideration. This rule was promulgated on January 4, 2012, and will become effective on July 4, 2012. 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 Communications & Intergovernmental Affairs. EDU's mission is to foster the joint goals of economic development and environmental protection by offering assistance in compliance, best practices and financing incentives 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 2011, 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 2011 EDU administered a continuing 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. This grease program was enhanced with additional outreach to NYC property managers, including tenant meetings and literature

distribution (over 34,500 pieces distributed to this sector in 2011). The following table summarizes EDU's outreach activities during 2011.

Selected EDU Public-Outreach Program[1] Activities During 2011

Outreach Type	Compliance Assistance	Green Business Development	Business Development & Financial Referrals/ Incentives	Water Bills & Infrastructure Assistance	Total Unique Contacts
Tel./Email/Walk-in Inquiries[2]	186	9	19	40	217
On-Site Visits[3]	624	624		338	962
Dedicated Mailings[4]	34,625	96	51		34,772
Workshops[5]	38	32	1	1	38
Trade Shows[6]	2	2	2		2
Grand Total					35,991

(1) Contacts include some primarily non-water related outreach (Air Compliance, Right-to-Know, etc.)
(2) Includes 37 business inquiries counted in multiple categories (e.g., Compliance and Financial Referrals)
(3) Grease—380, Noise—244, Water Bills—338; includes 624 on-site visits counted in two categories (Compliance & Green Business)
(4) Property Management Grease—34,625, Noise BMPs—96, Financing--51
(5) Grease—14, Noise—14, Right-to-Know—6, Other Topics/Stakeholders—4, Water Bills—1; includes 32 workshops counted in >1 category (LMP training counted under Grease & "Other Topics")
(6) Two workshops performed counted under Compliance, Green Business & Bus. Develop. & Financing

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**

Following extensive stakeholder outreach and completion of the Citywide Administrative Procedures Act (CAPA), DEP promulgated an amendment to Chapter 31 of Title 15 of the Rules of the City of New York (RCNY) to modify the flow rate of stormwater to the city's combined sewer system for new and existing development, as part of sewer availability and connection approvals. DEP's stormwater performance standard applies to developers proposing new buildings ("new developments") and horizontal enlargements of existing buildings or impervious surfaces ("alterations") in combined sewer system areas citywide. The rule was developed to free up and provide additional capacity in the future as the number of new developments and alterations increase within a drainage area, provide substantial flexibility for applicants to comply with stricter release requirements based on the availability of different technologies and site specific conditions, and allow for a phased implementation approach from existing city rules toward future and potentially more stringent federal and state stormwater requirements. As such, this rule is an integral component of the 2010 NYC Green Infrastructure Plan and the City's comprehensive approach to reduce combined sewer overflows (CSOs) over 20 years. The rule was promulgated on January 4, 2012 and will become effective on July 4, 2012.

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 2011. In April, OLTPS published an updated plan with 132 initiatives—including 15 initiatives to improve the quality of our waterways to increase opportunities for recreation and restore coastal ecosystems—and more than 400 specific milestones for December 31, 2013.

7.d.7.10 **NYC Green Infrastructure Program**

To implement the goals laid out in the NYC Green Infrastructure Plan released in September 2010, DEP established the Office of Green Infrastructure (OGI) in January 2011. Within the City's combined sewer watersheds shown in the Plan, OGI has coordinated with the Bureau of Environmental Planning and Analysis (BEPA) and Bureau of Wastewater Treatment (BWT) to further target priority tributary areas. Specifically, OGI's target tributary areas were based on the results of cost-benefit analyses in the Green Infrastructure Plan, ongoing assessments of different storm events and related frequencies of CSO events, and continuing discussions with NYSDEC for the development of LTCPs. These priority tributary areas represent the wet weather drainage area for the combined sewer outfalls that have the highest volumes, most frequent overflow events, and the worst water quality. By identifying priority tributary areas, DEP is able to focus the capital funding for green infrastructure and target the most challenging tributary areas. Water quality modeling and watershed planning has and would continue to direct the implementation going forward. In addition, the continuous monitoring data DEP is collecting will also feedback into more cost-effective and efficient implementation. The main programmatic areas by which the Program would be implemented are the Green Infrastructure Capital Program, the Green Infrastructure Grant Program, and the Neighborhood Demonstration Area projects. The maintenance, monitoring, partnerships, outreach, and community involvement a fundamental part of the Program and are key to its success.

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

DEP initiated a study in February 2011 on climate change and population growth effects to develop adaptation and optimization strategies for addressing increasing demand and minimizing impacts of heavy rain and storm surge to drainage and wastewater management systems. The study focuses on one wastewater treatment plant and two drainage areas as pilot locations. In addition, the Mayor's Office of Long-Term Planning and Sustainability (OLTPS) is taking a broad look at the city's critical assets inventories, potential vulnerabilities to extreme events and potential design specifications and adaptation strategies for all types of infrastructure as part of a citywide climate resilience effort. DEP is working with OLTPS to provide in-depth information regarding DEP's systems and current understanding of potential climate impacts and mitigation.

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

DEP continues to implement and monitor stormwater and ecological pilots to the Jamaica Bay Watershed Protection Plan (JBWPP), as required by Local Law 71 of 2005. The next status update to Mayor and City Council on the plan will be October 1, 2012.

DEP, the National Park Service and Brooklyn College sponsored the State of the Bay: Past, Present and Future scientific symposium on Thursday, October 20th at Brooklyn College. A boat tour of Jamaica Bay highlighting the on-going restorations and ecological pilot studies was held on Friday, October 21st. This event is one of a series of symposia anticipated to occur every few years to highlight on-going and emerging research. Topics of the symposia addressed a range of issues impacting the ecology of Jamaica Bay, a unique and irreplaceable ecological resource that has survived and often thrived alongside human habitats.

Mayor Michael R. Bloomberg, U.S. Department of the Interior Secretary Ken Salazar and U.S. Environmental Protection Agency Region 2 Administrator Judith Enck announced new agreements to improve the Federal and City parklands around Jamaica Bay and improve overall water quality in the Bay. The Mayor and Secretary Salazar signed an agreement committing to a joint planning process that will devise a new, unified governing model and new, common objectives for the 10,000 acres of publicly-owned land in south Brooklyn and Queens.

The City, together with the US Army Corps of Engineers and New York State Department of Environmental Conservation continue to make remarkable progress on marsh island restoration. Approximately 375,000 cubic yards of clean sand from the Ambrose Channel deepening project is beneficially being used to restore 42 acres of marsh at the Yellow Bar Hassock marsh island. There are additional plans to use Ambrose sand to continue the upward trend of restoring another 35 acres of disappearing marsh islands at Black Wall and Rulers Bar.

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. Update 2011 will describe DEP's ongoing efforts to develop and demonstrate cutting edge ecological improvement technologies such as pilot eelgrass plantings to increase biodiversity within Jamaica Bay.

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 2011 DEP began or supplemented the following:

- Green infrastructure project to capture and treat stormwater runoff along North and South Conduit Avenue in Queens. The 13,000 square-foot stormwater bioretention and treatment zone will help improve harbor water quality in Jamaica Bay. This green infrastructure project will have the capacity to divert at least 200,000 gallons of stormwater from a nine-acre drainage area that would otherwise flow into the combined sewer system—roughly 90% of the stormwater that accumulates within the drainage area during a moderate storm.

- Stormwater Pilot Program for stand-alone parking lots, an initiative that requires lot owners to pay a charge for the stormwater runoff they produce, or demonstrate that they are addressing stormwater on site with green infrastructure or other measures. Until now, stand-alone parking lots, which produce a significant amount of stormwater runoff that can lead to combined sewer overflows during heavy rain, have not contributed financially to the system because they did not receive a water bill.

- Completion of the cleaning of large sewers in southeast Queens using new state-of-the-art Vactor trucks. The cleaning of 12.2 miles of large sewers — called interceptors — removed roughly 1,008 cubic yards of debris weighing 1,562 tons, enough to fill 97 garbage trucks. The work will increase the amount of flow that local sewers can carry to the Jamaica Wastewater Treatment Plant because clear sewers lines have the ability to convey more stormwater during heavy rains, which ultimately reduces the likelihood and intensity of combined sewer overflows into Jamaica Bay.
- Completed the replacement of all 410 signs marking the combined sewer overflow outfalls in New York City. The updated design now includes warnings

about fishing, swimming, and boating near specific sewer outfalls, which will assist the public in making informed decisions about recreational opportunities when it rains.

- Distributed a total of 1,000 free rain barrels in the Bronx, Brooklyn, Queens and Staten Island to single- and two-family homeowners. Each rain barrel has the capacity to collect up to 55 gallons, assisting single- and two-family homeowners who, on average, devote up to 40% of their total water usage to watering gardens and lawns during the summer.
- Turned on the new $404 million Paerdegat Basin Combined Sewer Overflow (CSO) Facility in Brooklyn. The retention facility will prevent up to 50 million gallons of combined sewer overflows during heavy rain from being discharged into Paerdegat Basin, a 1.25 mile channel that is connected to Jamaica Bay.
- Completion of a $130 million Alley Creek Combined Sewer Overflow (CSO) Facility in Bayside, Queens. The facility will collect up to five million gallons of combined sewage every time it rains that was previously discharged into Alley Creek and Little Neck Bay.
- Received a No Discharge Zone designation in the open waters and tributaries of Jamaica Bay. The designation, made possible because DEP has developed sufficient sewage pump-out locations where vessels are able to discharge waste, will improve the bay's water quality and ecology.
- Announced the 15 winners of DEP's 2011 Green Infrastructure Grant Program. Selected from a total of 52 applications, the 15 winners will share approximately $3.8 million of funds to build green infrastructure projects that will reduce combined sewer overflows and improve water quality in New York Harbor.
- Completion of a ribbed mussel ecological project to help improve the overall water quality and ecology of Jamaica Bay. Ribbed mussels are an important part of aquatic ecosystems, filtering out nitrogen and bacteria to improve water quality. The pilot project will test the effectiveness and long-term viability of using ribbed mussels to remove nutrients and other pollutants from the waters of Fresh Creek, a tributary of Jamaica Bay.
- Proposed a rule requiring new construction and major building alteration projects to capture more stormwater runoff, provide additional capacity in the combined sewer system and reduce street flooding.
- Completed the installation of a green roof at the Jamaica Wastewater Treatment Plant. The green roof has the ability to absorb up to 13,000 gallons of stormwater annually, which will reduce runoff as well as the likelihood and intensity of combined sewer overflow discharges into Jamaica Bay.

- The New York State Department of Environmental Conservation and the New York City Department of Environmental Protection reached a draft agreement to reduce combined sewer overflows (CSO) into area water bodies. The agreement modifies New York City's approach to improving harbor water quality, under which the city will invest an estimated $187 million in green infrastructure projects by 2015, part of a planned $2.4 billion public and private investment over the next 20 years.
- Announced the fourth phase of the Eelgrass Pilot Project to help improve Jamaica Bay's local ecosystem. The project includes an additional 8,000 eelgrass plants in Jamaica Bay near Breezy Point.
- 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 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

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 been 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 100 sites in 2011. 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 were able to provide 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 performed 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 outlets 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 installed to take the street storm water flow, reducing this flow to the existing combined sewer. The originally combined sewers, when supplemented by a HLSS, would still be classified as combined, since it still takes storm flow from adjacent private properties and in many cases flow from upstream combined sewers.

Below 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 and below are more precise schedules that can be offered at this time (from Department of Design and Construction) (DDC) and are as follows – there are many variables which may affect this projected timing i.e. budget, permitting.

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.

<u>SEQ200483 = 39.77 MG per year</u>

Contract # SEQ200483 currently projected for FY 13

Hook Creek Blvd (Twin Ponds Project)

(See Map of location in the attachment Appendix 8)

Design Start – 4/1/11

Projected Design Completion – 7/15/12

Projected Construction Start – 1/14/13

Projected Construction Completion – 7/04/15

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 Appendix 8)

Design Start – 4/1/11

Projected Design Completion – 7/15/12

Projected Const Start – 1/14/13

Projected Const Completion – 7/14/14

SEQ200529 =12.35 MG per year

Contract # SEQ200529 currently projected for FY 17

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

(See Map of location in the attachment Appendix 8)

Projected Design Start – 12/13/16

Projected Design Completion – 12/9/17

Projected Const Start – 6/27/18

Projected Const Completion – 6/26/19

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 Appendix 8)

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 WWTP drainage area.

DEP has revised the scoped the first project CONISPH01 (copy attached) to reach the first phase of the rezoning area, as determined by City Hall and EDC. The first project will include the installation of a new larger outfall at West 15th Street, new storm sewers, replacement of existing sanitary sewers, replacement and upgrading of existing trunk and distribution water mains in West 15th Street between Hart Place and Surf avenue, as well as the replacement of existing storm sewers in a portion of Surf Avenue between Stillwell and W17 Streets and is scheduled for FY 2012. Subsequent phases (see attached project sketch for CONISPH2A and CONISPH2B) determined by EDC/City Hall have been scoped. Infrastructure work will include new / upgraded storm sewers, a new larger storm sewer outfall located at W 21st Street (Phase 2A) and West 12th Street (Phase 2B)and Hart Place and West 15th Street, replacement of existing sanitary sewers, replacement and upgrading of existing trunk and distribution water mains. These subsequent phases have been forecast in the budget for FY 14 and 15. It is projected that additional phases will be forecast in FY17 and beyond.

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 2011.

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 2011, 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. Septage and Hauled Waste

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

The septage and hauled waste program continued unchanged since the 2010 Annual BMP Report issued on March 31, 2011.

On November 1, 2011, DEP reopened the scavenger manhole at the Bowery Bay WWTP.

12. Control of Run-off

"All sewer certifications for new development shall be consistent with NYCDEP rules and regulations and shall require on-site detention or retention 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.

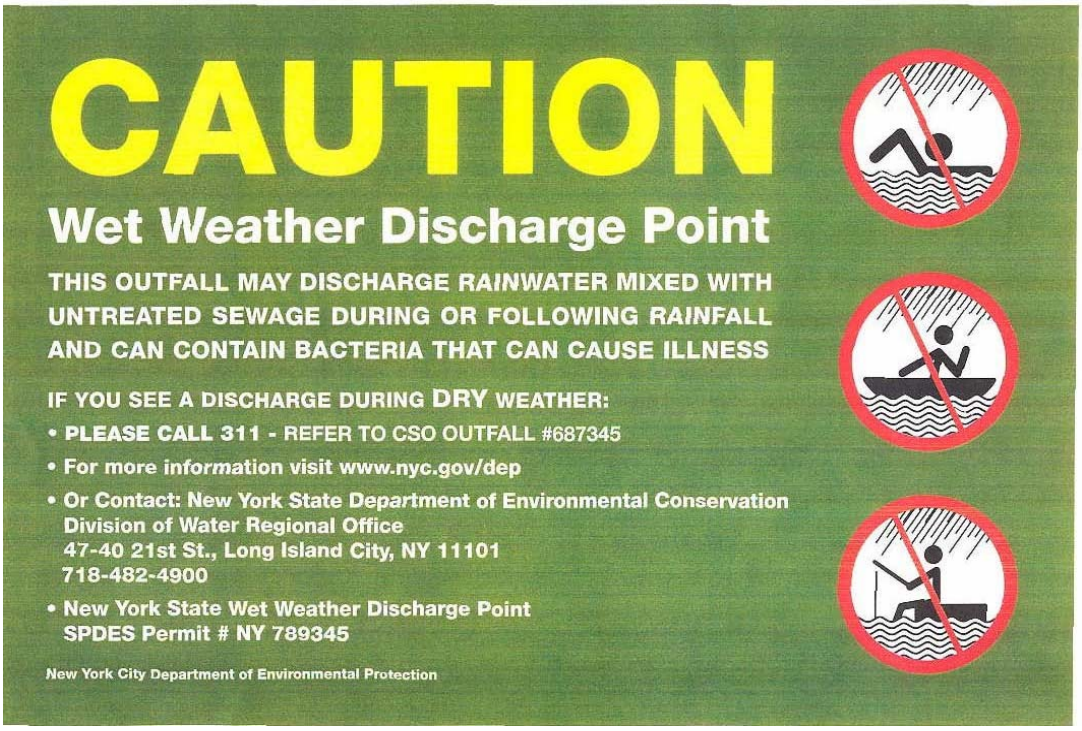
A rule to "reduce the release rate of storm flow from new developments to 10% of the drainage plan allowable or 0.25 cfs, whichever is higher (for cases when the allowable storm flow is more than 0.25 cfs)," was promulgated on January 4, 2012, and will become effective on July 4, 2012.

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 was approved by 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. The replacement of the signs was completed in May of 2011 with the newly designed CSO signs; see **Appendix 10** for the list of installed CSO sign locations.

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

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

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

“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-2011.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 2011 beach season there were a total of 120 Pollution Advisory days, 220 Beach Closure days, and 130 Wet Weather Advisory days. It should be noted that 2011 was the second wettest year in New York City history and that August was the wettest month ever recorded. This directly impacted water quality and resulted in an increase in beach advisories and closures compared to previous years. Three events are of particular note: the 7-inch rainfall on August 14th, Hurricane Irene, and the North River plant fire. During and immediately following these events, several beaches were placed under advisory or closed.

The nearly 8-inch rain event on August 14th also resulted in extended Advisories and Closure for the Breezy Point 219th Street Beach Club in Queens and at South, Midland Cedar Grove and Wolfe's Pond beaches in Staten Island.

Extensive flooding brought about by Hurricane Irene resulted in many streams and bays becoming sediment-laden; this included the Hudson River which spills into New York Harbor. The extensive sediment loadings to the Hudson River together with localized property and infrastructure flooding may have contributed to the elevated Enterococcus concentrations at certain Staten Island beaches. These beaches were re-opened on September 1st except South Beach which remained closed for the remainder of the bathing season.

In response to the North River fire, these beaches were placed under Advisory on July 22nd and closed on July 26th based on water quality monitoring and hydrological modeling. Seagate Beach was placed back into Advisory July 28th and the remainders of the beach closures were lifted the evening of July 28th.

Douglaston Manor Beach in Queens was closed a total of 81 days and had Pollution Advisories posted for a further 23 days during the season because of localized elevated bacteria levels, likely due to failing septic systems in the area.

The specific Advisory and Closure dates, and reasons for issuing these advisories and closures are shown in **Appendix 10** Tables B-1 and B-2 - 2011 Advisories & Closures.

Appendix 10, Table A, shows Public Beach Advisories and Closure comparisons for 2009 to 2011. Tables B-1 and B-2 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 CSO's 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. Annual Report

The permittee shall submit an annual report summarizing implementation of the above best management practices (BMP's). 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 BMP's 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 ninth 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'11 Chloride Concentrations Average Summary

Table 2 - Yearly Average Tidal Inflow Comparison for CY '10 – '11

Table 3 - CSO Alarm Summary

Exhibit 1

August 14, 2003

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

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

Dear Mr. Elburn:

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

Sincerely yours,

A. Lopez

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 y / n Diversion	Inspection Of y / n Regulator	Inspection 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 Construction Start 07/2010	Rockaway Bch. Blvd	Projected
SEQ-200508 08/2011	BEACH 32nd St.	Projected Construction Start
QED-982 06/2012	Rockaway Beach Blvd	Projected Construction Start
SEQ002681 (HWQ631B2) 06/2013	Sommerville B2	Projected Construction Start
SEQ200523 07/2011	New Haven Avenue, etc	Projected Construction Start
SEQ200533 06/2010	Beach 42nd Street	Actual Construction Start
QED-983 03/2011	Beach 88th Street	Projected Construction Start

Updates & construction start dates as of 01/04/2012 are as follows:

HD153C2/SEQ200421/SEQ002576 Edgemere C2 - Actual Construction Start 09/2011,
Project completion 6/2014

SE795 - Projected Construction Start 07/2012,
Projected completion 7/2014

HWQ631B1/SE-789 - Actual Construction Start 01/22/2009
Projected Finish 07/2012

HD153C1/SEQ200406/2562/Edgemere C1 - Actual Construction Start 04/2009,
Projected Finish 07/2012

SEQ200426/HWQ1126B - On Hold – DOT issue

QED983 - Construction Start 09/2011,
Projected completion 9/2013

SEQ200508 - Projected Construction Start 03/2012,
Projected completion 3/2014

QED982 - Projected Construction Start 07/2015

SEQ002681/HWQ631B2 - Projected Construction Start 06/2013

SEQ200523 - Actual Construction Start 10/2011,
Projected completion 6/2013

SEQ200533 - Actual Construction Start 06/07/2010,
Projected completion 1/2012

SEX20039 – Construction completed – 11/10/11

TABLE 1

2011 12-Month Rolling Average Influent Chlorides (mg/L)

PLANTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
WARDS ISLAND	570	560	550	540	530	540	530	520	510	510	490	480
NORTH RIVER	338	337	328	331	322	327	328	332	320	316	310	307
HUNTS POINT	260	240	240	240	240	240	240	240	240	240	230	230
26th WARD	280	280	280	280	290	280	280	270	270	260	240	220
CONEY ISLAND	840	830	850	850	840	820	790	760	700	650	640	630
OWLS HEAD	250	240	220	210	220	220	230	220	220	220	240	230
NEWTOWN CREEK	889	907	889	887	905	927	953	946	902	898	876	865
RED HOOK	432	441	448	456	454	467	459	442	435	444	433	421
JAMAICA	250	250	250	250	250	250	260	260	260	260	250	250
TALLMAN ISLAND	290	270	260	270	260	270	270	270	280	280	290	290
BOWERY BAY	490	500	480	490	500	510	510	530	560	540	540	540
ROCKAWAY	2,200	2,200	2,200	2,200	2,200	2,300	2,300	2,200	2,200	2,200	2,200	2,200
OAKWOOD BEACH	233	238	233	229	231	232	232	242	245	245	243	243
PORT RICHMOND	540	553	551	556	569	574	564	560	542	428	406	393

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

TABLE 2 **YEARLY AVERAGE TIDAL INFLOW COMPARISON FOR CY '10-'11**

WPCP	JANUARY - DECEMBER '10		JANUARY - DECEMBER '11		VARIANCE		REMARKS*
	INFLOW (MGD)	% DWF	INFLOW (MGD)	% DWF	INFLOW (MGD)	%	
WARDS ISLAND	11.576	6.0%	9.786	4.9%	1.79	1.05%	18.29% DECREASE
NORTH RIVER	4.640	4.0%	4.273	3.6%	0.37	0.33%	8.60% DECREASE
HUNTS POINT	1.757	1.5%	1.703	1.4%	0.05	0.17%	3.16% DECREASE
26th WARD	0.845	1.7%	0.648	1.3%	0.20	0.39%	30.30% DECREASE
CONEY ISLAND	4.528	5.7%	3.966	4.5%	0.56	1.19%	14.18% DECREASE
OWLS HEAD	1.325	1.6%	1.406	1.6%	-0.08	-0.03%	5.71% INCREASE
NEWTOWN CREEK	17.390	7.5%	17.236	7.5%	0.15	0.00%	0.89% DECREASE
RED HOOK	0.856	3.3%	0.884	3.3%	-0.03	-0.03%	3.17% INCREASE
JAMAICA	1.133	1.5%	1.234	1.6%	-0.10	-0.09%	8.16% INCREASE
TALLMAN ISLAND	0.853	1.7%	1.041	1.9%	-0.19	-0.19%	18.11% INCREASE
BOWERY BAY	3.406	3.4%	4.949	4.7%	-1.54	-1.27%	31.18% INCREASE
ROCKAWAY	3.207	15.1%	2.633	15.3%	0.57	-0.21%	21.83% DECREASE
OAKWOOD BEACH	0.427	1.5%	0.514	1.6%	-0.09	-0.15%	16.94% INCREASE
PORT RICHMOND	1.033	4.3%	0.865	3.3%	0.17	1.03%	19.46% DECREASE

**Tidal Inflow (MGD) seasonal percentage change.*

Table 3

CSO Alarm Summary CY' 11

Location	Date	Time of alarm	Nature of alarm	Cause of interruption	Bypassing analysis
PR-Reg. No. 31	01/13/11	11:30AM	CSO ALARM	BYPASS	Reduced.Reported to DEC.Item#5063
PR-Reg. No. 13	05/08/11	11:22PM	CSO ALARM*	BYPASS	Reduced.
BB-Reg. No. 32A	05/10/11	11:55AM	CSO ALARM	BYPASS	Reduced.Reported to DEC.Item#5125
TI-Reg. No. 06	06/04/11	7:45AM	CSO ALARM	BYPASS	Reduced.Reported to DEC.Item#5135
BB-Reg. No. LL-32A	06/06/11	10:35AM	CSO ALARM	BYPASS	Reduced.Reported to DEC.Item#5136
PR-Reg. No.03E	09/17/11	9:50AM	CSO ALARM	BYPASS	Reduced.Reported to DEC.Item#5156

*The incident was discovered through the CSO telemetry system.

Appendix 2

DEP BWSO

TV Inspection and Cleaning (Borough Map 1-5)

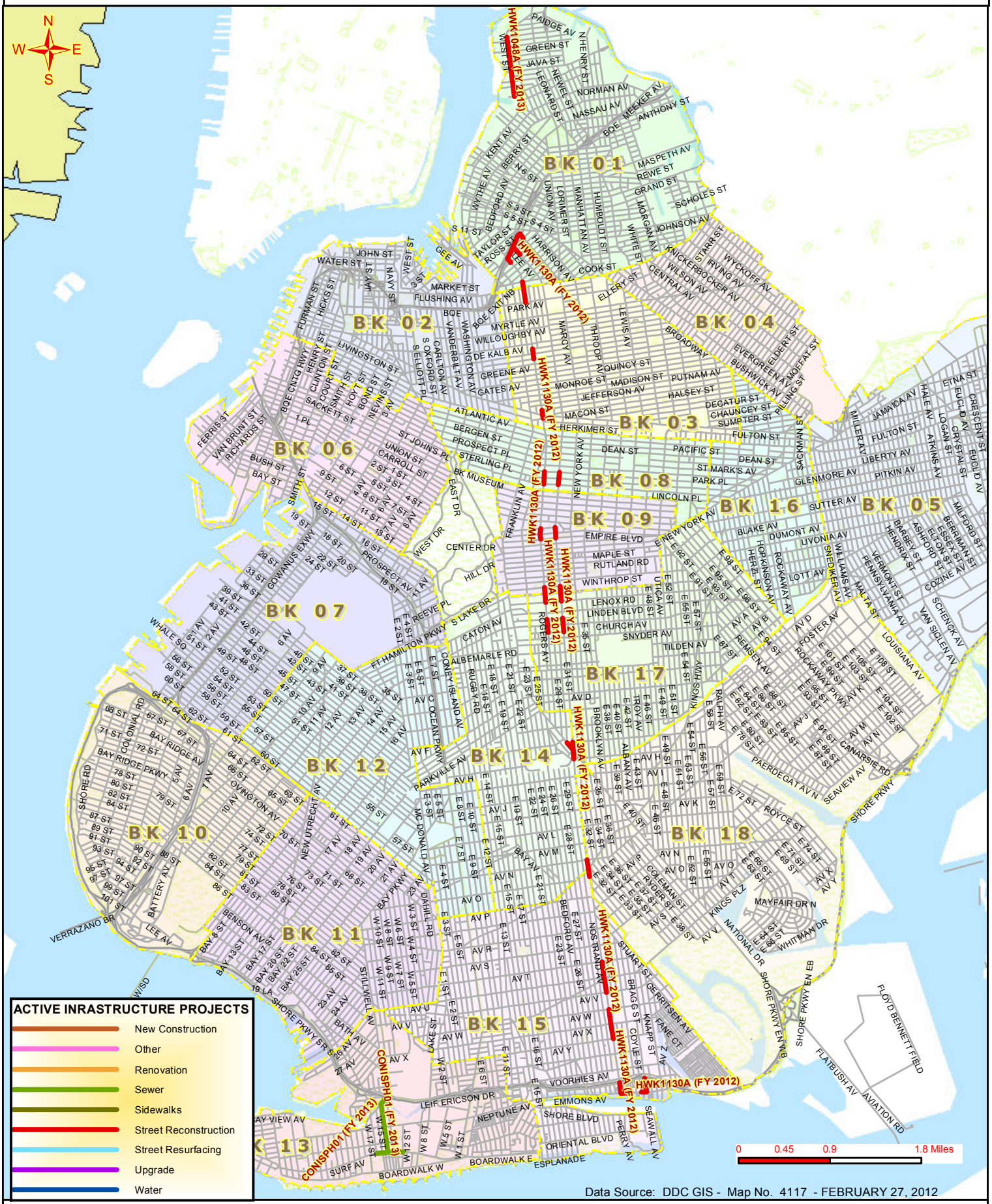
NYC Public Sewers Inspected, Cleaned or
Televised in CY 2011 (Borough Map 1-5)

NYC Public Sewers Inspected, Cleaned or
Televised in CY 2011 (Community Board Map 1-53)

Inspected Locations

BROOKLYN

CLEANING AND VIDEO TAPING OF SEWER IN FISCAL YEAR 2011



Data Source: DDC GIS - Map No. 4117 - FEBRUARY 27, 2012

Hon. Michael R. Bloomberg, Mayor

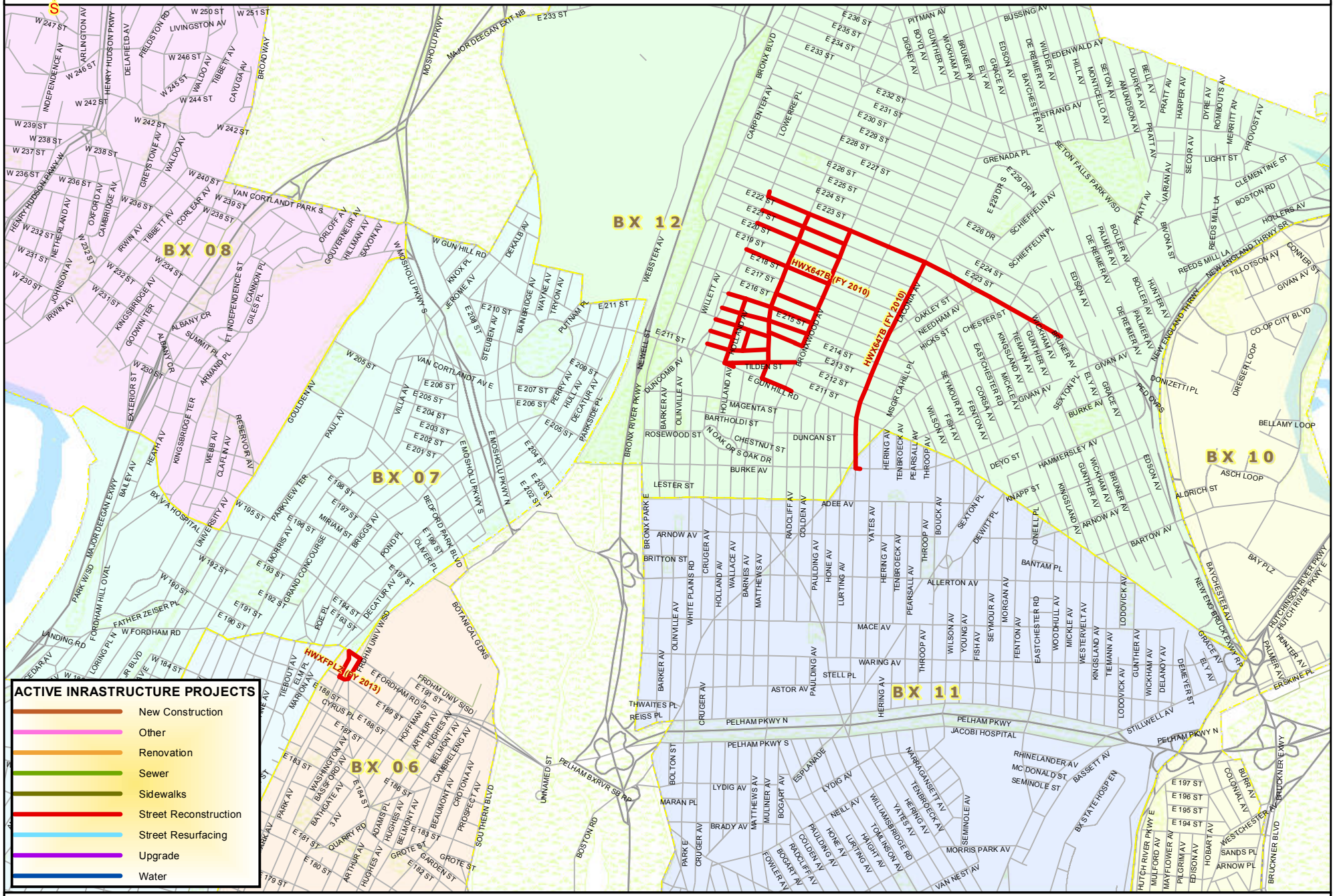
David J. Burney, FAIA, Commissioner
NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

Janette Sadik-Khan, Commissioner
NEW YORK CITY DOT

Carter H. Strickland, Jr. Commissioner
NYC Environmental Protection

THE BRONX

CLEANING AND VIDEO TAPING OF SEWER IN FISCAL YEAR 2011



David J. Burney, FAIA, Commissioner

NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

Hon. Michael R. Bloomberg, Mayor

Janette Sadik-Khan, Commissioner

NEW YORK CITY DOT

Carter H. Strickland, Jr. Commissioner

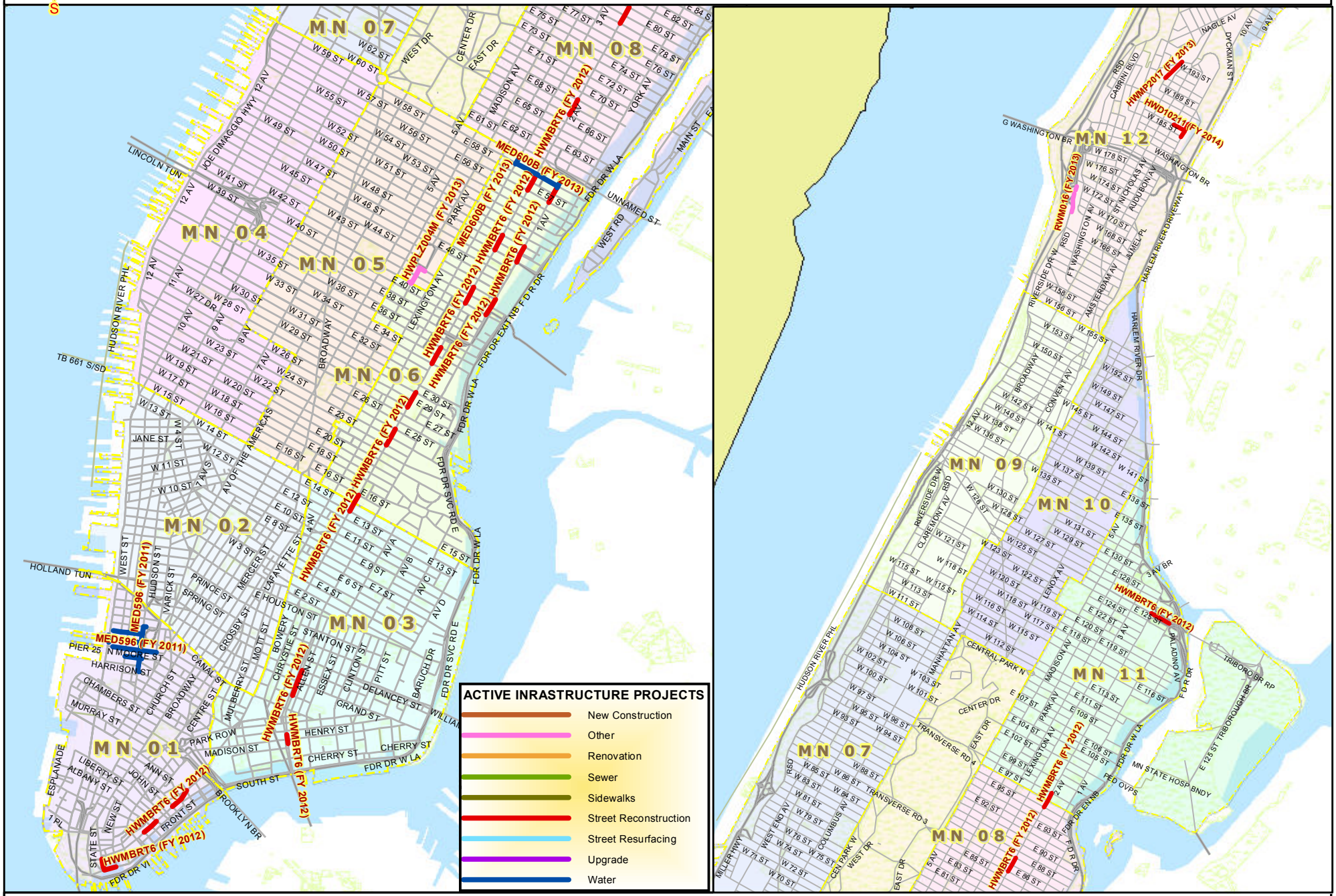
NYC Environmental Protection

Data Source: DDC GIS - Map No. 4117 - FEBRUARY 27, 2012

0 0.05 0.1 0.2 Miles

MANHATTAN

CLEANING AND VIDEO TAPING OF SEWER IN FISCAL YEAR 2011



David J. Burney, FAIA, Commissioner

NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

Data Source: DDC GIS - Map No. 4117 - FEBRUARY 27, 2012

Hon. Michael R. Bloomberg, Mayor

Janette Sadik-Khan, Commissioner

NEW YORK CITY DOT

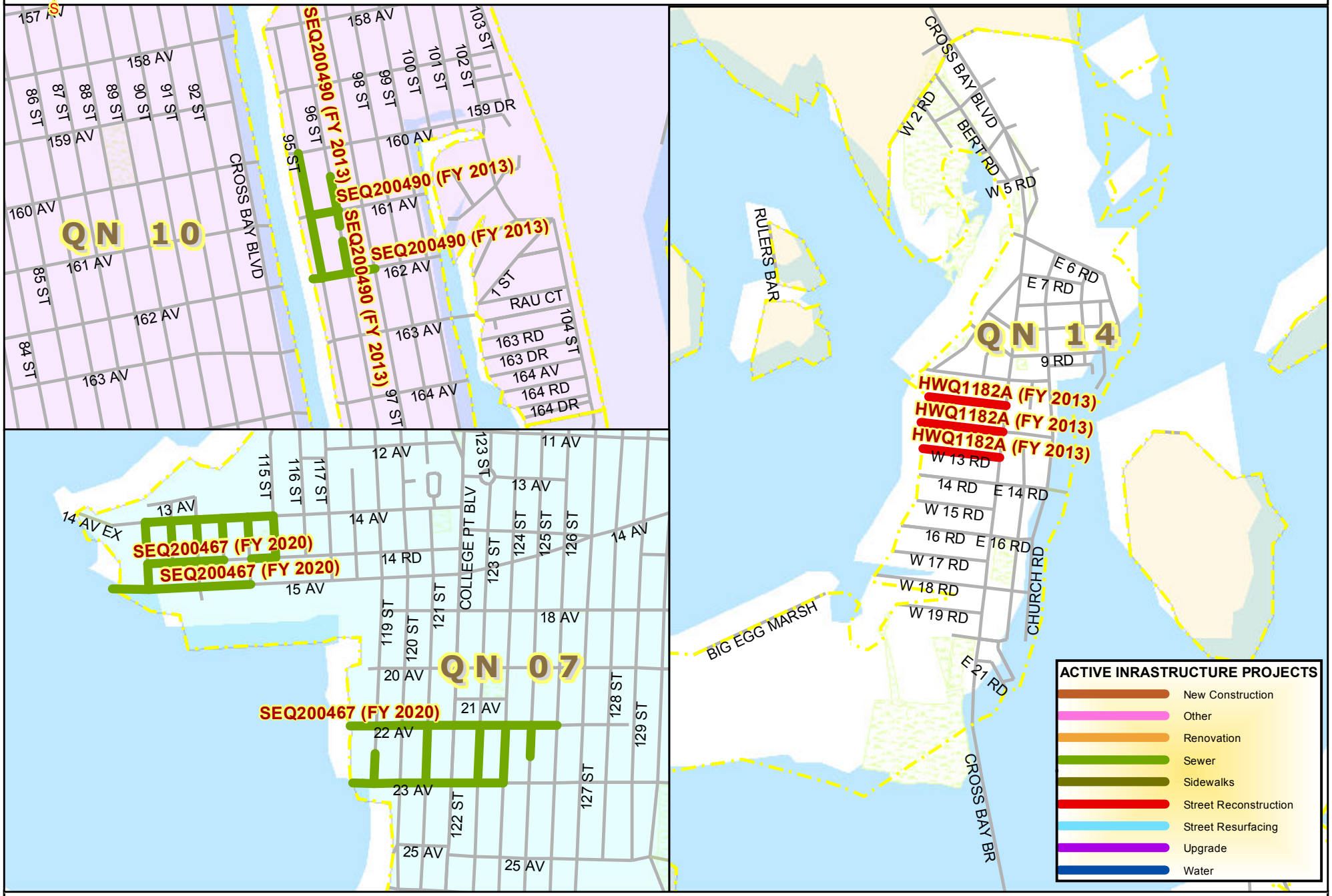
0 0.1 0.2 0.4 Miles

Carter H. Strickland, Jr. Commissioner

NYC Environmental Protection

QUEENS

CLEANING AND VIDEO TAPING OF SEWER IN FISCAL YEAR 2011



David J. Burney, FAIA, Commissioner

NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

Data Source: DDC GIS - Map No. 4117 - FEBRUARY 27, 2012

Hon. Michael R. Bloomberg, Mayor

Janette Sadik-Khan, Commissioner

NEW YORK CITY DOT

0 0.5 1 1.5 2 Miles

Carter H. Strickland, Jr. Commissioner

NYC Environmental Protection

STATEN ISLAND

CLEANING AND VIDEO TAPING OF SEWER IN FISCAL YEAR 2011

David J. Burney, FAIA, Commissioner

NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

Data Source: DDC GIS - Map No. 4117 - FEBRUARY 27, 2012

Hon. Michael R. Bloomberg, Mayor

Janette Sadik-Khan, Commissioner

NEW YORK CITY DOT

Carter H. Strickland, Jr. Commissioner

NYC Environmental Protection

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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 CMOM Compliance	
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 Mapping Unit on 3/8/2012	

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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 CMOM Compliance	
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 Mapping Unit on 3/5/2012	

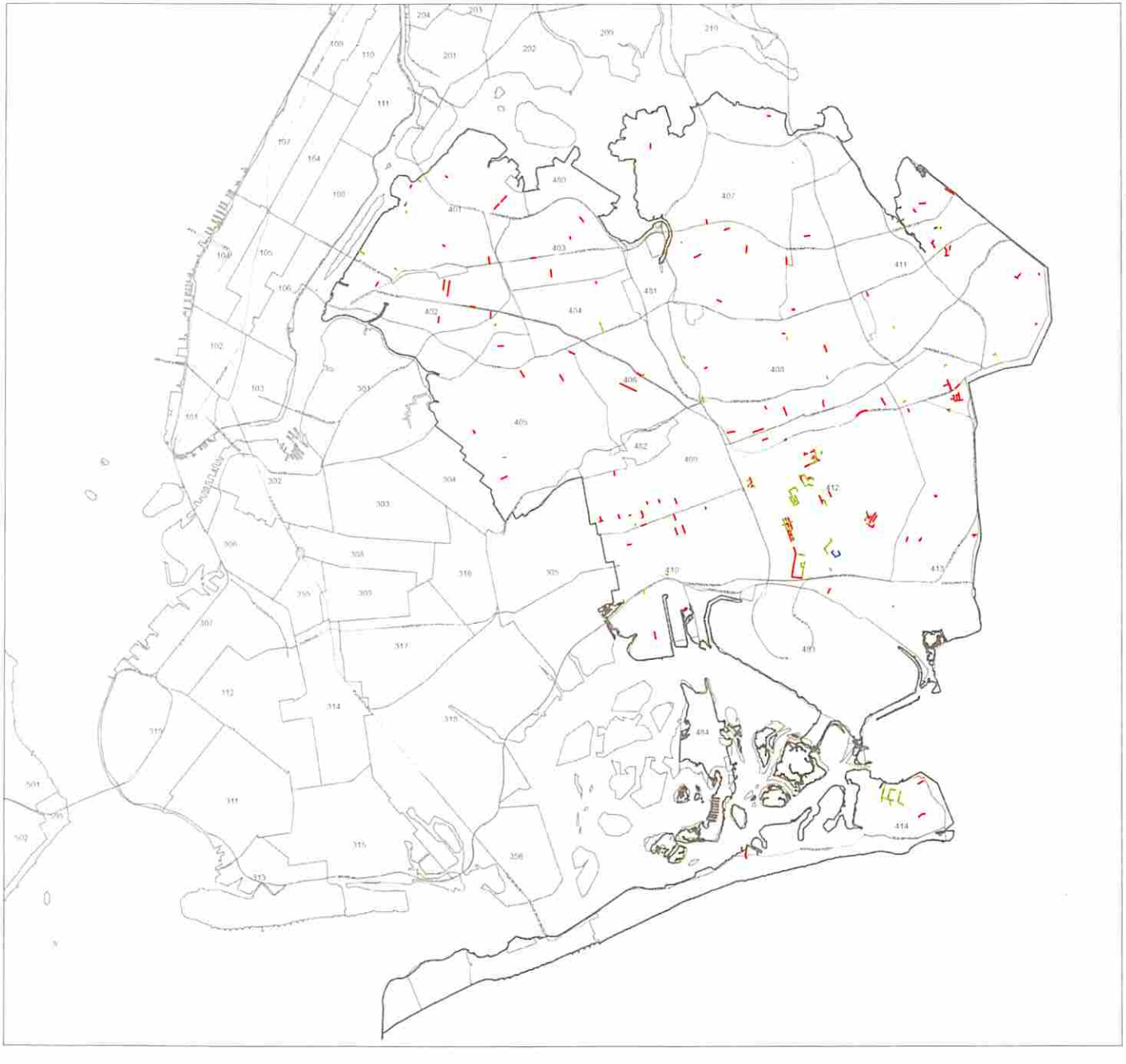
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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 CMOM Compliance	
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 Mapping Unit on 3/6/2012	



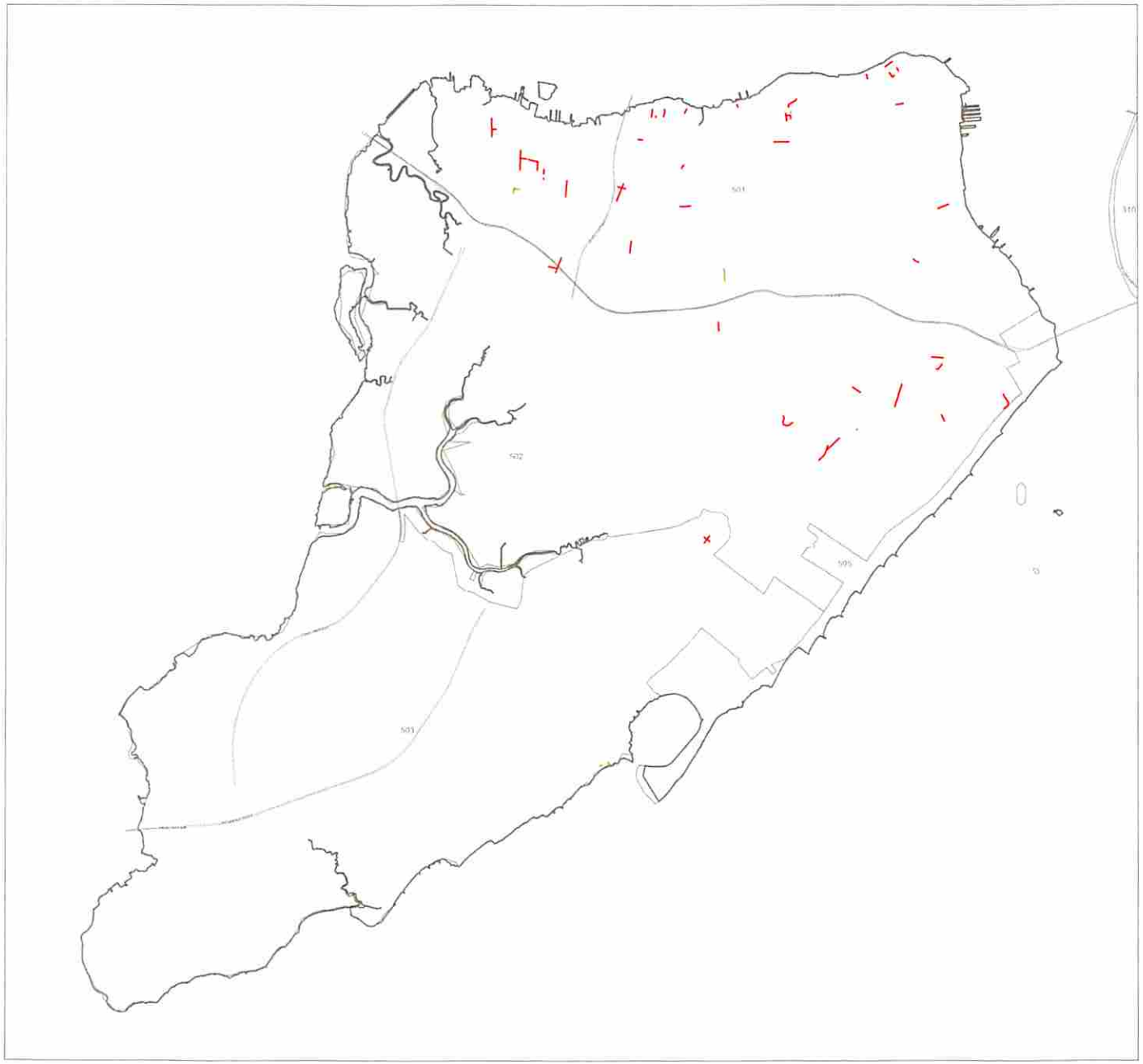
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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 CMOM Compliance	
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 Mapping Unit on 3/5/2012	



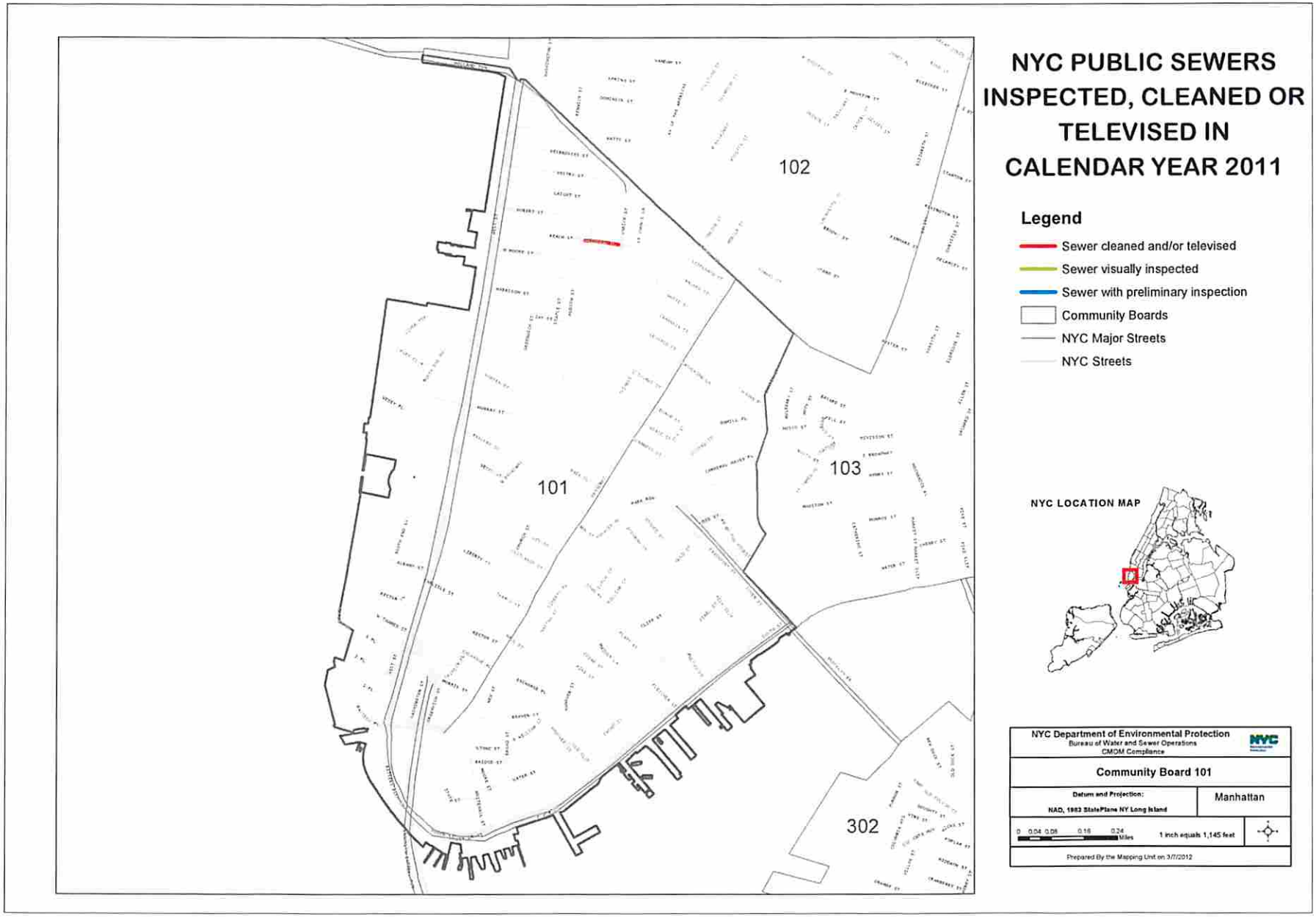
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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 CMOM Compliance	
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 Mapping Unit on 3/5/2012	


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
102
101
103
302
NYC LOCATION MAP
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
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 Mapping Unit on 3/7/2012

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

Legend

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

NYC LOCATION MAP

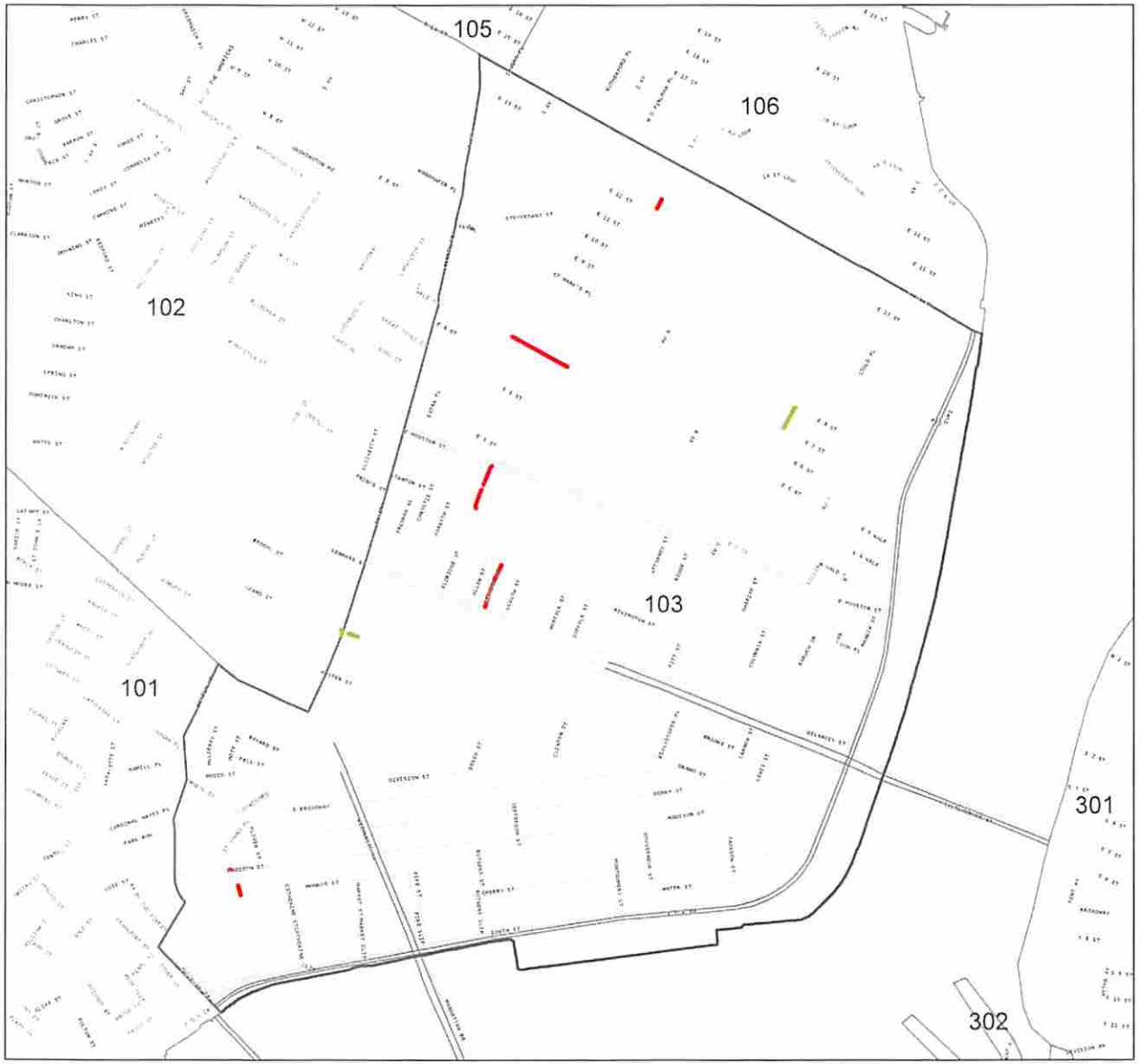
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance

Community Board 102

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

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

Prepared By the Mapping Unit on 3/7/2012



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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
CMOM Compliance

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 Mapping Unit on 3/7/2012

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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
CMOM Compliance

Community Board 104

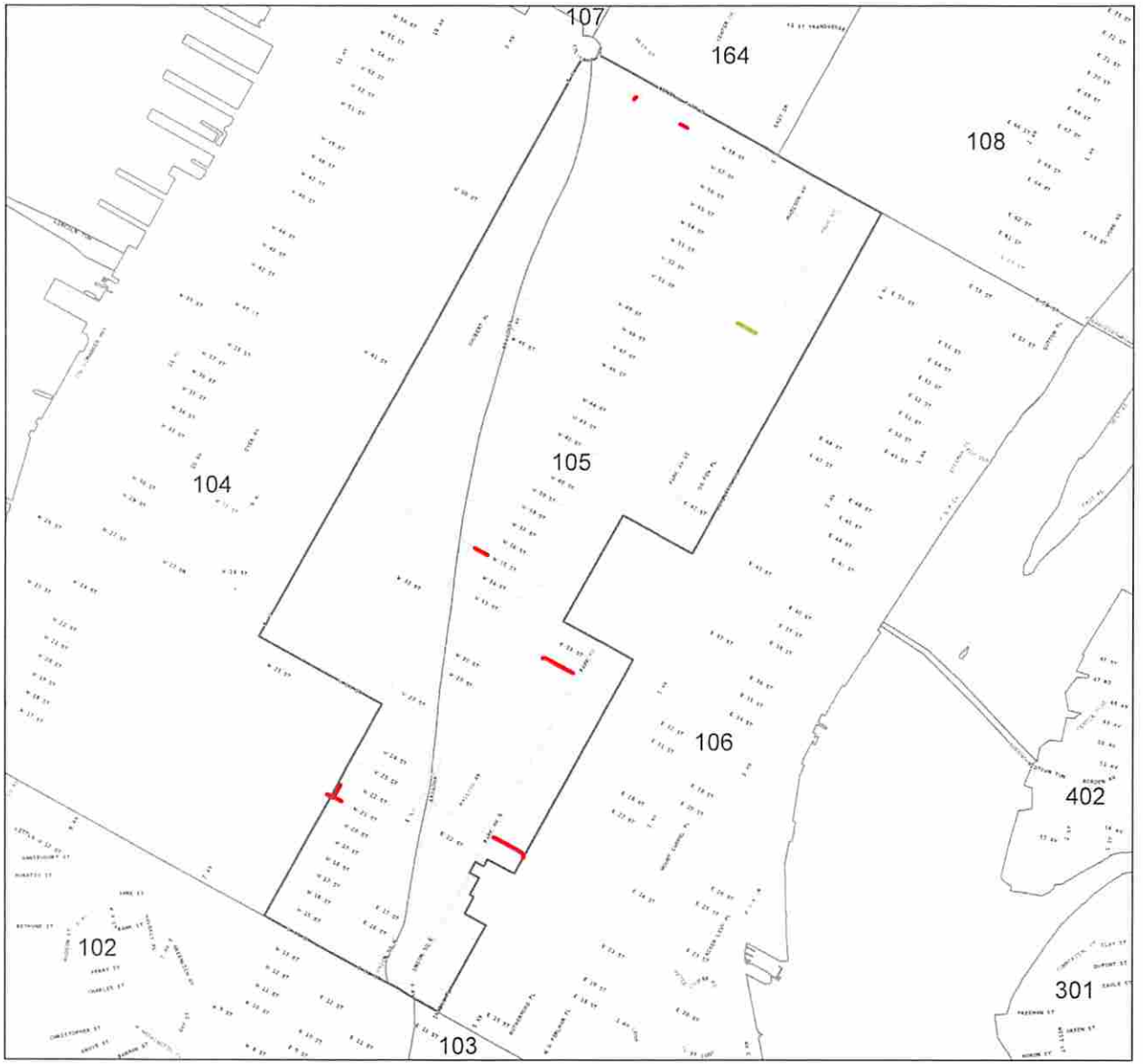
Datum and Projection:
NAD, 1983 StatePlane NY Long Island

Manhattan

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Mapping Unit on 3/7/2012



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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
CMOM Compliance

Community Board 105

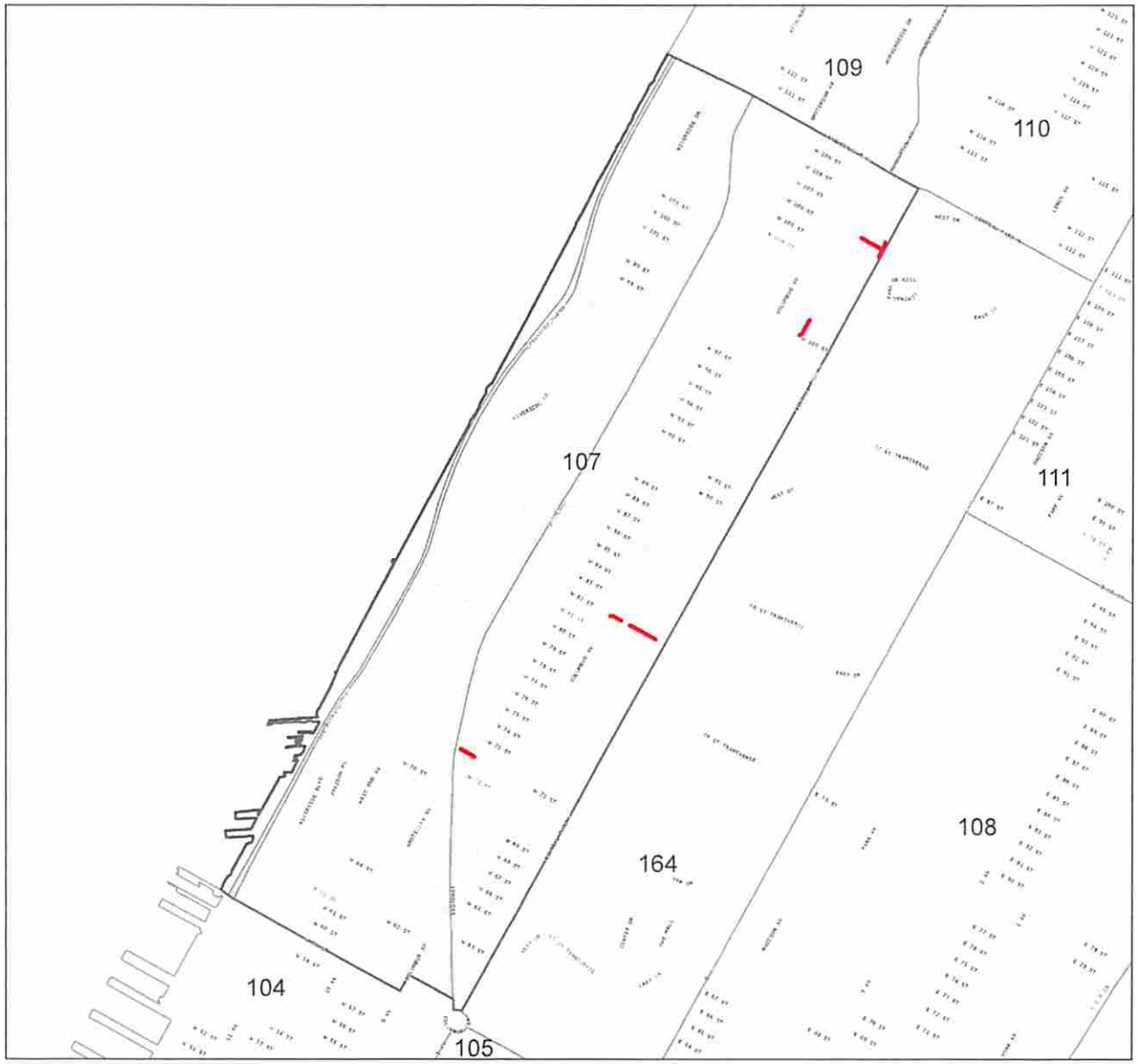
Datum and Projection:
NAD, 1983 StatePlane NY Long Island

Manhattan

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Mapping Unit on 3/7/2012



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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
CMOM Compliance

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 Mapping Unit on 3/7/2012

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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
CMOM Compliance

Community Board 108

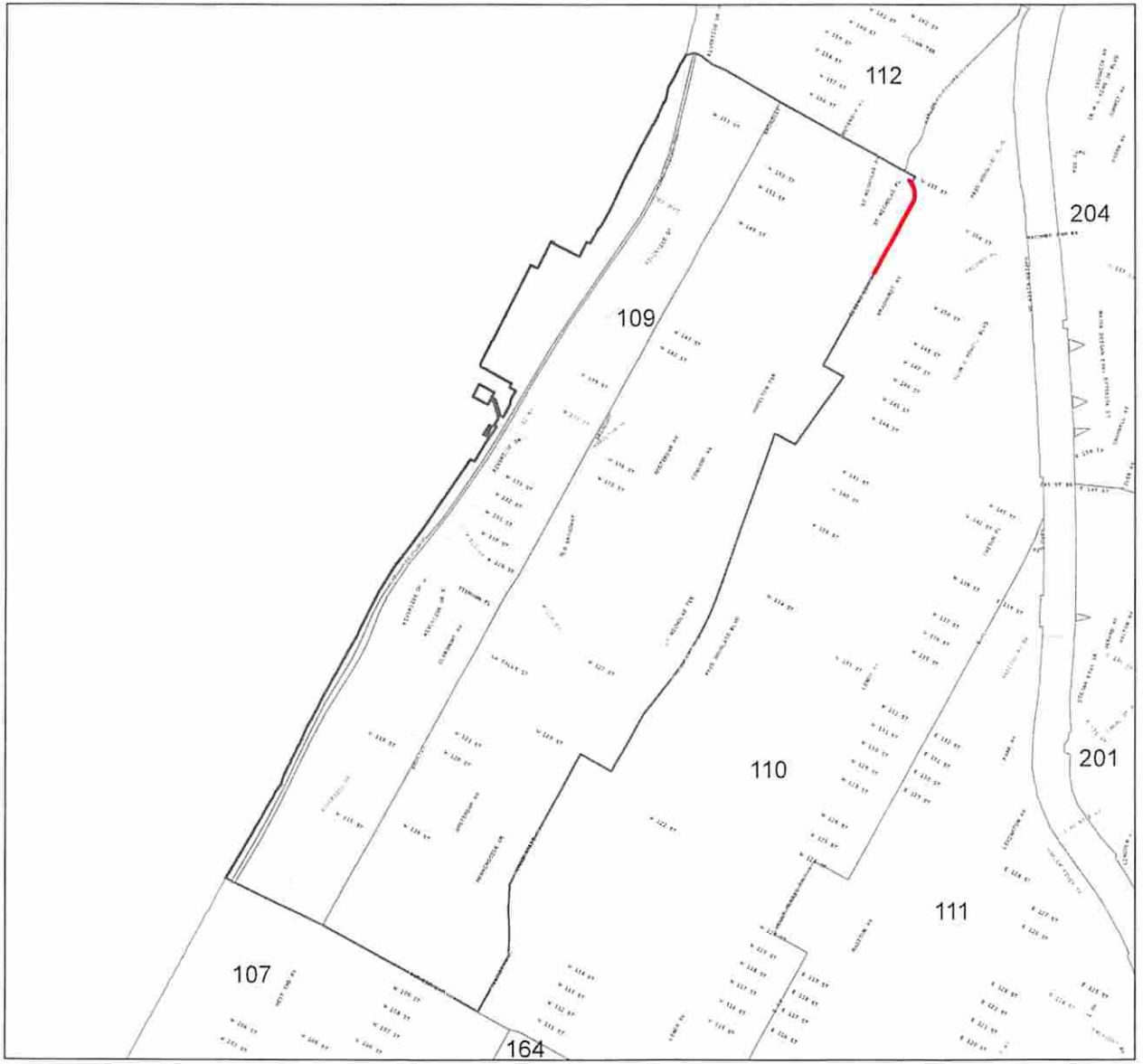
Datum and Projection:
NAD, 1983 StatePlane NY Long Island

Manhattan

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Mapping Unit on 3/7/2012



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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
CMOM Compliance

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 Mapping Unit on 3/7/2012

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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
CMOM Compliance

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 Mapping Unit on 3/7/2012

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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
CMOM Compliance

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 Mapping Unit on 3/7/2012

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

Legend

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

NYC LOCATION MAP

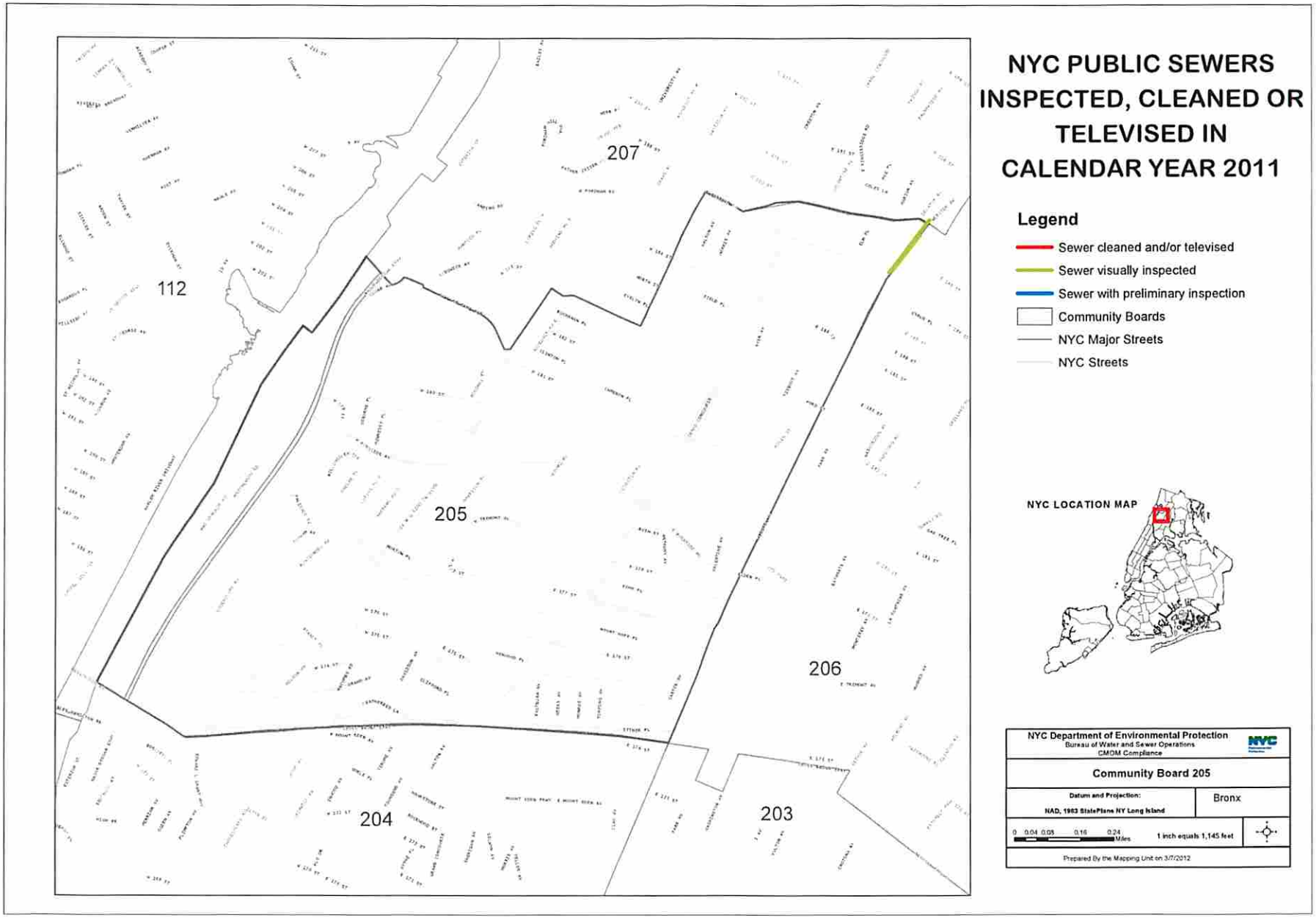
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance

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 Mapping Unit on 3/7/2012



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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
CMOM Compliance

Community Board 205

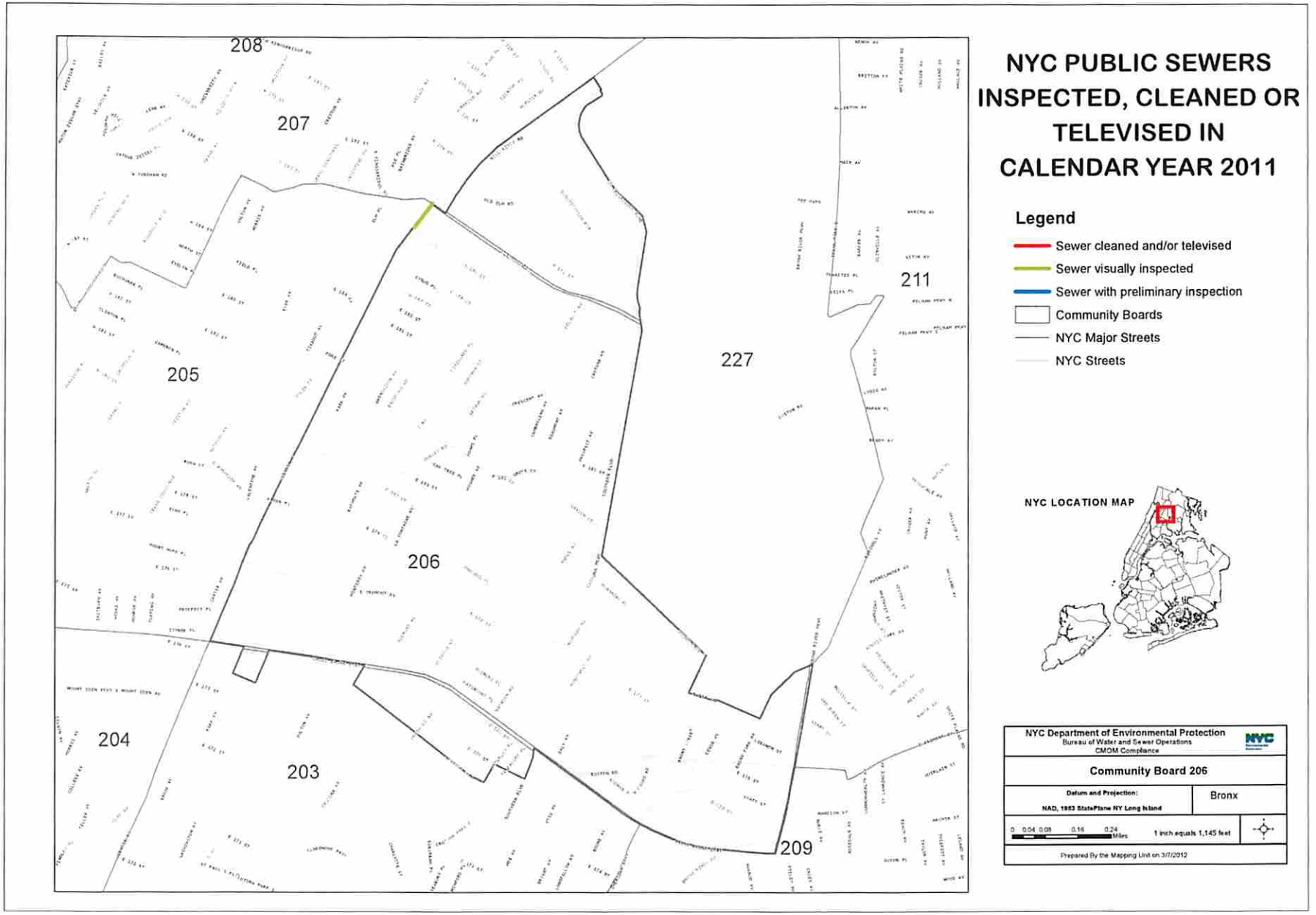
Datum and Projection: NAD, 1983 StatePlane NY Long Island

Bronx

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Mapping Unit on 3/7/2012



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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
CMOM Compliance

Community Board 206

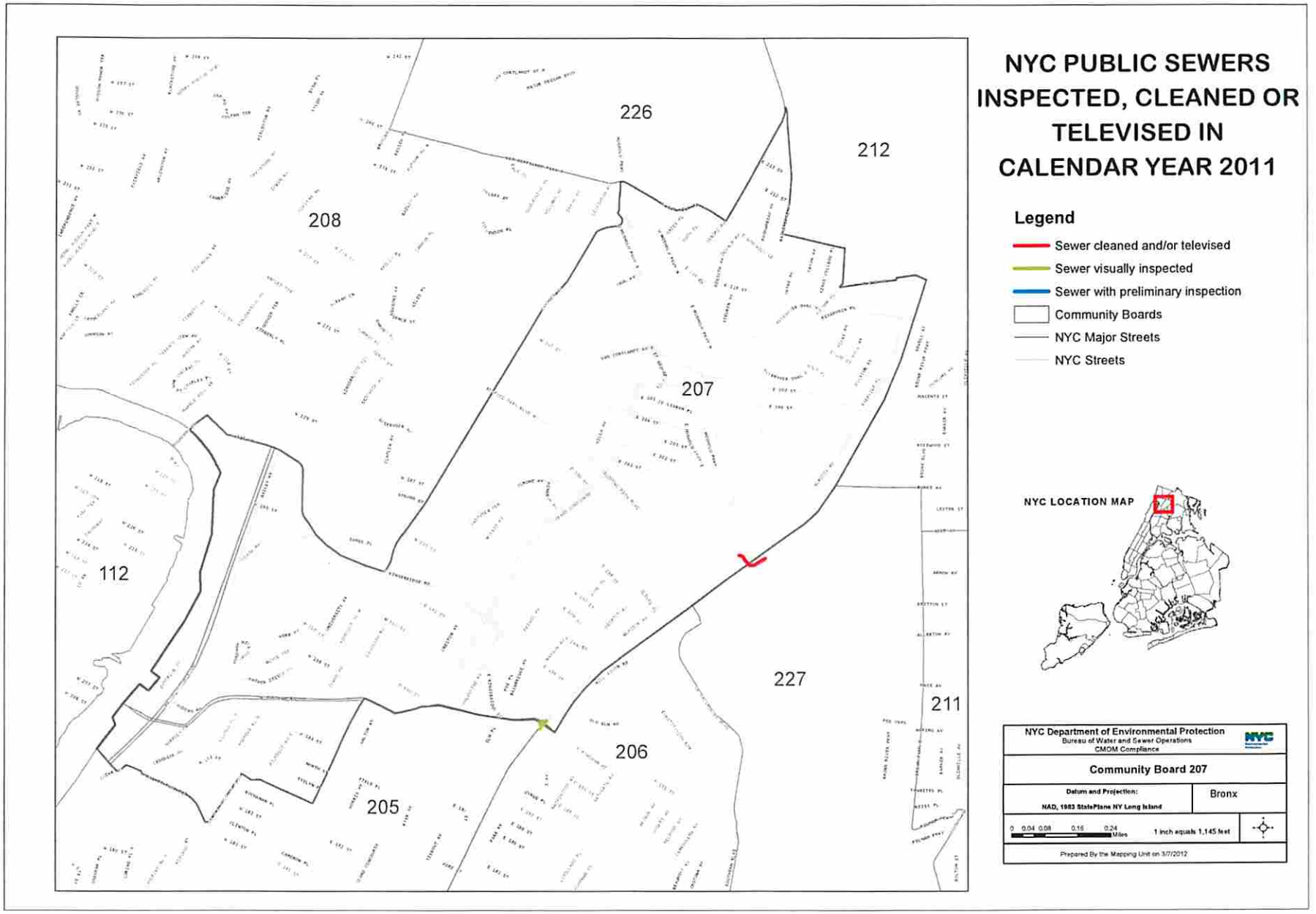
Datum and Projection: NAD, 1983 StatePlane NY Long Island

Bronx

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Mapping Unit on 3/7/2012


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
226
212
208
207
112
227
211
206
205
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
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 Mapping Unit on 3/7/2012

NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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
CMOM Compliance

Community Board 209

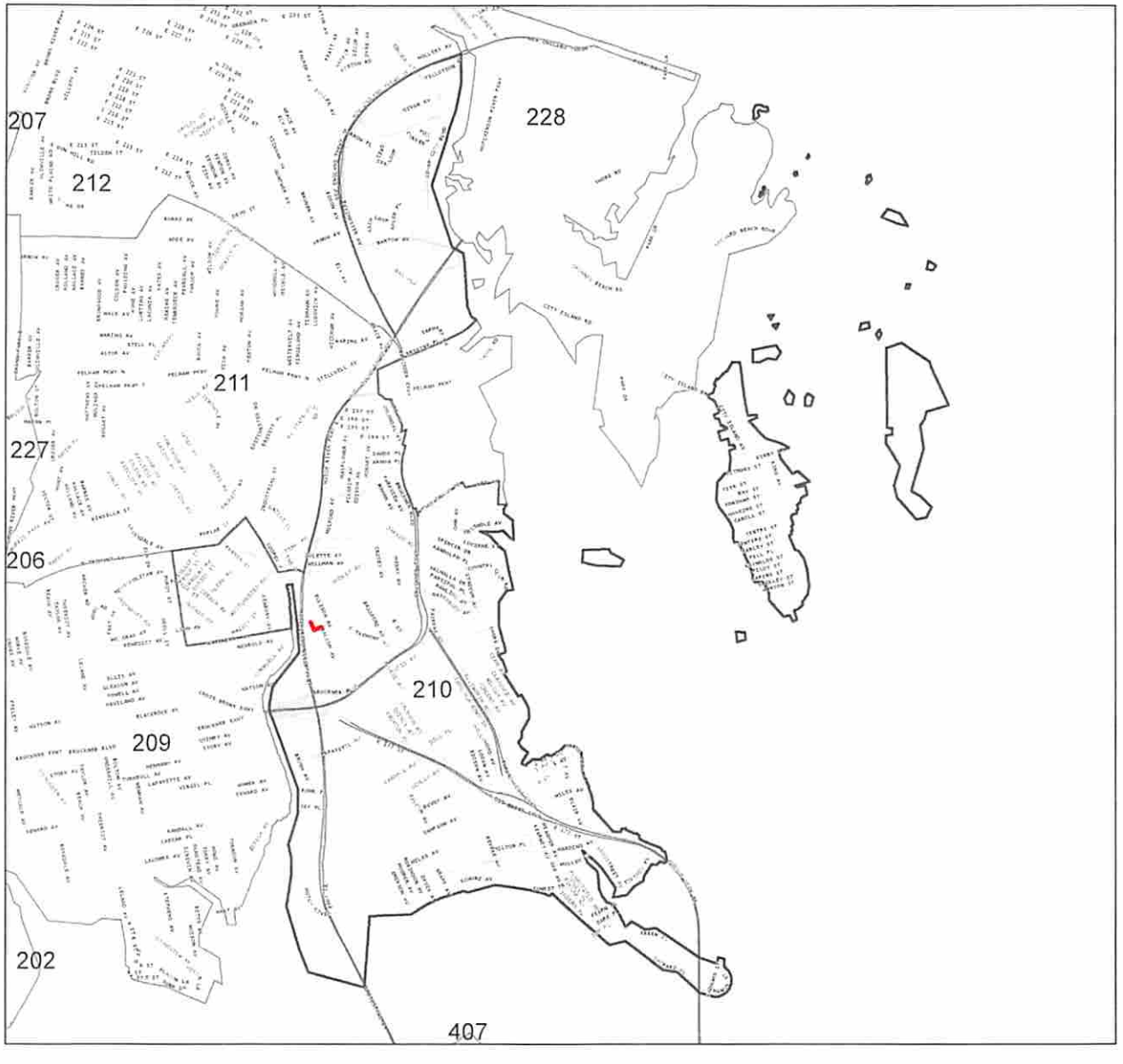
Datum and Projection: NAD, 1983 StatePlane NY Long Island

Bronx

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Mapping Unit on 3/7/2012



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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
CMOM Compliance

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 Mapping Unit on 3/7/2012

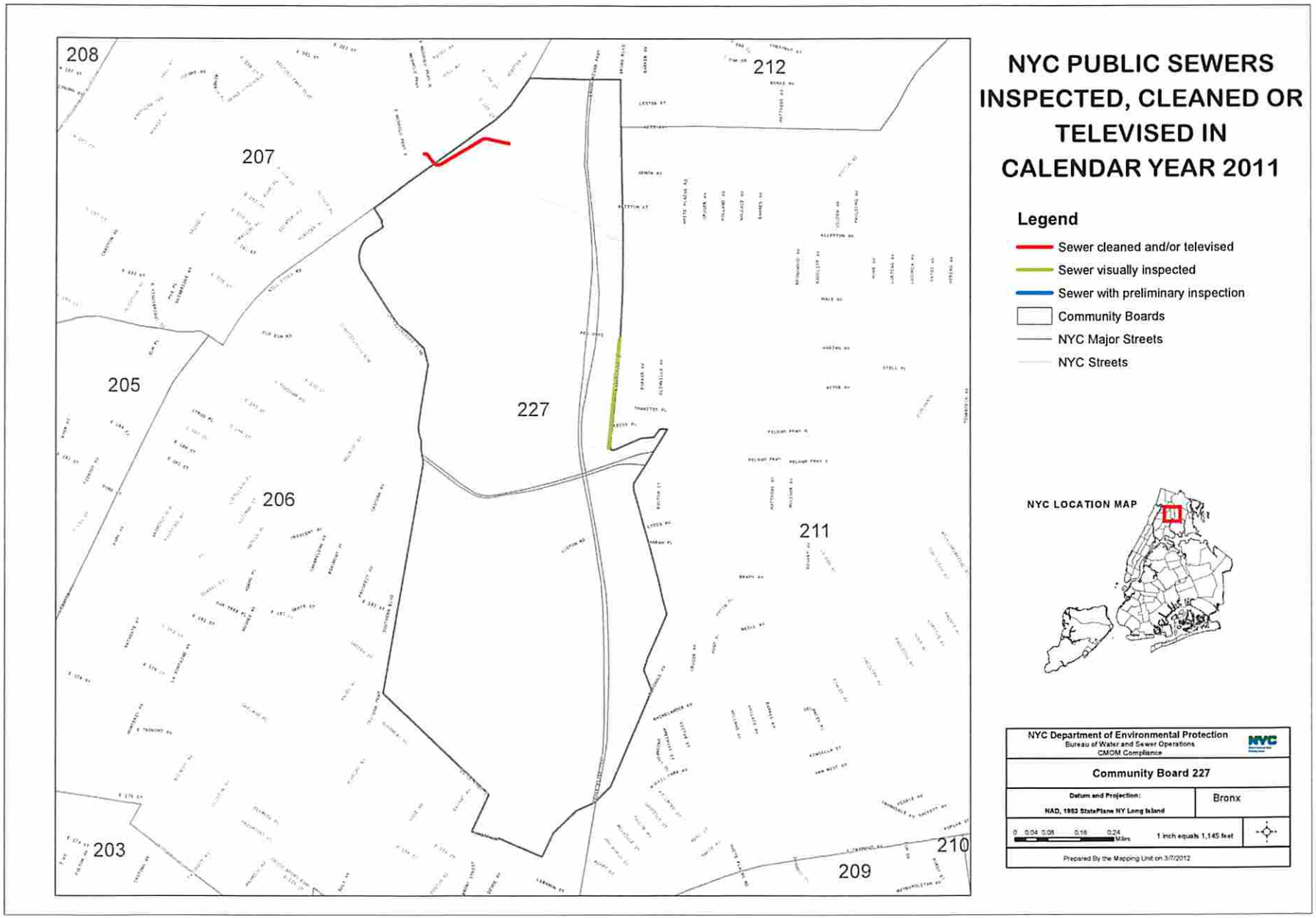
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

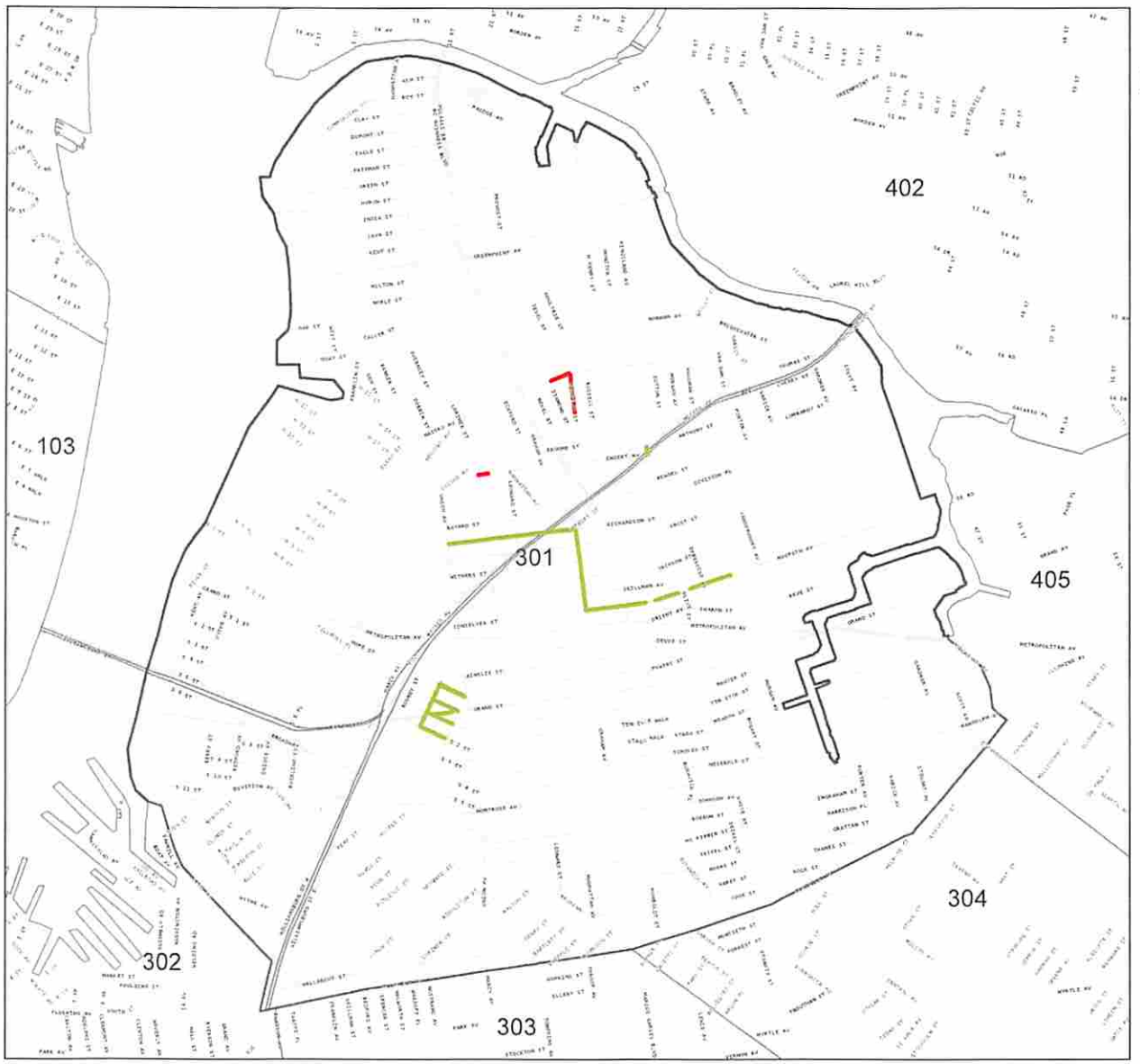
Legend

- 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 CMOM Compliance	
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 Mapping Unit on 3/7/2012	


208
212
207
205
227
206
211
203
210
209
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
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
CMOM Compliance
Community Board 227
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 Mapping Unit on 3/7/2012



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

Legend

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

NYC LOCATION MAP

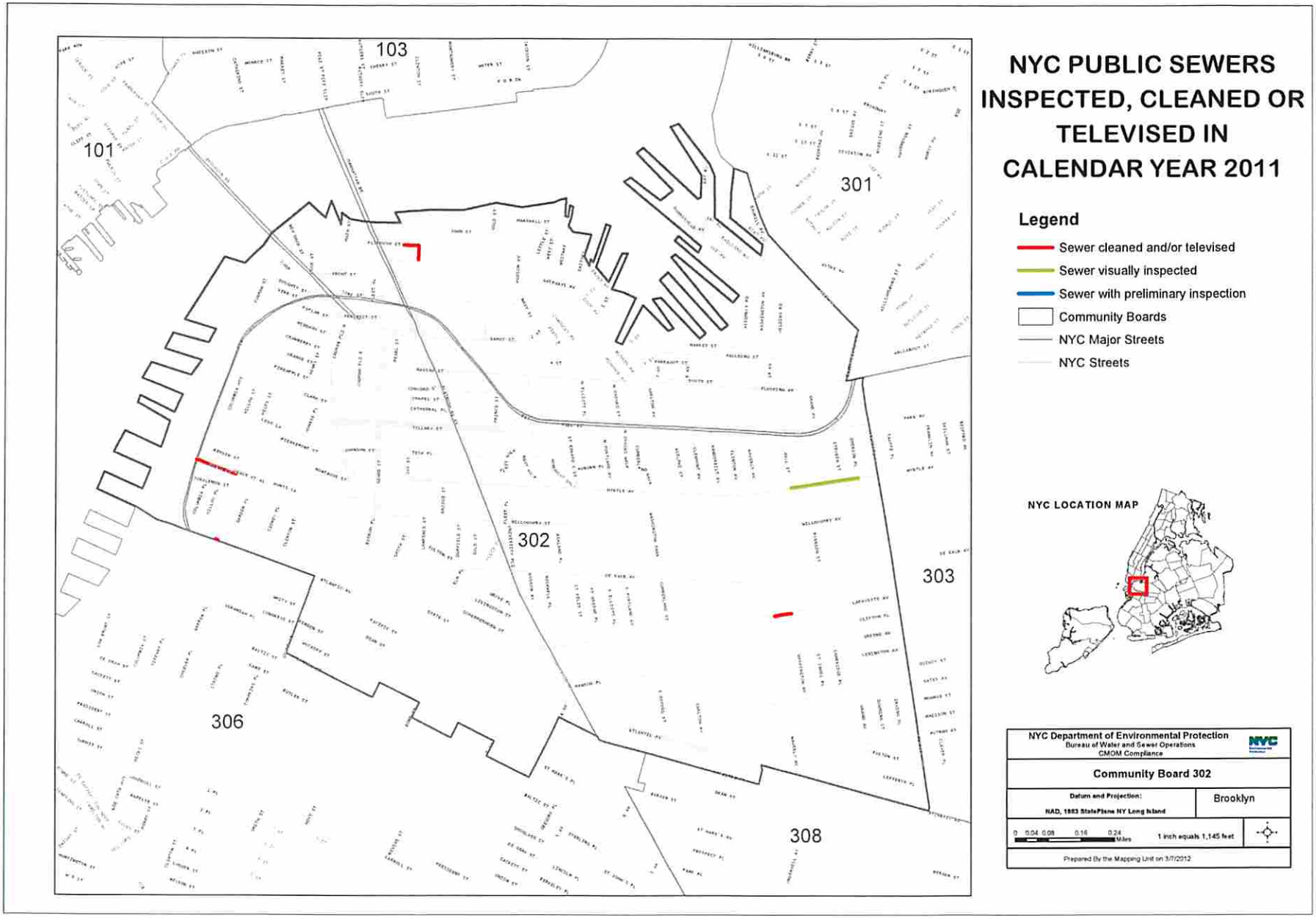
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance

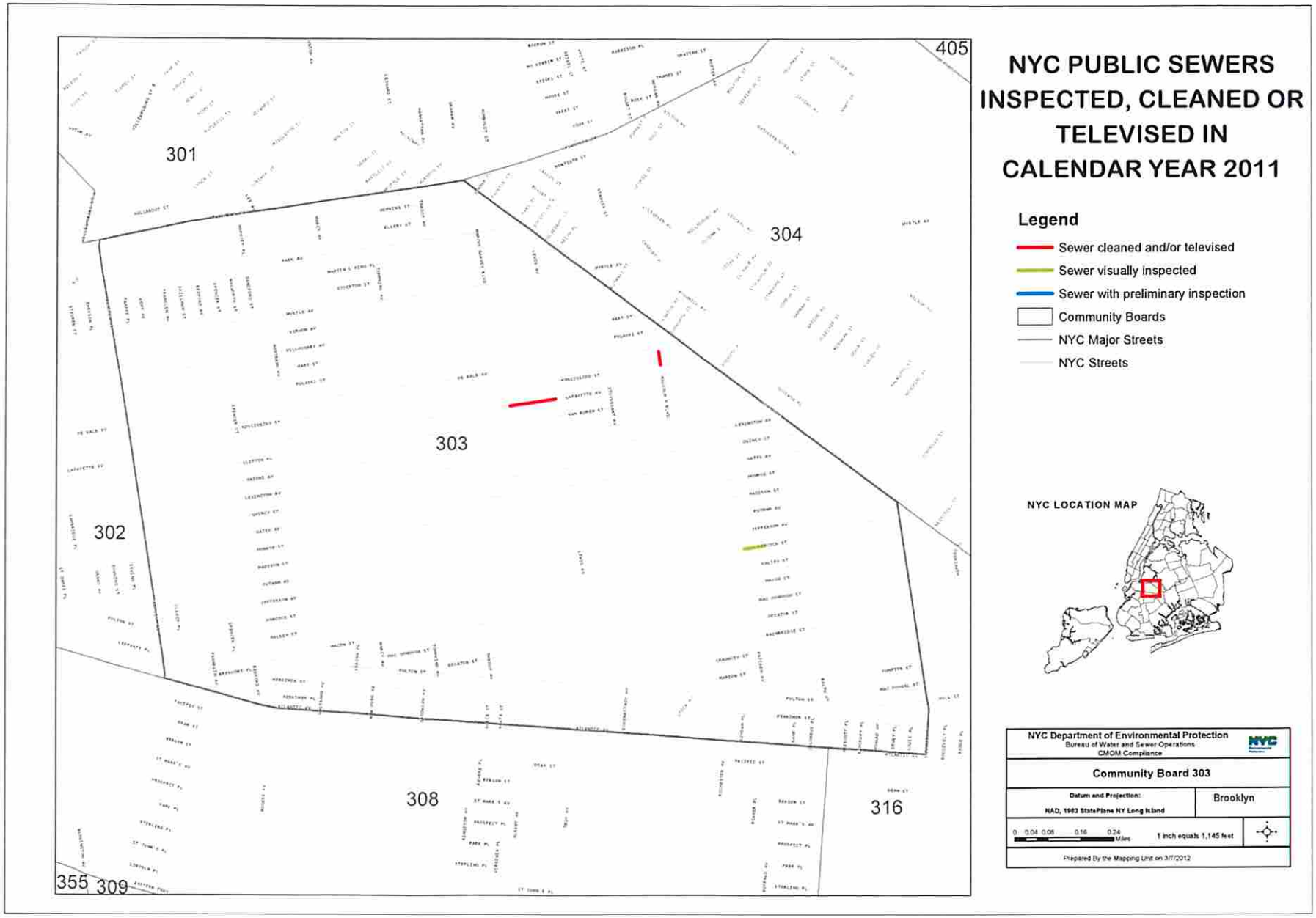
Community Board 301

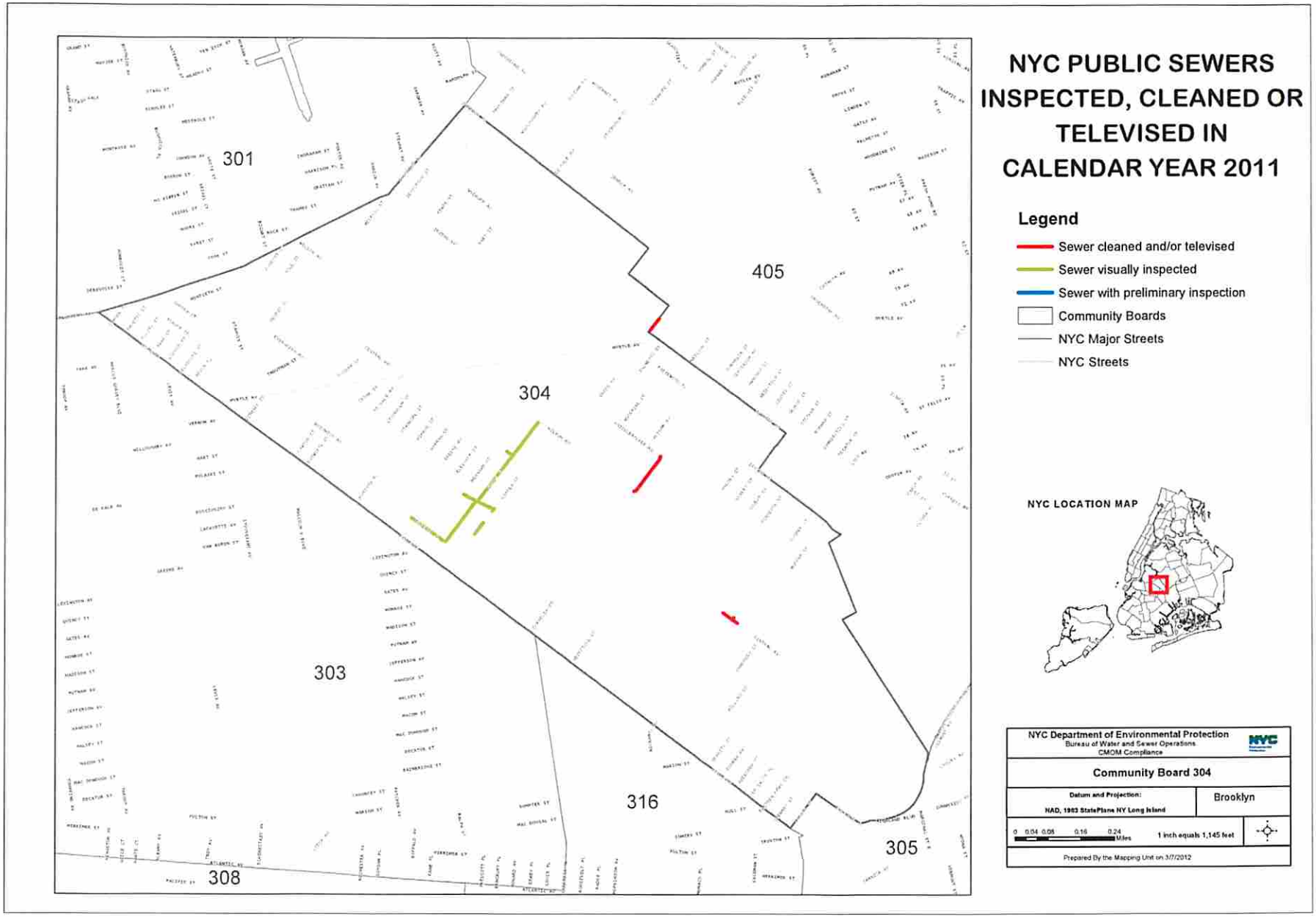
Datum and Projection:	Brooklyn
NAD, 1983 StatePlane NY Long Island	

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

Prepared By the Mapping Unit on 3/7/2012


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
103
101
301
302
303
306
308
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
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 Mapping Unit on 3/7/2012


405
301
304
303
302
308
316
355
309
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
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
CMOM Compliance
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 Mapping Unit on 3/7/2012


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
301
405
304
303
316
305
308
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
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 Mapping Unit on 3/7/2012

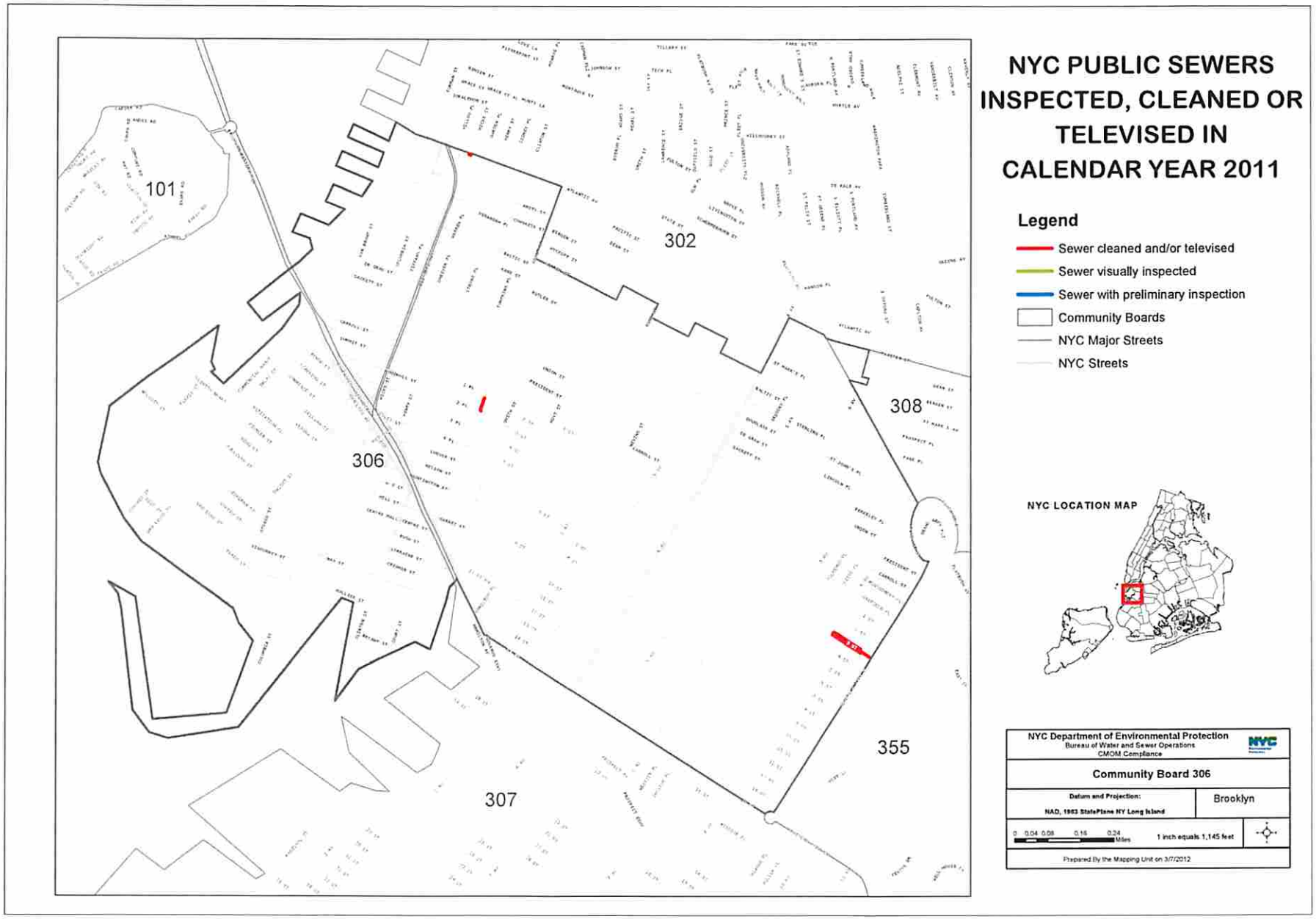
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

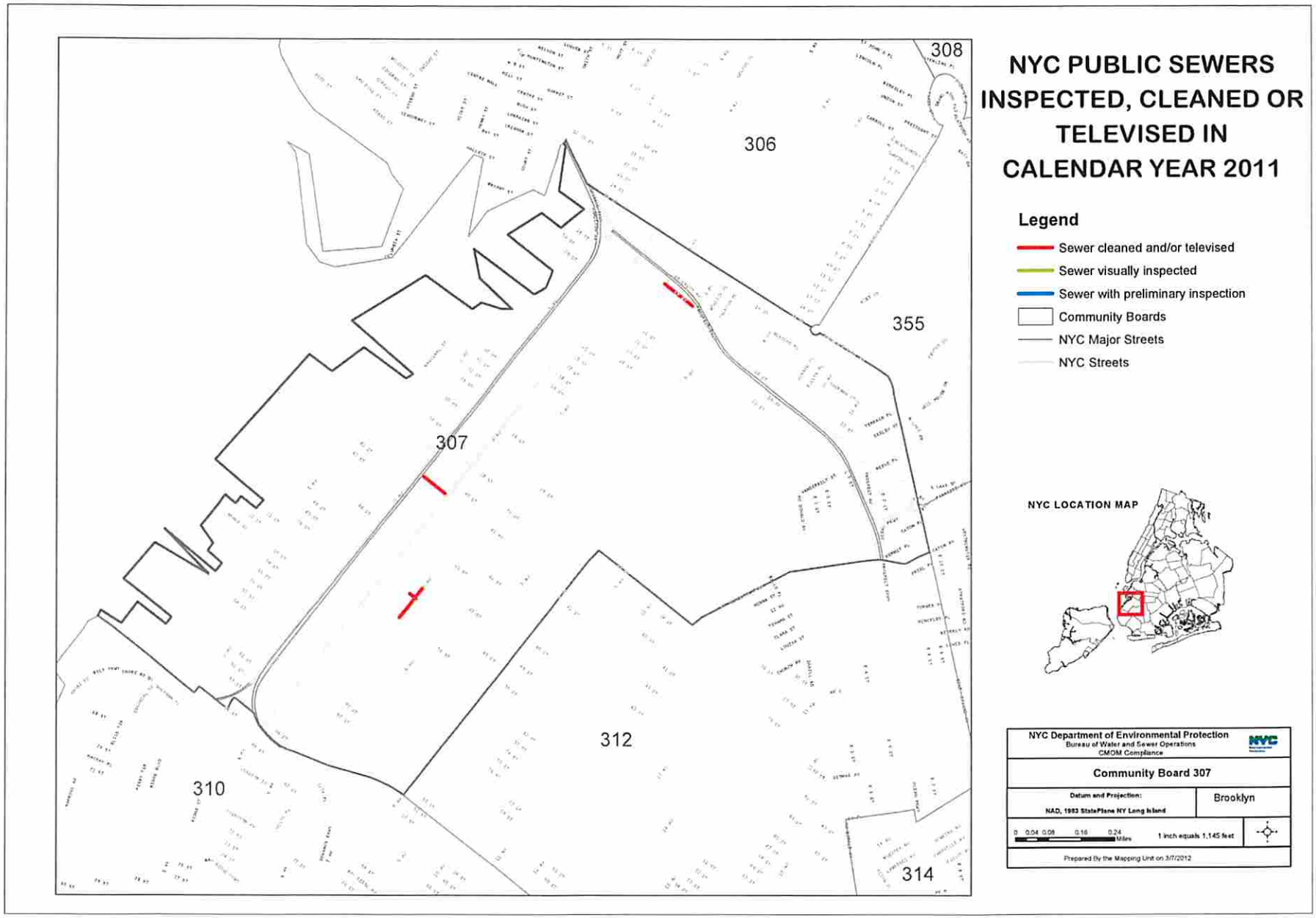
Legend

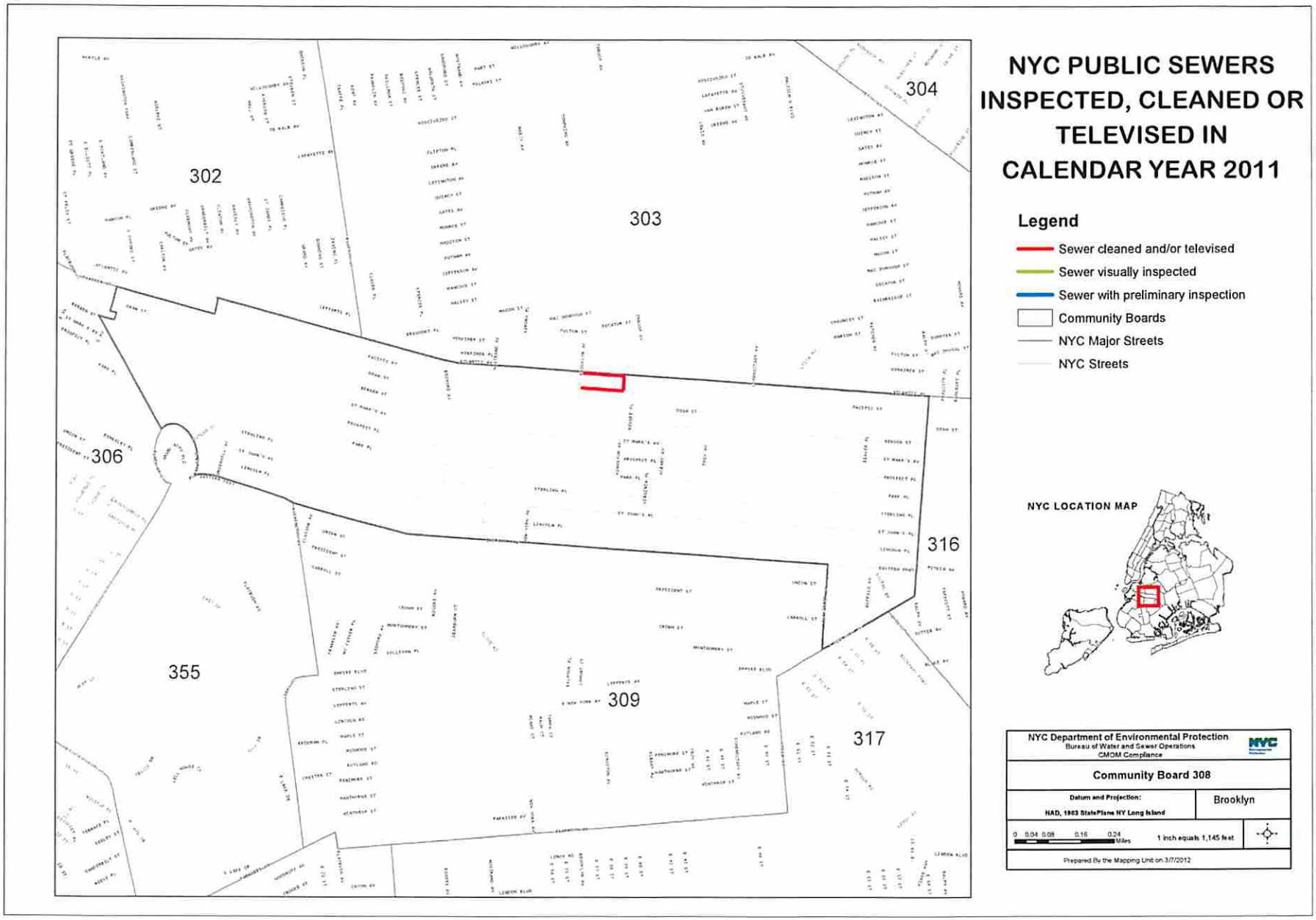
- Sewer cleaned and/or televised
- Sewer visually inspected
- Sewer with preliminary inspection
- Community Boards
- NYC Major Streets
- NYC Streets

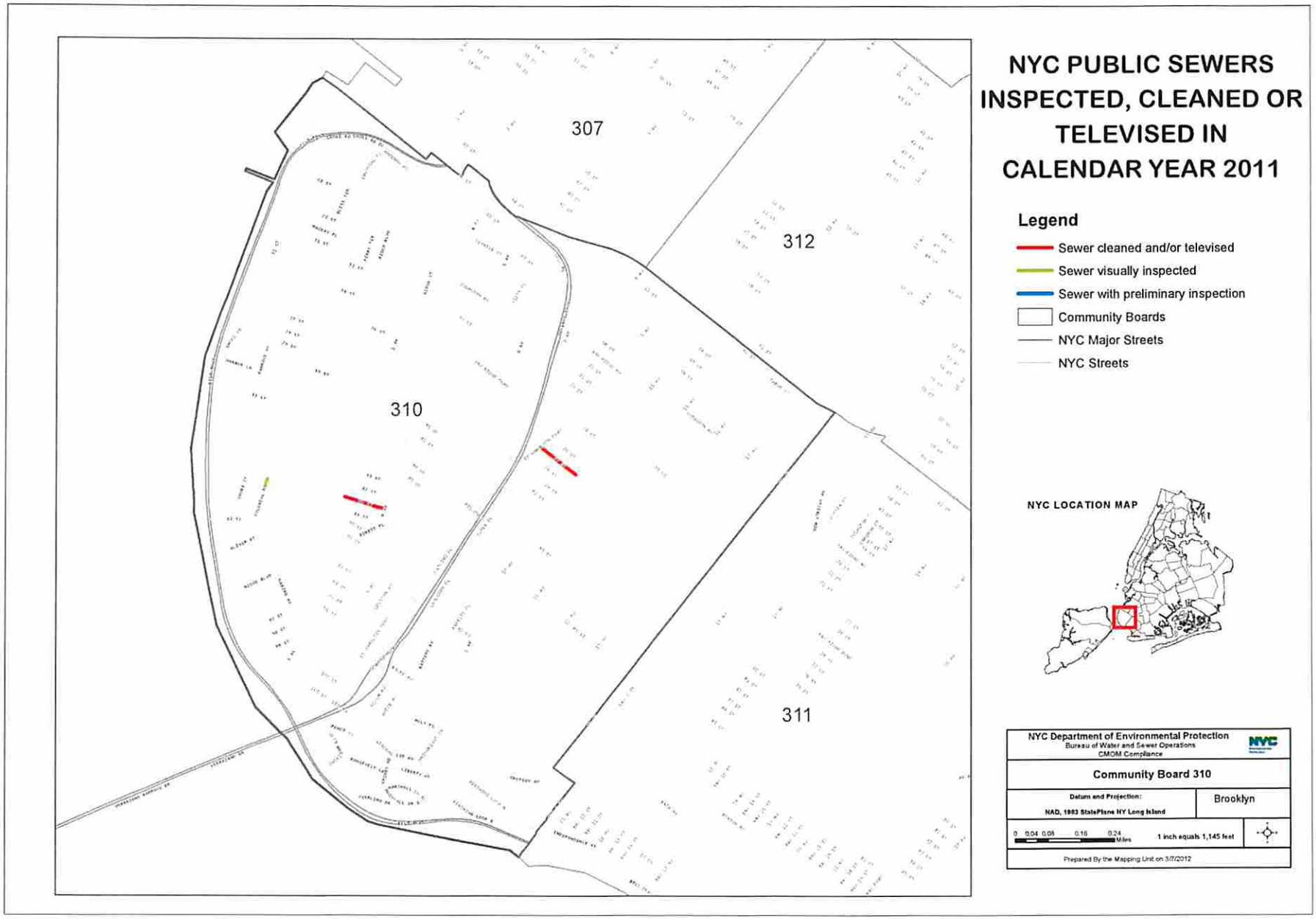
NYC LOCATION MAP

NYC Department of Environmental Protection Bureau of Water and Sewer Operations CMOM Compliance	NYC
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 Mapping Unit on 3/7/2012	


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
101
302
308
306
355
307
NYC LOCATION MAP
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
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 Mapping Unit on 3/7/2012


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
308
306
355
307
312
310
314
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
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 Mapping Unit on 3/7/2012


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
302
303
304
306
316
355
309
317
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
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 Mapping Unit on 3/7/2012


307
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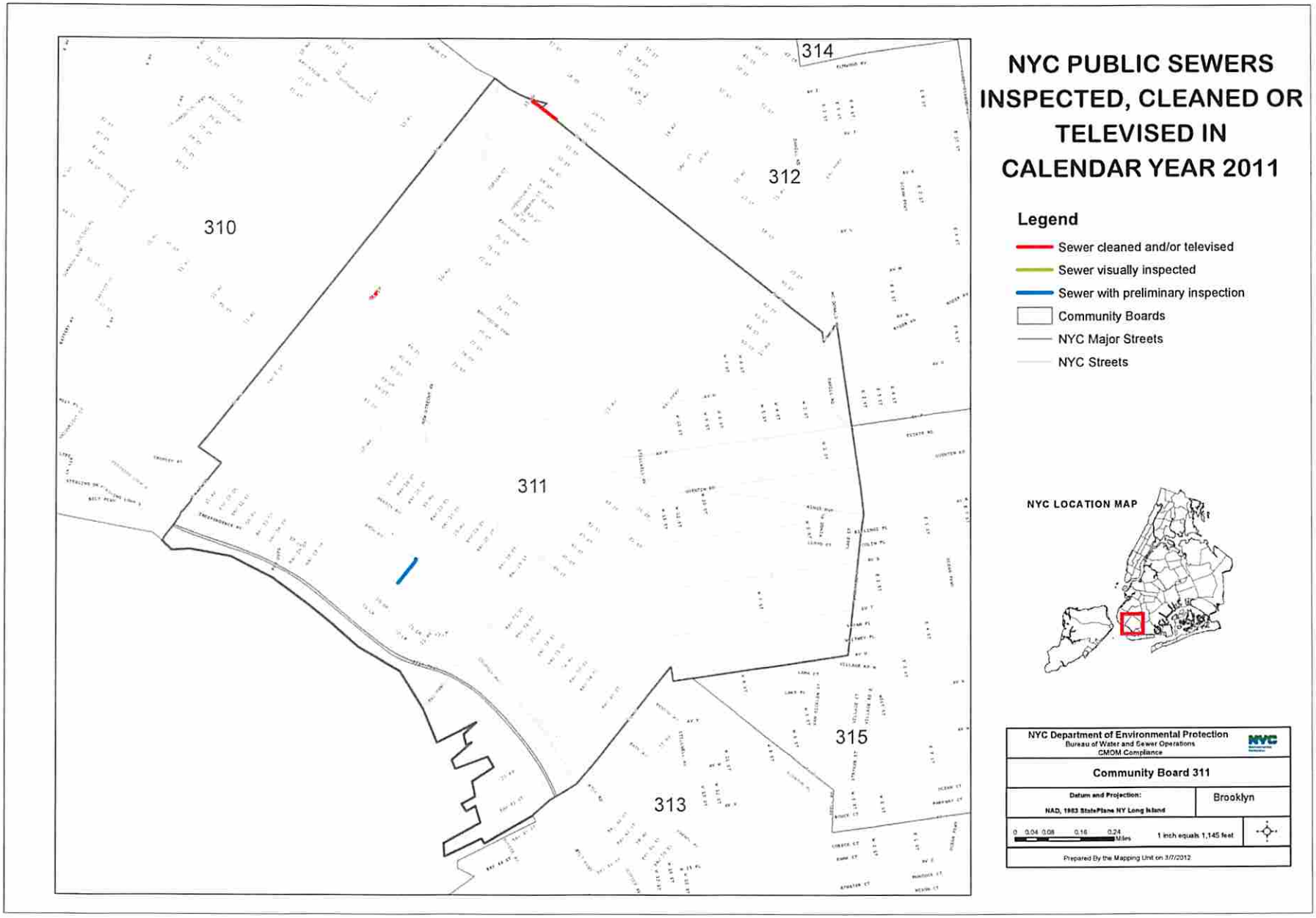
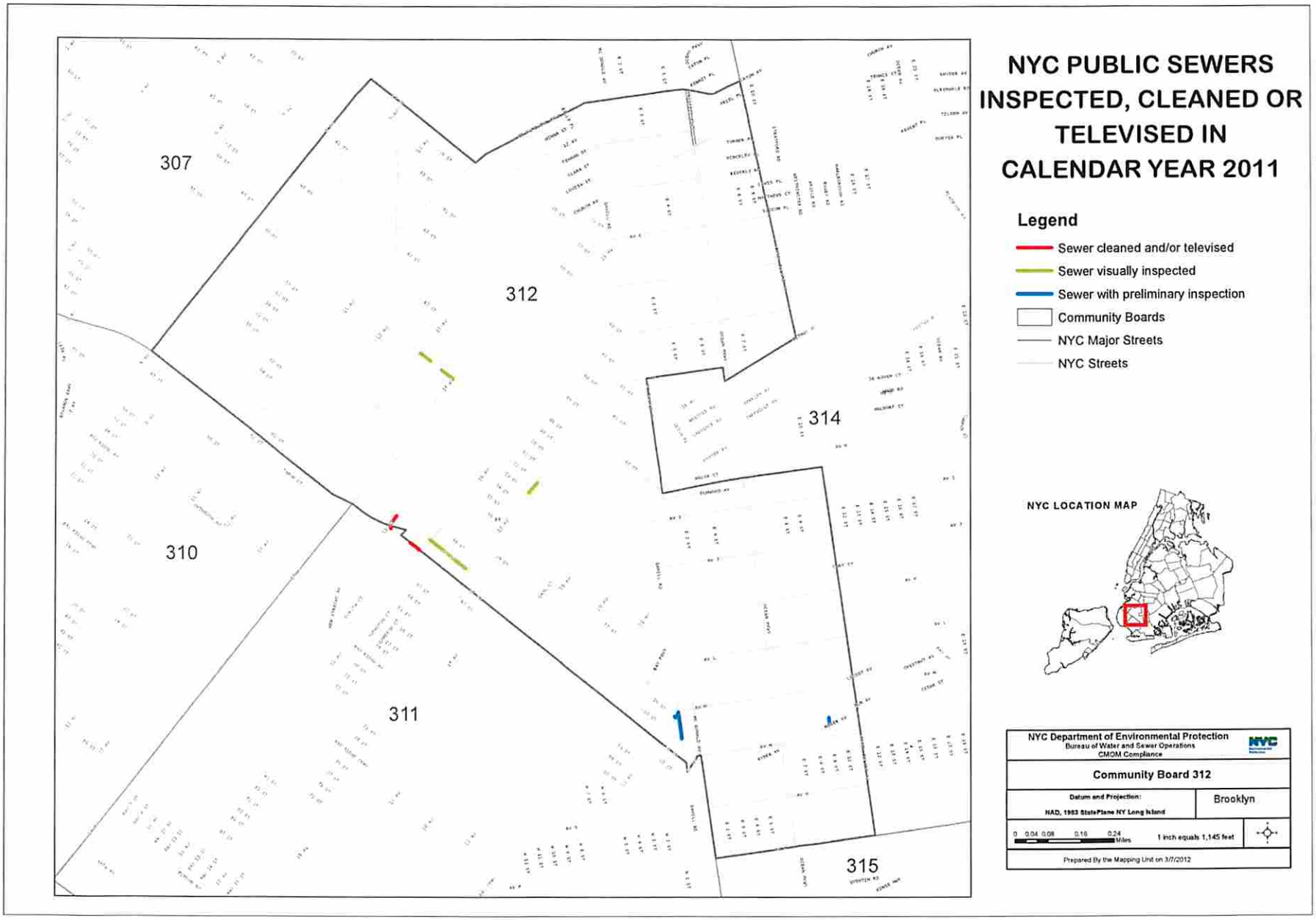
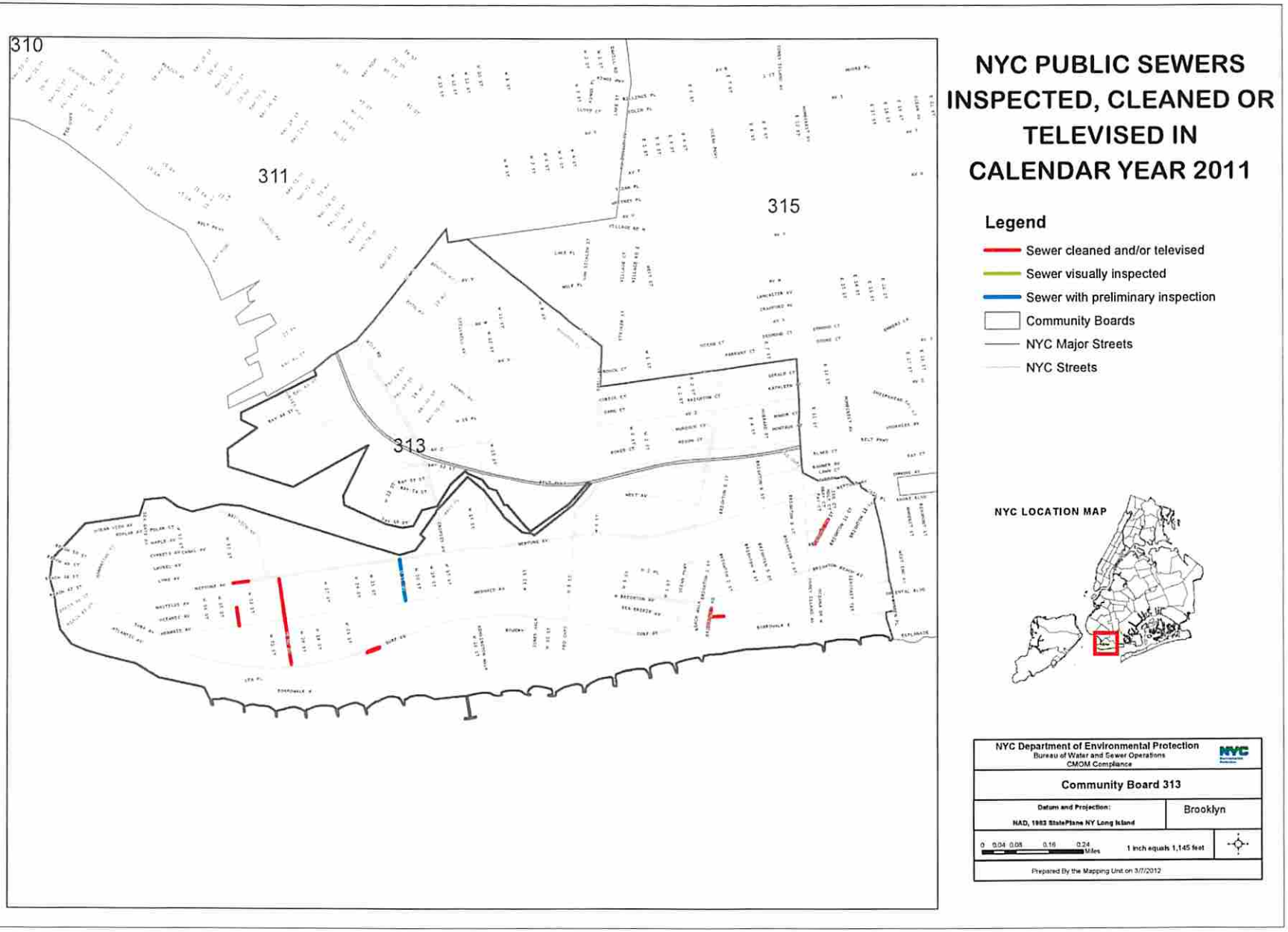
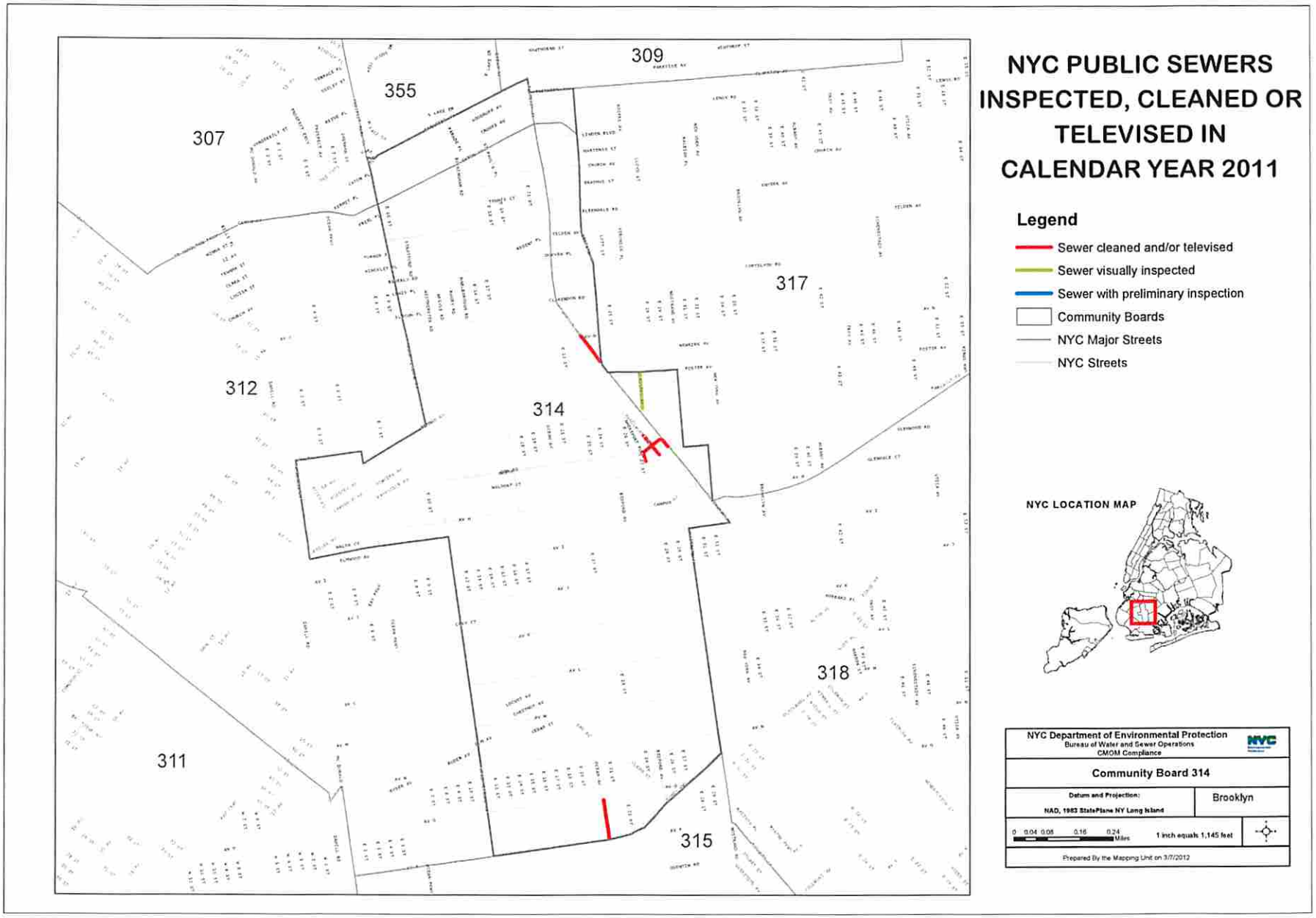
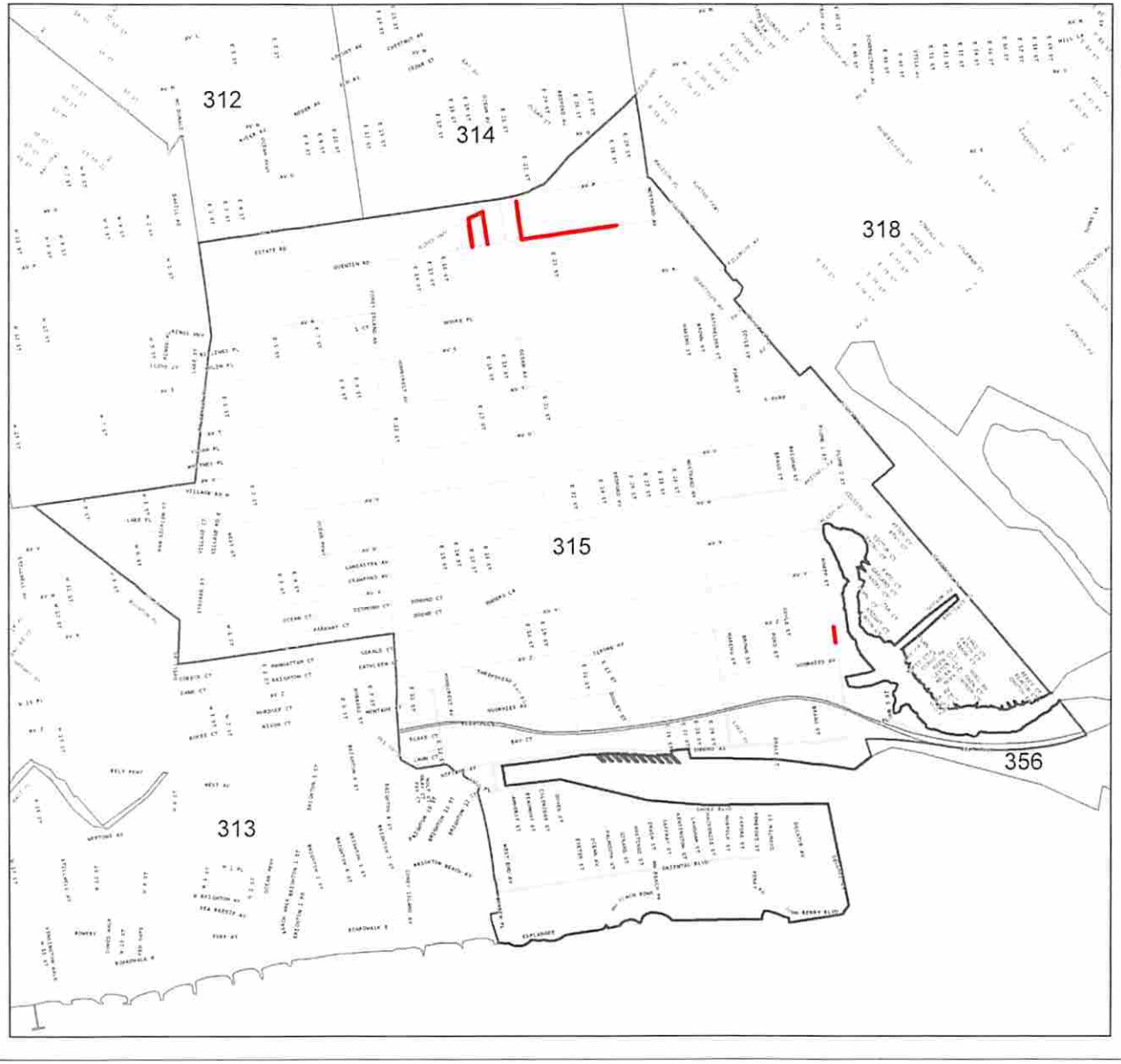
310
311
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
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 Mapping Unit on 3/7/2012


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
310
311
312
313
314
315
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
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 Mapping Unit on 3/7/2012


307
312
314
310
311
315
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
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
CMOM Compliance
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 Mapping Unit on 3/7/2012


310
311
315
313
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
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
CMOM Compliance
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 Mapping Unit on 3/7/2012


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
307
355
309
317
312
314
318
311
315
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
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 Mapping Unit on 3/7/2012



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

Legend

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

NYC LOCATION MAP

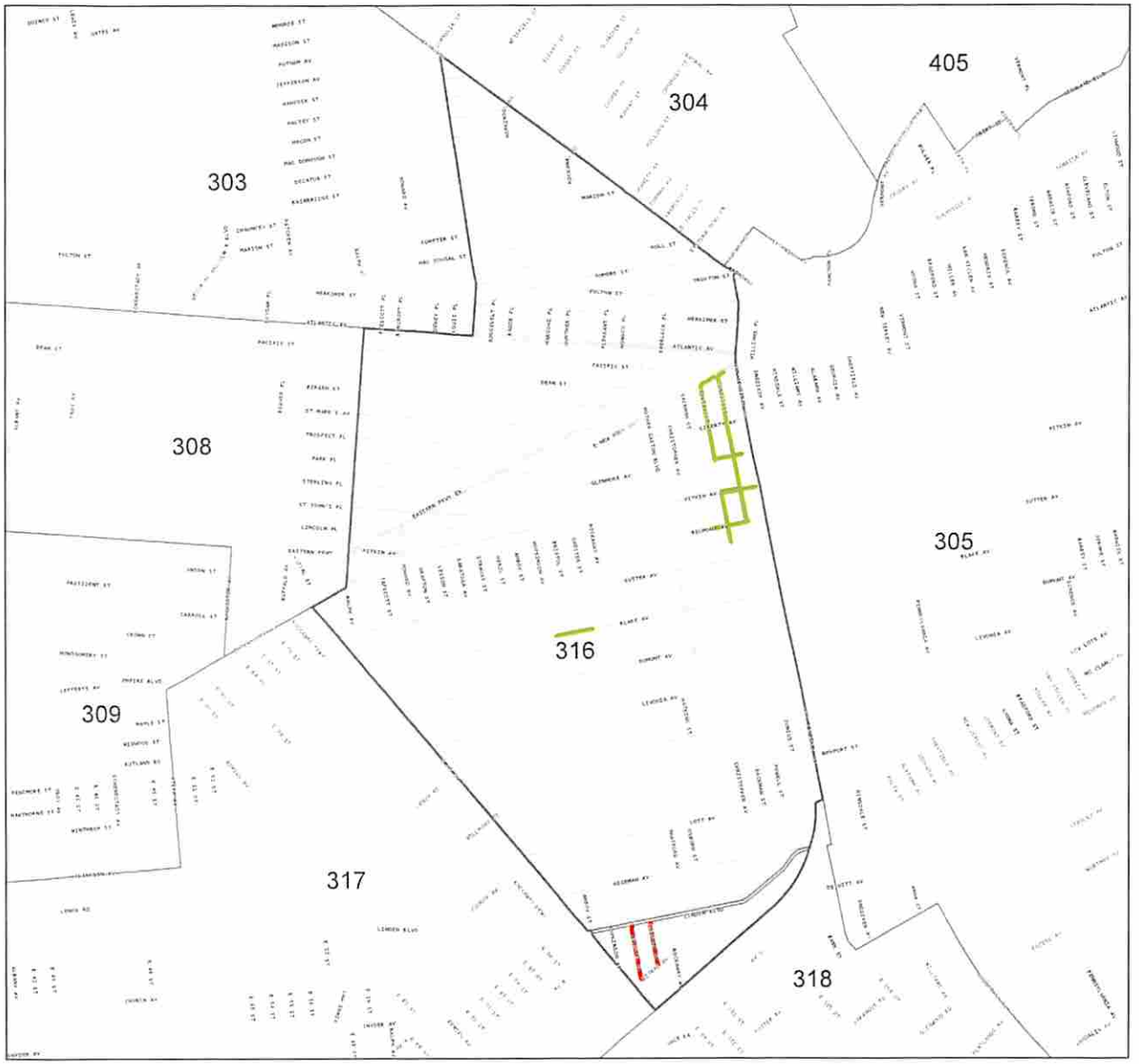
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance

Community Board 315

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

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

Prepared By the Mapping Unit on 3/7/2012



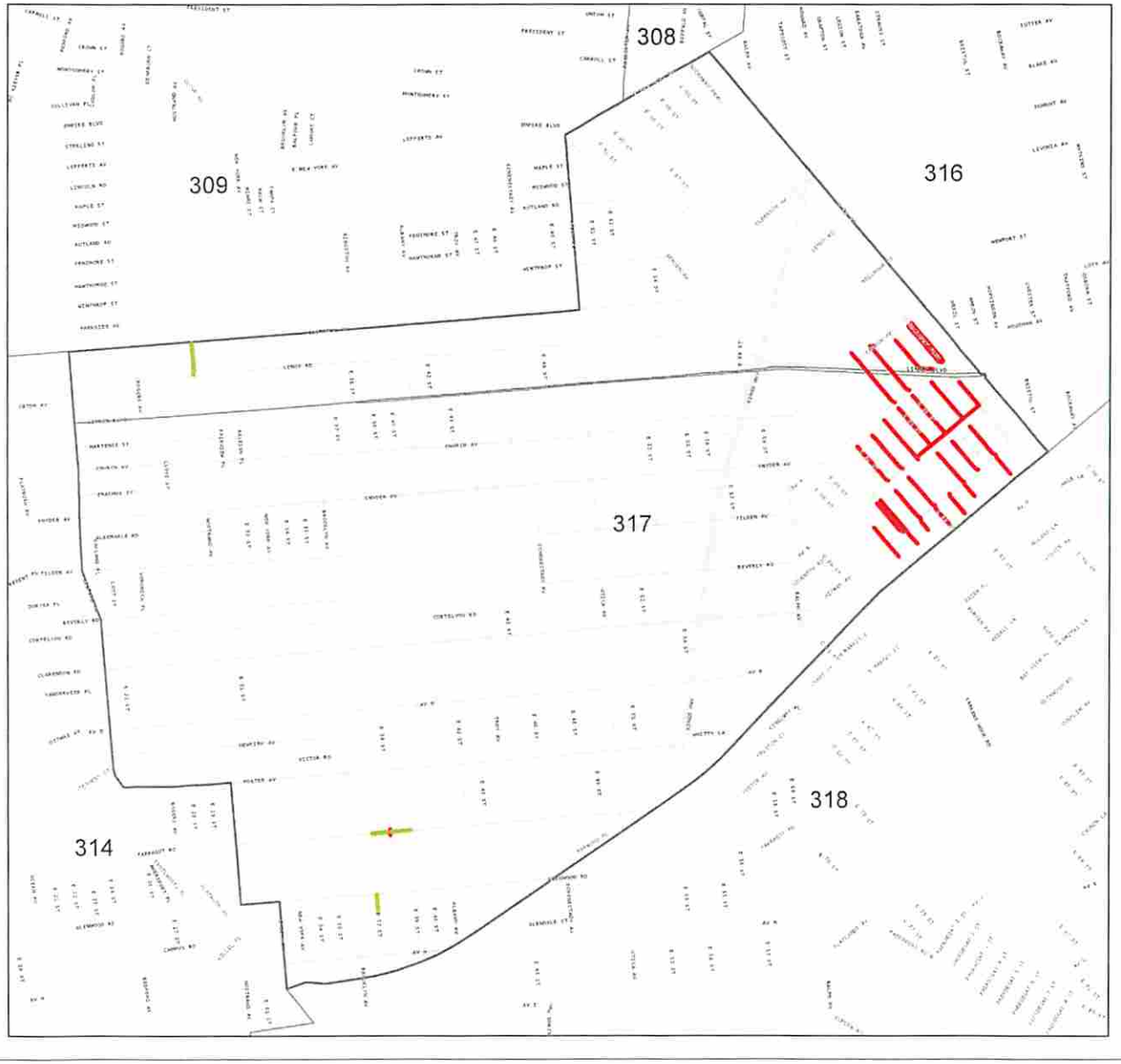
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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 CMOM Compliance	
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 Mapping Unit on 3/7/2012	



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

Legend

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

NYC LOCATION MAP

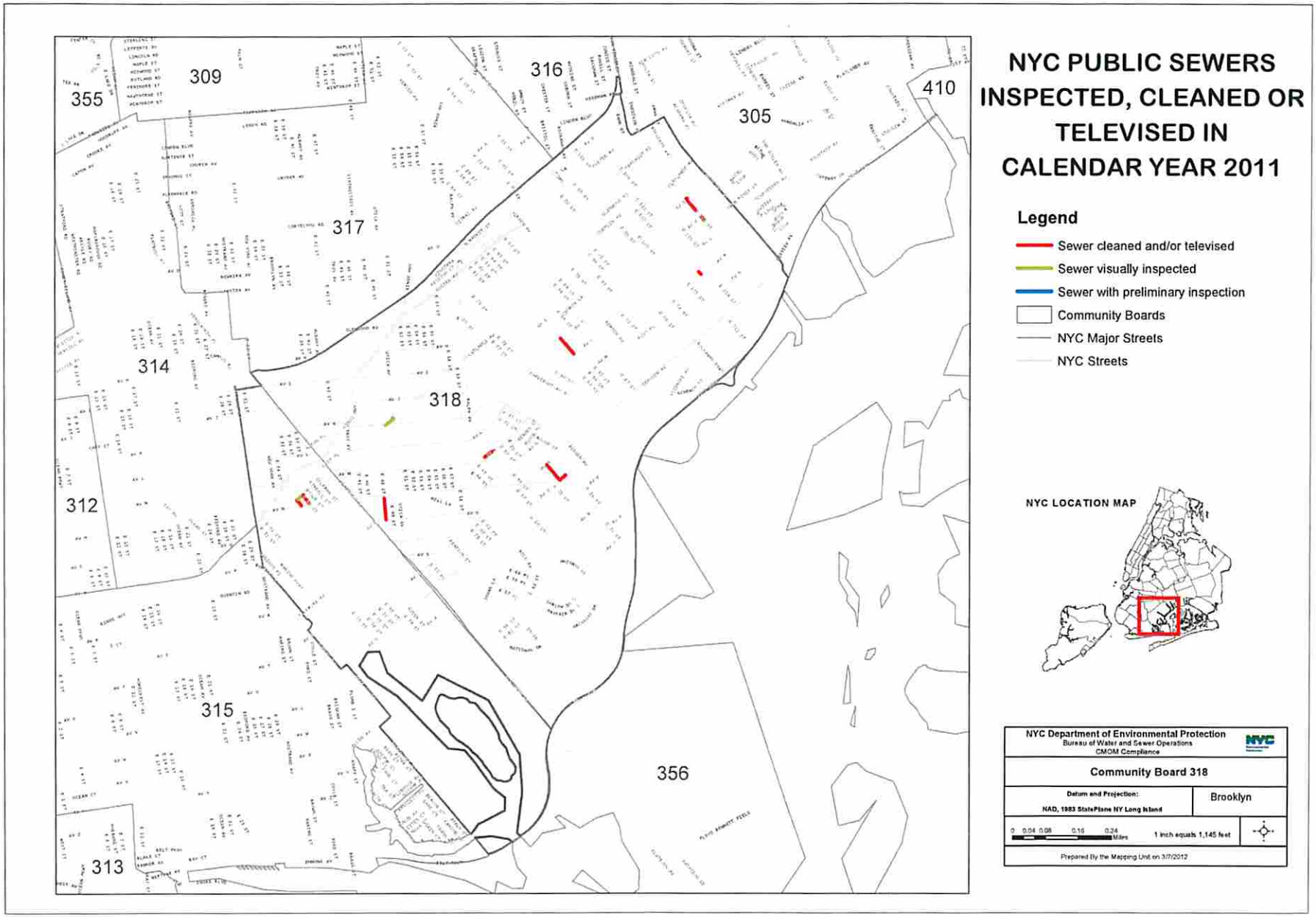
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance

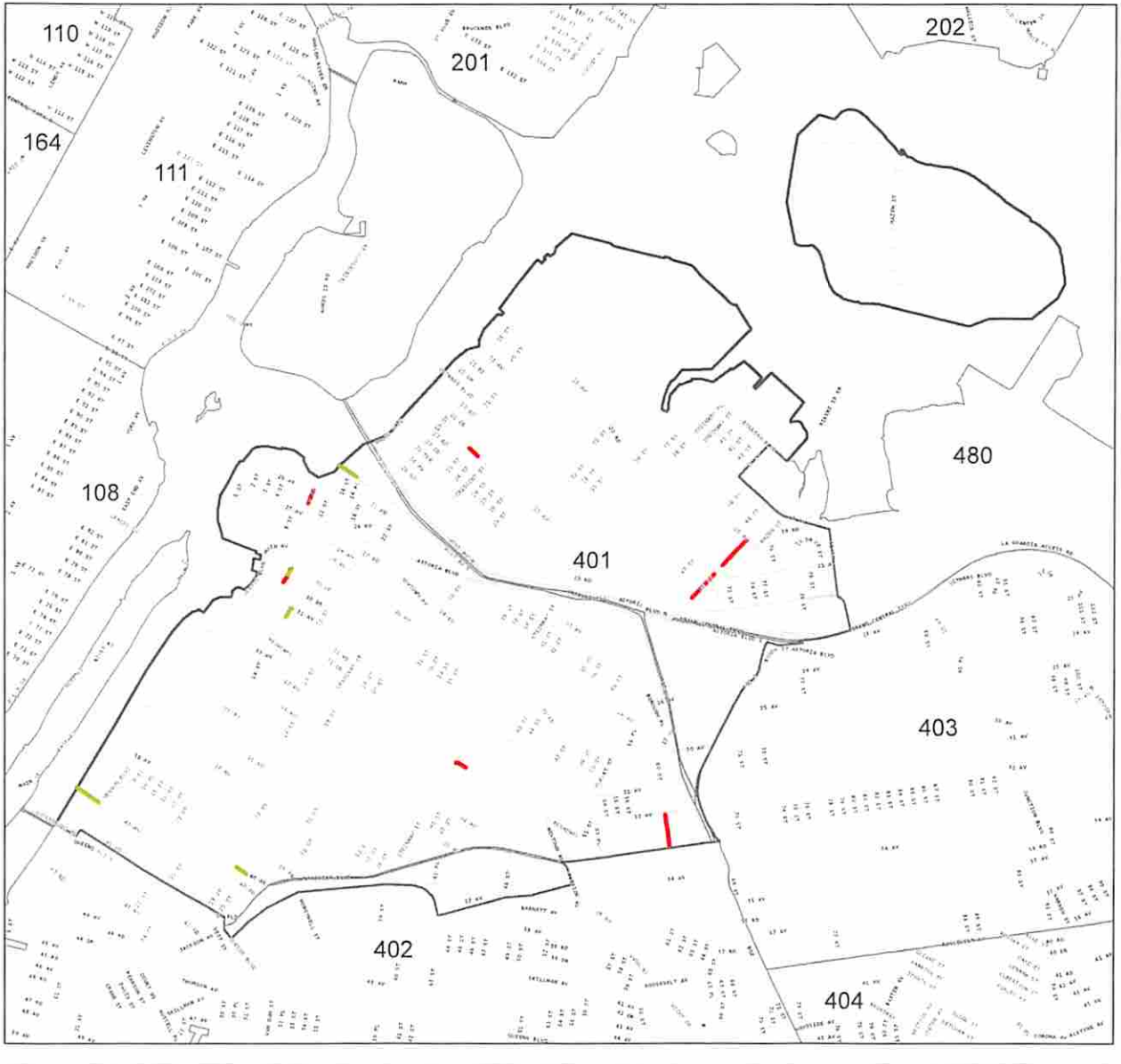
Community Board 317

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

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

Prepared By the Mapping Unit on 3/7/2012


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
309
316
410
355
305
317
314
318
312
315
356
313
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
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 Mapping Unit on 3/7/2012



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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
CMOM Compliance

Community Board 401

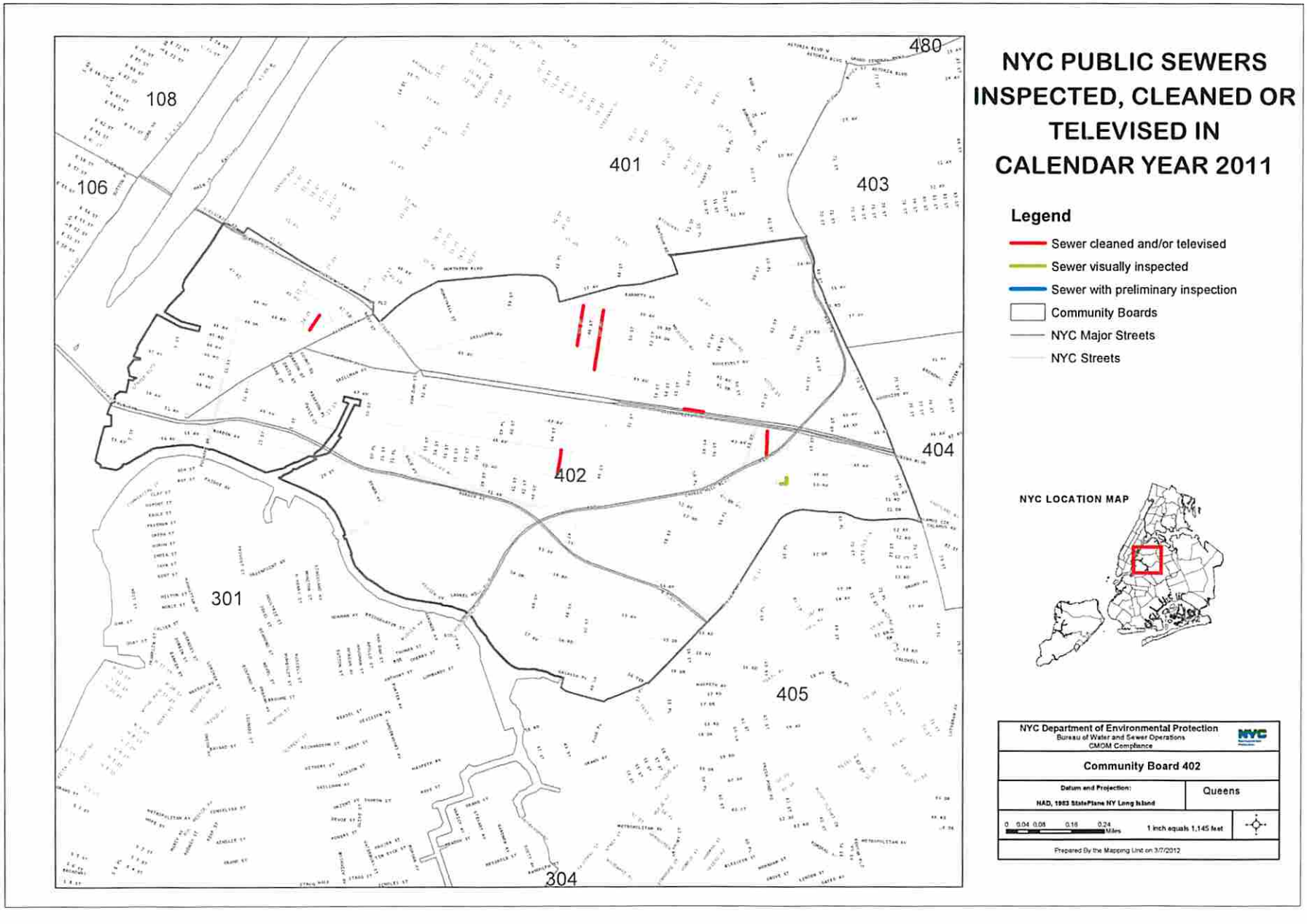
Datum and Projection: NAD, 1983 StatePlane NY Long Island

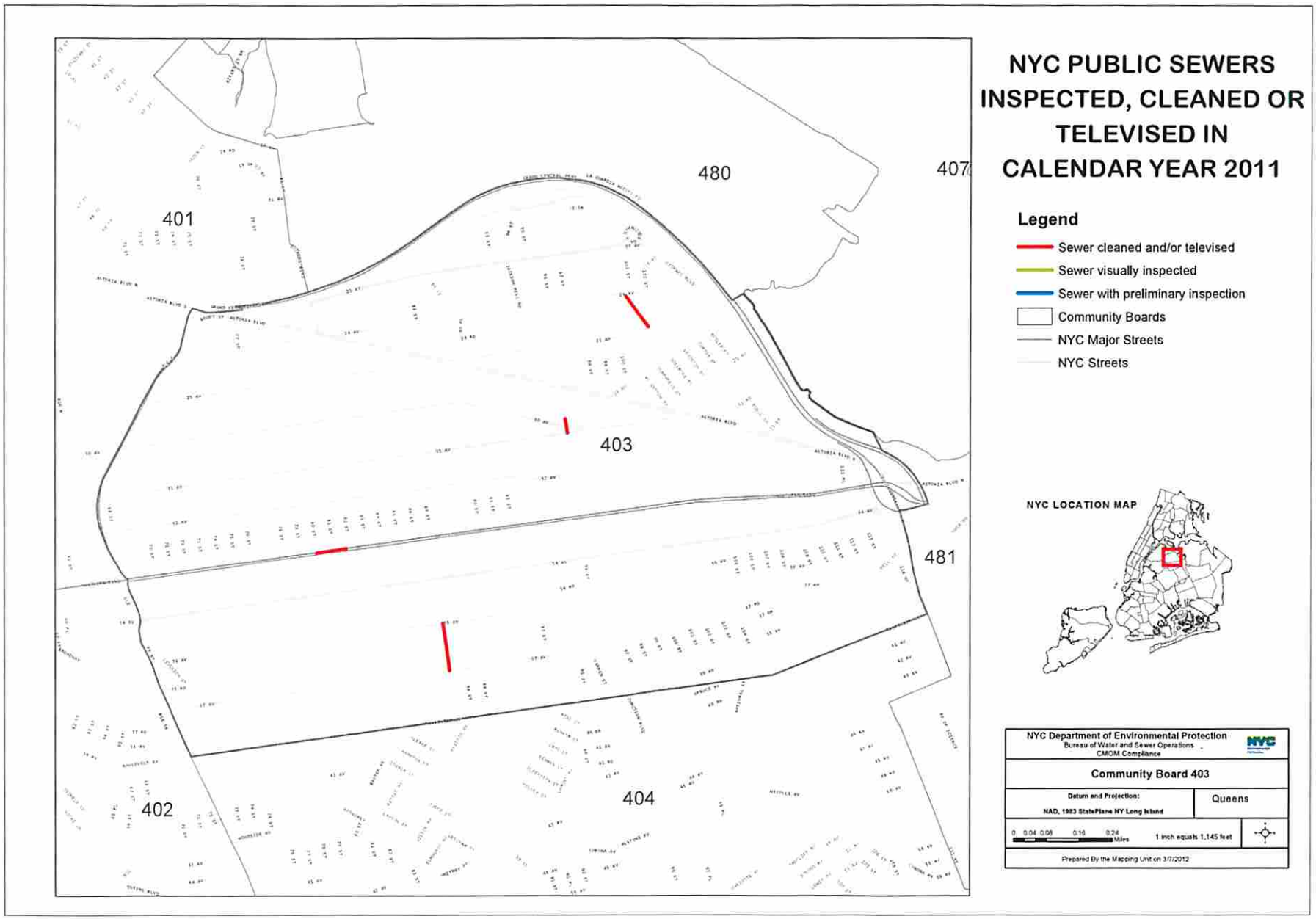
Queens

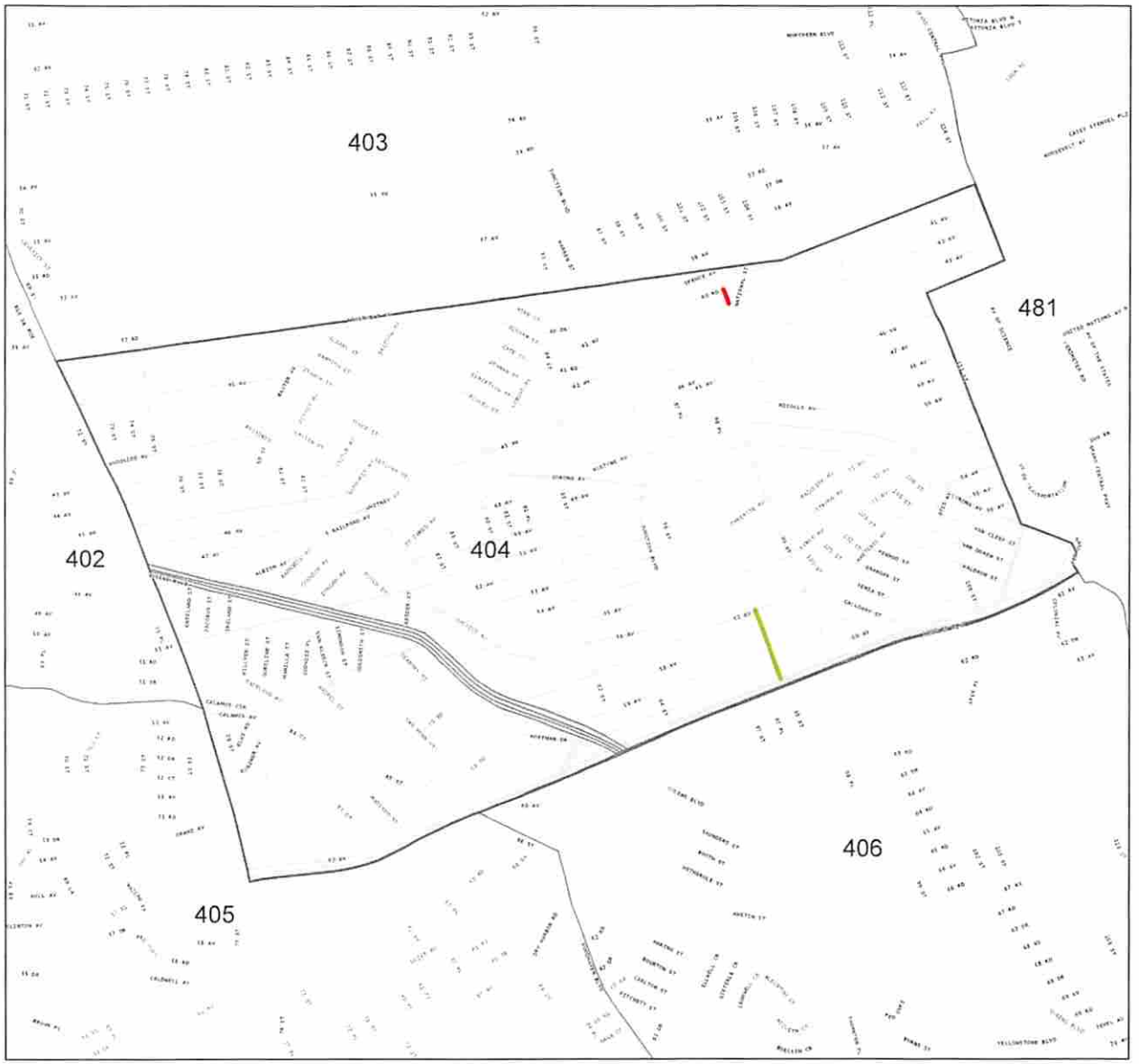
0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Mapping Unit on 3/7/2012


480
108
401
403
106
404
402
301
405
304
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
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
CMOM Compliance
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 Mapping Unit on 3/7/2012


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
480
401
403
481
402
404
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
Community Board 403
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 Mapping Unit on 3/7/2012



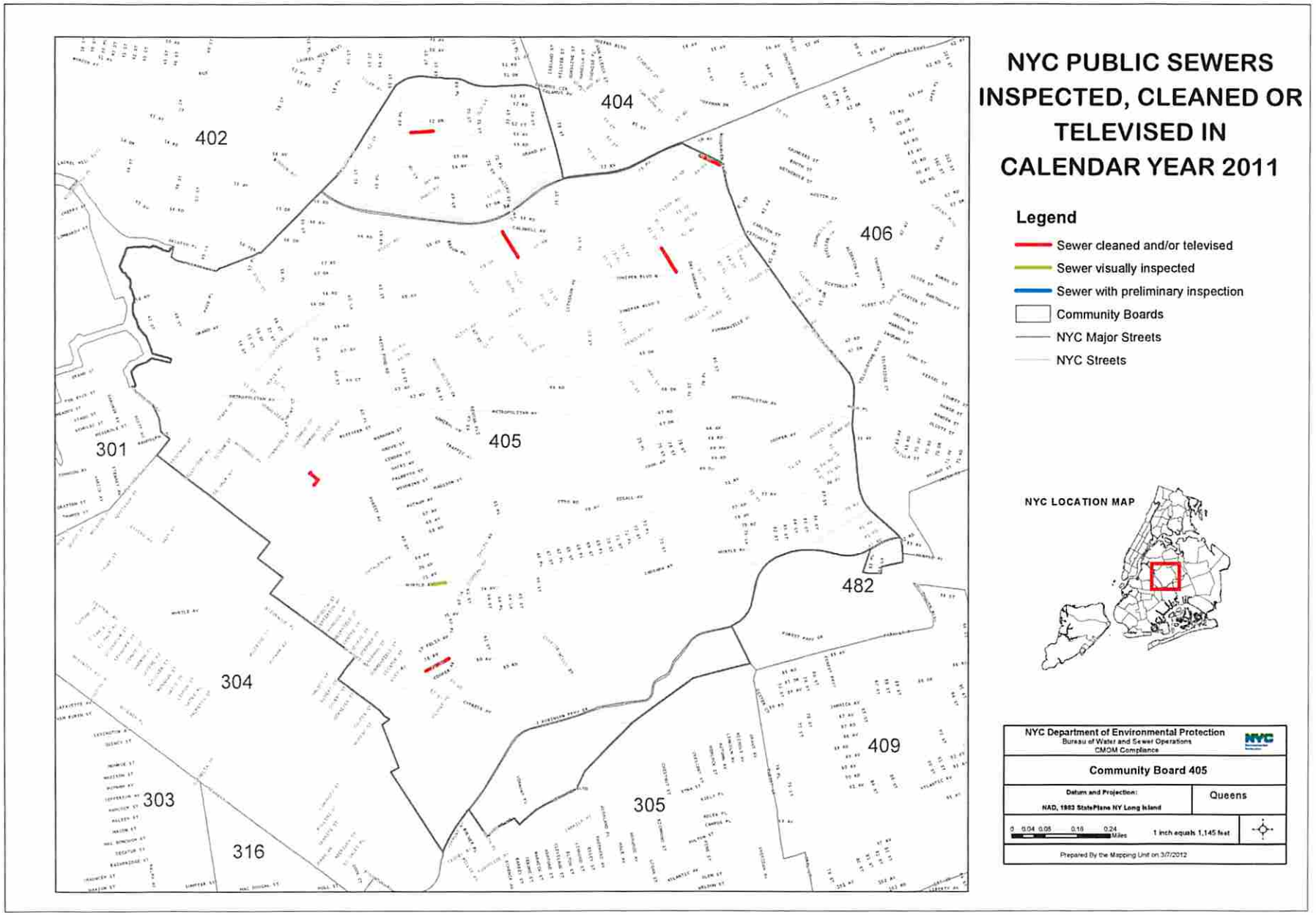
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

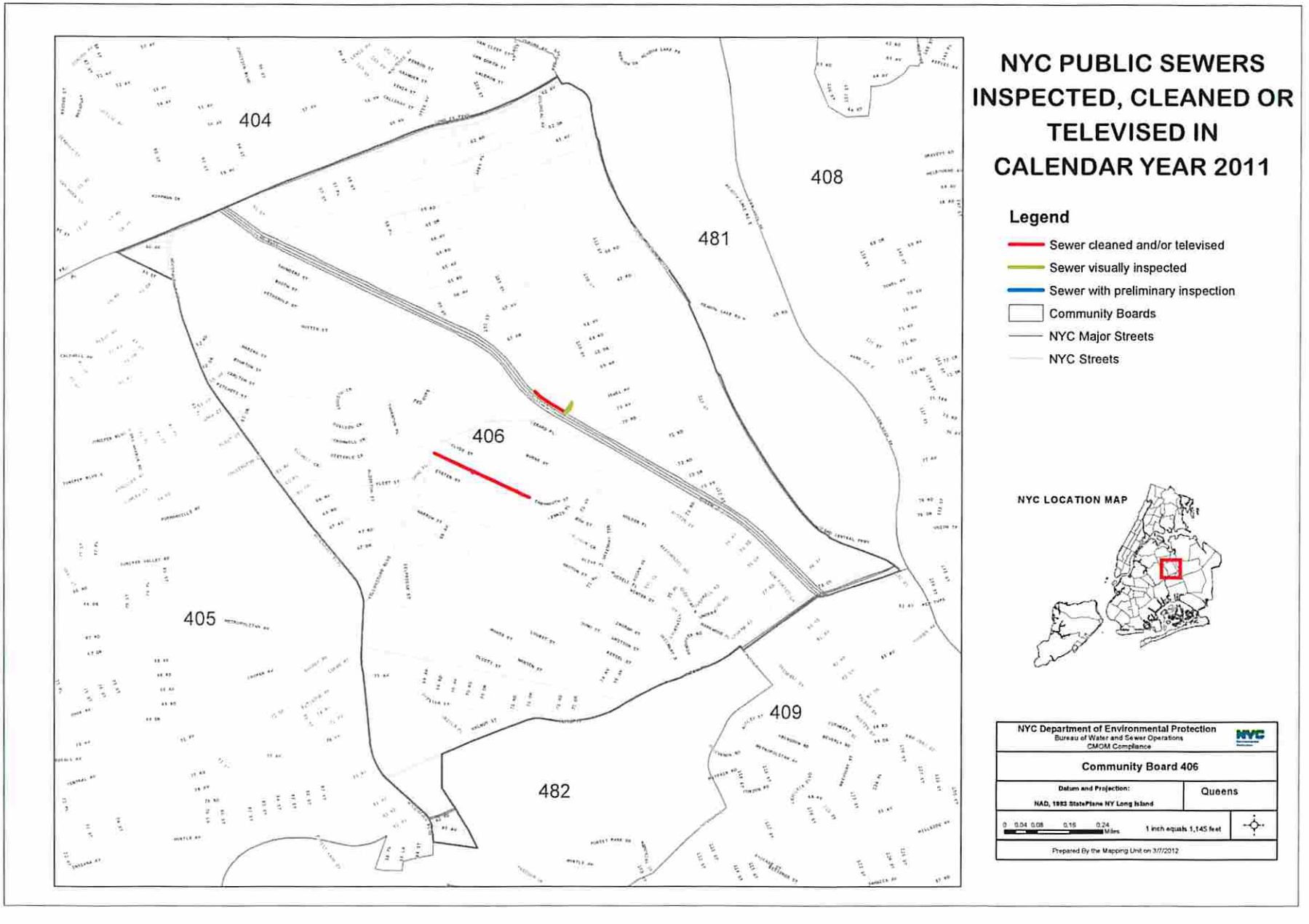
Legend

- 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 CMOM Compliance	
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 Mapping Unit on 3/7/2012	


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
402
404
406
405
301
482
304
409
303
305
316
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
Community Board 405
Queens
Datum and Projection:
NAD, 1983 StatePlane NY Long Island
0 0.04 0.08 0.16 0.24 Miles
1 inch equals 1,145 feet
Prepared By the Mapping Unit on 3/7/2012


404
408
481
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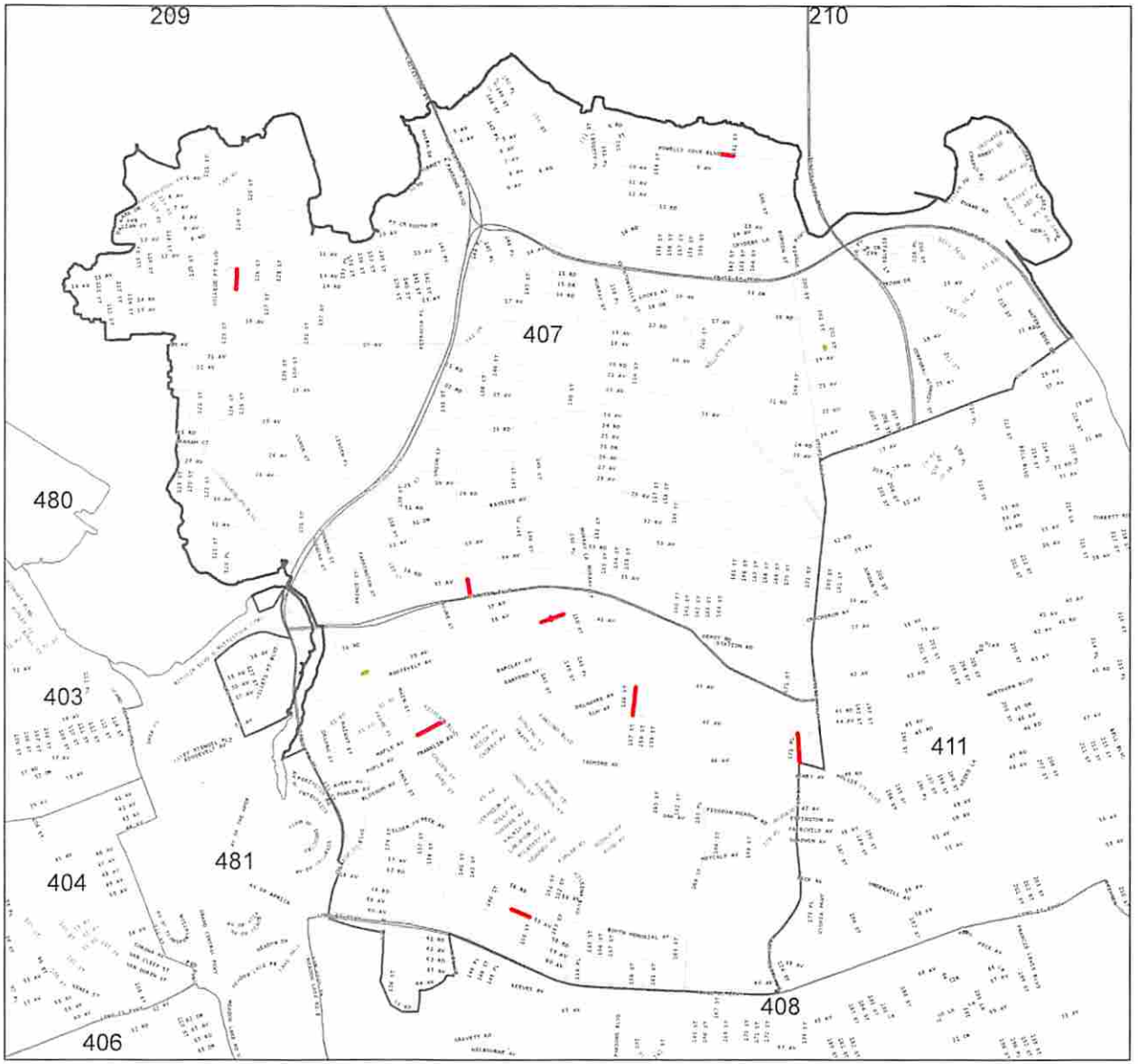
405
409
482
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
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 Mapping Unit on 3/7/2012



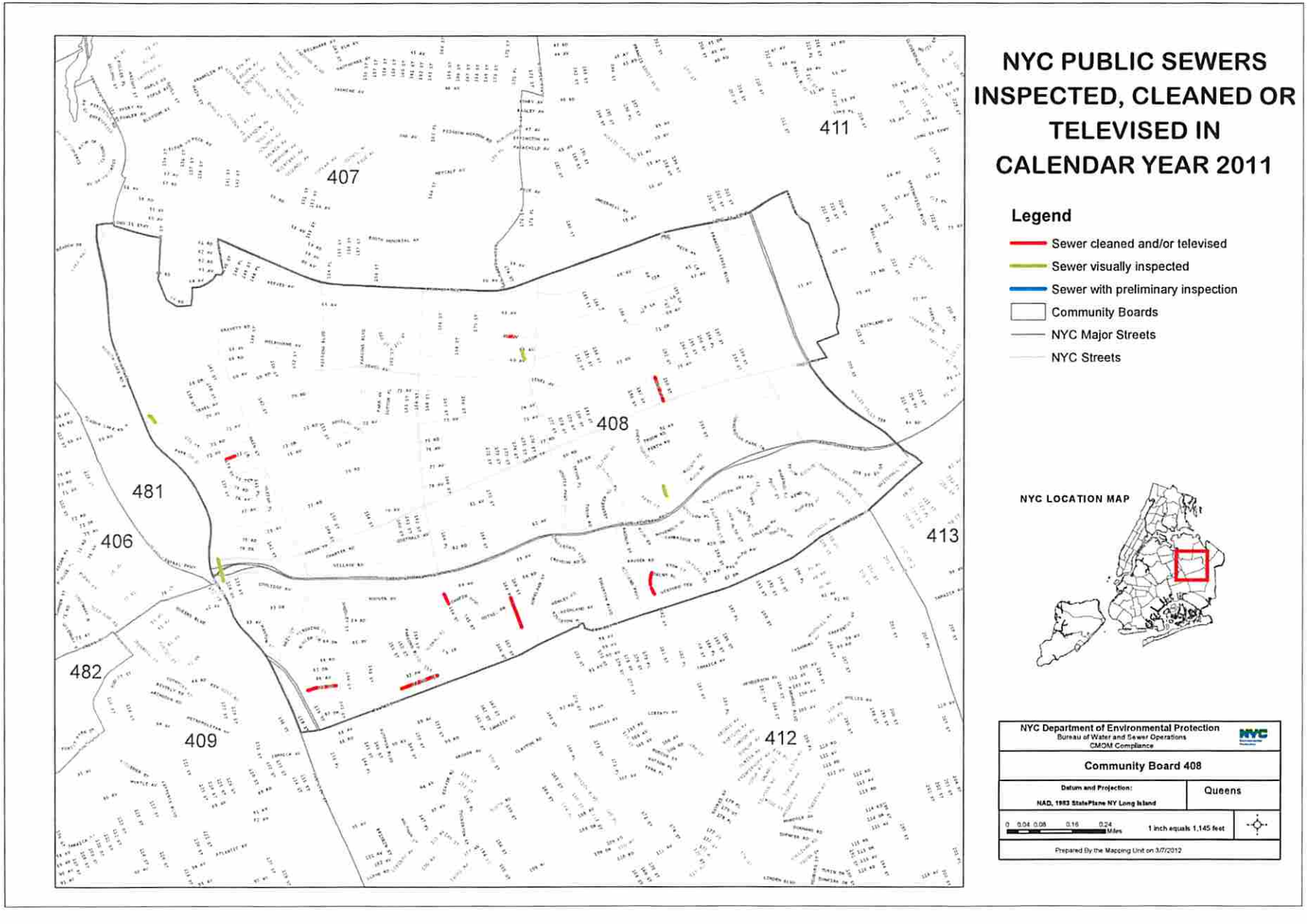
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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 CMOM Compliance	
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 Mapping Unit on 3/7/2012	


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
407
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NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
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
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NYC LOCATION MAP

NYC Department of Environmental Protection Bureau of Water and Sewer Operations CMOM Compliance	
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
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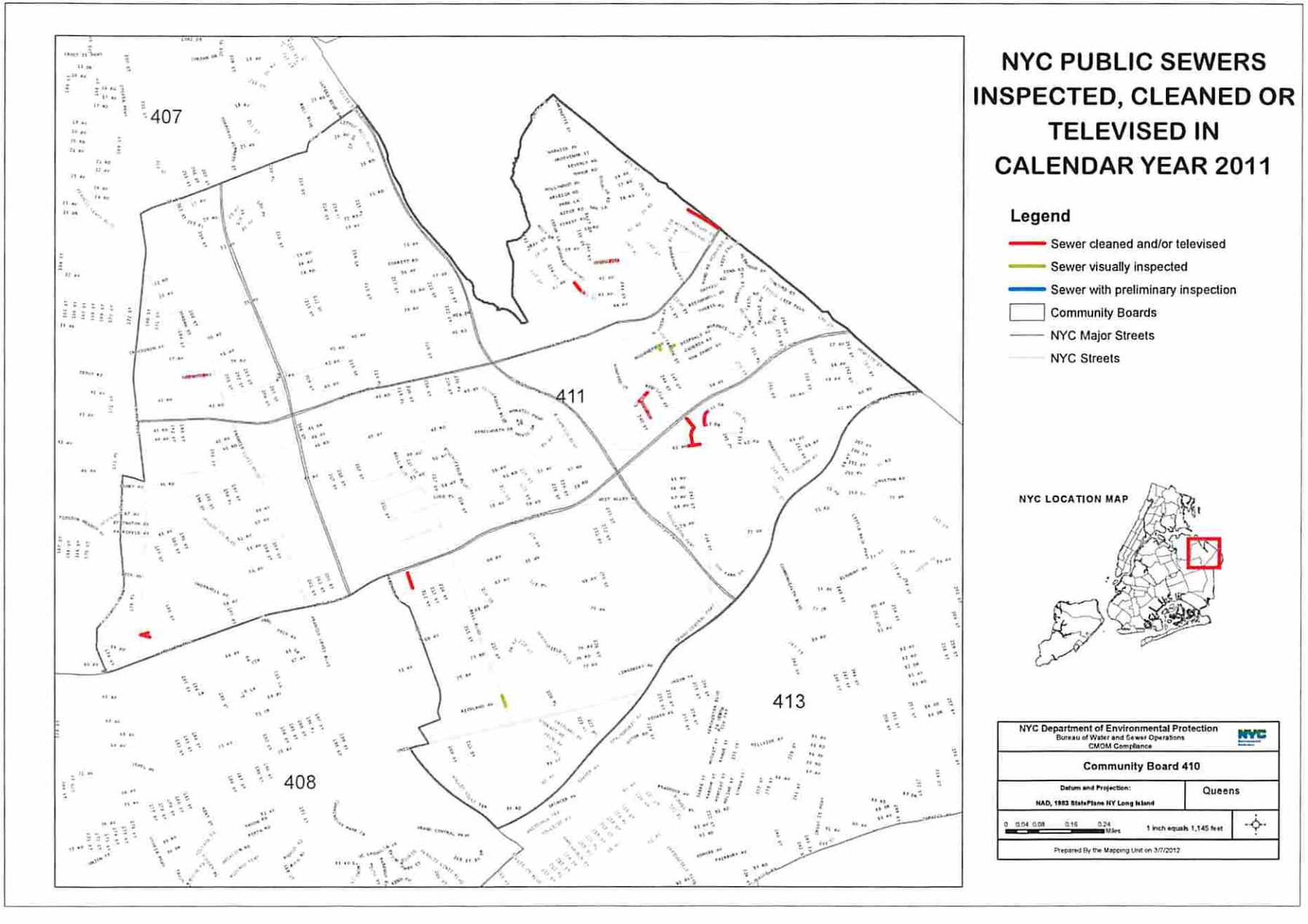
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
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NYC LOCATION MAP
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
Community Board 410
Datum and Projection:
NAD, 1983 StatePlane NY Long Island
Queens
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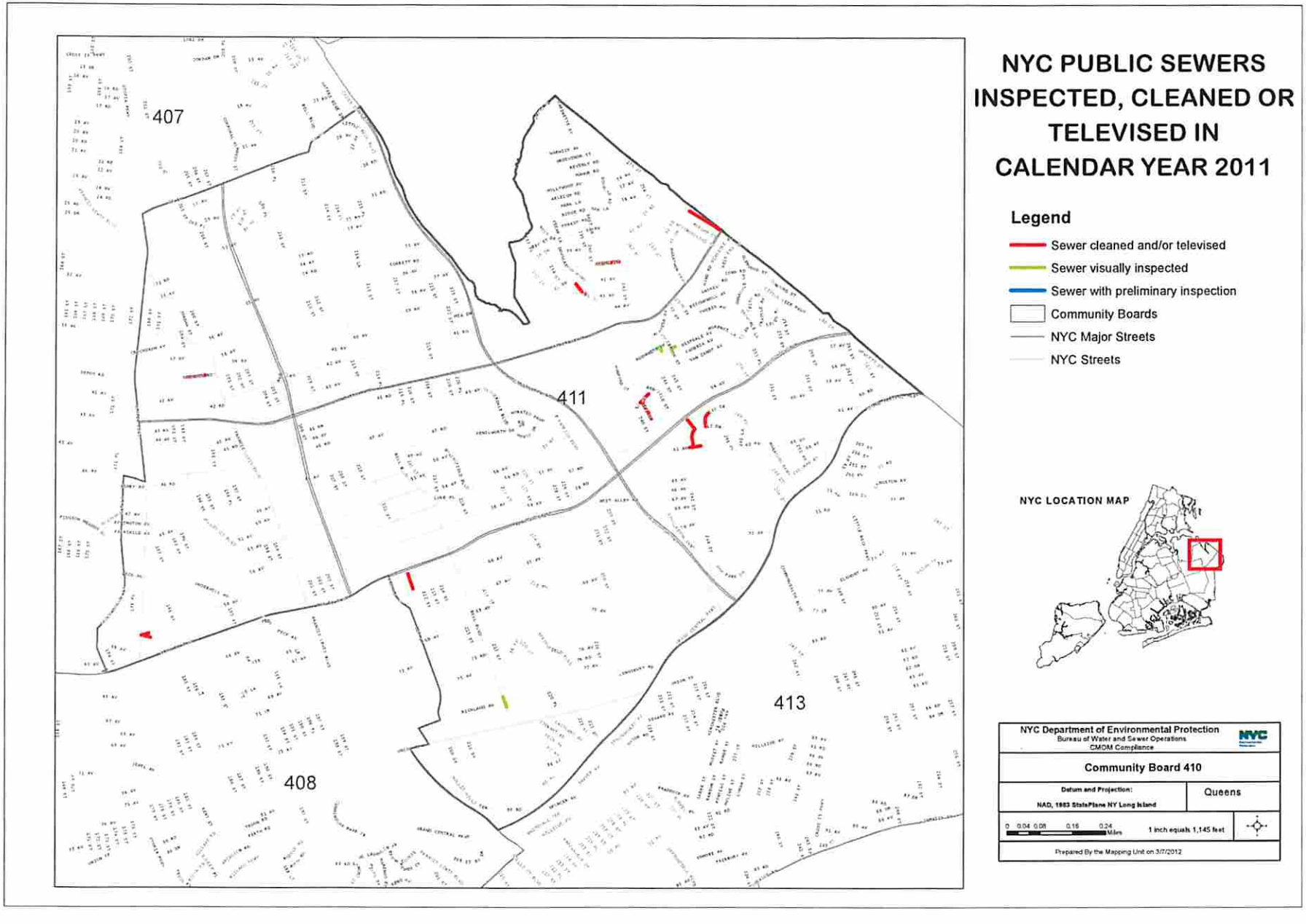
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NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
NYC Department of Environmental Protection
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CMOM Compliance
Community Board 410
Datum and Projection:
NAD, 1983 StatePlane NY Long Island
Queens
0 0.04 0.08 0.16 0.24 Miles
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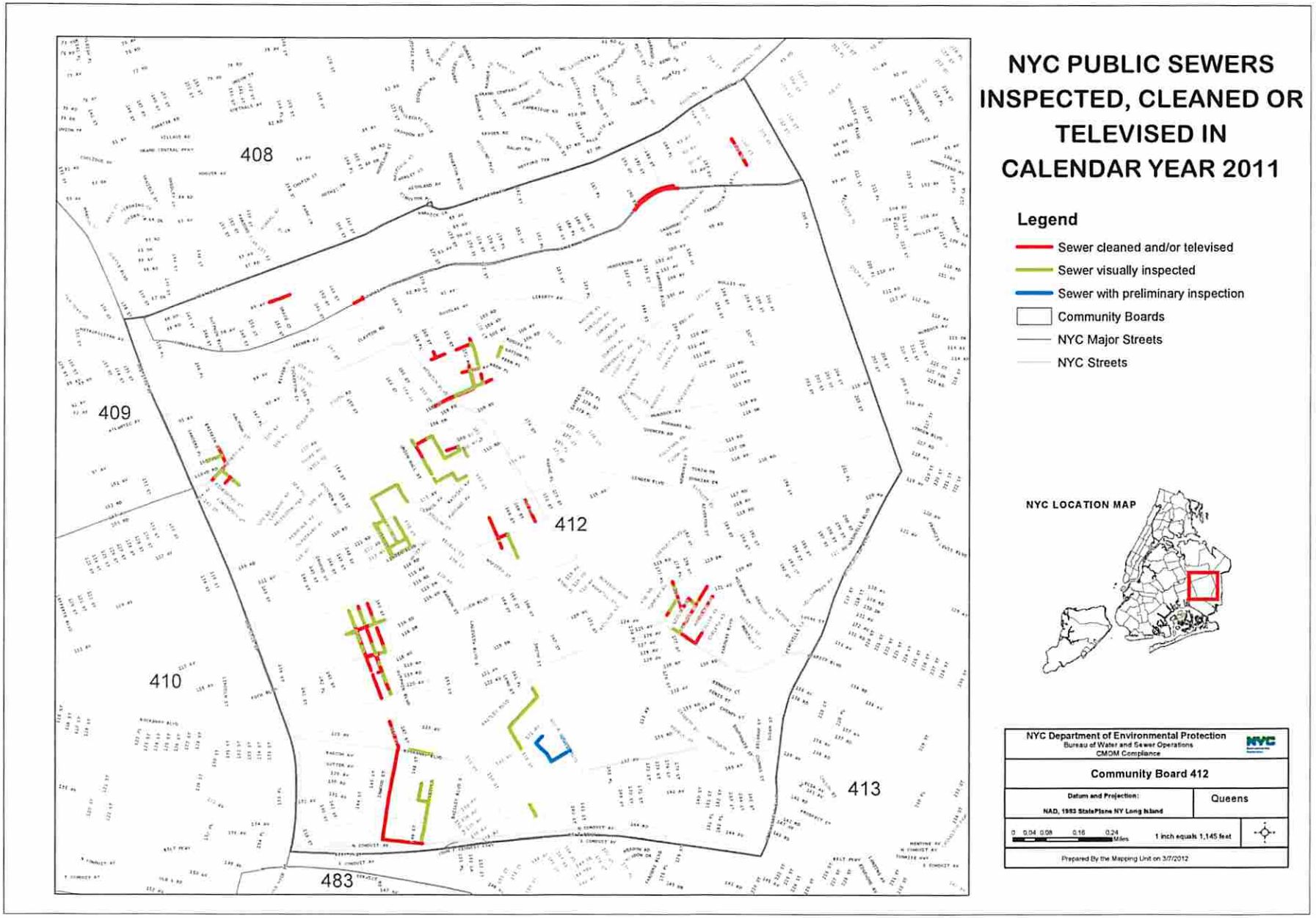
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
408
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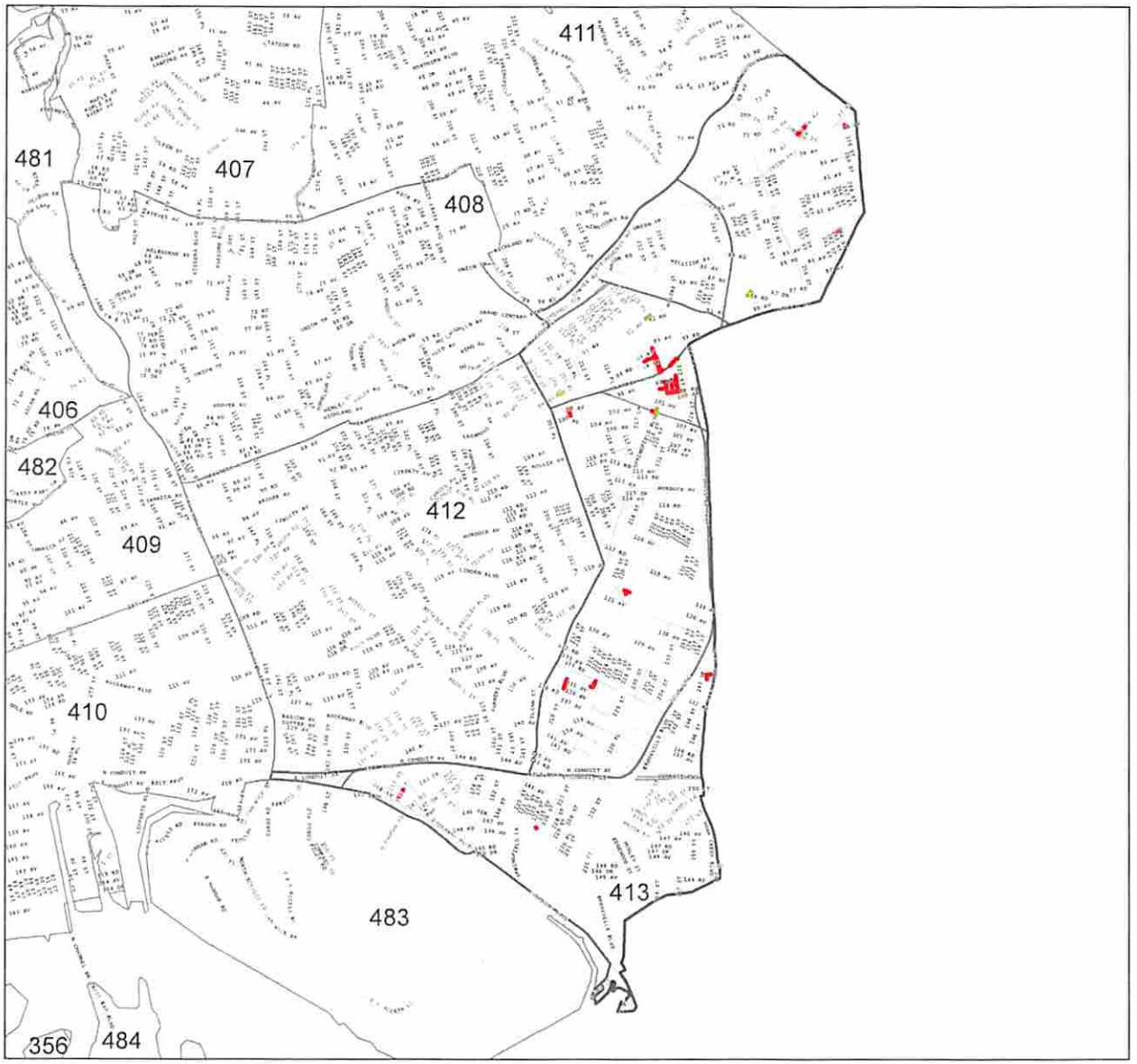
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
Community Board 412
Queens
Datum and Projection:
NAD, 1983 StatePlane NY Long Island
0 0.04 0.08 0.16 0.24 Miles
1 inch equals 1,145 feet
Prepared By the Mapping Unit on 3/7/2012



NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011

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- Community Boards
- NYC Major Streets
- NYC Streets

NYC LOCATION MAP

NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance

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 Mapping Unit on 3/7/2012

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- NYC Major Streets
- NYC Streets

NYC LOCATION MAP

NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance

Community Board 414

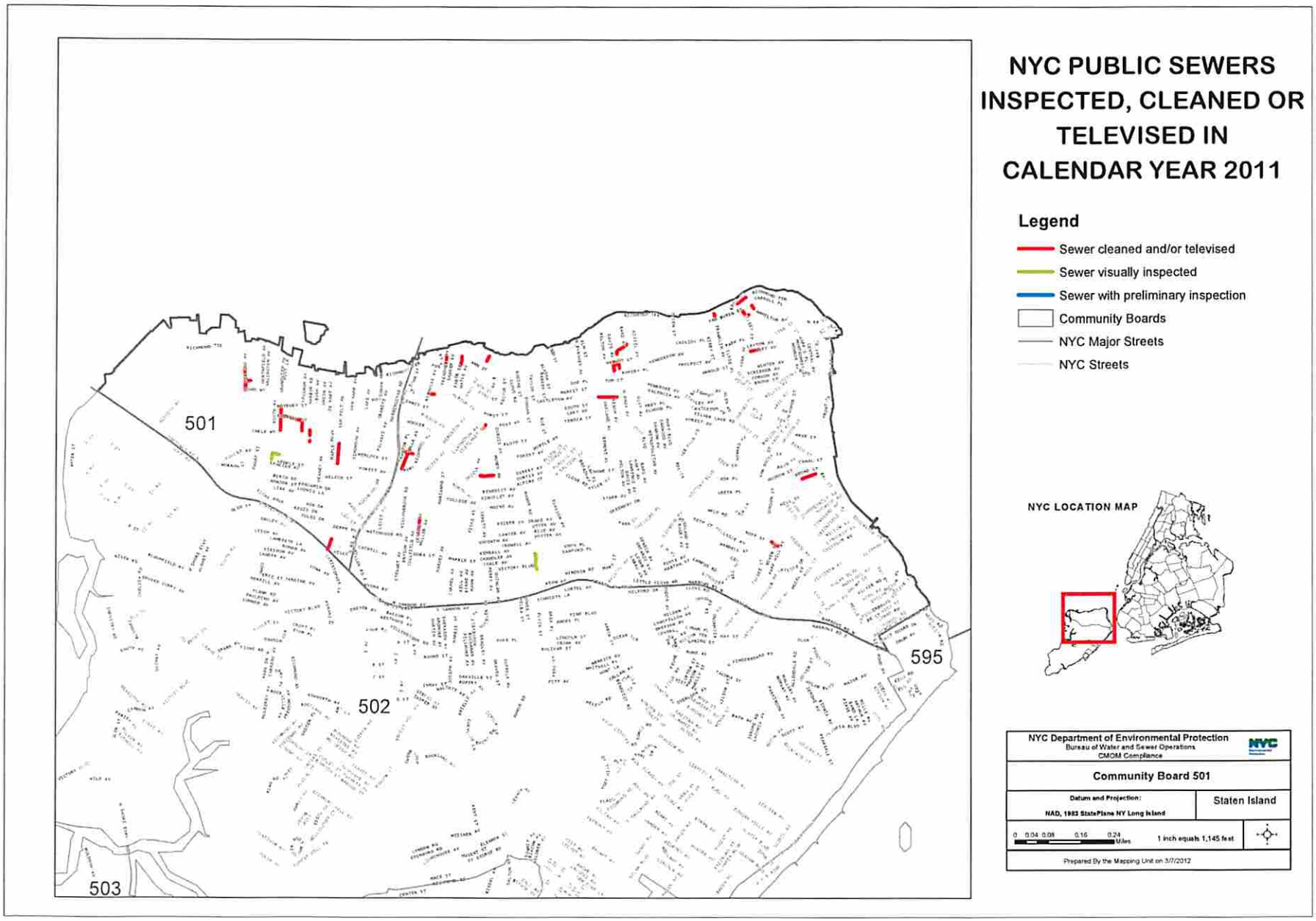
Datum and Projection:
NAD, 1983 StatePlane NY Long Island

Queens

0 0.04 0.08 0.16 0.24 Miles

1 inch equals 1,145 feet

Prepared By the Mapping Unit on 3/7/2012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Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
501
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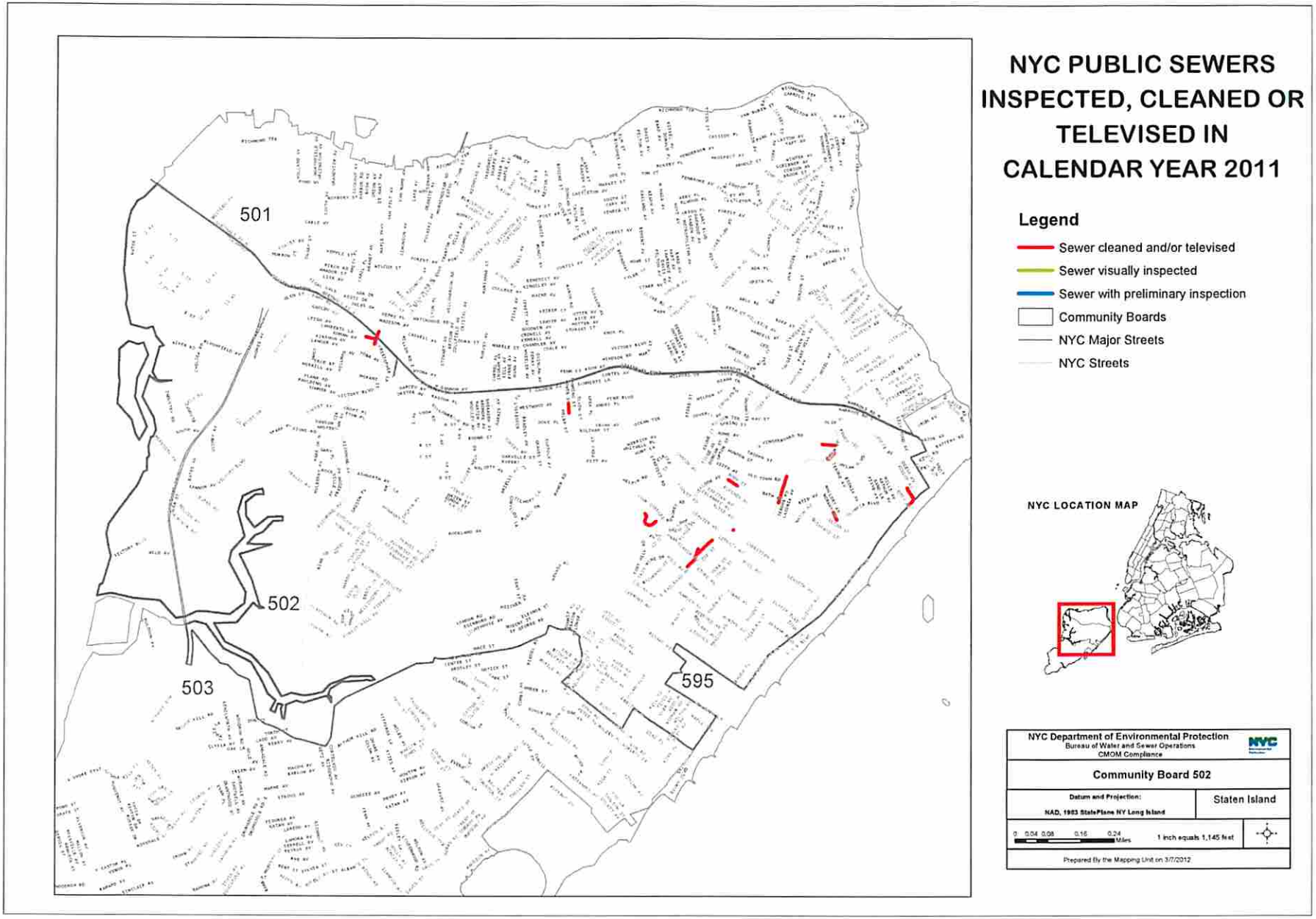
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
Community Board 501
Datum and Projection:
NAD, 1983 StatePlane NY Long Island
Staten Island
0 0.04 0.08 0.16 0.24 Miles
1 inch equals 1,145 feet
Prepared By the Mapping Unit on 3/7/2012


501
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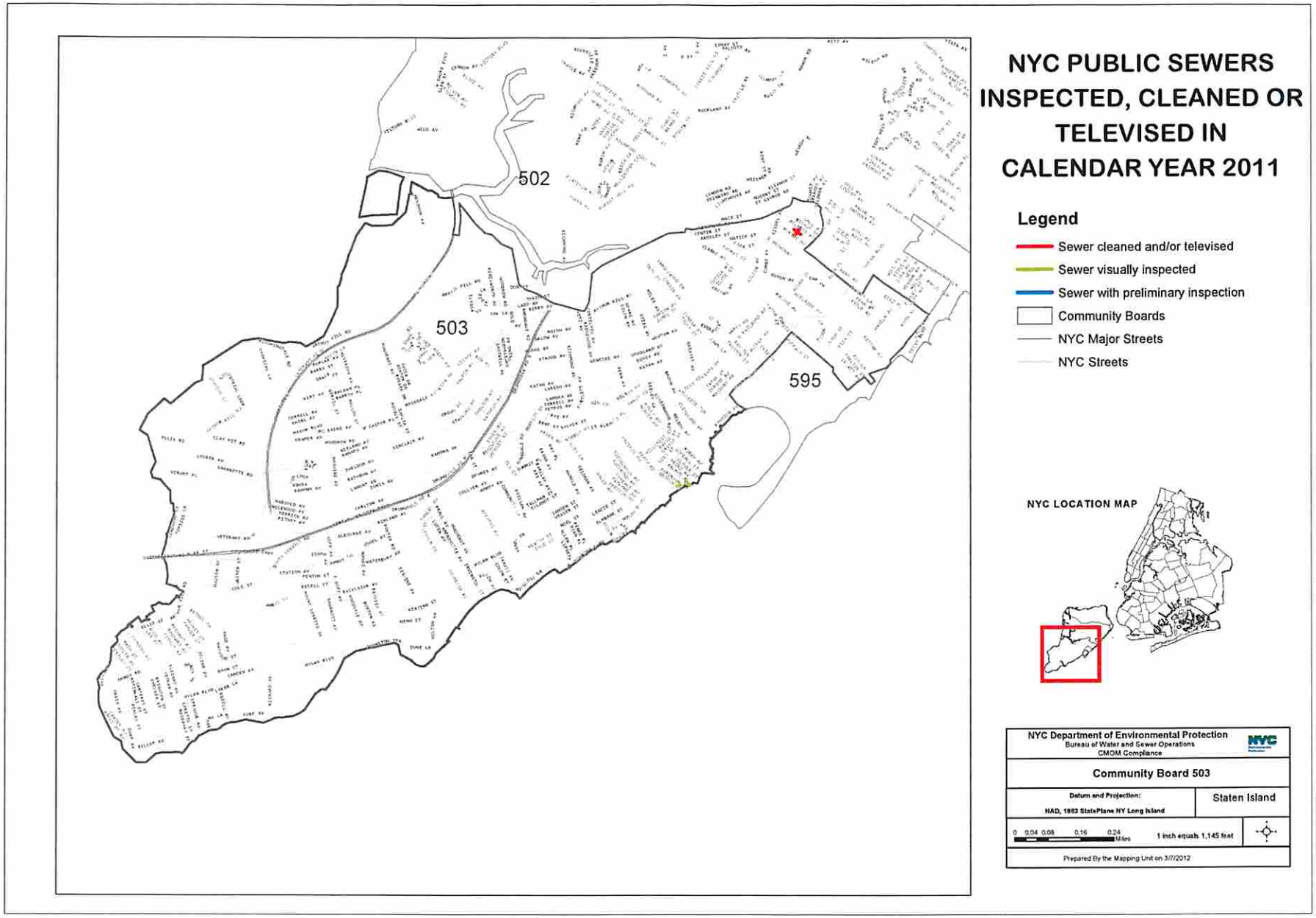
NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
NYC LOCATION MAP
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
Community Board 502
Staten Island
Datum and Projection:
NAD, 1983 StatePlane NY Long Island
0 0.04 0.08 0.16 0.24 Miles
1 inch equals 1,145 feet
Prepared By the Mapping Unit on 3/7/2012


NYC PUBLIC SEWERS INSPECTED, CLEANED OR TELEVISED IN CALENDAR YEAR 2011
Legend
Sewer cleaned and/or televised
Sewer visually inspected
Sewer with preliminary inspection
Community Boards
NYC Major Streets
NYC Streets
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NYC LOCATION MAP
NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
CMOM Compliance
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 Mapping Unit on 3/7/2012

DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER AND SEWER OPERATIONS
CMOM COMPLIANCE

Inspected Locations

N	LOG	Location	Start Date	Comp Date	Cleaned / Surveyed (LF)			
					<=24	>24 <=48	>48 <=60	>60

2011

In-House Survey

Brooklyn

1	10-256	Flatlands Av and E 38 St	10/6/2011	10/27/2011				260
2	11-060	Graham Av and Meeker Av to Metropolitan Av	2/28/2011	3/16/2011				5621
3	11-068	Flatlands Av and Utica Av	3/7/2011	3/7/2011				332
4	11-083	Blake Av and Bristal St	3/7/2011	3/22/2011				502
5	11-133	E 37 St (931) bt Glenwood Rd and Av H	4/21/2011	4/21/2011				261
6	11-147	17 Av (5219) bt 52 St and 53 St	5/10/2011	5/11/2011				290
7	11-165	Myrtle Av bt Hall St and Steuben St	6/9/2011	6/15/2011		499	547	
8	11-215	Hegeman Av (525) bt Sheffiele Av and Pensylvania Av	8/4/2011	8/4/2011				261
9	11-219	Nostrand Av bt Clarkson Av and Lenox Rd	9/15/2011	9/15/2011				451
10	11-221	E 38 St and Farragut Rd	7/11/2011	7/11/2011				523
11	11-287	E 9 St bt Av M and Roder Av	8/26/2011	8/26/2011	116			
12	11-288	Rogers Av (1357) bt Foster Av and Farragut Rd	9/15/2011	9/20/2011				753
13	11-290I	S1 St,S2 St,Hooper St,KeapSt,Grand St HSA Q2 G9	9/27/2011	9/27/2011	2564	343		245
14	11-312	Bay 23 St (189) bt Bath Av and Cropsey Av	9/28/2011	9/28/2011	555			
15	11-335	60 St (1628) bt 16 Av and 17 Av	12/8/2011	12/8/2011				849
16	11-336	Dahill Rd bt 59 St and 60 St	10/5/2011	10/5/2011	464			
17	11-348	W 21 St (28-29) bt Neptune Av and Mermaid Av	10/6/2011	10/6/2011		455		
18	11-377	50 St and 13 Av	11/22/2011	1/5/2012				508
19	11-390B	Green Ifrastructure Pilot Area B	11/9/2011	11/9/2011	6126			
20	11-390C	Green Infrastructure Pilot Area C	11/10/2011	11/10/2011	4015			
21	11-428	Colonial Rd (8824)	12/21/2011	12/21/2011	129			

Manhattan

22	10-269	E 124 St and FDR Dr	6/3/2011	6/3/2011		110		
23	10-361	1 Av and 2 Av Impovement HWMBRT6A	1/19/2011	2/25/2011			469	1541
24	11-005	Bowery and Grand St	3/15/2011	3/16/2011		59		223
25	11-021	Av C (110) bt E 7 St and E 8 St	3/18/2011	3/21/2011				240
26	11-105	W 35 St (76) bt 6 Av and 5 Av	3/31/2011	4/1/2011		70		
27	11-136	Pier 83 W 43 St and 12 Av	5/2/2011	5/26/2011				155
28	11-232	215 St from Broadway to Park Terr E	8/3/2011	8/3/2011	100			
29	11-283	W 22 St (556) bt 11 Av and 10 Av	10/4/2011	10/4/2011	861			
30	11-424	E 51 St (34)	12/20/2011	12/20/2011		293		

N	LOG	Location	Start Date	Comp Date	Cleaned / Surveyed (LF)			
					<=24	>24 <=48	>48 <=60	>60
Queens								
31	10-222	92 Av (221-08) bt 221 St and 221 Pl	2/1/2011	2/1/2011				264
32	10-344	Bell Blvd and Kingsbury Av	2/25/2011	2/25/2011		163	130	
33	11-013	Rushmore Av and 245 St, Overbrook St and Deepdale Av	1/10/2011	1/10/2011	130	410		
34	11-019	Commonwealth Blvd and 88 Rd	3/1/2011	3/1/2011			150	396
35	11-033	98 St bt 57 Av and Horac Harding Exp	1/5/2011	2/16/2011				1096
36	11-036	Avon St (186-29)	2/7/2011	2/18/2011		166	152	
37	11-070	134 St and Uniion Tpk EB	3/15/2011	3/15/2011				640
38	11-077	Queens Blvd and Yellowstone Blvd	4/14/2011	4/18/2011		30		423
39	11-080	40 Av (28-28) bt 28 St and 29 St	3/24/2011	3/24/2011				534
40	11-099	N Conduit Av and Tahoe St	3/29/2011	3/29/2011		651		
41	11-107	Myrtle Av and Summerfield St	4/4/2011	4/7/2011				377
42	11-109	65 Pl (48-47) bt 48 Av and 50 Av	4/18/2011	4/18/2011				502
43	11-146	12 St (30-48) bt 30 Rd and 30 Dr	5/10/2011	5/14/2011	319			6
44	11-172	115 Av and 166 St	5/25/2011	5/25/2011			109	
45	11-174	14 St (31-001) bt 31 Av and 31 Rd	5/23/2011	5/23/2011				219
46	11-175	Hempstead Av and Springfield Blvd	5/26/2011	6/17/2011				830
47	11-181	157 Av and 79 St	7/14/2011	7/19/2011	193			
48	11-182	87 St (156-23) bt 156 Av and 157 Av	7/14/2011	7/14/2011			288	
49	11-184	90 St bt Rockaway Blvd and 102 Rd	7/18/2011	7/18/2011				156
50	11-185	Foch Blvd and 146 St	7/20/2011	7/20/2011			192	
51	11-206	160 St (133-19) bt 132 Av and 134 Av	7/27/2011	9/16/2011	1541			
52	11-246	Fresh Meadow La bt 69 Av and 68 Av	8/8/2011	8/8/2011				317
53	11-272	Rushmore Av (244-26) bt 244 St and 245 St	8/23/2011	8/23/2011		146		
54	11-290A	172 St bt 105 Av and 108 Av, Polhemas Av HSA Q2 G1	8/22/2011	8/22/2011	3458			
55	11-290B	102 Av,Inwood St,Lloyd Rd,105 Av, Liberty Av HSA Q2 G2	8/30/2011	8/30/2011	1270			
56	11-290C	Guy Brewer Blvd,164 Pl, 110 Rd,164 St,109 Dr HSA Q2 G3	9/2/2011	9/27/2011	4344			
57	11-290D	116 Av,146 St,148 St,116 Dr HSA Q2 G4	10/4/2011	10/18/2011	8685			
58	11-290E	Mott Av,Nameoke Av,Gibson St,McBride St,Dickens St HSA Q2 G5	10/19/2011	10/20/2011	6699			
59	11-290F	Rockaway Blvd,149 St,130, 150 St HSA Q2 G6	10/20/2011	10/21/2011	2936			
60	11-290G	Zoller Rd, Merrick Blvd,Selover Rd Leslie Rd and Ursina Rd HSA Q2 G7	11/9/2011	11/9/2011	4735			
61	11-290H	155 St,Linden Blvd,112 Av,156 St,110 Av,11 Av,1599 St HSA Q2 G8	9/20/2011	9/22/2011	6591			
62	11-301	Park Dr E bt Jewel Av and 136 St	12/1/2011	12/1/2011			282	
63	11-311	Guy Brewer Trunkline Sewer Elevation Survey	8/24/2011	9/5/2011		2681		
64	11-311A	Guy Brewer Blvd and Vicinity	12/2/2011	12/2/2011		364		
65	11-330	Queensbridge Park CSO	10/4/2011	10/4/2011			529	
66	11-344	94 Av and 209 St	11/30/2011	11/30/2011				264
67	11-412	201 St bt 17 Av and 19 Av	11/16/2011	11/16/2011	80			
68	11-434	Prince St (39-16)	11/16/2011	11/16/2011	279			
Staten Island								
69	11-096	Astoria S Park and Shore Blvd	4/12/2011	4/18/2011				141
70	11-150	South Av and Forest Av (HWR300-03)	7/22/2011	7/26/2011				599
71	11-151	Victory Blvd and Manor Rd	5/18/2011	5/18/2011				765
72	11-229	Armstrong Av and Tennyson Dr DDC SE-798 Robinson Av	9/22/2011	9/22/2011		100		375
73	11-238	Walnut St (76) bt Bard Av and Davis Av	8/1/2011	8/1/2011		40		
74	11-399	Willow Av (25) and Clifton St	11/29/2011	11/29/2011		472		171
75	11-479	Starlight Rd (14)	12/21/2011	12/21/2011				
The Bronx								
76	08-304C	Bronx Park East and Reiss Place	9/12/2011	9/12/2011				1500
77	11-071	Webster Av bt E 188 St and E Fordham Rd	3/28/2011	3/30/2011				2212
78	11-350	Stephens Av (230) bt O"Brien Av and Gildersleeve Av	10/13/2011	10/13/2011	320			
79	11-351	Naples Terr (230) bt Broadway and Godwin Terr	10/14/2011	10/14/2011	357			

N	LOG	Location	Start Date	Comp Date	Cleaned / Surveyed (LF)			
					<=24	>24 <=48	>48 <=60	>60
2011 In-House Survey Total, LF:		**91,569** (17.34 mi)	**1/10/2011**	**12/21/2011**	**56867**	**7052**	**2848**	**24802**
Operating Expenses, $								

N	LOG	Location	Start Date	Comp Date	Cleaned / Surveyed (LF)			
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CITYWIDE

Brooklyn

80	07-255	26th Ward Area	3/10/2009		41945	2704		
81	10-247	Glenwood Rd (2722) bt Amersfort Pl and Kenilworth Pl	4/27/2011	6/20/2011	741		705	
82	10-256	Flatlands Av and E 38 St	9/13/2011	9/19/2011	776			
83	10-291	Flatbush Av (1246) bt Av D and Newkirk Av	3/3/2011	3/29/2011			687	
84	10-370	Humboldt St (662) bt Nassau Av and Driggs Av	5/2/2011	5/5/2011	627			303
85	11-012	Cooper St and Central Av	2/15/2011		126	153		
86	11-020	E 108 St (1031) bt Av J and Flatland 1 St	1/24/2011	1/26/2011	650			
87	11-031	Court St bt 1 Pl and 2 Pl	1/23/2011	1/24/2011	223			
88	11-032	60 St (1570) bt Long Island RR and 16 Av	2/11/2011	2/14/2011	753	197		
89	11-039	15 Av (7819) bt 78 St and 79 St	4/1/2011	4/1/2011	220			
90	11-052	E 48 St (1777) bt Av N and Av O	2/22/2011	2/24/2011	759			
91	11-058	W 30 St (2929) bt Mermaid Av and Surf Av	3/2/2011	3/4/2011	1687			
92	11-062	Gates Av bt St Nicholas Av and Wyckoff Av	3/4/2011	3/7/2011	463			
93	11-064	Malcolm X Blvd and Dekalb Av	3/7/2011	3/8/2011		199		
94	11-074	Av U (7203) bt E 72 St and E 73 St	4/7/2011	4/7/2011	975			
95	11-092	Ocean Av (2055) bt Av O and Av P	4/1/2011	4/6/2011	822			
96	11-098	Old Mill Rd (184) bt Fountain Av and Crescent St	3/27/2011	3/28/2011				
97	11-113	Brightwater Ct (112) Brighton 1 Rd and Brighton 1 Pl	4/29/2011	4/29/2011	550			
98	11-115	Lafayette Av (252) bt Waverly Av and Washington Av	4/27/2011	4/27/2011	263			
99	11-126	E 21 St (1770) bt Av P and Quentin Rd	5/19/2011	5/23/2011	1985			
100	11-139	Kings Hwy (1811) bt E 18 St and E 19 St	5/23/2011	5/23/2011				
101	11-141	Brighton 10 St (187) bt Ocean View Av and Brighton 10 La	4/28/2011	4/29/2011	1135			
102	11-142	E 18 St (1675) bt Kings Highway and Quentin Rd	5/6/2011	5/6/2011	977			
103	11-145	3 St (592) bt 8 Av and Prospect W Park	5/9/2011	5/10/2011	1841			
104	11-148	Shepherd Av (93) bt Ridgewood Av and Arlington Av	5/16/2011	5/16/2011		674		
105	11-153	Av M (6603) bt E 66 St and Bergen B Pl	9/8/2011	9/16/2011	308			
106	11-155	Atlantic Av bt Kingston Av and Brooklyn Av	5/5/2011	5/12/2011	1672			
107	11-156	17 St (263) bt 5 Av and 6 Av	5/17/2011	5/17/2011	723			
108	11-163	Union Av bt Driggs Av and N 12 St	5/19/2011	5/19/2011	322			
109	11-169	88 St (335) bt 3 Av and 4 Av	5/24/2011	5/24/2011	773			
110	11-202	Knapp St (2601) bt Voorhies Av and Av Y	6/16/2011	6/16/2011	290			
111	11-221	E 38 St and Farragut Rd	7/8/2011	7/8/2011	84			
112	11-226	77 St (939) bt Ft Hamilton Pkwy and 10 Av	7/13/2011	7/14/2011	863			
113	11-255	Liberty Av and Logan St	9/23/2011	9/23/2011	252	89		
114	11-278	Grace Ct bt Hicks St and BQE	8/16/2011	8/22/2011	866			
115	11-289	5 Av bt 49 St and 51 St	8/24/2011	9/1/2011	697	250		
116	11-305	41 St (324) bt 3 Av and 4 Av	11/29/2011	12/7/2011	1403			
117	11-317	W 33 St bt Mermaid Av and Neptune Av	11/21/2011		345	301		
118	11-356	Cornelia St (262) bt Wilson Av and Knickerbocker Av	10/27/2011	11/9/2011	667			
119	11-357	Jay St (50) bt Plymouth St and Water St	11/17/2011	12/1/2011	232	219		
120	11-394	Lorimer Av (776) bt Bayard St and Driggs Av	12/15/2011					
121	11-436	E 84 St (1102) bt Av K and Av L	11/22/2011	11/28/2011	716			
122	11-443	Surf Av (2316) bt W 23 St and W 24 St	11/23/2011	11/23/2011	256			

N	LOG	Location	Start Date	Comp Date	Cleaned / Surveyed (LF)			
					<=24	>24 <=48	>48 <=60	>60

Manhattan

123	10-228	W 82 St (32) bt Central Park W and Columbus Av	8/9/2010	8/17/2011		750		
124	10-310	Madison Av (39) bt James St and Oliver St	11/17/2010	1/7/2011	15	137		
125	11-002	W 56 St (500) bt 10 Av and 11 Av	2/16/2011	2/18/2011		875		
126	11-003	7 Av (WS) bt W 58 St and W 54 St	1/24/2011	2/16/2011	958	10	122	
127	11-006	E 23 St (123) bt Park Av S and Lexington Av	3/29/2011	4/14/2011		432		
128	11-007	W 24 St bt 7 Av and 8 Av	2/22/2011	4/29/2011		798		
129	11-011	Orchard St bt Delancey St and Rivington St	2/24/2011	2/25/2011	453			
130	11-014	2 Av bt E 122 St and E 125 St	2/2/2011	2/7/2011		711		
131	11-023	W 114 St (232) bt 7 Av and 8 Av	4/17/2011	4/18/2011		670		
132	11-028	1 Av (211) bt E 12 St and E 13 St	2/8/2011	2/15/2011		178		
133	11-038	Eldridge St (235) bt Stanton St and E Houston St	2/27/2011	3/3/2011		450		
134	11-066	E 5 St (303) bt 2 Av and 1 Av	3/10/2011	5/3/2011		620		
135	11-091	W 53 St bt 10 Av and 9 Av	4/10/2011	4/11/2011		800		
136	11-095	6 Av (761) bt W 25 St and W 26 St	4/6/2011	4/8/2011	350	32		
137	11-103	E 104 St (349) bt 2 Av and 1 Av	4/18/2011	4/18/2011		90		
138	11-104	E 84 St (222) bt 3 Av and 2 Av	4/19/2011	4/20/2011	124	447		
139	11-105	W 35 St (76) bt 6 Av and 5 Av	4/4/2011	4/5/2011	34	188		
140	11-131	E 88 St bt Lexington Av and Park Av	4/18/2011	4/19/2011	418			
141	11-140	Ericsson Pl (20) bt Varic St and Holland Tunnel Exit	4/25/2011	4/26/2011		407		
142	11-143	Charles St and Waverly Pl	5/4/2011	7/1/2011	106	141		
143	11-171	W 10 St (184) bt W 4 St and Bleecker St	6/6/2011	6/7/2011		307		
144	11-183	Lenox Av (288) bt W 124 St and W 125 St	6/11/2011	6/12/2011		432		
145	11-188	W 57 St (333) bt 8 Av and 9 Av	6/7/2011	6/8/2011		766		
146	11-190	W 176 St (502) bt Amsterdam Av and Audubon Av	6/12/2011	6/13/2011	268			
147	11-200	Edgecombe Av bt W 153 St and W 154 St	7/1/2011	7/6/2011		1326		
148	11-210	E 32 St (30) bt Madison Av and Park Av	6/26/2011	6/27/2011	434			
149	11-211	Charles St (105) bt Bleecker St and Hudson St	6/30/2011	7/1/2011		492		
150	11-212	6 Av and W 21 St	6/27/2011	7/13/2011		222	187	62
151	11-214	W 149 St (303) bt 8 Av and Bradhurst Av	6/29/2001	6/30/2011	164	319		
152	11-218	W 158 St and Edward Morgan Pl	7/7/2011	7/7/2011				
153	11-228	W 100 St and Manhattan Av	7/21/2011	7/22/2011		255		
154	11-251	E 86 St bet/ 2 Av & 3 Av	8/4/2011	8/5/2011		431		
155	11-282	W 54 St bt 9 Av and 10 Av	8/22/2011	8/23/2011	777			
156	11-321	W 106 St and Central Park W	9/20/2011	9/20/2011	548	26		
157	11-361	3 Av (1700) bt E 95 St and E 96 St	10/23/2011	10/24/2011	724	440		
158	11-427	W 72 St and Amsterdam Av	11/16/2011	11/16/2011		209		

Queens

N	LOG	Location	Start Date	Comp Date	Cleaned / Surveyed (LF)			
					<=24	>24 <=48	>48 <=60	>60
159	03-180	168 Place bt Gothic Dr and Highland Av	1/6/2011	1/6/2011	855			
160	04-401	86 St bt Eliot Av and 60 Dr	2/25/2011	3/1/2011	560			
161	08-273	B 84 St and B Channel Dr	1/3/2011	3/1/2011	796			
162	08-279	89 Av bt Parsons Blvd and 153 St	7/14/2011	7/15/2011	558			
163	09-043	186 St and 75 Av	4/2/2009	5/12/2011	94			
164	10-346	Bleecker St (2011) bt Fairview Av and Grandview Av	6/13/2011	6/14/2011	756			
165	11-008	169 St (104-21) bt 104 Av and 105 Av	2/28/2011	2/28/2011	554			
166	11-010	211 St (61-11) bt H Harding Exp and 64 Av	2/24/2011	2/24/2011	480			
167	11-016	Lefferts Blvd and Liberty Av	4/15/2011	4/15/2011	220			
168	11-029	109 St (97-45) bt 97 Av and 101 Av	2/16/2011	2/16/2011	531			
169	11-030	103 St (95-24) bt 95 Av and 97 Av	2/14/2011	2/14/2011	303			
170	11-037	Auburndale La (45001) bt 45 Av and 46 Av	2/24/2011	2/24/2011	702			
171	11-046	Queens Blvd and 57 St	4/20/2011	4/21/2011	490			
172	11-051	Jamaica Av bt 190 St and Francis Lewis Blvd	4/19/2011	4/22/2011	2654	538	382	
173	11-055	209 St (99-15)	3/1/2011	3/1/2011	315			
174	11-057	E Williston Av (263-10) bt 263 St and 264 St	3/25/2011	3/25/2011				
175	11-059	244 St and 61 Av	3/10/2011	3/10/2011	1492			
176	11-061	87 Rd (150-39) bt 150 St and 155 St	3/8/2011	3/9/2011	951	962		
177	11-079	149 St and Roosevelt Av	3/28/2011	3/28/2011	63	581		
178	11-082	170 St bt Linden Blvd and 115 Av	3/24/2011	3/24/2011	604			
179	11-088	79 Av (58-22) bt Cypress Av and 60 St	3/29/2011	3/29/2011	665			
180	11-106	189 St (75-39) bt 75 Av and Union Tpke	4/13/2011	4/14/2011	694			
181	11-114	120 Av and 222 St	4/26/2011	4/26/2011	41			
182	11-121	Northern Blvd (81-20) bt 81 St and 82 St	4/14/2011	4/14/2011	473			
183	11-122	Station Rd (195-03) bt 195 St and 196 St	4/14/2011	5/16/2011	531			
184	11-123	Jamaica Av and 165 St	4/21/2011	4/21/2011	252			
185	11-124	64 St (44-51) bt Queens Blvd and Laurel Hill Blvd	4/26/2011	4/26/2011	530			
186	11-127	Maple Av and Kissena Blvd	4/18/2011	4/18/2011	731			
187	11-132	60 St (32-11) bt 32 Av and Northern Blvd	4/25/2011	4/25/2011	692			
188	11-135	Powells Cove Blvd (160-15) bt 160 St and 161 St	4/27/2011	4/27/2011	300			
189	11-144	87 Rd (150-36) bt 150 St and 155 St	5/11/2011	5/12/2011	1079			
190	11-146	12 St (30-48) bt 30 Rd and 30 Dr	5/25/2011	5/25/2011	327			
191	11-152	Queens Blvd bt 69 Rd and 69 Av	6/13/2011	6/14/2011	630			
192	11-157	9 St (26-20) bt 26 Av and 27 Av	5/18/2011	5/18/2011	293			
193	11-158	109 Av (84-13) bt 84 St and 86 St	5/17/2011	5/17/2011	357			
194	11-161	244-16 129 Rd	5/18/2011	5/18/2011	663			
195	11-162	105 St (107-35) bt Liberty Av and 109 Av	5/13/2011	5/13/2011	712			
196	11-168	Caffrey Av bt B 9 St and Hurley Ct	5/23/2011	5/23/2011	734			
197	11-172	115 Av and 166 St	6/1/2011	9/27/2011	1988			
198	11-173	85 St (95-24) bt 95 Av and 97 Av	5/25/2011	5/25/2011	401			
199	11-175	Hempstead Av and Springfield Blvd	7/15/2011	7/16/2011	287	225		
200	11-176	Depew Av (240-37) and Willow Pl	6/29/2011	6/29/2011	616			
201	11-185	Foch Blvd and 146 St	6/24/2011	6/28/2011	1396			
202	11-189	81 St (62-37) bt 62 Av and Juniper Blvd N	6/15/2011	6/15/2011	694			
203	11-194	Fairview Av and Menhan St	6/14/2011	6/14/2011	579			
204	11-201	103 Av (92-13) bt 92 St and 93 St	6/22/2011	6/22/2011	522			
205	11-207	Brunswick Av (11-40) bt Virginia St and Sage St	6/30/2011	6/30/2011	569			
206	11-208	88 St (84-26) bt Park Lane S and 85 Rd	6/27/2011	6/27/2011	393			
207	11-209	58 Av (148-22) bt 148 St and 150 St	6/29/2011	6/29/2011	487			
208	11-213	24 St and 23 Av	6/27/2011	6/27/2011	255			
209	11-216	164 St (84-36) bt 84 Rd and 84 Dr	6/29/2011	6/29/2011	279			
210	11-217	94 St (97-37) bt 97 Av and 101 Av	6/29/2011	6/29/2011	655			
211	11-223	201 St bt 90 Av and 93 Av	7/8/2011	7/8/2011	785			
212	11-230	58 Av bt 183 St and Utopia Pkwy	7/13/2011	7/13/2011	424	28		
213	11-233	157 St (43-66) bt 43 Av and 45 Av	7/15/2011	7/19/2011	690			
214	11-241	Hazen St (20-40) bt 74 St and 73 St	7/26/2011	7/27/2011	858			

N	LOG	Location	Start Date	Comp Date	Cleaned / Surveyed (LF)			
					<=24	>24 <=48	>48 <=60	>60
215	11-242	96 St and 30 Av	8/1/2011	8/2/2011	348			
216	11-243	124 St (13-29) bt 13 Av and 14 Av	7/28/2011	7/28/2011	489			
217	11-244	Dartmouth St (67-122) bt Yellowstone Blvd and 68 Av	8/2/2011	9/19/2011	1753			
218	11-247	174 St and 67 Av	8/10/2011	8/10/2011	278	102		
219	11-248	241 St (52-23) bt 52 Av and 53 Av	9/8/2011	9/9/2011	934			
220	11-249	108 St (107-47) bt 107 Av and 109 Av	8/4/2011	8/4/2011	835			
221	11-253	88 St (163-61) bt 163 Av and 164 Av	9/6/2011	9/7/2011	731			
222	11-254	102 St (40-31) bt 40 Rd and 41 Av	8/8/2011	8/8/2011	193			
223	11-256	225 St (147-36) bt 147 Av and 148 Av	8/11/2011	8/12/2011	322			
224	11-257	160 Av (101-06) bt 101 St and 102 St	9/15/2011	9/15/2011	264			
225	11-258	Gillmore St (24-33) bt 24 Av and 25 Av	8/8/2011	8/8/2011	607			
226	11-262	Parsons Blvd (35-14) bt 35 Av and Northern Blvd	9/15/2011	9/15/2011	424			
227	11-268	97 St (94-26) bt Atlantic Av and 95 Av	9/14/2011	9/14/2011	315			
228	11-269	70 St (59-45) bt Caldwell Av and 60 Av	9/12/2011	9/12/2011	738			
229	11-270	53 Av (66-09) bt 66 St and 68 St	9/13/2011	9/13/2011	524			
230	11-274	45 St (48-110) bt 48 Av and 50 Av	9/15/2011	9/15/2011	616			
231	11-281	86 Rd (139-16) bt 139 St and 143 St	9/12/2011	9/13/2011	785			
232	11-285	49 St (21-28) bt Ditmars Blvd and 21 Av	9/30/2011	9/30/2011	905			
233	11-290A	172 St bt 105 Av and 108 Av, Polhemas Av HSA Q2 G1	10/11/2011	10/12/2011	5737			
234	11-290B	102 Av,Inwood St,Lloyd Rd,105 Av, Liberty Av HSA Q2 G2	10/20/2011	10/27/2011	1664			
235	11-290C	Guy Brewer Blvd,164 Pl, 110 Rd,164 St,109 Dr HSA Q2 G3	12/2/2011		848			
236	11-290D	116 Av,146 St,148 St,116 Dr HSA Q2 G4	11/22/2011		7198			
237	11-290G	Zoller Rd, Merrick Blvd,Selover Rd Leslie Rd and Ursina Rd HSA Q2 G7	12/19/2011	1/4/2012	4358			
238	11-290J	94 Rd,218 St,Springfield Blvd,97 Av, 98 Av,219 St, 99 Av,220 St,221 St, H	11/3/2011		5631	640		
239	11-291	45 St (39-25) bt 39 Av and Skillman Av	8/25/2011	8/30/2011			1003	
240	11-295	219 St and 135 Av	9/22/2011	9/22/2011	493			
241	11-296	47 St bt 39 Av and 43 Av	8/26/2011	8/31/2011	1497			
242	11-298	Avon St (86-49) bt Dalny Rd and Wexford Terr	9/26/2011	9/26/2011	525			
243	11-302	B 84 St bt Rockaway Freeway and B Channel Dr	9/21/2011	9/22/2011	273			
244	11-331	235 St and 43 Av	11/2/2011		395			
245	11-339	72 Rd (139-07) bt 139 St and 72 Crst	11/1/2011	11/1/2011	261			
246	11-340	87 St (35-15) bt 35 Av and 37 Av	11/1/2011	11/2/2011	743			
247	11-341	Glenwood St (43-20) bt 41 Dr and Borough Boundary	11/4/2011	11/4/2011	1000			
248	11-343	77 St (94-17) bt Atlantic Av and 95 Av	11/7/2011	11/10/2011	809			
249	11-347	106 St (105-15) bt 103 Av and Liberty Av	11/10/2011	11/16/2011	641			
250	11-353	223 St (134-00) bt Merrick Blvd and 134 Rd	11/16/2011	11/16/2011	570			
251	11-360	263 St and 76 Av	10/26/2011	10/28/2011	825	74		
252	11-371	146 Av and 159 St	11/30/2011	11/30/2011	504			
253	11-385	Linden Blvd (157-11) bt 157 St and 158 St	11/17/2011	11/22/2011		4126		
254	11-457	Crescent St (43-08) bt 43 Av and 44 Rd	12/21/2011	12/29/2011	450			

N	LOG	Location	Start Date	Comp Date	Cleaned / Surveyed (LF)			
					<=24	>24 <=48	>48 <=60	>60

Staten Island

255	11-034	Holand Av (136) bt Benjamin Pl and Macormac Pl	1/28/2011	3/4/2011	1897			
256	11-041	N Railroad Av (877) bt Stobe Av and Jefferson Av	2/3/2011	2/9/2011	2048			
257	11-042	Hylan Blvd and Reid Av	2/10/2011	2/10/2011	750			
258	11-056	Larkin St (52) bt Kirkland Ct and Sharpe Av	3/2/2011	3/2/2011	453			
259	11-065	Richmond Av (1409) bt Lamberts Av and Lander Av	3/8/2011	3/9/2011	1750			
260	11-067	Sand St (22) bt SE and Bay St	4/5/2011	4/5/2011	388			
261	11-073	Newberry Av (35) bt Richmond Rd and Bank Pl	4/5/2011	4/5/2011	536			
262	11-085	Hancock St (42) bt Cromwell Av and Garretson Av	4/8/2011	4/11/2011	122			
263	11-086	Villa Av (581) bt Dixon Av and a bend	3/31/2011	4/4/2011	1530			
264	11-087	Sharpe Av and Grove Av	4/11/2011	4/11/2011	544			
265	11-090	Hylan Blvd (1400) bt Quintard St and Reid Av	4/8/2011	4/8/2011	606			
266	11-101	Harbor Rd (290) bt Continental Pl and Confederation Pl	3/30/2011	3/30/2011	572			
267	11-159	Van Pelt Av (363) bt Netherland Av and Forest Av	5/20/2011	5/20/2011	952			
268	11-186	Franklin Av bt Richmond Terr and Van Buren St	6/23/2011	6/23/2011	247			
269	11-191	Charles Av (247) bt Crittenden Pl and Nicholas Av	6/22/2011	6/22/2011	254			
270	11-197	Jersey St (121) bt Richmond Terr and bend	6/16/2011	6/16/2011	479	99		
271	11-198	Brabant St (150) bt Lockman Av and Grandview Av	6/20/2011	6/20/2011	2472			
272	11-205	Egbert Av bt Jewett Av and Karen Ct	6/22/2011	6/23/2011	601	621		
273	11-238	Walnut St (76) bt Bard Av and Davis Av	10/11/2011	10/11/2011		550	258	
274	11-239	Curtis Ct (2) bt DE and Henderson Av	9/16/2011	9/21/2011	434			
275	11-240	Davis Av (224) bt Walnut St and Henderson Av	7/29/2011	7/29/2011	808			
276	11-250	Steuben St (639) bt Radcliff Rd and Hyland Blvd	9/7/2011	9/13/2011	509			
277	11-266	Gower St (284) bt Westwood Av and Holden Blvd	9/9/2011	9/9/2011	512			
278	11-271	Cortland St (11) bt Post Av and Palmer Av	9/9/2011	9/11/2011	264			
279	11-276	Beverly Rd (164) bt Steuben St bt Allendale Rd	9/8/2011	9/8/2011	1471			
280	11-299	Roff St (125) bt Vanderbilt Av and Oder Av	12/1/2011	12/1/2011	206			
281	11-303	Cromwell Circle (106)	9/22/2011	9/29/2011	1127			
282	11-309	Vincent Av (108) bt Dalton Av and Coverly St	11/21/2011	12/28/2011	738			
283	11-313	Park Av bt Richmond Terr and Church St	12/2/2011	12/2/2011	264			
284	11-318	Linda Av (59) bt Robin Rd and Fr Capodanno Blvd	10/3/2011	10/13/2011	1048			
285	11-322	Van St (17) bt Richmond Terr and Tompkins St	10/7/2011	10/7/2011	171			
286	11-327	Tompkins St (57) bt Brownell St and Quinn St	10/12/2011	10/18/2011	381			
287	11-338	Richmond Terr (476) bt Westervelt Av and Jersey St	12/2/2011	12/2/2011	524			
288	11-346	Castleton Av (807) bt Davis Av and Regan Av	12/7/2011	12/13/2011	878			
289	11-362	Crystal Av (229) bt Leonard Av and Waters Av	11/17/2011		458			
290	11-447	Taft Av (83) bt Bismark Av and Jersey St	12/13/2011		428			
291	11-493	Norway Av (190) bt Mc Clean Av and Cameron Av	12/30/2011	1/12/2012	413			
292	12-071	Alaska St (166) bt Henderson Av and Castleton Av	2/29/2012	3/9/2012				

The Bronx

293	10-355	Dr Kazimiroff Blvd bt Mosholu Pkwy and Bx River Pkwy SB	2/22/2011	2/22/2011				
294	11-137	Pelham Pkwy S SR bt Tenbroeck Av and Narragansett Av	4/21/2011	4/21/2011				
295	11-179	Waterbury Av and Balcome Av	6/30/2011	6/30/2011	541			
296	11-261	Turneur Av (424) bt Norton Av and Lacombe Av	8/9/2011	8/9/2011	592			

2011 CITYWIDE Total, LF:	**211,373** (40.03 mi)		**1/3/2011**	**12/30/2011**	**181371**	**26293**	**3344**	**365**
Operating Expenses, $	**1,395,089.95**							

N	LOG	Location	Start Date	Comp Date	Cleaned / Surveyed (LF)			
					<=24	>24 <=48	>48 <=60	>60
2011 Total, LF:		**302,942** (57.38 mi)	**1/3/2011**	**12/30/2011**	**238238**	**33345**	**6192**	**25167**
Operating Expenses, $		**1,395,090**						
Sewer Segments Total:		2,680			2,072	299	43	111
Average Sewer Segment, LF:		113			115	112	144	227

Appendix 2

DEP BWT

Table 1 - Status of Regulators under SCADA

Map 1 – BWT CY 2011 Wastewater Collection Systems Cleaning Locations

Table 2 – BWT CY 2011 Wastewater Collection Systems Cleaning Locations

LIST OF REGULATORS UNDER SCADA

						UPDATED 03-14–2011				
		NYCDEP - List Of Regulators under SCADA								
	WPCP	Reg#	Location	SPDES	BEACH	Existing	SCADA		Expected	
					SENSITIVE	Telemetry System			Completion date	
1	WI(M)	02A	E. 74th ST. & FDR DR.	003		DYNAC	REG-027		31-Dec-12	
2	WI(M)	02B	N/O E. 74th ST. & FDR DR.	003			REG-027		31-Dec-12	
3	WI(M)	07	E.79th ST. & FDR DR.	008		DYNAC	REG-027		31-Dec-12	
4	WI(M)	23	E.106th ST. & FDR DR.	023		DYNAC	REG-027		31-Dec-12	
5	WI(M)	24	E.110th ST. & FDR DR.	024		DYNAC	REG-027		31-Dec-12	
6	WI(M)	38	E.135th ST. & E/O HARLEM R. DR.	038		DYNAC	REG-027		31-Dec-12	
7	WI(M)	45	W.147th ST. & IRT YARD	045		TRANSDYNE	REG-027		31-Dec-12	
8	WI(M)	46	W.151 st ST. & PLAYGROUND	046		DYNAC	REG-027		31-Dec-12	
9	WI(M)	51	N/S HARLEM RIVER DR. & W.167th ST.	051		TRANSDYNE	REG-027		31-Dec-12	
10	WI(M)	52	N/S HARLEM R. DR. & W.176th ST.	052		TRANSDYNE	REG-027		31-Dec-12	
11	WI(B)	53	BRUCKNER BLVD. & BROOK AV.	068		DYNAC	REG-027		31-Dec-12	
12	WI(B)	58	MAJOR DEEGAN S/S 138th ST.	075		DYNAC	REG-027		31-Dec-12	
13	WI(B)	60	JEROME AV. & McCOMB.D PARK	062		TRANSDYNE	REG-027		31-Dec-12	
14	WI(B)	62	UNDERCLIFF & SEDGEWICK AV.	060			REG-027		31-Dec-12	
15	WI(B)	66	N/O FORDHAM RD. W/S MAJOR DEEGAN	057		TRANSDYNE	REG-027		31-Dec-12	
16	WI(B)	67	E.192nd ST. W/O BAYLEY AV.	056		DYNAC	REG-027		31-Dec-12	
17	WI(B)	68	E.149th ST. & EAST RIVER	072		DYNAC	REG-027		31-Dec-12	
18	NR	N-03	W.201st ST. & HARLEM RIVER	017		DYNAC		REG-026	29-Dec-10	
19	NR	N-16	DYKMAN ST. & HENRY HUDSON PKWY.	006		TRANSDYNE	REG-027		31-Dec-12	
20	NR	N-18	RIVERSIDE DR. & W.172nd. ST.	004		DYNAC		REG-026	29-Dec-10	
21	NR	N-23	ST.CLAIR PLACE & 12th AV.	043		DYNAC		REG-026	29-Dec-10	
22	NR	N-26	RIVERSIDE PARK @ W.96th ST.	040		TRANSDYNE		REG-026	29-Dec-10	
23	NR	N-28	RIVERSIDE PARK @ 80th ST.	038		TRANSDYNE		REG-026	29-Dec-10	
24	NR	N-29A	FREEDOM PL. @ W.66th ST.	046		DYNAC		REG-026	29-Dec-10	
25	NR	N-33	TWELFTH AV. @ W.48th ST.	033		DYNAC		REG-026	29-Dec-10	
26	NR	N-45	TWELFTH AV @ W.30th ST.	027		DYNAC		REG-026	29-Dec-10	
27	NR	N-50	ELEVENTH AV. @ W.18th ST.	023		DYNAC		REG-026	29-Dec-10	
28	HP	01	E.177th ST. E/O TIERNEY PL	022	✔	TRANSDYNE	REG-027		31-Dec-12	
29	HP	02	SHORE DR. S/O PENNYFIELD AV.	021	✔	DYNAC	REG-027		31-Dec-12	
30	HP	03	CALHOUN AV. S/O SCHURZ AV.	019	✔	TRANSDYNE	REG-027		31-Dec-12	
31	HP	04	BRUSH AVE & BRUCKNER BLVD	016	✔	DYNAC	REG-027		31-Dec-12	
32	HP	05	WHITE PL RD. S/O RIVER AV.	011	✔	TRANSDYNE	REG-027		31-Dec-12	
33	HP	06	WHITE PL RD. & 0'BRIEN AV.	011	✔	DYNAC	REG-027		31-Dec-12	
34	HP	08	TRUXTON ST. & OAKPOINT AV.	025		DYNAC	REG-027		31-Dec-12	
35	HP	09	TIFFANY ST. & EAST BAY AV.	002	✔	DYNAC	REG-027		31-Dec-12	
36	HP	10	HUNTS POINT AV. & RYAWA AVES.	003	✔	TRANSDYNE	REG-027		31-Dec-12	
37	HP	11	EMERSON AV. & SCHURZ AV.	017	✔	TRANSDYNE	REG-027		31-Dec-12	

LIST OF REGULATORS UNDER SCADA

	WPCP	Reg#	Location	SPDES	BEACH SENSITIVE	Existing Telemetry System	SCADA		Expected Completion date	
38	HP	12	ROBINSON AV. & SCHURZ AV.	018	✔	TRANSDYNE	REG-027		31-Dec-12	
39	HP	13	METCALF AV. & SOUNDVIEW PARK	009	✔	DYNAC	REG-027		31-Dec-12	
40	HP	14	EDGEWATER PARK	026	✔	TRANSDYNE	REG-027		31-Dec-12	
41	HP	15	CONNER ST. E/O HUTCHISON AV.	023			REG-027		31-Dec-12	
42	26W	01	TIDE GATE (26 WARD WPCP)	004	✔	DYNAC	REG-027		31-Dec-12	
43	26W	02	WILLIAMS & FLATLANDS AVES.	003	✔	DYNAC	REG-027		31-Dec-12	
44	26W	03	CRESENT ST. & FLATLANDS AV.	005		DYNAC	REG-027		31-Dec-12	
45	OH	01	92nd ST. & BELT PKWY	017	✔	DYNAC		REG-026	29-Dec-10	
46	OH	03	79th ST. E/O BELT PKWY (IN PARK)	018		TRANSDYNE	REG-027		31-Dec-12	
47	OH	04	71st ST. E/O BELT PKWY (IN PARK)	019		TRANSDYNE	REG-027		31-Dec-12	
48	OH	06	64th ST. BUSH TERMINAL	002				REG-026	29-Dec-10	
49	OH	06A	64th ST. IN RR YARD	002				REG-026	29-Dec-10	
50	OH	06B	64th ST. IN RR YARD	002				REG-026	29-Dec-10	
51	OH	06C	64th ST. BUSH TERMINAL	002	✔	TRANSDYNE		REG-026	29-Dec-10	
52	OH	07	49th ST. & 1st AV.	003				REG-026	29-Dec-10	
53	OH	07A	49th ST. & 1st AV.	003	✔	DYNAC		REG-026	29-Dec-10	
54	OH	07B	49th ST. & 1st AV.	003	✔			REG-026	29-Dec-10	
55	OH	07C	49th ST. & 1st AV.	003				REG-026	29-Dec-10	
56	OH	07D	43nd ST. & 1st AV.	004	✔	TRANSDYNE	REG-027		31-Dec-12	
57	OH	09A	17th AV. & BATH AV.	015	✔	DYNAC	REG-027		31-Dec-12	
58	OH	09B	17th AV. & 72nd ST.	015	✔	TRANSDYNE	REG-027		31-Dec-12	
59	OH	10	21st AVENUE & 83rd STREET	021		TRANSDYNE	REG-027		31-Dec-12	
60	OH	11	AVE. V & W. 11th ST.	021		DYNAC	REG-027		31-Dec-12	
61	NC(Q)	Q-01	RUST & 56th ST.	077			REG-027		31-Dec-12	
62	NC(B)	B-01	JOHNSON AV. W/O PORTER AV.	015		DYNAC		REG-026	29-Dec-10	
63	NC(B)	B-04	KENT AV. & TAYLOR ST.	014		DYNAC		REG-026	29-Dec-10	
64	NC(B)	B-05	DIVISION AV. W/O KENT AV.	013		DYNAC		REG-026	29-Dec-10	
65	NC(B)	B-06	S.5th AV. W/O KENT AV.	012		DYNAC		REG-026	29-Dec-10	
66	NC(B)	B-09	N.12th ST. & KENT AV.	006		DYNAC		REG-026	29-Dec-10	
67	NC(M)	M-01	CLARKSON ST. & WEST ST.	076		DYNAC		REG-026	29-Dec-10	
68	NC(M)	M-02	N/O CANAL ST. & WEST ST.	075		DYNAC		REG-026	29-Dec-10	
69	NC(M)	M-10	SOUTH ST. N/O BROAD ST.	069		TRANSDYNE	REG-027		31-Dec-12	
70	NC(M)	M-16	SOUTH ST. N/O DOVER ST.	078		DYNAC		REG-026	29-Dec-10	
71	NC(M)	M-17	SOUTH ST. & ROBERT WAGNER ST.	066			REG-027		31-Dec-12	
72	NC(M)	M-19	SOUTH ST. S/O CATHERINE SLIP	050		DYNAC		REG-026	29-Dec-10	
73	NC(M)	M-21	SOUTH ST & JEFFERSON ST.	063		DYNAC		REG-026	29-Dec-10	
74	NC(M)	M-36	FDR DR. & E.14th ST.	052		DYNAC		REG-026	29-Dec-10	
75	NC(M)	M-37	E.18th ST. & AV.C	049		TRANSDYNE		REG-026	29-Dec-10	
76	NC(M)	M-40	FDR DR. & E.26th ST.	045		DYNAC		REG-026	29-Dec-10	

LIST OF REGULATORS UNDER SCADA

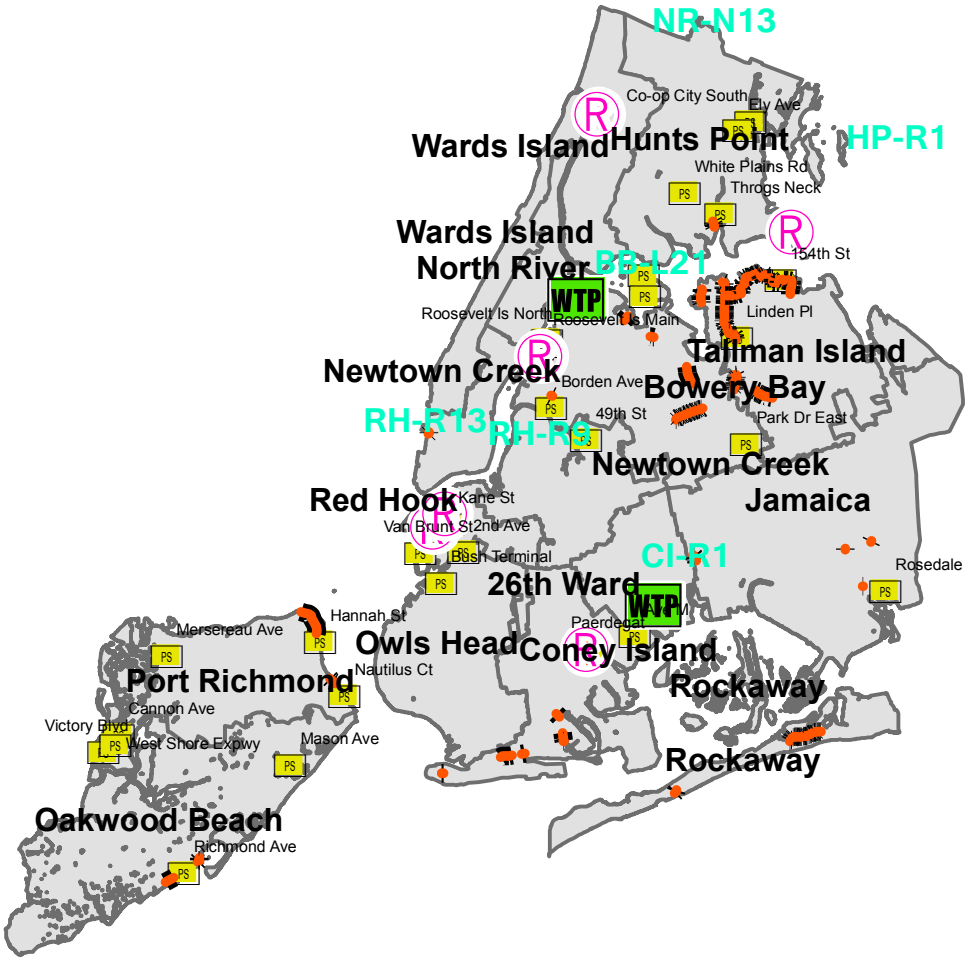
	WPCP	Reg#	Location	SPDES	BEACH SENSITIVE	Existing Telemetry System	SCADA		Expected Completion date	
77	NC(M)	M-42	E.33rd ST. E/O 1st AV.	041		DYNAC		REG-026	29-Dec-10	
78	NC(M)	M-44	E.41st ST. E/O 1st AV.	037		DYNAC		REG-026	29-Dec-10	
79	NC(M)	M-47	FDR DR. & E.49th ST.	036		DYNAC		REG-026	29-Dec-10	
80	NC(M)	M-50	FDR DR. & E.61st ST.	032		DYNAC		REG-026	29-Dec-10	
81	RH	R-02	WOLCOTT ST. & CONOVER ST.	028		DYNAC		REG-026	29-Dec-10	
82	RH	R-20	GOLD ST. @ PLYMOUTH ST.	004		DYNAC		REG-026	29-Dec-10	
83	RH	R-20A	GOLD ST. @ PLYMOUTH ST.	004				REG-026	29-Dec-10	
84	RH	R-21	HUDSON AVE. @ PLYMOUTH ST.	OO3		DYNAC		REG-026	29-Dec-10	
85	RH	R-21A	HUDSON AVE. @ PLYMOUTH ST.	OO3				REG-026	29-Dec-10	
86	JA	01	JFK AIRPORT	006		TRANSDYNE	REG-027		31-Dec-12	
87	JA	2	79TH STR.N.CONDUIT AVE	26W-005		DYNAC		REG-026	29-Dec-10	
88	JA	03	123rd. PLACE & 150th ST.	003	✔	DYNAC		REG-026	29-Dec-10	
89	JA	09	LINDEN & SPRINGFIELD BLVDS.	005		TRANSDYNE	REG-027		31-Dec-12	
90	JA	14	124th ST. & N.CONDUIT AV.	003a		TRANSDYNE		REG-026	29-Dec-10	
91	TI	09	LINDEN PL & 32nd AV.	011		TRANSDYNE	REG-027		31-Dec-12	
92	TI	10A	144th ST. & E/O MALBA AVE	003		TRANSDYNE	REG-027		31-Dec-12	
93	TI	13	15th DR. & WILLETS POINT BLVD.	023		TRANSDYNE	REG-027		31-Dec-12	
94	TI	30	QUINCE AV. & KISSENA BLVD.	010		TRANSDYNE	REG-027		31-Dec-12	
95	TI	40	FRESH MEADOW La & PECK AV.	010		TRANSDYNE	REG-027		31-Dec-12	
96	TI	46	210 th ST. & LIE (N.S)	008	✔	TRANSDYNE	REG-027		31-Dec-12	
97	TI	47	218th ST & LIE (N.S)	008	✔	TRANSDYNE	REG-027		31-Dec-12	
98	TI	49	220th PL. & 46th AV.	008	✔	TRANSDYNE	REG-027		31-Dec-12	
99	BBL	L-04	47th AV. BETW. 28th & 29th ST.	026		DYNAC	REG-027		31-Dec-12	
100	BBL	L-21	37th AV. & VERNON BLVD.	028		DYNAC	REG-027		31-Dec-12	
101	BBL	L-22	VERNON BLVD & BROADWAY	O29		DYNAC	REG-027		31-Dec-12	
102	BBL	L-23	30th RD. & VERNON BLVD.	030		DYNAC	REG-027		31-Dec-12	
103	BBL	L-30	ASTORIA PARKS E/O SHORE BLVD.	034		DYNAC	REG-027		31-Dec-12	
104	BBH	02	45th ST. & PLANT	002			REG-027		31-Dec-12	
105	BBH	03	HAGEN ST. & 19th ST. AV.	003		TRANSDYNE	REG-027		31-Dec-12	
106	BBH	06	108th ST.(31st DR)& DITMARS BLVD.	008		TRANSDYNE	REG-027		31-Dec-12	
107	BBH	09	108th ST. & 43rd. AV.	008		TRANSDYNE	REG-027		31-Dec-12	
108	RK	01	B.106th ST. & BEACH CHANNEL DR.	029		DYNAC	REG-027		31-Dec-12	
109	PR	R-13E	CANAL ST. & FRONT ST	031		TRANSDYNE		REG-026	29-Dec-10	
110	PR	R-35W	BODINE ST. & RICHMOND TERR.	035		DYNAC		REG-026	29-Dec-10	
111	PR	R-06W	RICHMOND TERR. & NICHOLAS AV.	029		DYNAC		REG-026	29-Dec-10	

REG-026 - CONSENT ORDER REGULATOR SCADA

REG-027 - NON-CONSENT ORDER REGULATOR SCADA

Environmental Protection

BWT Cleaning 2011



Legend

- WTP — WWTP
- R — Regulator
- Interceptor
- PS — Pump Station
- Drainage Area

TABLE 2

BWT CLEANING in 2011

DESCRIPTION	SIZES (IN)	LENGTH (FT)	LOCATION
Paerdegat PS	Various	Various	6016 Flatlands Av & Ralph Av, Brooklyn (56.30CY Removed)
Mersereau Ave PS	Various	Various	Mersereau Av & Netherland Av Staten Island, NY 10303 (28.47CY Removed)
Richmond Ave PS	Various	Various	Richmond Av & Prol PL, Staten Island, NY 10312 (125.37CY Removed)
Rikers Island North PS	Various	Various	Rikers Island North , NY 10470 (98.83CY Removed)
Rikers Island South PS	Various	Various	Rikers Island South , NY 10470 (20.99CY Removed)
Linden Place PS	Various	Various	N-E Corner of Linden Pl. & 31st Rd., Flushing NY 11354 (44.37CY Removed)
Cliff St/Nautilus Court PS	Various	Various	Cliff St. & Nautilus Court, Staten Island, NY 10305 (3.48CY Removed)
Roosevelt island Main PS	Various	Various	Inside Sanitation Facility, Roosevelt Island, NY 10044 (6.29CY Removed)
Roosevelt island North PS	Various	Various	Near Coler Hospital, Roosevelt Island, NY 10044 (4.34CY Removed)
29th & 28th St/Bush Terminal PS	Various	Various	West of 2nd Av Between 28th & 29th St., B'klyn, NY 11220 (12.70CY Removed)
Kane ST PS	Various	Various	N-W Corner Kane St. & Hicks St.-W., B'klyn, NY 11231 (24.30CY Removed)
Hannah St PS	Various	Various	1 MurrayHulbert St., SI, NY 10301 (104.28CY Removed)
West Shore Expwy PS	Various	Various	West Shore Expwy. & Victory Blvd., SI, NY 10314 (0.97CY Removed)
Victory Blvd PS	Various	Various	Victory Blvd. Near Con Ed-Plant S/O of W. Shore Expwy., SI, NY 10314 (0.97CY Removed)
Cannon Ave PS	Various	Various	Cannon Ave. Near Prices Lane & Glen St., SI, NY10314 (3.87CY Removed)
Mason Ave PS	Various	Various	Mason Ave S/O Slater Blvd., SI, NY 10305 (0.32CY Removed)
Ave M PS	Various	Various	N/side of Ave M b/n E99th St & E100th St., B'klyn, NY11236 (2.00CY Removed)
NCQ 49th St. PS	Various	Various	49th St. & 57th Ave., Maspeth, NY 11378 (2.00CY Removed)
Borden Ave PS	Various	Various	Borden Ave. & Review St., LIC, NY 11101 (2.00CY Removed)
154th St. PS	Various	Various	Powells Cove Blvd & 154th St., Whitestone, NY 11357 (7.00CY Removed)
BB Park Dr. East PS	Various	Various	Park Dr. E., b/n 77th Ave. & 73rd Terr., Flushing, NY 11367 (10.00CY Removed)
HP Ely Ave PS	Various	Various	Ely Ave. & Waring Ave., BX, NY 10469 (3.00CY Removed)
OH 2nd Ave PS	Various	Various	2nd Ave. & 5th St., B'klyn, NY 11215 (4.00CY Removed)
RH Van Brunt St.	Various	Various	Foot of Van Brunt St. near Read st., B'klyn, NY 11231 (2.00CY Removed)
JA Rosedale PS	Various	Various	147th Ave. & Brookville Blvd. W., Rosedale, NY 11422 (18.40CY Removed)
HP White Plains Rd	Various	Various	White Plains Rd. & Cross Bronx Expwy., BX, NY 10462 (48.00CY Removed)
HP Co-op City South PS	Various	Various	Hutchinson River Pkwy East & Einstein Loop, BX, NY 10475 (7.00CY Removed)
HP Throgs Neck PS	Various	Various	Lafayette Ave., East of Zerega Ave., BX, NY 10475 (8.00CY Removed)
WI Aeration Tanks 2 & 3	Various	Various	7 Wards Island New York, NY 10035 (14.00CY Removed)
WI Pre-House 1 & Tent Cleaning	Various	Various	7 Wards Island New York, NY 10035 (6.00CY Removed)
WI Pre-Tank Effluent	Various	Various	7 Wards Island New York, NY 10035 (34.00CY Removed)
WI Pre-Tank 1 Cleaning	Various	Various	7 Wards Island New York, NY 10035 (48.00CY Removed)
WI South Contact Tank Cleaning	Various	Various	7 Wards Island New York, NY 10035 (138.00CY Removed)

BWT CLEANING in 2011

DESCRIPTION	SIZES (IN)	LENGTH (FT)	LOCATION
WI Tank #34 / Pant Drain Cleaning	Various	Various	7 Wards Island New York, NY 10035 (2.00CY Removed)
WI Tank #33 Cleaning	Various	Various	7 Wards Island New York, NY 10035 (9.00CY Removed)
26W Plant Centrate Vault Cleaning	Various	Various	122-66 Flatlands Ave., Brooklyn, New 11207 (2.00CY Removed)
26W Catch Basins & Floor Drains	Various	Various	122-66 Flatlands Ave., Brooklyn, New 11207 (4.00CY Removed)
Red Hook Regulator RH09 (DIV CHMBER) Cleaning	14 x 14	Various	Hamilton Av. & Ferry PL (4.00CY Removed)
Red Hook Regulator RH13 (T.G CHMBER) Cleaning	8 x 12	Various	Atlantic Av. W. of Furman St. (2.00CY Removed)
Hunts Point Regulator HP01 (T.G) Cleaning	18 x 12	Various	E. 177th St. E/O Tierney PL (7.00CY Removed)
Bowery Bay Regulator BBL21 (D.P) Cleaning	30 x 24	Various	37th Ave. & Vernon Blvd (0.50CY Removed)
North River Regulator NR-13 (DIV & T.G CHMBER)	15" Dia	Various	W. 215th St. & Harlem River (12.00CY Removed)
Coney Island Regulator CI-01	2EA 60 x 36	Various	Ralph Ave. & Flatlands Ave. (14.00CY Removed)
Port Richmond Regulator PRE03	12.00	24.00	Nautilus St. E/O Bay St., Staten Island, NY (3.38CY Removed)
WI Distribution Channel (WWTP)	Various	Various	7 Wards Island New York, NY 10035 (191.85CY Removed)
Bowery Bay Dewatering (WWTP)	Various	Various	43-01 Berrian Blvd, Astoria, New York 11105 (9.00CY Removed)
TI Interceptor	Various >=30	**37349.90**	Starting from (162nd St.&Cryders LA down to Powels cove Blvd, turns left on Powels Cove Blvd down to 154th St. to 10th Av, right on 10th Av down to 152nd St. straight to 7th Av down to Clintonville St. to 6th Av down to 150th St. to 3rd Av, straight down across Whitestone SR E&W to Parsons BL down to Malba Dr. straight to 7th Av down onto 141st St. straight to 11th Av, makes right turn down on 11th Av to 130th St. Another south branch interceptor cleaned started downstream of TI_Reg-9 Linden PL & 32 Av straight down to Whitestone SR E, makes left on SR E down to Farrington St. makes right turn across Whitestone EP & SR W thru Parking Lot easement onto Ulmer St. straight down to 130th St all the way across 11th Av down to 7th Av, makes left on 7th Av down to 129th St. straight down & across Powels cove BL into TI WWTP plant. The second south branch interceptor cleaned started from Lawrence St & 58th Av down to Booth Memorial Av & College Point BL straight down to Avery Av. The third south branch interceptor cleaned started from 157th St. & Booth Memorial Av straight down across Kissena BL down to 148th St., makes right on 148th St. down to 56RD straight down to 56RD & 146th St (2173.86CY Removed)

BWT CLEANING in 2011

DESCRIPTION	SIZES (IN)	LENGTH (FT)	LOCATION
BB East Branch Interceptor	Various >=30	**6276.04**	The east branch BB interceptor cleaning started from Horace Harding Expressway SR S & 93rd St. across Long Island Expressway onto 94th St. & Horace Harding Expressway SR N. Another east interceptor branch cleaned in BB started from 81st St. & 19th Av across 20th Av mid-way down on 81st St. onto Marine Terminal RD easement (112.48CY Removed)
JA West Branch Interceptor	54 x 54	**1066.67**	The west branch JA interceptor cleaning started from downstream of Reg-J-13 (mid-way b/n N & S Conduit Av, South of 79th St.) along S Conduit Av straight down to Linden Blvd (359.55CY Removed)
26W East Branch Interceptor	60 x 60	**459.99**	The east branch 26W interceptor cleaning started from mid-way of Fountain Av onto Spring Creek easement area (12.08CY Removed)
CI North Branch Interceptor	Various >=30	**3110.46**	The north branch CI interceptor partially cleaned started from three manholes upstream of Paerdegat Pumping Station on Ralph Av, across Flatlands Av through control chamber at Paerdegat facility down onto Ralph Av all the way to E 72nd St. including interceptor line segment between E66th St & Av M on Ralph Av (634.35CY Removed)
Rk East and West Branch Interceptor	Various >=30	**6243.04**	The east branch RK interceptor started from BCH54 & BCH56 along BCH Chnnl Dr. straight down to BCH71st St., turns left on BCH70th St through an easement to BCH76th St on BCH Chnnl Dr. The west branch interceptor cleaned started from the center of Jacob Riis PK DY towards the easement on Jacob Riis PK DY exit to BCH Chnnl Dr (463.83CY Removed)
PR East Branch Interceptor	Various >=30	**859.73**	The east branch PR interceptor partially cleaned started in between Camden St & one Manhle upstream of Lynhurst Av on Edgewater St, including interceptor line segment at the corner of Nautilus St & Bay St (21.5CY Removed)

TOTAL DEBRIS REMOVED IN 2011 = 4927.63 Cubic Yards
TOTAL TV/SONAR INSPECTION IN 2011 =265431 Linear ft.

Appendix 3

Estimation of Wet-Weather Capture

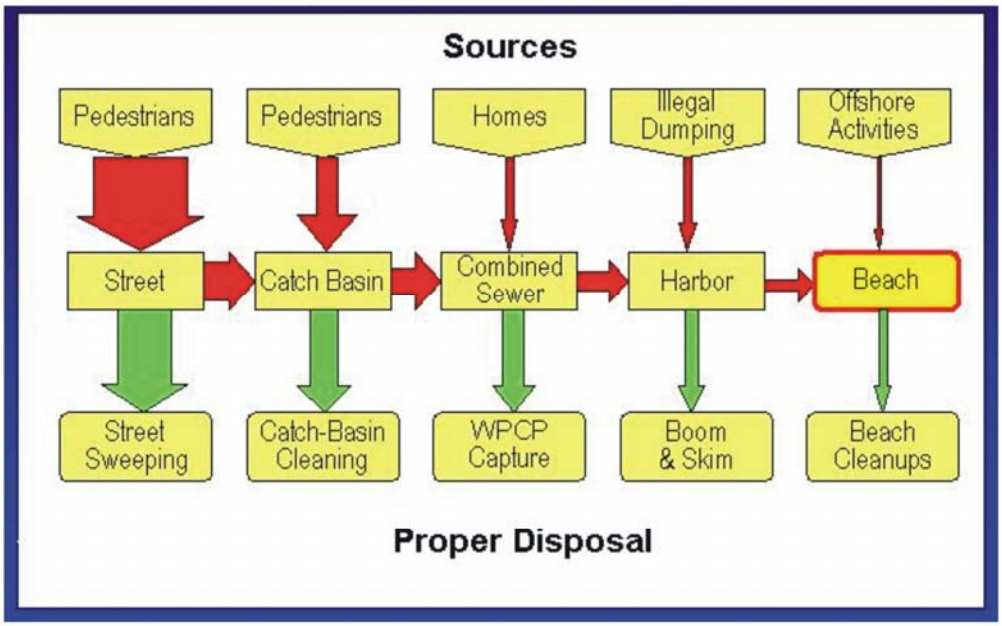
3.0 ESTIMATION OF WET-WEATHER CAPTURE

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) 2011. 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 2011. Section 3.4 describes the 2011 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 2011. 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



1200 MacArthur Boulevard Mahwah, New Jersey 07430 (201) 529-5151 f: (201) 529-5728	Figure 3-1 Sources and Fate of Floatables in New York City	Environmental Protection
	Annual Report on Best Management Practices for CSOs	

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 2011, the percent-capture analyses utilize the InfoWorks modeling framework for all drainage areas except Oakwood Beach, where the use of RAINMAN was necessary as the InfoWorks model is 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.*

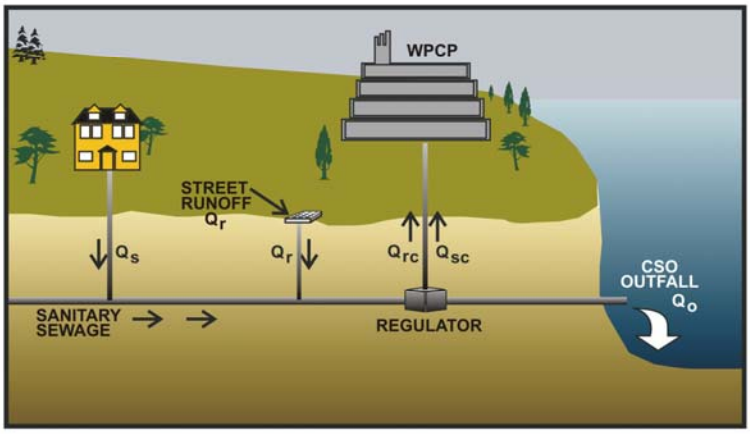
This definition of capture, herein referred to as "combined-sewage capture," is the ratio of CS volume captured at the WPCP to the total runoff and sanitary sewage entering the combined-sewer system during wet-weather periods.

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 **CS(COMBINED SEWAGE) CAPTURE**

"OLD CALCULATION METHOD" **"EPA GUIDANCE"**

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

HydroQual 1200 MacArthur Boulevard Mahwah, New Jersey 07430 (201) 529-5151 f: (201) 529-5728	Figure 3-2 Wet Weather Treatment Plant Capture Annual Report on Best Management Practices for CSOs	NYC Environmental Protection

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 2011: 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.

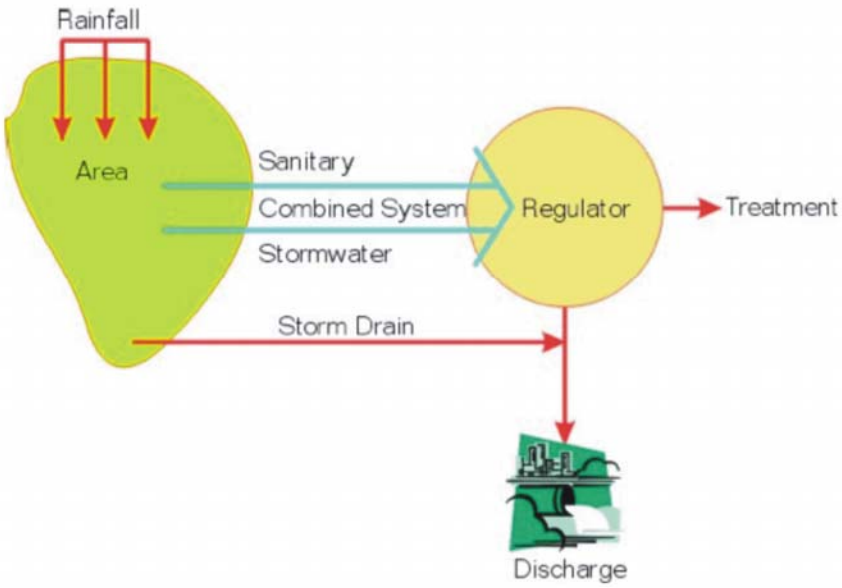
3.3.1 RAINMAN Model

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.



1200 MacArthur Boulevard Mahwah, New Jersey 07430 (201) 529-5151 f: (201) 529-5728	Figure 3-3 Schematic Representation of RAINMAN Model Annual Report on Best Management Practices for CSOs	NYC Environmental Protection

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 2011 calculations of percent capture of CSO and surface runoff only in the Oakwood Beach WPCP drainage area. The primary reason is that the InfoWorks models of this drainage area is 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 2011 for Oakwood Beach, RAINMAN was cross-calibrated against the influent flows observed at the plant. 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 2011 for Tallman 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.

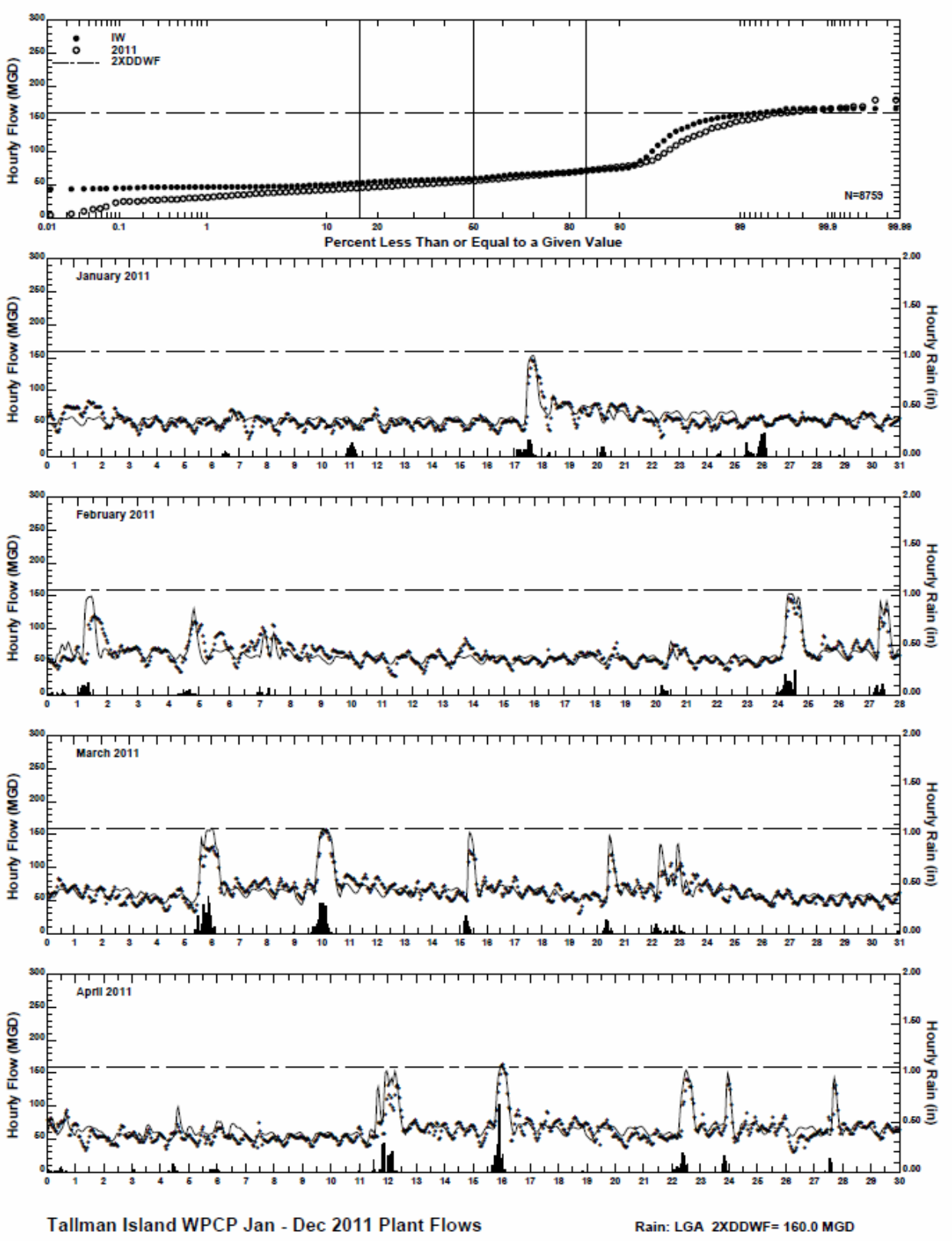


Figure 3-4
Infoworks Sample Calibration 2011

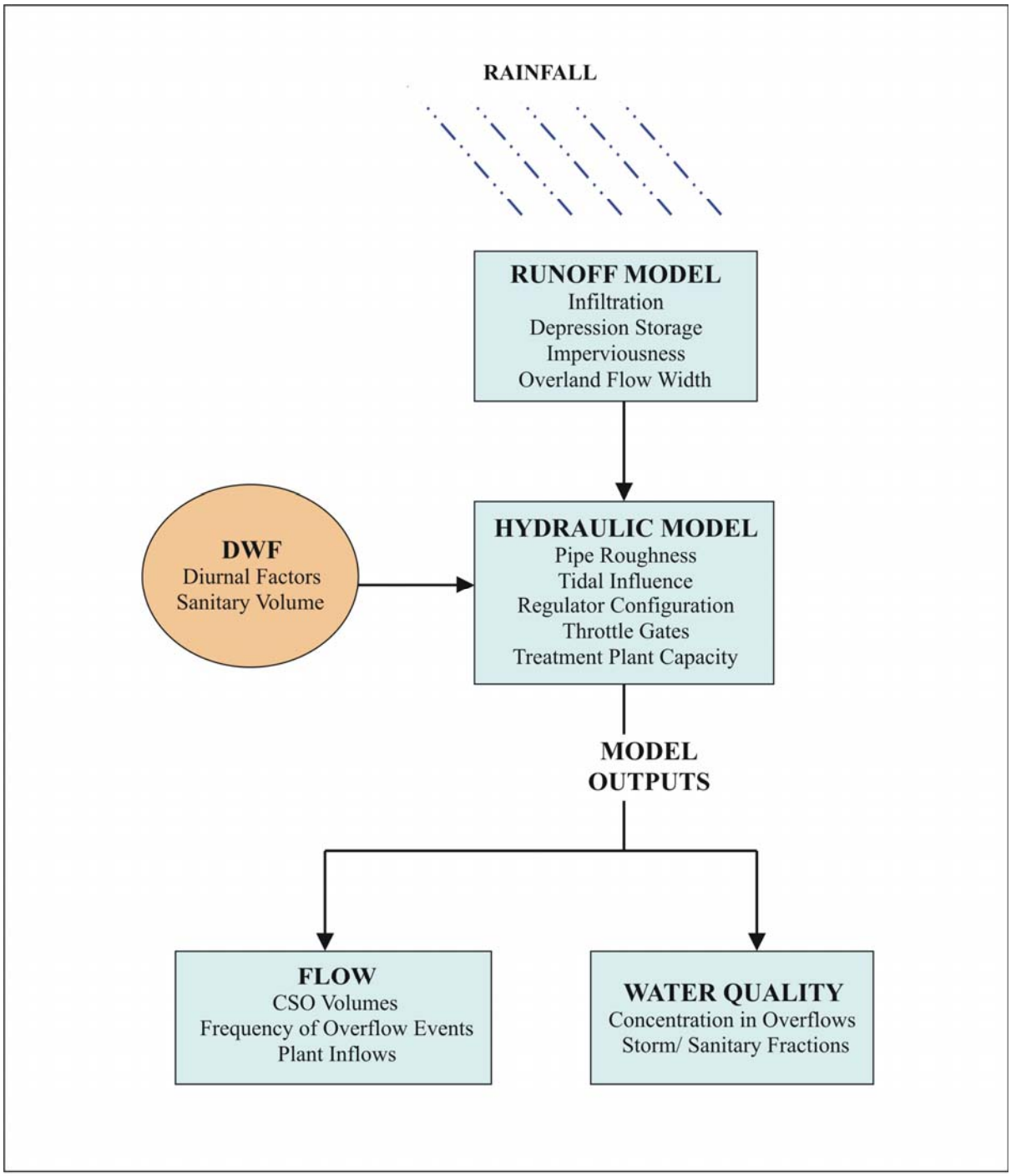


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Figure 3-5
Schematic Representation of InfoWorks Model

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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:

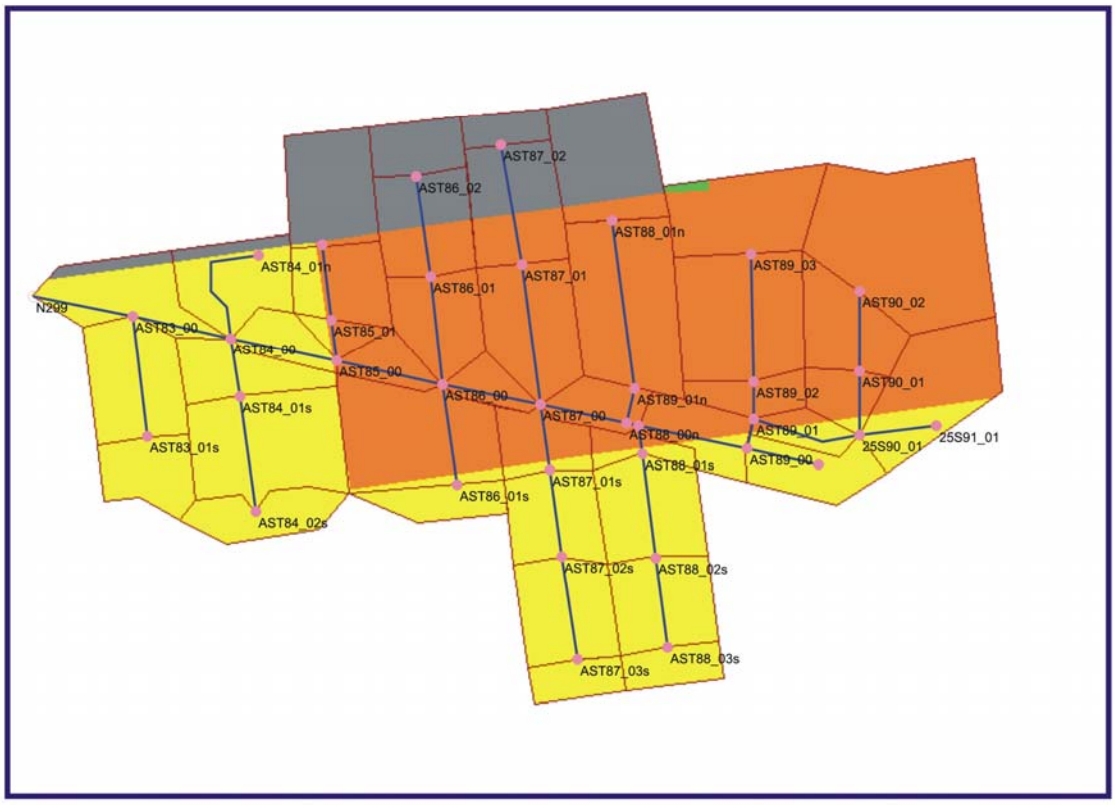
$$f = f_c + (f_o - f_c)\, e^{-kt} \qquad \text{(Horton Equation)}$$

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.



HydroQual 1200 MacArthur Boulevard Mahwah, New Jersey 07430 (201) 529-5151 f: (201) 529-5728	Figure 3-6 Geographical and Sewer System Data in the InfoWorks Model Annual Report on Best Management Practices for CSOs	NYC Environmental Protection

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

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

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

with:
- Q Discharge (m^3/s)
- A Cross-sectional area (m^2)
- g Acceleration due to gravity (m/s^2)
- θ Angle of bed to horizontal (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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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 Oakwood Beach, are summarized in Table 3-1.

3.4 COMBINED-SEWAGE CAPTURE RESULTS - 2011 FLOW VOLUME

Table 3-2 presents the results of the combined-sewage volume percent capture evaluation performed for 2011. The InfoWorks model was used to analyze drainage areas except for the Oakwood Beach WPCP area, which were analyzed using the RAINMAN model. A total of two scenarios were considered, as discussed in Section 3.2 - "Actual" refers to the actual conveyance/treatment system performance and rainfall in 2011 and "Standardized" refers to the actual conveyance/treatment system performance simulated with a "typical" rainfall condition.

Table 3-1. As-Modeled[5] WPCP Service Area Characteristics
Calendar Year 2011

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	0.49	50.5	85	143	170
BB	11,885	0.762	105	150	324	300
CI	6,062	0.68	86	110	233	220
HP	11,435	0.57	125	200	444	400
JA	5,240	0.45	76.5	100	242	200
NC	12,471	0.613	229	310	774	620[6]
NR	4,421	0.721	117	170	378	340
OH	9,329	0.61	88	120	260	240
PR	3,575	0.36	27	60	126	120
RH	2,991	0.6	27	60	135	120
TI	8,032	0.46	56	80	179	160
WI	9,591	0.61	198	275	556	500[7]
NYC CS Total	89,521	0.578[3]	1,185	1,720	3,794	3,390
Separate Areas						
RO[4]	NA	NA	18	45	68	90
OB[4]	NA	NA	34	40	115	80
NYC overall	NA	NA	1,237	1,805	3,977	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 2011

Case Name:	**"Actual"(1)**	**"Standardized"(2)**
Rainfall Condition:(4)	**Actual (2011)**	**Standardized (1988 JFK)**
Wet Weather Flows:	**Actual (2011)**	**Actual (2011)**
26	76	91
BB	63	62
CI(6)	81	83
HP	66	76
JA	62	69
NC	78	85
NR	85	90
OH	66	72
PR	67	90
RH	70	82
TI	68	80
WI	68	85
NYC avg.(5)	71	80

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 (2011)" refers to 2011 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, 2011). (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 2011 averaged 71 percent City-wide. Combined-sewage capture at individual, combined area WPCPs varied from a low at Jamaica (62 percent) to a high at North River (85 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 2011 was higher than what would be expected under more typical rainfall conditions (i.e., JFK 1988 rainfall). Under typical rainfall conditions, system operations in 2011 would have produced City-wide average combined-sewage volume captures of 80 percent. Results at individual combined-area WPCPs varied from a low at Bowery Bay of 62 percent to a high at 26th Ward of 91 percent.

3.7 REFERENCES

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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	July 2011	WWOP Approved (Jan. 2006) - awaiting DEC approval of the July 2011 version
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, October 2011	April 2010 version Approved (Jul. 2010) - awaiting DEC approval of the Oct. 2011 version
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 2011	July 2010 version Approved (Sept. 2010) - awaiting DEC approval of the July 2011 version
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, July 2011	appended to TI WWOP
Alley Creek	Dec. 2003	May 2007, Oct. 2007, Aug. 2009, April 2010, July 2010, July 2011	appended to TI WWOP
Peardegat Basin	Dec. 2003	May 2010, Oct. 2010	appended to CI WWOP
Corona Avenue	Dec. 2003		

Appendix 5

Dry Weather Raw Sewage Bypass Graph (2005 – 2011)

Dry Weather Raw Sewage Bypasses Summary (2005 – 2011)

Bypassing Cause Codes

Pump Station Bypass Summary

Pump Station Bypass Cause Code Summary

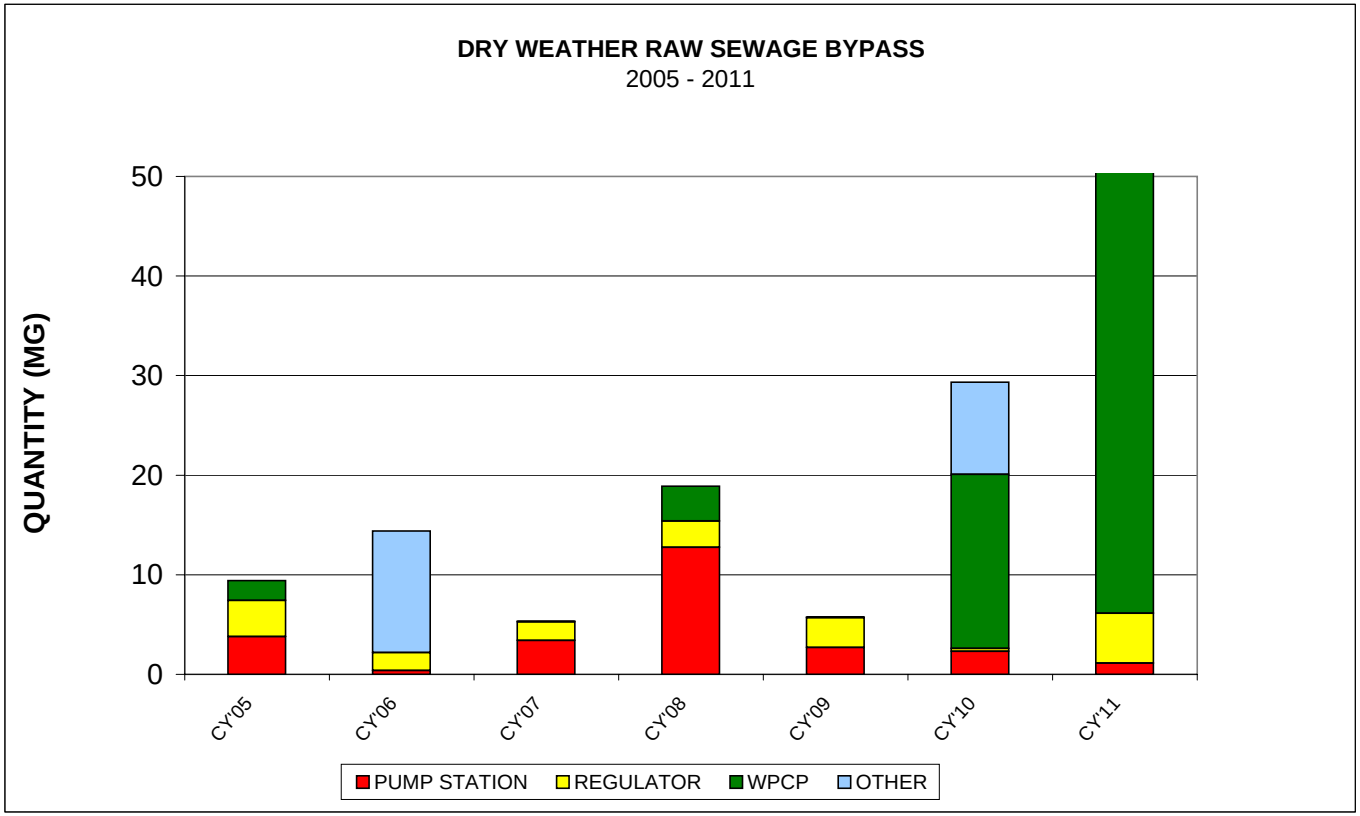
Pump Station Bypass Summary Itemized by Cause Code & P.S.s

Regulator Bypass Summary

Regulator Bypass Cause Code Summary

Regulator Bypass Summary Itemized by Cause Code & Location

WWTP Bypass



Dry Weather Bypassing CY'05-CY'09

SOURCE	CY'05	CY'06	CY'07	CY'08	CY'09	CY'10	CY'11
PUMP STATION	3.78	0.39	3.40	12.75	2.69	2.32	1.12
REGULATOR	3.64	1.80	1.86	2.63	2.99	0.27	5.02
WPCP	2.00	0.00	n/a	3.50	0.06	17.50	275.41
OTHER	0.00	12.21	0.06	0.02	0.02	9.25	0.00
TOTAL	9.42	14.40	5.32	18.90	5.76	29.34	281.55

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.

*In 2011, there was a Bypass during Wet Weather at Owls Head which is included in the above totals.

*In 2011, there was a fire at the North River WWTP which resulted in the plant being evacuated and taken completely offline for an extended period.

*In 2011, there was a bypass at Regulator PR-17E of raw sewage mixed with accumulated precipitation from reservoir (volume reported as bypassed includes precipitation).

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
CY2011	8	1.12	184.8

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
CY2011 *	6	5.02	47.3

*In 2011, there was a bypass at Regulator PR-17E of raw sewage mixed with accumulated precipitation from reservoir (volume reported as bypassed includes precipitation).

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
CY2011 *	5	275.41	72.3

*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.

*In 2011, there was a Bypass during Wet Weather at Owls Head which is included in the above totals.
for an extended period.

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
CY2011	0	0.00	0.0

*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 2011

LOCATION	EVENTS	%EVENTS	MG	%MG	HOURS	%HOURS
OH-Avenue V PS	1	13%	0.131	12%	3.00	0.02
PR Hannah Street P S	1	13%	0.338	30%	5.67	0.03
RK- Bayswater PS	1	13%	0.008	1%	164.25	0.89
TI-Linden Place PS	2	25%	0.521	47%	7.83	0.04
WI-W. 235th Street PS	1	13%	0.046	4%	0.45	0.00
WI-W. 254th Street PS	1	13%	0.002	0%	0.10	0.00
RH_Nevins Street PS	1	13%	0.072	6%	3.23	0.02
TOTAL	8	100%	1.118	100	184.83	100%

PUMP STATION BYPASSING
CY 2011
CAUSECODE BYPASS SUMMARY

CAUSE CODE	CODE DESCRIPTION	EVENTS	%EVENTS	MG	%MG	HOURS	%HOURS
2B	ELECTRICAL UTILITY FAILURE - NETWORK	3	38%	0.12	11%	3.78	2%
3A	ELECTRICAL EQUIPMENT FAILURE -Distrib.Equipment	1	13%	0.13	12%	2.83	2%
3C	ELECTRICAL EQUIPMENT FAILURE - MSP CONTROL SYSTEM	2	25%	0.73	65%	10.67	6%
8C	FLOODING - OTHER	2	25%	0.139	12%	167.25	91%
Total		8	100%	1.12	100%	184.53	100%

PUMP STATION BYPASSING
CY 2011
SUMMARY BY CAUSE CODE & PUMPING STATIONS

CASECODE: 2B ELECTRICAL UTILITY FAILURE -NETWORK

ITEM #	LOCATION	EVENTS	%EVENTS	MG	%MG	HOURS	%HOURS
5085	WI-W. 254th Street PS	1	13%	0.002	0%	0.10	0.1%
5141	WI-W. 235th Street PS	1	13%	0.046	4%	0.45	0.2%
5096	RH-Nevins Street PS	1	13%	0.072	6%	3.23	1.7%
	TOTAL	3	37.50%	0.120	10.73%	3.78	2.05%

CASECODE: 3A ELECTRICAL EQUIPMENT FAILURE -Distrib.Equipment

ITEM #	LOCATION	EVENTS	%EVENTS	MG	%MG	HOURS	%HOURS
5065	TI- Linden Place PS	1	13%	0.131	0.12	2.83	0.02
	TOTAL	1	13%	0.131	0.12	2.83	1.5%

CASECODE: 3C ELECTRICAL EQUIPMENT FAILURE -MSP Control System

ITEM #	LOCATION	EVENTS	%EVENTS	MG	%MG	HOURS	%HOURS
5124	PR Hannah Street P S	1	13%	0.338	30.2%	5.67	3.1%
5159	TI-Linden Place PS	1	13%	0.39	34.9%	5.00	2.7%
	TOTAL	2	25%	0.73	65.1%	10.67	5.8%

CASECODE: 8C Flooding. Other

ITEM #	LOCATION	EVENTS	%EVENTS	MG	%MG	HOURS	%HOURS
5148	OH-Avenue V PS	1	12.5%	0.131	11.7%	3.00	1.6%
5151	RK-Bayswater Avenue PS	1	12.5%	0.008	0.7%	164.25	89.1%
	TOTAL	2	25.0%	0.139	12.4%	167.25	90.7%

REGULATOR BYPASSING SUMMARY

CY 2011

CAUSECODE: 6A BLOCKAGES - REGULATOR

LOCATION	EVENTS	%EVENTS	HOURS	%HOURS	MG	%MG
PR-Reg. No. 31	1	17%	9.50	20.1%	0.00356	0.07%
PR-Reg. No. 17E	1	17%	17.33	36.7%	4.60000	91.56%
BB-Reg. No. 32A	1	17%	0.08	0.2%	0.00026	0.01%
TI-Reg. No. 06	1	17%	0.08	0.2%	0.00002	0.00%
BB-Reg. No. LL-32	1	17%	0.25	0.5%	0.00026	0.01%
PR-Reg. No. 03E	1	17%	20.00	42.3%	0.42000	8.4%
TOTAL	6	100%	47.25	100%	5.024	100%

REGULATOR BYPASSING CY2011

CAUSECODE BYPASS SUMMARY

CAUSE CODE	CODE DESCRIPTION	EVENT	%EVENTS	HOURS	%HOURS	QUANTITY	%QUANTITY
				(HRS)		(MG)	
6A	BLOCKAGES - Regulator	6	100	47.25	100	5.0240	100
	Total:	6	100	47.25	100	5.0240	100

REGULATOR BYPASSING
CY 2011

CAUSECODE: 6A BLOCKAGES-REGULATOR

LOCATION	STIME		SDATE	CAUSE FOR BYPASS	AMOUNT (MG)	DURATION (HR)
BBLL-Reg. No. 32A	11:55	AM	05/10/11	A blockage of debris was discovered in the diversion chamber	0.00026	0.08
BBLL-Reg. No. 32A	10:35	AM	06/06/11	A blockage of debris was discovered in the diversion chamber	0.00026	0.25
PR-Reg. No. 31	11:30	AM	01/13/11	Blockage in the regulator gate	0.003563	9.5
PR-Reg. No.03E	9:50	AM	09/17/11	A blockage of debris was discovered in the diversion chamber	0.42	8.17
TI-Reg. No. 06	7:45	AM	06/04/11	A blockage of debris was discovered in the diversion chamber	0.000016	0.08
PR-Reg. No. 17E	3:38	PM	04/12/11	A blockage was discovered in the downspout	4.6	17.33
CAUSE TOTAL					5.024	47.25

WWTP BYPASS
CY 2011

ITEM #	LOCATION	EVENTS	%EVENTS	MG	%MG	HOURS	%HOURS	TYPE
5086	HP- Hunts Point	1	20%	1.49	0.54%	0.92	1.27%	Raw Sewage Bypass
5105	JAM-Jamaica	1	20%	0.45	0.16%	0.33	0.46%	Raw Sewage Bypass
5108	NC-Newtown Creek	1	20%	5	1.82%	1.37	1.89%	Raw Sewage Bypass
5122	OH-Owls Head	1	20%	5.41	1.96%	7.25	10.02%	Raw Sewage Bypass
5140	NR-North River	1	20%	215 - 260	92.23%	52.20	72.18%	Raw Sewage Bypass
				10	3.63%	10.25	14.17%	
	TOTAL	**5**	**100%**	**275.41**	**100%**	**72.32**	**100**	

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, Esq., Chief
Division of Pollution Control and Monitoring

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

Average Daily Industrial and Influent Metals Loadings Per Year

1996 data could not be recalculated by the method used for 1997-2006 and 2011 not included.

Appendix 7 BWSO

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 2011 Catch Basin Hooding (Total number of hoods replaced by drainage area)

Catch Basin Hooding

Drainage Area	
26th Ward	68
Bowery Bay	25
Coney Island	68
Hunts Point	116
Jamaica	79
Newtown Creek	108
North River	11
Oakwood Beach	30
Owls Head	14
Port Richmond	7
Rockaway	22
Tallman Island	24
Wards Island	82
Total	**654**

Table 7.1-3: CY 2011 Catch Basin Survey & Cleaning

Borough	Total CB Surveyed	Scheduled CB Cleaned	Complaint Based CB Cleaned	Total CB Cleaned
BRONX	5,248	2,171	1,602	3,773
BROOKLYN	11,611	6,184	3,501	9,685
MANHATTAN	4,989	1,590	768	2,358
QUEENS	17,746	6,902	6,703	13,605
STATEN ISLAND	3,279	1,303	1,233	2,536
TOTAL:	**42,873**	**18,150**	**13,807**	**31,957**

Appendix 7 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-2B	City-Wide Floatable Material Recovery per Containment Sites
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 2004-2011

Table 7C-1. City-Wide Floatable Material Recovery 2004-2011

	2004	2005	2006	2007	2008	2009	2010	2011
No. Sites[1]								
FCP[2] Permanent	21.00	21.00	22.00	21.00	21.00	24.00	23.00	23.00
FCP Temporary[3]	2.00	2.00	1.00	2.00	2.00	2.00	1.00	1.00
Other Sites[4]	2.00	2.00	3.00	4.00	4.00	3.00	12.00	N/A
Total	25.00	25.00	26.00	27.00	27.00	29.00	36.00	24.00
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	1,988.25
FCP Temporary	2.00	3.00	18.00	25.50	18.25	1.00	5.00	1.50
Other Sites[4]	32.00	80.25	70.50	151.50	136.50	207.50	523.00	N/A
Total	**1,494.00**	**1,130.75**	**1,703.00**	**2,308.30**	**2,036.50**	**1,577.25**	**2,302.50**	**1,989.75**

[1] 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.

[4] Skimming en route to CSO containment sites.

[5] Total volume of floatables retrieved from sites during period.

Table 7C-2. City-Wide Floatable Material Recovery Per CSO Floatable Containment Sites, 2011

Month-Year	Bergen Basin	Bowery Bay	Bronx River	Bushwick Inlet	Coney Island Creek	Clason Point	Cryder's Point	East Branch	English Kills	Flushing Bay CS1(1)	Flushing Bay CS2(2)	Flushing Creek 1	Flushing Creek 2
Jan-11			30.0				1.0				18.0		8.0
Feb-11			36.0										11.0
Mar-11	18.0	3.0	190.0				2.0		10.0			1.0	
Apr-11	6.0	4.0	210.0				9.0			4.0		4.0	11.0
May-11	30.0		153.0						3.0		2.0		
Jun-11	6.0		85.0	1.5							3.0	3.0	9.0
Jul-11	9.0	2.0	30.0									6.0	1.5
Aug-11	51.0		135.5				3.0		3.0				
Sep-11	9.0		100.5			6.0							
Oct-11	12.0	4.5	30.0				5.0		6.0				
Nov-11	10.5	3.0	36.0						6.0				16.5
Dec-11			69.0				3.0			1.5	1.5		12.0
2011 Total	151.5	16.5	1105.0	1.5		6.0	23.0		28.0	5.5	24.5	14.0	69.0

Month-Year	Fresh Creek	Gowanus Canal	Hendrix Creek	Maspeth Creek	Owls Head(4)	Paerdegat Basin	Redhook Intake	Thurston Basin	Wallabout Channel 1	Wallabout Channel 2	Westchester Creek	Open Water(3)	2011 Total
Jan-11	5.0							30.0			6.0		**98.0**
Feb-11		1.0	11.0				1.0	10.0				8.0	**78.0**
Mar-11			2.0	2.0				6.0				24.0	**258.0**
Apr-11			10.0	7.0				2.0				81.0	**348.0**
May-11				7.0		15.0		3.0				48.0	**261.0**
Jun-11		0.5	3.0	14.0	3.0	4.0		1.5				27.0	**160.5**
Jul-11				1.0					0.5	2.0		12.0	**64.0**
Aug-11				9.75				3.0	1.5			6.0	**212.75**
Sep-11												15.0	**130.5**
Oct-11	12.0			1.5		0.5						54.0	**125.5**
Nov-11					6.0			3.0				48.0	**129.0**
Dec-11							1.5					36.0	**124.5**
2011 Total	17.0	1.5	26.0	42.3	9.0	19.5	2.5	58.5	2.0	2.0	6.0	359.0	**1989.75**

(1) Formerly known as Flushing Bay CS2.

(2) Formerly known as Flushing Bay CS3.

(3) See next page for skimming activities en route to CSO containment site.

(4) Formerly known as Buttermilk Channel.

Table 7C-2A. City-Wide Floatable Material Recovery While Navigating to Containment Sites, 2011

Month-Year	Flushing Bay	Gravesend Bay	East River	Jamaica Bay	Hudson River	Arthur Kill	Red Hook	Upper NY Bay	Gowanus Bay	2011 Total
11-Jan										
11-Feb	8.0									**8.0**
11-Mar		3.0		9.0				9.0		**21.0**
11-Apr			9.0	10.0				62.0		**81.0**
11-May				6.0				42.0		**48.0**
11-Jun				14.0				9.0		**23.0**
11-Jul								12.0		**12.0**
11-Aug					1.0	2.0				**3.0**
11-Sep								15.0		**15.0**
11-Oct				9.0			18.0	24.0		**51.0**
11-Nov								42.0		**42.0**
11-Dec								30.0	6.0	**36.0**
2011 Total	**8.0**	**3.0**	**9.0**	**48.0**	**1.0**	**2.0**	**18.0**	**245.0**	**6.0**	**340.0**

Table 7C-2B. City-Wide Floatable Material Recovery Near Containment Sites, 2011

Month-Year	Hendrix Creek	Wallabout 1 & 2	Bowery Bay	English Kills	Bronx River	2011 Total
11-Jan						
11-Feb						
11-Mar	3.0					**3.0**
11-Apr						
11-May						
11-Jun			4.0			**4.0**
11-Jul						
11-Aug		3.0				**3.0**
11-Sep						
11-Oct				3.0		**3.0**
11-Nov					6.0	**6.0**
11-Dec						
2011 Total	**3.0**	**3.0**	**4.0**	**3.0**	**6.0**	**19.0**

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	35	0	63	98
February	21	10	47	78
March	44	12	202	258
April	18	88	242	348
May	96	10	155	261
June	14.5	46	100	160.5
July	9	15.5	39.5	64
August	54	20.25	138.5	212.75
September	9	15	106.5	130.5
October	24.5	61.5	39.5	125.5
November	13.5	60	55.5	129
December	0	37.5	87	124.5
2011 TOTAL YTD	**338.5**	**375.75**	**1275.5**	**1989.75**

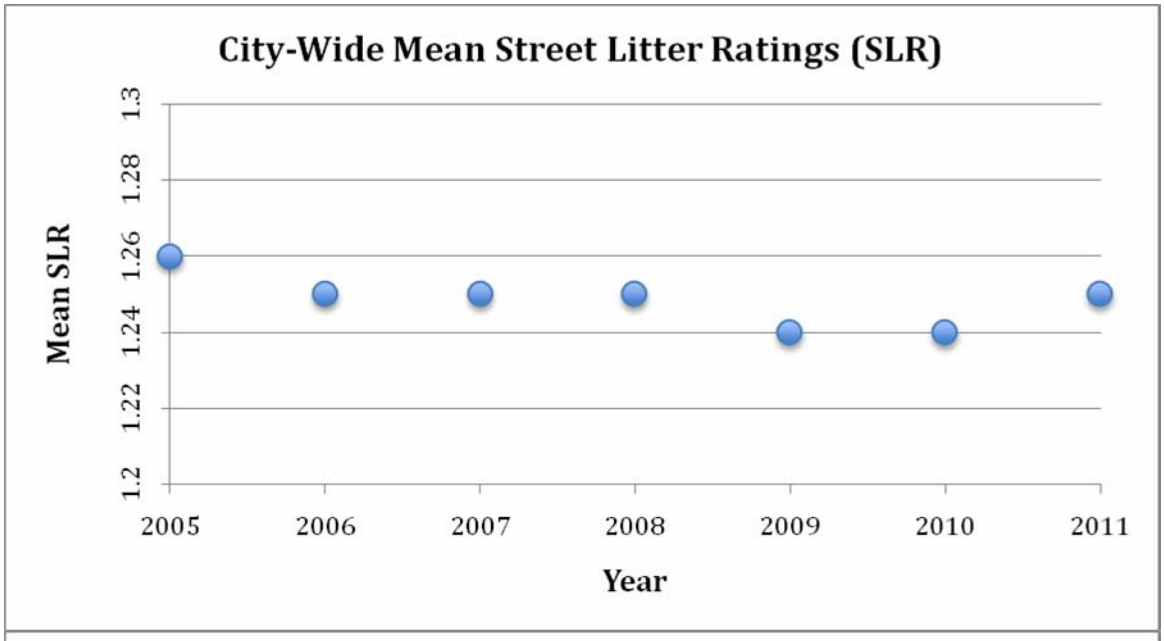
ZONE I	ZONE II/III	ZONE IV
BERGEN BASIN	BUSHWICK INLET	BOWERY BAY
FRESH CREEK	CONEY ISLAND	BRONX RIVER
HENDRIX CREEK	EAST BRANCH	CLASON POINT
PAERDEGAT BASIN	ENGLISH KILLS	CRYDERS POINT
SHEEPSHEAD BAY	GOWANUS CANAL	FLUSHING BAY I
SHELLBANK BASIN	MASPETH CREEK	FLUSHING BAY II
THURSTON BASIN	OWLS HEAD	FLUSHING CREEK I
	REDHOOK	FLUSHING CREEK II
	WALLABOUT I	HUNTS POINT
	WALLABOUT II	WESTCHESTER CREEK
	WHALE CREEK	

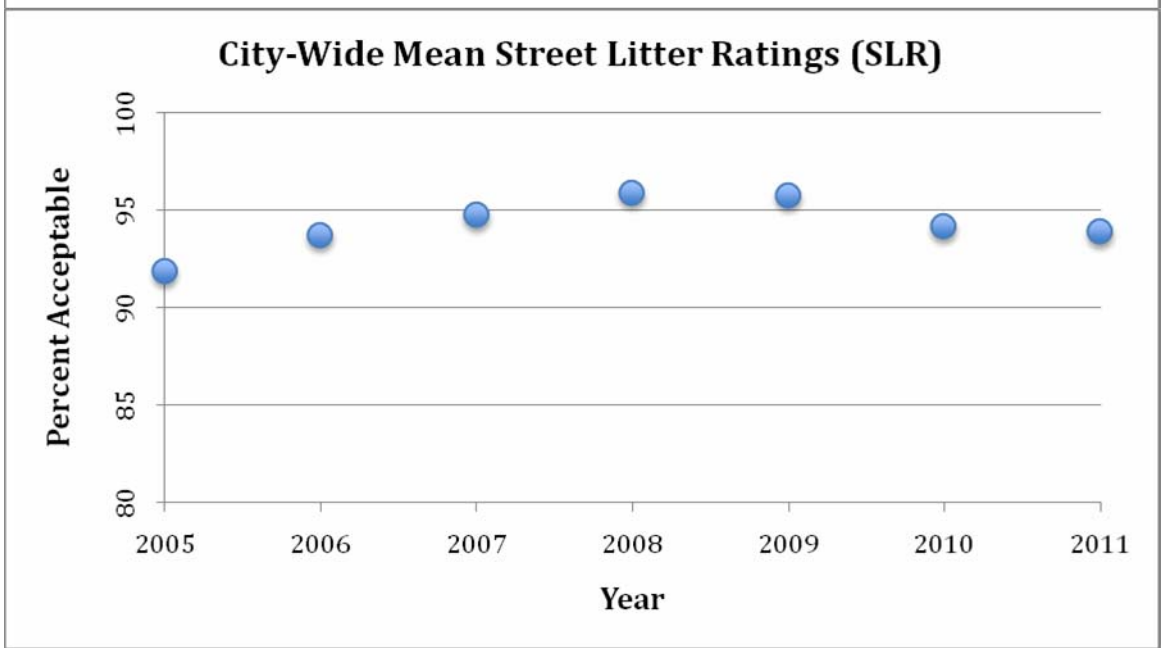
Table 7-2. City-Wide Street Cleanliness. 2005[1] – 2011

	Measure of Street Cleanliness Results of Scorecard Litter Ratings (SLR)						
Year	2005	2006	2007	2008	2009	2010	2011
Mean SLR [2]	1.26	1.25	1.25	1.25	1.24	1.24	1.25
% Acceptable [3]	91.9	93.75	94.78	95.92	95.8	94.86	93.9
Filthy [4]	0.69	0.32	0.32	0.14	0.20	0.18	0.21

Notes:

(1) Scorecard Program initiated 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





HydroQual 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	NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION DEP

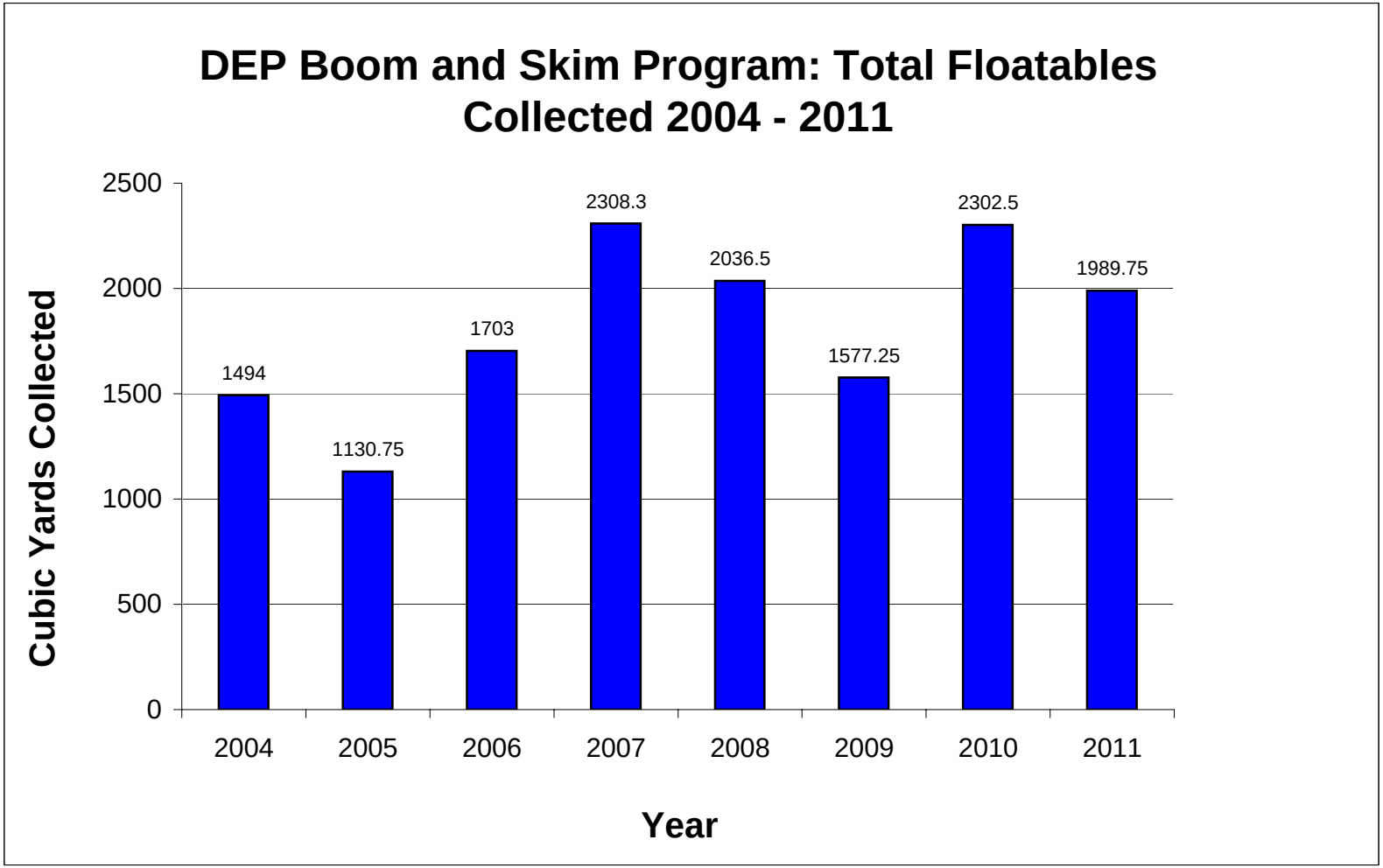


Figure7-3. City Floatable Material Recovery 2004 - 2011

Appendix 8

Sewer Certification Form

Site Connection Proposal Form

Coney Island District Infrastructure Implementation

HLSS Projects

- - - - - - - -

THIS IS NOT A PERMIT.

- - - - - - - -

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF SEWER REGULATION & CONTROL

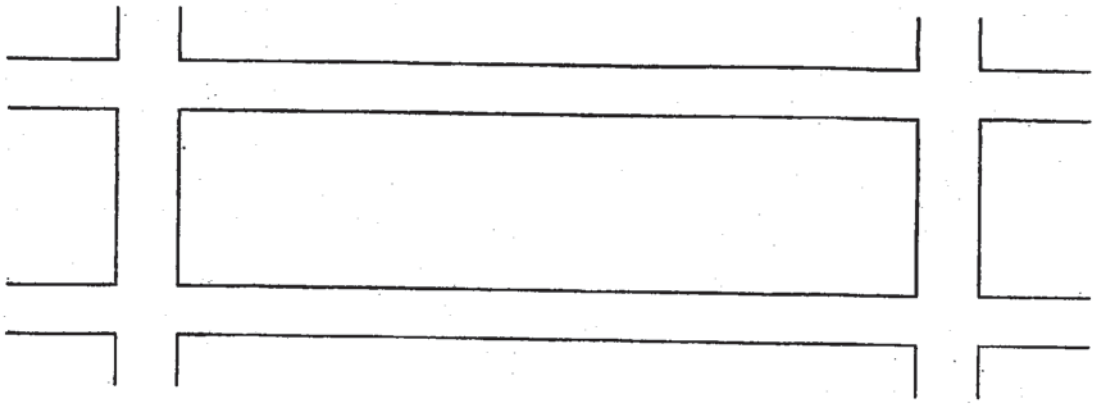
SEWER CERTIFICATION FORM
FOR 1-, 2-, or 3-Family Homes Only

PE/RA Signature and original seal

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

SITE CONNECTION PROPOSAL FORM

VALID FOR TWO (2) YEARS

(SC /)

PE/RA signatu and origina seal

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:

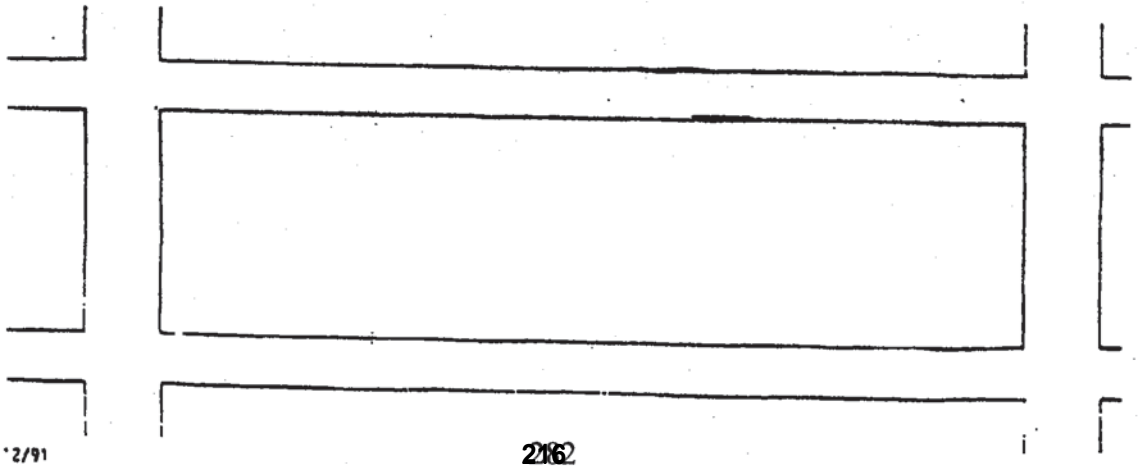
1. ☐ Conn. to Exist. Spur, Riser, or Curb Connectior
2. ☐ Proposed New Riser
3. ☐ Fold Spur in
4. ☐ Drill in
5. ☐ M.H. Conn ☐ Exist ☐ Prc
6. ☐ Reuse Plugged Connections

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"



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:

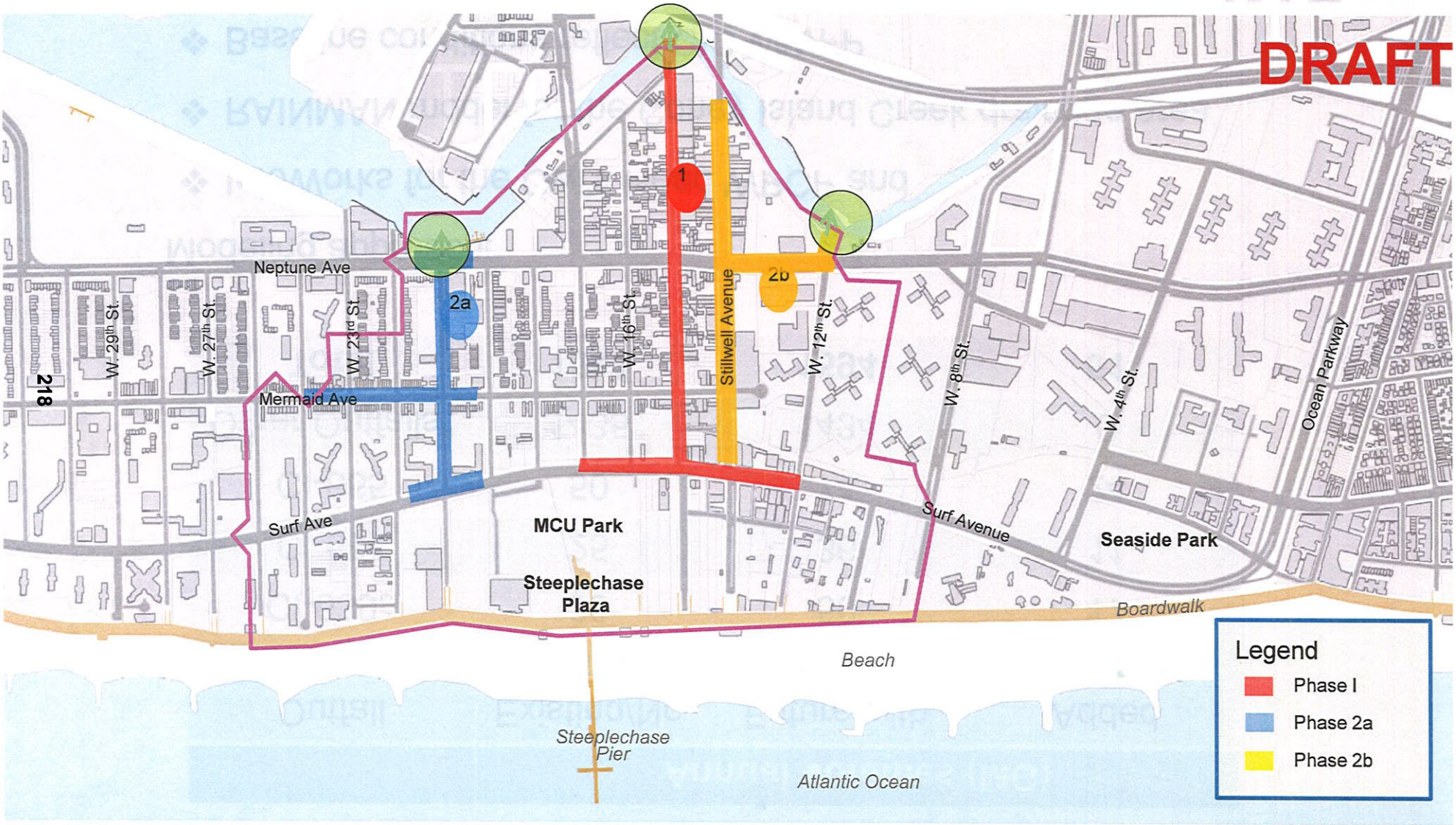
ADP and Implementation Phasing

NYC Environmental Protection

NYCEDC

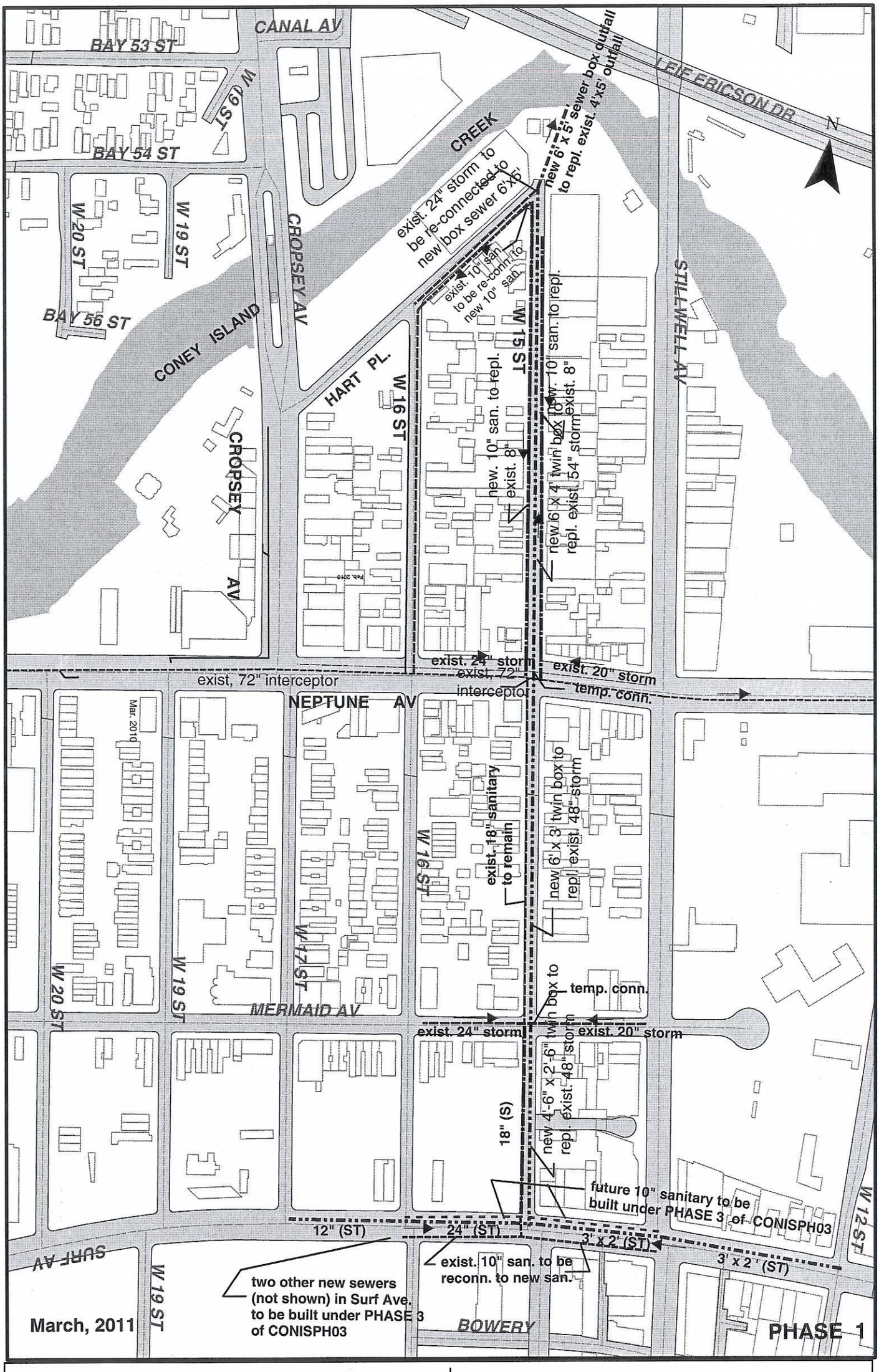
Coney Island District Infrastructure Implementation

Reference Map



This phasing diagram is conceptual only and subject to further DEP/DDC review

NYCEDC , Draft 03/22/2011
NYCDEP, Adapted 10/26/11



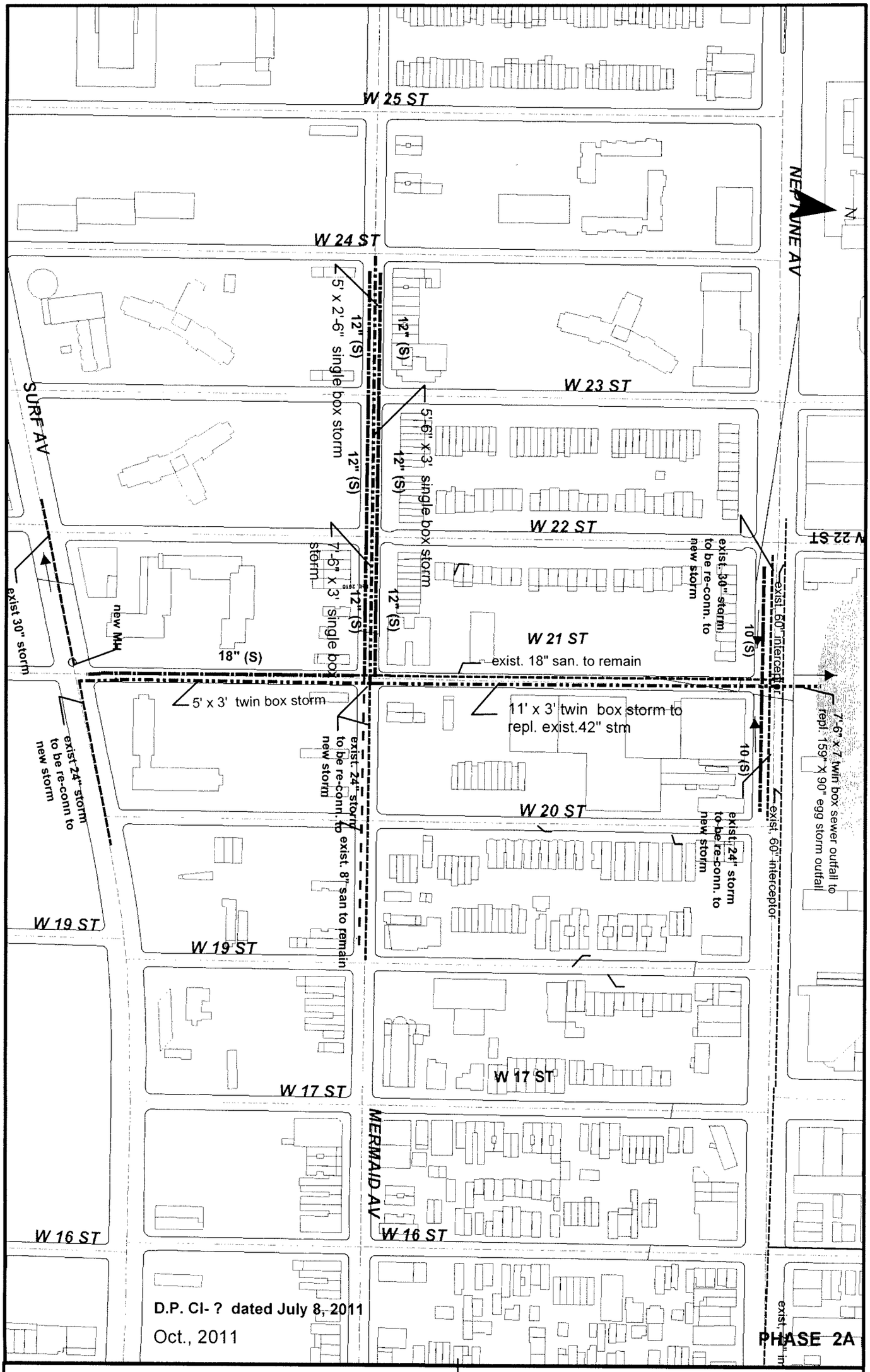
CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER AND SEWER OOPERATIONS
DIVISION OF CAPITAL PROGRAM DEVELOPMENT AND POLANNING

CONISPH01

BOROUGH: BROOKLYN

INSTLLATION OF STORM AND SANITARY SEWERS IN CONEY ISLAND AREA PHASE 1.

Sheet 1 of 1



CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER AND SEWER OOPERATIONS
DIVISION OF CAPITAL PROGRAM DEVELOPMENT AND PLANNING

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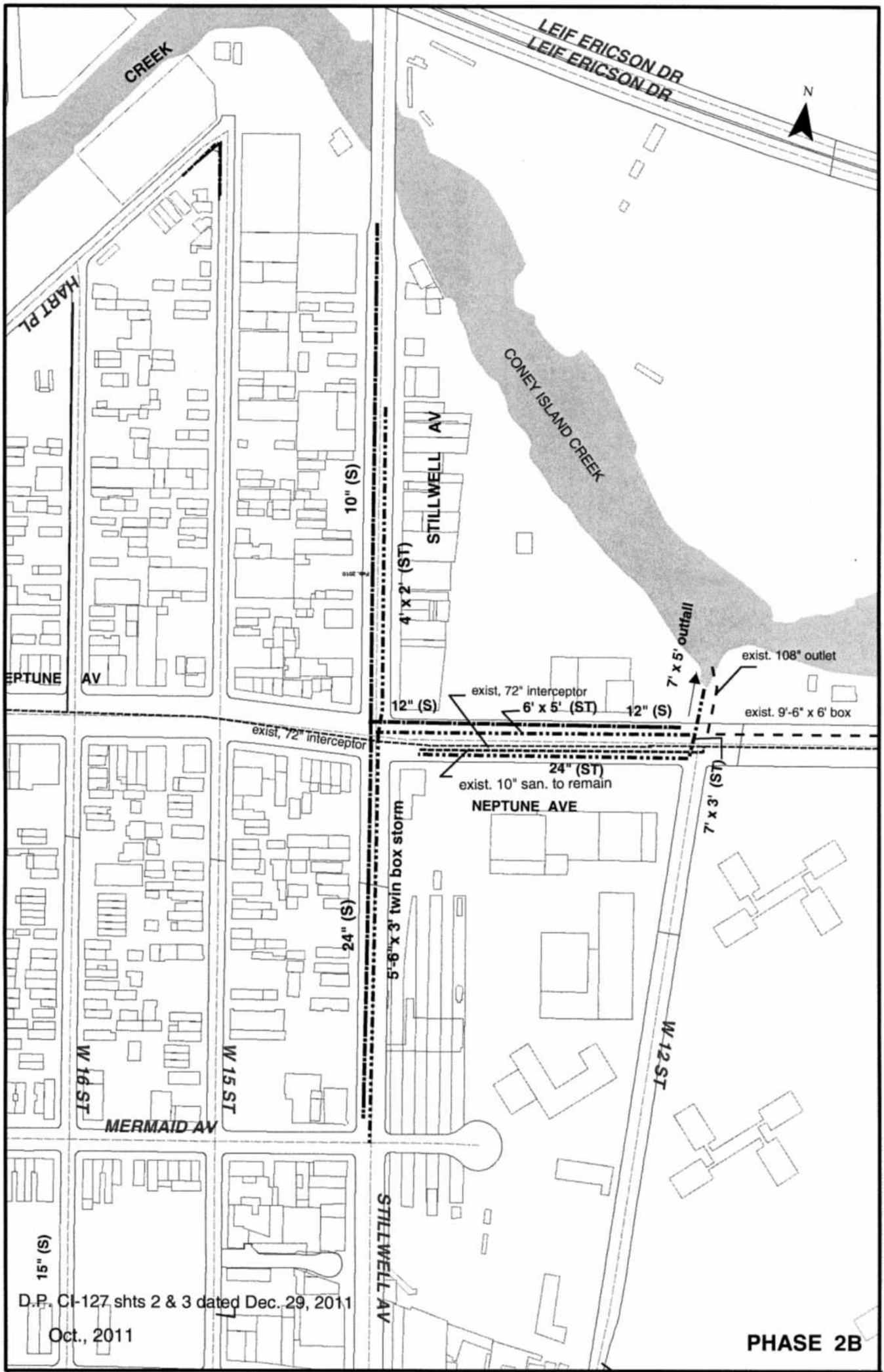
CONISPH2A

BOROUGH: BROOKLYN

INSTLLATION OF STORM AND SANITARY SEWERS IN CONEY ISLAND AREA.(PHASE 2A).

Sheet 2 of 3



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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER AND SEWER OOPERATIONS
DIVISION OF CAPITAL PROGRAM DEVELOPMENT AND PLANNING

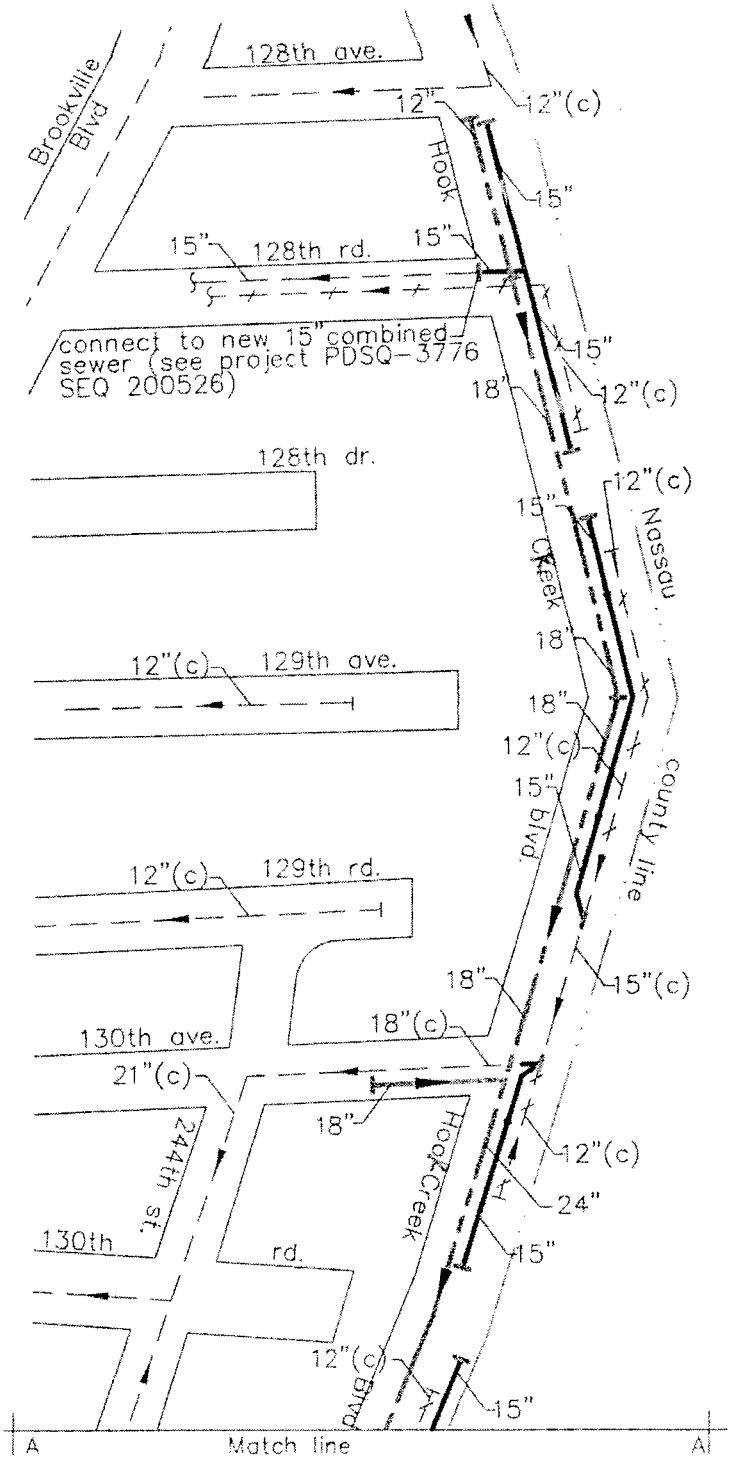
221

CONISPH2B

BOROUGH: BROOKLYN

INSTLLATION OF STORM AND SANITARY SEWERS IN CONEY ISLAND AREA PHASE 2B.

Sheet 3 of 3



SEQ200483

LEGEND
- EXISTING SEWER
- SANITARY (S) SEWER
- STORM (ST) SEWER
- COMBINED SEWER
- DIRECTION OF FLOW

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF WATER AND SEWER OPERATION
DIVISION OF CAPITAL PROGRAM DEVELOPMENT AND PLANNING

PDSQ-3602 BOROUGH-QUEENS

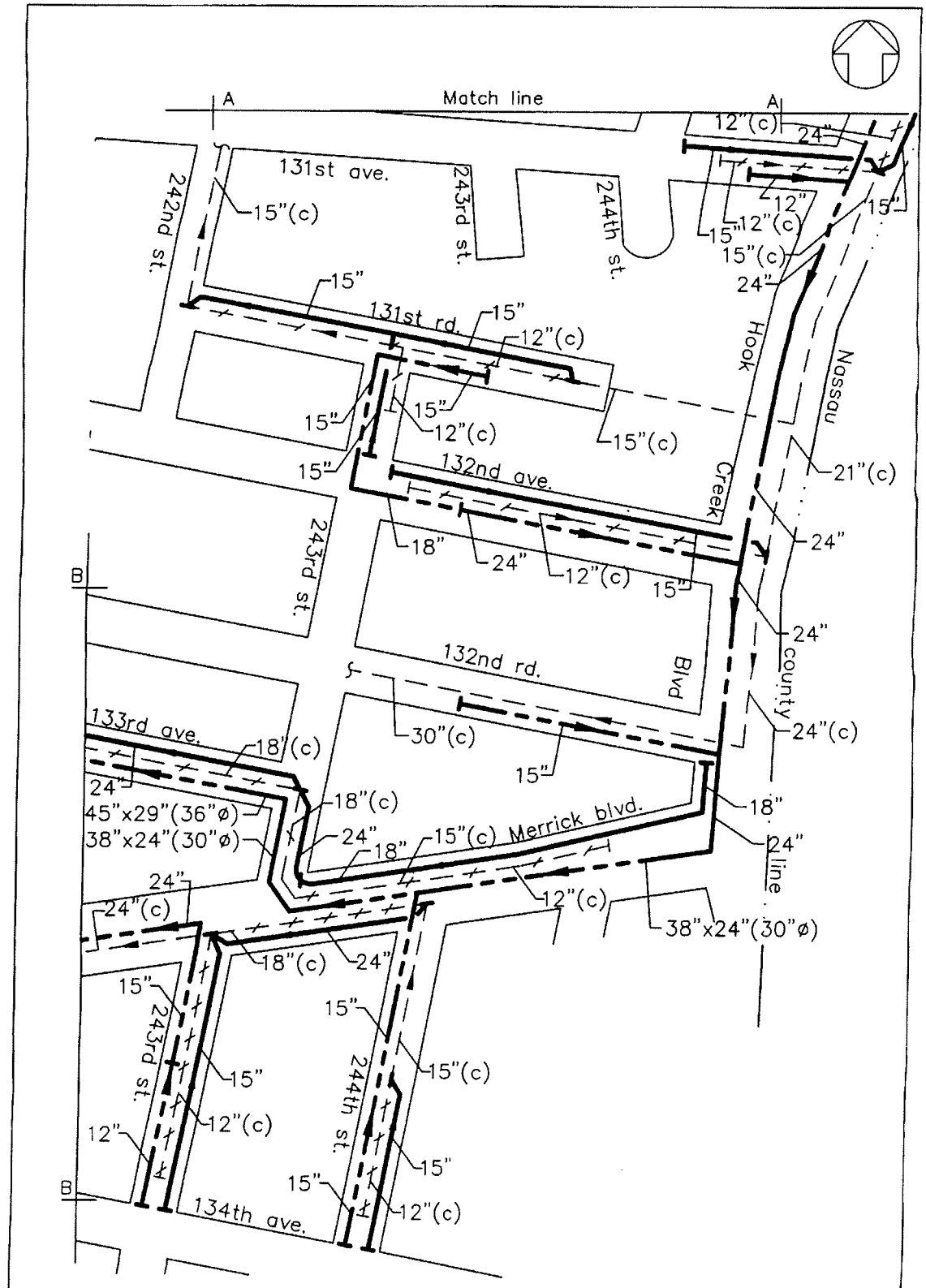
STORM AND COMBINED SEWERS IN HOOK CREEK BLVD

BETWEEN 128 AVENUE & MERRICK BLVD.

ETC. SHEET 1 OF 3

PROJECT ENGINEER SVETLANA BRICHKO

NOVEMBER, 2004;
FEBRUARY, 2006
MAY, 2007



SEQ200483

LEGEND

EXISTING SEWER
SANITARY (S) SEWER
STORM (ST) SEWER
COMBINED SEWER
DIRECTION OF FLOW

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF WATER AND SEWER OPERATION
DIVISION OF CAPITAL PROGRAM DEVELOPMENT
AND PLANNING

PDSQ-3602 BOROUGH-QUEENS

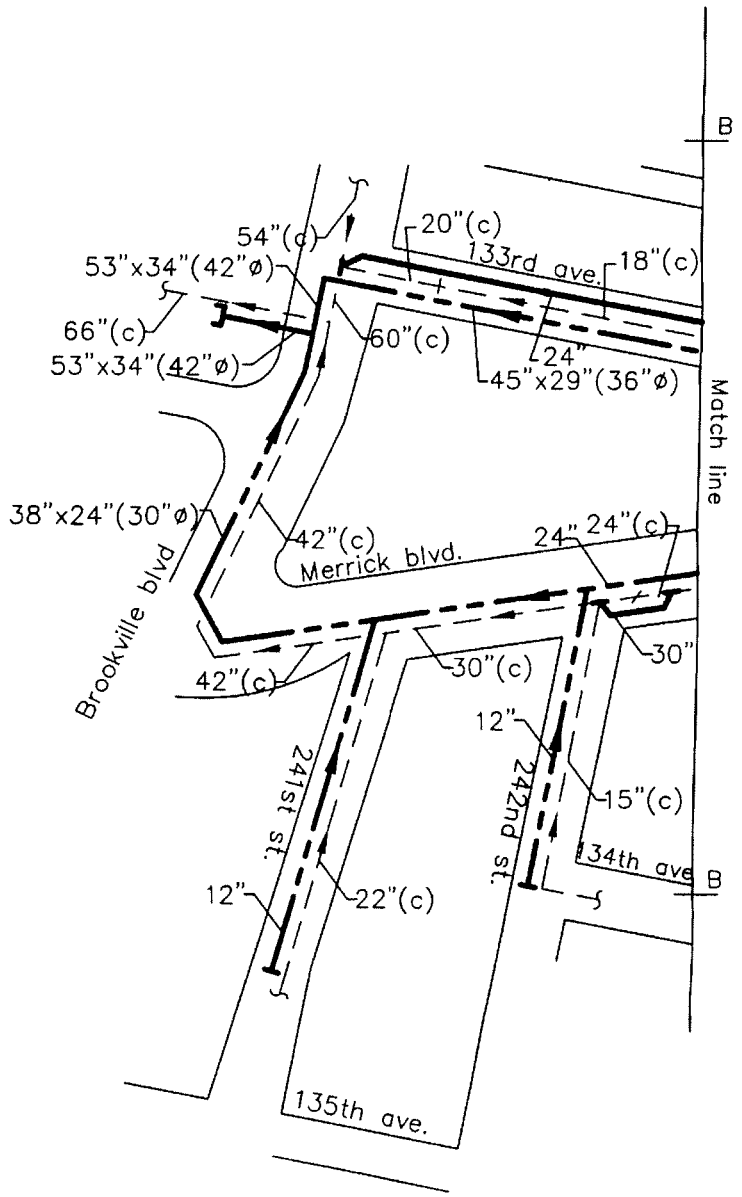
STORM AND COMBINED SEWERS IN HOOK CREEK BLVD

BETWEEN 128 AVENUE & MERRICK BLVD.

ETC. SHEET 2 OF 3

PROJECT ENGINEER SVETLANA BRICHKO

NOVEMBER, 2004
FEBRUARY, 2006
MAY, 2007



SEQ200483

LEGEND

- EXISTING SEWER
- SANITARY (S) SEWER
- STORM (ST) SEWER
- COMBINED SEWER
- DIRECTION OF FLOW

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF WATER AND SEWER OPERATION
DIVISION OF CAPITAL PROGRAM DEVELOPMENT
AND PLANNING

PDSQ-3602 BOROUGH-QUEENS

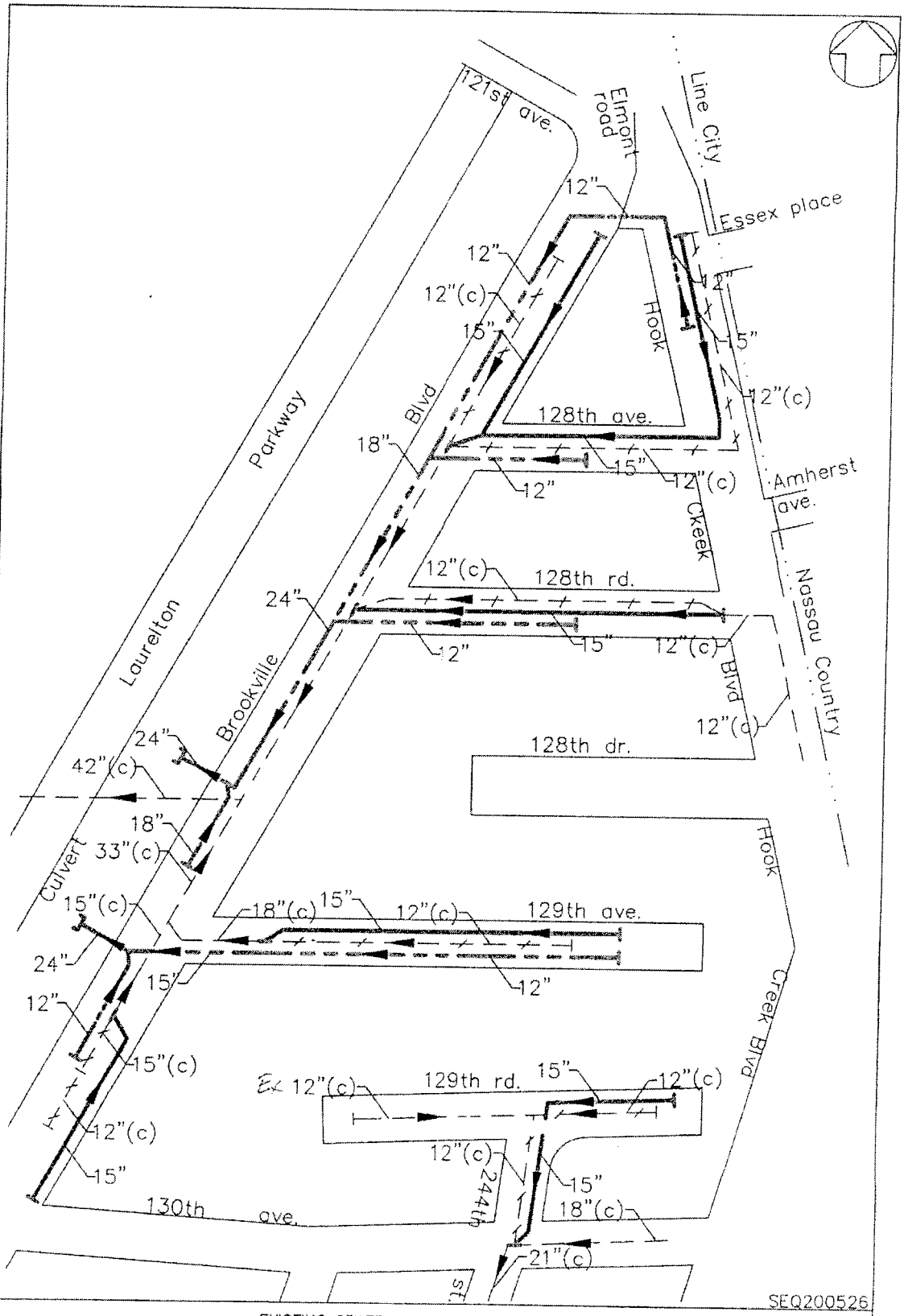
STORM AND COMBINED SEWERS IN HOOK CREEK BLVD

BETWEEN 128 AVENUE & MERRCK BLVD,

ETC. SHEET 3 OF 3

PROJECT ENGINEER SVETLANA BRICHKO

NOVEMBER, 2004
FEBRUARY, 2006
MAY, 2007



LEGEND

- EXISTING SEWER
- SANITARY (S) SEWER
- STORM (ST) SEWER
- COMBINED SEWER
- DIRECTION OF FLOW

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF WATER AND SEWER OPERATION
DIVISION OF CAPITAL PROGRAM DEVELOPMENT AND PLANNING

PDSQ-3776 BOROUGH-QUEENS

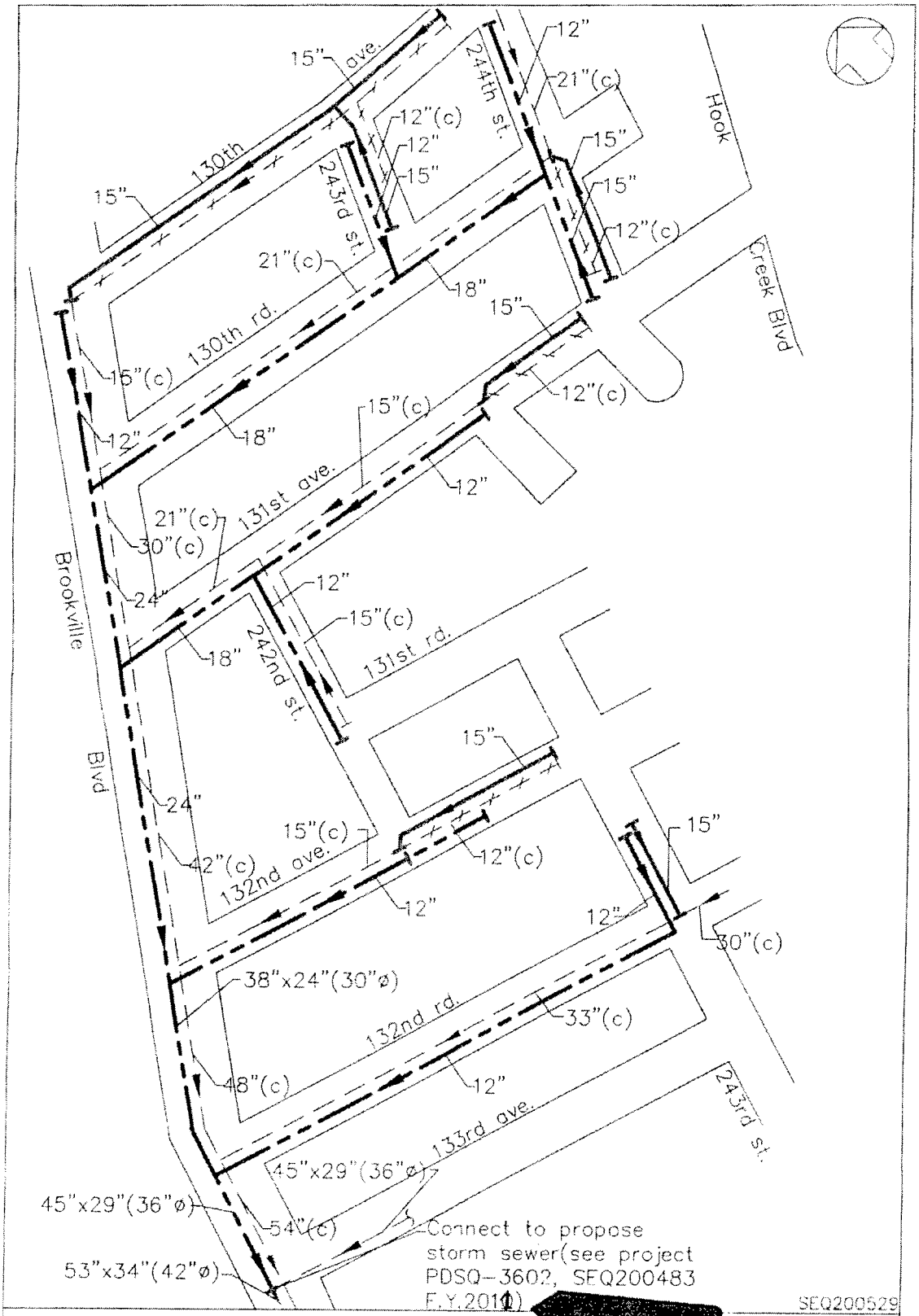
STORM AND COMBINED SEWERS IN BROOKVILLE BLVD

BETWEEN 121ST STREET & 128TH DRIVE,

ETC. SHEET 1 OF 1

PROJECT ENGINEER SVETLANA BRICHKO

APRIL 2007



CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

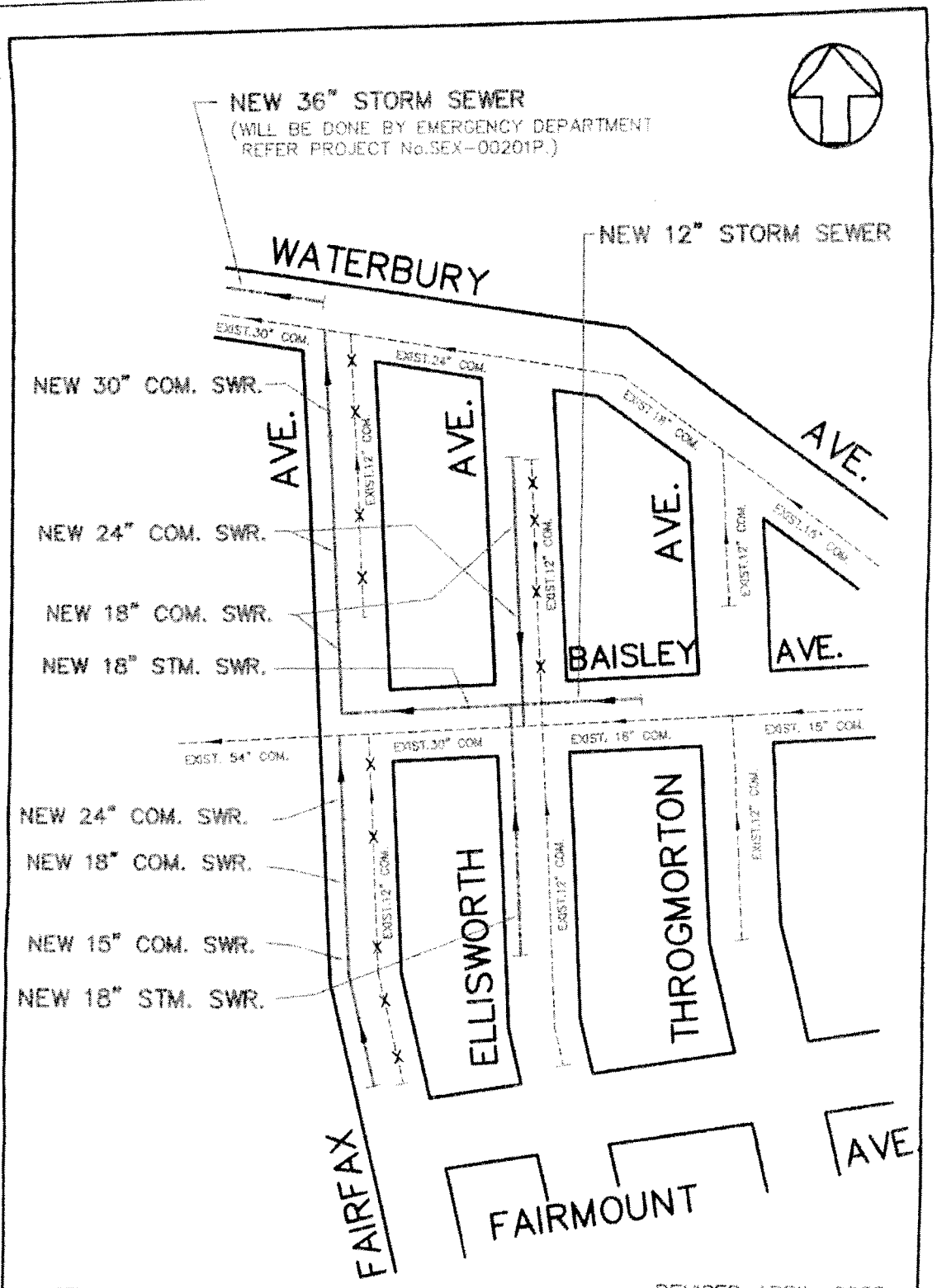
BUREAU OF WATER AND SEWER OPERATION
DIVISION OF CAPITAL PROGRAM DEVELOPMENT
AND PLANNING

PDSQ-3777 BOROUGH-QUEENS

STORM AND COMBINED SEWERS IN 130TH ROAD
BETWEEN 244TH STREET AND BROOKVILLE
BLVD, ETC. SHEET 1 OF 1

PROJECT ENGINEER SVETLANA BRICHKO

JUNE, 2007



NOTE:

REFER DRAINAGE PLAN No.4SD13 & 4SC20 (R-5) DATED JUNE-12-08

REVISED APRIL-2008

REVISED JUNE-2008

LEGEND

EXISTING SEWER
SANITARY (S) SEWER
STORM (ST) SEWER
COMBINED SEWER
DIRECTION OF FLOW

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF WATER AND SEWER OPERATION
DIVISION OF CAPITAL PROGRAM DEVELOPMENT
AND PLANNING

SEX-20039 (PDX-3674) BOROUGH BRONX

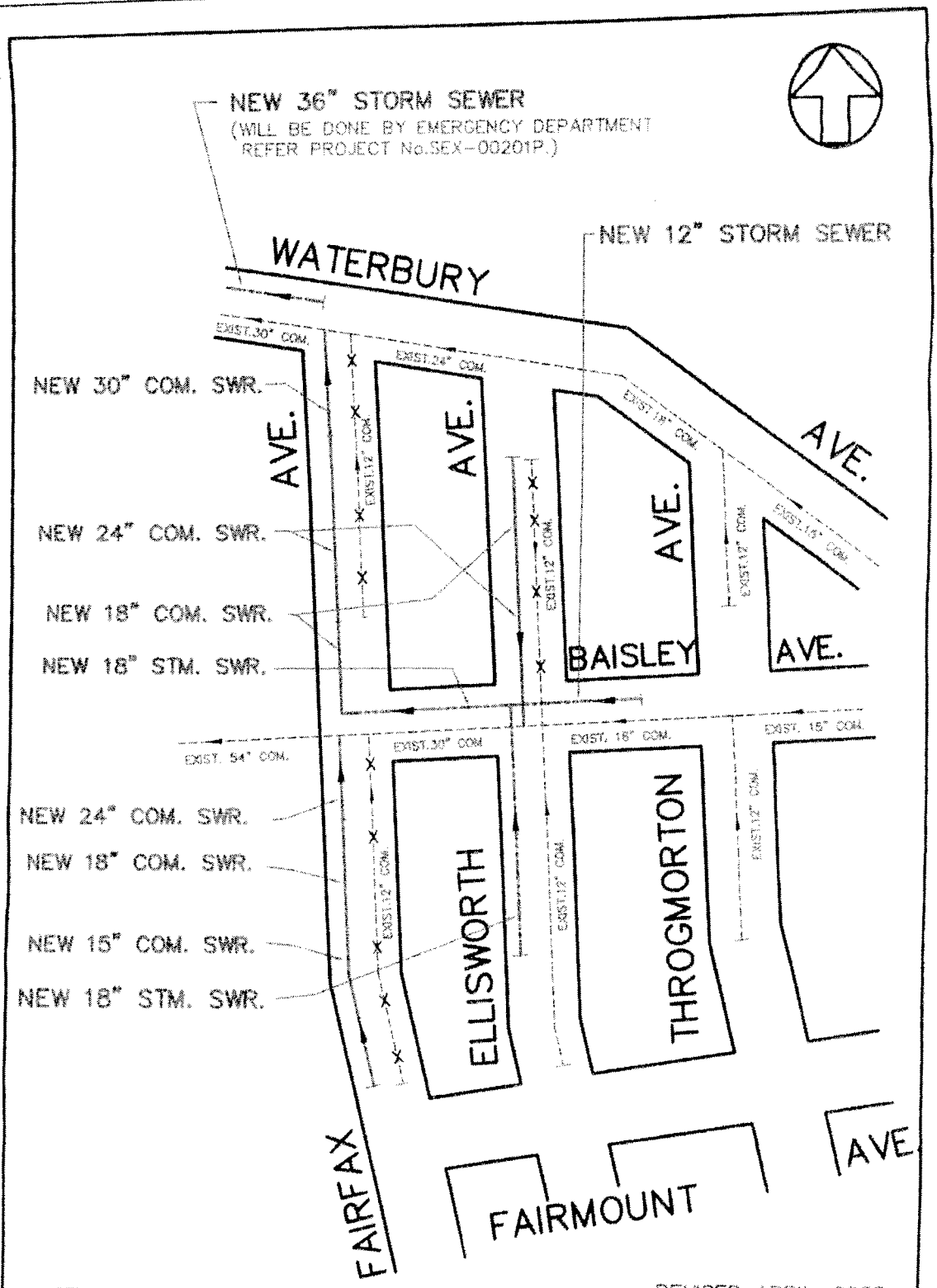
NEW STORM SEWER IN FAIRFAX AVE.

BETWEEN WATERBURY AVE. FAIRMOUNT

AVE. ETC. SHEET 1 OF 1

PROJECT ENGINEER - PHILIP PANICKER

JAN. 2006 (JUNE-2008)



NOTE:

REFER DRAINAGE PLAN No.4SD13 & 4SC20 (R-5) DATED JUNE-12-08

REVISED APRIL-2008

REVISED JUNE-2008

LEGEND

EXISTING SEWER
SANITARY (S) SEWER
STORM (ST) SEWER
COMBINED SEWER
DIRECTION OF FLOW

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF WATER AND SEWER OPERATION
DIVISION OF CAPITAL PROGRAM DEVELOPMENT
AND PLANNING

SEX-20039 (PDX-3674) BOROUGH BRONX

NEW STORM SEWER IN FAIRFAX AVE.

BETWEEN WATERBURY AVE. FAIRMOUNT AVE. ETC.

SHEET 1 OF 1

PROJECT ENGINEER - PHILIP PANICKER

JAN. 2006 (JUNE-2008)

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 # NY 0026191

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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
36	WIM-038	HARLEM RIVER & E. 135th STREET	REG #38	Installed
37	WIM-039	HARLEM RIVER & W. 140th STREET	REG #39	Installed
38	WIM-040	HARLEM RIVER & W. 141st STREET	REG #40	Installed
39	WIM-041	HARLEM RIVER & W. 142nd STREET	REG #41	Installed
40	WIM-042	HARLEM RIVER & W. 143rd STREET	REG #42	Installed
41	WIM-043	EAST RIVER & E. 102nd STREET	REG #19	Installed
42	WIM-044	HARLEM RIVER & W. 145th STREET	REG #44	Installed
43	WIM-045	HARLEM RIVER & W. 149th STREET	REG #45	Installed
44	WIM-046	HARLEM RIVER & W. 151st STREET	REG #46	Installed
45	WIM-047	HARLEM RIVER & W. 154th STREET	REG #47	Installed
46	WIM-048	HARLEM RIVER & W. 155th STREET	REG #48	Installed
47	WIM-050	HARLEM RIVER & W. 156th STREET	REG #50	Installed
48	WIM-051	HARLEM RIVER & W. 167th STREET	REG #51	Installed
49	WIM-052	HARLEM RIVER & W. 176th STREET	REG #52	Installed
50	WIB-053	HUDSON RIVER & W. 256th STREET	REG #R-3	Installed
51	WIB-054	HUDSON RIVER & W. 248th STREET	REG #R-2	Installed
52	WIB-055	HUDSON RIVER & W. 236th STREET	REG #R-1	Installed
53	WIB-056	HARLEM RIVER & W. 192nd STREET	REG #67	Installed
54	WIB-057	HARLEM RIVER & LANDING ROAD	REG #66	Installed
55	WIB-058	HARLEM RIVER & W. 178th STREET	REG #65	Installed
56	WIB-059	HARLEM RIVER & W. 176th STREET	REG #64	Installed
57	WIB-060	HARLEM RIVER & UNDER HIGH BRIDGE	REG #62	Installed
58	WIB-061	HARLEM RIVER & W. 167th STREET	REG #61	Installed
59	WIB-062	HARLEM RIVER & JEROME AVENUE	REG #60, 60A	Installed
60	WIB-063	HARLEM RIVER & S/O MCCOMBS DAM BRIDGE	REG #72	Installed
61	WIB-064	HARLEM RIVER & E. 149th STREET	REG #59	Installed
62	WIB-065	HARLEM RIVER & PARK AVENUE	REG #57	Installed
63	WIB-066	HARLEM RIVER & THIRD AVENUE BRIDGE	REG #56	Installed
64	WIB-067	HARLEM RIVER & LINCOLN AVENUE	REG #55	Installed
65	WIB-068	BRONX KILL & BROOK AVENUE	REG #53, 54	Installed
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
71	WIB-075	HARLEM RIVER & E. 138th STREET	REG #58	Installed
72	WIB-076	HARLEM RIVER & BRADLEY TERRACE	REG #MH-1	Installed
73	WIB-077	HARLEM RIVER & TEUNISSEN PLACE	REG #MH-2	Installed
74	WIB-078	HARLEM RIVER & W. BROADWAY BRIDGE	REG #MH-3	Installed
75	WIB-079	HUDSON RIVER & W. 261st STREET (MT. ST. VINCENT	REG #R-4	Installed
76	**NR - 001**	**North River W.P.C.P. Outfall**		Installed
77	NR-002	HUDSON RIVER & W. 152nd STREET	REG #N-20,21,21A,21B	Installed
78	NR-003	HUDSON RIVER & W. 158th STREET	REG #N-19	Installed
79	NR-004	HUDSON RIVER & W. 171st STREET	REG #N-18	Installed
80	NR-005	HUDSON RIVER & W. 190th STREET	REG #N-17	Installed
81	NR-006	HUDSON RIVER & DYCKMAN STREET	REG #N-16	Installed
82	NR-007	HARLEM RIVER & W. 218th STREET	REG #N-15	Installed
83	NR-008	HARLEM RIVER & W. 216th STREET	REG #N-14	Installed
84	NR-009	HARLEM RIVER & W. 215th STREET	REG #N-13	Installed
85	NR-010	HARLEM RIVER & W. 211th STREET	REG #N-10, N-11, N-12	Installed
86	NR-011	HARLEM RIVER & W. 209th STREET	REG #N-9	Installed
87	NR-012	HARLEM RIVER & W. 207th STREET	REG #N-7	Installed
88	NR-013	HARLEM RIVER & W. 206th STREET	REG #N-6	Installed
89	NR-014	HARLEM RIVER & W. 205th STREET	REG #N-5	Installed
90	NR-016	HARLEM RIVER & W. 203rd STREET	REG #N-4	Installed
91	NR-017	HARLEM RIVER & W. 201st STREET	REG #N-3	Installed
92	NR-018	HARLEM RIVER & HIGHBRIDGE PARK	REG #N-1	Installed
93	NR-019	HUDSON RIVER & BANK STREET	REG #N-56	Installed
94	NR-020	HUDSON RIVER & JANE STREET	REG #N-55	Installed
95	NR-021	HUDSON RIVER & GANSEVOORT STREET	REG #N-54	Installed
96	NR-022	HUDSON RIVER & S/O W. 17th STREET	REG #N-51	Installed
97	NR-023	HUDSON RIVER & W. 18th STREET	REG #N-50	Installed
98	NR-024	HUDSON RIVER & W. 21st STREET	REG #N-48, N-49	Installed
99	NR-025	HUDSON RIVER & W. 24th STREET	REG #N-47	Installed
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
106	NR-032	HUDSON RIVER & W. 46th STREET	REG #N-36, N-37	Installed
107	NR-033	HUDSON RIVER & W. 48th STREET	REG #N-33, N-34	Installed
108	NR-034	HUDSON RIVER & W. 50th STREET	REG #N-32	Installed
109	NR-035	HUDSON RIVER & W. 56th STREET	REG #N-31	Installed
110	NR-036	HUDSON RIVER & W. 59th STREET	REG #N-30	Installed
111	NR-037	HUDSON RIVER & W. 72nd STREET	REG #N-29	Installed
112	NR-038	HUDSON RIVER & W. 80th STREET	REG #N-28	Installed
113	NR-039	HUDSON RIVER & W. 91st STREET	REG #N-27	Installed
114	NR-040	HUDSON RIVER & W. 96th STREET	REG #N-26, N-26A	Installed
115	NR-041	HUDSON RIVER & W. 108th STREET	REG #N-25	Installed
116	NR-042	HUDSON RIVER & W. 115th STREET	REG #N-24	Installed
117	NR-043	HUDSON RIVER & SAINT CLAIR PL	REG #N-23	Installed
118	NR-044	HUDSON RIVER & W. 138th STREET	REG #N-22	Installed
119	NR-045	HARLEM RIVER & ACADEMY STREET	REG #N-2	Installed
120	NR-046	HUDSON RIVER & W. 66th STREET	REG #N-29A	Installed
121	NR-047	HUDSON RIVER & W. 47th STREET	REG #N-35	Installed
122	NR-048	HUDSON RIVER & W. 42nd STREET	REG #N-40, N-41	Installed
123	NR-049	HUDSON RIVER & W. 14th STREET	REG #N-52	Installed
124	NR-050	HUDSON RIVER & BLOOMFIELD STREET	REG #N-53	Installed
125	NR-051	HUDSON RIVER & W. 49th STREET	N/A	Installed
126	NR-052	HUDSON RIVER & W. 34th STREET	REG #N-44	Installed
127	NR-055	HARLEM RIVER & W. 207th STREET	REG #N-7, N-8	Installed
128	NR-056	HUDSON RIVER & W. 142nd STREET	REG #N-22A	Installed
129	**HP - 001**	**Hunt's Point W.P.C.P. Outfall**		Installed
130	HP-002	EAST RIVER & TIFFANY STREET	REG #9, 9A	Installed
131	HP-003	EAST RIVER & FARRAGUT STREET	REG #10	Installed
132	HP-004	BRONX RIVER & WEST FARM ROAD	CSO-28, 28A	Installed
133	HP-005	HUTCHINSON RIVER & HOLLERS AVENUE PS	HOLLERS AVENUE P.S.	Installed
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
141	HP-013	PUGSLEY'S CREEK & NEWMAN AVENUE	CSO-24	Installed
142	HP-014	WESTCHESTER CREEK & EAST TREMONT AVENUE	CSO-29, 29A	Installed
143	HP-015	WESTCHESTER CREEK & LATTING STREET	CSO-22	Installed
144	HP-016	WESTCHESTER CREEK & BRUCKNER EXPWY	REG #4	Installed
145	HP-017	EAST RIVER & EMERSON AVENUE	REG #11	Installed
146	HP-018	EAST RIVER & ROBINSON AVENUE	REG #12	Installed
147	HP-019	EAST RIVER & CALHOUN AVENUE	REG #3	Installed
148	HP-020	EAST RIVER & THROGS NECK BLVD	REG #2A	Installed
149	HP-021	EAST RIVER & PENNYFIELD AVENUE	REG #2	Installed
150	HP-022	EASTCHESTER BAY & E 177th STREET	REG #1	Installed
151	HP-023	HUTCHINSON RIVER & CONNER STREET	REG #15, CONNOR ST.PS	Installed
152	HP-024	HUTCHINSON RIVER & E 233rd STREET	REG #15A	Installed
153	HP-025	EAST RIVER & TRUXTON STREET	REG #8	Installed
154	HP-026	WEIR CREEK & ELLESWORTH AVENUE	REG #14	Installed
155	HP-028	EASTCHESTER BAY & OUTLOOK AVENUE	CSO-20	Installed
156	HP-029	EASTCHESTER BAY & WATT AVENUE	CSO-21	Installed
157	HP-031	HUTCHINSON RIVER & BELLAMY LOOP	CSO-32, CO-OP CITY N. P.S.	Installed
158	HP-032	EAST RIVER & RIKERS ISLAND NORTH	RIKER'S ISLAND N. P.S.	Installed
159	HP-033	WESTCHESTER CREEK & S/O BRUCKNER BLVD, E/O	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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
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
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
211	NCM-049	EAST RIVER & E. 18th STREET	REG #M-37	Installed
212	NCM-051	EAST RIVER & OLD SLIP	REG #M-12	Installed
213	NCM-052	EAST RIVER & E. 14th STREET	REG #M-36	Installed
214	NCM-053	EAST RIVER & E. 11th STREET	REG #M-35	Installed
215	NCM-054	EAST RIVER & E. 8th STREET	REG #M-34	Installed
216	NCM-055	NEWTOWN CREEK & E. 6th STREET	REG #M-33	Installed
217	NCM-056	EAST RIVER & E. 3rd STREET	REG #M-32	Installed
218	NCM-057	EAST RIVER & STANTON STREET	REG #M-30	Installed
219	NCM-058	EAST RIVER & RIVINGTON STREET	REG #M-29	Installed
220	NCM-059	EAST RIVER & S/O GRAND STREET	REG #M-26	Installed
221	NCM-060	EAST RIVER & S/O CORLEARS HOOK PARK	REG #M-25	Installed
222	NCM-061	EAST RIVER & JACKSON STREET	REG #M-23	Installed
223	NCM-062	EAST RIVER & GOUVERNEUR SLIP E.	REG #M-22	Installed
224	NCM-063	EAST RIVER & JEFFERSON STREET	REG #M-21	Installed
225	NCM-064	EAST RIVER & MARKET SLIP	REG #M-20	Installed
226	NCM-065	EAST RIVER & S/O CATHERINE STREET	REG #M-18	Installed
227	NCM-066	EAST RIVER & ROBERT WAGNER SR. PLACE	REG #M-17	Installed
228	NCM-067	EAST RIVER & MAIDEN LANE	REG #M-13	Installed
229	NCM-068	EAST RIVER & COENTIES SLIP	REG #M-11	Installed
230	NCM-069	EAST RIVER & BROAD STREET	REG #M-10	Installed
231	*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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
246	RH-002	EAST RIVER & HUDSON AVENUE	REG #R-21A	Installed
247	RH-003	EAST RIVER & HUDSON AVENUE	REG #R-21	Installed
248	RH-005	EAST RIVER & GOLD STREET	REG #R-20A	Installed
249	RH-006	EAST RIVER & PEARL STREET	REG #R-19A	Installed
250	RH-007	EAST RIVER & ADAMS STREET	REG #R-19	Installed
251	RH-008	EAST RIVER & WASHINGTON STREET	REG #R-18A	Installed
252	RH-009	EAST RIVER & MAIN STREET	REG #R-18	Installed
253	RH-010	EAST RIVER & ORANGE STREET	REG #R-16	Installed
254	RH-011	EAST RIVER & MONTAGUE STREET	REG #R-15	Installed
255	RH-012	EAST RIVER & CADMAN PLAZA	REG #R-17	Installed
256	RH-013	EAST RIVER & JORALEMON STREET	REG #R-14	Installed
257	RH-014	EAST RIVER & ATLANTIC AVENUE	REG #R-13	Installed
258	RH-016	EAST RIVER & AMITY STREET	REG #R-12	Installed
259	RH-018	EAST RIVER & KANE STREET	REG #R-11	Installed
260	RH-019	BUTTERMILK CHANNEL & HAMILTON AVENUE	REG #R-9	Installed
261	RH-020	BUTTERMILK CHANNEL & DEGRAW STREET	REG #R-10	Installed
262	RH-021	BUTTERMILK CHANNEL & SACKETT STREET	REG #R-9A	Installed
263	RH-022	ATLANTIC BASIN & BOWNE STREET	REG #R-8	Installed
264	RH-023	ATLANTIC BASIN & COMMERCE STREET	REG #R-7	Installed
265	RH-024	ATLANTIC BASIN & VERONA STREET	REG #R-6	Installed
266	RH-025	ATLANTIC BASIN & PIONEER STREET	REG #R-5	Installed
267	RH-028	BUTTERMILK CHANNEL & WOLCOTT STREET	REG #R-2	Installed
268	RH-029	UPPER NEW YORK BAY & VAN BRUNT STREET	REG #R-1, VAN BLANT ST. PS	Installed
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
281	TI-005	EAST RIVER & 154th STREET	REG #12	Installed
282	TI-006	LITTLE NECK BAY & 24th AVENUE	24 AVENUE P.S.	Installed
283	TI-007	ALLEY CREEK & NORTHERN BLVD	OLD DOUG P.S.	Installed
284	TI-008	ALLEY CREEK & 46th AVENUE	REG #46, 47, 48, 49	Installed
285	*TI-009*	*LITTLE NECK BASIN & DOUG. BAY P.S.*	*DOUG BAY P.S.*	*WAIVER*
286	TI-010	FLUSHING RIVER & ROOSEVELT AVENUE	REG #30, 31, 40, 44	Installed
287	TI-011	FLUSHING BAY & 32nd AVENUE	REG #9, 51, 52, 53, 54	Installed
288	TI-012	FLUSHING BAY & 29th AVENUE	122ND STREET P.S.	Installed
289	TI-014	FLUSHING BAY & 23rd AVENUE	REG #7	Installed
290	TI-015	FLUSHING BAY & 22nd AVENUE	REG #6	Installed
291	TI-016	FLUSHING BAY & 20th AVENUE	REG #5	Installed
292	TI-017	FLUSHING BAY & 15th AVENUE	REG #4	Installed
293	TI-018	FLUSHING BAY & 14th AVENUE	REG #3	Installed
294	TI-019	EAST RIVER & 9th AVENUE	REG #2	Installed
295	TI-020	EAST RIVER & COLLEGE PLACE	REG #1	Installed
296	TI-022	FLUSHING RIVER & 40th ROAD	REG #55, 56, 57, 58	Installed
297	TI-023	LITTLE BAY & CRYDERS LANE	REG #13, CLEARVIEW P.S.	Installed
298	TI-024	ALLEY POND & 61st AVENUE	NEW DOUG P.S.	Installed
299	TI-025	ALLEY CREEK (W) & 400' SOUTH OF LIRR BRIDGE	Alley Creek CSO Storage Facility	Installed
300	**BB - 001**	**Bowery Bay W.P.C.P. Outfall**		Installed
301	BB-002	RIKER'S ISLAND CHANNEL & 45th STREET	REG #2	Installed
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
316	BB-017	EAST RIVER & 50th AVENUE	REG #L-12	Installed
317	BB-018	EAST RIVER & 49th AVENUE	REG #L-12A	Installed
318	BB-021	EAST RIVER & 47th AVENUE	REG #L-15	Installed
319	BB-022	EAST RIVER & 5th STREET	REG #L-16	Installed
320	BB-023	EAST RIVER & 44th DRIVE	REG #L-17	Installed
321	BB-024	EAST RIVER & 43rd AVENUE	REG #L-18	Installed
322	BB-025	EAST RIVER & 41st AVENUE	REG #L-19	Installed
323	BB-026	DUTCH KILLS & BETW. 28th & 29th STREET	REG #L-4, L-39, L-40, L-42	Installed
324	BB-027	EAST RIVER & 38th AVENUE	REG #L-20	Installed
325	BB-028	EAST RIVER & 37th AVENUE	REG #L-21	Installed
326	BB-029	EAST RIVER & BROADWAY	REG #L-22	Installed
327	BB-030	EAST RIVER & 30th ROAD	REG #L-23	Installed
328	BB-032	EAST RIVER & MAIN AVENUE	REG #L-29, L-29A, MH-15	Installed
329	BB-033	EAST RIVER & 27th AVENUE	REG #L-27	Installed
330	BB-034	EAST RIVER & HOYT AVENUE	REG #L-30	Installed
331	BB-035	EAST RIVER & DITMARS BLVD	REG #L-31	Installed
332	BB-036	EAST RIVER & 21st AVENUE	REG #L-32	Installed
333	BB-037	EAST RIVER & 20th AVENUE	REG #L-33	Installed
334	BB-040	DUTCH KILLS & 49th AVENUE	REG #L-5	Installed
335	BB-041	LUYSTER CREEK & 19th AVENUE	REG #1	Installed
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
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
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
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
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

CSO Signs

No	OUTFALL ID	OUTFALL LOCATION	CONTRIBUTORS	STATUS / COMMENTS
421	PR-036	BODINE CREEK & RECTOR STREET	REG #R-36	Installed
422	PR-037	KILL VAN KULL & RICHMOND AVENUE	REG #R-37	Installed

Appendix 10

Department of Health (DOH) Notification Program

Figure 1	Location of NYC Permitted Beaches
Table A	Beach Advisory and Closure Comparison 2009 to 2011
Table B-1	Advisory Summary for Public Beaches
Table B-2	Closure Summary for Public 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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representative and reliable data. The collected samples are delivered to the NYCDOHMH Public Health Laboratory (PHL) for bacteriological analysis.

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.

Table 1: **NEW YORK CITY PERMITTED BEACHES AND WATER BODY IDENTIFICATION**

Borough	Sector	Beaches	Area	Water body
Brooklyn	Public	Coney Island Manhattan	From Norton's Point to Sheepshead Bay	Lower New York Bay
	Private	Seagate , Kiddie Gerritsen Kingsborough		
Bronx	Public	Orchard	From the southeastern border of Westchester County to just below the Throgs Neck Bridge at Throgs Point	Eastchester Bay, Western Long Island Sound
	Private	American Turner Danish American Manheim White Cross Morris Yacht Schuyler Hill Trinity Danish Locust Point Yacht Club West Fordham Street		
Queens	Public	Rockaway	The southern side of Rockaway Peninsula; From Norton's Point to Sheepshead Bay; Little Neck Bay	Western Long Island Sound; Atlantic Ocean Coastline
	Private	Breezy Point Douglaston Manor Whitestone Booster Civic Association		
Staten Island	Public	Midland, South Wolfe's Pond Park Cedar Grove	From Page Avenue, east of Tottenville to Fort Wadsworth Reservation	Lower New York Bay, Raritan Bay

Figure 1: LOCATION OF NEW YORK CITY PERMITTED BEACHES

Beach Advisory and Closure Comparison 2009 - 2011

Office of Public Health Engineering, NYCDOMH

Beach	Wet Weather Advisory (days)			Pollution Advisory (days)			Closure (days)		
	2009	2010	2011	2009	2010	2011	2009	2010	2011
American Turner, Bx	20	9	11	23	6	10	6	0	6
Danish American, Bx	20	9	11	19	6	0	6	0	5
Manhem, Bx	23	8	11	12	6	7	5	0	5
White Cross, Bx	16	9	11	0	6	8	15	0	5
Morris Yacht, Bx	20	6	11	14	7	0	6	0	5
Schuyler Hill, Bx	25	9	12	0	3	0	0	0	7
Trinity Danish, Bx	19	9	9	12	6	12	6	0	7
West Fordham St Assoc, Bx	N/A	8	12	N/A	0	0	N/A	0	5
Locust Point, Bx	N/A	9	10	N/A	0	6	N/A	0	5
Whitestone Booster, Qns	N/A	8	13	N/A	14	6	N/A	0	5
Orchard Beach, Bx	0	0	1	4	0	0	0	0	4
Douglaston Manor, Qns	21	7	0	14	6	25	30	41	81
Breezy Point Reid, Qns	0	0	0	0	0	0	0	0	4
Breezy Point 219th St, Qns	0	0	0	0	0	2	1	0	8
Rockaway, Qns	0	0	0	0	0	0	1	0	4
Coney Island, Bk	0	0	1	0	0	0	1	0	4
Manhattan, Bk	0	0	1	0	0	2	1	0	4
Seagate, Bk	0	0	0	0	0	5	0	0	7
Gerritsen/Kiddy, Bk	27	11	13	7	2	15	1	0	7
Kingsborough, BK	0	0	1	16	0	2	7	0	5
Midland, SI	0	0	1	0	0	6	0	0	9
South Beach, SI	0	0	1	0	0	6	0	0	13
Cedar Grove Beach, SI	N/A	N/A	0	N/A	N/A	6	N/A	0	9
Wolfe's Pond Park, SI	0	0	0	8	0	2	0	0	6
Totals:	**191**	**102**	**130**	**129**	**62**	**120**	**86**	**41**	**220**

TABLE B-1 Advisory and Closure Summary for Public Beaches

Name	Status	Start Date	End Date	Reason
Cedar Grove	Pollution Advisory	7/22/2011	7/25/2011	North River Treatment Plant Bypass
	Closure	7/26/2011	7/28/2011	North River Treatment Plant Bypass
	Wet Weather Advisory	8/14/2011	8/14/2011	August 14th Rainfall Event
	Pollution Advisory	8/17/2011	8/18/2011	August 14th Rainfall Event
	Preemptive Closure	8/27/2011	9/1/2011	Hurricane Irene
Coney Island	Wet Weather Advisory	8/14/2011	8/14/2011	August 14th Rainfall Event
	Preemptive Closure	8/27/2011	8/30/2011	Hurricane Irene
Manhattan Beach	Wet Weather Advisory	8/14/2011	8/14/2011	August 14th Rainfall Event
	Pollution Advisory	8/17/2011	8/18/2011	August 14th Rainfall Event
	Preemptive Closure	8/27/2011	8/30/2011	Hurricane Irene
Midland Beach	Pollution Advisory	7/22/2011	7/25/2011	North River Treatment Plant Bypass
	Closure	7/26/2011	7/28/2011	North River Treatment Plant Bypass
	Wet Weather Advisory	8/14/2011	8/14/2011	August 14th Rainfall Event
	Pollution Advisory	8/17/2011	8/18/2011	August 14th Rainfall Event
	Preemptive Closure	8/27/2011	9/1/2011	Hurricane Irene
Orchard Beach	Wet Weather Advisory	8/14/2011	8/14/2011	August 14th Rainfall Event
	Preemptive Closure	8/27/2011	8/30/2011	Hurricane Irene

TABLE B-1Advisory and Closure Summary for Public Beaches (continued)

Name	Status	Start Date	End Date	Reason
Rockaway Beach	Preemptive Closure	8/27/2011	8/30/2011	Hurricane Irene
South Beach	Pollution Advisory	7/22/2011	7/25/2011	North River Treatment Plant Bypass
	Closure	7/26/2011	7/28/2011	North River Treatment Plant Bypass
	Wet Weather Advisory	8/14/2011	8/14/2011	August 14th Rainfall Event
	Pollution Advisory	8/17/2011	8/18/2011	August 14th Rainfall Event
	Preemptive Closure	8/27/2011	9/1/2011	Hurricane Irene
	Closure	9/1/2011	9/5/2011	Confirmed Enterococci Exceedance Hurricane Irene
Wolfe's Pond	Pollution Advisory	8/17/2011	8/18/2011	August 14th Rainfall Event
	Preemptive Closure	8/27/2011	9/1/2011	Hurricane Irene

TABLE B-2 Advisory and Closure Summary for Private Beaches

Name	Status	Start Date	End Date	Reason
American Turner	Pollution Advisory	5/28/2011	6/2/2011	Enterococci Exceedance
	Wet Weather Advisory	6/17/2011	6/17/2011	Preemptive Advisory
	Wet Weather Advisory	7/3/2011	7/4/2011	Preemptive Advisory
	Wet Weather Advisory	7/29/2011	7/30/2011	Preemptive Advisory
	Wet Weather Advisory	8/4/2011	8/4/2011	Preemptive Advisory
	Wet Weather Advisory	8/10/2011	8/10/2011	Preemptive Advisory
	Wet Weather Advisory	8/14/2011	8/15/2011	August 14th Rainfall Event
	Wet Weather Advisory	8/20/2011	8/20/2011	Preemptive Advisory
	Wet Weather Advisory	8/22/2011	8/22/2011	Preemptive Advisory
	Preemptive Closure	8/27/2011	9/1/2011	Hurricane Irene
	Pollution Advisory	9/8/2011	9/11/2011	Enterococci Exceedance
Breezy Point 219th Street	Pollution Advisory	8/18/2011	8/19/2011	August 14th Rainfall Event
	Closure	8/20/2011	8/23/2011	August 14th Rainfall Event
	Preemptive Closure	8/27/2011	8/30/2011	Hurricane Irene
Breezy Point Reid Ave	Preemptive Closure	8/27/2011	8/30/2011	Hurricane Irene
Danish American Beach Club	Wet Weather Advisory	6/17/2011	6/17/2011	Preemptive Advisory
	Wet Weather Advisory	7/3/2011	7/4/2011	Preemptive Advisory
	Wet Weather Advisory	7/30/2011	7/30/2011	Preemptive Advisory
	Wet Weather Advisory	8/4/2011	8/4/2011	Preemptive Advisory

	Wet Weather Advisory	8/10/2011	8/10/2011	Preemptive Advisory

TABLE B-2 Advisory and Closure Summary for Private Beaches (continued)

Name	Status	Start Date	End Date	Reason
Danish American Beach Club	Wet Weather Advisory	8/14/2011	8/15/2011	August 14th Rainfall Event
	Wet Weather Advisory	8/20/2011	8/20/2011	Preemptive Advisory
	Wet Weather Advisory	8/22/2011	8/22/2011	Preemptive Advisory
	Preemptive Closure	8/27/2011	8/31/2011	Hurricane Irene
	Wet Weather Advisory	9/7/2011	9/7/2011	Preemptive Advisory
Douglaston Manor	Closure	5/28/2011	6/2/2011	Confirmed Enterococci Exceedance
	Pollution Advisory	6/3/2011	6/4/2011	Enterococci Exceedance
	Closure	6/5/2011	6/29/2011	Confirmed Enterococci Exceedance
	Pollution Advisory	6/30/2011	7/13/2011	Enterococci Exceedance
	Closure	7/14/2011	7/19/2011	Confirmed Enterococci Exceedance
	Closure	7/29/2011	9/2/2011	Confirmed Enterococci Exceedance
	Pollution Advisory	9/3/2011	9/8/2011	Enterococci Exceedance
	Closure	9/8/2011	9/15/2011	Confirmed Enterococci Exceedance
	Pollution Advisory	9/16/2011	9/18/2011	Enterococci Exceedance
Gerritsen/ Kiddie	Wet Weather Advisory	6/11/2011	6/11/2011	Preemptive Advisory
	Wet Weather Advisory	6/17/2011	6/18/2011	Preemptive Advisory
	Wet Weather Advisory	7/3/2011	7/4/2011	Preemptive Advisory
	Wet Weather Advisory	7/9/2011	7/9/2011	Preemptive Advisory
	Closure	7/27/2011	7/28/2011	Confirmed Enterococci Exceedance

	Wet Weather Advisory	7/29/2011	7/31/2011	Preemptive Advisory

TABLE B-2 Advisory and Closure Summary for Private Beaches (continued)

Name	Status	Start Date	End Date	Reason
Gerritsen/ Kiddie	Pollution Advisory	8/3/2011	8/9/2011	Enterococci Exceedance
	Wet Weather Advisory	8/10/2011	8/10/2011	Preemptive Advisory
	Wet Weather Advisory	8/14/2011	8/16/2011	August 14th Rainfall Event
	Pollution Advisory	8/19/2011	8/26/2011	Enterococci Exceedance
	Preemptive Closure	8/27/2011	8/31/2011	Hurricane Irene
Kingsborough Community College	Wet Weather Advisory	8/14/2011	8/14/2011	August 14th Rainfall Event
	Pollution Advisory	8/17/2011	8/18/2011	August 14th Rainfall Event
	Preemptive Closure	8/27/2011	8/31/2011	Preemptive Closure Hurricane Irene
Locust Point Yacht Club	Wet Weather Advisory	6/17/2011	6/17/2011	Preemptive Advisory
	Wet Weather Advisory	7/3/2011	7/4/2011	Preemptive Advisory
	Wet Weather Advisory	7/29/2011	7/30/2011	Preemptive Advisory
	Pollution Advisory	8/4/2011	8/9/2011	Enterococci Exceedance
	Wet Weather Advisory	8/10/2011	8/10/2011	Preemptive Advisory
	Wet Weather Advisory	8/14/2011	8/15/2011	August 14th Rainfall Event
	Wet Weather Advisory	8/20/2011	8/20/2011	Preemptive Advisory
	Wet Weather Advisory	8/22/2011	8/22/2011	Preemptive Advisory
	Preemptive Closure	8/27/2011	8/31/2011	Hurricane Irene
Manhem Club	Pollution Advisory	6/16/2011	6/22/2011	Enterococci Exceedance
	Wet Weather Advisory	7/3/2011	7/4/2011	Preemptive Advisory

TABLE B-2 Advisory and Closure Summary for Private Beaches (continued)

Name	Status	Start Date	End Date	Reason
Manhem Club	Wet Weather Advisory	7/29/2011	7/30/2011	Preemptive Advisory
	Wet Weather Advisory	8/4/2011	8/4/2011	Preemptive Advisory
	Wet Weather Advisory	8/10/2011	8/10/2011	Preemptive Advisory
	Wet Weather Advisory	8/14/2011	8/15/2011	August 14th Rainfall Event
	Wet Weather Advisory	8/20/2011	8/20/2011	Preemptive Advisory
	Wet Weather Advisory	8/22/2011	8/22/2011	Preemptive Advisory
	Preemptive Closure	8/27/2011	8/31/2011	Hurricane Irene
	Wet Weather Advisory	9/7/2011	9/7/2011	Preemptive Advisory
Morris Yacht and Beach Club	Wet Weather Advisory	6/17/2011	6/17/2011	Preemptive Advisory
	Wet Weather Advisory	7/3/2011	7/4/2011	Preemptive Advisory
	Wet Weather Advisory	7/29/2011	7/30/2011	Preemptive Advisory
	Wet Weather Advisory	8/4/2011	8/4/2011	Preemptive Advisory
	Wet Weather Advisory	8/10/2011	8/10/2011	Preemptive Advisory
	Wet Weather Advisory	8/14/2011	8/15/2011	August 14th Rainfall Event
	Wet Weather Advisory	8/20/2011	8/20/2011	Preemptive Advisory
	Wet Weather Advisory	8/22/2011	8/22/2011	Preemptive Advisory
	Preemptive Closure	8/27/2011	8/31/2011	Hurricane Irene
Schuyler Hill Civic Association	Wet Weather Advisory	6/17/2011	6/17/2011	Preemptive Advisory
	Wet Weather Advisory	7/3/2011	7/4/2011	Preemptive Advisory

	Wet Weather Advisory	7/29/2011	7/30/2011	Preemptive Advisory

TABLE B-2 Advisory and Closure Summary for Private Beaches (continued)

Name	Status	Start Date	End Date	Reason
Schuyler Hill Civic Association	Wet Weather Advisory	8/4/2011	8/4/2011	Preemptive Advisory
	Wet Weather Advisory	8/10/2011	8/10/2011	Preemptive Advisory
	Wet Weather Advisory	8/14/2011	8/15/2011	August 14th Rainfall Event
	Wet Weather Advisory	8/20/2011	8/20/2011	Preemptive Advisory
	Wet Weather Advisory	8/22/2011	8/22/2011	Preemptive Advisory
	Preemptive Closure	8/27/2011	8/31/2011	Hurricane Irene
	Closure	9/1/2011	9/2/2011	Confirmed Enterococci Exceedance
	Wet Weather Advisory	9/7/2011	9/7/2011	Preemptive Advisory
Sea Gate 42ndStreet	Pollution Advisory	7/22/2011	7/25/2011	North River Treatment Plant Bypass
	Closure	7/26/2011	7/27/2011	North River Treatment Plant Bypass
	Pollution Advisory	7/28/2011	7/28/2011	North River Treatment Plant Bypass
	Preemptive Closure	8/27/2011	8/31/2011	Hurricane Irene
Sea Gate Beach Club	Pollution Advisory	7/22/2011	7/25/2011	North River Treatment Plant Bypass
	Closure	7/26/2011	7/27/2011	North River Treatment Plant Bypass
	Pollution Advisory	7/28/2011	7/28/2011	North River Treatment Plant Bypass
	Preemptive Closure	8/27/2011	8/31/2011	Hurricane Irene
Trinity Danish	Pollution Advisory	5/28/2011	6/2/2011	Enterococci Exceedance
	Wet Weather Advisory	6/17/2011	6/17/2011	Preemptive Advisory
	Wet Weather Advisory	7/3/2011	7/4/2011	Preemptive Advisory

	Pollution Advisory	7/29/2011	8/3/2011	Enterococci Exceedance

TABLE B-2 Advisory and Closure Summary for Private Beaches (continued)

Name	Status	Start Date	End Date	Reason
Trinity Danish	Wet Weather Advisory	8/4/2011	8/4/2011	Preemptive Advisory
	Wet Weather Advisory	8/10/2011	8/10/2011	Preemptive Advisory
	Wet Weather Advisory	8/14/2011	8/15/2011	August 14th Rainfall Event
	Wet Weather Advisory	8/20/2011	8/20/2011	Preemptive Advisory
	Wet Weather Advisory	8/22/2011	8/22/2011	Preemptive Advisory
	Preemptive Closure	8/27/2011	9/2/2011	Hurricane Irene
West Fordham Street Association	Wet Weather Advisory	6/17/2011	6/17/2011	Preemptive Advisory
	Wet Weather Advisory	7/3/2011	7/4/2011	Preemptive Advisory
	Wet Weather Advisory	7/29/2011	7/30/2011	Preemptive Advisory
	Wet Weather Advisory	8/4/2011	8/4/2011	Preemptive Advisory
	Wet Weather Advisory	8/10/2011	8/10/2011	Preemptive Advisory
	Wet Weather Advisory	8/14/2011	8/15/2011	August 14th Rainfall Event
	Wet Weather Advisory	8/20/2011	8/20/2011	Preemptive Advisory
	Wet Weather Advisory	8/22/2011	8/22/2011	Preemptive Advisory
	Preemptive Closure	8/27/2011	8/31/2011	Hurricane Irene
	Wet Weather Advisory	9/7/2011	9/7/2011	Preemptive Advisory
White Cross Fishing Club	Wet Weather Advisory	6/17/2011	6/17/2011	Preemptive Advisory
	Wet Weather Advisory	7/3/2011	7/4/2011	Preemptive Advisory
	Wet Weather Advisory	7/29/2011	7/30/2011	Preemptive Advisory

	Wet Weather Advisory	8/4/2011	8/4/2011	Preemptive Advisory

TABLE B-2 Advisory and Closure Summary for Private Beaches (continued)

Name	Status	Start Date	End Date	Reason
White Cross Fishing Club	Wet Weather Advisory	8/10/2011	8/10/2011	Preemptive Advisory
	Wet Weather Advisory	8/14/2011	8/15/2011	August 14th Rainfall Event
	Wet Weather Advisory	8/20/2011	8/20/2011	Preemptive Advisory
	Wet Weather Advisory	8/22/2011	8/22/2011	Preemptive Advisory
	Preemptive Closure	8/27/2011	8/31/2011	Preemptive Closure Hurricane Irene
	Pollution Advisory	9/8/2011	9/15/2011	Enterococci Exceedance
Whitestone Booster Civic Association	Wet Weather Advisory	6/17/2011	6/18/2011	Preemptive Advisory
	Wet Weather Advisory	7/3/2011	7/4/2011	Preemptive Advisory
	Wet Weather Advisory	7/9/2011	7/9/2011	Preemptive Advisory
	Wet Weather Advisory	7/29/2011	7/30/2011	Preemptive Advisory
	Pollution Advisory	8/4/2011	8/9/2011	Enterococci Exceedance
	Wet Weather Advisory	8/10/2011	8/10/2011	Preemptive Advisory
	Wet Weather Advisory	8/14/2011	8/15/2011	August 14th Rainfall Event
	Wet Weather Advisory	8/20/2011	8/20/2011	Preemptive Advisory
	Wet Weather Advisory	8/22/2011	8/22/2011	Preemptive Advisory
	Preemptive Closure	8/27/2011	8/31/2011	Preemptive Closure Hurricane Irene
	Wet Weather Advisory	9/7/2011	9/7/2011	Preemptive Advisory

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) Holly Rozelman, Div. Chief		**Date signed:** 3/23/2012
Signature:	**Telephone Number:** 718-595-4938	**FAX Number:** 718-595-6852

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