Section II
Preventive Maintenance Program

MODIFIED CONSENT DECREE SECTIONS XII and XIX
PARAGRAPHS 26, 57b
PREVENTIVE MAINTENANCE PROGRAM

Paragraph 26: Requires the Board to comply with the Preventive Maintenance Program in accordance with the procedures and schedules therein.

Paragraph 57b: Requires the Board's annual report to include information on activities listed on the table "Preventive Maintenance-Quantifiable Measures" in the Preventive Maintenance Program (Modified Consent Decree Exhibit 3.) The report on preventive maintenance shall include the following information:

- Identification of specific pipe segments which were inspected, cleaned, repaired, or replaced
- Number and location of manhole inspections
- A summary of all force main preventive maintenance activities for the year
- Other non-RMAP related activity
- Where available, maps documenting information provided in the report
- A certification of compliance with the Preventive Maintenance Program (including pump station preventive maintenance)
- Any non-significant changes made to the Modified Preventive Maintenance Program

- The Board has complied with the requirements in the Preventive Maintenance Program for sanitary sewer collection system line inspections, sanitary sewer collection system line cleaning, sanitary sewer collection system manhole inspections, sanitary sewer collection system repairs, pump station preventive maintenance, air release valve inspection and maintenance, force main isolation valve exercise and inspection, force main alignment inspection, and cathodic protection system surveys.

- A map documenting the Board's preventive maintenance for 2011 is shown in Appendix 3.

GRAVITY SYSTEM

1. **Sewer Main Line Inspection and Cleaning:**
   Inspect at least 9% of the system each year and 100% in 8 years.
   Clean at least 7% of the system each year and 100% in 10 years.

   Inspection
   - In 2011, the Board complied with the Preventive Maintenance requirements for the Sanitary Sewer Collection System line inspection.

- Total footage contained in the East Bank Sanitary Sewer Collection System Line Inventory is 6,052,087.30 feet as of December 31, 2011.

- The Board completed inspection on 1,012,340.00 feet of sewer system during 2011. A detailed report of sewer main lines inspected by the Board for 2011 is included at Appendix Tab 4 and does not include duplicates.

- The Board's contractors completed inspection on 274,311.00 feet of sewer system during 2011. A detailed report of sewer main lines inspected by the Board's contractors for 2011 is included at Appendix Tab 5 and does not include duplicates.

- The Board and its contractors completed inspection on 1,249,797.00 (20.65%) of sewer system during 2011. A detailed report of sewer main lines inspected by the Board and its contractors is included at Appendix Tab 6 and does not include duplicates.

- Appendix Tab 7 contains a listing of all line segments inspected during 2011, and includes duplicates.

- The Board has met the requirement to inspect at least 9% of the system each year.

- The Board has inspected a cumulative total of 3,158,311.60 feet (52.19%) from June 23, 2009 to December 31, 2011, for the current running from June 23, 2009 through June 22, 2017. This cumulative total does not include duplicates. Appendix Tab 8 contains a listing of all sewer mains inspected, trough December 31, 2011, for this cycle.

- The Board is on track to meet the requirement to inspect 100% of the system in 10 years.

- The Board and its contractors inspected a cumulative total of 274,311.00 feet in 2011 utilizing CCTV. A detailed report containing sewer mains inspected utilizing CCTV is included as Appendix Tab 9.

- The Board and its contractors inspected a cumulative total of 1,012,340.00 feet utilizing Smoke Testing. A detailed report containing sewer mains inspected utilizing Smoke Testing is included as Appendix Tab 10.

Cleaning:

- Total footage contained in the East Bank Sanitary Sewer Collection System Line Inventory is 6,052,087.30 feet as of December 31, 2011.

- The Board cleaned 943,323.90 feet of the sewer system during 2011. A detailed report of sewer main line segments cleaned by the Board during 2011 is provided at Appendix Tab 11 and does not include duplicates.

- The Board's contractors cleaned 969,252.80 feet of the sewer system during 2011. A detailed report of sewer main line segments cleaned by the Board's contractors during 2011 is provided at Appendix Tab 12 and does not include duplicates.

- The Board and its' contractors cleaned 1,812,284.70 feet (29.94%) feet of the sewer system during 2011. A detailed report of sewer main line segments cleaned by the Board and its' contractors during 2011 is provided at Appendix Tab 13 and does not include duplicates.

- Appendix Tab 14 contains a listing of all line segments cleaned during 2011, and includes duplicates.

- The Board has met the requirement to clean at least 7% of the system each year.

- The Board has cleaned a cumulative total of 3,878,849.40 feet (64.09%) from June 23, 2008 to December 31, 2011 for the current cycle running from June 23, 2008 to June 22, 2018. This cumulative total does not include duplicate line cleanings. Appendix Tab 15 contains a listing of all sewer mains cleaned during this cycle.

- The Board is on track to meet the requirement to inspect 100% of the system in 10 years.

2. <u>Sewer Manhole Inspections:</u>

Inspect at least 25% of all sewer manholes each year and 100% in 3.3 years.

- As of December 31, 2011, the Board's East Bank Sanitary Sewer System contained 23,027 manholes.

- The Board inspected 8,281 manholes during 2011. A detailed report of manholes inspected by the Board is included at Appendix Tab 16.

- The Board's contractors inspected 9,148 manholes during 2011. A detailed report of manholes inspected by the Board's contractors is included at Appendix Tab 17.

- The Board and its contractors inspected 14,142 (61.41%) manholes during 2011. A detailed report of manholes inspected by the Board and its' contractors is included at Appendix Tab 18 and does not include duplicates.

- A report of sewer manholes inspected by the Board during 2011, including duplicates, is included at Appendix Tab 19.

- The Board has met the requirement to inspect at least 25% of all sewer manholes each year.

- The Board has inspected a cumulative total of 21,860 (94.93%) manholes from August 18, 2009 through December 31, 2011 for the current cycle running from

August 18, 2009 through December 17, 2012. This cumulative total does not include duplicates. Appendix Tab 20 contains a listing of all sewer manholes inspected, through December 31, 2011, for this cycle.

- The Board is on track to meet the requirement to inspect 100% of all sewer manholes in 3.3 years.

3. <u>Sewer Collection System Repairs</u>:
Report all sanitary sewer system repairs.

- The Board completed 1,077 repairs in 2011. A detailed report of the Board's sewer collection system repairs is provided at Appendix Tab 21.

- The Board's contractors completed 252 repairs in 2011. A detailed report of sewer collection system repairs by Board contractors is provided at Appendix Tab 22.

- The Board and its contractors completed 1,329 repairs in 2011. A detailed report of all sewer collection system repairs is provided at Appendix Tab 23.

- The Board has met the requirement to report all sanitary sewer system repairs.

<u>OPERATIONS AND FACILITIES MAINTENANCE DEPARTMENTS</u>

1. **<u>Pump Station Preventive Maintenance</u>**
Complete 90% of all preventive maintenance tasks within two weeks of the schedule date for completion.

- The total number of scheduled East Bank Operations and Facilities Maintenance Departments work orders for 2011 was three thousand and eighty (3,080).

- Pursuant to Paragraph 57b of the Modified Consent Decree, the preventive maintenance reporting period for each pump station begins after it has been operating for a full quarter of the year.

- The Board is reporting preventive maintenance activities for sixty-one (61) stations in 2011. The following Table indicates the scheduled and completed tasks for the Board's fully operational stations.

TOTAL PREVENTIVE MAINTENANCE WORK ORDER FOR OPERATIONS DEPT. AND FACILITY MAINTENANCE DEPT.	ACTIVITY CODE	NUMBER OF STATIONS	FREQUENCY FOR THE YEAR	SCHEDULED WORK ORDERS	COMPLETED W/O	PERCENT COMPLETED W/O
SEW. OPERATIONS - ANNUAL	PSOA1	60	1	51	51	
SEW. OPERATIONS - SEMI ANNUAL	PSOSA1	60	2	88	81	
SEW. OPERATIONS - QUARTERLY	PSOQ1	60	4	153	152	
SEW. OPERATIONS - MONTHLY	PSOM1	60	12	471	471	
SEW. OPERATIONS - WEEKLY	PSOW1	60	52	2052	2041	
SEW. FM MACHINE SHOP ANNUAL	PSFMA1	60	1	51	51	
SEW. FM ELECTRIC SHOP ANNUAL	PSFEA1	60	1	51	51	
SEW. FM ELECTRIC SHOP SEMI ANNUAL	PSFES1	60	2	88	77	
DRN. OPERATIONS - ANNUAL "D"	DPSOA	1	1	1	1	
DRN. OPERATIONS - SEMI ANNUAL "D"	DPSOSA	1	2	2	2	
DRN. OPERATIONS - QUARTERLY "D"	DPSOQ	1	4	4	4	
DRN. OPERATIONS - MONTHLY "D"	DPSOM	1	12	12	12	
DRN. OPERATIONS - WEEKLY "D"	DPSOW	1	52	52	52	
DRN. FM MACHINE SHOP ANNUAL "D"	PSFMA1	1	1	1	1	
DRN. FM ELECTRIC SHOP ANNUAL "D"	PSFEA1	1	1	1	1	
DRN. FM ELECTRIC SHOP SEMI ANNUAL "D"	PSFES1	1	2	2	2	
TOTAL WORK ORDERS FOR YEAR 2011				**3,080**	**3,049**	**99.0%**

- Operations and Facility Maintenance personnel completed 3,049 sewage pumping station preventive maintenance tasks (99.00%) through December 31, 2011. This work was completed within two weeks of the scheduled date for accomplishment. A detailed report of the preventive maintenance activities completed is located in Appendix 24.

- The Board has met the requirement to complete 90% of all preventive maintenance tasks within two weeks of the scheduled date for completion.

- The Board continues to perform regular maintenance on all units powered by commercial power. In addition, portable pumps that are under contract are maintained by the vendor.

PRESSURE SYSTEM

1. Air Release Valves:
Perform semi-annual inspection and maintenance.

- The Networks Department performed the semi-annual inspections and maintenance of the Board's sewer force main air release valves in 2011.

- During the first half of 2011, the Board inspected and maintained 34 (100%) known air release valves.

- During the second half of 2011, the Board inspected and maintained 34 (100%) known air release valves.

- A detailed report of the semi-annual inspections of air release valves is provided at Appendix Tab 25.

- The Board has met the requirement to perform semi-annual inspections and maintenance on all known air release valves.

- The Networks Department maintains a program to identify accessible corporation cocks in the sanitary sewer force main system and to investigate these sites for possible use as air release valves and inclusion in the program. The Sewerage and Water Board maps have been reviewed to find all corporation cocks that were accessible for use as potential air release valves. Each location has been recorded. The Board has also visited each of these locations to verify the existence of the corporation cock and its location. In addition, Networks Engineering is reviewing the sewer force main system to identify suitable locations for installation of air release valves.

2. <u>Force Main Isolation Valves Exercise and Inspection</u>:
Inspect and exercise annually, after the completion of the first inspection cycle, for which two years is allowed.

- The Board inspected and exercised 171 (100%) of the 171 identified sewer force main isolation valves during 2011. A detailed report of the inspections of force main isolation valves is contained at Appendix Tab 26.

- The Board has met the requirement to inspect and exercise annually its Force Main Isolation Valves.

3. <u>Force Main Alignment:</u>
Visually inspect annually.

- The Networks Department has completed the annual alignment inspection of one hundred percent (100%) of the 102 miles of sewer force mains for 2011. A detailed report of the Force Main Alignment inspection is provided at Appendix 27.

- The Board has met the requirement to complete a visual force main alignment inspection for 2011.

4. <u>Cathodic Protection</u>:
Conduct cathodic protection surveys annually.

- The Board conducted 22 (100%) cathodic protection surveys during 2011. A detailed report of the twenty-two (22) cathodic protection inspections is provided at Appendix Tab 28.

- The Board has met the requirement to perform cathodic protection surveys annually.

- The Board's Cathodic Protection system consists of sacrificial anodes attached to the structure to be protected or impressed current systems. The anode method is used on short sections of coated steel sewer force mains. For longer sections of steel sewer force mains, the positive impressed current system employs a rectifier assembly in a deep well ground bed. At present, Board operates two (2) east bank sacrificial anode systems and twenty (20) impressed current systems. The impressed current systems also contain sacrificial anode protection to prevent corrosion if the rectifier fails. All twenty-two (22) systems are surveyed annually.

Non-Significant Changes to the Preventive Maintenance Program

- For 2011, the Board is not requesting any modifications to the Preventive Maintenance Plan.